



Cisco D9854 Advanced Program Receiver

Installation and Operation Guide

Please Read This Entire Guide

Veillez lire entièrement ce guide

Bitte das gesamte Handbuch durchlesen

Sír vase leer completamente la presente guía

Si prega di leggere completamente questa guida

Important:

Please read this entire guide before you install or operate this product. Give particular attention to all safety statements.

Important:

Veillez lire entièrement ce guide avant d'installer ou d'utiliser ce produit. Prêtez une attention particulière à toutes les règles de sécurité.

Zu beachten:

Bitte lesen Sie vor Aufstellen oder Inbetriebnahme des Gerätes dieses Handbuch in seiner Gesamtheit durch. Achten Sie dabei besonders auf die Sicherheitshinweise.

Importante:

Sír vase leer la presente guía antes de instalar o emplear este producto. Preste especial atención a todos los avisos de seguridad.

Importante:

Prima di installare o usare questo prodotto si prega di leggere completamente questa guida, facendo particolare attenzione a tutte le dichiarazioni di sicurezza.

Notices

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Safety Precautions

This symbol alerts you to the presence of uninsulated dangerous voltage inside the product enclosure that poses a risk of electric shock.		CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN		This symbol alerts you to important operating and maintenance (servicing) instructions included with this product.
CAUTION TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVERS FROM THIS UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL. SEE ADDITIONAL SAFETY INSTRUCTIONS BELOW.				
WARNING TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.				

1. Read Instructions – All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Cleaning – Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
Exception: A product that is meant for uninterrupted service and that, for some specific reason, such as the possibility of the loss of an authorization code for a CATV converter, is not intended to be unplugged by the user for cleaning or any other purpose, may exclude the reference to unplugging the product in the cleaning description above.
6. Attachments – Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. Water and Moisture – Do not use this product near water – for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.
8. Accessories – Do not place this product on an unstable cart, stand, tripod, bracket, or table.
The product may fall, causing serious injury to a child or adult, and serious damage to the product.

Safety Precautions, Continued

Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

PORTABLE CART WARNING

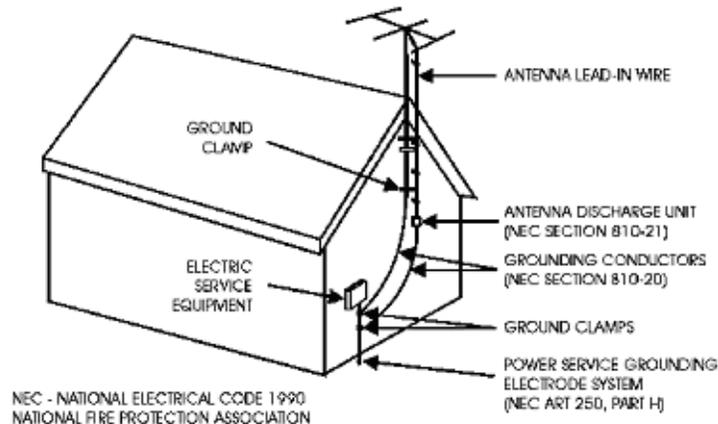


10. Ventilation – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. Power Sources – This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12. Grounding or Polarization – This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
Alternate Warnings – This product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

Safety Precautions, Continued

13. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
14. Protective Attachment Plug – The product is equipped with an attachment plug having overload protection. This is a safety feature. See Instruction Manual for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.
15. Outdoor Antenna Grounding – If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Figure 1. Outdoor antenna grounding



TO CATV SYSTEM INSTALLER
This reminder is provided to call the CATV system installer's attention to Article 820-40 of the National Electrical Code (NEC) that provides guidelines for proper grounding, and in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of entry as practical.

16. Lightning – For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

Safety Precautions, Continued

17. Power Lines – An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
18. Overloading – Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
19. Object and Liquid Entry – Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
20. Servicing – Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
21. Damage Requiring Service – Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a) When the power-supply cord or plug is damaged,
 - b) If liquid has been spilled, or objects have fallen into the product,
 - c) If the product has been exposed to rain or water,
 - d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation,
 - e) If the product has been dropped or damaged in any way, and
 - f) When the product exhibits a distinct change in performance – this indicates a need for service.
22. Replacement Parts – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
23. Safety Check – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
24. Wall or Ceiling Mounting – The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
25. Heat – The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

Safety Precautions, Continued

Protect yourself from electric shock and your system from damage!

- This product complies with international safety and design standards. Observe all safety procedures that appear throughout this guide, and the safety symbols that are affixed to this product.
- If circumstances impair the safe operation of this product, stop operation and secure this product against further operation.

Avoid personal injury and product damage! Do not proceed beyond any symbol until you fully understand the indicated conditions!

	You will find this symbol on the product and/or in the literature that accompanies this product. It indicates important operating or maintenance instructions.
	You may find this symbol on the product and/or in the literature that accompanies this product. It indicates a live terminal; the symbol pointing to the terminal device.
	You may find this symbol on the product and/or in the literature that accompanies this product. It indicates a protective earth terminal.
	You may find this symbol on the product and/or in the literature that accompanies this product. It indicates excessive or dangerous heat.

Power

- **Important! This is a Class I product. You must earth this product.**
- **This product plugs into a socket-outlet. The socket-outlet must be near this product, and must be easily accessible. Connect this product only to the power source that is indicated on the back panel of this product. If this product does not have a mains power switch, the power cord serves this purpose.**

Enclosure

- Do not allow moisture to enter this product.
- Do not open the enclosure of this product unless otherwise specified.
- Do not push objects through openings in the enclosure of this product.

Cables

- Always disconnect all power cables before servicing this product.
- Always pull on the plug or the connector to disconnect a cable. Never pull on the cable itself.
- Do not walk on or place stress on cables or plugs.

Factory service

- Refer service only to service personnel who are authorized by the factory.

Règles de sécurité

Protégez-vous des risques d'électrocution et protégez votre système contre les endommagements éventuels.

- Ce produit respecte les standards internationaux de sécurité et de conception. Veuillez observer toutes les procédures de sécurité qui apparaissent dans ce guide, ainsi que les symboles de sécurité qui figurent sur le produit.
- Si, du fait des circonstances, ce produit cesse de fonctionner normalement, cessez de l'utiliser et empêchez-en l'utilisation future.

Évitez le risque de blessures et de dommages aux produits! Ne procédez à aucune tâche tant que vous n'aurez pas entièrement assimilé les conditions indiquées par un symbole!

	Ce symbole figure dans la documentation accompagnant ce produit. Il indique d'importantes instructions de fonctionnement ou d'entretien.
	Ce symbole peut être attaché à ce produit. Il indique une borne sous tension; la direction indique la borne.
	Ce symbole peut être attaché à ce produit. Il indique une borne de terre de protection.
	Ce symbole peut être attaché à ce produit. Il indique une température excessive ou dangereuse.

Alimentation

- **Important! Ce produit fait partie de la classe I. Vous devez le mettre à la terre.**
- **Ce produit se branche dans une prise murale. Cette dernière doit être placée à proximité du produit et doit être facilement accessible.**
- **Ne branchez ce produit qu'à la source d'alimentation indiquée sur son panneau arrière.**
- **Si ce produit n'a pas d'interrupteur d'alimentation générale, le cordon d'alimentation remplit ce rôle.**

Enceinte

- Ne laissez pas l'humidité pénétrer dans ce produit.
- N'ouvrez pas l'enceinte de ce produit, sauf instructions contraires.
- Ne forcez pas d'objets dans les ouvertures du boîtier.

Câbles

- Débranchez toujours tous les cordons d'alimentation avant de réparer ce produit.
- Tirez toujours sur la prise ou le connecteur pour débrancher un câble. Ne tirez jamais directement sur le câble.
- Ne marchez pas sur les câbles ou les prises et n'y exercez aucune pression.

Réparations effectuées à l'usine

- Ne confiez les travaux de réparations qu'au personnel autorisé par l'usine.

Sicherheitsvorkehrungen

Schützen Sie sich gegen elektrischen Schlag, und Ihr Gerät gegen Beschädigung!

- Dieses Gerät entspricht internationalen Sicherheits- und Ausführungsnormen. Beachten Sie alle in diesem Handbuch enthaltenen Sicherheitshinweise sowie die am Gerät angebrachten Warnzeichen.
- Sollten örtliche Umstände den sicheren Betrieb dieses Gerätes beeinträchtigen, schalten Sie es ab und sichern es gegen weitere Benutzung.

Vermeiden Sie Verletzungen sowie Beschädigung des Gerätes! Wenn Sie zu einem der folgenden Warnzeichen gelangen, nicht weiterarbeiten, bis Sie seine Bedeutung voll verstanden haben!

	Dieses Symbol erscheint auf dem Gerät und/oder in der ihm beiliegenden Literatur. Es bedeutet wichtige, zu beachtende Betriebs- oder Wartungsanweisungen.
	Wenn dieses Zeichen am Gerät angebracht ist, warnt es vor einer spannungsführenden Stelle.
	Dieses Symbol kennzeichnet auf dem Gerät die Anschlußstelle der Sicherheitserde.
	Wenn dieses Zeichen am Gerät angebracht ist, warnt es vor heißen Stellen, die zu Verbrennungen führen können.

Netzspannung

- **Wichtig!** Dieses Gerät ist ein Produkt der Schutzklasse I. Es muß geerdet werden.
- **Das Gerät ist an einer Steckdose anzuschließen. Diese muß sich leicht zugänglich in unmittelbarer Nähe des Gerätes befinden.**
- **Die Netzversorgung muß den auf der Rückwand des Gerätes angegebenen Werten entsprechen.**
- **Falls sich kein Hauptschalter am Gerät befindet, dient das Netzkabel diesem Zweck.**

Gehäuse

- Das Innere des Gerätes ist vor Feuchtigkeit zu schützen.
- Das Gehäuse ist nicht zu öffnen.
- Niemals einen Gegenstand durch die Gehäuseöffnungen einführen!

Kabel

- Vor jeglicher Wartung des Gerätes sind alle Kabel zu entfernen.
- Hierzu grundsätzlich am Stecker oder Verbindungsstück und niemals am Kabel selber ziehen.
- Nicht auf die Kabel oder Stecker treten oder diese einer Zugbelastung aussetzen.

Hersteller-Wartung

Wartungsarbeiten sind nur durch vom Hersteller autorisierte Techniker vorzunehmen.

Precauciones de seguridad

¡Protéjase contra la electrocución y proteja su sistema contra los daños!

- Este producto cumple con los criterios internacionales de seguridad y diseño. Observe todas los procedimientos de seguridad que aparecen en esta guía, y los símbolos de seguridad adheridos a este producto.
- Si las circunstancias impiden la operación segura de este producto, suspenda la operación y asegure este producto para que no siga funcionando.

¡Evite lastimarse y evite dañar el producto! No avance más allá de cualquier símbolo hasta comprender completamente las condiciones indicadas!

	Encontrará este símbolo en el impreso que acompaña a este producto. Este símbolo indica instrucciones importantes de funcionamiento o mantenimiento.
	Es posible que este símbolo esté pegado al producto. Este símbolo indica un terminal vivo, la flecha apunta hacia el aparato terminal
	Podría encontrar este símbolo pegado al producto. Este símbolo indica un terminal de protección de tierra.
	Podría encontrar este símbolo pegado al producto. Este símbolo indica calor excesivo o peligroso.

Power

- **Importante!** Este es un producto de Clase I. Tiene que estar conectado a tierra.
- Este producto se conecta a un enchufe. El enchufe necesita estar cerca del producto y ser fácilmente accesible.
- Conecte este producto únicamente a la fuente de suministro eléctrico indicada en el panel posterior del producto.
- Si el producto no tiene interruptor para la línea principal, utilice el cordón toma de corriente para este propósito.

Cubierta

- No permita que la humedad penetre en este producto.
- No abra la cubierta del producto a menos que se indique lo contrario.
- No introduzca objetos a través de las aberturas de la cubierta del producto.

Cables

- Siempre desconectar todos los cables eléctricos antes de revisar o reparar el producto.
- Tire siempre del enchufe o del conector para desconectar un cable. Nunca tire del cable mismo.
- No camine ni aplique presión sobre los cables o enchufes..

Revisión y reparación de fábrica

Solo personal aprobado por la fábrica puede darle servicio al producto.

Precauzioni di sicurezza

Protegetevi da scosse elettriche e proteggete il vostro sistema da possibili danni!

- Questo prodotto soddisfa le norme internazionali per la sicurezza ed il design. Seguite tutte le procedure di sicurezza contenute in questa guida e i simboli di sicurezza applicati al prodotto.
- Se circostanze avverse compromettono la sicurezza d'uso di questo prodotto, interrompetene l'uso e assicuratevi che il prodotto non venga più utilizzato.

Evitare infortuni alla persona e danni al prodotto! Non procedere oltre a qualunque simbolo fino a quando non si siano comprese pienamente le condizioni indicate!

	Questo simbolo, che appare nella letteratura di accompagnamento del prodotto, indica importanti istruzioni d'uso e di manutenzione.
	Sul prodotto potete vedere questo simbolo che indica un dispositivo terminale sotto tensione; la freccia punta verso il dispositivo.
	Potrete trovare il presente simbolo applicato a questo prodotto. Questo simbolo indica un terminale protettivo di messa a terra.
	Potrete trovare il presente simbolo attaccato a questo prodotto. Questo simbolo indica un calore eccessivo o pericoloso.

Alimentazione

- **Importante! Questo prodotto è di Classe I. Va messo a terra.**
- **Questo prodotto si inserisce in una presa di corrente. La presa di corrente deve essere in prossimità del prodotto, e deve essere facilmente accessibile.**
- **Collegare questo prodotto solamente alla fonte di alimentazione indicata sul pannello posteriore di questo prodotto.**
- **Se questo prodotto non è dotato di un interruttore principale, il cavo di alimentazione funge a questo scopo.**

Chiusura

- Proteggete da umidità questo prodotto.
- Non aprire la chiusura di questo prodotto a meno che non sia specificato diversamente.
- Non inserire oggetti attraverso le fessure della chiusura.

Cavi

- Staccare sempre tutti i cavi di alimentazione prima di svolgere l'assistenza tecnica al prodotto.
- Per scollegare un cavo tirate la spina o il connettore, non tirare mai il cavo stesso.
- Non calpestare o sottoporre a sollecitazioni i cavi o le prese.

Riparazioni di fabbrica

- Per le riparazioni contattate solamente personale tecnico autoizzato dalla fabbrica.

Important Safety Instructions

Read and Retain Instructions

Carefully read all safety and operating instructions before operating this equipment, and retain them for future reference.

Follow Instructions and Heed Warnings

Follow all operating and use instructions. Pay attention to all warnings and cautions in the operating instructions, as well as those that are affixed to this equipment.

Terminology

The terms defined below are used in this document. The definitions given are based on those found in safety standards.

Service Personnel - The term *service personnel* applies to trained and qualified individuals who are allowed to install, replace, or service electrical equipment. The service personnel are expected to use their experience and technical skills to avoid possible injury to themselves and others due to hazards that exist in service and restricted access areas.

User and Operator - The terms *user* and *operator* apply to persons other than service personnel.

Ground(ing) and Earth(ing) - The terms *ground(ing)* and *earth(ing)* are synonymous. This document uses *ground(ing)* for clarity, but it can be interpreted as having the same meaning as *earth(ing)*.

Electric Shock Hazard

This equipment meets applicable safety standards.



WARNING:

To reduce risk of electric shock, perform only the instructions that are included in the operating instructions. Refer all servicing to qualified service personnel only.

Electric shock can cause personal injury or even death. Avoid direct contact with dangerous voltages at all times. The protective ground connection is essential to safe operation and must be verified before connecting the power supply.

Know the following safety warnings and guidelines:

- **Dangerous Voltages**
 - Only qualified service personnel are allowed to perform equipment installation or replacement.
 - Only qualified service personnel are allowed to remove chassis covers and access any of the components inside the chassis.
- **Grounding**
 - Do not violate the protective grounding by using an extension cable, power cable, or autotransformer without a protective ground conductor.
 - Take care to maintain the protective grounding of this equipment during service or repair and to re-establish the protective grounding before putting this equipment back into operation.

Important Safety Instructions, Continued

Installation Site

When selecting the installation site, comply with the following:

- **Protective Ground** - The protective ground lead of the building's electrical installation should comply with national and local requirements.
- **Environmental Condition** - The installation site should be dry, clean, and ventilated. Do not use this equipment where it could be at risk of contact with water. Ensure that this equipment is operated in an environment that meets the requirements as stated in this equipment's technical specifications, which may be found on this equipment's data sheet.

Installation Requirements



WARNING:

Allow only qualified service personnel to install this equipment. The installation must conform to all local codes and regulations.

Equipment Placement



WARNING:

Avoid personal injury and damage to this equipment. An unstable mounting surface may cause this equipment to fall.

To protect against equipment damage or injury to personnel, comply with the following:

- Install this equipment in a restricted access location.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.
- Place this equipment close enough to a mains AC outlet to accommodate the length of this equipment's power cord.
- Route all power cords so that people cannot walk on, place objects on, or lean objects against them. This may pinch or damage the power cords. Pay particular attention to power cords at plugs, outlets, and the points where the power cords exit this equipment.
- Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with this equipment.
- Make sure the mounting surface or rack is stable and can support the size and weight of this equipment.
- The mounting surface or rack should be appropriately anchored according to manufacturer's specifications. Ensure this equipment is securely fastened to the mounting surface or rack where necessary to protect against damage due to any disturbance and subsequent fall.

Ventilation

This equipment has openings for ventilation to protect it from overheating. To ensure equipment reliability and safe operation, do not block or cover any of the ventilation openings. Install the equipment in accordance with the manufacturer's instructions.

Important Safety Instructions, Continued

Rack Mounting Safety Precautions

Mechanical Loading

Make sure that the rack is placed on a stable surface. If the rack has stabilizing devices, install these stabilizing devices before mounting any equipment in the rack.



WARNING:

Avoid personal injury and damage to this equipment. Mounting this equipment in the rack should be such that a hazardous condition is not caused due to uneven mechanical loading.

Reduced Airflow

When mounting this equipment in the rack, do not obstruct the cooling airflow through the rack. Be sure to mount the blanking plates to cover unused rack space. Additional components such as combiners and net strips should be mounted at the back of the rack, so that the free airflow is not restricted.



CAUTION:

Installation of this equipment in a rack should be such that the amount of airflow required for safe operation of this equipment is not compromised.

Elevated Operating Ambient Temperature

Only install this equipment in a humidity- and temperature-controlled environment that meets the requirements given in this equipment's technical specifications.



CAUTION:

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install this equipment in an environment compatible with the manufacturer's maximum rated ambient temperature.

Handling Precautions

When moving a cart that contains this equipment, check for any of the following possible hazards:



WARNING:



Avoid personal injury and damage to this equipment! Move any equipment and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause this equipment and cart to overturn.

- Use caution when moving this equipment/cart combination to avoid injury from tip-over.
- If the cart does not move easily, this condition may indicate obstructions or cables that may need to be disconnected before moving this equipment to another location.
- Avoid quick stops and starts when moving the cart.
- Check for uneven floor surfaces such as cracks or cables and cords.

Important Safety Instructions, Continued

Grounding

This section provides instructions for verifying that the equipment is properly grounded.

Safety Plugs (USA Only)

Equipment protection Class I - Cisco supplies a mains cord with a 3-terminal (grounding-type) safety plug. Do not defeat the safety purpose of the grounding-type or polarized safety plug.

To properly ground this equipment, follow these safety guidelines:

- **Grounding-Type Plug** - For a 3-terminal plug (one terminal on this plug is a protective grounding pin), insert the plug into a grounded mains, 3-terminal outlet.

Note: This plug fits only one way. If this plug cannot be fully inserted into the outlet, contact an electrician to replace the obsolete 3-terminal outlet.

Safety Plugs (European Union)

- **Class I Mains Powered Equipment** - Provided with a 3-terminal AC inlet and requires connection to a 3-terminal mains supply outlet via a 3-terminal power cord for proper connection to the protective ground.

Note: The equipotential bonding terminal provided on some equipment is not designed to function as a protective ground connection.

Equipotential Bonding

If this equipment is equipped with an external chassis terminal marked with the IEC 60417-

5020 chassis icon (), or 5017 (), the installer should refer to CENELEC standard EN 50083-1 or IEC standard IEC 60728-11 for correct equipotential bonding connection instructions.

Important Safety Instructions, Continued

AC Power

Important: This equipment is Class I equipment, it must be grounded.

- If this equipment plugs into an outlet, the outlet must be near this equipment, and must be easily accessible.
- Connect this equipment only to the power sources that are identified on the equipment-rating label normally located close to the power inlet connector(s).
- If this equipment has two power sources be sure to disconnect all power sources before working on this equipment.
- If this equipment **does not** have a main power switch, the power cord connector serves as the disconnect device.
- Always pull on the plug or the connector to disconnect a cable. Never pull on the cable itself.
- Unplug this equipment when unused for long periods of time.

Circuit Overload

Know the effects of circuit overloading before connecting this equipment to the power supply.



CAUTION:

Consider the connection of this equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Refer to the information on the equipment-rating label when addressing this concern.

General Servicing Precautions



WARNING:

Avoid electric shock! Opening or removing this equipment's cover may expose you to dangerous voltages.

Be aware of the following general precautions and guidelines:

- **Servicing** - Refer all servicing to qualified service personnel. Servicing is required when this equipment has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into this equipment, this equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.
- **Wristwatch and Jewelry** - For personal safety and to avoid damage of this equipment during service and repair, do not wear electrically conducting objects such as a wristwatch or jewelry.
- **Lightning** - Do not work on this equipment, or connect or disconnect cables, during periods of lightning.
- **Labels** - Do not remove any warning labels. Replace damaged or illegible warning labels with new ones.
- **Covers** - Do not open the cover of this equipment and attempt service unless instructed to do so in the instructions. Refer all servicing to qualified service personnel only.
- **Moisture** - Do not allow moisture to enter this equipment.
- **Cleaning** - Use a damp cloth for cleaning.

Important Safety Instructions, Continued

Safety Checks - After service, assemble this equipment and perform safety checks to ensure it is safe to use before putting it back into operation.

Accessories

Use only attachments or accessories specified by the manufacturer.

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About This Manual

Objective

This manual describes how to install, use and maintain the Model D9854 Advanced Program Receiver.

Note: The manual describes all available options for the D9854 receiver. Your D9854 receiver may only have some of the features described in this manual.

Audience

The audience of this manual includes **users (operators)** and **service personnel** who are responsible for the installation, configuration, operation, monitoring and service of the D9854 receiver.

Required Knowledge

To use this documentation, the user should have a basic knowledge of the technology used in relation to this product. Service personnel should have additional skills and be familiar with cabling, electronic circuitry, and wiring practices.

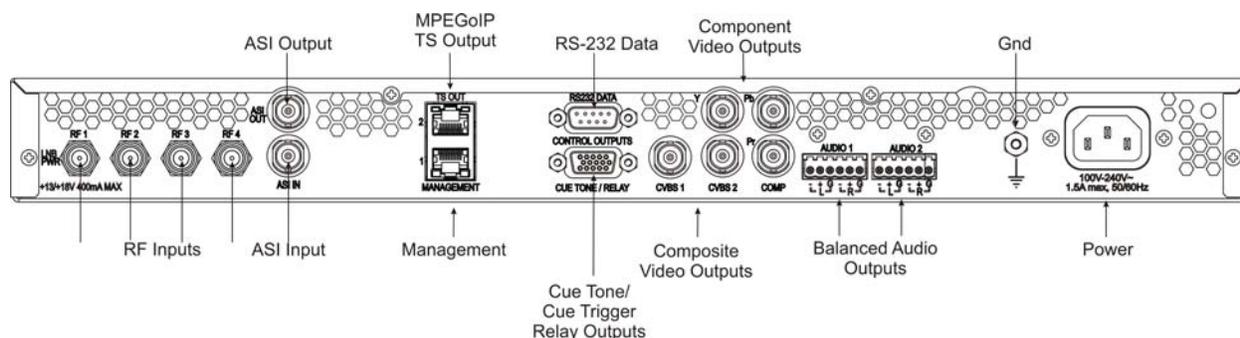
This manual is intended for operators who are responsible for the configuration, remote operation and maintenance of the D9854 receiver.

Chapter 1

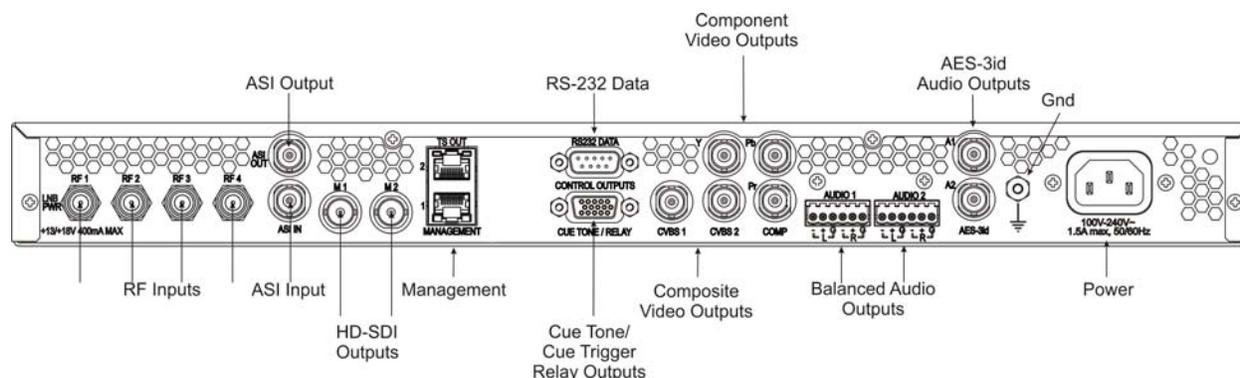
Quick Setup - Read Me First!

Connecting the Receiver

Proceed as follows to connect the Model D9854 Advanced Program Receiver to other equipment.



Base Model



SDI Model, with SD/HD-SDI and AES outputs

1. Connect the L-Band signal to RF1. 13V or 18V LNB power is only available on the RF1 port. The factory default setting for LNB power is OFF.
2. Connect the ASI OUT port to an ASI device for digital tier applications.
3. Connect the Composite Video Output to a video monitor.
4. Connect the terminal block balanced audio outputs labeled AUDIO 1 and AUDIO 2 to monitoring equipment.
5. Apply power by connecting the receiver to a power outlet. The message "Application Starting" will appear on the front panel. The boot process approximately 1 minute for the unit to initialize. When ready, the front panel display shows the startup screen.
6. The Ethernet Management port does not currently provide SNMP or management control. It is used for software application downloads only.

Connecting the Receiver, Continued

7. Connect the HD-SDI outputs (M1 and M2) to HD compatible signal processing equipment or HD signal monitoring equipment, if applicable.

Maintenance of EMC Compliance

The power cord (consisting of appliance coupler, flexible cord, and plug) supplied with this product meets the requirements for use in the country for which this product was purchased. In general, the power cord must be approved by an acceptable, accredited agency responsible for evaluation in the country where the product will be used.

Double-shielded (braid/foil or braid/braid) cables should be used for all ASI I/O and RF inputs. Single-shield cables are acceptable for all other inputs and outputs. For terminal block (Alarms) I/O, no shielding is required.

Set up for Network Connection

1. Press **MENU** to display the Main menu.
2. Press **▶** to go to the Setup menu. Press **SELECT**. Press **▶** to go to the IP menu. Press **SELECT**.
3. Use the **▲▼** arrow keys to navigate up and down the IP menu, and the **◀▶** arrow keys to move across the IP menu to set the IP Address, Mask and Gateway parameters. Use the number keys to directly enter numbers in the fields. For more information on keypad operation, see Front Panel Controls & Display.
4. Press **SELECT** each time to save the changes. Press **MENU** four times to return to the startup screen.

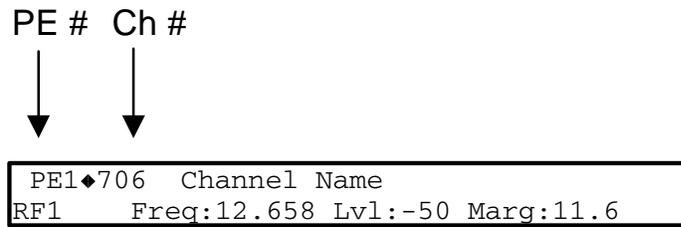
Quick Setup Instructions for RF Acquisition

1. Press **MENU** to display the Main menu.
2. Press **▶** to get to the Setup menu. Press **SELECT**. Press **▶** to move to the TS Input menu. Press **SELECT**.
3. To setup the ASI input port, go to step 4. To setup the RF1 input port, go to step 5.
4. Press **SELECT** twice. Press **▼** to set the ASI port to Act (Activate). Press **SELECT**. Press **MENU** three times to return to the start-up menu. Go to step 12.
5. Press **SELECT**. Press **▶** to go to RF1. Press **SELECT** twice. Use **▼** to set the RF1 port parameter to Act (Activate). Press **SELECT**.
6. Press **▼** to move to the LO1, LO2, Xover menu. Verify these parameters for your application. If no change is needed, go to Step 7. If required, you may modify these settings. Use **▶** to move to the parameter that you want to modify. Press **SELECT**. Use the numerical keypad to enter new frequencies. Press **SELECT**.
7. Press **▼** five times to move to the Modulation and Rolloff menu. Press **SELECT**. Use **▲▼** to choose DVB-S or DVB-S2. Press **SELECT**. If DVB-S2 is used, press **▶** to choose Rolloff. Press **SELECT**. Use **▲▼** to choose the value. Press **SELECT**.
8. Press **▲** to move to the Freq., Sym Rate, and FEC menu. Press **SELECT**. Enter the RF frequency. Press **SELECT**. Press **▶** to move to the Sym. Rate menu. Press **SELECT**. Enter the symbol rate. Press **SELECT**. If DVB-S2 is used, proceed to step 9. If DVB-S is used, press **▶** to go to FEC. Press **SELECT**. Use **▲▼** to select AUTO. Press **SELECT**.
9. Press **▼** twice to move to the Net ID menu. Press **▶** to choose Net ID. Press **SELECT**. Enter the value. Press **SELECT**.
10. Press **▼**. Press **SELECT**. Use **▲▼** to change the LNB power, if needed. Only the RF1 port is capable of providing 13V or 18V. Press **SELECT**.
11. Press **MENU** three times. Press **▶** to move to Save & Exit. Press **SELECT**. Save & Exit will return you to the Main: Setup menu; Abandon & Exit will go back to the last menu accessed with the original parameters; Cancel will go back to the last menu accessed with changes saved.
12. The receiver will search for the signal and display “Acquisition Successful”. It will find the first available channel on the network. Press **MENU** twice to return to the start-up menu.

Quick Setup Instructions for RF Acquisition, Continued

13. If the front LED is solid green, the unit is authorized. Proceed with **Assigning a Program Channel to a PE (Program Entry)**, page 1-6. If the front LED is flashing green, the unit is unauthorized. Please contact your service provider and provide the TID number for authorization. The TID can be found on the About menu. To locate the TID, press **MENU**, press **▶** twice, and then **SELECT**. Make a note of the TID number. Press **MENU** twice to return to the start-up screen.

Assigning a Program Channel to a PE (Program Entry)



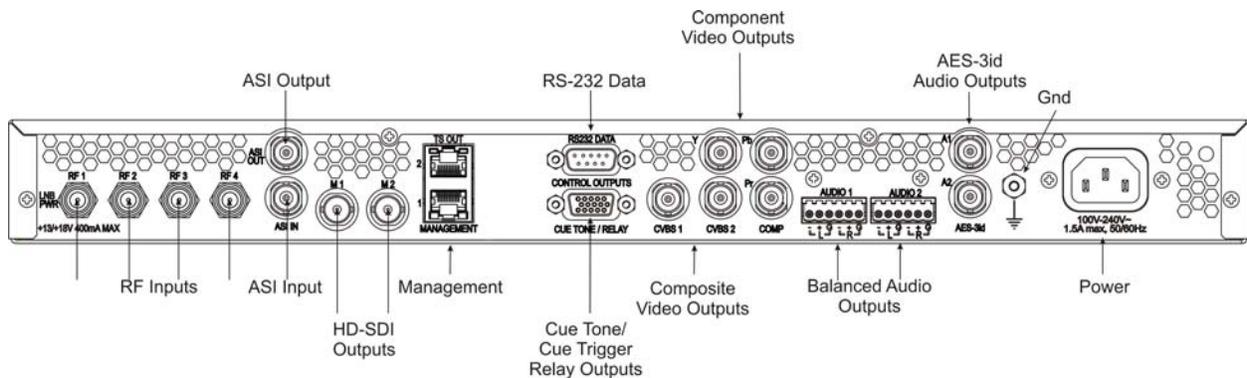
1. At the start-up screen, PE1 is initially displayed.
2. Use the ▲▼ keys to scroll through the available program channels or directly enter the channel number using the 0 to 9 keys; press **SELECT** to save the channel selection.

Important: In addition to ASI out availability on both models, your D9854 will be configured for either HD-SDI or MOIP output. Please follow the procedure for your model to configure the outputs.

ASI Out for both models

1. Press **MENU** to move to the MAIN MENU.
2. Press **▶** to move to the Setup menu. Press **SELECT**.
3. Press **▼** to move to the Outputs menu. Press **SELECT**.
4. Press **▶** to move to the TS Out menu. Press **SELECT**.
5. Press **SELECT** to access the ASI menu. Press **▼**. Press **SELECT**. Use **▲▼** to select the output mode. The factory default is “No Output”. It is recommended to set the Output Mode to MAP Svc Chans Only. Refer to **Factory Default Settings**, page B-2, for information on the default settings in order to choose the desired Output Mode. Press **SELECT**. Press **▶** to select “YES” if requested to “RESYNC ALL?”. Press **SELECT**. Press **▶** to move to Descrambling Mode Menu. Press **SELECT**. Use **▲▼** to select the scrambling mode. Press **SELECT**.
6. Press **APPLY**. Press **SELECT**.
7. Press **MENU** 5 times to return to the startup menu.

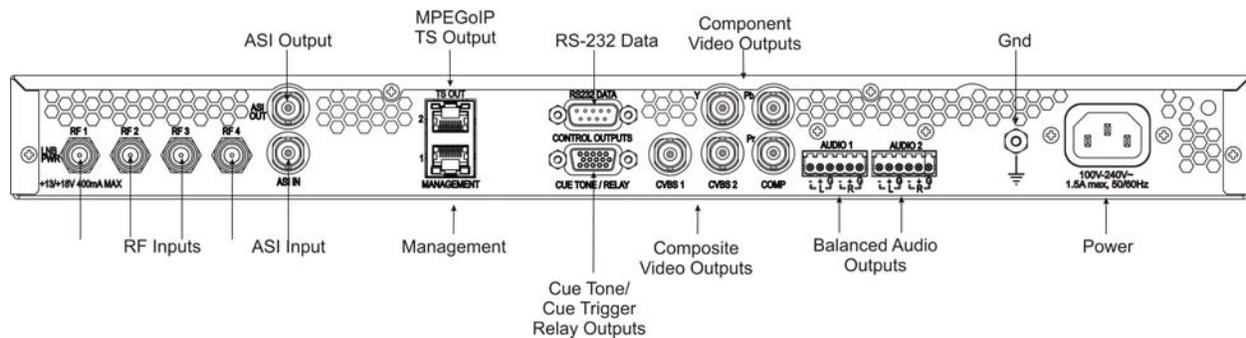
HD-SDI Outputs (SDI Model, with SD/HD-SDI and AES outputs)



SDI Model, with SD/HD-SDI and AES outputs

1. Press **MENU**.
2. Press **▶** to move to the Setup menu. Press **SELECT**.
3. Press **▶** three times to move to the Services menu. Press **SELECT**.
4. Press **SELECT** to enter the Video menu.
5. Press **SELECT** to enter the PV Format menu, then use **▲▼** to navigate and configure the output. Press **SELECT** to save the changes.
6. Press down arrow to move to the **SD Format** menu. Press **SELECT** to enter the menu and use **▲▼** to navigate and configure the output. Press **SELECT** to save the changes.
7. Press **MENU** two times. Press **▶** to move to the Outputs Menu. Press **SELECT**. Press **▶** two times to enter the M1/M2 Menu. Press **SELECT**. Press **SELECT** and use **▲▼** to enter ASI or SDI output on port 1. Press **SELECT** to save changes. Press **▶** to move to M2. Press **SELECT** and use **▲▼** to enter ASI or SDI output on port 2. Press **MENU** repeatedly to return to the startup screen.

MOIP Outputs (Base Model)



Base Model

1. Press **MENU** to move to the Main Menu.
2. Press **▶** to move to the Setup menu. Press **SELECT**.
3. Press **▼** to move to the Outputs menu. Press **SELECT**.
4. Press **▶** to move to the TS Out menu. Press **SELECT**.
5. Press **▶** to move to the MOIP menu. Press **SELECT**. Press **▶**. Press **SELECT** for Rate Control. Use **▲▼** to select "USER". Selecting "Auto" for **Rate Control** results in the device setting the output rate to be the same as the input rate. Press **SELECT**. Press **▶** to move to the User Rate menu. Press **SELECT** and use the keypad to enter the desired bit rate. Press **SELECT** to save changes.
6. Press **▼** to move to the Output Mode. Press **SELECT**. Use **▲▼** to choose the output mode for your application. Press **Select**. Press **▶** to move to Descrambling Mode menu. Press **SELECT**. Use **▲▼** to select the scrambling mode. Press **SELECT**.
7. Press **▼**. Press **▶** to move to Insert Null Packet. Press **SELECT**. Use **▲▼** to change the selection to "No". Press **SELECT**.
8. Press **▼** two times. Press **SELECT**. Use **▲▼** to change the selection to UDP or RTP. Press **SELECT**.
9. Press **▼**. Press **SELECT**. Enter the Destination Address using the keypad. Press **SELECT**. Press **▶** to move to the UDP Port. Press **SELECT** and enter the Port number using the keypad. Press **SELECT** to save the change. Press **▶** to move to the source port. Press **SELECT** and enter the Port number using the keypad. Press **SELECT** to save the change. The default is zero, which allows the system to assign a port.
10. Press **▼**. Press **▶** two times to move to PCR@IP Start menu. Press **SELECT**. Press **▼** to set value to "No". Press **SELECT** to save the value.
11. Press **▼** two times. Press **▶** to move to PCR Addition. Press **▼** to select "No".
12. Press **MENU** to exit the menu level and save the changes.

Setting the DPM Mode

A program can be set to one of three Digital Program Mapping (DPM) modes, either Drop, Pass or Map respectively. Refer to **Setup Menu: Outputs**, page 4-65 for more information on the DPM modes.

LCD Setting	Description
Drop	Removes the service and its associated PMT reference from the transport output.
Pass	Permits the source content and PMT reference to appear in the transport output with the same references unless the source material is MAPped on another PE.
Map	Provides the flexibility to define all the outgoing PID numbers for a PE, including those not currently on transmission.

To set the DPM Mode:

1. Press **MENU** to display the Main Menu.
2. Press **▶** to move to the Setup menu. Press **SELECT**.
3. Press **▶** five times to move to the Outputs menu. Press **SELECT**.
4. Press **▶** to move to the TS Out menu. Press **SELECT**.
5. Press **▶** twice to move to the DPM menu. Press **SELECT**.
6. Press **SELECT** to access the Global menu.
7. Press **SELECT** to choose ASI for Resync All.
8. Press **MENU**. Press **▶** to move to the ASI menu. Press **SELECT**. Verify the PE1 "InCh" and "OutCh" programs.
9. Press **▶** three times to choose Act. Press **SELECT**. Use **▲▼** to select the DPM action for the PID associated with the PE. Press **SELECT**. Press **APPLY**.
10. Press **MENU** six times to return to the start-up screen.

Chapter 2

Introduction

Overview

Introduction

This chapter is a general introduction to the Model D9854 Advanced Program Receiver. It describes the most common applications and interfaces of the receiver.

In This Chapter

This chapter contains the following topics.

Topic	See Page
D9854 Advanced Program Receiver	2-2
Transport Stream Outputs	2-4
Control and Management Interfaces	2-6

D9854 Advanced Program Receiver

General Description

The Model D9854 Advanced Program Receiver is designed for satellite content distribution applications requiring DVB-S and DVB-S2 reception capabilities with advanced digital outputs for digital tier program distribution. A built-in decoder will be capable of decoding a MPEG-2 or MPEG-4 High Definition (HD) program for analog monitoring or high-quality HD-SDI output version will be available for re-encode applications.

The ASI transport output or the optional MPEGoIP output will provide a number of output modes including the capability of carrying a decrypted program for digital tier distribution. This helps ensure that compressed video programs are efficiently distributed to households equipped with digital set-top boxes. Digital Program Insertion (DPI) information will also be available along with the video and audio PIDs (Packet Identifiers) for external ad insertion in compressed digital format.

Key Features

The D9854 receiver provides the following key features:

- Four L-band inputs
- DVB-S QPSK demodulation
- DVB-S2 QPSK/8PSK demodulation
- PowerVu® conditional access with DES or DVB descrambling
- Supports Basic Interoperable Scrambling System (BISS) conditional access
- DVB-CI support for CAM-based conditional access
- 4:2:0 HD MPEG-4 AVC and MPEG-2 1080i and 720p decoding
- 4:2:0 SD MPEG-4 AVC and MPEG-2 decoding
- Aspect ratio conversion (4:3, 16:9, 14:9) with Active Format Descriptor (AFD) control for SD programs
- AFD support for down-conversion of HD programs with aspect ratio conversion
- Closed Captioning support for EIA-608 and EIA-708
- MPEG and Dolby® Digital audio decoding
- DVB or Imtext subtitling
- Four audio outputs providing either two stereo pairs or four mono channels of balanced, audio, each with the ability to use part of their output for applications such as SAP, cue tones, etc.
- Utility data up to 38.4 kbps via RS-232
- Uplink addressable decoder output control (VBI, audio routing, DPI, and ASI output)
- Fingerprint trigger
- Field upgradeable software and security
- SNMP for setup, control, and monitoring
- Front panel LCD for control and monitoring

D9854 Advanced Program Receiver, Continued

- Web browser interface for easy setup, control, and monitoring. The supported web browsers are: Internet Explorer 7.0, Internet Explorer 8.0, Firefox 3.5, and Firefox 3.6.
- DVB-VBI and SCTE-127 support
- CAM Interface software
- DTMF cue tone and cue trigger outputs for ad insertion
- Digital Program Mapping providing uplink control for service replacements in blackout areas
- Multiprotocol Encapsulation (MPE) output

Optional Features

The following features are available options:

- MPEGoIP output only available on the Digital Transport Model
- User-switchable redundant ASI outputs or SDI or HD-SDI outputs
- SD or HD-SDI video output with embedded audio
- AES-3id digital audio output

SFN Model Receivers

Single Frequency Network (SFN) receivers do not include some of the key features normally equipped on D9854 receivers, such as Digital Program Mapping (DPM), MPEGoIP output, and transport stream null packet stuffing. These features are disabled on this receiver model. SFN model receivers can be identified by the part number “401943801060305” on the label on the top cover of the unit.

Software Update

All software in the D9854 receiver is stored in non-volatile memory that can be electrically programmed. New software releases for the D9854 receiver can be downloaded via the Ethernet 10/100/1000 BaseT Management interface.

Transport Stream Outputs

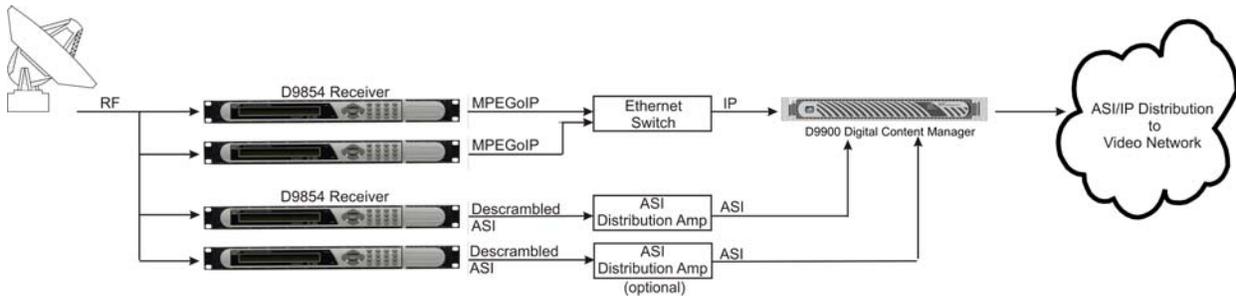
DVB-ASI Transport Stream Output

The D9854 receiver has one DVB-ASI output. This output can be used as an input for a DVB-T transmitter or other types of DVB-ASI reception equipment.

MPEGoIP Output

The optional MPEGoIP output provides a number of output modes including the capability of carrying a decrypted program for digital tier distribution. This helps ensure that compressed video programs are efficiently distributed to households equipped with digital set-top boxes. Digital Program Insertion (DPI) information will also be available along with the video and audio PIDs (Packet Identifiers) for external ad-insertion in compressed digital format.

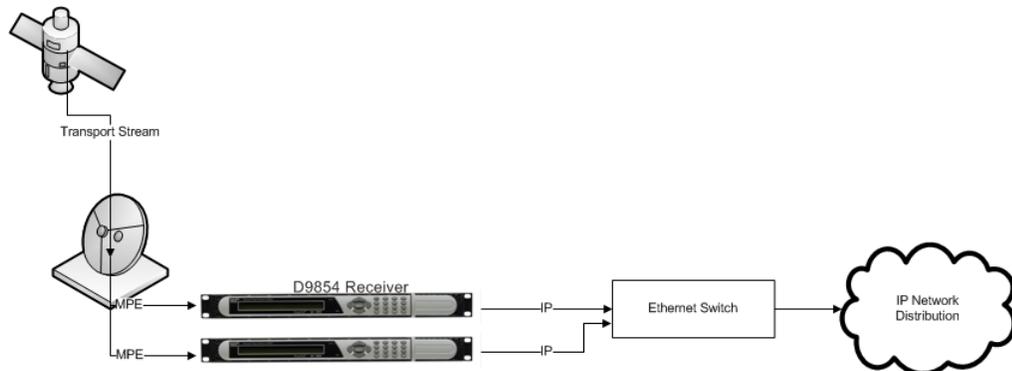
The diagram below shows an example of the D9854 receiver used in an MPEGoIP application.



MPE Output

The Multiprotocol Encapsulation (MPE) output provides a means to carry packet oriented IP protocols on top of a transport stream. The MPE output receives IP packets from the transport stream and the IP data can be sent through an Ethernet switch to an IP router or directly to a receiving device.

The diagram below shows an example of the D9854 receiver used in an MPE application.

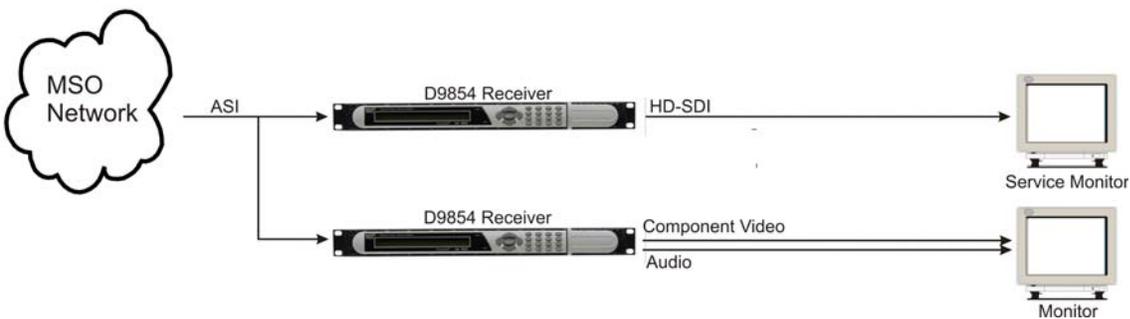


Transport Stream Outputs, Continued

HD-SDI Outputs

The D9854 Advanced Program Receiver is designed for satellite content distribution applications requiring DVB-S and DVB-S2 reception capabilities with advanced digital outputs for digital tier program distribution. A built-in decoder is capable of decoding an MPEG-2 or MPEG-4 High Definition (HD) program for analog monitoring. A high-quality HD-SDI output version is available for re-encoding applications.

The diagram below shows an example of the D9854 receiver used in HD-SDI monitoring applications.



Control and Management Interfaces

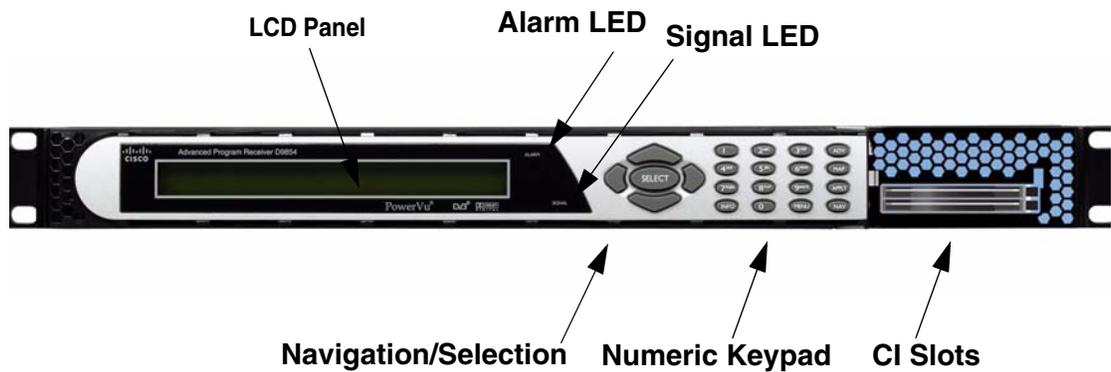
Ethernet

The Management interface for the D9854 receiver is the 10/100/1000 BaseT Ethernet interface. It is used for upgrading the software application.

Front Panel Control

The front panel keypad and LCD are used to control and monitor the operating parameters of the D9854 receiver.

The following diagram shows the front panel with its different sections.



Chapter 3

Installation

Overview

Introduction

This chapter describes how to install the D9854 Advanced Program Receiver. Before installing the D9854 Advanced Program Receiver, read all safety precautions and guidelines thoroughly.

Qualified Personnel

Only appropriately qualified and trained personnel should attempt to install, operate or maintain the D9854 receiver.



WARNING:

Allow only qualified personnel to install this product. Otherwise, personal injury or equipment damage may occur.

In This Chapter

This chapter contains the following topics.

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Section A - Rack Installation	3-3
General	3-3
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Topic	See Page
Setting Admin User Privileges via a Telnet Connection	3-16
Common Interface Modules	3-18

Section A - Rack Installation

General

Power Connection

To operate the receiver, you must connect it to an AC power source. For information about connecting the chassis to AC power, see Appendix A - Technical Specifications.

As Cisco units are designed for continuous operation, some products do not have a power switch. In this case the mains cord and/or DC power supply cable serve(s) as the mains disconnect device.



WARNING:

Make sure that at least one end of the power cable(s) remains easily accessible for unplugging, if you need to switch off the unit. For example: Ensure that the socket outlet is installed near the product.



WARNING:

To avoid electrical shock, connect the three-prong plug on this product to an earth-grounded three-pin socket outlet only.

Installing the D9854 Receiver

Rack Mounted

The D9854 receiver is a 1U unit with connector access at the rear panel. The receiver is intended for mounting in a standard 19" rack with minimum 1U spacing between units to allow adequate ventilation/air flow.

The D9854 receiver is vented from front to back. Multiple units can be stacked in a rack, provided that adequate cooling is available.

Cooling

The D9854 receiver is cooled by the use of internal fans. The air intake is from the front and the air outlet is on the rear.

Note: Adequate cooling must be provided equalling 107 W (maximum) at 25°C per unit to avoid overheating.



CAUTION:

The inlet air temperature must not exceed 50°C/122°F at any time.

Grounding

You must ensure that the unit is properly connected to ground in order to meet safety and EMC requirements. Before any other connection is made, the unit must be connected to a protected ground terminal as described below:

- Via the three wire power cord of the AC power supply. This connection is mandatory.
- In addition, via the protective ground terminal on the rear panel of the unit. This connection provides additional protection of the equipment.

To Mount the D9854 Receiver

To mount the D9854 receiver in a rack, do the following:

1. Mount L-brackets in the rack to support each D9854 receiver to be installed.
2. Place the receiver in its position in the rack.
3. Mount the receiver securely to the rack by securing the mounting flanges to the rack using the four screws provided.
4. Make sure the air outlet holes on the back of the receiver are not obstructed to allow air flow from the front to the back of the chassis.

Installing the D9854 Receiver, Continued

To Connect AC Power

To connect AC power to the D9854 receiver do the following:

1. Connect the power cord (supplied with the D9854 receiver) between the rear panel power receptacle and a 100 to 120/200 to 240 V AC power outlet.
2. Make sure that the power cable is connected to protective ground.
See **Grounding**, page 3-4 for more information.

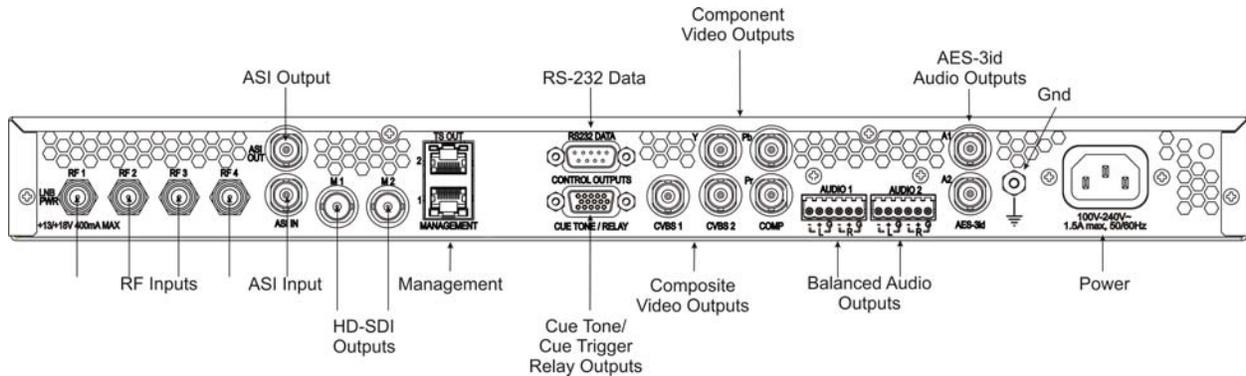
The D9854 receiver is equipped with one power supply located in the rear of the chassis. Note the location of the power supply in the event of alarms/warnings resulting in replacement of a power supply. Alarm messages appear in the Message Log.

Section B - Rear Connector Panel

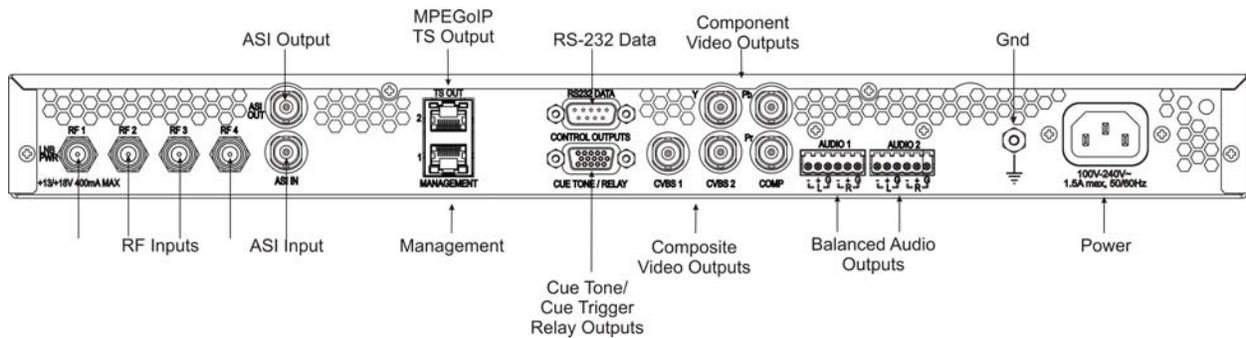
Overview

D9854 Receiver Rear Connector Panel

The following diagrams show the rear connector panel so the two D9854 receiver models available, Base and SDI with SD/HD-SDI and AES outputs.



Base Model



SDI Model, with SD/HD-SDI and AES outputs

Connectors

The following table describes the function and type of the various connectors.

Connector	Function	Connector Type
RF Inputs	Each input accepts an LNB signal input. RF1 provides LNB power for use when no external LNB power source is available. RF2 to R4 require an external LNB power source.	F
ASI Input	Asynchronous Serial Interface Input.	BNC

Connector	Function	Connector Type
ASI Output	One Asynchronous Serial Interface Output.	BNC
Management	For code downloading/application upgrading for the D9854 receiver.	RJ45
HD-SDI Outputs	M1 and M2 provide HD serial digital video with embedded audio output for HD applications according to SMPTE-292M.	BNC
RS-232 Data	RS-232 data output: 7 bits, even parity, 1 stop bit, up to 38.4 kb/s. These outputs are user-configurable via the Setup menu on the front panel.	9-pin sub-D female
Cue Tone/Cue Trigger Relay Outputs	Program relay provides programmed responses for alarms, cue trigger states for ad-insertion equipment, or a cue tone output for connection to ad-insertion equipment.	15-pin sub-D female
Composite Video Outputs	CVBS 1 and CVBS 2 provide two identical SD composite video outputs for monitoring applications.	BNC
Component Video Outputs	SD to HD upconverted component video output for HD monitoring applications.	BNC
AES-3id Audio Outputs	AES-3id outputs. One output for each stereo channel.	BNC
Balanced Audio Outputs	Audio 1 and Audio 2 provide two stereo pairs or four mono channels.	Terminal Blocks
Ground	Screw	Grounding point for the receiver.
Power	AC power	IEC 60320 Sheet 14

Section C - Connecting the Input/Output Signals

Connecting the RF Inputs

Do as follows to connect to the RF inputs:

1. Connect up to four LNB RF cables to the RF connectors labelled RF1 through RF4 on the rear of the unit.

Use 75-ohm (braid/foil or braid/braid), low insertion loss coaxial cable.

Each input accepts an LNB signal input. RF2 to RF4 require an external LNB power source

Connecting the ASI Input

Do as follows to connect to the ASI input:

1. If desired, connect to the ASI IN port to an asynchronous serial interface for uplink monitoring.

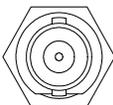
Connecting the Video Outputs

Connector for the Video Output

The video output connectors are of the BNC type.

Video Connector

The following table shows the video connector.

Connector	Interface type	Connector type
	SMPTE-292M	BNC female

To Connect the Component Video Output

1. Connect a video monitor to the connectors labeled Pr, Pb, and Y.

To Connect the Composite Video Output

Do as follows to connect to the Composite Video Output:

1. Connect a video monitor to the CVSB 1 and CVSB 2 connectors. The two outputs are identical. Use a 75-ohm double-braided coax cable.

To Connect the HD-SDI Outputs

Connect HD rebroadcast equipment to the connectors labeled M1 and M2, and/or if required, connect them to a video monitor.

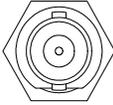
There are two connectors to provide active loop-through possibility.

Connecting the Audio Outputs

Connectors for the Digital Audio Output

The configuration of the D9854 receiver outputs two stereo channels. The D9854 receiver also supports encoding of audio embedded in the HD-SDI video signal.

The following drawing shows the audio connector.

Connector	Interface type	Connector type
	AES-292M	BNC female.

Note: The digital audio output is always 75-ohm single-ended.

To Connect the Digital Audio Outputs

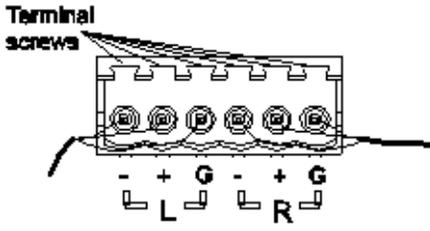
Connect the audio outputs as follows:

1. Connect digital audio output broadcast equipment to the AES-3id connectors. The two stereo channels are useful for Dolby Digital 5.1 passthrough applications. Use a high-quality, double-shielded RJ6 coaxial cable.

Hint: For digital audio connections, use a balanced cable designed for 110-ohm AES-EBU digital audio.

To Connect the Balanced Audio Output

1. Connect the AUDIO 1 and AUDIO 2 balanced audio outputs to monitoring equipment. Use a multi-conductor, pluggable cable from the receiver's AUDIO 1 and AUDIO 2 (Left and Right) terminals to your equipment, as shown in the following illustration.

Connector	Connector type
	Terminal Block

2. Feed the stripped ends of the positive, negative and ground wires into the appropriate terminals as labelled, and then screw the terminal screws (located on the top of the terminal block) finger tight to each wire.

Connecting the Ethernet Management Interface

The Ethernet Interface

The RJ-45 interface for 10/100/1000 BaseT Ethernet is currently intended for upgrading/downloading the software application.

Note: You must set up the IP address, the default gateway and the subnet mask to match the network connection. This is done through the front panel menu. For further information, see **Set up for Network Connection**, page 1-3.

Informative Notes

Proper cables are required for reliable Ethernet operation; to run up to a maximum segment length of 100 m and up to 100baseT, the cable has to comply with the EIA/TIA Category 5 (or higher) wire specifications, and for 1000baseT, Category 6 is required.

To Connect the Ethernet Interface

1. Connect an RJ-45 cable between the Ethernet connector on the D9854 receiver and the Ethernet port of your PC.

You need to set up the IP address on the D9854 receiver (via the front panel display). For information on setting up the IP address via the front panel, see **Set up for Network Connection**, page 1-3.

Connecting the IP TS Output

The Ethernet Interface

The RJ-45 interface IP TS OUT is 10/100/1000 BASE-T Ethernet. It is intended for both MPEGoIP and MPE outputs. The MPEGoIP output of the transport stream is encapsulated in the IP packets to a groomer (e.g., Digital Content Manager 9900) for distribution. The MPE output receives IP packets from the transport stream.

Informative Notes

For reliable Ethernet operation; to run over a maximum segment length of 100 m and up to 100baseT, the cable has to comply with the EIA/TIA Category 5 (or higher) wire specifications, and for 1000baseT, Category 6 is required.

To Connect the Ethernet Interface

1. Connect a crossed RJ-45 cable between the Ethernet connector on the D9854 receiver and the Ethernet port of the equipment after the D9854 receiver. The equipment after the D9854 receiver could be an IP router or a switch.

Connecting the ASI Output

To Connect the ASI Output

Do as follows to connect to the ASI output:

1. Connect the output signal from the D9854 receiver ASI OUT connector.
Use a Belden "Brilliance" cable with foil/braid construction. The shield must provide 99% or better shielding effectiveness.
The equipment after the D9854 receiver could be a Model D9887 HDTV Receiver.

Connecting an External Alarm System

Connector for an External Alarm System

The D9854 receiver and Alarm relay functionality. See **Connecting the Cue Tone/ Cue Trigger Interface**, page 3-15 for more information on Cue Tone and Cue Trigger equipment connections. These outputs are user-configurable via the Setup Menu on the front panel.

The Alarm output connector is a 15-pin sub-D female connector. The following diagram shows the connector and the pin allocation table for the Alarm output pins.

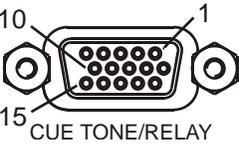
The connector pin states depend on the selected Relay Mode. The Relay Mode is set on the front panel via the Main: Setup: Outputs menu.

To Change the Relay Mode

The Alarm relay is a program relay that can be configured to provide programmed responses for alarms, warnings, cue trigger states for ad-insertion equipment, or a cue tone output for connection to ad-insertion equipment. As a default, the Alarm Relay is configured for Alarm mode.

To change the Relay Mode for alarm monitoring purposes:

1. On the front panel menu, go the Main: Setup: Outputs, and select **Cueing**.
2. Use the down arrow key to scroll through the menu to Relay Mode.
3. Change the state to **Alarm** and press the **Select** key to save the new setting. As a result, the rear panel connector pin states will change to that shown in the table below for Alarm mode.

Connector	Normally closed pin	Common pin	Normally open pin	Relay Mode
	11	10	15	Trigger
	15	10	11	Alarm (default)

Note: A Normally closed state implies the state when power is applied to the relay in a normal operating state, without a trigger or alarm condition present.

Connecting the RS-232 Data Interface

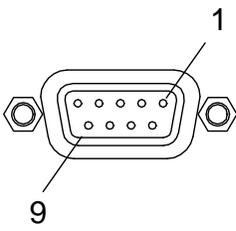
The RS-232 Data Interface

The DCE DB-9 female connector is intended for low-speed data: 7 bits, even parity, 1 stop bit, up to 38.4 kb/s (default). These outputs are user-configurable via the Setup Menu on the front panel.

The interconnect cable from the D9854 receiver to a PC should be straight through (i.e., no handshaking), shielded and equipped with a DB-9 male connector at one end to mate with the rear panel RS-232 Data interface, and a female DB-9 connector to connect to the PC.

Pin Allocation, RS-232 Data Connector

The table shows the RS-232 Data connector and the pin allocation:

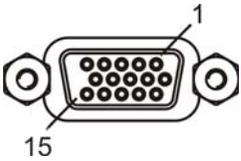
Connector	Pin	Pin allocation
	1	Not connected
	2	TxD
	3	RxD
	4	Not connected
	5	Ground
	6	Not connected
	7	Not connected
	8	Not connected
	9	Not connected

Connecting the Cue Tone/Cue Trigger Interface

The Cue Tone Interface/Cue Trigger Interface

The D9054 HD Encoder is equipped with a connector labeled Cue Tone/Relay for alarm relay outputs for remote alarm signaling. This connector provides Cue Tone, Cue Trigger and Alarm relay functionality. These outputs are user-configurable via the Setup Menu on the front panel.

The connector is a 15-pin sub-D female connector. The following diagram shows the connector and the pin allocation table for Cue Tone, Cue Trigger and Alarm relay connections.

Connector	Pin	Pin allocation
	1	Cue Trig 1
	2	Cue Trig 2
	3	Cue Trig 3
	4	Cue Trig 4
	5	Cue Trig 5
	6	Cue Trig 6
	7	Cue Trig 7
	8	Cue Trig 8
	9	Not connected
	10	Alarm - Ground
	11	Alarm - Normally open
	12	Chassis ground
	13	Cue Tone -
	14	Cue Tone +
	15	Alarm - Normally closed

Connecting the CueTone Interface

1. Connect the Cue Tone pins, 13 and 14 to a device to facilitate ad-insertion using DTMF Analog Cue Tones.

Connecting the CueTrigger Interface

1. Connect the Cue Trigger pins (1 to 8) to up to 8 serial control devices or a device to control ad-insertion. These outputs are user-configurable on the front panel menu.

Setting Admin User Privileges via a Telnet Connection

Administrator User Privileges

Up to 10 usernames/passwords can be defined for login use via a telnet or Web GUI (i.e., http) session on the D9854 receiver.

When a user tries to login via a telnet or http connection, the user is required to provide a username and a password. The user is granted access only if this username/password pair exists in the authentication table.

The first user defined in the authentication table is considered the “Admin User” and is granted special privileges. The Admin user is allowed to add new users, delete users, change usernames and modify his own passwords. All other users are only allowed to modify their passwords.

Starting a Telnet Session

To start a communication session with the receiver using a utility such as Telnet or Tera Term Pro, type the following command:

1. telnet <ip address>
2. At the username prompt, enter the default username:
<admin>
3. At the password prompt, enter the default username:
<localadmin>

Adding a New User

To add a new user, type the following command:

```
pwd add_user <new username> <new password> <confirmed_password>
```

Note: The <new password> and <confirmed_password> should be identical and the new username should not match any of the usernames already defined in the authentication table.

Deleting a User

To delete a user, type the following command:

```
pwd del_user <username>
```

Changing a Username

To modify a username, type the following command:

```
pwd change_username <username> <new_username> <confirmed_username>
```

Note: The <new username> and <confirmed_username> should be identical and the new username should not match any of the usernames already defined in the authentication table.

Setting Admin User Privileges via a Telnet Connection, Continued

Changing a Password (allowed by all Users)

Passwords can be changed by all users.

To modify a password, type the following command:

```
pwd change_password < username> < new_password> <confirmed_password>
```

Note: The <new_password> and <confirmed_password> should be identical. Each user, including the admin user, can modify only his own password.

Printing the List of Users

To print the list of users, type the following command:

```
pwd list_users
```

Note: Only usernames will be printed. Passwords will not be visible.

Resetting the Login Authentication Table

At any time the user authentication table can be reset from the front panel. This option is under the Setup, IP menu. When the authentication table reset is required, the username and password are reset to the software defaults. The username and password defaults are as follows unless you have been provided customer-specific defaults in addition to the one normally supplied.

Default username - admin

Default password - localadmin

Common Interface Modules

Only CAMs purchased from Cisco are currently supported. The following lists the supported CAMs:

Common Interface Modules	Part Number
Aston Professional CAM, for descrambling CONAX (maximum 12 services)	4016669
Aston Consumer CAM for descrambling CONAX (maximum 2 services)	4016670
CAM for descrambling CryptoWorks	V9523361
Aston Professional CAM for descrambling Irdeto (maximum 12 services)	4016671
Aston Consumer CAM for descrambling Irdeto (maximum 2 services)	4016672
Aston Professional CAM for descrambling MediaGuard (maximum 12 services)	V9528197
Aston Consumer CAM for descrambling MediaGuard (Maximum 2 services)	V9528198
Aston Professional CAM for descrambling Viaccess (maximum 12 services)	V9528199
Aston Consumer CAM for descrambling Viaccess (maximum 2 services)	V9528240
CAM for descrambling Roscrypt (maximum 50 services)	NA
SMiT Professional Irdeto CAM (maximum 8 services)	4037372
SMiT Consumer Irdeto CAM	4037371

Note: Roscrypt CAMs are not available from Cisco, and must be purchased from a recognized vendor.

Chapter 4

Front Panel Operation

Overview

Introduction

This chapter describes how to set up the D9854 Advanced Program Receiver using the front panel keys and display. This information is primarily applicable for standalone operation.

In This Chapter

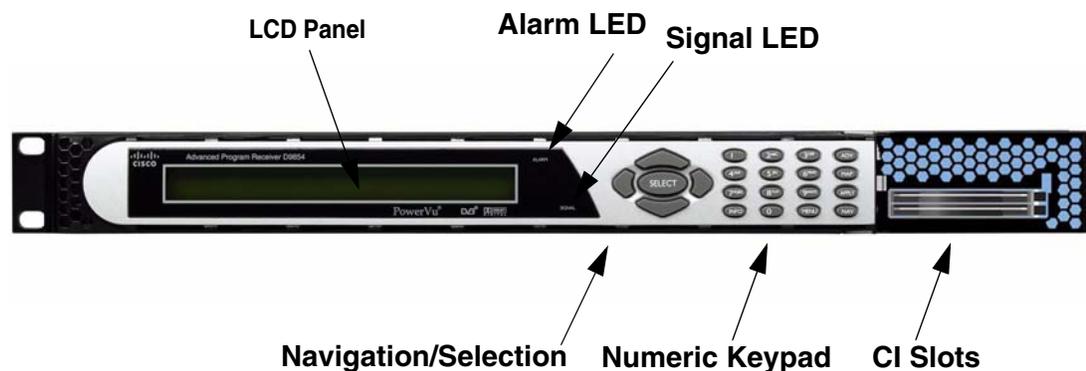
This chapter contains the following topics.

Topic	See Page
About the Front Panel	4-2
Keypad Convention	4-4
Startup Screen	4-8
Main Menu	4-8
Status Menu	4-14
Setup Menu	4-25
About Menu	4-96
Versions Menu	4-98
Diagnostics Menu	4-101

About the Front Panel

Introduction

The D9854 receiver is operated using controls and indicators on the front panel. These include the numeric keypad, the Navigation/Selection keypad, the LCD, the Alarm and Signal indicators. These are shown in the following illustration.



LCD

The LCD provides information on the selections available at any menu level, current settings for parameters, and certain status and alarm indications. This is a 2x40, backlit LCD display. The top line may be status data or identifier information. It can also display optional functions available for tuning operations. The bottom line will show selections or parameter values available using the navigation/selection keypad. The items are selected by pressing the **SELECT** (center key) or **DOWN Arrow** key on the navigation/selection keypad.

Keypad

The numeric keypad is used to enter alphanumeric values. The **MENU** key sets the software to the initial menu and returns to the previous menu. The **MENU** key can also be used to cancel a numeric entry at any point during the entry sequence, and the **LEFT Arrow** key allows backspacing through the entry.

CI Slots

The CI slots allow the use of CAM (Conditional Access Module) Smart Card to decrypt purchased programming. For setup information, see **Setup Menu: Common Interface (CI)**, page 4-60. For a list of supported CAMs, refer to **Common Interface Modules**, page 3-18.

About the Front Panel, Continued

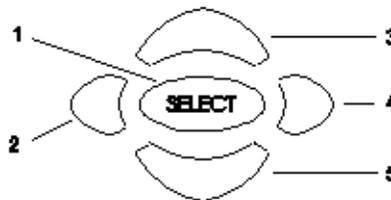
Front Panel LEDs

The functions of the LEDs are described in the table below.

LED	Signal State/Color	Explanation
ALARM	Red	Solid for five seconds indicates a Warning.
	Red	Flashing indicates an Alarm.
SIGNAL	Green	Solid indicates all of the following conditions: <ul style="list-style-type: none"> • all RF inputs are enabled, all inputs are locked to a signal, and are not muted. • all routed ASI outputs are operating without an error.
	Green	Flashing indicates one of the following conditions: <ul style="list-style-type: none"> • difficulty with an input, route or output. • one or more RF inputs, or the ASI input are not synchronized. • one or more ASI outputs are routed, but muted by a fault condition. • no RF signal is present or detected, or it is muted. • receiver is not authorized to receive the program.
	Off	Off indicates all of the following conditions: <ul style="list-style-type: none"> • no RF input signal is available, enabled or detected, or the input is muted. • no ASI input is present • no valid inputs are available.

Navigation/Selection Keypad

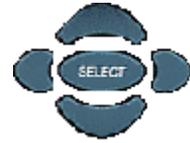
The navigation keys (**LEFT**, **RIGHT**, **UP** and **DOWN**) and the **SELECT** key are the primary controllers. Each navigation key performs various functions, depending on the current state of the menu system (i.e., sometimes the left navigation key backspaces over an entry and sometimes moves the cursor to a different menu item). Once the cursor is over the desired function, pressing the **SELECT** (center key) key selects the current item. Pressing the **SELECT** key stores any entered values.



Keypad Convention

Overview

Throughout this manual, there are references to parts of a keypad on the front of the receiver. This is the Navigation/ Selection keypad (see diagram at right), which changes its function, depending on the current state of the menu. For clarity, the following table shows which parts of this integral interface are being referenced by which term.



Button	Description	Function
1	SELECT	Runs the highlighted command or opens the highlighted menu.
2	LEFT arrow	When moving through menus, highlights the menu item to the left. When entering data, moves the cursor to the left. In some menus, backspaces over the data entry.
3	UP arrow	Highlights the menu item above.
4	RIGHT arrow	When moving through menus, highlights the menu item to the right. When entering data, moves the cursor to the right.
5	DOWN arrow	Highlights the menu item below.

Keypad Convention, Continued

When you see this...	It means...	
LEFT Arrow key	Press the key on the left side of the Navigation/Selection Keypad.	
RIGHT Arrow key	Press the key on the right side of the Navigation/Selection Keypad.	
UP Arrow key	Press the key on the top of the Navigation/Selection Keypad.	
DOWN Arrow key	Press the key on the bottom of the Navigation/Selection Keypad.	
SELECT key	Press the key in the center of the Navigation/Selection Keypad.	
INFO key	Press the key on the lower left of the numeric keypad for context-sensitive help messages, when available. When entering characters in numeric or alphanumeric fields, this key can be used to toggle between upper and lower case.	
MENU key	Press the key on the lower right of the numeric keypad. Starts the on-screen display. Also functions as the Escape key so you can back out of menus and data entry fields.	
Alphanumeric Entry	Pressing the numeric keys 2-9 once will enter the respective digit into a data entry field. Pressing these buttons again will enter the first of the letters displayed beside the number. Repeatedly pressing the button will toggle through all of that key's possible choices. When entering text, the 1 button can be used to insert spaces (press twice). To delete a character, press 0 twice.	

Keypad Convention, Continued

When you see this...	It means...	
ADV	Toggles between Program Entry and Channel number.	
MAP	Edit, insert and delete Digital Program Mapping (DPM) Modes on Program Entries or on PIDS within Program Entries.	
APPLY	Activates current changes without having to exit the menu.	
NAV	For future use.	

Front Panel Setup

Locking/Unlocking the Front Panel

Depending on the customer's default settings, the receiver is shipped with a locked or unlocked front panel. You can lock or unlock the front panel using the front panel keypad.

Proceed as follows to unlock the front panel using the front panel keypad:

1. From the Startup screen, press **SELECT** and then **INFO**. This will unlock the front panel keypad and allow you to make changes to all the operating parameters; however, if the keypad remains untouched for the duration of the set timeout period (default is 60 seconds), the keypad will change back to the Lock state unless you change the keypad state on the Admin Menu. Likewise you can toggle the keypad lock state back using **SELECT** and **INFO** at any time provided the KB Lock state on the Admin Menu is Enabled. For more information on front panel keypad buttons, see **Keypad Convention**, page 4-4.

Note: If the lock level is 3 or 4, you must enter a password to unlock the front panel. For more information on lock level password, see **Setup Menu: Admin**, page 4-26.

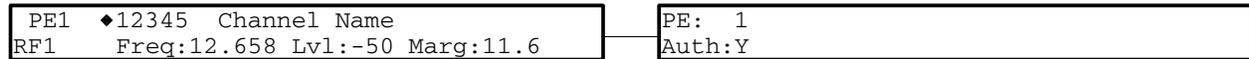
2. To disable Lock completely, navigate to **Setup, Admin, KB Lock** in the LCD display and press the **SELECT** key.
3. Change the **KB Lock** state from **Enabled** to **Disabled**.
4. The front panel will now be unlocked allowing you to change any of the operating parameters.

To lock the front panel, perform the same procedure, except use **▶** to change the state. In this case you will not be prompted to confirm the operation.

Startup Screen

Menu Structure

On power-up and initialization, the startup screen is displayed similar to that shown below. The screen also indicates the signal status.



Startup Screen

Channel Authorization Status Screen

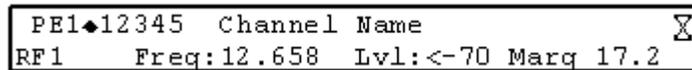
Channel Authorization Status

From the startup screen, press the right or left arrow keys on the front panel keypad to move to the PE entry authorization status screen. This screen indicates whether the selected channel is authorized.

Auth Status	Description
Y	Indicates the channel is authorized.
N	Indicates the channel is not authorized.

LCD Panel

The LCD panel displays basic signal and program information in the LCD display, as described in the following illustration:



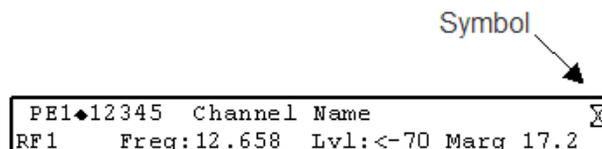
LCD Setting	Description
PE	Program Entry (PE). The receiver supports up to 16 program entries at the analog outputs. PE1 is used by the PowerVu signal only. PE2 to PE16 is used by the Conditional Access Module (CAM) only.
12345	Channel for program monitoring.
Channel name	Name of the monitored program.

Startup Screen, Continued

LCD Setting	Description
RF	Active RF input port. Note: ASI will be shown if the ASI input port is active.
Freq:	Downlink frequency of the tuned signal in GHz.
Lvl:	Signal level in dBm.
Marg:	Carrier-to-noise (C/N) margin in dB.
DEGD	The Degraded indicator only appears if there is a degraded tuning information in use. This occurs if the SI tables are not consistent on the incoming stream. The receiver will attempt to identify the service list based on the information available. Check the SI acquisition and stream information to ensure that the channels, network, and tuning information is operating as expected.

LCD Symbol

Various symbols will periodically appear in the top right-hand corner of the LCD panel, indicating which user actions are currently acceptable. The following displays the location of the symbol:



The following table describes the various symbols:

LCD Symbol	Description
⌚	The Hourglass indicates that parameters are being saved in the background. You can continue to perform any operation desired. Note: If a power-cycle/interruption occurs while the hourglass is displayed, some parameters may not be saved. Refrain from powering off the unit while the hourglass is displayed.
ⓘ	The Info symbol indicates that the INFO key is active. In most cases, this will display contextual information on the LCD screen.

Startup Screen, Continued

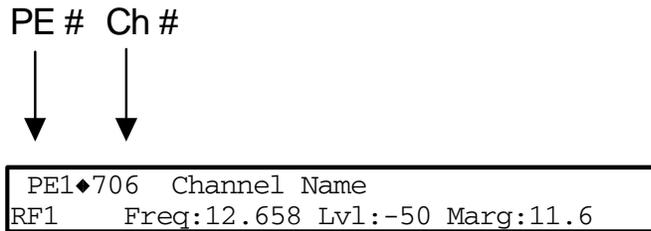
LCD Symbol	Description
	The Select symbol indicates that the SELECT key is active.
	The Left/Right symbol indicates that the RIGHT/LEFT arrow key is active; e.g., pressing the RIGHT/LEFT arrow key will have an affect, such as moving the cursor to the right/left.
	The up/down symbol indicates that the UP/DOWN arrow key is active.
	<p>The Download In Progress (DL) symbol indicates that the receiver is currently downloading a software update and storing it into memory in the background.</p> <p>Note: Service interruption occurs during a reboot, which is always required when the receiver's software is updated.</p>
	<p>The Download Trigger (DT) symbol indicates new software is ready for download, but a download trigger by the receiver is required before it will be downloaded.</p> <p>Note: Service interruption occurs during a reboot, which is always required when the receiver's software is updated.</p>
	The Download symbol indicates that a software download for a version of software already in memory has been detected.
*	The Session Open symbol indicates that you are changing a group of related items.

Startup Screen, Continued

Assigning a Program to the Program Entry

To assign a program to the PE:

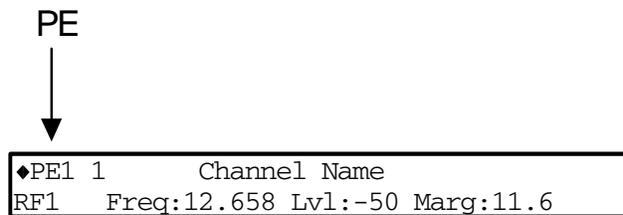
1. Press MENU until you display the startup screen.



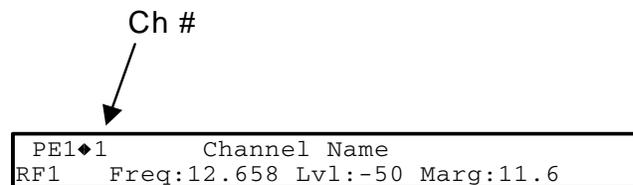
The PE (Program Entry) channel is initially displayed.

Note: PE1 is the default.

2. Press the ADV key to select PE1.



3. Press the UP or DOWN arrow key to scroll through the available program entries.
4. Press ADV again to select the channel number.



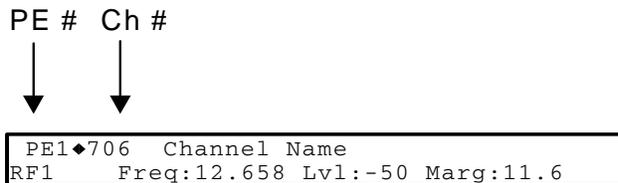
5. Directly enter the channel number using the 0 to 9 keys.

Startup Screen, Continued

Deleting a Program from the Program Entry

To delete a program from the PE:

1. Press MENU until the startup screen appears.
2. Navigate to the program that you want to delete.



3. Press SELECT to select the program number.
4. Enter program number 0 in the PE entry to delete the program. You can also use the MAP key to re-insert a program after you have deleted it by pressing MAP.

Program Entry Output Mode

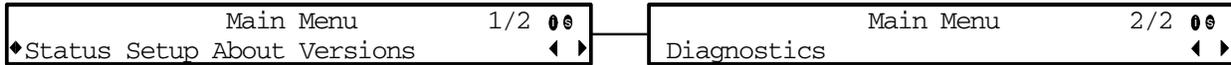
A program can be set to one of three output modes, either Drop, Pass or Map respectively.

LCD Setting	Description
Drop	Removes the service and its associated PMT reference from the transport output.
Pass	Permits the source content and PMT reference to appear in the transport output with the same references.
Map	Provides the flexibility to define all the outgoing PID numbers for the PE, including those not currently on transmission.

See **Setting Up Digital Program Mapping (DPM)**, page 4-84 for more information.

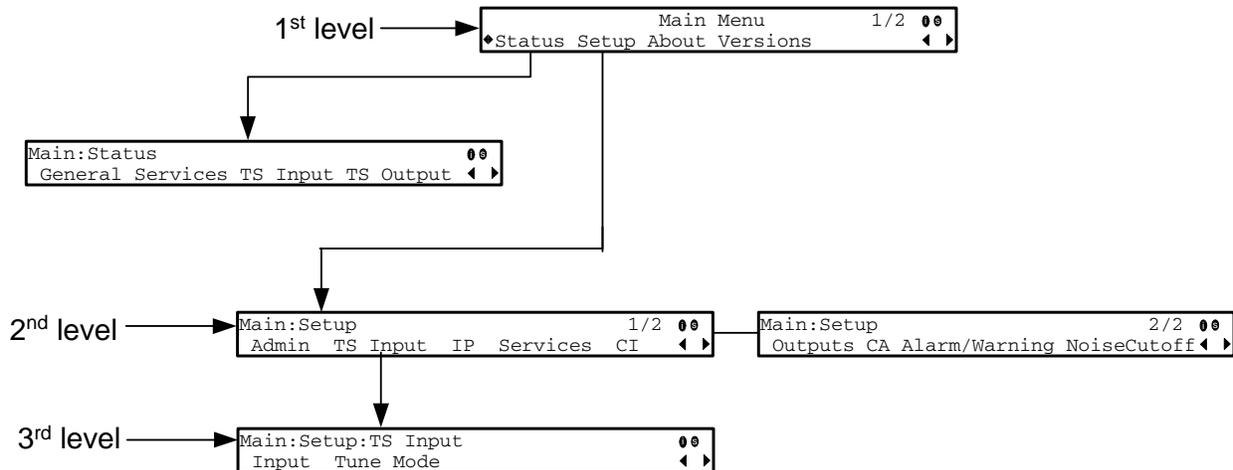
Main Menu

Operation of the D9854 receiver begins at the Main menu. From the startup screen, press the MENU key to view the Main menu.



Menu Selection

Select the desired function by moving the cursor left or right by pressing the LEFT or RIGHT arrow key. Once a selection is made by pressing the SELECT key, the LCD presents the second menu level for the selected function. Succeeding levels for each function include all the hierarchical levels for the function in the front panel LCD. For example, the TS Input level is shown as Main: Setup: TS Input, with each succeeding level separated by a colon (:), as shown in the example below. The front panel menus are described on the following pages.



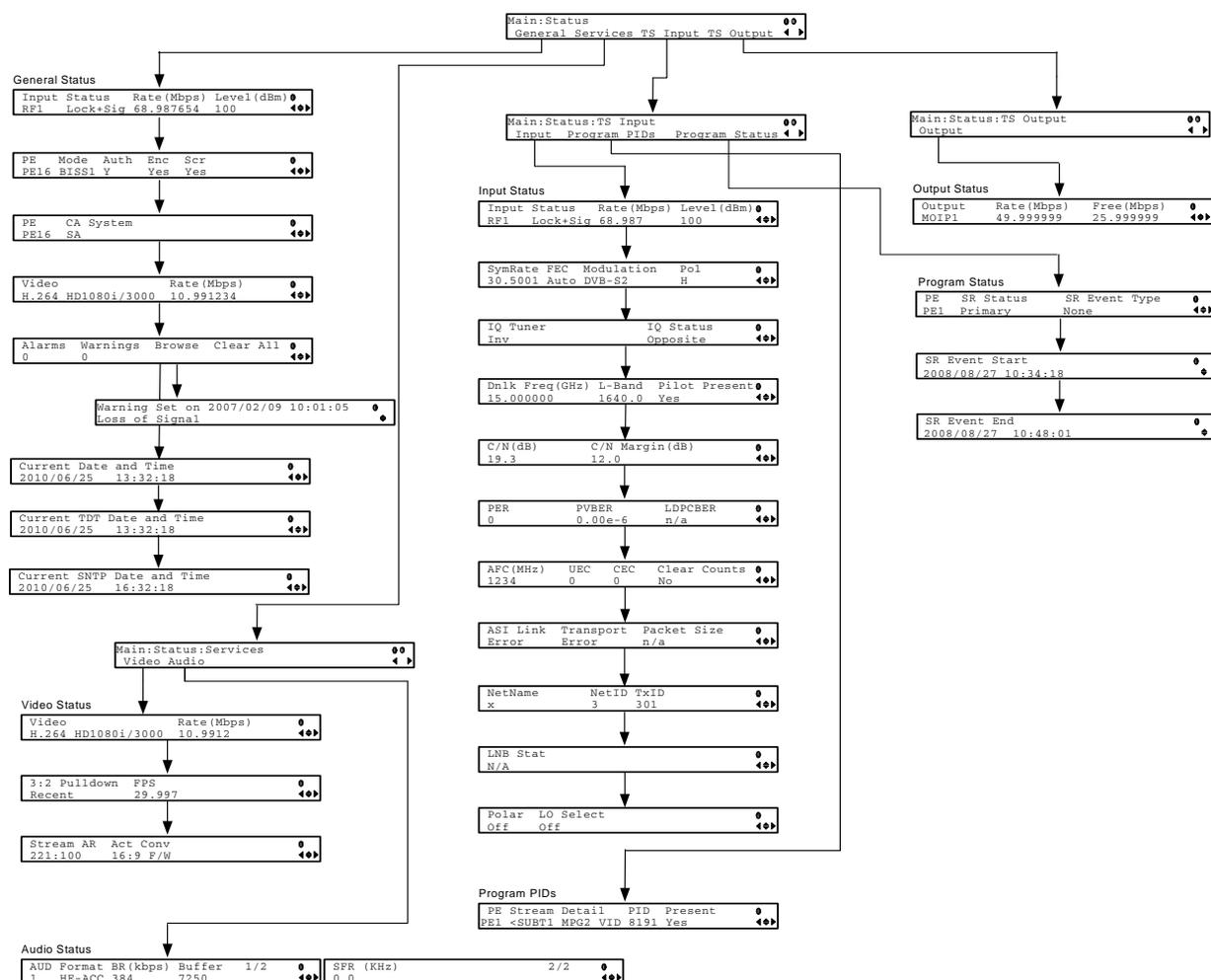
Status Menu

Structure

To view the Status menu from the Main menu, press the SELECT key. The Status menu indicates the status of the input and output signals, the video and audio services, and allows you to browse and/or configure the alarms and warnings.

The Status menu is split into four parts; General, Services, TS Input and TS Output. Each parameter is described in this section. For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The Status menu has the following structure:



Status Menu: General

GENERAL STATUS

Input

Description: Indicates the active input port receiving the signal.

Status

Description: Indicates the current signal lock status for the selected RF input.

Parameters: Signal Lock - See table.

Status	Description
Locked	Indicates the receiver is locked to a carrier with no valid content.
Lock+Sig	Indicates the receiver is locked to a carrier with valid content.
No Lock	Indicates the receiver is not locked to a carrier.

Rate (Mbps)

Description: Indicates the bit rate of the received input signal.

Parameters: in Mbps.

Level (dBm)

Description: Indicates the signal level of the received signal.

Parameters: in dBm.

PE

Description: Indicates the Program Entry number.

Parameters: PE1 to PE16.

Mode

Description: Indicates the type of CA used for the received signal, e.g., SA or BISS.

Auth

Description: Indicates whether the receiver is authorized to receive the signal.

Parameters: Yes, No.

Status Menu: General, Continued

Enc

Description: Indicates whether the received signal is encrypted.
Parameters: Yes or No.

Scr

Description: Indicates whether the received signal is scrambled.
Parameters: Yes or No.

CA System

Description: Indicates the Conditional Access (CA) system used for the received signal.
Parameters: SA or BISS.

Video

Description: Indicates the input stream type and source resolution of the received signal/program.
Parameters: SD480i/2997, SD480i/3000, SD576i/2500, HD720p/5000, HD720p/5994, HD720p/6000, HD1080i/2500, HD1080i/2997, HD1080i/3000, Unknown or Unsupported.

Rate (Mbps)

Description: Indicates the bit rate of the received video program.

Alarms

Description: Displays the number of currently active Alarms.

Warnings

Description: Indicates the number of currently active Warnings.

Browse

Description: Select this option to scroll through the current alarms and warnings.

Clear All

Description: Select this option to clear all the current warnings and alarms. You will be prompted to verify whether you want to clear all the alarms and warnings.
Parameters: Abort, Continue. Select Abort to cancel the operation or Continue to clear all the warnings and alarms.

Current Date and Time

Description: By default, it displays the current TDT date and time, if the SNTP information is unavailable. If the SNTP information is available, it will display the SNTP date and time.

Status Menu: Services

Current TDT Date and Time

Description: Displays the current TDT (Time and Date Table) date and time received from the DVB stream.

Current SNTP Date and Time

Description: Displays the current SNTP (Simple Networking Time Protocol) date and time if IRD receives a valid reply from the NTP server.

SERVICES

VIDEO STATUS

Video

Description: Indicates the input stream type and source resolution of the received signal/program.

Parameters: SD480i/2997, SD480i/3000, SD576i/2500, HD720p/5000, HD720p/5994, HD720p/6000, HD1080i/2500, HD1080i/2997, HD1080i/3000, Unknown, or Unsupported.

Rate (Mbps)

Description: Indicates the bit rate of the received video program.

3:2 Pulldown

Description: Indicates whether 3:2 pulldown mode is detected.

Parameters: Yes, No or Recent.

FPS

Description: Indicates the frame rate in frames per second.

Typically 25.0, 29.97, 30.0, 50.0, 59.94, 60.0, unknown or unsupported.

Stream AR

Description: Indicates the stream aspect ratio.

Parameters: 4:3, 14:9 or 16:9.

Act Conv

Description: This is the type of aspect ratio conversion that the receiver will perform based on your selection.

Parameters: None, 4:3 L/B, 4:3 P/B, 14:9, 14:9, 4:3 F/H or 16:9 F/W.

Status Menu: Services, Continued

AUDIO STATUS

AUD

Description: Indicates the audio channel within the stream when the signal contains more than two audio pairs.

Parameters: AUD1 for audio channel Aud1.
AUD2 for audio channel Aud2.
AUD1 to AUD4 for two stereo audio channels.

Format

Description: Indicates the received audio channel format.

Parameters: MPEG, AC3, AAC, HEAAC or DDP.

BR (Kbps)

Description: Indicates the audio bit rate of the received audio channel.

Parameters: in Kbps.

Buffer

Description: Indicates the audio input buffer level.

Parameters: in bytes.

SFR (KHz)

Description: Indicates the audio sampling frequency in KHz.

Parameters: 32, 44.1, or 48 KHz.

TS INPUT

INPUT

Input

Description: Indicates the active input port receiving the signal.

Parameters: RF1, RF2, RF3, RF4, or ASI.

Status Menu: TS Input

Status

Description: Indicates the current signal lock status for the input.

Parameters: Signal Lock - See table.

Status	Description
Locked	Indicates the receiver is locked to a carrier with no valid content.
Lock+Sig	Indicates the receiver is locked to a carrier with valid content.
No Lock	Indicates the receiver is not locked to a carrier.

Rate (Mbps)

Description: Indicates the bit rate of the received input signal.

Parameters: in Mbps.

Level (dBm)

Description: Indicates the signal level of the received signal.

Parameters: in dBm.

SymRate

Description: Indicates the Symbol Rate of the received signal.

Parameters: in Msymbols/second.

FEC

Description: Indicates the FEC (Forward Error Correction) rate of the received signal.

Parameters: N/A, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 7/8, 8/9 or 9/10.

Modulation

Description: Indicates the modulation type for the received signal.

Parameters: N/A, QPSK, 8PSK, DVB-S, DVB-S2 or 16QAM.

Pol

Description: Indicates the signal polarization setting. This setting is only applicable when LNB Power is set to H-NIT or V-NIT. The selected setting must match the polarization of the transmitted signal.

Parameters: Horiz (Horizontal), Vert (Vertical) or Auto.

Status Menu: TS Input, Continued

IQ Tuner

Description: Indicates the IQ (Input Signal Inversion) for the received signal.
Parameters: Inv or NonInv.

IQ Status

Description: Indicates the input signal spectrum inversion setting (IQ), which allows the operator to track and select inverted and non-inverted digital signals.
Parameters: Auto, Opposite, or Normal.

DnIk Freq (GHz)

Description: Indicates the current downlink frequency.
Parameters: in GHz.

L-Band

Description: Indicates the current L-Band frequency.
Parameters: in MHz.

Pilot Present

Description: Indicates whether a Pilot is present for the received signal. The Pilot is set on the modulator for input signal synchronization purposes.
Parameters: Yes or No.

C/N (dB)

Description: Indicates the current Carrier-to-Noise ratio.
Parameters: in dB.

C/N Margin (dB)

Description: Indicates the current Carrier-to-Noise Margin for the received signal. The Carrier-to-Noise margin is the actual distance that C/N is from the noise threshold.
Parameters: Values can be displayed in the range of -32.0 to +30.0 dB.

PER

Description: Indicates the current PER (Packet Error Rate).

PVBER

Description: Indicates the PV (Post-Viterbi) BER for the received signal (DVB-S).

LDPCBER

Description: Indicates the LDPC error rate for the selected input (DVB-S2).

AFC (MHz)

Description: Indicates the current Automatic Frequency Control count.
Parameters: in MHz.

Status Menu: TS Input, Continued

UEC

Description: Indicates the current Uncorrected Error Count for the received signal.

CEC

Description: Indicates the current Corrected Error Count for the received signal.

Clear Counts

Description: Select this option to clear the error counters. You will be prompted to confirm the operation.

Parameters: Yes or No.

ASI Link

Description: Indicates whether there is a transport stream link error.

Parameters: Yes, No or N/A.

Transport

Description: Indicates the current transport synchronization status

Parameters: Sync - No Sync, Normal or N/A.

Packet Size

Description: Indicates the packet Size (in bytes) for the selected input.

Parameters: 188 bytes or 204 bytes.

Net Name

Description: Indicates the name assigned to the network.

Parameters: Up to 12 alphanumeric characters.

NetID

Description: Indicates the Network ID of the uplink signal the receiver is to receive when using the selected preset. The receiver's Network ID must match the Network ID associated with the transmitted signal that identifies the NIT to be used.

Note: Each network must be assigned a unique ID (number).

Parameters: 1 to 65535.

TxID

Description: Indicates the Transport ID.

Parameters: 1 to 65535.

LNB Stat

Description: Indicates the current LNB connection status.

Parameters: No Load, Overloaded, OverTemp, Short Circuit, Disabled, Normal or N/A.

Status Menu: TS Input, Continued

Polar

Description: Indicates the polarity of the received signal.
Parameters: H (Horizontal), V (Vertical) or Off.

LO Select

Description: Indicates whether a 22 kHz tone is available on input port RF1. This is applicable for dual-band applications.
Parameters: On or Off.

PROGRAM PIDS

PE

Description: Indicates the Program Entry number.
Parameters: PE1 to PE16.

Stream

Description: Indicates the name assigned to the Program Entry.
Parameters: Up to 4 alphanumeric characters.

Detail

Description: Indicates any detail associated with the program PID (e.g., MPG2 PID).
Parameters: MPG1 VID, MPG2 VID, 422 VID, H264 VID, HD VID, MPG4 VID, MPG AUD, MPG2 AUD, DVB AC3, DVB DDP, AAC AUD, HEAAC, AUD, MPG4 AUD, DBE AUD, DTS AUD, DVB TXT, DVB VBI, DVB SUBT, DVB ASYN, DVB SYNS, DVB SYND, DVB MPE, DVB DCAR, DVB OCAR, SA VBI, ATSC AC3, ATSC DDP, SA UTLD, SCTE DPI, SA HSD, SA CDDL, SA WBD, SA SUBT, ECM, EMM, PCR, or UNKNOWN.

PID

Description: Indicates the program PID number.
Parameters: 1 to 8191.

Present

Description: Indicates whether the PID is present in the incoming stream.
Parameters: Yes or No.

TS OUTPUT

OUTPUT STATUS

Output

Description: Indicates the output type.
Parameters: ASI or MPEGoIP.

Status Menu: TS Input, Continued

Rate (Mbps)

Description: Indicates the current output bit rate.

Parameters: 0 to 213 Mbps.

Free (Mbps)

Description: Indicates the available bit bandwidth (no stuffing).

Parameters: in Mbps.

PROGRAM STATUS

PE

Description: Indicates the Program Entry number.

Parameters: PE1 to PE16.

SR Status

Description: This displays the status of an alternate authorized program/service from the same transport stream when the receiver is not authorized to view the primary program. This is an uplink initiated function that maps the alternate service to the original (primary) service PIDs, replacing the original service with the alternate service at the digital transport output. No local intervention is required by the receiver operator for provision of this service replacement feature.

Parameters: Not Started - Indicates that an event has not started.

Primary - Indicates that a service replacement event is active, but the primary program is being displayed.

Alternate - Indicates that a service replacement event is active, and that the receiver has tuned to and is displaying the alternate program/event as it is not authorized to view the scheduled event.

SR Event Type

Description: Indicates the type of service replacement event.

Parameters: None - Indicates that no service replacement event is scheduled.

Scheduled - Indicates that all receivers will tune to the alternate program at the scheduled time. This setting is only applicable to current PE1 (i.e., PowerVu) programs; not PE2 through PE16.

CA - Indicates that only receivers unauthorized to view the scheduled program will tune to the alternate program according to the selected authorization tier bits. This setting is only applicable to current PE1 (i.e., PowerVu) programs; not PE2 through PE16.

Cue Trigger - Indicates that only receivers authorized by the Cue Trigger mask will tune to the scheduled program/event. Cue triggers can only be initiated /controlled on PE1 (i.e., PowerVu).

Status Menu: TS Input, Continued

SR Event Start

Description: Displays the start time of the service replacement event when one is scheduled; otherwise, the default start time is displayed. The default start time is 2007/09/01 00:00:00.

SR Event End

Description: Displays the end time of the service replacement event when one is scheduled; otherwise, the default end time is displayed. The default end time is 2007/09/01 00:00:00.

Setup Menu

Structure

To view the Setup menu from the Main menu, press the RIGHT arrow key once and the SELECT key. The Setup menu is split into nine parts; Administration, TS Input, IP, Services, CI, Outputs, CA, Alarms/Warnings, and Noise Cutoff. For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The Setup menu allows you to set all the parameters associated with the following:

- Administration - lock level, password, factory reset, keypad lock, download mode and date and time
- TS Input - frequency parameters for acquiring and locking on to an RF signal, or receiving an ASI input
- IP - parameters for setting up the Ethernet ports
- Services - audio video, captions, and VBI
- CI - parameters to decrypt programming available from service provider programmers via CAM Smart Cards
- Outputs - parameters for setting up the transport stream out, which includes DPM and transcoding
- CA - conditional access
- Alarms/Warnings - enables alarms/warnings traps and relays
- Noise Cutoff - muting thresholds

The Setup menu has the following structure:



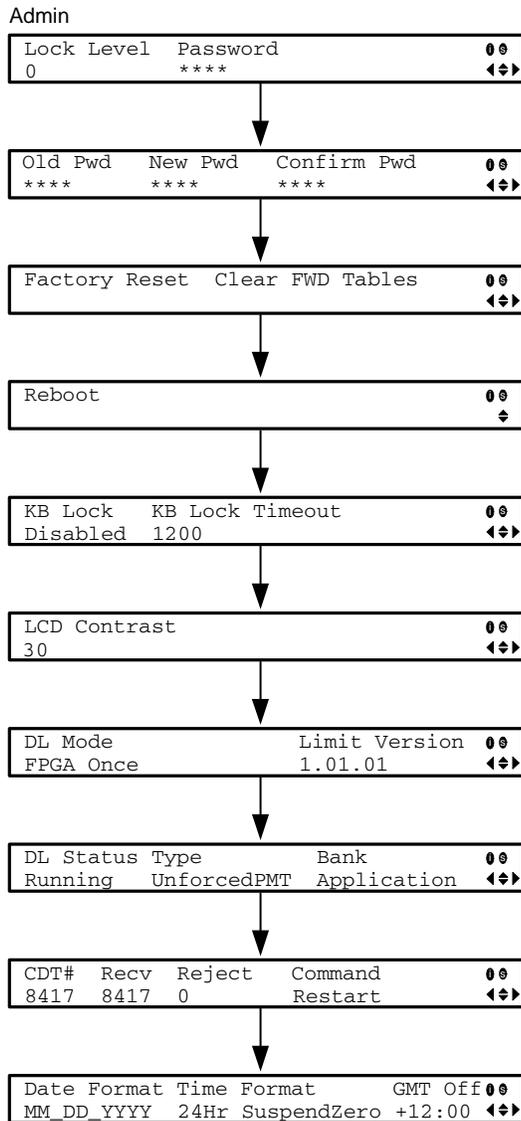
Setup Menu: Admin

Structure

To view the Admin menu from the Main menu, press the SELECT key.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The Admin menu has the following structure:



Setup Menu: Admin, Continued

ADMIN

Lock Level

Description: Sets the front panel keypad lock level.
Parameters: 0, 1, 2 or 3.

Password

Description: Enter the password to successfully set the current lock level. The default password for all lock levels is 1234.

Old Pwd, New Pwd, Confirm Pwd

Description: To change the password, enter the old password (Old Pwd). Next, enter the new password (New Pwd, four digits in the range from 0000 to 9999) and re-enter the new password for confirmation (Confirm Pwd). To change the password, the receiver must be in Lock Level 0. The default password is 1234.

Factory Reset

Description: Select this option to perform a reset of receiver settings back to the factory set (default) values. A warning message prompts you to confirm the operation.
Parameters: Reboot Unit - you are prompted to verify the operation. Abort or Continue.

Clear FWD tables

Description: Select this option to Clear the Forward Tables, which removes stored database information applicable to upgraded software versions. A warning message prompts you to confirm the operation.
Parameters: Abort or Continue.

Reboot

Description: Allows you to reboot the receiver. You will be asked to confirm the operation.
Parameters: Select Continue to reboot the receiver or Abort to cancel the operation.

KB Lock

Description: Sets the front panel keypad lock state.
Parameters: Enabled or Disabled.

Setup Menu: Admin, Continued

KB Lock Timeout

Description: Sets the keypad lock timeout period. The lock timeout period takes effect when the keypad has not been touched (i.e., a key has not been pressed) when on the Main Menu for the set period. Avoid setting the period to a short duration when the keypad is used often.

Parameters: 5 to 1800 seconds. The default is 60 seconds.

LCD Contrast

Description: Adjusts the contrast of the LCD menu panel.

Parameters: 1 (lowest contrast) to 30 (highest contrast).

DL Mode

Description: Sets the download mode.

Parameters: Once, Always or Never.

DL Mode Setting	Description
Always	Unforced download will be accepted and saved in memory.
Once	An unforced download will be accepted, followed by a reboot of the receiver, and the DL Mode will change to Never.
Never	Unforced downloads will not be accepted.

Note: Forced downloads (initiated by the uplink) are always accepted and always result in a reboot of the receiver. *Service interruption will occur!*

Limit Version

Description: Indicates the current FPGA version number.

Parameters: Read-only alphanumeric value.

Setup Menu: Admin, Continued

DL Status, Type, Bank

- Description: Indicates the DL Mode status, type and bank (i.e., type of code).
- Parameters: DL Status - Idle, Running, Timeout. Idle indicates the receiver is waiting for a download. Running indicates the receiver is processing a download. Timeout indicates the receiver didn't complete the download.
- Type - None, Rear Panel, HTTP or Over Air.
- Bank - App 5514, App 7109, FPGA 7109, Sat 7109, Screen logo, Menu Logo, Eth Logo, App PPC, PowerPC, DB Update or Exec Bin.

CDT#

- Description: Indicates the total number of expected CDTs, the number received, the number rejected and the download command.
- Parameters: This is the number of tables expected to be received during the current download operation.

Recv

- Description: This is the number of CDTs received since the last completed or aborted download, or power-cycle.
- Parameters: Read-only numeric value.

Reject

- Description: This is the rejected table count. Tables are rejected whenever validation fails due to things like CRC failure or incorrect code or receiver type.
- Parameters: Read-only numeric value.

Command

- Description: Indicates the download command.
- Parameters: Restart, Abort or None. Abort stops a download that is currently being received. Restart restarts a previously aborted download. Note that the download does not resume from where it was aborted, but restarts from the beginning. None means no action is to be performed.

Setup Menu: Admin, Continued

Date Format, Time Format, GMT Off

Description: Sets the Date and Time formats and the GMT offset. Time information is normally broadcast as part of the transmitted digital signal. It is usually the broadcasters local time relative to GMT (Greenwich Mean Time).

Parameters: Date - The following formats are supported: YYYY_MM_DD, DD_MM_YYYY, MM_DD_YYYY.

Time - The following formats are supported: 24Hr, 24Hr SuspendZero (the leading zero is dropped from the time), 12Hr, 12Hr SuspendZero (the leading zero is dropped from the time).

GMT Off - Time is displayed using a time zone instead of the true local time. If the current broadcast time is not your local time, you must change this time setting in the range from -12.0 to +12.0 hours in 0.5 hour increments.

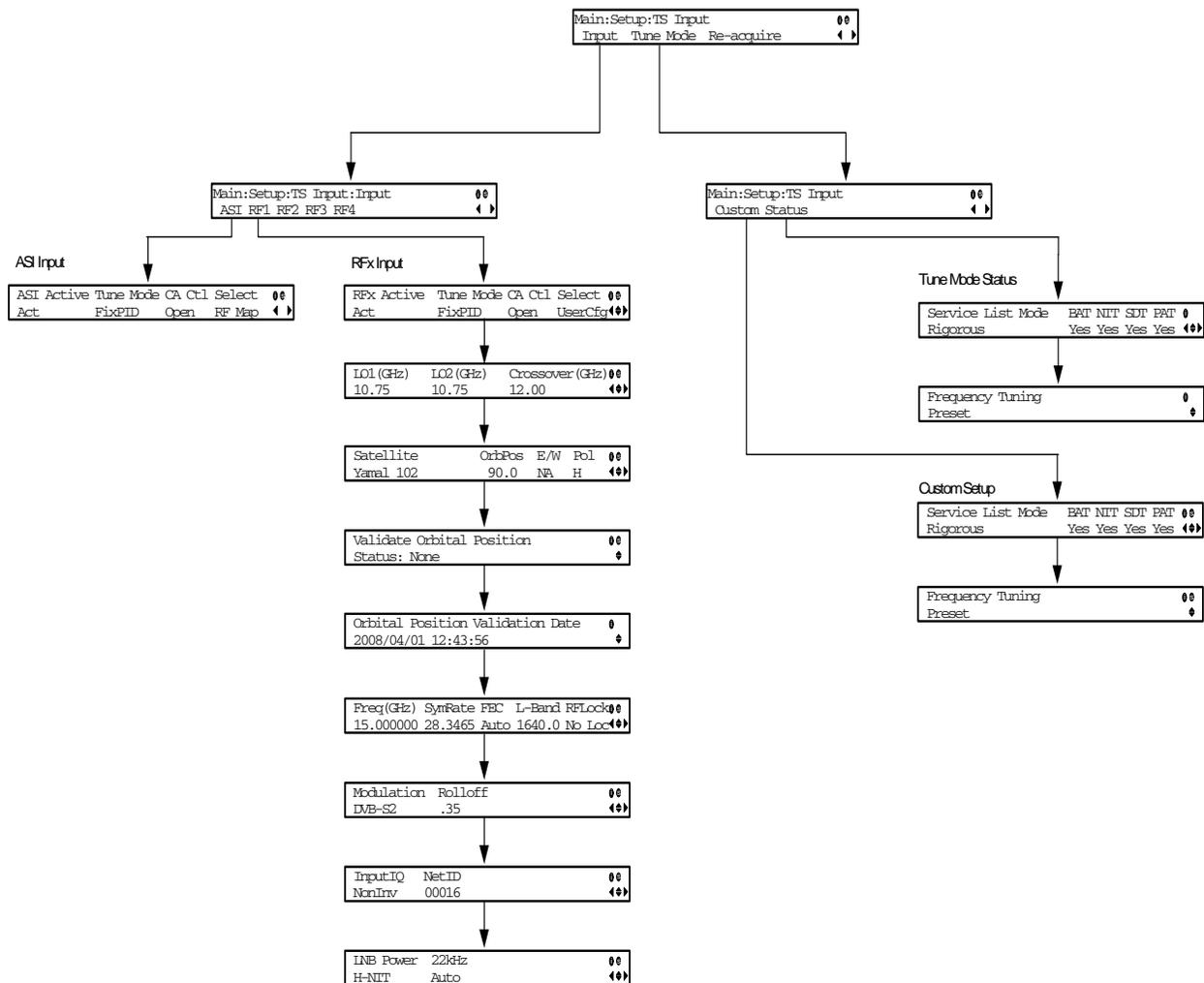
Setup Menu: TS Input

Structure

To view the TS (Transport Stream) Input menu from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key once and the SELECT key to view the TS Input menu.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The TS Input menu has the following structure:



Setup Menu: TS Input, Continued

ASI INPUT

ASI Active

Description: Sets the input to be active or inactive.

Parameters: Act or No.

Tune Mode

Description: Sets the mode used to build channel lists from allowed service lists.

Parameters: Auto, Basic, or Custom. The default is Basic.

CA Ctl

Description: Sets the type of CA (Conditional Access) to determine which programs can be viewed via the receiver.

Parameters: Std (standard) for PowerVu signal or Open conditional access for free-to-air (i.e., in-the-clear signals).

Select

Description: This sets the parameters the receiver uses for signal switching.

Parameters: RF Map or Preset. RF Map uses the orbital positioning settings to find and lock onto a signal, while it can be ignored for Preset.

RF1, RF2, RF3, RF4

RFx INPUT

RFx Active (RF1, RF2, RF3, RF4)

Description: Sets the input to be active or inactive.

Note: Setting a new input to be Active will deactivate the currently Active input.

Parameters: Act or No.

Tune Mode

Description: Sets the mode used to build channel lists from allowed service lists.

Parameters: Auto, Basic and Custom. The default is Basic.

Note: When editing the tuning, the device is in a transient state while acquiring tuning information and channel lists, etc. The receiver reverts to the previous set of tuning settings/information and channels until these changes are either saved or abandoned.

CA Ctl

Description: Sets the type of CA (Conditional Access) to will determine which programs can be viewed via the receiver.

Parameters: Std (standard) for PowerVu signal or Open conditional access for free-to-air (i.e., in-the-clear signals).

Setup Menu: TS Input, Continued

Select

Description: This sets the parameters the receiver uses for signal switching.
Parameters: SW Map or UserCfg. SW Map uses the orbital positioning settings to find and lock onto a signal, while it can be ignored for UserCfg.

LO1 (GHz)

Description: This is the Local Oscillator frequency #1. This option sets the satellite antenna LNB local oscillator #1 frequency.

Parameters: 0.0 to 15.0 GHz. Must be lower than the value for LO2.

LO2 (GHz)

Description: This is the Local Oscillator frequency #2. It sets the satellite antenna LNB local oscillator #2 frequency. This option is only used in dual-band LNB applications.

Parameters: 0.0 to 15.0 GHz. Must be higher than the value for LO1. In single-band LNB applications, set this value to 0.0.

Crossover (GHz)

Description: This is the crossover frequency, which is an internal threshold frequency used for selecting the LO1 or LO2 frequency, depending on the current Downlink frequency settings. This option is only used in dual-band LNB applications.

Parameters: 0.0 to 15.0 GHz. In single-band LNB applications, set this value to 0.0.

Satellite

Description: This is the name of the satellite currently selected. Choose the satellite you want to use to receive the signal from the list of satellites available. When you select a satellite, the orbital position (OrbPos) is displayed. This is important for automatic switching from one RF input to another in the event of loss of the signal, allowing the receiver to acquire an alternate signal.

Parameters: When the satellite is not listed, enter the known orbital position (OrbPos) of the satellite you want to use to receive the signal.

Setup Menu: TS Input, Continued

OrbPos

Description: This is the location in orbit of the satellite currently being used. The satellite position (in degrees) in combination with the direction (either **E** (East) or **W** (West)) denotes the satellite position the dish connected to the current RF Input should point. This is used when the satellite is not available in the look-up menu list.

For manual configuration, simply enter the location of the satellite using the numerical keypad. The receiver will not recognize the satellite name and identify it as Unknown. This setting is required to resolve any ambiguity between RF inputs during automatic disaster recovery.

Parameters: Degrees.

E/W

Description: Denotes the satellite position the dish connected to the current RF Input should point. This is used when the satellite is not available in the look-up menu list.

Parameters: E, W or NA.

Pol

Description: Marks the polarity of the signal connected to this RF input.

Parameters: H (horizontal), Vert (vertical), A (Auto). Auto is only applicable when LNB Power is set to H-NIT or V-NIT.

Validate Orbital Position

Description: This option allows you to configure and validate the RF inputs to match those expected by the network. The receiver will check to see if all the frequencies in the Network Information Table (NIT) can be tuned to.

Parameters: Yes or No.

Orbital Position Validation Date

Description: This displays the last date that the 'Validate Orbital Position' operation was performed.

Parameters: N/A.

Freq (GHz)

Description: This is the current Downlink operating frequency used by the receiver for tuning the received digital signal.

Parameters: 0.0 to 15.0 GHz.

Setup Menu: TS Input, Continue

SymRate

Description: This is the symbol rate. The symbol rate must match that of transmitted signal.

Parameters: 1.0 to 45.0 Ms/s for DVB-S.
1.0 to 30.0 Ms/s for DVB-S2 if Pilot Present is set to Yes.
5.0 to 30.0 Ms/s for DVB-S2 if Pilot Present is set to No.

FEC

Description: This is the Forward Error Correction inner code rate. The FEC must match the FEC of the transmitted signal.

Parameters: 1/2, 2/3, 3/4, 5/6, 7/8 for DVB-S or Auto for DVB-S2.

L-Band

Description: This is the L-Band operating frequency used by the receiver. This value is determined by the values set in the Freq and LO options.

Parameters: 950 to 2150 MHz.

RF Lock

Description: Indicate whether the receiver is locked to the received signal.

Parameters: Lock or NoLock.

Modulation

Description: Sets the modulation type for the received signal.

Parameters: DVB-S or DVB-S2.

Rolloff

Description: Sets the rolloff factor of the incoming signal.

Parameters: .20, .25, .35. Use .20 or .35 when DVB-S modulation is used, and either of the three when DVB-S2 is used. Use a small number to reject or filter carriers close to the same frequency.

InputIQ

Description: This is the Input signal spectrum inversion setting, which allows the operator to track and select inverted and non-inverted digital signals.

Parameters: When set to Auto, received digital signals are tracked and inverted for correct selection, as required. When set to Inv (inverted), the received digital signal is always inverted. Conversely, when set to NonInv (non-inverted), the received digital signal is never inverted. Normally set to Auto, Inv and NonInv are typically used to automatically reject or filter out unwanted signals.

Setup Menu: TS Input, Continued

NetID

Description: This is the Network ID of the uplink signal the receiver is to receive when using this preset. The receiver's Network ID must match the Network ID associated with the transmitted signal.

Parameters: 1 to 65535. The default value is 1.

LNB Power

Description: This setting determines if power is provided via the RF1 Input to an external LNB connection.

Parameters: Off, 13V, 18V, V-NIT or H-NIT. When LNB Power is set to V-NIT or H-NIT, the signal polarization is automatically read from the NIT.

Note: Power will not be applied to the LNB when Power is set to Off.

22kHz

Description: This applicable for dual-band LNB applications. It sets whether or not 22 kHz tone is available on RF1.

Parameters: On, Off or Auto (actual presence of 22 KHz control signal depends on whether downlink frequency is greater than the crossover frequency).

TUNE MODE

CUSTOM

Services List Mode

This menu is where you set up your custom properties. Select the channel to set up and then edit it.

Description: All of the options on this menu allow you to select which tables to use to obtain tuning and channel lists. The values set on this menu only apply when Tune Mode is set to *Custom*.

Setup Menu: TS Input, Continued

Parameters: Degraded or Rigorous. Rigorous means all the default settings must be present in the received signal. Degraded means only the table parameters present in the received signal will be used to install the receiver. The default is Rigorous.

The following table shows some possible configurations for the allowed service lists and the different frequency tuning settings.

Allowed Service Lists	Custom
BAT	N
NIT	N
SDT	N
PAT	Y
Frequency Tuning	Preset

Frequency Tuning

Description: Sets whether the receiver is to be tuned to the received signal using the NIT or a user configuration.

Parameters: NIT or User Cfg.

STATUS

Services List Mode

Description: Indicates which tables are used to obtain tuning and channel lists. This values on this menu only apply when Tune Mode is set to *Custom*.

Parameters: Degraded or Rigorous. Rigorous means all the default settings must be present in the received signal. Degraded means only the table parameters present in the received signal will be used to install the receiver. The default is Rigorous Install.

The following table displays the default settings for the allowed service lists and frequency tuning settings.

Allowed Service Lists	Auto	Basic	Custom
BAT	N	N	N
NIT	Y	Y	N
SDT	Y	N	N
PAT	Y	N	Y
Frequency Tuning	NIT	NIT	Preset

Setup Menu: TS Input, Continued

Frequency Tuning

Description: Indicates whether the receiver is tuned to the received signal using the NIT or a user configuration.

Parameters: NIT or User Cfg.

Re-Acquire

Description: Re-acquires the signal using the tuning parameters from user settings.

Parameters: Abort or Continue. Select Abort to cancel the operation or choose Continue to complete the operation.

Setup Menu: IP

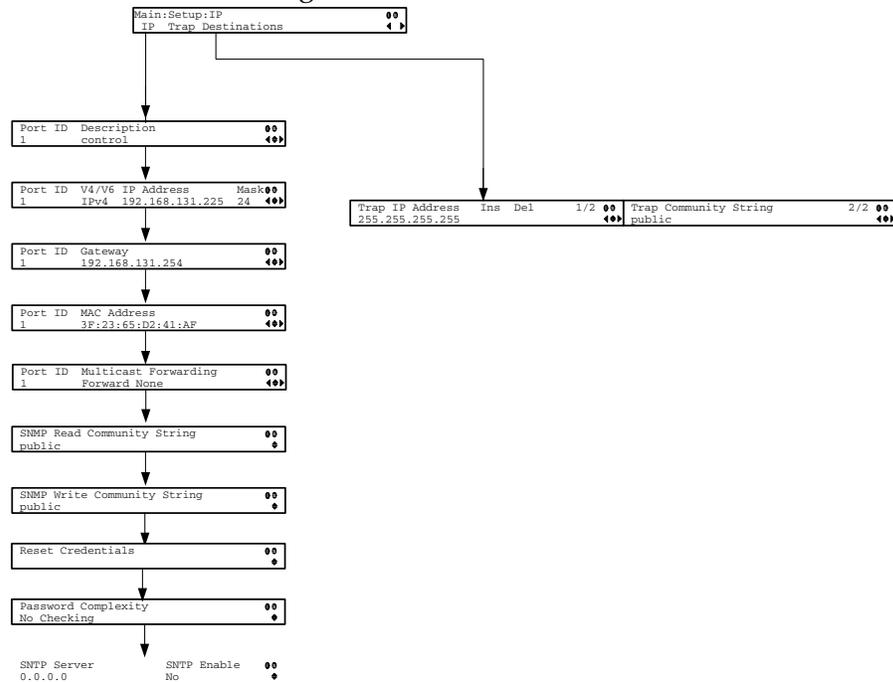
Structure

To view the IP menu from the Main menu, press the RIGHT arrow key once and the then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key twice and the SELECT key to view the IP menu.

The IP menu allows you to set the parameters for communicating with other equipment via the Ethernet Data and Management ports for MPEGoIP and MPE applications and upgrading application software.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The IP menu has the following structure:



IP

Port ID

Description: Displays the ID for the Ethernet port.

Parameters: 1 or 2. The default is 1.

Description

Description: Sets the description or name for the Ethernet port.

Parameters: Up to 20 alphanumeric characters in length.

Setup Menu: IP, Continued

V4/V6

Description: Displays the TCP/IP communication protocol version supported on the Ethernet port.

Parameters: This value is not editable. Only V4 is currently supported.

IP Address

Description: Sets the IP Address for its participation in a Network environment.

Parameters: 12 digits in length (###.###.###.###).

Mask

Description: Sets the Subnet Mask in CIDR (Classless Inter-Domain Routing) format for its participation in a Network environment.

Parameters: 8 to 30.

Gateway

Description: Sets the Network Gateway Address on the Network, used to expose the receiver to a WAN.

Parameters: The IP Address/Mask and Gateway Address should be changed together, i.e., as a group. The following table shows the most commonly used Subnet mask values to enter for a chosen IP address mask, which will depend on the size of your network.

Mask	Subnet Mask
8	255.0.0.0
16	255.255.0.0
24	255.255.255.0

MAC Address

Description: Displays the MAC address of the receiver. It is set at the factory and is a read-only value.

Parameters: N/A.

Multicast Forwarding

Description: Sets whether all the MPE data is forwarded to the network. It can forward up to 5 multicast IP addresses.

Note: The Port ID must be set to 2.

Note: The receiver supports up to a maximum of 10 Mbps throughput when forwarding 1500 byte packets.

Parameters: Forward None or Forward All.

Setup Menu: IP, Continued

SNMP Read Community String

Description: The SNMP Community Read field is used when communicating with a device within an SNMP environment. These commands allow you to set the password to read and write data to a device to display diagnostics traps/alarms. The options are public (default) and or a custom string.

Parameters: Use the default community string called public or enter a custom community string. To set a custom community string, enter an alphanumeric character string up to 31-characters in length identifying the password for the device. Note that the community string is case-sensitive.

SNMP Write Community String

Description: The SNMP Community Write field is used when communicating with a device within an SNMP environment. These commands allow you to set the password to read and write data to a device to display diagnostics traps/alarms. The options are public (default) and or a custom string.

Parameters: Use the default community string called public or a custom community string. To set a custom community string, enter an alphanumeric character string up to 31-characters in length identifying the password for the device. Note that the community string is case-sensitive.

Reset Credentials

Description: If for some reason you cannot access the decoder (due to a forgotten password, corrupted data, etc.), the recovery procedure for the decoder is as follows:

Using the keypad, chose this field on the front panel menu. A default login username and randomly generated password will be displayed on front panel display for approximately 30 seconds. It is recommended that this account be replaced by a login username/password chosen by the administrator. To change the username and password, you must be an Admin user. Refer to **Setting Admin User Privileges via a Telnet Connection**, page 3-16.

Note: After this recovery procedure, all old user accounts will be lost.

Password Complexity

Description: Sets the password complexity for all users. The complexity level changes will only affect the new user accounts and password changes. It will not affect existing accounts.

Setup Menu: IP, Continued

Note: This feature is only available to a user with Admin privileges only.

Parameters: No Checking, Minimal Checking, or Full Complexity Checking.

The following describes the rules for each level:

Password Complexity	Description
No Checking	There are no restrictions on passwords. Note: A minimum of one character is required.
Minimal Checking	The passwords must comply with the following requirements: <ul style="list-style-type: none">• It cannot contain username or reversed username.• It cannot contain any of the following strings: cisco, sciatl, ocsic, italics, atlsci, iclsta, or any string achieved by full or partial capitalization of letters.• No letter is repeated more than three times in a row.• Must contain a minimum of four characters.
Full Complexity Checking	The passwords must comply with the following requirements: <ul style="list-style-type: none">• It cannot contain username or reversed username.• It cannot contain any of the following strings: cisco, sciatl, ocsic, italics, atlsci, iclsta, or any string achieved by full or partial capitalization of letters.• No letter is repeated more than three times in a row.• Must contain a minimum of eight characters.• Must contain a minimum of three of the following types of characters: capital letters, small letters, digits, and special characters.

SNTP Server

Description: Set the NTP Server Address. If the NTP server address is not set (0.0.0.0), the IRD will not attempt to connect to it.

Parameters: 12 digits in length (###.###.###.###).

SNTP Enable

Description: Periodically request NTP timestamps from the NTP server (NTP server address set below) and to synchronize its system (i.e., non-DVB related) time with the NTP server.

Parameters: Yes or No.

Setup Menu: IP, Continued

TRAP DESTINATIONS

Trap IP Address

Description: This sets the destination for SNMP trap messages for events (i.e., fault messages).

Parameters: Up to 12 digits in length, e.g., 155.128.100.200.

Ins, Del

Description: You can choose to Insert or Delete entries. Up to 25 entries can be assigned to the Trap IP Address and Community String fields. To add a new entry, press **Ins** and enter the new entry in the IP Address or Community String field. To delete an existing entry, scroll to the IP address or community string you want to delete and press **Del**.

Trap Community String

Description: This sets the Community string for the Trap IP Address above.

Parameters: Public or custom string. Up to 35 characters. The default is public.

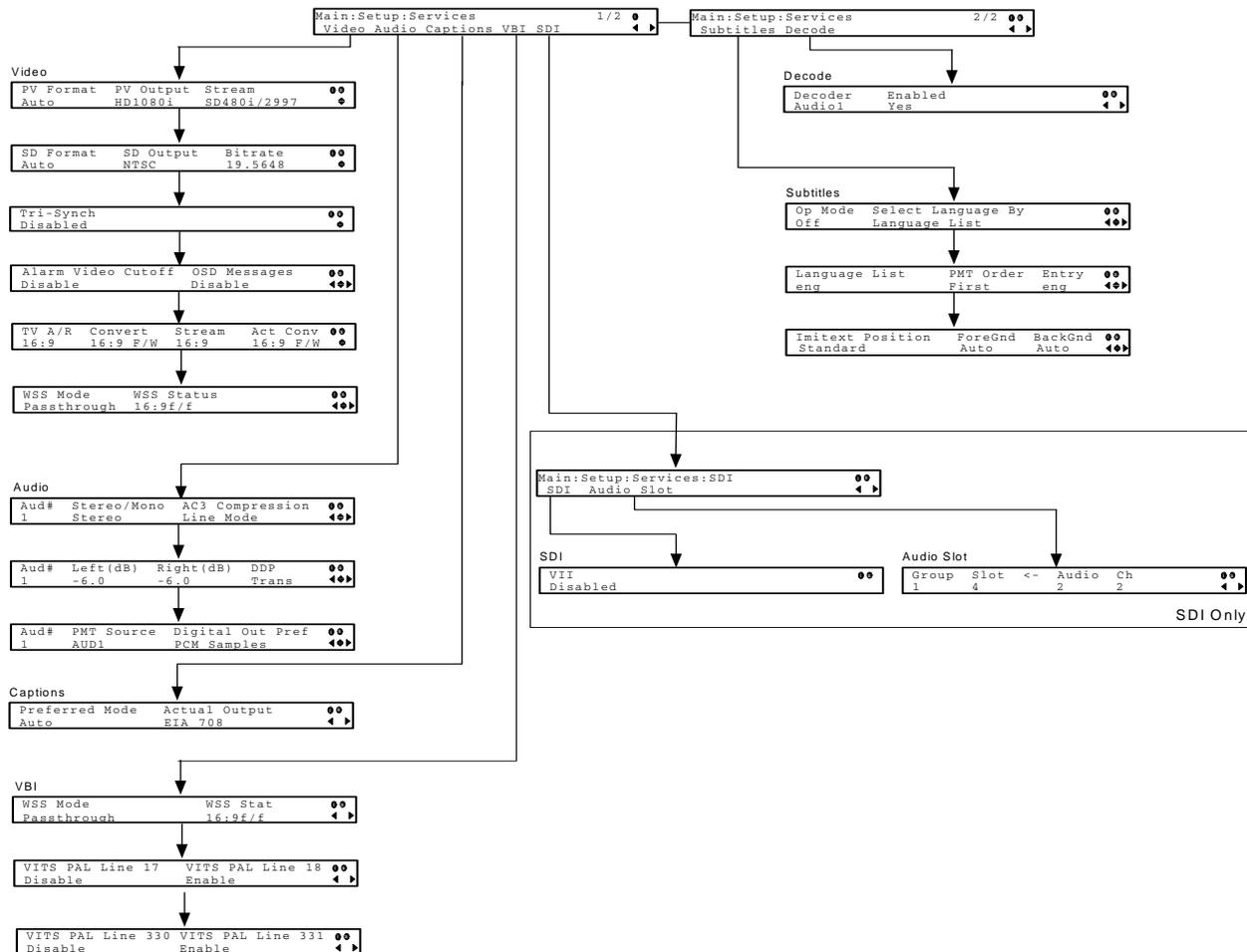
Setup Menu: Services

Structure

To view the Services menu from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key three times and the SELECT key to view the Services menu.

The Services menu allows you to set up all the operating parameters associated with audio, video and captions services.

Each parameter is described below. The menu has the following structure:



Setup Menu: Services, Continued

VIDEO

PV Format

Description: Set the primary video output format.
Parameters: Auto, SD, HD 720p, or HD 1080i.

PV Output

Description: Indicates the output video format. This value is read-only.
Parameters: Auto, SD, HD 720p, or HD 1080i.

Stream

Description: This is the format of the incoming stream. It is determined by the the SD Format setting and the actual format of the incoming stream. This value is read-only.

SD Format

Description: Selects the video format for the output when the input video is SD format.
Parameters: Auto, NTSC, PAL-N (AR), PAL-M or PAL-B/G/I/D. Use NTSC for 525-line systems and PAL-B/G/I/D for 625-line systems.

SD Output

Description: Indicates the SD Output video signal format.
Parameters: NTSC, PAL-N (AR), PAL-M or PAL-B/G/I/D.

Bitrate

Description: Indicates the video output bit rate.
Parameters: 1.0 to 15.0 Mbps.

Tri-Synch

Description: Indicates whether component Tri-Synch is enabled or disabled.
Parameters: Enabled or Disabled.

Alarm Video Cutoff

Description: Sets whether the video output is cut off if any enabled alarm is active on the receiver. When video is cut off, there will be no horizontal or vertical synchronization on the output. This is useful for downstream redundancy switching by detecting a loss of video signal.
Note: This same function also exists under Setup: Alarm/Warning.
Parameters: Enable or Disable. The default is Disable.

Setup Menu: Services, Continued

OSD Messages

Description: Sets whether alarms and warnings are to be displayed on the on-screen display (e.g., TV monitor).

Parameters: Enable or Disable.

TV A/R

Description: This is the aspect ratio of your TV.

Parameters: 4:3 or 16:9 (wide aspect ratio). The default is 4:3. Set it to the corresponding value.

Convert

Description: This is the conversion that the receiver will perform on the incoming signal for the picture to be displayed correctly (i.e., to correspond to the aspect ratio of your TV) on your TV, based on your selection.

Parameters: Auto, None, Auto AFD (Auto setting using Active Format Descriptor), 16:9 L/B (letter box), 4:3 P/B (pillar box), 14:9, 4:3 CCO (Centre Cut Out), 16:9 SCALE. The default is set to Auto.

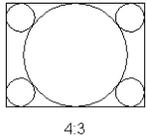
Stream

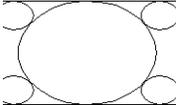
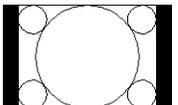
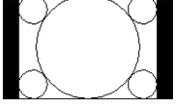
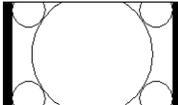
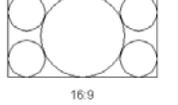
Description: This indicates the aspect ratio of the incoming signal. This is read-only.

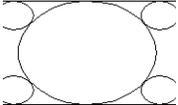
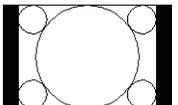
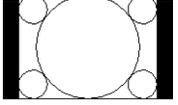
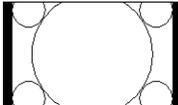
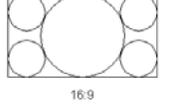
Act Conv

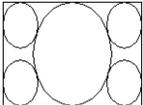
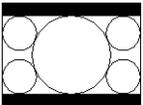
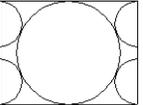
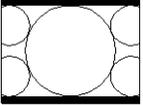
Description: This is the type of (aspect ratio) conversion the receiver will perform based on what you have selected. This is read-only.

Refer to the following table for the conversions performed by the receiver based on your selection, and the effect on the picture displayed by the receiver in each case (without Auto AFD).

Stream	TV A/R	Conversion	Act Conv	Description	Image
4:3	4:3	None	None	Normal Picture	
4:3	4:3	Auto	None	No conversion	
4:3	4:3	16:9 L/B	None	Conversion is not possible. Normal picture.	
4:3	4:3	4:3 CCO	None	Conversion is not possible. Normal picture.	

Stream	TV A/R	Conversion	Act Conv	Description	Image
4:3	4:3	4:3 P/B	None	Conversion is not possible. Normal picture.	
4:3	4:3	14:9	None	Conversion is not possible. Normal picture.	
4:3	4:3	16:9 SCALE	None	Conversion is not possible. Normal picture.	
4:3	16:9	None	None	Picture is short & fat.	 4:3 Stretch
4:3	16:9	Auto	4:3 P/B	Uses 4:3 P/B.	 4:3 PB
4:3	16:9	16:9 L/B	None	Conversion is not possible. Picture appears short and fat.	
4:3	16:9	4:3 CCO	None	Conversion is not possible. Picture appears short and fat.	
4:3	16:9	4:3 P/B	4:3 P/B	4:3 picture is centered in a pillar-style box.	 4:3 PB
4:3	16:9	14:9	14:9	Compromises some up-sampling. Some black bars and cropping are visible.	 14:9
4:3	16:9	16:9 SCALE	16:9 SCALE	Vertically up-samples the centre of the 4:3 picture and crops the top and bottom of the screen.	 16:9 FH
16:9	16:9	None	None	Normal	 16:9

Stream	TV A/R	Conversion	Act Conv	Description	Image
4:3	4:3	4:3 P/B	None	Conversion is not possible. Normal picture.	
4:3	4:3	14:9	None	Conversion is not possible. Normal picture.	
4:3	4:3	16:9 SCALE	None	Conversion is not possible. Normal picture.	
4:3	16:9	None	None	Picture is short & fat.	 4:3 Stretch
4:3	16:9	Auto	4:3 P/B	Uses 4:3 P/B.	 4:3 PB
4:3	16:9	16:9 L/B	None	Conversion is not possible. Picture appears short and fat.	
4:3	16:9	4:3 CCO	None	Conversion is not possible. Picture appears short and fat.	
4:3	16:9	4:3 P/B	4:3 P/B	4:3 picture is centered in a pillar-style box.	 4:3 PB
4:3	16:9	14:9	14:9	Compromises some up-sampling. Some black bars and cropping are visible.	 14:9
4:3	16:9	16:9 SCALE	16:9 SCALE	Vertically up-samples the centre of the 4:3 picture and crops the top and bottom of the screen.	 16:9 FH
16:9	16:9	None	None	Normal	 16:9

Stream	TV A/R	Conversion	Act Conv	Description	Image
16:9	16:9	Auto	None	No conversion. Normal picture.	
16:9	16:9	16:9 L/B	None	Conversion is not possible. Normal picture.	
16:9	16:9	4:3 CCO	None	Conversion is not possible. Normal picture.	
16:9	16:9	4:3 P/B	None	Conversion is not possible. Normal picture.	
16:9	16:9	14:9	None	Conversion is not possible. Normal picture.	
16:9	16:9	16:9 SCALE	None	Conversion is not possible. Normal picture.	
16:9	4:3	None	None	Picture appears tall and thin.	 16:9 Compressed
16:9	4:3	16:9 L/B	16:9 L/B	Vertically down-samples the picture and applies black bars at the top & bottom of the screen.	 4:3 LB
16:9	4:3	4:3 CCO	4:3 CCO	Horizontally up-samples the centre portion of the picture to fill the 720.	 4:3 Crop
16:9	4:3	4:3 P/B	None	Conversion is not possible. Picture appears tall and thin.	
16:9	4:3	14:9	14:9	Compromises some up-sampling. Some black bars and some cropping are visible.	 14:9
16:9	4:3	16:9 SCALE	None	Conversion is not possible. Picture appears tall and thin.	

Setup Menu: Services, Continued

Note: Active Format Descriptor (AFD) - normally it is necessary to set both the TV Aspect Ratio and Conversion to correctly display the video program on the TV system. The Auto AFD option enables the receiver output to automatically match the display format of the video program to the TV system based on specific (uplink) program information carried in the transport stream. In this case, the receiver performs the conversion based on the TV Aspect Ratio setting combined with the program-specific uplink information to provide the “best fit” for display of the program material on the TV. This feature is primarily used in 16:9 and 14:9 (wide screen) applications.

WSS Mode

Description: This is the Wide Screen Signaling output mode. It is used to select how the receiver affects PAL WSS when it is present in the VBI.

Parameters: Auto, Suppress or Passthrough. The table below describes each of the options. The default is Auto.

WSS Mode	Description
Passthrough	Passes WSS (unmodified, as received by the D9854 receiver) on VBI Line 23 when present
Auto:Create	Creates WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through.
Auto:Modify	Modifies WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through.
Suppress	Disables Line 23 VBI processing. WSS is not output on line 23.

WSS Status

Description: This indicates the current value of PAL WSS in VBI line 23. If VBI line 23 is not present, this field is blank. If PAL WSS is present on VBI line 23, the receiver interprets the data and displays the information in this field. In WSS Auto mode, this field indicates the modified value received for aspect ratio conversion.

Parameters: Possible displayed status messages are: 4:3 f/f (full format), 14:9 L/B (letter box) Centre, 14:9 L/B Top, 16:9 L/B Centre, 16:9 L/B Top, 16:9 L/B Centre, 14:9 F/F Centre, 16:9 f/f, Undefined value.

Setup Menu: Services, Continued

AUDIO

Aud#

Description: This is the audio output number to which all settings on the two audio menus will apply.

Parameters: 1 or 2. When you change this option on one of the Audio Menus, it changes on the other as well. The two audio (Aud#) menus allow you to configure the two balanced audio outputs on the rear panel (Audio 1 and Audio 2), known in the receiver as Aud1 and Aud2, respectively.

Stereo/Mono

Description: This setting configures how audio received on the audio input is handled.

Parameters: Stereo (Left and Right are passed directly through to Left and Right), R-MONO (Right is passed to both the Left and Right), L-MONO (Left is passed to both the Left and Right), and Mixed (Left is passed to both the Left and Right, and Right is passed to both the Left and Right).

AC3 Compression

Description: This is only applicable if the received signal is Dolby Digital (AC-3). This specifies the Dolby Digital (AC-3) Compression range of the received audio.

Parameters: Line Mode, Custom 1, Custom 0 or RF Mode. RF Mode is recommended for analog cable modulators.

Left (dB)

Description: This is the volume adjustment for the Left audio channel.

Parameters: -6.0 dB to +6.0 dB. Any value can be entered with the numeric keypad (in the appropriate range), but the UP and DOWN arrows will make increments/decrements at 0.5 dB steps.

Right (dB)

Description: This is the volume adjustment for the Right audio channel.

Parameters: -6.0 dB to +6.0 dB. Any value can be entered with the numeric keypad (in the appropriate range), but the UP and DOWN arrows will make increments/decrements at 0.5 dB steps.

Setup Menu: Services, Continued

DDP

Description: Sets the Dolby Digital Plus output mode. If **Trans** is selected, it will transcode to Dolby Digital (AC-3) audio output. If **Passthrough** is selected and the bitrate is less than 1536 kbps (48 Khz), passthrough is performed and Dolby Digital Plus compressed out is received. If **Passthrough** is selected and the bitrate is more than 1536 Kbps, transcoding will be performed. This setting affects only the AES-3id and SDI outputs.

Note: Dolby Digital Plus is only available on Audio 1. Ensure that the Aud# is set to Aud1.

Note: Ensure that the Digital Out Pref is set to Compressed for digital passthrough. Otherwise, only decoded PCM will be available. This parameter has no effect if the audio source is not Dolby Digital Plus.

Parameters: Trans (Transcoded) or Pass (Passthrough).

PMT Source

Description: Selects the PMT source for the audio channel.

Parameters: None, AUDI to AUD64.

Digital Out Pref

Description: This sets the output preference for the SDI output or AES-3id output.

Parameters: PCM Samples or Compressed.

Mode	Description
PCM Samples	If the audio source is MPEG Layer II format, the output will be routed to the SDI output as PCM.
Compressed	If the audio source is AES compressed, the output will be routed to the AES-3id output, compressed.

Setup Menu: Services, Continued

When Dig Out Pref is set to PCM Samples, the output is PCM regardless of whether it's MPEG, Dolby Digital (AC-3) or AAC audio. Additionally, when the output is Compressed, MPEG-1 L1 and L2 will be output PCM, even though Dolby Digital (AC-3) and AAC is compressed (and transcoded).

Output Input	Digital Output Preference		
	PCM Samples	Compressed	
		DDP Mode	
		Transcode (Converter)	Passthrough
MPEG LA (MPEG-1 and MPEG-2)	PCM	PCM	PCM
Dolby Digital (AC-3)	PCM	Dolby Digital (AC-3)	Dolby Digital (AC-3)
Dolby Digital Plus (E-AC-3) (Bit rate < 1.5 Mbps)	PCM	Dolby Digital (AC-3)	Dolby Digital Plus (E-AC-3) (no over-clocking, x1)
Dolby Digital Plus (E-AC-3) (Bit rate > 1.5 Mps)	PCM	Dolby Digital (AC-3)	Dolby Digital (AC-3)
MPEG-2 AAC, MPEG-4 (AAC and HE-AAC)	PCM	MPEG-2 AAC, MPEG-4 (AAC and HE-AAC)	MPEG-2, MPEG-4 (AAC and HE-AAC)

CAPTIONS

Preferred Mode

Description: This is the closed-captioning mode to use if there are multiple in the stream.

Parameters: Auto, SA Custom, EIA 708, DVS 053, Type 3, DVS 053 Type 4 SA, DVS 053 Type 4 ATSC, Reserved or DVS 157. The default is Auto.

Note: SA Custom is not supported when telecine video coding is enabled.

Setup Menu: Services, Continued

Actual Output

- Description: This is the actual caption mode used. This is read-only.
- Parameters: Auto, SA Custom, EIA 708, DVS 053, Type 3, DVS 053 Type 4 SA, DVS 053 Type 4 ATSC, Reserved or DVS 157.

VBI

WSS Mode

- Description: This is the Wide Screen Signalling output mode. It is used to select how the receiver affects PAL WSS when it is present in the VBI.
- Parameters: Passthrough, Auto:Create, Auto:Modify, and Passthrough. The table below describes each of the options. The default is Auto.

WSS Mode	Description
Passthrough	Passes WSS (unmodified, as received by the D9858 transcoder) on VBI Line 23 when present.
Auto:Create	Creates WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through.
Auto:Modify	Modifies WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through.
Suppress	Disables Line 23 VBI processing. WSS is not output on line 23.

WSS Stat

- Description: This indicates the current value of PAL WSS in VBI line 23. If VBI line 23 is not present, this field is blank. If PAL WSS is present on VBI line 23, the receiver interprets the data and displays the information in this field. In WSS Auto mode, this field indicates the modified value received for aspect ratio conversion.
- Parameters: Possible displayed status messages are: 4:3 f/f (full format), 14:9 L/B (letter box) Centre, 14:9 L/B Top, 16:9 L/B Centre, 16:9 L/B Top, 16:9 L/B Centre, 14:9 F/F Centre, 16:9 f/f, Undefined value.

VITS PAL Line 17, 18, 330, 331

- Description: Select whether to enable or disable Vertical Interval Test Signal on PAL Lines 17, 18, 330, or 331.
- Parameters: Enable or Disable

Setup Menu: Services, Continued

SDI

VII

Description: This selects whether to enable or disable the SDI VII (video index) interface.

Parameters: Enabled, Disabled.

Audio Slot

Group, Slot <- Audio Ch

Description: This selects the audio channel grouping, and audio channels from the available audio group.

Parameters: Group: This the channel group - 1 to 4.

Slot: This is the HANC position - 1 to 4.

Audio: This is the audio source - 1, 2.

Ch: This is the source audio channel - 1, 2.

Setup Menu: Services, Continued

SUBTITLES

This menu allows you to configure the type of subtitling (i.e., DVB or Imitext) displayed by the receiver, and how the receiver displays subtitling on the TV.

Op Mode

Description: This determines the mode to use to display the program subtitles.

Parameters: Off, On, DVB, or Imitext. The following table describes each of the available options.

Op Mode Selection	Description
Off	No subtitles are displayed.
On	Functions as an "Auto" setting. DVB subtitles are displayed when only DVB subtitles are transmitted on the channel, and likewise, Imitext subtitles are displayed when only Imitext subtitles are transmitted on the channel. When both DVB and Imitext subtitles are available on the same channel, only DVB subtitles will be displayed.
DVB	Displays only DVB titles. For example, if DVB is selected, but both DVB and Imitext titles are being transmitted on the same channel, only DVB subtitles will be displayed.
Imitext	Displays only Imitext subtitles. For example, if Imitext is selected, but both DVB and Imitext titles are being transmitted on the same channel, only Imitext subtitles will be displayed.

Setup Menu: Services, Continued

Select Language By

Description: This is used to select the language type to display the subtitles.

Parameters: Language List, Language Entry, and PMT Order. The default setting is Language List. Language Entry and Language PMT Order are more applicable for advanced applications. The following table describes each of the available options and how to set them.

Select Language By Option	Description
Language List	Each subtitling PID can contain multiple languages. Use this setting to select the language from the Language List by toggling through the available selections. If Language List is selected, PMT Order and Entry fields are not used.
Language Entry	Use this setting with Entry to directly enter the language code when the language you want is not in the list. In this case enter the three-character code provided by your uplink service provider under Entry using the numeric keypad (e.g., eng for English).
PMT Order	Use this setting to select one of up to eight languages as assigned in the PMT for the tuned channel on the receiver. Toggle through the PMT Order to select the correct language within the order (i.e., First to Eighth), available from your uplink service provider.

Language List

Description: Select the language from the Language List by toggling through the available selections. If Language List is selected, PMT Order and Entry fields are not used.

Setup Menu: Services, Continued

PMT Order

Description: Select the correct language within the order (i.e., First to Eighth), available from your uplink service provider.

Parameters: First to Eighth.

Entry

Description: Use Language Entry with this setting to directly enter the language code when the language you want is not in the list.

Parameters: Enter the three-character code provided by your uplink service provider under Entry using the numeric keypad (e.g., eng for English).

Imitext Position

Description: This is used to set the position of on-screen subtitle text.

Parameters: Standard or Extended.

ForeGnd

Description: This is used to set the colour of Imitext subtitles only.

Parameters: Auto, Yellow and White. Auto displays text in the colour transmitted by the subtitling equipment. Yellow and White override the colour set by the uplink, and display text in the selected colour.

BackGnd

Description: This is used to set the background on which Imitext subtitles are displayed.

Parameters: Auto, Shadow, Opaque, Semi or None. The following table identifies the affect each setting has on the displayed subtitle text.

BackGnd Option	Description
Auto	Follows (i.e., same as) the uplink subtitling equipment setting.
Shadow	Applies an outline to the right side of each text character. No background box is applied to subtitles, i.e., text is visible directly on top of video.
Opaque	Applies a black box to each text character.
Semi	Applies a semi-transparent box to subtitle text.
None	No shadow or outline is applied to subtitle text.

Setup Menu: Services, Continued

DECODE

Decoder

Description: This selects the service to be decoded by the receiver.

Parameters: Video or Audio1 to Audio4.

Enabled

Description: Enables or disables the selected decoder.

Parameters: Yes or No.

Setup Menu: Common Interface (CI)

Structure

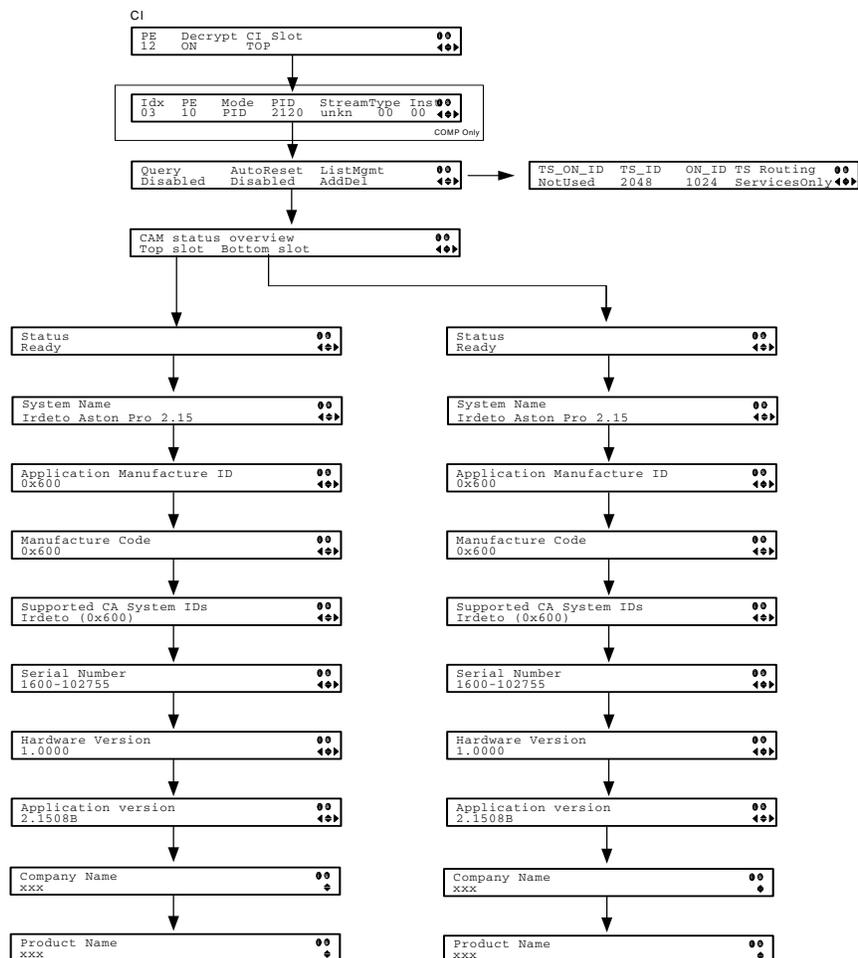
To view the CI menus from the **Common Interface Modules**, page 3-18 Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key four times and the SELECT key to view the CI menu.

The Common Interface (CI) slots are located under the door on the front panel. They allow use of a CAM (Conditional Access Module) Smart Card to decrypt purchased programming.

Note: You must be authorized to view the programming available via the Smart Card from your service provider.

Note: CAMs must be purchased from Cisco. For a list of the supported CAMs, see **Common Interface Modules**, page 3-18.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2. The CI menu has the following structure:



Setup Menu: CI, Continued

CI

PE

Description: This selects the Program Entry to decrypt the associated program.

Parameters: PE1 to PE16

If PE1 is selected (default), Auto is automatically selected in the CI Slot parameter. The software automatically assigns the top or bottom slot that matches the stream. If PE1 is in Auto mode, the Decrypt parameter must be ON (COMP and OFF are invalid).

If you select PE2 to PE16, you can optionally select COMP for the Decrypt parameter. If you select COMP, you can customize the PID and stream type for decryption.

Decrypt

Description: Determines whether to decrypt the program selected for the PE on the selected CAM.

Parameters: ON (default), OFF, COMP (PE2 to PE16 only)

If you are configuring PE2 to PE16, you can select COMP to customize the PID or stream type to decrypt the program.

CI Slot

Description: Indicates the CI slot location of the CAM.

Parameters: Top, Bottom, Auto (PE1 only)

If you are configuring PE1, you can select Auto and the CI slot is automatically assigned to the card that matches the stream (top or bottom).

If you are configuring PE2 to PE16, you can select to decrypt the CAM located in the top or bottom slot.

Setup Menu: CI, Continued

COMP only

For PE1 to PE16, if you selected COMP for the Decrypt parameter, you can customize the PID or stream type to decrypt the program.

To Add a Record, press the **ADV** button, select Insert and define the appropriate parameters.

Note: To delete an existing record, select Delete and confirm your deletion.

There are three different methods in setting a customized record.

If you set by	Parameter Settings
PID	Set Mode to PID and enter PID number.
Stream Type	Set Mode to Stream, select a Stream type (audio, video, subtitle, ttx, or user) and enter Inst (instance) of the stream type. There is an additional configuration if you select user as the Stream type (see below).
Stream Type: User	Set Mode to Stream, Stream type to User, manually enter the stream code in Type , and then the Inst (instance) of the stream type.

Idx

Description: Indicates the customized record number. This is read-only.

Parameters: 1-64 (up to 32 records for each CAM).

PE

Description: Set the Program Entry to decrypt the associated program.

Parameters: 1 to 16.

Mode

Description: Set the Mode to PID if you want to enter the PID number. Set the Mode to Stream to manually customize the stream parameters.

Parameters: PID or Stream.

PID

Description: Select the program PID number. It is only used if the Mode was set to PID.

Parameters: 0 to 8192.

Setup Menu: CI, Continued

Stream

- Description: Set the stream category if the PID value is unknown.
Set to User if you want to manually enter a stream code for the stream type.
- Parameters: Aud (audio), Vid (video), Subtitle (subt), TTX, User.

Type

- Description: If you selected User in the Stream parameter, you can manually enter the stream type value.
- Parameters: 0 to 255.

Inst

- Description: Set the instance of the selected stream.
- Parameters: 1 to 64.

Query

- Description: Set to Enable to query the CAM prior to decryption to ensure that the program can be decrypted.
- Parameters: Enabled or Disabled (default).

Auto Reset

- Description: Set to Enable to automatically reset the card.
- Parameters: Enable or Disabled (default).

List Mgmt

- Description: Set to AddDel (default) to add or delete programs individually in the CAM.
Set to Update All to automatically update and reset all the programs each time you add or modify the programs available via the CAM.
- Parameters: AddDel or Update All.

TS_ON_ID

- Description: Set to Enable if you want to restrict the incoming transport stream.
If the incoming stream does not match the transport stream and original network ID specified (TS_ID and ON_ID), the program will not be decrypted.
- Parameters: Enable or Disable (default).

TS_ID

- Description: Specify the Transport ID.
- Parameters: 0 to 65535

Setup Menu: CI, Continued

ON_ID

Description: Specify the Transport Original Network ID.
Parameters: 0 to 65535.

TS Routing

Description: Select EntireTS to use the CAM to decrypt the entire transport stream, or select ServicesOnly to use the CAM to decrypt only the PIDs being used by the active services.
Parameters: EntireTS or ServicesOnly.

Top/Bottom Slot

CAM Status Overview

Description: View the status of the CAM that is located in the top or bottom slot.
Parameters: Top slot or Bottom slot.

Status

Description: Displays the status of the CAM.
Parameters: Ready or Not Ready.

System Name

Description: Indicates the system name of the CAM.

Application Manufacture ID

Description: Displays the factory loaded application number of the CAM.

Manufacture Code

Description: Indicates the manufacture's code.

Supported CA System IDs

Description: Displays the CA system identification name of the CAM. Some CAMs may support multiple CA system IDs.

Serial Number

Description: Indicates the unique serial number of the CAM.

Hardware Version

Description: Displays the hardware version number of the CAM.

Application Version

Description: Displays the software version number of the CAM.

Company Name

Description: Displays the company name of the CAM.

Product Name

Description: Displays the product name of the CAM.

Setup Menu: Outputs

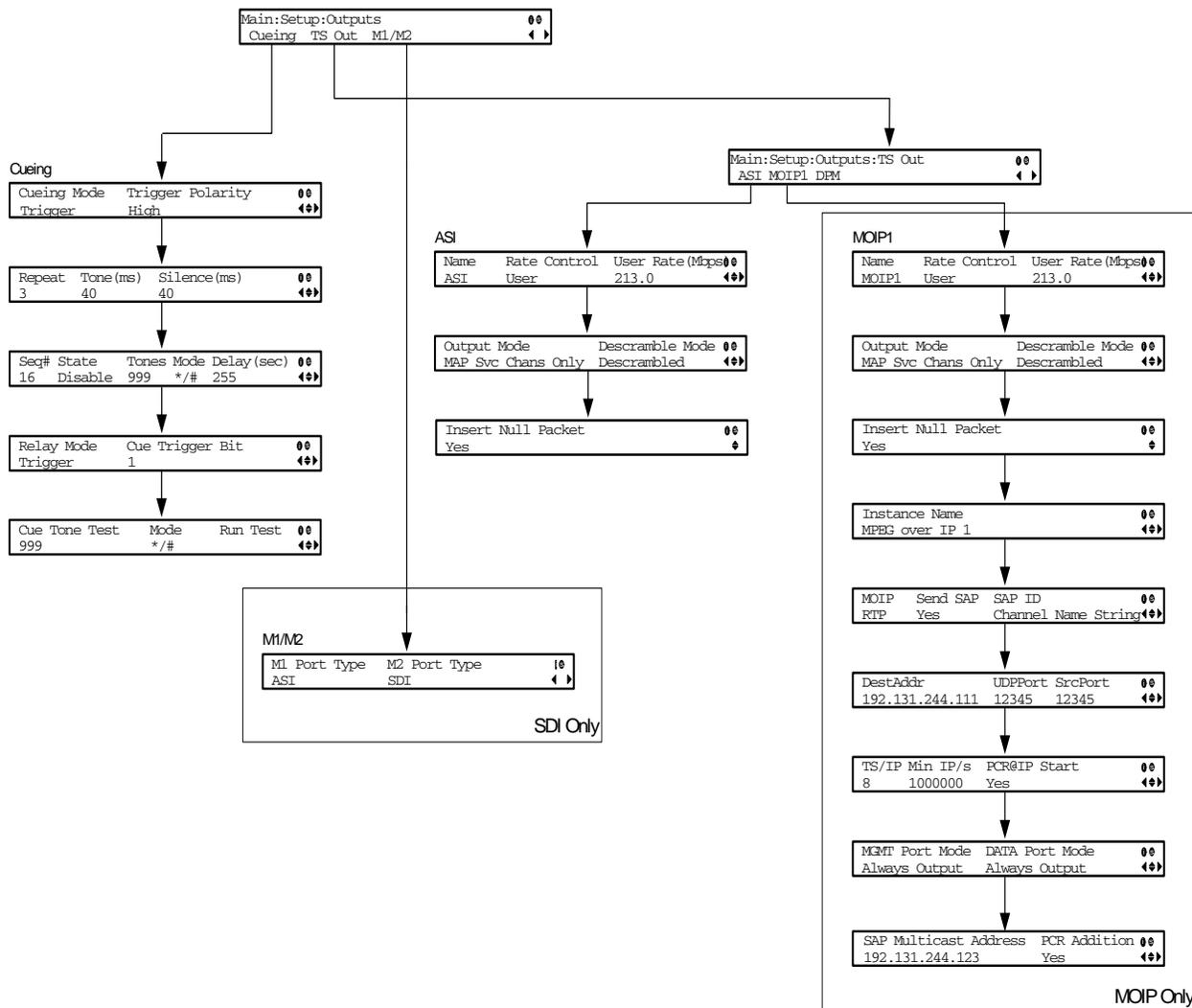
Structure

To view the Outputs menus from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key four times and the SELECT key to view the Outputs menu.

The Outputs menu allows you to set up the rear panel control relays for alarms, cue tones and cue triggers, and the transport stream outputs, Digital Program Mapping (DPM) and transcoding.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The Outputs menu has the following structure:



Setup Menu: Outputs, Continued

CUEING

Cueing Mode

Description: This sets whether the Cueing Mode is Cue Trigger or Cue Tone.

Parameters: Trigger, Tone. Cue tones are standard Dual-Tone Multi-Frequency (DTMF) tones. The tones are generated at the Cue Tone/Relay output on the rear panel of the receiver.

Cue trigger refers to open-collector pins which can be generated at the Cue Tone/Relay output on the rear panel of the receiver.

Trigger Polarity

Description: This sets the Trigger Polarity.

Parameters: High, Low. When High, an active signal sent by the uplink results in a floating or open collector. An inactive signal results in a GND signal. When Low, the reverse of High is true.

Repeat

Description: This parameter specifies how many consecutive tone sequences are generated.

Parameters: 1, 2, 3. The default is 3. The other values are provided when a scenario demands repetition to ensure that the ad-insertion equipment receives the signal.

Tone (ms)

Description: This is the duration of the tone in milliseconds.

Parameters: 0 to 80. The default is 40.

Silence (ms)

Description: This is the silence duration between the tones in milliseconds.

Parameters: 0 to 80. The default is 40.

Seq#

Description: This is the tone sequence to use. The receiver supports up to 16 tone sequences.

Parameters: Press Select and then use the up/down arrows to move through all 16 available sequences, pressing Select again to choose the one you want. Any edits you make to State, Tones, Mode and Delay will be applied to that Seq#.

State

Description: This sets the state.

Parameters: Enabled, Disabled. When disabled, no cue tone is output.

Setup Menu: Outputs, Continued

Tones

Description: These are the cue tone digits used in your network.
Parameters: 1 to 999.

Mode

Description: This option specifies what to transmit in the sequence.
Parameters: * for Start Tone, # for End Tone, and */# for transmitting the Start Tone and then the End Tone after waiting the specified delay time in the option below.

Delay (sec)

Description: This is the delay, in seconds, that is sent when */# is used in the Mode option above.
Parameters: 1 to 255. The default is 30.

Relay Mode

Description: This relay can be programmed to respond to an Alarm state, Warning state, or the state of one of the eight cue trigger pins. The response is generated at the Cue Tone/Relay output on the rear panel of the receiver.

Parameters: Alarm, Trigger.

The following table shows what the possible field settings are and their relationship to the receiver output.

Relay Mode	Condition	Relay Contact	
		NC - C	C - NO
Alarm	Unit Power Off	Open	Close
	Alarm State	Open	Close
	No Alarm	Close	Open
Trigger	Active (selected in PNC)	Close	Open
	Inactive	Open	Close

Cue Trigger Bit

Description: Select one of the eight Cue Trigger Bits corresponding to the Cue Trigger port pins.

Parameters: 1 to 8.

Setup Menu: Outputs, Continued

Cue Tone Test

Description: Specify the cue tone digits you want to test locally.
Parameters: 000 to 999.

Mode

Description: Specify what to test in sequence.
Parameters: * for Start Tone and # for End Tone.

Run Test

Description: Verifies the cue tone test according to the Cue Tone Test and Mode set above.
Parameters: Yes or No.

M1/M2

M1 Port Type

Description: This option allows the operator to set the output format for the M1 port.
Parameters: ASI, SDI.

M2 Port Type

Description: This option allows the operator to set the output format for the M2 port.
Parameters: ASI, SDI.

Setup Menu: Outputs, Continued

TS OUT

ASI

Name

Description: This is the name assigned to the transport output for ease of reference.

Parameters: 20-character string.

Rate Control

Description: This is the DPM output rate control (in Mbps) when using an RF input source.

Parameters: Auto, User. The table below describes the affect each of the settings has on the output bit rate.

Rate Control	Description
Auto	The output rate follows that set by the uplink. The output rate will be the same as the input rate (including all null packets). This means the output bit rate is determined automatically based on the input source symbol rate and FEC value.
User	The output rate is specified as the Output Rate parameter. It is determined by the user setting regardless of the input source.

SFN Units only

Rate Control	Description
Auto	Sets the output rate at 32 Mbps for DVB-T transports without null packet stuffing. If the incoming rate is lower than 32 Mbps, the receiver will burst up to 32 Mbps, but will average to the incoming bit rate.
User	The output rate is specified as the Output Rate parameter with null packet stuffing disabled. The output rate must be set high enough to pass the entire transport or the output will be corrupted. If the incoming rate is lower than the set output rate, the receiver will burst up to the output rate, but will average to the incoming bit rate.

Setup Menu: Outputs, Continued

User Rate (Mbps)

Description: This parameter controls the output rate. It is only used if Rate Control is set to User. This setting is used when the signal source is RF or ASI. Note that output data may be lost when the user-selected bit rate is set to a value that is less than the actual signal bit rate. This allows you to set the output bit rate to a value expected by equipment connected to the ASI output.

Parameters: 0 to 213 Mbps.

Output Mode

Description: This selects the DPM output mode.

Parameters: No Output, Passthrough, Service Chans Only, MAP Passthrough, MAP Svc Chans Only or Full DPM Control.

Output Mode	Description
No Output	No ASI output will be generated.
Passthrough	The output will be identical to the input. The output channel will not be modified. PE/PID remapping options, PSI regeneration and User Rate are not supported in this mode.
Service Chans Only	Only service channels will be output.
MAP Passthrough	The output will be identical to the input, except that it will be generated using the DPM and PID mapping settings.
MAP Svc Chans Only	Only service channels will be output according to the DPM and PID mapping settings.
Full DPM Control	The output will be generated according to the DPM settings on the DPM: ASI or MOIP1 menus. This is a manual control setting.

Setup Menu: Outputs, Continued

Descramble Mode

Description: This parameter selects whether the receiver should scramble the output even if it is authorized to receive the channel.

Parameters: Scrambled, Descrambled. Default is Descrambled.

Descramble Mode	Description
Scrambled	Scrambles the output channel even if the PE is authorized and can descramble the channel.
Descrambled	Descrambles the output channel, and passes in-the-clear channels.

Insert Null Packet

Description: This parameter selects whether to insert null packets in the output stream.

Parameters: Yes, No.

MOIP1

Name

Description: This is the name assigned to the transport output for ease of reference.

Parameters: 20-character string.

Setup Menu: Outputs, Continued

Rate Control

Description: This is the DPM output rate control (in Mbps) when using an RF input source.

Parameters: Auto, User. The table below describes the effect each of the settings has on the output bit rate.

Rate Control	Description
Auto	The output rate follows that set by the uplink. The output rate will be the same as the input rate (including all null packets). This means the output bit rate is determined automatically based on the input source symbol rate and FEC value.
User	The output rate is specified as the Output Rate parameter. It is determined by the user setting regardless of the input source.

User Rate (Mbps)

Description: This parameter controls the output rate. It is only used if Rate Control is set to User. This setting is used when the signal source is RF or ASI. Note that output data may be lost when the user-selected bit rate is set to a value that is less than the actual signal bit rate. This allows you to set the output bit rate to a value expected by equipment connected to the ASI output.

Parameters: 0 to 999.99999 Mbps.

Setup Menu: Outputs, Continued

Output Mode

Description: This selects the DPM output mode.

Parameters: No Output, Passthrough, Service Chans Only, MAP Passthrough, MAP Svc Chans Only or Full DPM Control.

Output Mode	Description
No Output	No MPEGoIP output will be generated.
Passthrough	The output will be identical to the input. The output channel will not be modified. PE/PID remapping options, PSI regeneration and User Rate are not supported in this mode.
Service Chans Only	Only service channels will be output.
MAP Passthrough	The output will be identical to the input, except that it will be generated using the DPM and PID mapping settings.
MAP Svc Chans Only	Only service channels will be output according to the DPM and PID mapping settings.
Full DPM Control	The output will be generated according to the DPM setting.

Descramble Mode

Description: This parameter selects whether the receiver should scramble the output even if it is authorized to receive the channel.

Parameters: Scrambled, Descrambled. Default is Descrambled.

Descramble Mode	Description
Scrambled	Scrambles the output channel even if the PE is authorized and can descramble the channel.
Descrambled	Descrambles the output channel, and passes in-the-clear channels.

Setup Menu: Outputs, Continued

Insert Null Packet

Description: This parameter selects whether to insert null packets in the output stream.

Parameters: Yes or No.

Instance Name

Description: This is the DPM output instance name.

Parameters: Up to 31 characters.

MOIP

Description: Selects the transport protocol to be used for the output stream.

Parameters: RTP or UDP.

Send SAP

Description: This selects whether to send Session Announcement Protocol messages.

Parameters: Yes or No.

SAP ID

Description: This is the SAP identifier (ID)/string.

Parameters: Up to 49 characters.

DestAddr

Description: Enter the multicast destination IP address.

Parameters: 0 to 255 for each of the four fields in the format ###.###.###.###.
For example, 225.1.1.1.

UDPPort

Description: This selects the destination port number.

Parameters: 1 to 65535.

Note: If you selected RTP for MOIP, you must select an even destination port number.

SrcPort

Description: This selects the source UDP port number.

Parameters: 0 to 65535.

Setup Menu: Outputs, Continued

TS/IP

Description: This selects the maximum number of transport packets per IP packet.

Parameters: 1 to 7.

Min IP/s

Description: This selects the minimum number of IP packets per second.

Parameters: 0, 2 to 1000.

PCR@IP Start

Description: This selects whether to always transmit a new IP packet when a new Program Clock Reference (PCR) arrives.

Parameters: Yes or No.

MGMT Port Mode, DATA Port Mode

Description: This selects the Management and Data MPEGoIP modes.

Note: If No Output was selected for MOIP1 Output Mode, updates to the port modes will have no affect.

Parameters: No Output or Always Output.

MGMT Mode DATA Mode	Description
No Output	Disables the MPEGoIP interface.
Always Output	Always outputs data on the port. Note: You cannot select Always Output for both ports simultaneously.

SAP Multicast Address

Description: This is the SAP destination IP address.

Parameters: 0 to 255 for each of the four fields in the format ###.###.###.###.

PCR Addition

Description: This selects whether to add a PCR to the output stream.

Parameters: Yes or No.

Setup Menu: Outputs: TS Out: DPM

Structure

To view the DPM menu from the TS Out menu, press the RIGHT arrow key twice. The DPM menu provides access to functionality associated with Global and ASI and MOIP1 outputs.

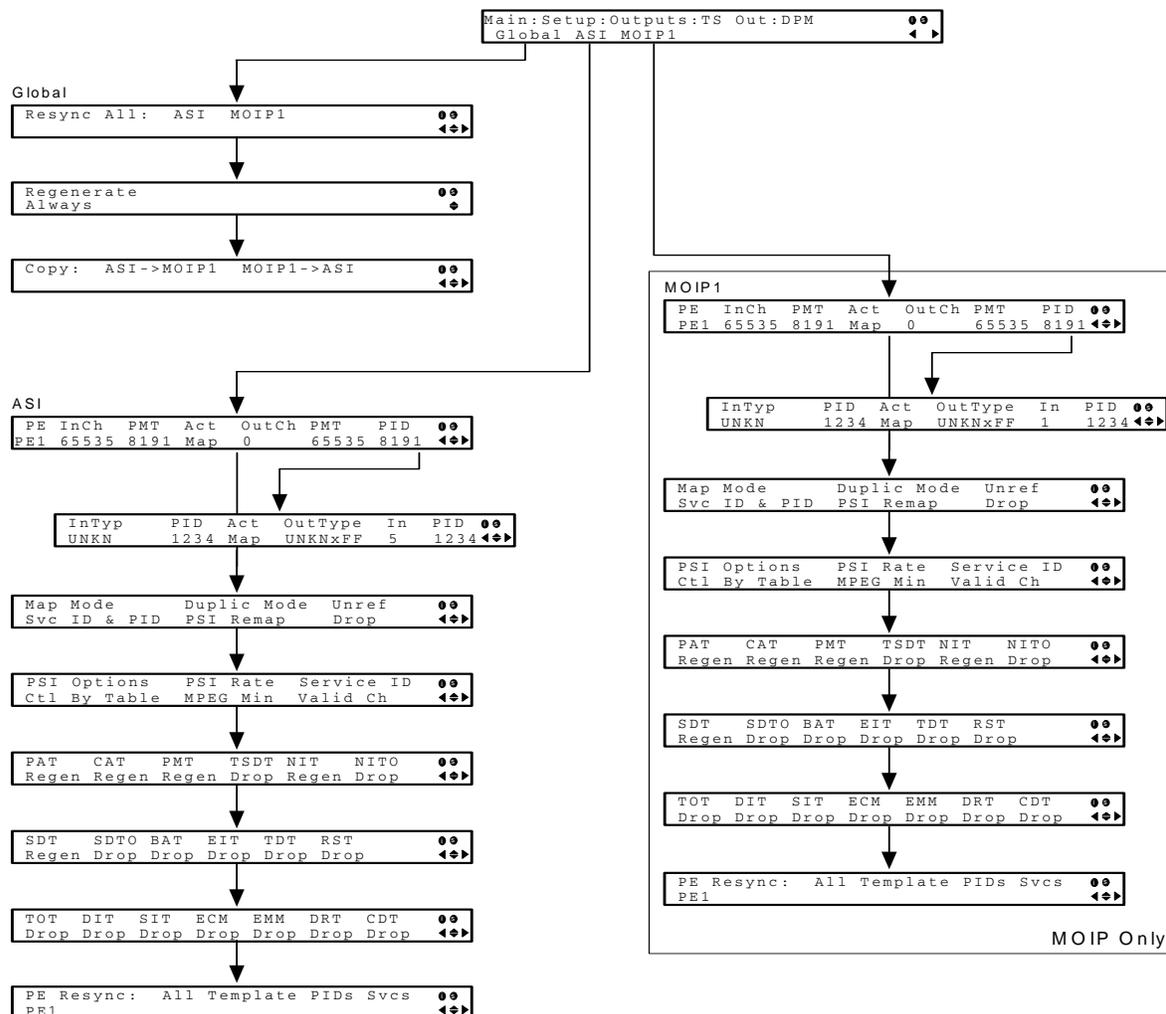
The DPM menu allows you to groom functionality on a program basis where individual service PID modifications are provided on a limited scale.

Use the digital program mapping features to:

- configure the transport output bit rate
- configure the output mode for a program entry
- configure the service and PID output settings in a program entry

Note: Any changes made to the ASI and MOIP1 DPM values will automatically change the TS Output mode for ASI and MOIP to Full DPM Control.

The DPM menu has the following structure:



Setup Menu: Outputs: TS Out: DPM

GLOBAL

Resync All:

Description: This resynchronizes all DPM output with the PMT data for all program entries.

Parameters: ASI or MOIP1.

Regenerate

Description: This selects whether to regenerate the PSI tables.

Parameters: Always or As Needed (only if the content has changed).

Copy:

Description: This copies all DPM data from either the ASI output to the MOIP1 output (MPEG over IP) or from the MOIP1 output to the ASI output depending on your selection.

Parameters: ASI->MOIP1 or MOIP1->ASI.

ASI/MOIP1

PE

Description: This selects the DPM Program Entry to view/modify.

Parameters: 1 to 16.

InCh

Description: Displays the input channel of the current PE.

Parameters: 1 to 65535.

PMT

Description: This is the input PMT. This value is only to map to the output PMT if the PE Action is set to MAP.

Parameters: 1 to 8192.

Act

Description: Selects the DPM program action for the PE.

Parameters: Pass, Map or Drop. Default is Pass.

OutCh

Description: This selects the DPM output channel you want to map to the input channel (InCh). This value is only used if the PE Action is set to MAP.

Parameters: 0 to 65535.

Setup Menu: Outputs: TS Out: DPM, Continued

PMT

Description: This is the DPM output PMT/service ID, which is the same as the input PMT if it is present. This value is only used if the PE Action is set to MAP

Parameters: 0 to 65535.

PID (Press Select to view this level)

InTyp

Description: This indicates the input program stream category/service type. This value is read-only.

PID

Description: This indicates the input program PID. This value is read-only. It is only used if the PID Action is set to Map.

Parameters: 1 to 8190.

Act

Description: This selects the DPM action for the PID associated with the PE.

Parameters: Pass, Drop or Map.

OutType

Description: This selects the output program stream category/service type. This value is only used if the PID Action is set to MAP.

Parameters: UNKN, CDT, LSDT, DATA, TTX, MPE, DPI, VBI, SUBT, AUD, VID, PCR or INVL.

In

Description: This selects the output stream instance.

Parameters: 1 to 64.

PID

Description: This selects the output program PID.

Parameters: 1 to 8192.

Setup Menu: Outputs: TS Out: DPM, Continued

Map Mode

Description: This parameter selects the DPM map mode.

Parameters: Svc ID, Svc ID & PID.

Map Mode	Description
Svc ID	The elementary PIDs are not changed. Channels are remapped by changing their PSI references. When this mode is selected, PE detailed PID mapping cannot be edited.
Svc ID & PID	Channels and the elementary service PIDs can be mapped.

Duplic Mode

Description: This selects the method of DPM program duplication, which modifies the PSI to duplicate a program and its content. This parameter is only used if Map Mode is set to Svc ID & PID.

Parameters: PSI Remap or Pkt Copy. Pkt Copy is recommended for most applications.

Duplic Mode	Description
PSI Remap	Every input PID can be mapped to one output PID. If PID mapping conflicts exist, DPM will use the Precedence Rule to decide which output PID to use. All PMTs using the input PID will be updated to reference the output PID specified by the winner.
Pkt Copy	An input PID can be mapped to multiple output PIDs. The PID will be duplicated as many times as needed (up to a certain hardware limitation).

Setup Menu: Outputs: TS Out: DPM, Continued

Unref

Description: This selects the DPM action to use for unreferenced content. Unreferenced content is the remainder of the transport that is not filtered by the program entries.

Parameters: Drop All or Pass All. Default is Drop All.

Output	Unref
ASI	Pass, Drop
MOIP1	Pass, Drop

PSI Options

Description: This option allows the operator to specify which PSI tables to include in the program/output stream.

Parameters: Pass All, Drop All or Control by Table.

PSI Options	Description
Pass All	Transmits the incoming PSI Tables as is; does not modify the content and rate.
Drop All	Does not transmit any PSI Tables.
Ctl By Table	The operator can enter the Tables menu to select the output mode for each table. The default table selections will be all pass, and only with CDT dropped.

Setup Menu: Outputs: TS Out: DPM, Continued

PSI Rate

Description: This selects the DPM regeneration rate. This applies the PowerVu rates (consistent with the uplink). This parameter is only used if Remapping Control is set None.

Parameters: Auto, MPEG Min or SA Std.

PSI Rate	Description
Auto	Matches the generated PSI tables' output rate as the incoming rate.
MPEG Min	Transmits the generated PSI tables on the longest intervals that are allowed by MPEG standard.
SA Std	Transmits the generated PSI tables based on PowerVu standard intervals.

Service ID

Description: This parameter specifies whether the receiver should always generate PSI tables for the Mapped PE even if the selected input channel is not available, or for only valid service channels/IDs.

Parameters: Valid Ch, All Ch.

Svc ID	Description
Valid Ch	Only transmits the PSI tables for the mapped program if the program exists on the input stream.
All Ch	Transmits the PSI tables for the mapped program even if the program does not exist in the input stream. All Ch is only valid if the PAT, NIT, SDT and PMT are set to Regenerate.

Setup Menu: Outputs: TS Out: DPM, Continued

PAT, CAT, PMT, TSDT, NIT, NITO,

SDT, SDTO, BAT, EIT, TDT, RST,

TOT, DIT, SIT, ECM, EMM, DRT, CDT

Description: Selects the tables which will be passed, dropped, regenerated, or passed with rate control (PwRC) from the output.

Setting	Mode Options	Description	Default
PAT	Pass, Drop, Regen	Program Allocation Table	Pass
CAT	Pass, Drop, Regen	Conditional Access Table	Pass
PMT	Pass, Drop, Regen	Program Map Table	Pass
TSDT	Pass, Drop	Transport Section Description Table	Pass
NIT	Pass, Drop, Regen, PwRC	Network Information Table	Pass
NITO	Pass, Drop, PwRC	Network Information Table - Other	Pass
SDT	Pass, Drop, Regen, PwRC	Service Description Table	Pass
SDTO	Pass, Drop, PwRC	Service Description Table - Other	Pass
BAT	Pass, Drop, PwRC	Bouquet Allocation Table	Pass
EIT	Pass, Drop	Event Information Table	Pass
TDT	Pass, Drop	Time-Date Table	Pass
RST	Pass, Drop	Running Status Table	Pass
TOT	Pass, Drop	Time Offset Table	Pass
DIT	Pass, Drop	Discontinuity Information Table	Pass
SIT	Pass, Drop	Selection Information Table	Pass
ECM	Pass, Drop	Encrypted Control Message	Pass

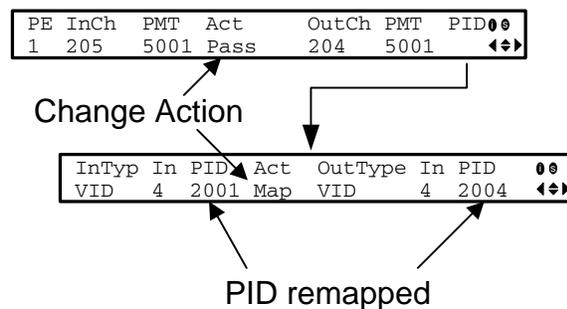
Setting	Mode Options	Description	Default
EMM	Pass, Drop	Entitlement Management Message	Pass
DRT	Pass, Drop	Disaster Recovery Table	Pass
CDT	Pass, Drop	Code Download Table	Pass

Setup Menu: Outputs: TS Out: DPM, Continued

Setting Up Digital Program Mapping (DPM)

To set up DPM:

1. Verify that you are receiving a valid signal and that you have set up the channels that you want to pass, drop or map.
2. Go to the Setup: Outputs, TS Out: DPM: Global menu and select **Resync All** for the selected output, ASI or MOIP1. This copies the input services PIDs to the remapped output service PIDs.
3. Go to Setup: Outputs: TS Out: DPM: ASI, and select the PE containing the channel you want to configure.
4. Set the **Act** for the selected PMT to either **Pass**, **Drop**, or **Map** depending on the action desired.
5. Use the RIGHT arrow key to move to the right and select PID to display the detailed menu level.
6. Configure the input to output channel mapping. Video and PCR can be output on the same PID or different PIDs. If output on the same PID, they will appear identical to the input. The example below shows the PMT passed, but the services PIDs remapped.



Note: If the parameters cannot be saved, the problem may be that the incorrect Map Mode has been selected. Ensure that Svc ID & PID is selected when remapping PIDs, otherwise a message such as “Bad configuration data” will be displayed and you will need to change the parameters to obtain the correct output.

7. Go to Setup: Outputs, TS Out: ASI, and set the **Output Mode** to **Full DPM Control**. Also, if necessary set the Descramble Mode according to whether the program is to be Scrambled or Descrambled for downstream viewing/monitoring.

Setup Menu: Outputs: TS Out: DPM, Continued

8. On the same menu, set the following parameters:

Parameter	Description
Map Mode	Svc ID & PID
Duplic Mode	Pkt Copy
Unref	Drop
PSI Options	Ctl By Table
PSI Rate	Any
Svc ID	Any

9. Set the table parameters as follows:

Parameter	Description
PAT	Regen
CAT	Regen
PMT	Regen
TSDT	Drop
NIT	Regen or Drop
NITO	Drop
SDT	Regen
SDTO	Drop
BAT	Drop
EIT	Drop
TDT	Pass
RST	Pass
TOT	Pass
DIT	Pass

Setup Menu: Outputs: TS Out: DPM, Continued

Parameter	Description
SIT	Pass
ECM	Drop
EMM	Drop
DRT	Drop
CDT	Drop

10. Press MENU three times to exit the TS Out menu and save the data. If the changes cannot be saved/made, a message will be displayed indicating “Bad configuration data”. The following options are available: Abandon, Exit or Return. Select Return to re-enter the parameter.

Note: When remapping an input program channel to an output channel, ensure that the PIDs are mapped to different PIDs to avoid PID collisions.

PE Resync: All, Template, PIDs, Svcs

Description: Each PE output can be synchronized to its input according to one of four output modes.

Parameters: Services only (Svcs), PIDS only (PIDs), using a Template or All (Services and PIDS).

Setup Menu: Outputs: TS Out: DPM, Continued

Synchronizing Output Services

To synchronize the output to the input Services Only:

This operation synchronizes the inputs to the outputs according to the service assignments only. This is useful when you already have PID assignments set for the services but want to ensure that the services are mapped correctly.

1. On the DPM menu, map the output services as desired.
2. Select PE Resync: Svcs. The receiver will synchronize the PE output according to the available input services only, and ignore the input to output service PID mapping.

To synchronize the output to the input PIDs only:

This operation synchronizes the inputs to the outputs according to the PID assignments only. This is useful when you already have the services set up but want to synchronize to the incoming PIDs.

1. On the DPM menu, map the output services as desired.
2. Select PE Resync: PIDs. The receiver will synchronize the PE output according to the input PIDs only, and ignore the service assignment categories/names.

To synchronize the output to All (Services and PIDs):

This operation synchronizes the inputs to the outputs of the current PMT according to the service assignments and then the PID assignments. This is similar to a sample and hold function.

1. On the Detailed Program Mapping Active menu, map the outputs services as desired.
2. Select PE Resync: All. The receiver will synchronize the PE output according to the services and then the PIDs assigned to each service.

To synchronize the output to a Template:

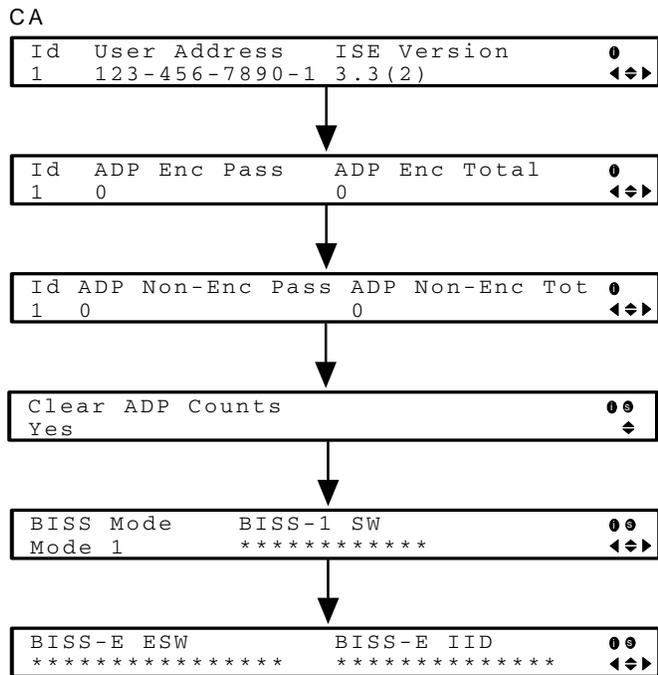
Using a template allows you to preset the input to output mapping of a PE according to the preset template. This is helpful in preconfiguring any number of PEs for future use.

Setup Menu: CA

CA Menu

To view the CA menu from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key six times and the SELECT key to view the CA menu.

The CA menu provides information about the ISE, the status of the ADP transmission, and allows you to set the BISS mode and session words available from your service provider. The CA menu has the following structure:



CA

Id

Description: This is the ISE number.

Parameters: 1.

User Address

Description: Indicates the ISE User Address.

Parameters: 14 hexadecimal characters.

ISE Version

Description: Indicates the ISE version number.

Parameters: 7 characters.

Setup Menu: CA, Continued

ADP Enc Pass

Description: Indicates the current Encrypted Addressed Data Packet Count. This count indicates the amount of transmitted ADP information which is being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.

ADP Enc Total

Description: Indicates the total number of current Encrypted Addressed Data Packet count. This count indicates the amount of transmitted ADP information being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.

ADP Non-Enc Pass

Description: Indicates the current Non-Encrypted Addressed Data Packet count. This count indicates the amount of transmitted ADP information being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.

ADP Non- Enc Total

Description: Indicates the current Non-Encrypted Addressed Data Packet Count. This count indicates the amount of transmitted ADP information being accurately received and processed. Ideally, the ADP Non-Enc Pass and ADP Non-Enc Total numbers should be identical.

Clear ADP Counts

Description: To help the operator make accurate analyses of the receiver's functionality, the ADP Enc Pass, ADP Enc Total, ADP Non- Enc Pass and ADP Non-Enc Total numbers can be cleared by using this feature. These same values are also reset whenever the receiver is turned on, reset or power-cycled.

Parameters: Yes, No.

BISS Mode

Description: This is used to set the Basic Interoperable Scrambling System (BISS) mode for the receiver. When using BISS mode, all the services on a channel associated with PE1 through PE16 are decrypted if they are signalled as BISS CA-controlled by the SDT and PMT descriptors. Only channels configured to a PE and identified as BISS CA-controlled will be decrypted. All other services will be passed without decryption.

Parameters: Mode 1 or Mode E.

Setup Menu: CA, Continued

BISS-1 SW

Description: This used to set the BISS Mode 1, odd and even session words.

Parameters: You can enter the fixed 12-character Session Word (SW). Once entered it cannot be viewed, only displayed as asterisks (*).

Contact your program provider for the respective session word and/or injected ID.

BISS-E ESW, BISS-E IID

Description: This used to set the BISS Mode E, odd and even session words.

Parameters: You can enter the 16-character Encrypted Session Word (ESW) and the 14-character Injected ID. Once entered, neither of these values can be viewed, only displayed as asterisks.

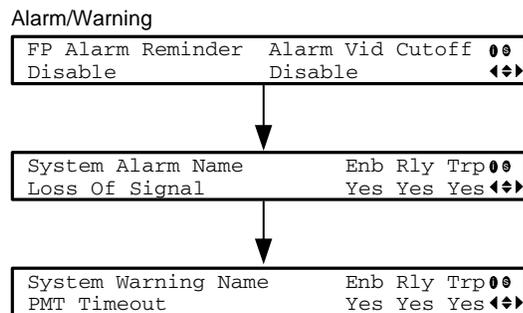
Contact your program provider for the respective session word and/or injected ID.

Setup Menu: Alarm/Warning

Structure

To view the Alarm/Warning menu from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key six times and the SELECT key to view the Alarm/Warning menu.

The Alarm/Warning menu allows you to browse the active alarms and warnings, and set whether the output will be disabled in the event of an alarm. This menu has the following structure:



ALARM/WARNING

FP Alarm Reminder

Description: When this function is enabled, the highest priority alarm flashes on the LCD display for a two-second interval every 10 seconds. The alarm will continue to flash periodically until it is either cleared or the function is disabled.

Parameters: Enable or Disable.

Alarm Vid Cutoff

Description: Sets whether the video output is cut off if any enabled alarm is active on the receiver. When video is cut off, there will be no horizontal or vertical synchronization on the output. This is useful for downstream redundancy switching by detecting a loss of video signal.

Note: This function also exists under Setup: Services: Video.

Parameters: Enable or Disable. The default is Disable.

Setup Menu: Alarm/Warning, Continued

System Alarm Name

Description: Displays a list of the alarm/fault messages. You can scroll through the list using the UP and DOWN Arrow keys.

Parameters: Enable - Yes, No. When set to Yes, the alarm message will be reported. When set to No, the fault won't be reported and the alarm relays will not be triggered or change state.

Note: Enable must be set to Yes for the Relay and Trap settings to be functional.

Rly - Yes, No. When set to Yes, the rear panel alarm relay will be triggered to enable external equipment connected to the alarm port.

Trp - Yes, No. When set to Yes, the SNMP trap message will be sent to the trap destination; otherwise the fault message will be ignored.

"No*" indicates the trap or relay is enabled, but Enable is set to No, which will prevent relay or trap operation.

System Warning Name

Description: Displays a list of the warning messages. You can scroll through the list using the UP and DOWN Arrow keys.

Parameters: Enable - Yes, No. When set to Yes, the warning message will be reported. When set to No, the fault won't be reported.

Note: Enable must be set to Yes for Relay and Trap messages reporting to be functional.

Rly - Yes, No. When set to Yes, the rear panel alarm relay will be triggered to enable external equipment connected to the alarm port.

Trp - Yes, No. When set to Yes, the SNMP trap message will be sent to the trap destination; otherwise the warning message will be ignored.

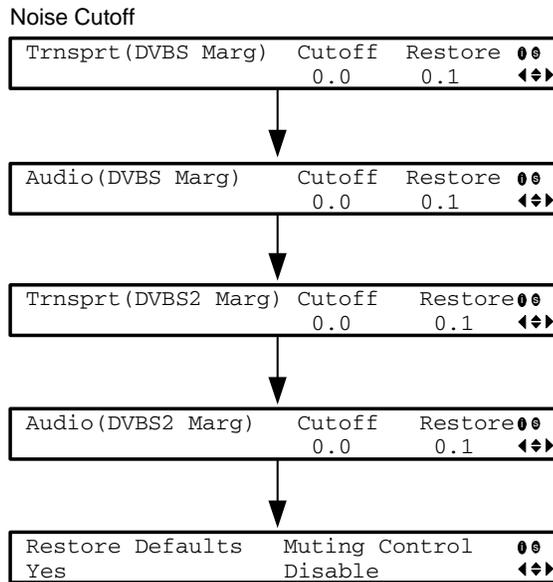
"No" indicates the trap or relay is enabled, but Enable is set to No, which will prevent relay or trap operation.

Setup Menu: Noise Cutoffs

Structure

To view the Noise Cutoffs menu from the Main menu, press the RIGHT Arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key eight times and the SELECT key to view the Noise Cutoffs menu.

The Noise Cutoffs menu allows you to set the muting thresholds for both audio and video in the event of a noisy signal. This menu has the following structure:



NOISE CUTOFF

Trnsprt (DVBS Marg)/Trnsprt (DVBS2 Marg)

Description: This sets how the receiver reacts when the signal quality is severely degraded when using DVB-S or DVB-S2 modulation. This allows you to set the transport C/N margin values for the receiver. The receiver uses these noise values/settings as limits during normal operation to determine whether to mute the transport in the event of a noisy signal, poor signal or no signal condition.

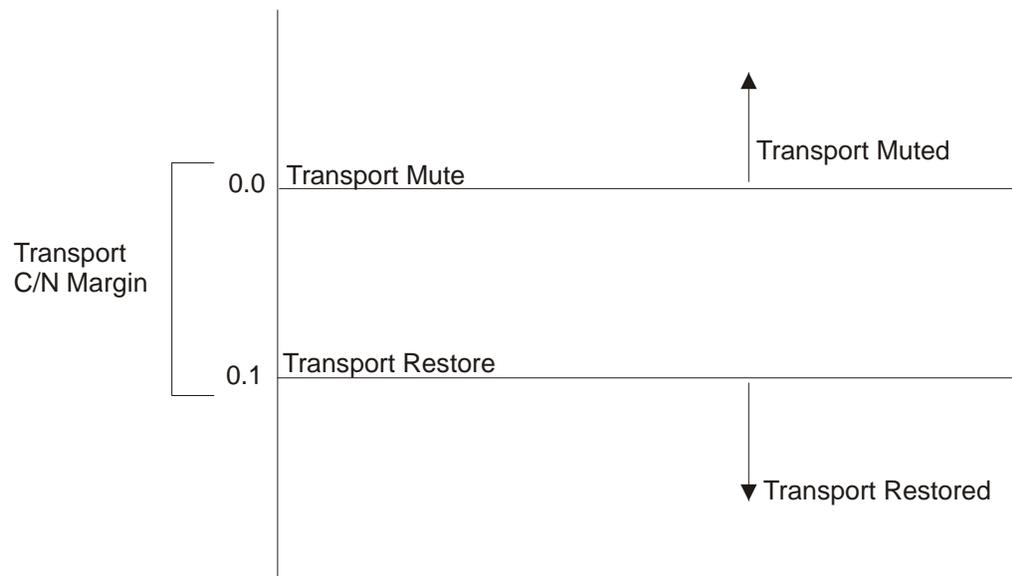
Parameters: Cutoff - This is the lower limit for the transport C/N margin setting. The transport will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Transport Cutoff is 0.0.

Setup Menu: Noise Cutoffs, Continued

Restore - This is the upper limit for the transport C/N margin setting. The transport will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Transport Restore is 0.1.

Note: Muting Control must be set to Enable for these settings to be active.

Transport Default C/N Margin Relationship



Audio (DVBS Marg)/Audio (DVBS2 Marg)

Description: This is used to set the Audio channel Cutoff and Restore C/N margin values (limits) to mute audio when the signal quality is severely degraded when using DVB-S or DVB-S2 modulation.

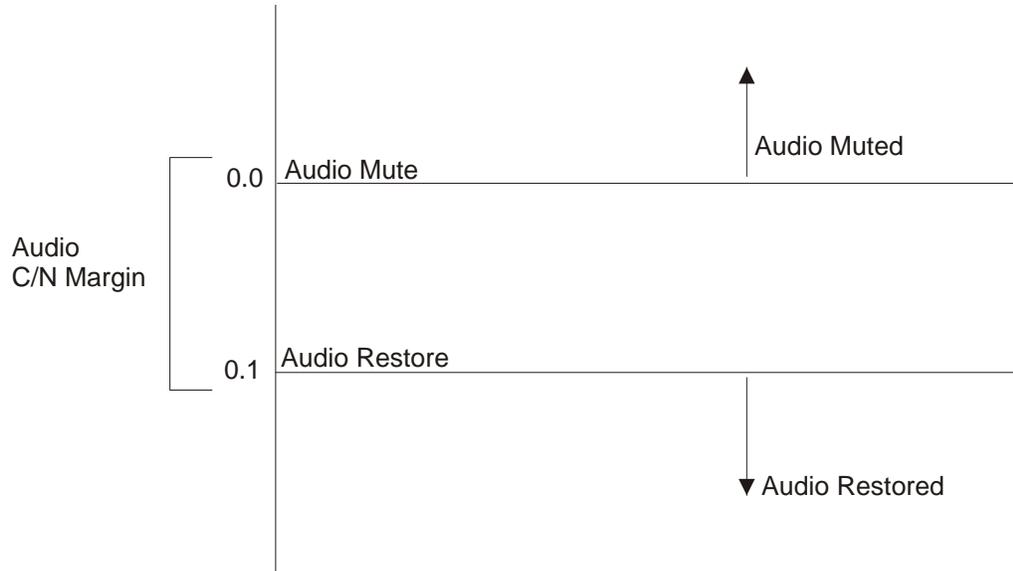
Parameters: Cutoff - This is the lower limit for the audio C/N margin setting. Audio will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Audio Cutoff is 0.0.

Restore - This is the upper limit for the audio C/N margin setting. Audio will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Audio Restore is 0.1.

Setup Menu: Noise Cutoffs, Continued

Note: Muting Control must be set to Enable for these settings to be active.

Audio Default C/N Margin Relationship



Restore Defaults

Description: This restores the RF options to their factory set (default) values.

Parameters: Yes, No.

Muting Control

Description: This allows you to mute the transport stream and audio in the event of an unstable signal, poor signal or no signal condition.

Parameters: Enable, Disable. The default is Enable.

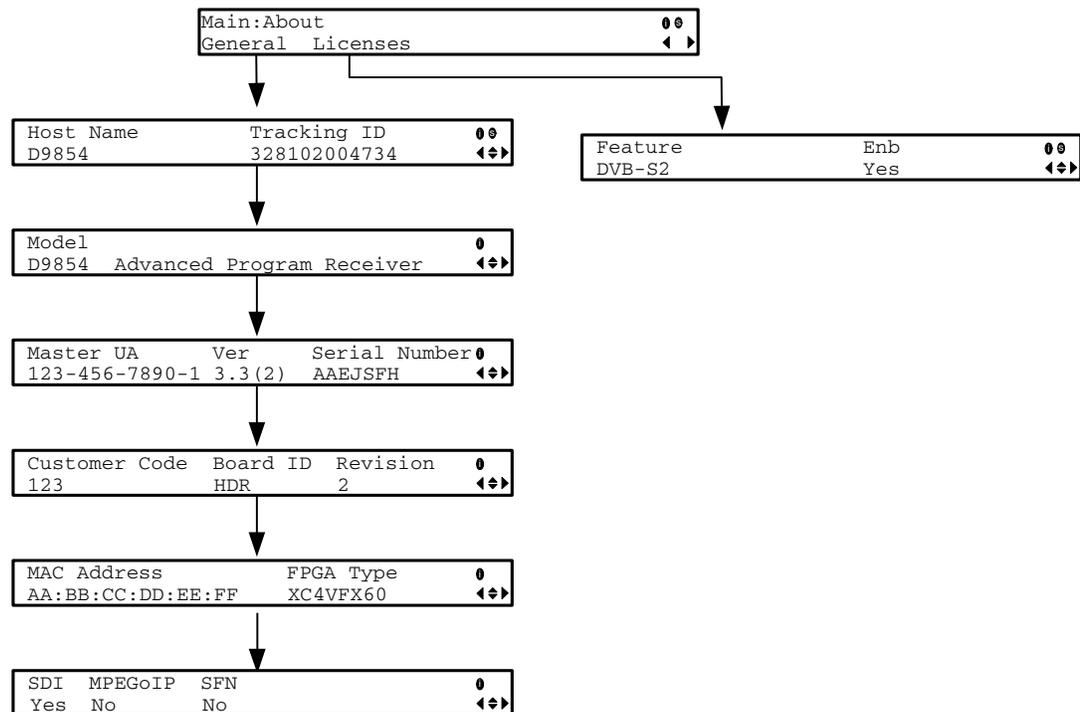
About Menu

Structure

To view the About menu from the Main menu press the RIGHT arrow key three times and then the SELECT key.

The About menu provides basic hardware information that is useful when requesting customer support from Cisco.

Each parameter is described below. The About menu has the following structure:



ABOUT

GENERAL

Host Name

Description: Select this option to change the Host ID. It is a user configurable name that appears on the Web Interface title to identify the receiver.

Tracking ID

Description: This is the unique Tracking ID number that identifies the product version.

Model

Description: Indicates the model number of the receiver.

Master UA

Description: Indicates the Master User Address (UA), which is required to request program authorization from the uplink.

About Menu, Continued

Ver

Description: Indicates the unique version number of the receiver.

Serial Number

Description: Indicates the unique serial number of the receiver.

Customer Code

Description: Indicates the unique Customer Code assigned to an organization by Cisco.

Board ID

Description: Indicates the board type.

Revision

Description: Indicates the board revision number.

MAC Address

Description: Indicates the MAC address of the Ethernet port.

FPGA Type

Description: Indicates the FPGA type/number information.

SDI

Description: Indicates whether the receiver is equipped with an SDI output.

MPEGoIP

Description: Indicates whether the receiver is equipped with an MPEG over IP output.

SFN

Description: Indicates whether the receiver is configured as a SFN (Single Frequency Network) unit.

LICENSES

Feature

Description: Displays a list of software licenses for the D9854 Advanced Program Receiver.

Parameters: HD Decode, H.264 Decode, DVB-S2, MPEGoIP Out.

Enb

Description: Indicates whether the selected software license is enabled or disabled.

Parameters: Yes or No.

Note: All software licenses are enabled for this release (temporarily). Any of these required licenses will need to be purchased from Cisco in subsequent software releases.

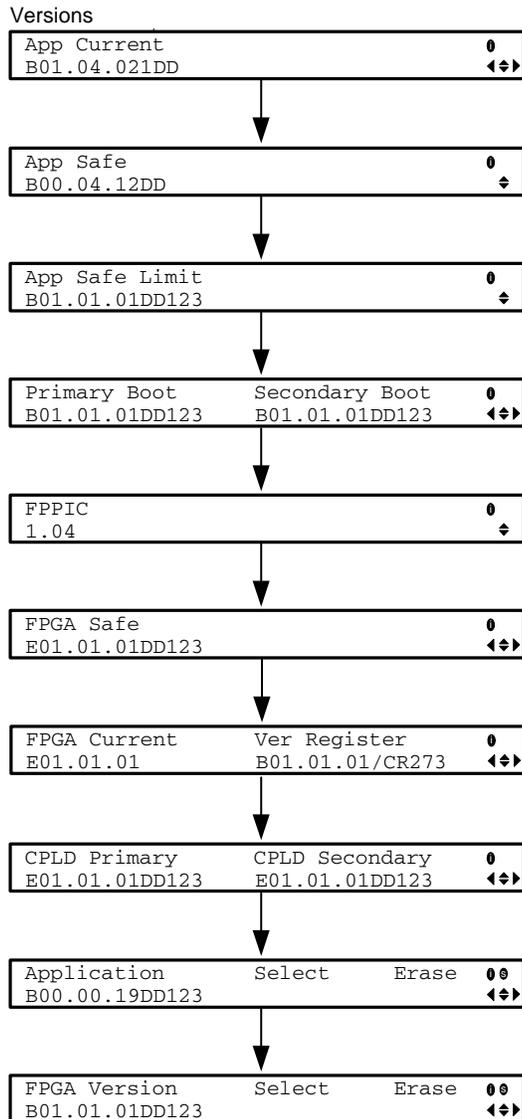
Versions Menu

Structure

To view the Versions menu from the Main menu press the RIGHT arrow key four times and then the SELECT key.

The Versions menu provides basic software information that is useful when requesting customer support from Cisco.

The menu has the following structure:



Versions Menu, Continued

VERSIONS

App Current

Description: Indicates the currently running loaded application version number.

App Safe

Description: Indicates the factory loaded application version number.

App Safe Limit

Description: Indicates the minimum version number that can be used/downloaded for the factory loaded application.

Primary Boot/Secondary Boot

Description: Indicates the receiver primary and secondary Boot application version numbers.

FPPIC

Description: Indicates the FP Programmable Interrupt Controller (PIC) version number.

FPGA Safe

Description: Indicates the safe limits for the Field Programmable Gate Array (FPGA) version number.

FPGA Current

Description: Indicates the current limits for the Field Programmable Gate Array (FPGA) version number.

Ver Register

Description: Indicates the release number read from the Field Programmable Gate Array (FPGA) version registers.

CPLD Primary, CPLD Secondary

Description: Indicates the primary and secondary Complex Programmable Logic Device (CPLD) version numbers.

Application, Select, Erase

Application Select this option to choose a different application version number the next time the receiver is rebooted, or to erase a particular application version.

Select Select this option to choose the selected Application version for the next reboot. You will be prompted to Abort or Continue.

Erase Select this option to erase the selected Application version. You will be prompted to Abort to Continue. Select Abort to discontinue the operation or choose Continue to complete the operation.

Versions Menu, Continued

FPGA Version, Select, Erase

- | | |
|--------------|---|
| FPGA Version | Select this option to choose a different FPGA application version number the next time the receiver is rebooted, or to erase a particular application version. |
| Select | Select this option to choose a different FPGA application version number the next time the receiver is rebooted, or to erase a particular application version. You will be prompted to Abort or Continue. |
| Erase | Select this option to erase the selected FPGA version. You will be prompted to Abort to Continue. Select Abort to discontinue the operation or choose Continue to complete the operation. |

Diagnostics Menu, Continued

ALARMS/WARNINGS

AW HISTORY

View History

Description: Select this option to view the system event messages. Press SELECT to view the messages using the UP/DOWN arrow keys.

Clear History

Description: Select this option to clear any existing history information.

LOGS

View Logs

Description: Select this option to view the system log messages. Press SELECT to view the messages using the UP/DOWN arrow keys.

Clear Logs

Description: Select this option to clear any existing log history information.

View DL

Description: Select this option to view a history of the system downloads.

PSI

Frequency Plan

This is the Frequency Plan sub-menu. You cannot make any changes here, but you can view the available frequency plans stored in the receiver. The following is a list of the expanded abbreviations:

TxID - Transport ID

Freq (GHz) - Downlink Frequency (GHz)

FEC - Forward Error Correction inner code rate

Pol - Polarity of the received signal (H, V, or Off)

ONID - Original Network ID

SymRate - Symbol Rate (Msym/s)

Modulation - Modulator constellation setting

OrbPos - Orbital Position (in degrees)

Diagnostics Menu, Continued

Channels

This is the Virtual Channel sub-menu. You cannot make any changes here, but you can view the available channels and their settings. The following is a list of the expanded abbreviations:

VC - Virtual Channel

TxID - Transport ID

PMT - Program Map Table

ECM - Entitlement Control Message

Program Name - Name of the program

Tables

This is the Tables received sub-menu. You cannot make any changes here, but you can view the PSI tables received and their settings. The following is a list of the expanded abbreviations:

Type - Table Type (i.e., NIT, PMT, etc.)

Tbl-ID - Unique Table ID

ID - MPEG/DVB Table ID

Ver - Table Version number

PID - Program PID number

Status - Reception status

Sections - PSI tables are received in sections. This indicates the section number received. This information is useful for diagnostics/troubleshooting purposes.

POWER ON

Creation Date and Time

Description: Displays the date and time when the receiver was manufactured.

Power On Date and Time

Description: Displays the date and time when the receiver was powered up.

Total Hrs, Hrs Since Last Pwoff

Description: Displays the total numbers of hours (Total Hrs) that the receiver has been operating, and the number of hours since the last power-off (Hrs Since Last Pwoff).

Diagnostics Menu, Continued

Tot Rst #, Clrbl Rst #, Clr Rst

Description: Displays the total numbers of times the receiver has been restarted (Total Rst #), and the number of restarts since the last time the restart count was cleared (Clrbl Rst #).

Clear Rst # Select this option to clear/reset the Clrbl Rst # counter to 0.

Reason For Last Reset

Description: Displays the reason for the last restart, i.e., power cycle or manual reset.

HEALTH MONITOR

Cur Temp, Max Temp, Avg Temp

Description: Displays the current temperature operating temperature (Cur Temp), the maximum operating temperature (Max Temp) that has been reached, and the average operating temperature (Avg Temp).

Parameters: Degrees Celsius.

Chapter 5

Setup and Monitoring

Overview

In This Chapter

This chapter contains the following topics.

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Logging On to the Web Interface

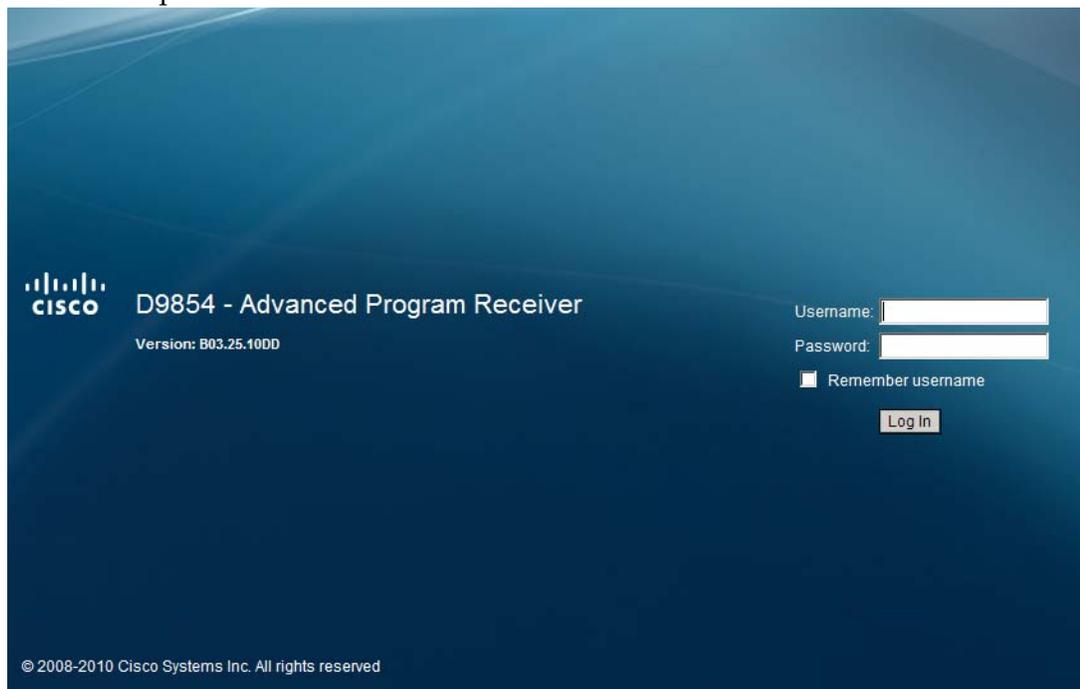
To Log on to the Web Interface

Proceed as follows to log on to the Web Interface:

1. Open a web browser.

Note: The supported web browsers are: Internet Explorer 7.0, Internet Explorer 8.0, Firefox 3.5, and Firefox 3.6.

2. Type the IP address of the D9854 Advanced Program Receiver in the Address bar and press Enter.



3. Type the **Username** and **Password**.

Note: The username and password are case-sensitive. The default username is **admin** and the default password is **localadmin**. If you have forgotten your username and password you can reset them to its factory defaults from the front panel menu of the D9854 Advanced Program Receiver.

Important: The password and user name will be remembered for the whole of the web session. Close the web browser if you want to prevent others from accessing the settings of the D9854 Advanced Program Receiver.

If your session expires, you must refresh the browser and log back in.

4. Click **Log in**.

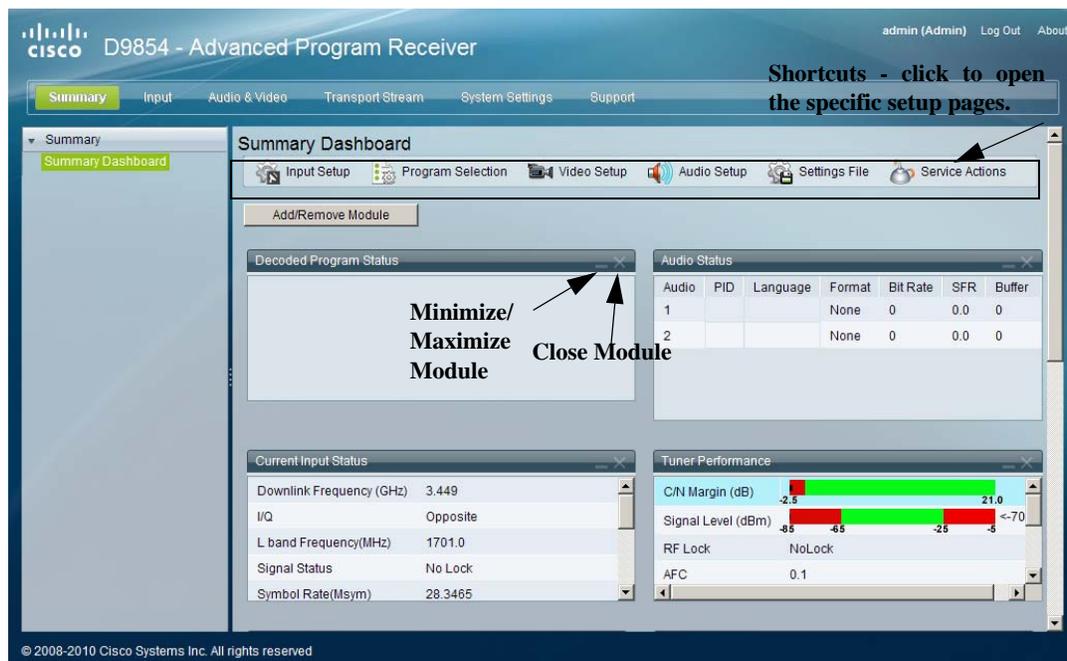
Note: If you select **Remember username**, the user name will be remembered the next time you log into the web GUI.

Web Interface - Summary Screen

To get an Overview of the Main D9854 Settings

Proceed as follows to get an overview of the main D9854 Advanced Program Receiver settings:

1. Log on to the Web GUI.
2. Click the **Summary > Summary Dashboard**. The Summary Dashboard page is displayed.



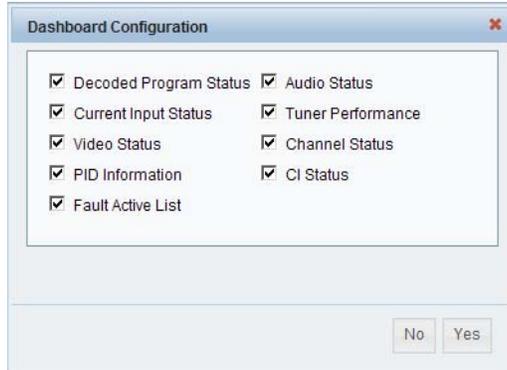
The Summary Dashboard page displays the main settings of the D9854 Advanced Program Receiver.

The shortcuts above the modules in the Summary Dashboard page are shortcuts to the various setup pages. For example, click **Video Setup** to open the Video Setup page.

You can customize the Summary Dashboard by temporarily minimizing or removing the modules displayed. Each module has a maximize and minimize button, allowing you to view or hide various modules. The default view is displayed when you refresh the Summary Dashboard page.

Web Interface - Summary Screen, Continued

You can also customize the Dashboard by clicking on **Add/Remove Module**. The Dashboard Configuration window is displayed.



The following table describes the all the available modules:

Module	Description
Decoded Program Status	Displays channel and service information.
Audio Status	Displays the current audio status information, such as the audio format and sampling frequency.
Current Input Status	Displays the current RF Tuning Status information, including the downlink frequency and signal status.
Tuner Performance	Displays the satellite dish status, such as the C/N Margin and Signal Level.
Video Status	Displays the current video information.
Channel Status	Displays the channel status information, such as the type of CA used and whether the receiver is authorized to receive the signal.
PID Information	Displays the PIDs associated with the channels.
CI Status	Displays the CAM card information.
Fault Active List	Displays the currently active alarms and warnings.

Links

Linked Pages

The GUI of the D9854 has a number of linked pages.



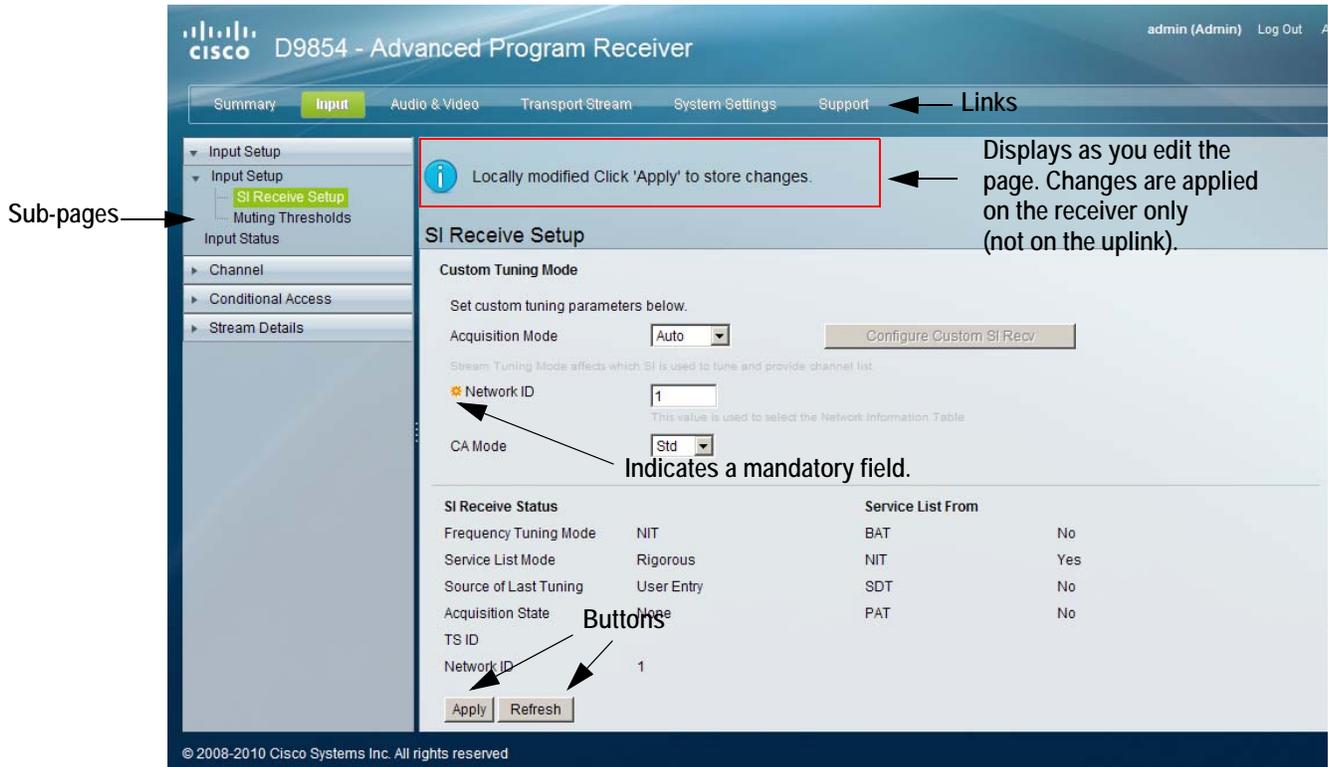
The function for the linked pages is as follows:

- **Summary**
From this page you can obtain an overview of the D9854 operation.
- **Input**
From this page you can:
 - set up RF and ASI inputs,
 - configure muting thresholds,
 - view input status,
 - configure channels,
 - configure CI (Common Interface) settings,
 - view PSI, Frequency, and Channel tables.
- **Audio & Video**
From this page you can:
 - configure video settings,
 - set up closed caption and subtitles,
 - configure audio settings,
 - view current audio status,
 - set the cueing parameters.
- **Transport Stream**
From this page you can:
 - configure ASI and MPEGoIP outputs,
 - configure receiver settings.
- **System Settings**
From this page you can:
 - view alarm and warning status information
 - configure ethernet ports,
 - set date and time formats,
 - configure lock levels.
- **Support**
From this page you can:
 - view logs,
 - view contact information,
 - view and upgrade software version.

D9854 Web GUI Environment

Web GUI Environment

The following is an example of a D9854 Web GUI page.



The Window Buttons

The GUI of the D9854 has the following general buttons:

Button	Description
Apply	Saves and applies the settings to the receiver.
Refresh	Reads existing data from the D9854. If edits were made in a setup page, then unsaved changes are discarded.
Reset Defaults	Discards any changes made and sets data to default values.
Clear Counters	Resets counters on the displayed page.

Setting up the RF Input

To Set up the RF Input

Proceed as follows to set up the RF Input:

1. From the user interface of the D9854, click **Input > Input Setup**. The Input Setup page is displayed.

The screenshot shows the Cisco D9854 Advanced Program Receiver web interface. The main navigation bar includes Summary, Input (highlighted), Audio & Video, Transport Stream, System Settings, and Support. The left sidebar shows a tree view with Input Setup expanded, containing Input Setup, SI Receive Setup, Muting Thresholds, Input Status, Channel, Conditional Access, and Stream Details. The main content area is titled 'Input Setup' and has tabs for RF and ASI. The RF tab is active, showing the following sections:

- RF Input Selection:** Includes a checked 'Use RF Input' checkbox, an 'Input Selection' dropdown set to 'UserCfg', and radio buttons for 'Use RF 1', 'Use RF 2', 'Use RF 3', and 'Use RF 4'.
- Tuning:** Includes fields for 'Downlink Frequency' (3.449 GHz), 'Symbol Rate' (28.3465 MSym/s), 'FEC' (Auto), 'Modulation' (DVB-S), 'Roll Off' (.35), 'I/Q' (Auto), 'RF 1 22 KHz' (Off), and 'RF1 Power' (Off).
- RF Input LNB Configuration:** A table with columns: Input, LO1 (Ghz), LO2 (Ghz), Crossover (Ghz), Polarisation, Orbital Posn, and East/West Flag. The table contains four rows for RF1 through RF4, all with LO1 at 5.15 GHz, LO2 at 0.0 GHz, Crossover at 0.0 GHz, and Polarisation set to Horizontal.

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2. In the RF Input Selection section, select **Use RF Input** to activate an RF input. You can select RF 1 to RF 4 below.
3. Select UserCfg in the **Input Selection** to lock to the RF input set by the user. Select SW Map to use the orbital position settings to select the RF input. It is recommended that you validate the orbital position for SW Map option.
4. Select an RF input to activate (**Use RF 1**, **Use RF 2**, **Use RF 3**, or **Use RF 4**).
5. In the **Tuning** section, enter the current operating **Downlink Frequency** used by the receiver for tuning the received digital signal. You can enter a value in the range from 0.0 to 15.0 GHz.
6. Type the **Symbol Rate**. The symbol rate must match that of transmitted signal. You can enter a value in the range from 1.0 to 45.0 Ms/s for DVB-S, 1.0 to 30.0 for DVB-S2 if Pilot Present is set to Yes on the Front Panel, or 5.0 to 30.0 for DVB-S2 if Pilot Present is set to No on the Front Panel.

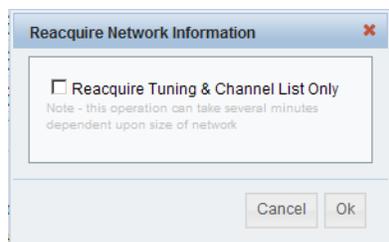
Setting up the RF Input, Continued

7. Select the Forward Error Correction (**FEC**) inner code rate. The FEC rate must match the FEC of the transmitted signal. You can select 1/2, 2/3, 3/4, 5/6, 7/8, or Auto.
8. Select the **Modulation** type for the received signal (DVB-S or DVB-S2).
9. Select the **Roll Off** factor of the incoming signal (.20, .25, .35). Set the value to .20 or .35 when DVB-S modulation is used, and either of the three when DVB-S2 is used. Use a small number to reject or filter carriers close to the same frequency.
10. Set the input signal spectrum inversion setting (**IQ**), which allows the operator to track and select inverted and non-inverted digital signals.
When set to Auto, received digital signals are tracked and inverted for correct selection, as required. When set to Opposite, the received digital signal is always inverted. Conversely, when set to Normal, the received digital signal is never inverted.
11. The **RF1 22KHz** is only applicable for dual-band LNB applications. It sets whether or not the 22 kHz tone is available on the RF1. The selections are On, Off, or Auto (actual presence of 22 KHz control signal depends on whether downlink frequency is greater than the crossover frequency).
12. The **RF1 Power** setting determines if power is provided via the RF1 Input to an external LNB connection.
You can set the LNB Power to Off, 13V, 18V, V-NIT or H-NIT. When LNB Power is set to V-NIT or H-NIT, the signal polarization is automatically read from the NIT.
Note: Power will not be applied to the LNB when Power is set to Off.
13. In the **RF Input LNB Configuration** section, for RF1, RF2, RF3, and/or RF4, enter the Local Oscillator frequency #1 (**LO1**), which sets the satellite antenna LNB local oscillator #1 frequency. You can enter a value in a range from 0.0 to 15.0 GHz. This value must be lower than the value for LO2.
14. For RF1, RF2, RF3, and/or RF4, enter the Local Oscillator frequency #2 (**LO2**), which sets the satellite antenna LNB local oscillator #2 frequency. This option is only used in dual-band LNB applications. You can enter a value in a range from 0.0 to 15.0 GHz. This value must be higher than the value for LO1. In single-band LNB applications, set this value to 0.0.
15. Enter the **Crossover** frequency for RF1, RF2, RF3, and/or RF4. This is an internal threshold frequency used for selecting the LO1 or LO2 frequency, depending on the current downlink frequency settings. This option is only used in dual-band LNB applications.
You can enter a value in a range from 0.0 to 15.0 GHz. In a single-band LNB applications, set this value to 0.0.

Setting up the RF Input, Continued

16. Select the signal **Polarisation** setting (Horizontal, Vertical, or Automatic). This setting is only applicable when the LNB Power is set to H-NIT or V-NIT. The selected setting must match the polarisation of the transmitted signal.
17. Set the Orbital Position (**Orbital Posn**) for RF1, RF2, RF3, and/or RF4, in degrees. This is the location in orbit of the satellite currently being used. The satellite position (in degrees) in combination with the direction (either E (East) or W (West)) denotes the satellite position the dish connected to the current RF Input should point. This is used when the satellite is not available in the look-up menu list.

For manual configuration, enter the location of the satellite using the numerical keypad. The receiver will not recognize the satellite name and identify it as Unknown. This setting is required to resolve any ambiguity between RF inputs during automatic disaster recovery.
18. Select the **East/West Flag** for RF1, RF2, RF3, or RF4. This is the satellite position the dish connected to the current RF Input should point. The options are East, West, or N/A (Not Applicable).
19. Click **Apply**.
20. Click **Validate Orbital Position** to validate the RF inputs to match those expected by the network. The receiver will check to see if all frequencies in the Network Information Table (NIT) can be tuned to. The Date is displayed as the last date that the Validate operation was performed.
21. Click **Reacquire** to re-acquire the signal using the tuning parameters from user settings. The Reacquire Network Information window is displayed.



Select **Reacquire Tuning & Channel List Only** for the decoder to tune back to the user configured input and frequency and re-acquire the PSI/SI information back to the selected channel. Click **OK**.

Note: This operation can take several minutes, depending on the size of the network.

Setting up the RF Input, Continued

22. The **Current Input Status** section displays the current RF status.

Current Input Status			
Downlink Frequency(GHz)	3.449	I/Q	Opposite
L band Frequency(MHz)	1701.0	Signal Status	No Lock
Symbol Rate(Msym)	28.3465	TS ID	
FEC	N/A	Input	RF1
Modulation Type	QPSK DVB-S	Acquisition State	None
Pilots	N/A	Orbital Validation	None 1901/01/01 00:00:00

The following table describes the Current Input Status information displayed:

Parameter	Description
Downlink Frequency (GHz)	The current downlink frequency, in GHz.
L band Frequency (MHz)	The current L-Band frequency, in MHz.
Symbol Rate (Msym)	Symbol rate of the received signal, in Msymbols/second.
FEC	The FEC (Forward Error Correction) rate of the received signal (N/A, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 7/8, 8/9 or 9/10).
Modulation Type	The modulation type for the received signal (N/A, QPSK, 8PSK, DVB-S or DVB-S2).
Pilots	Indicates whether the pilots for the DVB-S2 modulation is on or off.
I/Q	The IQ (Input Signal Inversion) for the received signal (Inv or NonInv).
Signal Status	Current signal lock status for the input. For details on the statuses, see the table below.
TS ID	The Transport ID (in the range from 1 to 65535).
Input	The active input port receiving the signal (RF1, RF2, RF3, RF4, or ASI).
Acquisition State	Displays Full if the ASI and PSI tables have all been found. Otherwise, it will display Degraded if there are missing tables or None if no ASI or PSI tables have been found.
Orbital Validation	Displays the last date that the Validate Orbital Position operation was performed.

Setting up the RF Input, Continued

The following table indicates the current signal lock status for the selected RF input:

Status	Description
Locked	Indicates the receiver is locked to a carrier with no valid content.
Lock+Sig	Indicates the receiver is locked to a carrier with valid content.
No Lock	Indicates the receiver is not locked to a carrier.

Setting up the ASI Input

To Set up the ASI Input

Proceed as follows to set up the ASI Input:

1. From the user interface of the D9854, click **Input > Input Setup**. The Input Setup page is displayed.
2. Click on the **ASI** tab.



3. Select **Use ASI Input** to activate the ASI input.
4. The ASI Input Status section displays the current RF status. The following table describes the ASI Input Status information displayed:

Parameter	Description
Current Input	The active input port receiving the signal (RF1, RF2, RF3, RF4, or ASI).
Signal Status	Current signal lock status for the ASI input. For details on the statuses, see the table below.
Input Rate (Mbps)	Bit rate of the received input signal, in Mbps.
ASI Link	Indicates whether there is a transport stream link error (Yes, no or N/A).
ASI Transport	Indicates the current transport synchronization status (Sync - No Sync, Normal or N/A).
ASI Packet Size (bytes)	Indicates the packet size (in bytes) for the selected input (188 bytes or 204 bytes).

Parameter	Description
Acquisition State	Displays Full if the ASI and PSI tables have all been found. Otherwise, it will display Degraded if there are missing tables or None if no ASI or PSI tables have been found.
TS ID	The Transport ID (in the range from 1 to 65535).
Network ID	The Network ID (in the range from 1 to 65535) of the uplink signal the receiver is to receive when using the selected preset. The receiver's Network ID must match the Network ID associated with the transmitted signal that identifies the NIT to be used. Note: Each network must be assigned a unique ID (number).

The following table indicates the current signal lock status for the selected RF input:

Status	Description
Locked	Indicates the receiver is locked to a carrier with no valid content.
Lock+Sig	Indicates the receiver is locked to a carrier with valid content.
No Lock	Indicates the receiver is not locked to a carrier.

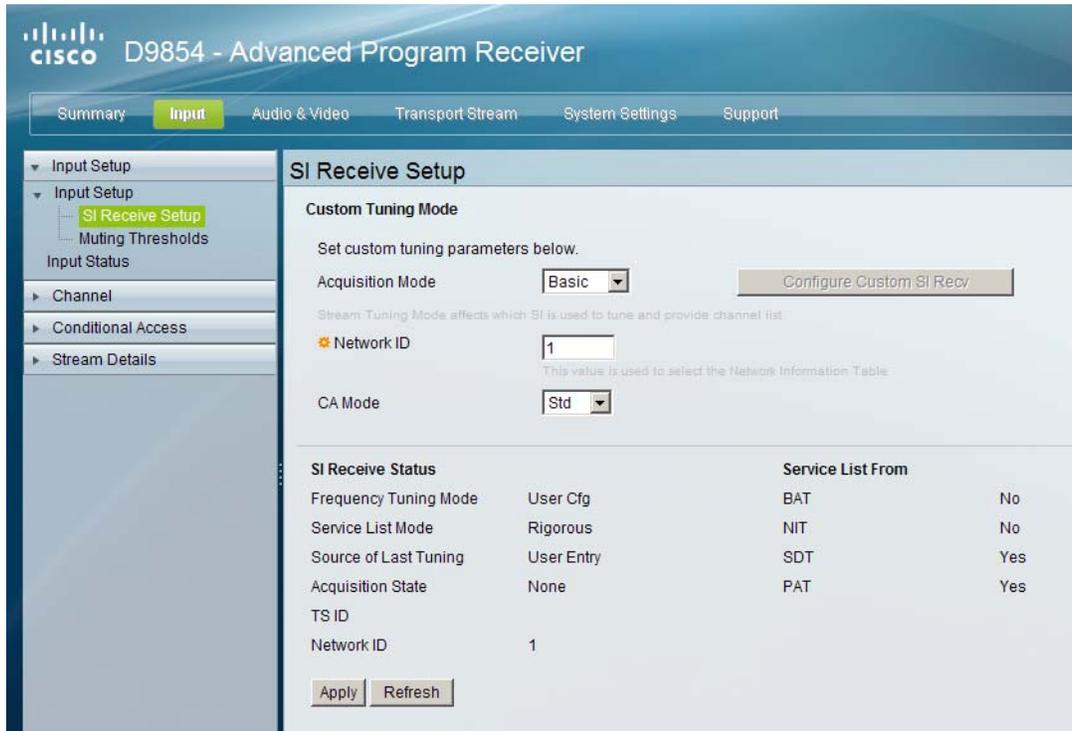
5. Click **Apply**.

Setting up SI Receive Parameters

To Set up the SI Receive parameters

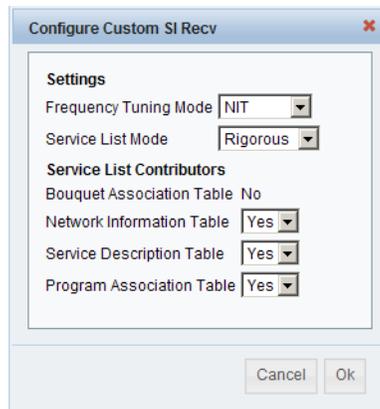
Proceed as follows to set up the SI Receive parameters:

1. From the user interface of the D9854, click **Input > Input Setup**, expand **Input Setup** and then click **SI Receive Setup**. The SI Receive Setup page is displayed.



2. In the **Custom Tuning Mode** section, select the mode used to build channel lists from allowed service lists. The selections are Auto, Basic, or Custom. The default is Basic.

If you select Custom, click **Configure Custom SI Recv** and the Configure Custom SI Recv window opens:



Setting up SI Receive Parameters, Continued

3. Set the **Frequency Tuning Mode**, which determines whether the receiver is to be tuned to the received signal using the NIT or User Cfg (user configurations).
4. The **Service List mode** determines which tables to use to obtain tuning and channel lists.

Select Rigorous if all the default settings must be present in the received signal. Select Degraded if only the table parameters present in the received signal will be used to install the receiver. The default is Rigorous.

5. The remaining fields allow you to set up your custom properties. The following table shows some possible configurations for the allowed service lists and the different frequency tuning settings.

Allowed Service Lists	Custom
Bouquet Association Table (BAT) (not supported)	N
Network Information Table (NIT)	N
Service Description Table (SDT)	N
Program Association Table (PAT)	Y
Frequency Tuning mode	User Cfg

Note: You cannot change the Bouquet Association Table value. It is not supported in the current release.

6. Click **OK**.
7. Enter the **Network ID** of the uplink signal the receiver is to receive when using the selected preset. The receiver's network ID must match the network ID associated with the transmitted signal that identifies the NIT to be used. You can enter a value in the range from 1 to 65535. The default is 1.
8. Select the Conditional Access (**CA Mode**) that determines which programs can be viewed via the receiver. Select Std (standard) for PowerVu signal or Open conditional access for free-to-air (e.g., in-the-clear signals). The default is Std.
9. The **SI Receive Status** section displays all the current SI Receive settings. It also displays the source of last tuning and the last Preset Number activated. The **Service List From** section displays the current settings of the allowed services (BAT, NIT, SDT, PAT).
10. Click **Apply**.

Setting up Muting Threshold Controls

To Set Up the Muting Threshold Controls

Proceed as follows to set up the muting threshold controls:

1. From the user interface of the D9854, click **Input > Input Setup**, expand **Input Setup** and then click **Muting Thresholds**. The Muting Thresholds page is displayed.



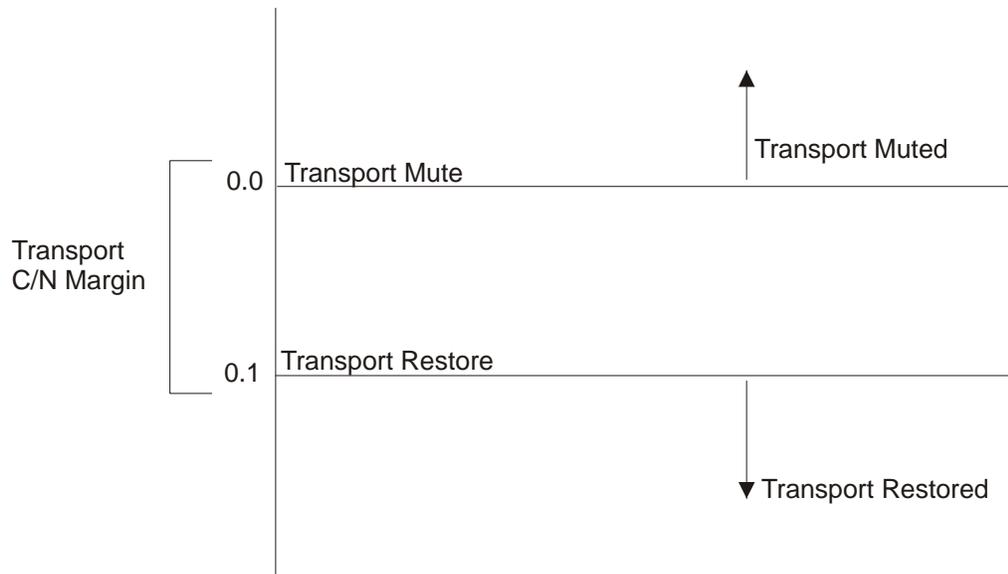
2. Select **Enable Threshold Muting** to mute the transport stream and audio in the event of an unstable signal, poor signal or no signal condition. The default is selected.
3. The **Transport Mute** and **Restore** for both **DVB-S C/N Margin (dB)** and **DVB-S2 C/N Margin (dB)** sets how the receiver reacts when the signal quality is severely degraded when using DVB-S or DVB-S2 modulation. This allows you to set the transport C/N margin values for the receiver. The receiver uses these noise values/settings as limits during normal operation to determine whether to mute the transport in the event of a noisy signal, poor signal or no signal condition.

The **Transport Mute** is the lower limit for the transport C/N margin setting. The transport will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Transport Cutoff is 0.0.

Setting up Muting Threshold Controls, Continued

The **Transport Restore** is the upper limit for the transport C/N margin setting. The transport will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Transport Restore is 0.1.

Note: Enable Threshold Muting must be selected for these settings to be active.
Transport Default C/N Margin Relationship



4. The **Audio Mute and Restore** for both **DVB-S C/N Margin (dB)** and **DVB-S2 C/N Margin (dB)** sets the Audio channel Mute and Restore C/N margin values (limits) to mute audio when the signal quality is severely degraded when using DVB-S or DVB-S2 modulation.

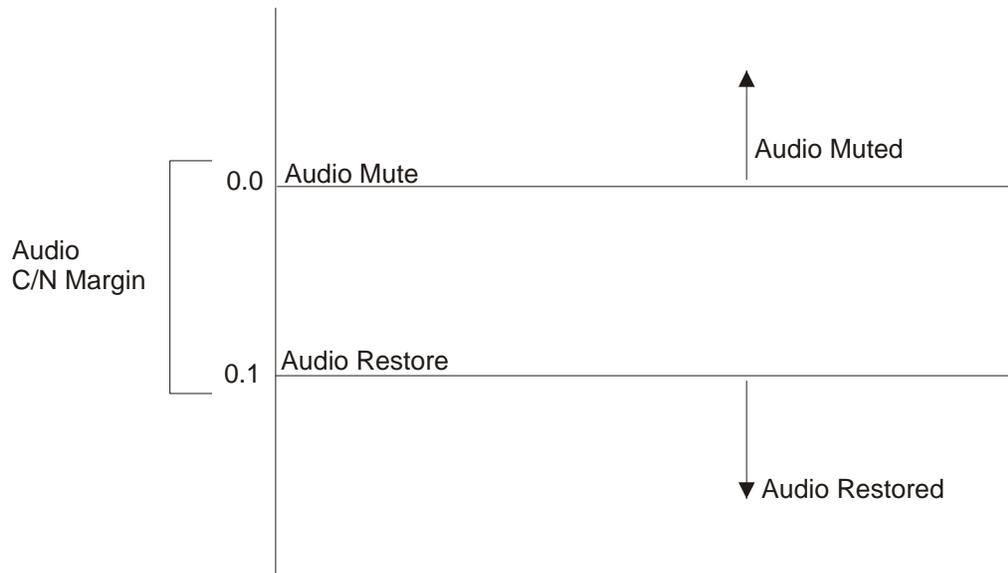
The **Audio Mute** is the lower limit for the audio C/N margin setting. Audio will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Audio Cutoff is 0.0.

Setting up Muting Threshold Controls, Continued

The **Audio Restore** is the upper limit for the audio C/N margin setting. Audio will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Audio Restore is 0.1.

Note: Enable Threshold Muting must be selected for these settings to be active.

Audio Default C/N Margin Relationship



5. Click **Apply**.

Click **Reset Defaults** to restore the RF options to their factory set (default) values.

Viewing the Input Status

To View the Input Status

Proceed as follows to view the Input Status page:

From the user interface of the D9854, click **Input > Input Setup > Input Status**. The Input Status page is displayed.

Current Input Status

Downlink Frequency(GHz)	3.449	I/Q	Opposite
L band Frequency(MHz)	1701.0	Signal Status	No Lock
Symbol Rate(Msym)	28.3465	TS ID	
FEC	N/A	Input	ASI
Modulation Type	QPSK DVB-S	Acquisition State	None
Pilots	N/A	Orbital Validation	None 1901/01/01 00:00:00

Tuner Performance

C/N Margin (dB)
Signal Level (dBm)

RF Lock	NoLock	PV BER	
AFC	0.0	RF(1) Power	Off
LDPC ER		LNB Status	N/A
Packet ER			

Net ID: 1 Network Name: Unk
Input Rate: 0.0 Scrambling Mode: Unk
LNB Power Supply Status (Operational): N/A

The Current Input Status section displays the same information shown in the Input Setup page. For more information on the parameters displayed, see **Setting up the RF Input**, page 5-8.

The Tuner Performance section displays the satellite dish information, such as the C/N Margin and Signal Level.

Setting up the Channel Selections

To Set up the Channel Selection Configurations

Proceed as follows to set up the Channel Selection configurations:

1. From the user interface of the D9854, click **Input > Channel > Channel Selection**. The Channel Selection page is displayed.

The screenshot shows the Cisco D9854 - Advanced Program Receiver web interface. The top navigation bar includes 'Summary', 'Input', 'Audio & Video', 'Transport Stream', 'System Settings', and 'Support'. The 'Input' tab is active. On the left, a sidebar menu shows 'Input Setup' expanded to 'Channel', with 'Channel Selection' highlighted. The main content area is titled 'Channel Selection' and contains the instruction 'Select from available channels or type in a channel number'. Below this, there are 16 rows, each labeled 'PE1' through 'PE16'. Each row has a text input field containing '0:UNKN' and a small downward-pointing arrow icon. At the bottom of the configuration area are 'Apply' and 'Refresh' buttons. The footer of the page reads '© 2008-2010 Cisco Systems Inc. All rights reserved'.

2. Enter a channel number for up to 16 program entries. Alternatively, use the drop-down arrow to select an available channel.
3. Click **Apply**.

Viewing the Channel Status

To View the Channel Status

Proceed as follows to view the Channel Status page:

From the user interface of the D9854, click **Input > Channel > Channel Status**. The Channel Status page is displayed.



PE Index	Channel	Channel Name	Conditional Access System ID	Channel Authorised	Channel Encrypted	Channel Scrambled
PE1	0	UNKN	Unknown	Yes	No	No
PE2	0	UNKN	Unknown	Yes	No	No
PE3	0	UNKN	Unknown	Yes	No	No
PE4	0	UNKN	Unknown	Yes	No	No
PE5	0	UNKN	Unknown	Yes	No	No
PE6	0	UNKN	Unknown	Yes	No	No
PE7	0	UNKN	Unknown	Yes	No	No
PE8	0	UNKN	Unknown	Yes	No	No
PE9	0	UNKN	Unknown	Yes	No	No
PE10	0	UNKN	Unknown	Yes	No	No
PE11	0	UNKN	Unknown	Yes	No	No

The following table describes the channel information displayed:

Channel Information	Description
PE Index	Indicates the Program Entry number (PE1 or PE16).
Channel	Displays the input channel of the current PE. The channel is displayed in a range from 1 to 65535.
Channel Name	Displays the channel name of the current PE.
Conditional Access System ID	Indicates the Conditional Access (CA) system used for the received signal (SA, BISS, or Unknown).
Channel Authorised	Indicates whether the receiver is authorized to receive the signal (Yes or No).
Channel Encrypted	Indicates whether the received signal is encrypted (Yes or No).
Channel Scrambled	Indicates whether the received signal is scrambled (Yes or No).

Configuring the Common Interface (CI) Information

To Configure the Common Interface (CI)

Proceed as follows to configure CI:

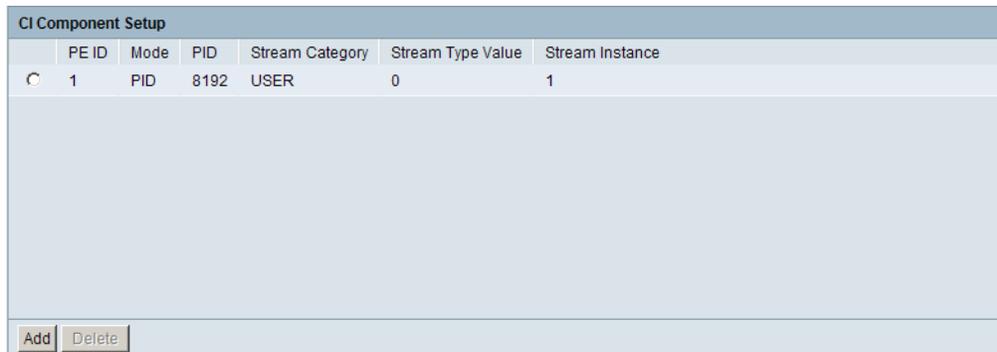
1. From the user interface of the D9854, click **Input > Conditional Access > CI Setup**. The CI Setup page is displayed.

PE	CI Slot	Decryption Mode
1	AUTO	ON
2	TOP	ON
3	TOP	ON
4	TOP	ON
5	TOP	ON
6	TOP	ON
7	TOP	ON
8	TOP	ON
9	TOP	ON
10	TOP	ON

2. Select Enable in the **CI CAM QUERY Support** drop-down to query the CAM prior to decryption to ensure that the card can be decrypted. The default is Disable.
3. Select Enable in **CI CAM Auto Reset** to automatically reset the card. The default is Disable.
4. In the **Type of CA List Management Type**, select AddDel (default) to add or delete programs individually in the CAM. Set to UpdateAll to automatically update and reset all the programs each time you add or modify the programs available via the CAM.
5. Select Enable in the **TS/ONID Check** drop-down if you want to restrict the incoming transport stream to the transport ID and transport original network ID listed below. If the incoming stream does not match the specified transport stream, the CAM will not decrypt. The default is Disable.

Configuring the Common Interface (CI) Information, Continued

6. If you set the **Use ONID Check** to Enable, you must define the **Transport ID** and **Original Network ID**. If the incoming stream does not match the specified IDs here, the CAM will not decrypt. You can enter a value in a range from 0 to 65535.
7. In the **CAM TS Handling** drop-down, select EntireTS to use the CAM to decrypt the entire transport stream, or select ServicesOnly to use the CAM to decrypt only the PIDs being used by the active services.
8. For PE 1, ensure that the **CI Slot** is set to Auto and the **Decryption Mode** is set to On (default) for the software to automatically assign the top or bottom slot that matches the stream. Comp and OFF Decryption modes are invalid.
9. If you use PE2 to PE16, you must select to decrypt the CAM that is located in the Top or Bottom slot in the **CI Slot** drop-down.
10. The **Decryption Mode** determines whether to decrypt the program selected for the PE on the selected CAM (Yes, No, Comp). Select Comp to customize the PID or stream type to decrypt.
11. If you selected Comp, you must configure the parameters in the CI Components Setup section below.
12. The **CI Component Setup** section allows you to insert and maintain customized records:



CI Component Setup						
	PE ID	Mode	PID	Stream Category	Stream Type Value	Stream Instance
C	1	PID	8192	USER	0	1

Buttons: Add, Delete

13. Each record customizes the PID or stream type to decrypt. The Index number is a read only field that indicates the record number. You can maintain up to 64 records, 32 records for each CAM.

Configuring the Common Interface (CI) Information, Continued

14. To insert a new record, click **Add**. A new row appears at the top of the table (see below).

PE ID	Mode	PID	Stream Category	Stream Type Value	Stream Instance
1	PID	8192	USER	0	1

Add Delete

15. There are various configurations when creating a new record.

16. The following table summarizes the various methods:

If you set by	Parameter Settings
PID ID	Set Mode to PID and enter PID number.
Stream Type	Set Mode to Stream, select Stream Category (audio, video, subtitle, ttx, or user) and enter Stream Instance of the stream type. There is an additional configuration if you select user as the Stream Category (see below).
Stream Type: User	Set Mode to Stream, Stream Category to User, manually enter the stream code in Stream Type Value , and then the Stream Instance of the stream type.

17. If you know the PID number, ensure that PID is selected under **Mode** and enter the appropriate **PID** number. Click **Save**.
18. To enter the stream type, select Stream under **Mode**, select the stream type in the **Stream Category** (Vid, Aud, Subt, or TTX) and enter the instance of the stream type in **Stream Instance**. You can enter a range from 1 to 64. Click **Save**.
19. If you do not know the stream type, you can specify a specific hex value as the stream type. Select Stream under **Mode**, select User under **Stream Category**, enter the hex value of the stream under **Stream Type Value** and the instance of the customized stream type in **Stream Instance**. You can enter a two digit hexadecimal value for the Stream Type and a range from 1 to 64 for the Stream Instance. Click **Add**.
20. To delete a record, select the record you want to remove and click **Delete**.

Configuring the Common Interface (CI) Information, Continued

21. The System ID section displays the system name and ID number of the CAM for the top/bottom slots.

Viewing the CI Status

To View the Common Interface (CI) Status

Proceed as follows to view the CI Status page:

From the user interface of the D9854, click **Input** > **Conditional Access**, expand **CI Setup** and then click **CI Status**. The CI Status page is displayed.



The following table describes the CI Status:

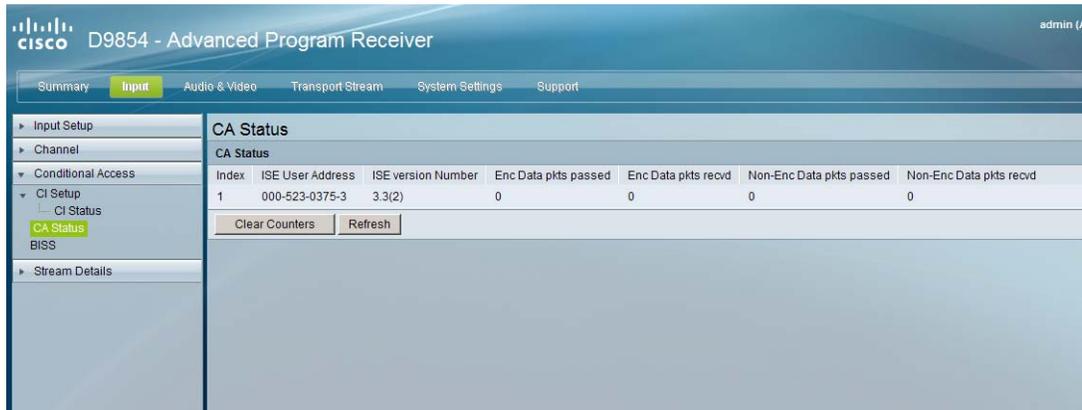
CI Status	Description
CI Slot	Indicates whether it is the top slot (TOP) or the bottom slot (BOTTOM).
CAM Status	Status of the CAM (Ready or Not Ready).
Sys Name	System name of the CAM.
Comp Name	Displays the company name of the CAM.
Manufacturer Code	The manufacturer's code.
Manufacturer ID	The factory loaded application number of the CAM.
Serial Number	The unique serial number of the CAM.
Hardware Version	The hardware version number of the CAM.
Application Version	The software version number of the CAM.

Viewing the CA Status

To View the CA Status

Proceed as follows to view the CA Status page:

From the user interface of the D9854, click **Input > Conditional Access > CA Status**. The CA Status page is displayed.



The following describes the columns in the CA Status table:

Status	Description
Index	The ISE number.
ISE User Address	The ISE User Address. It consists of 14 hexadecimal characters.
ISE Version Number	The ISE version number. It consists of 7 characters.
Enc Data pkts passed	Current Encrypted Addressed Data Packet Count. This count indicates the amount of transmitted ADP information which is being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.
Enc Data pkts rcvd	The total number of current Encrypted Addressed Data Packet count. This count indicates the amount of transmitted ADP information being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.
Non-Enc Data pkts passed	The current Non-Encrypted Addressed Data Packet count. This count indicates the amount of transmitted ADP information being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.

Status	Description
Non-Enc Data pkts rcvd	The current Non-Encrypted Addressed Data Packet Count. These counts indicate the amount of transmitted ADP information which is being accurately received and processed. Ideally, the ADP Non-Enc Pass and ADP Non-Enc Total numbers should be identical.

Setting up the BISS Mode

To Set up the BISS Mode

Proceed as follows to set up the BISS mode:

1. From the user interface of the D9854, click **Input > Conditional Access > BISS**. The BISS page is displayed.



The screenshot shows the Cisco D9854 - Advanced Program Receiver web interface. The top navigation bar includes 'Summary', 'Input' (highlighted), 'Audio & Video', 'Transport Stream', 'System Settings', and 'Support'. The left sidebar menu shows 'Input Setup', 'Channel', 'Conditional Access', 'CI Setup' (with sub-items 'CI Status' and 'CA Status'), 'BISS' (highlighted), and 'Stream Details'. The main content area is titled 'BISS' and contains the following configuration fields:

- BISS Mode: A dropdown menu set to 'Mode 1'.
- BISS Mode-1 Session Word: A text input field.
- BISS Mode-E Encrypted Session Word: A text input field.
- BISS Mode-E Injected ID: A text input field.

At the bottom of the configuration area are 'Apply' and 'Refresh' buttons.

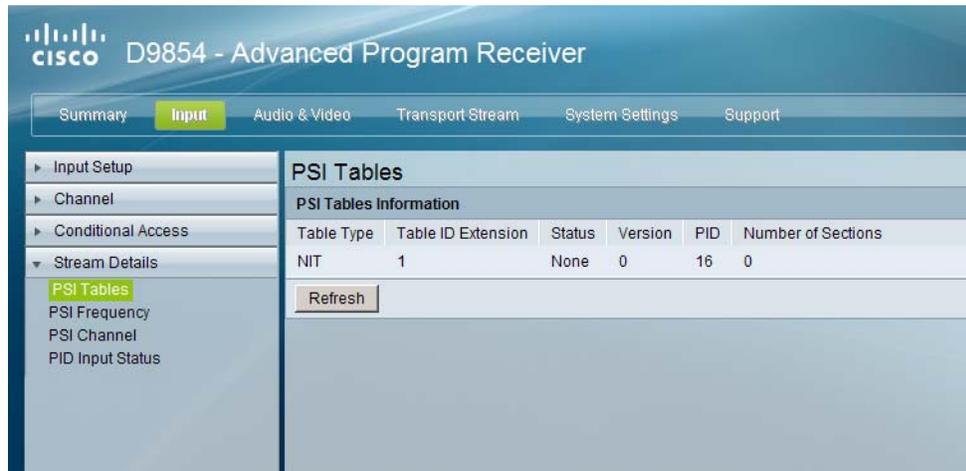
2. Select the Basic Interoperable Scrambling System (**BISS**) **Mode** for the receiver (Mode 1 or Mode E).
3. If you selected BISS Mode 1, enter a fixed 12-character **BISS Mode-1 Session Word**. Once entered it cannot be viewed, only displayed as asterisks (*). Contact your program provider for the session word.
4. If you selected BISS Mode E, enter the 16-character **BISS Mode-E Encrypted Session Word** and the 14-character **BISS Mode-E Injected ID**. Once entered, neither of these values can be viewed, only displayed as asterisks. Contact your program provider for the respective session word and/or injected ID.

Viewing the PSI Tables

To View the PSI Tables

Proceed as follows to view the PSI tables:

From the user interface of the D9854, click **Input > Stream Details > PSI Tables**. The PSI Tables page is displayed.



You cannot make any changes in the PSI table and can only view the PSI tables received and their settings. The following is a list of the various columns:

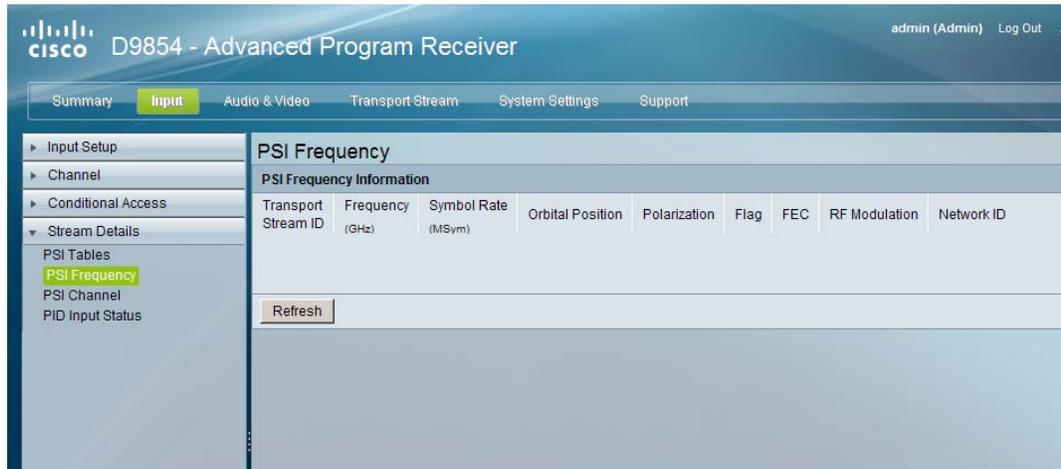
Abbreviation	Description
Table Type	Indicates the Table Type (i.e., NIT, PMT, etc.).
Table ID Extension	Displays the MPEG/DVB Table ID.
Status	Indicates the reception status.
Version	Indicates the table version number.
PID	Indicates the Program PID number.
Number of Sections	PSI tables are received in sections. This indicates the section number received. This information is useful for diagnostics/troubleshooting purposes.

Viewing PSI Frequency Information

To View the PSI Frequency Information

Proceed as follows to view the PSI Frequency table:

From the user interface of the D9854, click **Input > Stream Details > PSI Frequency**. The PSI Frequency page is displayed.



You cannot make any changes in the PSI Frequency table and can only view the available frequency plans stored in the receiver. The following is a list of the various columns:

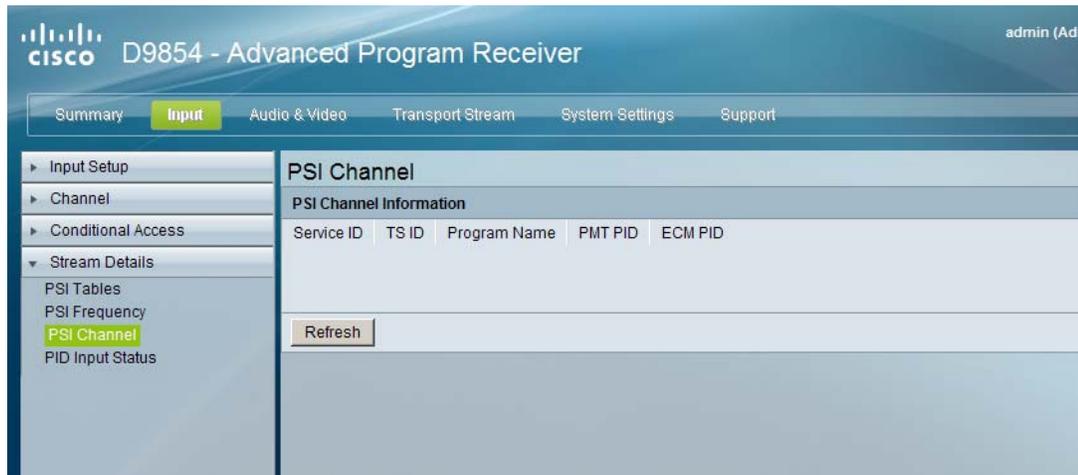
Abbreviation	Description
Transport Stream ID	Displays the transport ID.
Frequency (GHz)	Displays the downlink frequency (GHz).
Symbol Rate (MSym)	Displays the symbol rate (MSym/s).
Orbital Position	Displays the orbital position (in degrees).
Polarization	Displays the polarity of the received signal (H,V, or Off).
Flag	Displays the satellite position (in degrees), in combination with the direction (East or West).
FEC	Indicates the Forward Error Correction inner code rate.
RF Modulation	Indicates the modulator constellation setting.
Network ID	Displays the original network ID.

Viewing the PSI Channels

To View the PSI Channels

Proceed as follows to view the PSI Channel table:

From the user interface of the D9854, click **Input > Stream Details > PSI Channel**. The PSI Channel page is displayed.



You cannot make any changes in the PSI Channel table and can only view the available channels and their settings. The following is a list of the various columns:

Abbreviation	Description
Service ID	Indicates the virtual channel.
TS ID	Indicates the transport stream ID.
Program Name	Indicates the name of the program.
PMT PID	Indicates the Program Map Table PID.
ECM PID	Indicates the Entitlement Control Message PID.

Viewing the PID Input Status

To View the PID Input Status Information

Proceed as follows to view the PID Input Status table:

From the user interface of the D9854, click **Input** > **Stream Details** > **PID Input Status**. The PID Input Status page is displayed.



You cannot make any changes in the PID Input Status table and can only view the available channels and their settings. The following is a list of the various columns:

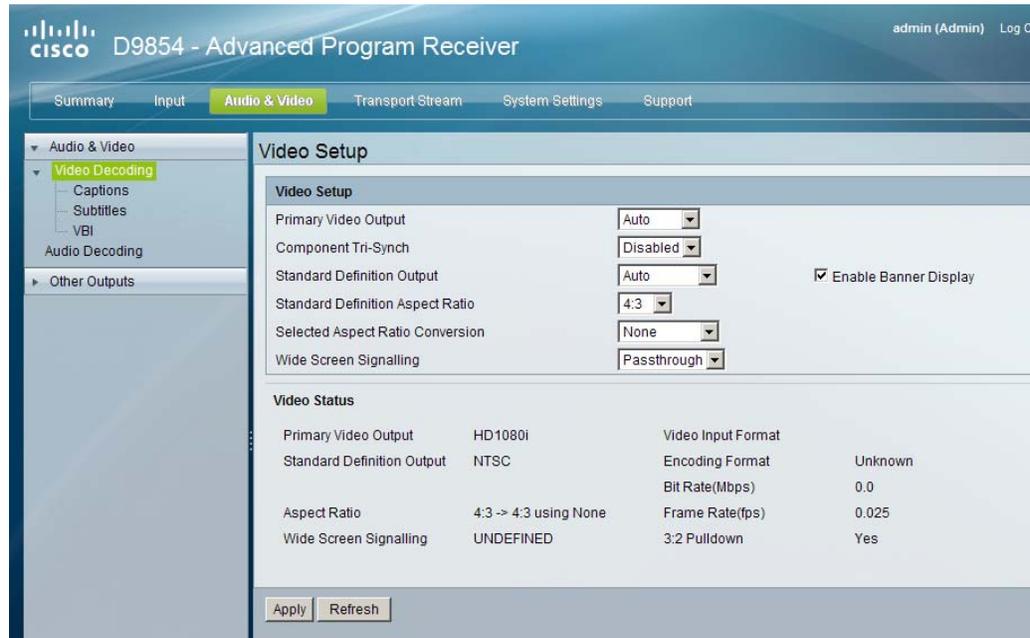
Abbreviation	Description
PE Index	Indicates the Program Entry number (PE1 or PE16).
Type	Name assigned to the Program Entry, up to 4 alphanumeric characters.
Detail	Displays any detail associated with the program PID (e.g., MPG2 PID). The parameters are: MPG1 VID, MPG2 VID, 422 VID, H264 VID, HD VID, MPG4 VID, MPG AUD, MPG2 AUD, DVB AC3, DVB DDP, AAC AUD, HEAAC, AUD, MPG4 AUD, DBE AUD, DTS AUD, DVB TXT, DVB VBI, DVB SUBT, DVB ASYN, DVB SYNS, DVB SYND, DVB MPE, DVB DCAR, DVB OCAR, SA VBI, ATSC AC3, ATSC DDP, SA UTLD, SCTE DPI, SA HSD, SA CDDL, SA WBD, SA SUBT, ECM, EMM, PCR, or UNKNOWN.
Language	Displays the language code carried in the PMT for the current PID, if applicable.
PID	The program PID number, in the range from 1 to 8192.
Present	Indicates whether the PID is present in the incoming stream (Yes or No).

Setting up the Video Parameters

To Set up Video

Proceed as follows to set up the video parameters:

1. From the user interface of the D9854, click **Audio & Video > Audio & Video > Video Decoding**. The Video Setup page is displayed.



2. Select the **Primary Video Output** format. The options are Auto, HD 720p, HD 1080i, or SD.
3. Select whether to enable or disable the **Component Tri-Synch**.
4. In the **Standard Definition Output** drop-down, select the video format for the output when the input video is SD format. The options are Auto, NTSC, PAL-N (AR), PAL-M, or PAL-B/G/I/D. You must use NTSC for 525-line systems and PAL-B/G/I/D for 625-line systems.
5. Select the **Standard Definition Aspect Ratio** of your TV (4:3 or 16:9, wide aspect ratio). The default is 4:3. Set it to the corresponding value.
6. Select the **Selected Aspect Ratio Conversion** that the receiver will perform on the incoming signal for the picture to be displayed correctly (i.e., to correspond to the aspect ratio of your TV) on your TV, based on your selection.
The options are None, Auto, Auto AFD (Auto setting using Active Format Descriptor), 16:9 L/B (letter box), 4:3 P/B (pillar box), 14:9, 4:3 CCO, and 16:9 Scale. The default is Auto.

Setting up the Video Parameters, Continued

7. Select the **Wide Screen Signalling** output mode. It is used to select how the receiver affects PAL WSS when it is present in the VBI. The table below describes each of the options. The default is Auto.

WSS Mode	Description
Passthrough	Passes WSS (unmodified, as received by the D9854 receiver) on VBI Line 23 when present
Auto:Create	Creates WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through.
Auto:Modify	Modifies WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through
Suppress	Disables Line 23 VBI processing. WSS is not output on line 23.

8. The **Video Status** section displays the current video settings, and the encoding, bit rate, FPS and aspect ratio of the incoming signal. The fields are read-only. The following table describes the video status information displayed:

Video Status	Description
Primary Video Output	Indicates the primary video output format (Auto, HD 720p, HD 1080i, or SD).
Standard Definition Output	Displays the video format for the output when the input video is SD format (Auto, NTSC, PAL-N (AR), PAL-M or PAL-B/G/I/D. Use NTSC for 525-line systems and PAL-B/G/I/D for 625-line systems).
Aspect Ratio	Displays the aspect ratio conversion the receiver will perform on the incoming signal for the picture to be displayed correctly on your TV.
Wide Screen Signalling	Displays the Wide Screen Signalling output mode.
Encoding Format	The input stream type of the received signal/program.
Bit Rate (Mbps)	Bit rate of the received video program. Typically 25.0, 29.97, 30.0, 50.0, 59.94, 60.0, unknown or unsupported.
Frame Rate (fps)	Indicates the frame rate in frames per second.

Video Status	Description
3:2 Pulldown	Indicates whether 3:2 pulldown mode is detected (Yes, No or Recent).

9. Select **Enable Banner Display** to display alarms and warnings on the on-screen display (e.g., TV monitor).
10. Click **Apply**.

Setting up Captions

To Set Up the Caption Parameters

Proceed as follows to set up the caption parameters:

1. From the user interface of the D9854, click **Audio & Video > Audio & Video**, expand **Video Decoding** and then click **Captions**. The Captions page is displayed.



2. Select the **Preferred Closed Caption Mode**. There are multiple in the stream. The default is Auto.
Note: SA Custom is not supported when telecine video coding is enabled.
3. The **Closed Caption Mode** in the **Status** section displays the actual caption mode used. This is read-only.
4. Click **Apply**.

Setting up Subtitles

To Set Up Subtitles

Proceed as follows to set up the subtitles:

1. From the user interface of the D9854, click **Audio & Video > Audio & Video**, expand **Video Decoding** and then click **Subtitles**. The Subtitles page is displayed.



2. Select the **Subtitle Control** to use to display the program subtitles. The following table describes each of the available options:

Op Mode Selection	Description
Off	No subtitles are displayed.
On	Functions as an “Auto” setting. DVB subtitles are displayed when only DVB subtitles are transmitted on the channel, and likewise, Imitext subtitles are displayed when only Imitext subtitles are transmitted on the channel. When both DVB and Imitext subtitles are available on the same channel, only DVB subtitles will be displayed.
DVB	Displays only DVB titles. For example, if DVB is selected, but both DVB and Imitext titles are being transmitted on the same channel, only DVB subtitles will be displayed.

Op Mode Selection	Description
Imitext	Displays only Imitext subtitles. For example, if Imitext is selected, but both DVB and Imitext titles are being transmitted on the same channel, only Imitext subtitles will be displayed.

- Set the **Imitext Position** of the on-screen subtitle text (Standard or Extended).
- The **Imitext Foreground Colour** sets the colour of Imitext subtitles only. Auto displays text in the colour transmitted by the subtitling equipment. Yellow and White overrides the colour set by the uplink and display text in the selected colour.
- The **Imitext Background Color** sets the background on which Imitext subtitles are displayed. The following table identifies the affect each setting has on the displayed subtitle text:

BackGnd Option	Description
Auto	Follows (i.e., same as) the uplink subtitling equipment setting.
Shadow	Applies an outline to the right side of each text character. No background box is applied to subtitles, i.e., text is visible directly on top of video.
Opaque	Applies a black box to each text character.
Semi	Applies a semi-transparent box to subtitle text.
None	No shadow or outline is applied to subtitle text.

- In the **Subtitle Language Settings** section, select the language type to display the subtitles. The default is Language List. Language Entry and PMT Order are more applicable for advanced applications. The following table describes each of the available options and how to set them:

Select Language By Option	Description
Language List	Each subtitling PID can contain multiple languages. Use this setting to select the language from the Language List by toggling through the available selections. If Language List is selected, PMT Order and Entry fields are not used.

Select Language By Option	Description
Language Entry	Use this setting with Entry to directly enter the language code when the language you want is not in the list. In this case enter the three-character code provided by your uplink service provider under Entry using the numeric keypad (e.g., eng for English).
PMT Order	Use this setting to select one of up to eight languages as assigned in the PMT for the tuned channel on the receiver. Toggle through the PMT Order to select the correct language within the order (i.e., First to Eighth), available from your uplink service provider.

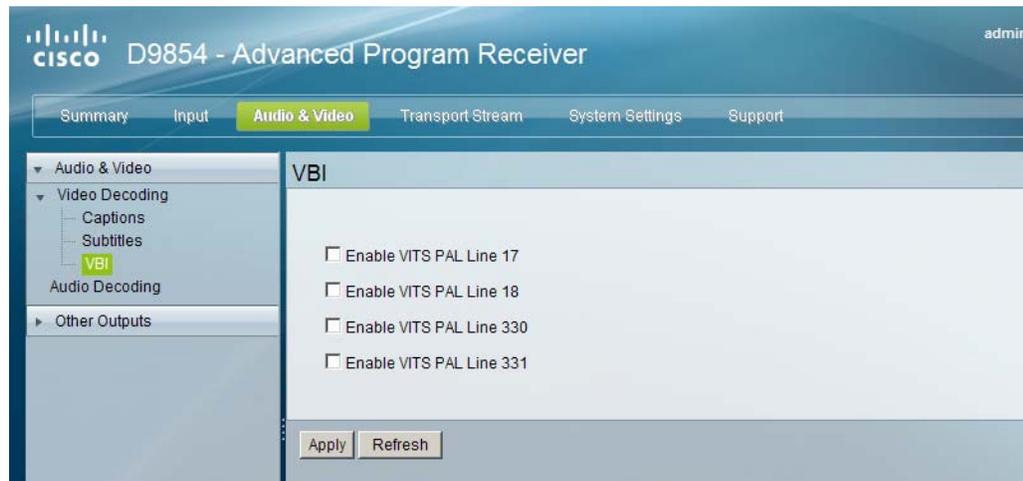
7. Click **Apply**.

Setting up VBI

To Set Up VBI

Proceed as follows to set up the VBI:

1. From the user interface of the D9854, click **Audio & Video > Audio & Video**, expand **Video Decoding** and then click **VBI**. The VBI page is displayed.



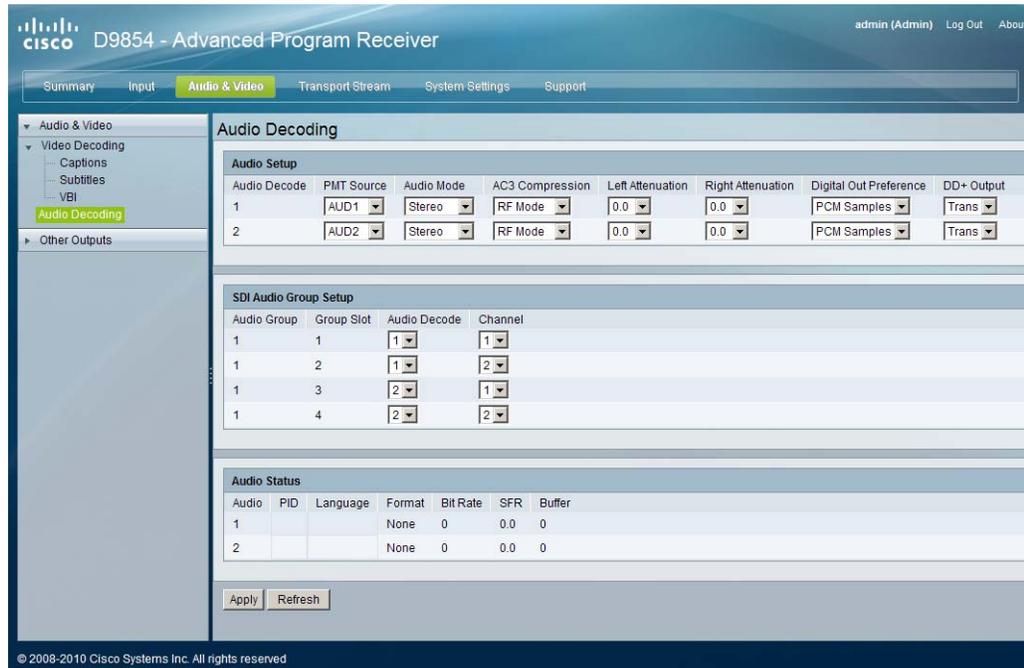
2. Select to enable Vertical Interval Test Signal (VITS) on PAL Lines 17, 18, 330, or 331.
3. Click **Apply**.

Setting up Audio Parameters

To Set Up the Audio Parameters

Proceed as follows to set up the audio:

1. From the user interface of the D9854, click **Audio & Video > Audio & Video > Audio Decoding**. The Audio Decoding page is displayed.



2. There are two audio settings. It allows you to configure the two balanced audio outputs on the rear panel (Audio 1 and Audio 2), known in the Web GUI as 1 and 2, respectively.
3. Select the **PMT Source** for the audio channel (None, AUD1 to AUD64).
4. Set the **Audio Mode**, which configures how audio received on the audio input is handled.
Select Stereo (Left and Right are passed directly through to Left and Right), R-Mono (Right is passed to both the Left and Right), L-MONO (Left is passed to both the Left and Right), or Mixed (Left is passed to both the Left and Right, and Right is passed to both the Left and Right).
5. The **AC3 Compression** is only applicable if the received signal is Dolby Digital (AC-3). This specifies the Dolby Digital (AC-3) Compression range of the received audio. The selections are Line Mode, Custom 1, Custom 0 or RF Mode. RF Mode is recommended for analog cable modulators.
6. **Left Attenuation** is the volume adjustment for the Left audio channel. You can select a value in the range from -6.0 dB to +6.0 dB, in increments of 0.5 dB.

Setting up Audio Parameters, Continued

7. **Right Attenuation** is the volume adjustment for the Right audio channel. You can select a value in the range from -6.0 dB to +6.0 dB, in increments of 0.5 dB.

The following options only appear if the D9854 contains SDI:

8. Set the **Digital Out Preference** for the SDI output or AES-3id output. The following describes the options:

Mode	Description
PCM Samples	If the audio source is MPEG Layer II format, the output will be routed to the SDI output as PCM.
Compressed	If the audio source is AES compressed, the output will be routed to the AES-3id output, compressed.

When **Digital Out Preference** is set to PCM Samples, the output is PCM regardless of whether it's MPEG, Dolby Digital (AC-3) or AAC audio. Additionally, when the output is Compressed, MPEG-1 L1 and L2 will be output PCM, even though Dolby Digital (AC-3) and AAC is compressed (and transcoded).

Output Input	Digital Output Preference		
	PCM Samples	Compressed	
		DDP Mode	
		Transcode (Converter)	Passthrough
MPEG LA (MPEG-1 and MPEG-2)	PCM	PCM	PCM
Dolby Digital (AC-3)	PCM	Dolby Digital (AC-3)	Dolby Digital (AC-3)
Dolby Digital Plus (E-AC-3) (Bit rate < 1.5 Mbps)	PCM	Dolby Digital (AC-3)	Dolby Digital Plus (E-AC-3) (no over-clocking, x1)
Dolby Digital Plus (E-AC-3) (Bit rate > 1.5 Mps)	PCM	Dolby Digital (AC-3)	Dolby Digital (AC-3)
MPEG-2 AAC, MPEG-4 (AAC and HE-AAC)	PCM	MPEG-2 AAC, MPEG-4 (AAC and HE-AAC)	MPEG-2, MPEG-4 (AAC and HE-AAC)

Setting up Audio Parameters, Continued

- Set the Dolby Digital Plus output mode (**DD+ Output**). If Trans is selected, it will transcode to Dolby Digital audio output. If Pass (passthrough) is selected and the bitrate is less than 1536 kbps (48 Khz), passthrough is performed and Dolby Digital Plus compressed out is received. If Pass (passthrough) is selected and the bitrate is more than 1536 Kbps, transcoding will be performed. This setting affects only the AES-3id and SDI outputs.

Note: Dolby Digital Plus is only available on Audio 1.

Note: Ensure that the **Digital Out Preference** is set to Compressed for digital passthrough. Otherwise, only decoded PCM will be available. This parameter has no effect if the audio source is not Dolby Digital Plus.

- In the **SDI Audio Group Setup** section, select the audio source (1 or 2) in the **Audio Decode** column and the source audio channel (1 or 2) in the **Channel** column for **Group Slot** 1 to 4. The Group Slot is the HANC position.
- The **Audio Status** section displays the current audio settings. The following table describes the audio status information:

Audio Status	Description
Audio	Displays the audio output number.
PID	Indicates the program PID number (1 to 8191).
Language	Indicates the language code.
Format	The received audio channel format (MPEG, AC3, AAC, HEAAC, or DDP).
Bit Rate	Audio bit rate of the received audio channel, in kbps.
SFR	The audio sampling frequency (32, 44.1, or 48 KHz).
Buffer	The audio input buffer level, in bytes.

- Click **Apply**.

Setting up Cueing Parameters

To Set Up Cueing Parameters

Proceed as follows to set up the cueing parameters:

1. From the user interface of the D9854, click **Audio & Video > Other Outputs > Cueing**. The Cueing page is displayed.



2. Set whether the **Cueing Mode** is Trigger or Tone.
Tones are standard Dual-Tone Multi-Frequency (DTMF) tones. The tones are generated at the Cue Tone/Relay output on the rear panel of the receiver. Trigger refers to open-collector pins which can be generated at the Cue Tone/Relay output on the rear panel of the receiver.
3. Set the **Trigger Polarity**. Select High and an active signal sent by the uplink results in a floating or open collector. An inactive signal results in a GND signal. Select Low, and the reverse of High is true.
4. Type the number of consecutive tone sequences are generated in the **Cueing Tone Repeat Count**. You can enter 1, 2, or 3. The default is 3. The other values are provided when a scenario demands repetition to ensure that the ad-insertion equipment receives the signal.
5. Enter the **Tone Duration**, in milliseconds, in the range from 0 to 80. The default is 40.
6. Enter the **Silence Duration** between the tones, in milliseconds. The duration is in the range from 0 to 80. The default is 40.

Setting up Cueing Parameters, Continued

7. Select the **Relay Mode** that can be programmed to respond to an Alarm state, Warning statue, or the state of one of the eight cue trigger pins. The response is generated at the Cue Tone/Relay output on the rear panel of the receiver. The following table shows what the possible field settings are and their relationship to the receiver output:

Relay Mode	Condition	Relay Contact	
		NC - C	C - NO
Alarm	Unit Power Off	Open	Close
	Alarm State	Open	Close
	No Alarm	Close	Open
Trigger	Active (selected in PNC)	Close	Open
	Inactive	Open	Close

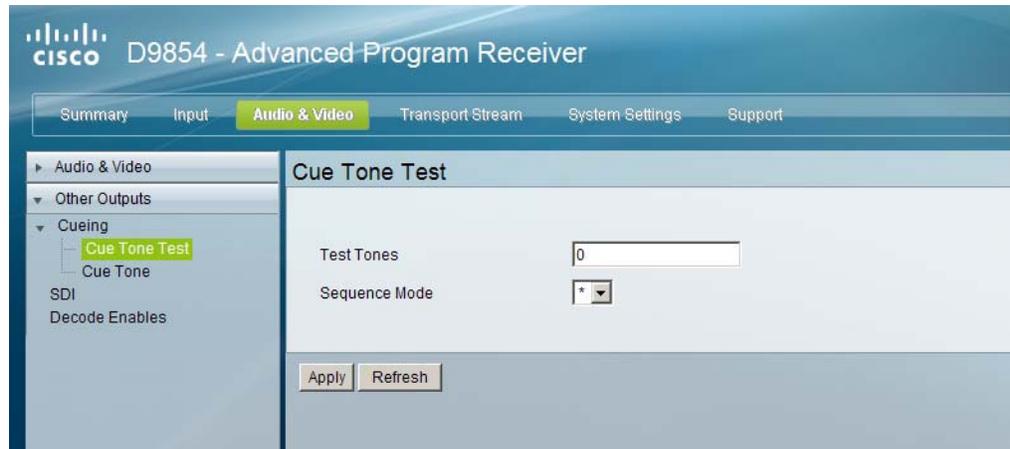
8. Select one of the **Cue Trigger Bit** corresponding to the Cue Trigger port pins (1 to 8).
9. Click **Apply**.

Setting up Cue Tone Test

To Set Up Cue Tone Test

Proceed as follows to set up cue tone test:

1. From the user interface of the D9854, click **Audio & Video > Other Outputs**, expand **Cueing** and then click **Cue Tone Test**. The Cue Tone Test page is displayed.



2. In the **Test Tones** field, specify the cue tone digits you want to test locally. You can enter a value between 000 and 999.
3. In the **Sequence Mode** drop-down list, select what to test in sequence (* for Start Tone and # for End Tone).
4. Click **Apply**.

Setting up Cue Tones

To Set Up Cue Tones

Proceed as follows to set up cue tones:

1. From the user interface of the D9854, click **Audio & Video > Other Outputs**, expand **Cueing** and then click **Cue Tone**. The Cue Tone page is displayed.

Sequence Number	Sequence State	Sequence Tones	Sequence Mode	Sequence Delay
1	Disable	0	*	1
2	Disable	0	*	1
3	Disable	0	*	1
4	Disable	0	*	1
5	Disable	0	*	1
6	Disable	0	*	1
7	Disable	0	*	1
8	Disable	0	*	1
9	Disable	0	*	1
10	Disable	0	*	1
11	Disable	0	*	1

2. The **Sequence Number** lists the tone sequences. The receiver supports up to 16 tone sequences. You can configure the state, tones, mode, and delay for each tone sequence.
3. Set the **Sequence State** (Enabled or Disabled). When disabled, no cue tone is output.
4. Enter the **Sequence Tones**, which are the cue tone digits used in your network (1 to 999).
5. Select the **Sequence Mode**, which specifies what to transmit in the sequence. Select * for Start Tone, # for the End Tone, and */# for transmitting the Start Tone and then the End Tone after waiting the specified delay time in the option below.
6. Enter the **Sequence Delay**, in seconds, that is sent when */# is used in the Mode option above. You can enter a value in the range from 1 to 255. The default is 30.
7. Click **Apply**.

Setting up SDI

To Set Up SDI

Proceed as follows to set up SDI:

1. From the user interface of the D9854, click **Audio & Video > Other Outputs > SDI**. The SDI page is displayed.



2. Set the **M1 Port Type** and **M2 Port Type** (SDI or ASI).
3. Select **Enable VII Output in HD-SDI** to enable the SDI VII (video index) interface.
4. In the **SDI Audio Group Setup** section, you can select the audio channel group and audio channels from the available audio group. The following describes the parameters:

SDI Audio Group Setup	Description
Audio Group	Displays the channel group (1 to 4).
Group Slot	Displays the HANC position (1 to 4).
Audio Decode	Select the audio source (1 or 2).
Channel	Select the source audio channel (1 or 2).

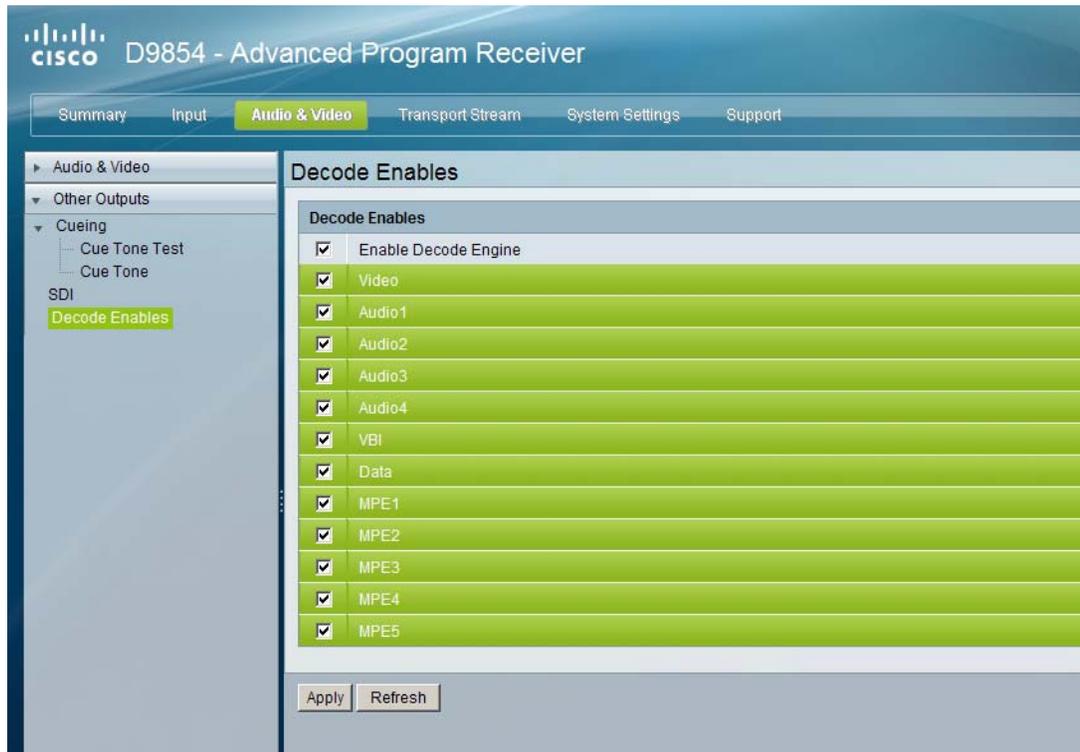
5. Click **Apply**.

Setting up Services

To Set Up Services

Proceed as follows to set up the service to be decoded by the receiver.

1. From the user interface of the D9854, click **Audio & Video > Other Outputs > Decode Enables**. The Decode Enables page is displayed.



2. Select the services to be decoded by the receiver. Select/de-select **Enable Decode Engine** to select/de-select all the services in the list.
3. Click **Apply**.

Configuring the ASI Output

To Set up the ASI Output

Proceed as follows to set up the ASI Output:

1. From the user interface of the D9854, click **Transport Stream > Transport Handling > ASI Output**. The ASI Output page is displayed.



Note: Any changes made to the ASI DPM values will automatically change the Output Mode to Full DPM Control, unless the output mode is set to No Output.

2. Select the DPM output **Rate Control** (in Mbps) when using an RF input source. The following table describes the affect each of the settings has on the output bit rate:

Rate Control	Description
Auto	The output rate follows that set by the uplink. The output rate will be the same as the input rate (including all null packets). This means the output bit rate is determined automatically based on the input source symbol rate and FEC value.
User	The output rate is specified as the Output Rate parameter. It is determined by the user setting regardless of the input source.

Configuring the ASI Output, Continued

ASI Output - SFN Units only

Rate Control	Description
Auto	Sets the output rate at 32 Mbps for DVB-T transports without null packet stuffing. If the incoming rate is lower than 32 Mbps, the receiver will burst up to 32 Mbps, but will average to the incoming bit rate.
User	The output rate is specified as the Output Rate parameter with null packet stuffing disabled. The output rate must be set high enough to pass the entire transport or the output will be corrupted. If the incoming rate is lower than the set output rate, the receiver will burst up to the output rate, but will average to the incoming bit rate.

3. Enter the output **User Rate**, which is only used if Rate Control is set to User. This setting is used when the signal source is RF or ASI.

Note: Output data may be lost when the user-selected bit rate is set to a value that is less than the actual signal bit rate. This allows you to set the output bit rate to a value expected by equipment connected to the ASI output.

You can enter a range from 0 to 213 Mbps for ASI.

4. Select the DPM **Output Mode**. The following table describes each mode:

Output Mode	Description
No Output	No ASI output will be generated.
Passthrough	The output will be identical to the input. The output channel will not be modified. PE/PID remapping options, PSI regeneration and User Rate are not supported in this mode.
Service Channels Only	Only service channels will be output.
MAP Passthrough	The output will be identical to the input, except that it will be generated using the DPM and PID mapping settings.
MAP Service Channels Only	Only service channels will be output according to the DPM and PID mapping settings.

Output Mode	Description
Full DPM Control	The output will be generated according to the Digital Program Mapping settings for ASI Output. This is a manual control setting.
Transcoding	The output will be generated using the DPM default settings, except that the DPM Action will be set to XCode and the Descrambled mode will be set to Descrambled.

- In **Descrambled** drop-down, select whether the receiver should scramble the output even if it is authorized to receive the channel. The default is Descrambled.

Descramble Mode	Description
Scrambled	Scrambles the output channel even if the PE is authorized and can descramble the channel.
Descrambled	Descrambles the output channel, and passes in-the-clear channels.

- Select Yes to insert null packets in the output stream under **Null Packet Insertion**. Otherwise, select No.
- The **ASI Output Status** section displays the current **Output Rate** (0 to 213 Mbps) and the available bit bandwidth (**Free Bandwidth**), in Mbps.
- Click **Apply**.

Configuring the DPM ASI Details

To Set up the DPM ASI Details

Proceed as follows to set up the DPM ASI Details:

Note: The following procedure defines all the available fields. For a typical setup of the DPM, see **Typical set up for Digital Program Mapping (DPM)**;, page 5-73.

1. From the user interface of the D9854, click **Transport Stream > Transport Handling**, expand **ASI Output** and then click **Digital Program Mapping**. The Digital Program Mapping page is displayed.

The screenshot shows the Cisco D9854 Advanced Program Receiver web interface. The main navigation bar includes Summary, Input, Audio & Video, Transport Stream (highlighted), System Settings, and Support. The left sidebar shows a tree view with Transport Handling expanded to ASI Output, then Digital Program Mapping. The main content area is titled 'Digital Program Mapping' and contains two sections: 'DPM Program Entry Setup' and 'DPM General Settings'.

DPM Program Entry Setup

	Program Entry	Chl #	Name	Action	Output Chl#	PMT PID
<input type="radio"/>	PE1	0	UNKN	Drop	0	8191
<input type="radio"/>	PE2	0	UNKN	Drop	0	8191
<input type="radio"/>	PE3	0	UNKN	Drop	0	8191
<input type="radio"/>	PE4	0	UNKN	Drop	0	8191
<input type="radio"/>	PE5	0	UNKN	Drop	0	8191
<input type="radio"/>	PE6	0	UNKN	Drop	0	8191
<input type="radio"/>	PE7	0	UNKN	Drop	0	8191
<input type="radio"/>	PE8	0	UNKN	Drop	0	8191
<input type="radio"/>	PE9	0	UNKN	Drop	0	8191
<input type="radio"/>	PE10	0	UNKN	Pass	0	8191
<input type="radio"/>	PE11	0	UNKN	Drop	0	8191
<input type="radio"/>	PE12	0	UNKN	Drop	0	8191

Buttons: Edit, Resynchronize, Resynchronize All

DPM General Settings

Remapping Mode	<input type="text" value="Svc ID & PID"/>
Duplication Method	<input type="text" value="Pkt Copy"/>
Unreferenced Content	<input type="text" value="Drop"/>
Service ID Output	<input type="text" value="Valid Ch"/>
SI Regeneration Option	<input type="text" value="SA Std"/>
PSI Table Output Option	<input type="text" value="Ctl By Table"/>
PSI Regeneration Option	<input type="text" value="Always"/>

This Item affects all Transport outputs

2. For each DPM **Program Entry**, it displays the input channel number (**Chl #**) and channel **Name**.

Note: Any changes made to the DPM Program Entry Setup configuration automatically changes the Output Mode to Full DPM Control in the ASI Output page.

3. Select the program entry you want to edit.

Configuring the DPM ASI Details, Continued

4. In the **Action** drop-down list, select the DPM program action for the PE (Pass, Map, or Drop). The default is Pass.
5. Click **Edit**. The DPM PE PID MAP window opens.

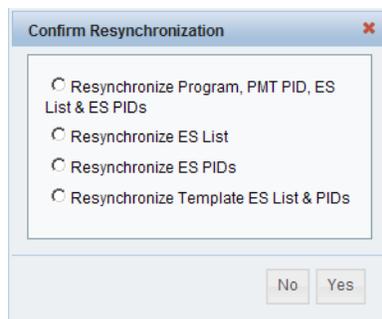
6. Enter the **Output Channel Number** you want to map to the input channel (Input Channel #). This value is only used if the PE **Action** was set to Map. You can enter a range from 1 to 65535.
7. Enter the **Output PMT PID** you want to map to the Input PMT PID.
8. In the **PE PID MAP** section, you can select an existing PID mapping entry you want to modify or click **Add Row** to create a new entry.
9. The **Input Stream** indicates the input program stream category/service type. The **Input PID** displays the input program PID (1 to 8190). This is only used if the Action is set to Map.
10. In the **Action** drop-down, select the DPM action for the PID associated with the PE.

Action	Description
Drop	Removes the service and its associated PMT reference from the transport output.
Map	Provides the flexibility to define all the outgoing PID numbers for a PE, including those not currently on transmission.

11. Enter a **Stream Type** to map within a PE to a specified PID (0 to 255).

Configuring the DPM ASI Details, Continued

12. Select the output program stream **Category** or service type. This value is only used if the Action is set to Map. The categories are: UNKN, CDT, LSDT, DATA, TTX, MPE, DPI, VBI, SUBT, AUD, VID, PCR or INVL.
13. Enter the Output Stream **Instance** (1 to 64) and the **Output** program **PID** (0 to 8192).
14. To remove a PID mapping, select the entry you want to remove and click **Delete**.
15. Click **OK**.
16. In the **DPM Program Entry Setup** section, each PE output can be synchronized to its input according to one of the four output modes. Select the program entry you want to synchronize and then click **Resynchronize** or click **Resynchronize All** to synchronize all the listed PE outputs to its inputs. The Confirm Resynchronization window is displayed.



17. Select whether you want to synchronize services and PIDs, services only, PIDs only, or to synchronize using a template.
18. Click **Yes**.
19. In the **DPM General Settings** section, you can configure ASI DPM transport stream settings.
20. In the **Remapping Mode** drop-down, select the DPM map mode. The following table describes each mode:

Map Mode	Description
Svc ID	The elementary PIDs are not changed. Channels are remapped by changing their PSI references. When this mode is selected, PE detailed PID mapping cannot be edited.
Svc ID & PID	Channels and the elementary service PIDs can be mapped.

Configuring the DPM ASI Details, Continued

21. Select the **Duplication Method** of the DPM program, which modifies the PSI to duplicate a program and its content. This parameter is only used if Remapping Mode is set to Svc ID & PID. The following table describes the each duplication method:

Duplic Mode	Description
PSI Remap	Every input PID can be mapped to one output PID. If PID mapping conflicts exist, DPM will use the Precedence Rule to decide which output PID to use. All PMTs using the input PID will be updated to reference the output PID specified by the winner.
Pkt Copy	An input PID can be mapped to multiple output PIDs. The PID will be duplicated as many times as needed (up to a certain hardware limitation).

Pkt Copy is recommended for most applications.

22. Select the DPM action to use for **Unreferenced Content**. Unreferenced content is the remainder of the transport that is not filtered by the program entries. You can select Drop (default) or Pass.
23. In the **Service ID Output** drop-down, select whether the receiver should always generate PSI tables for the Mapped PE even if the selected input channel is not available, or for only valid service channels/IDs. The following table describes each service ID:

Svc ID	Description
Valid Ch	Only transmits the PSI tables for the mapped program if the program exists on the input stream.
All Ch	Transmits the PSI tables for the mapped program even if the program does not exist in the input stream. All Ch is only valid if the PAT, NIT, SDT and PMT are set to Regenerate.

Configuring the DPM ASI Details, Continued

24. Select the **SI Regeneration Option**. This applies the PowerVu rates (consistent with the uplink). This parameter is only used if Remapping Control is set to None. The following table describes each PSI rate:

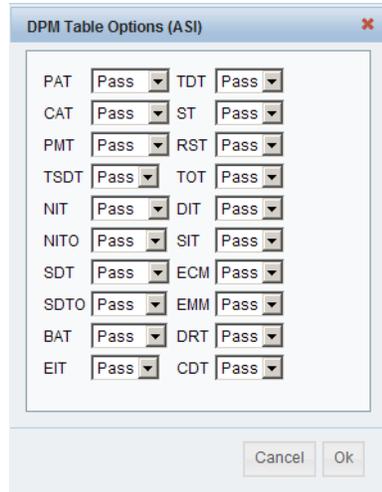
PSI Rate	Description
Auto	Matches the generated PSI tables' output rate as the incoming rate.
MPEG Min	Transmits the generated PSI tables on the longest intervals that are allowed by MPEG standard.
SA Std	Transmits the generated PSI tables based on PowerVu standard intervals.

25. The **PSI Table Output Option** drop-down allows the operator to specify which PSI tables to include in the program/output stream. The following table describes each option:

PSI Options	Description
Pass All	Transmits the incoming PSI Tables as is; does not modify the content and rate.
Drop All	Does not transmit any PSI Tables.
Ctl By Table	The operator can click Table Options to select the output mode for each table. The default table selections will be all pass, and only with CDT dropped.

Configuring the DPM ASI Details, Continued

26. In the **PSI Regeneration Option** drop-down, select whether to regenerate the PSI tables. You can select Always or As Needed (only if the content has changed).
27. If Ctl By Table was selected as the **PSI Table Output Option**, click **Table Options** to configure the DPM table options. The DPM Table Options (ASI) window is displayed.



28. Select the tables which will be passed, dropped, regenerated or passed with rate control (PwRC) from the ASI Output.

Setting	Mode Options	Description	Default
PAT	Pass, Drop, Regen	Program Allocation Table	Pass
CAT	Pass, Drop, Regen	Conditional Access Table	Pass
PMT	Pass, Drop, Regen	Program Map Table	Pass
TSDT	Pass, Drop	Transport Section Description Table	Pass
NIT	Pass, Drop, Regen, PwRC	Network Information Table	Pass
NITO	Pass, Drop, PwRC	Network Information Table - Other	Pass
SDT	Pass, Drop, Regen, PwRC	Service Description Table	Pass

Setting	Mode Options	Description	Default
SDTO	Pass, Drop, PwRC	Service Description Table - Other	Pass
BAT	Pass, Drop, PwRC	Bouquet Allocation Table	Pass
EIT	Pass, Drop	Event Information Table	Pass
TDT	Pass, Drop	Time-Date Table	Pass
RST	Pass, Drop	Running Status Table	Pass
TOT	Pass, Drop	Time Offset Table	Pass
DIT	Pass, Drop	Discontinuity Information Table	Pass
SIT	Pass, Drop	Selection Information Table	Pass
ECM	Pass, Drop	Encrypted Control Message	Pass
EMM	Pass, Drop	Entitlement Management Message	Pass
DRT	Pass, Drop	Disaster Recovery Table	Pass
CDT	Pass, Drop	Code Download Table	Pass

29. Click **OK**.

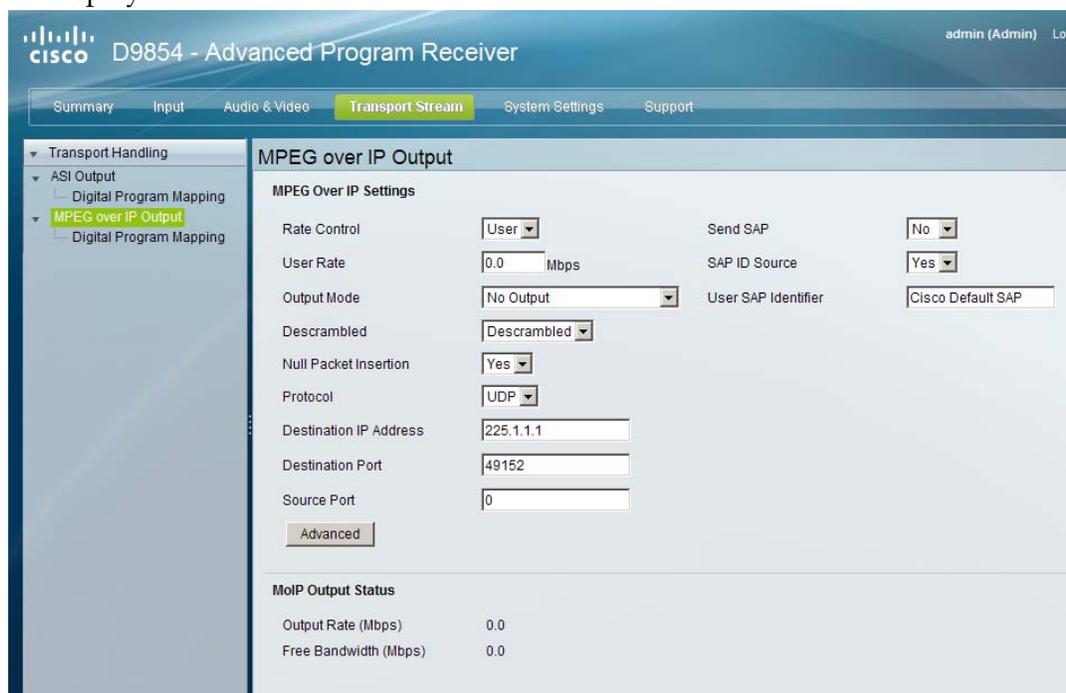
30. Click **Apply**.

Configuring the MPEGoIP Output

To Set up the MPEG over IP (MPEGoIP) Output

Proceed as follows to set up the MPEGoIP Output:

1. From the user interface of the D9854, click **Transport Stream > Transport Handling > MPEG over IP Output**. The MPEG over IP Output page is displayed.



Note: Any changes made to the MOIP DPM values will automatically change the Output Mode to Full DPM Control, unless the output mode is set to No Output.

2. Select the DPM output **Rate Control** (in Mbps) when using an RF input source. The following table describes the affect each of the settings has on the output bit rate:

Rate Control	Description
Auto	The output rate follows that set by the uplink. The output rate will be the same as the input rate (including all null packets). This means the output bit rate is determined automatically based on the input source symbol rate and FEC value.
User	The output rate is specified as the Output Rate parameter. It is determined by the user setting regardless of the input source.

Configuring the MPEGoIP Output, Continued

3. Enter the output **User Rate**, which is only used if Rate Control is set to User. This setting is used when the signal source is RF or ASI.

Note: Output data may be lost when the user-selected bit rate is set to a value that is less than the actual signal bit rate. This allows you to set the output bit rate to a value expected by equipment connected to the ASI output.

You can enter a range from 0 to 999.99999 Mbps.

4. Select the DPM **Output Mode**. The following table describes each mode:

Output Mode	Description
No Output	No MPEGoIP output will be generated.
Passthrough	The output will be identical to the input. The output channel will not be modified. PE/PID remapping options, PSI regeneration and User Rate are not supported in this mode.
Service Channels Only	Only service channels will be output.
MAP Passthrough	The output will be identical to the input, except that it will be generated using the DPM and PID mapping settings.
MAP Service Channels Only	Only service channels will be output according to the DPM and PID mapping settings.
Full DPM Control	The output will be generated according to the DPM settings on the Digital Program Mapping (MPEG over IP) page. This is a manual control setting.
Transcoding	The output will be generated using the DPM default settings, except that the DPM Action will be set to XCode and the Descrambled mode will be set to Descrambled.

Configuring the MPEGoIP Output, Continued

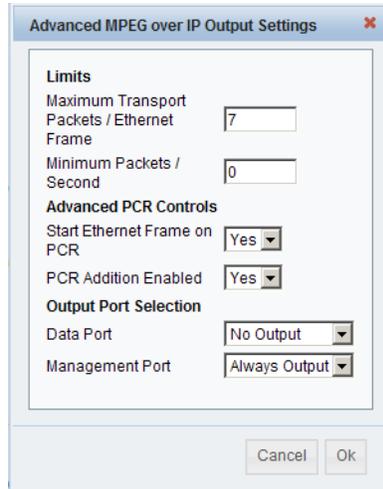
5. In **Descrambled** drop-down, select whether the receiver should scramble the output even if it is authorized to receive the channel. The default is Descrambled.

Descramble Mode	Description
Scrambled	Scrambles the output channel even if the PE is authorized and can descramble the channel.
Descrambled	Descrambles the output channel, and passes in-the-clear channels.

6. Select Yes to insert null packets in the output stream under **Null Packet Insertion**. Otherwise, select No.
7. Select the transport **Protocol** to be used for the output stream (RTP or UDP).
8. Enter the multicast **Destination IP Address**. You can enter 0 to 255 for each of the four fields in the format ###.###.###.###. For example, 255.1.1.1.
9. Select the **Destination Port** number (1 to 65535).
Note: If you selected RTP as the Protocol, you must select an even destination port number.
10. If UDP was selected as the Protocol, enter the **Source UDP Port** number (1 to 65535).
11. In the **Send SAP** drop-down list, select whether to send Session Announcement Protocol messages (Yes or No).
12. Select whether to send the **SAP ID Source** (Yes or No), defined in the **User SAP Identifier** below. You can enter the SAP identifier (ID)/string, up to 49 characters.

Configuring the MPEGoIP Output, Continued

13. Click **Advanced**. The Advanced MPEG over IP Output Settings window is displayed.



14. In the **Maximum Transport Packets/Ethernet Frame** field, enter the maximum number of transport packets per IP packet (1 to 7).
15. In the **Minimum number Packets/Second** field, enter the minimum number of transport packets per IP packet. You can enter 0 or 2 to 1000.
16. In the **Start Ethernet Frame on PCR** drop-down list, select whether to always transmit a new Ethernet Packet when a new Program Clock Reference (PCR) arrives (Yes or No).

Configuring the MPEGoIP Output, Continued

17. In the **PCR Addition Enabled** drop-down list, select whether to add a PCR to the output stream (Yes or No).
18. In the **Data Port** and **Management Port** drop-down lists, select the Management and Data MOIP modes.

Note: If No Output was selected for Output Mode, updates to the port modes will have no effect.

The following describes each mode:

Data Port Management Port	Description
No Output	Disables the MPEGoIP interface.
Always Output	Always output data on the port.

19. Click **OK**.
20. The **MoIP Output Status** section displays the current **Output bit Rate** (0 to 213 Mbps) and the available bit bandwidth (**Free Bandwidth**), in Mbps.
21. Click **Apply**.

Configuring the DPM MPEGoIP Output Details

To Set up the DPM MPEGoIP Details

Proceed as follows to set up the DPM MPEGoIP output:

Note: The following procedure defines all the available fields. For a typical setup of the DPM, see **Typical set up for Digital Program Mapping (DPM)**, page 5-73.

1. From the user interface of the D9854, click **Transport Stream > Transport Handling**, expand **MPEG over IP Output** and then click **Digital Program Mapping**. The Digital Program Mapping page is displayed.

The screenshot shows the Cisco D9854 Advanced Program Receiver web interface. The main navigation bar includes Summary, Input, Audio & Video, Transport Stream (highlighted), System Settings, and Support. The left sidebar shows a tree view with Transport Handling expanded, and Digital Program Mapping selected under MPEG over IP Output. The main content area is titled 'Digital Program Mapping' and contains two sections: 'DPM Program Entry Setup' and 'DPM General Settings'.

DPM Program Entry Setup

	Program Entry	Chl #	Name	Action	Output Chl#	PMT PID
<input type="radio"/>	PE1	0	UNKN	Drop	0	8191
<input type="radio"/>	PE2	0	UNKN	Drop	0	8191
<input type="radio"/>	PE3	0	UNKN	Drop	0	8191
<input type="radio"/>	PE4	0	UNKN	Drop	0	8191
<input type="radio"/>	PE5	0	UNKN	Drop	0	8191
<input type="radio"/>	PE6	0	UNKN	Drop	0	8191
<input type="radio"/>	PE7	0	UNKN	Drop	0	8191
<input type="radio"/>	PE8	0	UNKN	Drop	0	8191
<input type="radio"/>	PE9	0	UNKN	Drop	0	8191
<input type="radio"/>	PE10	0	UNKN	Drop	0	8191
<input type="radio"/>	PE11	0	UNKN	Drop	0	8191
<input type="radio"/>	PE12	0	UNKN	Drop	0	8191

Buttons: Edit, Resynchronize, Resynchronize All

DPM General Settings

Remapping Mode	Svc ID & PID
Duplication Method	Pkt Copy
Unreferenced Content	Drop
Service ID Output	Valid Ch
SI Regeneration Option	SA Std
PSI Table Output Option	Drop All
PSI Regeneration Option	Always

This item affects all Transport outputs.

2. For each DPM **Program Entry**, it displays the input channel number (**Chl #**) and channel **Name**.

Note: Any changes made to the DPM Program Entry Setup configuration automatically changes the Output Mode to Full DPM Control in the MPEG over IP Output page.

3. Select the program entry you want to edit.

Configuring the DPM MPEGoIP Details, Continued

4. In the **Action** drop-down list, select the DPM program action for the PE (Pass, Map, or Drop). The default is Pass.
5. Click **Edit**. The DPM PE PID MAP window opens.

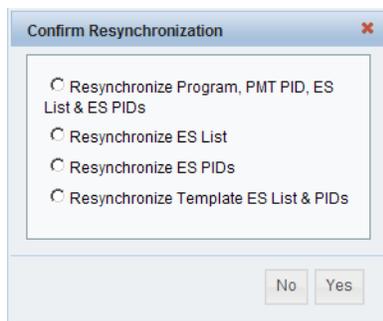
6. Enter the **Output Channel Number** you want to map to the input channel (Input Channel #). This value is only used if the PE **Action** was set to Map. You can enter a range from 1 to 65535.
7. Enter the **Output PMT PID** you want to map to the Input PMT PID.
8. In the **PE PID MAP** section, you can select an existing PID mapping entry you want to modify or click **Add Row** to create a new entry.
9. The **Input Stream** indicates the input program stream category/service type. The **Input PID** displays the input program PID (1 to 8190). It is only used if the PID Action is set to Map.
10. In the **Action** drop-down, select the DPM action for the PID associated with the PE.

Action	Description
Drop	Removes the service and its associated PMT reference from the transport output.
Map	Provides the flexibility to define all the outgoing PID numbers for a PE, including those not currently on transmission.

11. Enter a **Stream Type** to map within a PE to a specified PID (0 to 255).

Configuring the DPM MPEGoIP Details, Continued

12. Select the output program stream **Category** or service type. This value is only used if the Action is set to Map. The categories are: UNKN, CDT, LSDT, DATA, TTX, MPE, DPI, VBI, SUBT, AUD, VID, PCR or INVL.
13. Enter the Output Stream **Instance** (1 to 64) and the **Output** program **PID** (0 to 8192).
14. To remove a PID mapping, select the entry you want to remove and click **Delete**.
15. Click **OK**.
16. In the **DPM Program Entry Setup** section, each PE output can be synchronized to its input according to one of the four output modes. Select the program entry you want to synchronize and then click **Resynchronize** or click **Resynchronize All** to synchronize all the listed PE outputs to its inputs. The Confirm Resynchronization window is displayed.



17. Select whether you want to synchronize services and PIDs, services only, PIDs only, or to synchronize using a template.
18. Click **Yes**.
19. In the DPM General Settings section, you can configure MPEGoIP DPM transport stream settings.
20. In the **Remapping Mode** drop-down, select the DPM map mode. The following table describes each mode:

Map Mode	Description
Svc ID	The elementary PIDs are not changed. Channels are remapped by changing their PSI references. When this mode is selected, PE detailed PID mapping cannot be edited.
Svc ID & PID	Channels and the elementary service PIDs can be mapped.

Configuring the DPM MPEGoIP Details, Continued

21. Select the **Duplication Method** of the DPM program, which modifies the PSI to duplicate a program and its content. This parameter is only used if Remapping Mode is set to Svc ID & PID. The following table describes the each duplication method:

Duplic Mode	Description
PSI Remap	Every input PID can be mapped to one output PID. If PID mapping conflicts exist, DPM will use the Precedence Rule to decide which output PID to use. All PMTs using the input PID will be updated to reference the output PID specified by the winner.
Pkt Copy	An input PID can be mapped to multiple output PIDs. The PID will be duplicated as many times as needed (up to a certain hardware limitation).

Pkt Copy is recommended for most applications.

22. Select the DPM action to use for **Unreferenced Content**. Unreferenced content is the remainder of the transport that is not filtered by the program entries. You can select Drop (default) or Pass.
23. In the **Service ID Output** drop-down, select whether the receiver should always generate PSI tables for the Mapped PE even if the selected input channel is not available, or for only valid service channels/IDs. The following table describes each service ID:

Svc ID	Description
Valid Ch	Only transmits the PSI tables for the mapped program if the program exists on the input stream.
All Ch	Transmits the PSI tables for the mapped program even if the program does not exist in the input stream. All Ch is only valid if the PAT, NIT, SDT and PMT are set to Regenerate.

Configuring the DPM MPEGoIP Details, Continued

24. Select the **SI Regeneration Option**. This applies the PowerVu rates (consistent with the uplink). This parameter is only used if Remapping Control is set to None. The following table describes each PSI rate:

PSI Rate	Description
Auto	Matches the generated PSI tables' output rate as the incoming rate.
MPEG Min	Transmits the generated PSI tables on the longest intervals that are allowed by MPEG standard.
SA Std	Transmits the generated PSI tables based on PowerVu standard intervals.

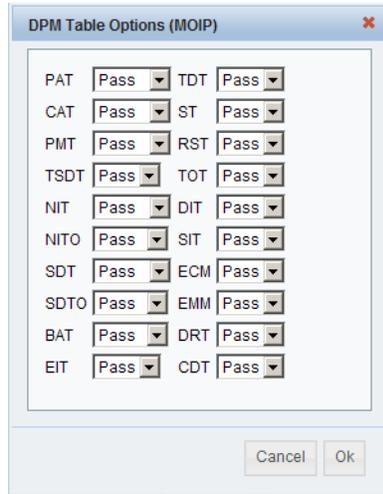
25. The **PSI Table Output Option** drop-down allows the operator to specify which PSI tables to include in the program/output stream. The following table describes each option:

PSI Options	Description
Pass All	Transmits the incoming PSI Tables as is; does not modify the content and rate.
Drop All	Does not transmit any PSI Tables.
Ctl By Table	The operator can click Table Options to select the output mode for each table. The default table selections will be all pass, and only with CDT dropped.

26. Select the **PSI Regeneration Option** drop-down, select whether to regenerate the PSI tables. You can select Always or As Needed (only if the content has changed).

Configuring the DPM MPEGoIP Details, Continued

27. If Ctl By Table was selected as the **PSI Table Output Option**, click **Table Options** to configure the DPM table options. The DPM Table Options (MOIP) window is displayed.



28. Select the tables which will be passed, dropped, regenerated or passed with rate control (PwRC) from the MOIP Output.

Setting	Mode Options	Description	Default
PAT	Pass, Drop, Regen	Program Allocation Table	Pass
CAT	Pass, Drop, Regen	Conditional Access Table	Pass
PMT	Pass, Drop, Regen	Program Map Table	Pass
TSDT	Pass, Drop	Transport Section Description Table	Pass
NIT	Pass, Drop, Regen, PwRC	Network Information Table	Pass
NITO	Pass, Drop, PwRC	Network Information Table - Other	Pass
SDT	Pass, Drop, Regen, PwRC	Service Description Table	Pass
SDTO	Pass, Drop, PwRC	Service Description Table - Other	Pass

Setting	Mode Options	Description	Default
BAT	Pass, Drop, PwRC	Bouquet Allocation Table	Pass
EIT	Pass, Drop	Event Information Table	Pass
TDT	Pass, Drop	Time-Date Table	Pass
RST	Pass, Drop	Running Status Table	Pass
TOT	Pass, Drop	Time Offset Table	Pass
DIT	Pass, Drop	Discontinuity Information Table	Pass
SIT	Pass, Drop	Selection Information Table	Pass
ECM	Pass, Drop	Encrypted Control Message	Pass
EMM	Pass, Drop	Entitlement Management Message	Pass
DRT	Pass, Drop	Disaster Recovery Table	Pass
CDT	Pass, Drop	Code Download Table	Pass

29. Click **Apply**.

30. Click **Copy to ASI** to copy all DPM data from MOIP output to the ASI output.

Typical set up for Digital Program Mapping (DPM):

Proceed as follows for a typical DPM set up:

1. Verify that you are receiving a valid signal and that you have set up the channels that you want to pass, drop, or map.
2. From the user interface of the D9854, click **Transport Stream**.
3. Click **ASI Output** or **MPEG over IP Output**.
4. In the **Output Mode** drop-down, select Full DPM Control.
5. If necessary, select the **Descrambled** mode according to whether the program is to be scrambled or descrambled for downstream viewing or monitoring.
6. Click **Apply**.
7. Click **Digital Program Mapping** from the **ASI Output** or **MPEG over IP Output**. The Digital Program Mapping page is displayed.
8. In the DPM Program Entry Setup, click **Resynchronize All**. This copies the input services PIDs to the remapped output service PIDs.

Configuring the DPM MPEGoIP Details, Continued

9. Select the PE containing the channel you want to configure and click **Edit**. The DPM PE PID MAP window is displayed.
10. In the **Action** drop-down, select Pass, Drop, or Map.
11. Configure the input to output channel mapping in the **Category** drop-down. Video and PCR can be output on the same PID or different PIDs. If output on the same PID, they will appear identical to the input.
12. Click **OK**.
13. In the DPM General Setting section, set the following parameters:

Parameter	Selection
Remapping Mode	Svc ID & PID
Duplication Method	Pkt Copy
Unreferenced Content	Drop
Service ID Output	Valid Ch/ All Ch
PSI Table Output Option	Ctl By Table
PSI Regeneration Option	Always/ As Needed

14. Click **Table Options**. The DPM Table Options (ASI/MOIP) window is displayed.
15. Set the following parameters:

Parameter	Selection
PAT	Regen
CAT	Regen
PMT	Regen
TSDT	Drop
NIT	Regen or Drop
NITO	Drop
SDT	Regen
SDTO	Drop

Parameter	Selection
BAT	Drop
EIT	Drop
TDT	Pass
RST	Pass
TOT	Pass
DIT	Pass
SIT	Pass
ECM	Drop
EMM	Drop
DRT	Drop
CDT	Drop

16. Click **OK**.

17. Click **Apply**.

Viewing the System Identification

To View the System Information

Proceed as follows to view the Identification page:

1. From the user interface of the D9854, click **System Settings > System > Identification**. The Identification page is displayed.



2. The System page displays the parameters associated with the D9854 system, such as serial number, model number, and user addresses.
3. You may optionally change the **Hostname** (device name) and click **Apply**.

Viewing Features/License Information

To View the Features/License Information

Proceed as follows to view the Hardware Features and Base License information:

From the user interface of the D9854, click **System Settings > System**, expand **Identification** and then click **Features/Licenses**. The Features/Licenses page is displayed.



The screenshot shows the Cisco D9854 Advanced Program Receiver web interface. The top navigation bar includes tabs for Summary, Input, Audio & Video, Transport Stream, System Settings (highlighted), and Support. The left sidebar shows a tree view with System > Identification > Features/Licenses selected. The main content area is titled 'Features/Licenses' and contains two tables.

Hardware Features	
Feature	Present (Stuffed)
SDI	Yes
MPOIP	No
Eth Filter	No
D9858	No
Number of SAT	0
Dolby-E	No
SFN	No

Feature License Summary	
Feature	Enabled
HD Decode	Yes
H.264 Decode	Yes
DVB-S2	Yes
MPEGolP Out	Yes

The **Hardware Features** section displays the hardware options installed in the current D9854 Advanced Program Receiver. For example, it indicates whether the receiver is equipped with an SDI output and the number of transcoding paths.

The **Feature License Summary** section displays a list of software licenses for the D9854 Advanced Program Receiver and whether each of the software licenses are enabled or disabled.

Note: All software licenses are enabled for this release (temporarily). Any of these required licenses will need to be purchased from Cisco in subsequent software releases.

Setting up IP Information

To Set Up the IP Information

Proceed as follows to configure the IP information:

1. From the user interface of the D9854, click **System Settings > System > IP Settings**. The IP Settings page is displayed.

The screenshot shows the Cisco D9854 - Advanced Program Receiver web interface. The top navigation bar includes 'Summary', 'Input', 'Audio & Video', 'Transport Stream', 'System Settings' (highlighted), and 'Support'. A left sidebar menu shows 'System' expanded with sub-items: 'Identification', 'Features/Licenses', 'IP Settings' (highlighted), 'Time/Clock', 'Alarms', 'Versions', 'Settings File', and 'Security/Accounts'. The main content area is titled 'IP Settings' and is divided into two sections: 'control' and 'data'. Each section contains the instruction 'Enter the port information below' and three input fields: 'IP Address', 'IP Mask', and 'Gateway Address'. In the 'control' section, the values are 192.131.244.6, 24, and 192.131.244.254 respectively. In the 'data' section, the values are 192.131.244.7, 24, and 192.131.244.254. At the bottom of the form are 'Apply' and 'Refresh' buttons.

2. The IP Settings page allows you to set the parameters for communicating with other equipment via the Ethernet Data and Management ports for MPEGoIP and MPE applications and upgrading application software.
3. Set the **IP Address** for its participation in a network environment. The address is 12 digits in length (###.###.###.###).
4. Enter the **IP Mask** in CIDR format for its participation in a Network environment (8 to 30).

Setting up IP Information, Continued

5. Set the **Gateway Address** on the Network, used to expose the receiver to a WAN. The IP Address, IP Mask, and Gateway Address should be changed together, i.e., as a group. The following table shows the most commonly used Subnet mask values to enter for a chosen IP address mask, which will depend on the size of your network.

Mask	Subnet Mask
8	255.0.0.0
16	255.255.0.0
24	255.255.255.0

6. Click **Apply**.

Setting up IP Routing Information

To Set Up the IP Information

Proceed as follows to configure the IP information:

1. From the user interface of the D9854, click **System Settings > System**, expand **IP Settings** and then click **IP Routing**. The IP Routing page is displayed.



2. In the **MPE Data Filter Model** drop-down, set whether all the MPE data is forwarded to the network (Forward None or Forward All). It can forward up to 5 multicast IP addresses.

Note: The receiver supports up to a maximum of 10 Mbps throughput when forwarding 1500 byte packets.

3. The **Static Unicast Routing** and the **Static Multicast Filtering** sections are not supported in the current release.
4. Click **Apply**.

Setting up SNMP Information and Trap Destinations

To Set Up SNMP Information

Proceed as follows to set up SNMP information:

1. From the user interface of the D9854, click **System Settings > System**, expand **IP Settings** and then click **SNMP**. The SNMP page is displayed.

Trap Destination Configuration	
Trap Destination IP Address	Community String
192.131.244.2	public

2. Set the **Read Community String** and the **Write Community String** to public (default) or custom string. The SNMP Community Read/Write is used when communicating with a device within an SNMP environment. These commands allow you to set the password to read and write data to a device to display diagnostics traps/alarms. To set a custom community string, enter an alphanumeric character string up to 31-characters in length identifying the password for the device.

Note: The community string is case-sensitive.

3. Enter the **System Name**, **System Location**, and **System Contact** information of the D9854 receiver. The system information is sent to the MIB browser, if applicable. The MIB Browser is a third party software used to manage SNMP requests. For more information, contact Cisco customer support.

Setting up SNMP Information and Trap Destinations, Continued

To Add a Trap Destination

1. Click **Add** in the Trap Destination Configuration section.

	Trap Destination IP Address	Community String
<input type="radio"/>	192.131.244.2	public
<input type="radio"/>	<input type="text"/>	<input type="text"/>

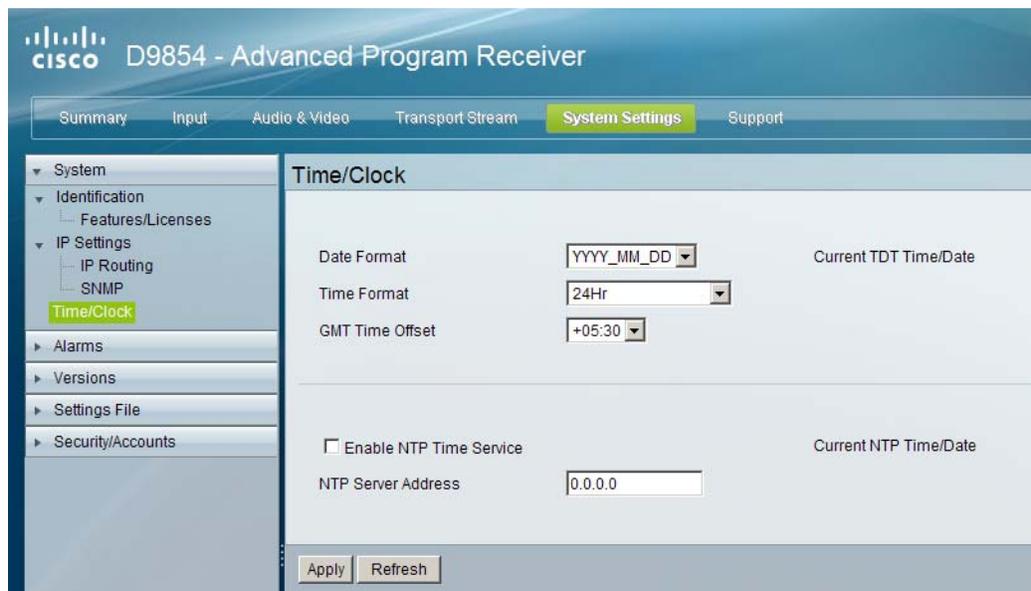
2. Type the **Trap Destination IP Address** that sets the destination for SNMP trap messages for events (i.e. fault messages). You can enter up to 12 characters (e.g., 155.128.100.200).
3. Type the **Community String** for the trap destination (IP Address entered above).
Enter public or custom string. The default is public. You can enter a string up to 35 characters.
4. To edit/delete an existing trap destination, select the trap destination entry by clicking on the radio button. Make the necessary changes, or click **Delete** to remove the address from the Trap Destination Configuration list.
5. Click **Apply**.

Configuring Time/Clock Information

To Configure the Time/Clock Settings

Proceed as follows to configure the time/clock settings:

1. From the user interface of the D9854, click **System Settings > System > Time/Clock**. The Time/Clock page is displayed.



2. Set the **Date Format** of the receiver. The following formats are supported: YYYY_MM_DD, DD_MM_YYYY, MM_DD_YYYY.
3. Set the **Time Format** of the receiver. Current time information is normally broadcast as part of the transmitted digital signal. It is broadcast as GMT (Greenwich Mean Time) with date information in Modified Julian Date format. The following formats are supported: 24Hr, 24 Hr SuspendZero (the leading zero is dropped from the time), 12Hr, 12Hr SuspendZero (the leading zero is dropped from the time).
4. Set the **GMT Offset**. The local time is displayed using a time zone (GMT offset). If your local time is not GMT, you must set this time setting in the range from -12.0 to +12.0 hours in 0.5 hour increments.
5. The **Current TDT Time/Date** displays the current TDT (Time and Date Table) date and time received from the DVB stream, adjusted for local time zone.
6. Select **Enable NTP Time Service** to periodically request NTP (Network Time Protocol) timestamps from the NTP server (NTP server address set below) and to synchronize its system (i.e., non-DVB related) time with the NTP server.
7. Set the **NTP Server Address**. If the NTP server address is not set (0.0.0.0), the IRD will not attempt to connect to it.

Configuring Time/Clock Information, Continued

8. Displays the current time in the **Current NTP Time/Date** if IRD receives a valid reply from the NTP server, adjusted for local time zone.
9. Click **Apply**.

Viewing the Alarm/Warning Status

To View the Alarm and Warning Status Information

Proceed as follows to view the Alarm/Warning Status page:

From the user interface of the D9854, click **System Settings > Alarms > Status**. The Status page is displayed.



The Status page displays all the active event messages for the D9854 system. The Fault Summary section displays the **Type** of message (alarm or warning) and the number of alarms and warnings that have an active status (**Number Active**).

The following table shows the Alarm/Warning Status table information:

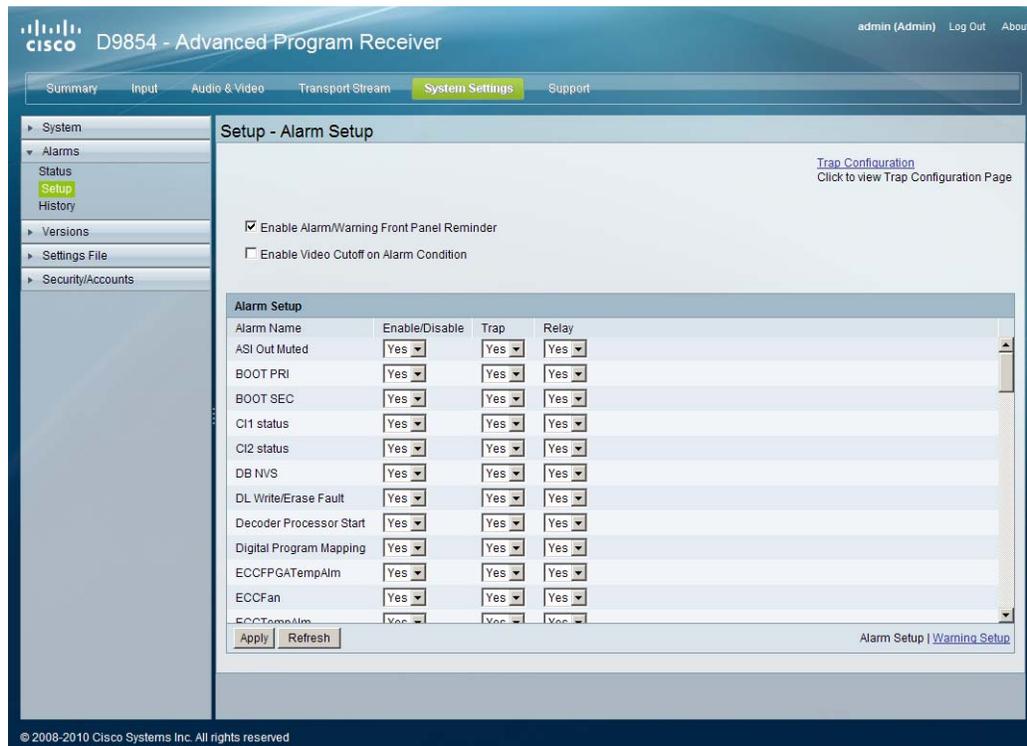
Status	Description
Type	Shows whether it is an alarm or a warning message.
Name	Name of the alarm or warning. For more information on alarm messages, refer to Messages , page 6-3.
Text	Content of the message.
Set Since	Date and time of the alarm or warning.

Setting up Alarms and Warnings

To Set Up Alarms

Proceed as follows to set up the alarms:

1. From the user interface of the D9854, click **System Settings > Alarms > Setup**. The Setup - Alarm Setup page is displayed.



2. Select **Enable Alarm/Warning Front Panel Reminder** and the highest priority alarm flashes on the LCD display for a two-second interval every 10 seconds. The alarm will continue to flash periodically until it is either cleared or the **Enable Alarm/Warning Front Panel Reminder** is de-selected.
3. Select **Enable Video Cutoff on Alarm Condition** to cut off the video output if any enabled alarm is active on the receiver. When video is cut off, there will be no horizontal or vertical synchronization on the output. This is useful for downstream redundancy switching by detecting a loss of video signal.
4. Click on the **Trap Configuration** link to view and/or modify SNMP trap destinations. The link will open the SNMP page. For more information, see **Setting up SNMP Information and Trap Destinations**, page 5-81.

Setting up Alarms and Warnings, Continued

5. The **Alarm Setup** section displays a list of the alarm/fault messages. For more information on alarm messages, refer to **Messages**, page 6-3.
6. Set **Enable/Disable** to Yes and the alarm message will be reported. Set to No and the fault won't be reported and the alarm relays will not be triggered or change state.
Note: Enable/Disable must be set to Yes for the Relay and Trap settings to be functional.
7. Set **Trap** to Yes and the SNMP trap message will be sent to the trap destination; otherwise, the fault message will be ignored.
"No" indicates the trap or relay is enabled, but Enable is set to No, which will prevent relay or trap operation.
8. Set **Relay** to Yes for the rear panel alarm relay to be triggered to enable external equipment connected to the alarm port.
9. Click **Apply**.

To Set Up Warnings

Proceed as follows to set up the warning parameters:

1. From the Setup - Alarm Setup page, click on the Warning Setup link at the bottom left hand corner of the page. The Setup - Warning Setup page is displayed.

The screenshot shows the 'Setup - Warning Setup' page in the Cisco D9854 Advanced Program Receiver web interface. The page title is 'Setup - Warning Setup' and it includes a navigation menu on the left with options like System, Alarms, Versions, Settings File, and Security/Accounts. The main content area has a checkbox for 'Enable Alarm/Warning Front Panel Reminder' which is checked. Below this is a table titled 'Warning Setup' with the following columns: Warning Name, Enable/Disable, Trap, and Relay. The table contains 14 rows of warning messages, each with 'Yes' selected for Enable/Disable, 'Yes' for Trap, and 'No' for Relay. At the bottom of the table are 'Apply' and 'Refresh' buttons. The page also includes a 'Trap Configuration' link and a footer with 'Alarm Setup | Warning Setup'.

Warning Name	Enable/Disable	Trap	Relay
ASI TS Overflow	Yes	Yes	No
BackupFail	Yes	Yes	No
BackupState	Yes	Yes	No
CAT timeout 0	Yes	Yes	No
CI Status	Yes	Yes	No
DRT timeout 0	Yes	Yes	No
ECCFPGTempWarn	Yes	Yes	No
ECTTempWarn	Yes	Yes	No
ECT timeout 0	Yes	Yes	No
Ethernet PHY #0	Yes	Yes	No
Ethernet PHY #1	Yes	Yes	No
FDCA Code Ver	Yes	Yes	No

Setting up Alarms and Warnings, Continued

2. Select **Enable Alarm/Warning Front Panel Reminder** and the warning flashes on the LCD display for a two-second interval every 10 seconds. The warning will continue to flash periodically until it is either cleared or the **Enable Alarm/Warning Front Panel Reminder** is de-selected.
3. The Warning Setup section displays a list of the warning messages. For more information on warning messages, refer to **Messages**, page 6-3.
4. Set **Enable/Disable** to Yes and the warning message will be reported. Set to No and the fault won't be reported.
Note: Enable/Disable must be set to Yes for Relay and Trap messages reporting to be functional.
5. Set **Trap** to Yes and the SNMP trap message will be sent to the trap destination; otherwise, the warning message will be ignored.
"No" indicates the trap or relay is enabled, but Enable is set to No, which will prevent relay or trap operation.
6. Set **Relay** to Yes for the rear panel relay to be triggered to enable external equipment connected to the alarm port.
7. Click **Apply**.

Viewing Alarm/Warning History

To View the Alarm and Warning History Information

Proceed as follows to view the Alarm/Warning History page:

From the user interface of the D9854, click **System Settings > Alarms > History**. The History page is displayed.

The screenshot shows the Cisco D9854 - Advanced Program Receiver user interface. The top navigation bar includes Summary, Input, Audio & Video, Transport Stream, System Settings (highlighted), and Support. The left sidebar shows a tree view with System, Alarms (expanded), Status Setup, History (highlighted), Versions, Settings File, and Security/Accounts. The main content area is titled 'History' and contains a 'Fault History' table.

Type	Name	Text	Set Date & Time	Cleared Date & Time
Alarm	Fan	Fans operational	2007/06/25 07:26:52	2007/06/25 07:27:11
Alarm	Fan	Fans operational	2007/06/25 07:27:12	2007/06/25 07:27:31
Alarm	Fan	Fans operational	2007/06/25 07:27:32	2007/06/25 07:27:38
Alarm	Fan	Fans operational	2007/06/25 07:27:39	2007/06/25 07:27:48
Alarm	Fan	Fans operational	2007/06/25 07:27:49	2007/06/25 07:27:51
Alarm	Fan	Fans operational	2007/06/25 07:27:52	2007/06/25 07:27:53
Alarm	Fan	Fans operational	2007/06/25 07:27:54	2007/06/25 07:27:58
Alarm	Fan	Fans operational	2007/06/25 07:27:59	2007/06/25 07:28:10
Alarm	Fan	Fans operational	2007/06/25 07:28:11	2007/06/25 07:28:13
Alarm	Fan	Fans operational	2007/06/25 07:28:14	2007/06/25 07:28:53
Alarm	Fan	Fans operational	2007/06/25 07:28:54	2007/06/25 07:29:46
Alarm	Fan	Fans operational	2007/06/25 07:29:47	2007/06/25 07:29:48

Below the table are three buttons: Refresh, Clear Alarms/Warnings History, and Export.

The Alarm and Warning History page displays all the past system event messages and their set and cleared dates and times. For more information on the alarm messages, refer to **Messages**, page 6-3.

Click **Clear Alarms/Warnings History** to clear all existing history information.

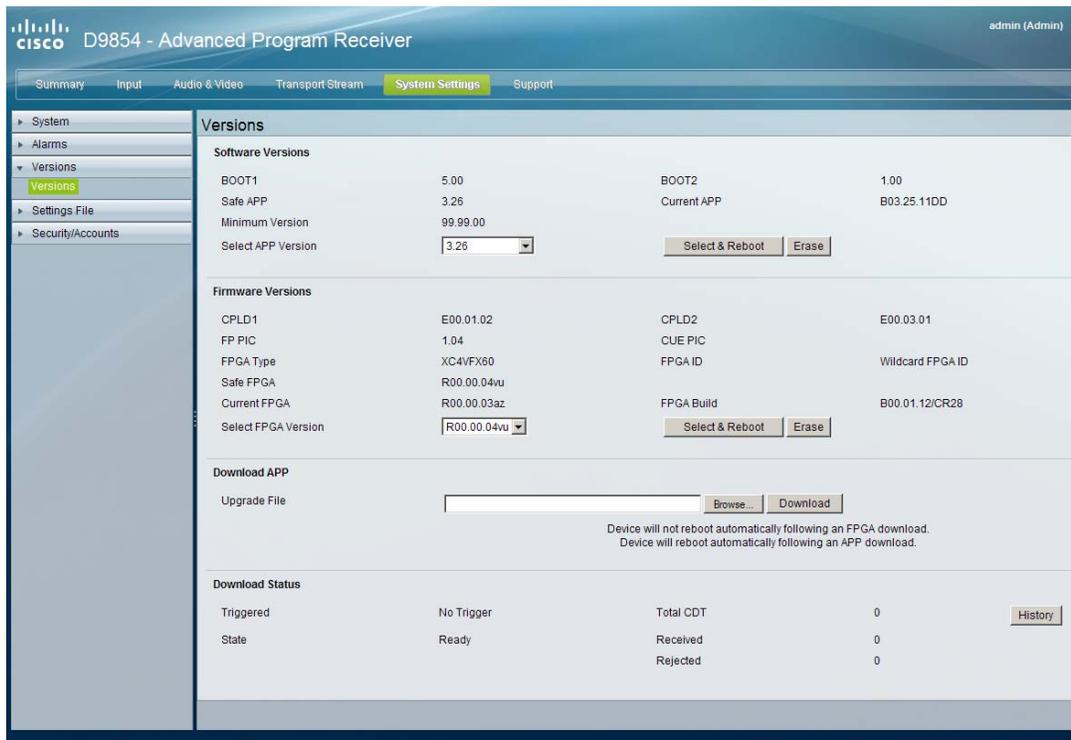
Click **Export** to save the history information to your local hard drive as a .csv file.

Viewing Version Information

To View the Version Information

Proceed as follows to view the Version information:

From the user interface of the D9854, click **System Settings > Versions > Versions**. The Versions page is displayed.



The **Software Versions** section displays the currently running loaded application version number, the factory loaded application version number, and the Host Boot version numbers. In the **Select APP Version** drop-down, you can choose a different application version number to load. Click **Select & Reboot** to load the selected application and reboot the receiver. Click **Erase** to remove the selected application version. You will be prompted to continue or not. Click **OK** to continue the deletion.

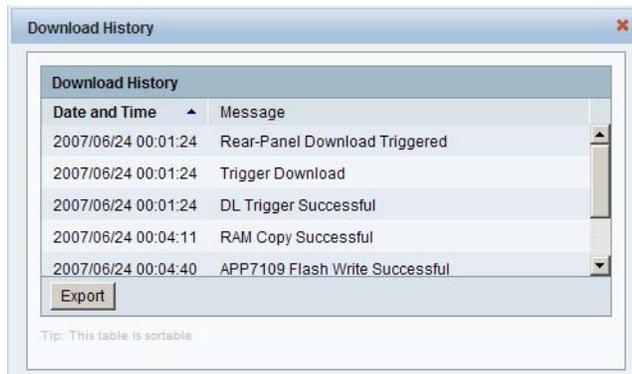
The **Firmware Versions** section displays the current and safe limits for the Field Programmable Gate Array (FPGA) version number, and the Complex Programmable Logic Device (CPLD) version number. In the **Select FPGA Version** drop-down, you can choose a different FPGA application version number to load. Click **Select & Reboot** to load the selected application and reboot the receiver. Click **Erase** to remove the selected application version. You will be prompted to continue or not. Click **OK** to continue the deletion.

Viewing Version Information, Continued

In the **Download APP** section, click **Browse** to select the new version of FPGA or the D9854 Advanced Program Receiver's software application. The Choose File dialog opens. Select the upgrade file and click **Open**. Click **Download** to download the selected upgrade file. File formats that can be downloaded include cdt, FPGA, app, etc.

Note: For application downloads, once the download is complete, the D9854 receiver will reboot automatically. For FPGA downloads, you must click **Reboot Receiver** in the Service Actions page (**Support > Service Actions**) to manually reboot the D9854 receiver and complete the download. This is to facilitate the typical case in which the user intends to flash the FPGA file (no auto reboot) followed by an APP download (auto reboot).

The Download Status section displays the current status of the downloads. Click **History** and the Download History window is displayed.

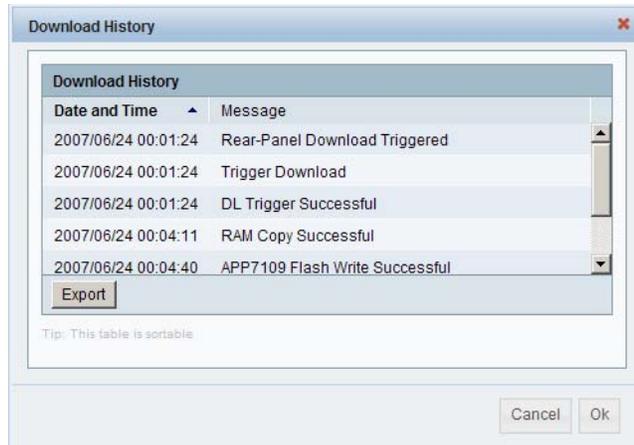


You can sort the columns by clicking on the column headings. Click **Export** to save the history information to a file.

Viewing Version Information, Continued

In the **Download APP** section, click **Browse** to select the new version of the D9854 Advanced Program Receiver's software application. The Choose File dialog opens. Select the upgrade file and click **Open**. Click **Download** to download the selected upgrade file.

The **Download Status** section displays the current status of the downloads. Click **History** and the Download History window is displayed.



You can sort the columns by clicking on the column headings. Click **Export** to save the history information to a file.

Setting up Import/Export Information

To Set Up the Import/Export Information

Proceed as follows to configure the import/export information:

1. From the user interface of the D9854, click **System Settings > Settings File > Import/Export**. The Import/Export page is displayed.

The screenshot shows the Cisco D9854 Advanced Program Receiver web interface. The top navigation bar includes 'Summary', 'Input', 'Audio & Video', 'Transport Stream', 'System Settings' (highlighted), and 'Support'. A left sidebar menu lists 'System', 'Alarms', 'Versions', 'Settings File' (expanded), 'Import/Export' (highlighted), 'Status', and 'Security/Accounts'. The main content area is titled 'Import / Export' and contains two sections: 'Device Settings File Transfer' and 'Configure Offline FTP Settings File Transfer'. The 'Device Settings File Transfer' section has two radio buttons: 'Export Device Settings & Transport Network Information' (selected) and 'Export User Device Settings Only'. An 'Export' button is to the right. Below is a 'Settings File' input field with a 'Browse...' button and an 'Import' button. The 'Configure Offline FTP Settings File Transfer' section has fields for 'Settings Filename' (value: file name), 'FTP Server IP Address' (value: 192.168.0.100), 'FTP User Name', 'FTP Password' (masked with dots), and 'FTP Port Number' (value: 21). It also has two radio buttons: 'Export Device Settings & Transport Network Information' and 'Export User Device Settings Only' (selected). At the bottom are 'Apply', 'Refresh', 'Export', and 'Import' buttons.

In the Device Settings File Transfer section, you can export and/or import device settings and transport network information.

2. Select **Export Device Settings & Transport Network Information** and click **Export** to download device settings and transport network information as a file to the designated file folder.
3. Select **Export User Device Settings only** and click **Export** to download user settings as a file to the designated file folder.
4. In the **Settings File**, click **Browse**. The Choose File dialog opens.
5. Navigate to the appropriate folder and select the file with a *.bkp* file extension and click **Open**.

Setting up Import/Export Information, Continued

The **Configure Offline FTP Settings File Transfer** section has backup and restore controls.

Note: You must have access to an FTP Server (e.g. WinFTP) on a network or a local PC before you can setup backup/restore controls.

6. Type the **Settings Filename** of the backup/restore file. You can enter up to 119 characters.
7. Set the **FTP Server IP Address** of the FTP server used to restore the backup/restore file. The address is up to 12 characters in length (e.g. 171.300.100.200 and in the range from 0 to 255.
8. Set the **FTP User Name** and **FTP Password** to access the FTP server.
Note: The FTP Password is not retained in the receiver. You must re-enter the password before initiating the backup or restore operation.
9. Set the **FTP Port Number** of the FTP server used to store the backup/restore file. You can enter a port number in the range from 1 to 65535.
10. Select **Export Device Settings & Transport Network Information** to save user settings and tuning information to the backup file. Select **Export User Device Settings Only** to save user settings to the backup file.
11. Click **Export** to save the settings to a backup file. Click **Import** to retrieve the last backed up file.

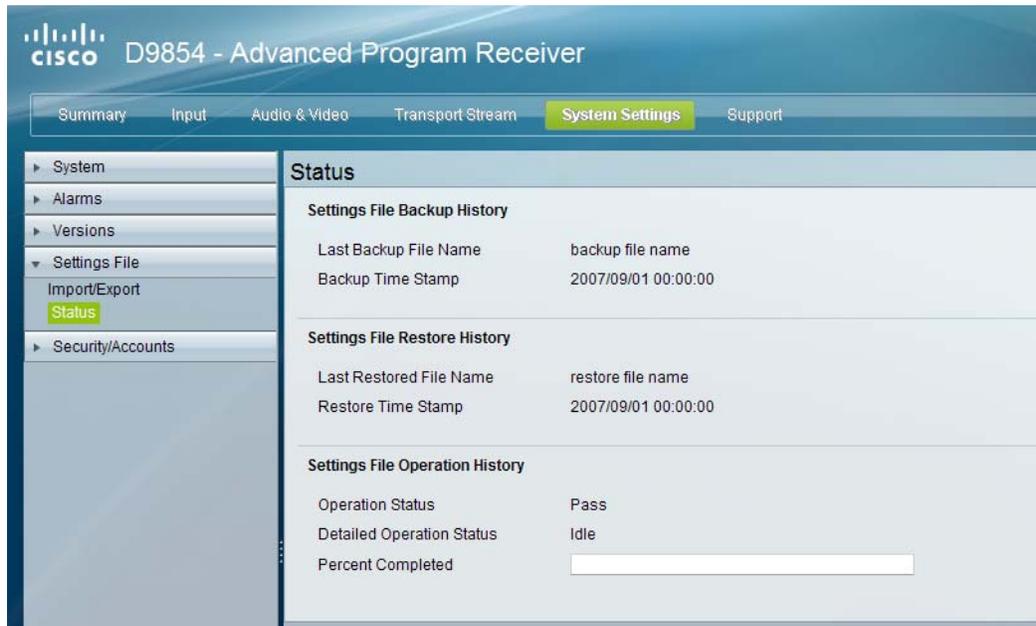
While backup or restore is in progress, the operation status, file transfer percentage, and detailed status windows appear.

Viewing the Backup/Restore Status

To View the Backup/Restore Status

Proceed as follows to view the backup/restore status:

1. From the user interface of the D9854, click **System Settings > Settings File > Status**. The Status page is displayed.



The following table displays the Settings File Backup/Restore/Operation History information:

Status	Description
Last Backup File Name	Name of the file to use.
Backup Time Stamp	Date and time of the last successful backup file saved.
Last Restored File Name	Name of the last file that was restored.
Restore Time Stamp	Date and time of the last successful restore.
Operation Status	Status of the current backup operation (InProgress, Pass, or Fail).
Detailed Operation Status	Detailed processing step for tracking backup progress.
Percentage Complete	Percentage of backup function completed.

Managing D9854 Web GUI Accounts

You can define up to 10 usernames/passwords for login use via web GUI session on the D9854 receiver.

When a user tries to login, the user is required to provide a username and a password. The user is granted access only if this username/password pair exists in the authentication table.

The default user is the “Admin User” and is granted special privileges. The Admin user is allowed to add new users, delete users, change usernames and modify its own password. All other users are only allowed to modify their own passwords.

To Configure the User Login Passwords

Proceed as follows to change the login password:

1. From the user interface of the D9854, click **System Settings > Security/Accounts > Account Management**. The Account Management page is displayed.



To configure the password complexity for all users:

Note: This feature is only available to a user with Admin privileges only.

2. Set the **Password Complexity** (No Checking, Minimal Checking, Full Complexity Checking). Any changes take effect immediately, and do not require the use of the Apply button.

Managing D9854 Web GUI Accounts, Continued

The following describes the rules for each level:

Password Complexity	Description
No Checking	There are no restrictions on passwords. Note: A minimum of one character is required.
Minimal Checking	A password must comply with the following requirements: <ul style="list-style-type: none">• It cannot contain username or reversed username.• It cannot contain any of the following strings: cisco, sciatl, ocsic, italics, atlsci, icslta, or any string achieved by full or partial capitalization of letters.• No letter is repeated more than three times in a row.• Must contain a minimum of four characters.
Full Complexity Checking	A password must comply with the following requirements: <ul style="list-style-type: none">• It cannot contain username or reversed username.• It cannot contain any of the following strings: cisco, sciatl, ocsic, italics, atlsci, icslta, or any string achieved by full or partial capitalization of letters.• No letter is repeated more than three times in a row.• Must contain a minimum of eight characters.• Must contain a minimum of three of the following types of characters: capital letters, small letters, digits, and special characters.

Note: The complexity level changes will only affect the new user accounts and password changes. It will not affect existing passwords. Any changes take effect immediately, and do not require the use of the **Apply** button.

To change your login password:

Note: You are allowed to only modify your own password.

3. The **Change Password for User** displays the password for the current login.
4. In the **Enter Current Password**, type the current login password.
5. In the **Enter New Password**, type the new login password.

Managing D9854 Web GUI Accounts, Continued

6. In the **Re-enter New Password**, type the new login password again to confirm. Once the password change is successful, the user will be directed to the login screen to re-enter their username and password.

Note: The Enter New Password and Re-enter New Password should be identical. Each user, including the admin user, can only modify their own password.

7. Click **Apply**.

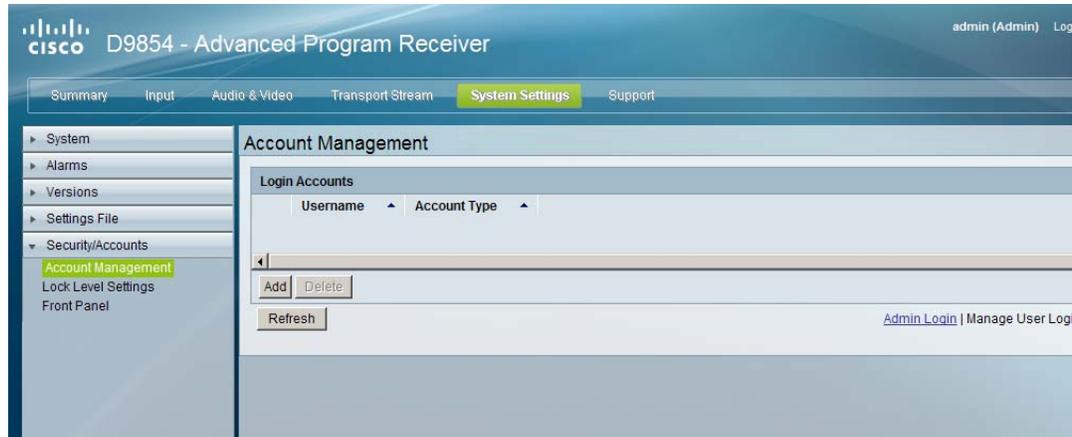
Managing D9854 Web GUI Accounts, Continued

To Add a User Account

Note: This feature is available to a user with Admin privileges only.

Proceed as follows to manage user accounts:

1. From the Account Management page, click on the **Manage User Logins** link. The Login Accounts page is displayed.



2. Click **Add** to create a new login account.

Note: You can create a maximum of 10 user accounts.

The Add Login Account window is displayed.

The screenshot shows a dialog box titled "Add Login Account" with a close button (X) in the top right corner. The dialog contains several input fields: "Username" (with a red asterisk icon), "New Password", "Confirm New Password", "Administrator Password", and "Account Type" (with a dropdown menu showing "User" and a red asterisk icon). At the bottom right of the dialog are "Cancel" and "Ok" buttons.

3. In the **Username** field, enter a user ID. The new username should not match any of the usernames already defined in the Logins Accounts table.

Managing D9854 Web GUI Accounts, Continued

4. In the **New Password** field, enter a password to assign the user ID. The password must follow the rules configured in the **Set Password Complexity for All Users** parameter. For more information, see **To Configure the User Login Passwords**, page 5-96.
5. Enter the new password again to confirm in the **Confirm New Password** field.
Note: The New Password and Confirm New Password should be identical.
6. In the **Administrator Password** field, enter your Administrator password used to log on to the D9854 web GUI.
7. In the **Account Type** drop-down list, select User, Admin, or Guest. The following table illustrates the different login types:

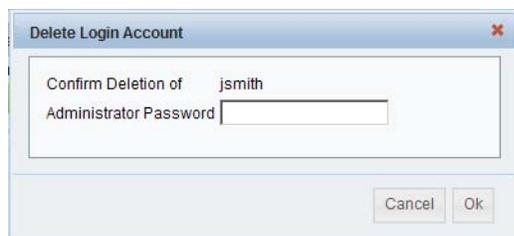
Account Type	Access
Guest	View settings only.
User	View and edit settings.
Admin	View, edit settings, and add/delete user accounts.

8. Click **OK**.

To delete a user account

Note: This feature is available to a user with Admin privileges only.

1. In the Account Management table, select the user you want to remove.
2. Click **Delete**. The Delete Login Account window is displayed.



3. Enter your **Administrator Password** to confirm the deletion.
4. Click **OK**. The selected user account is deleted.

Configuring Lock Level Settings

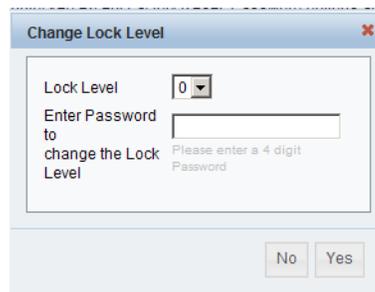
To Configure the Lock Level settings

Proceed as follows to configure the lock level settings:

1. From the user interface of the D9854, click **System Settings > Security/Accounts > Lock Level Settings**. The Lock Level Settings page is displayed.



2. Click **Change Lock Level** and the Change Lock Level window is displayed.



3. Select the **Lock Level** which restricts access and prevents unauthorized changes to the receiver settings (0, 1, 2, or 3). The default setting is 0.

Note: For details on the four lock levels, see **D9858 Transcoder Lock Levels**, page C-2.

4. Enter the Password to change the lock level. The default password is 1234.
5. Click **Yes**.

If the incorrect lock level or password is entered, an error message appears at the top of the page.

Configuring Lock Level Settings, Continued

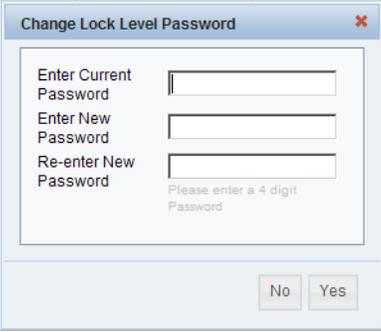
Changing the Lock Level Password

A unique lock level password (4-digit password) protects the current receiver settings against unauthorized changes. When changing the password, record and keep this number in a secure location. The default password is 1234.

Important: Proceed with caution when changing the password as this operation cannot be undone. If the password is lost or is unavailable, contact Cisco customer support.

To change the lock level password:

1. In the Lock Level Settings page, click **Change Lock Level Password**. The Change Lock Level Password window is displayed.



2. **Enter** the **Current** lock level **Password**.
3. In the **Enter New Password** field, enter the new password, any number from 0 to 9.
4. **Re-enter** the **New Password** and click **Yes**. A message appears informing you that the password was changed successfully.

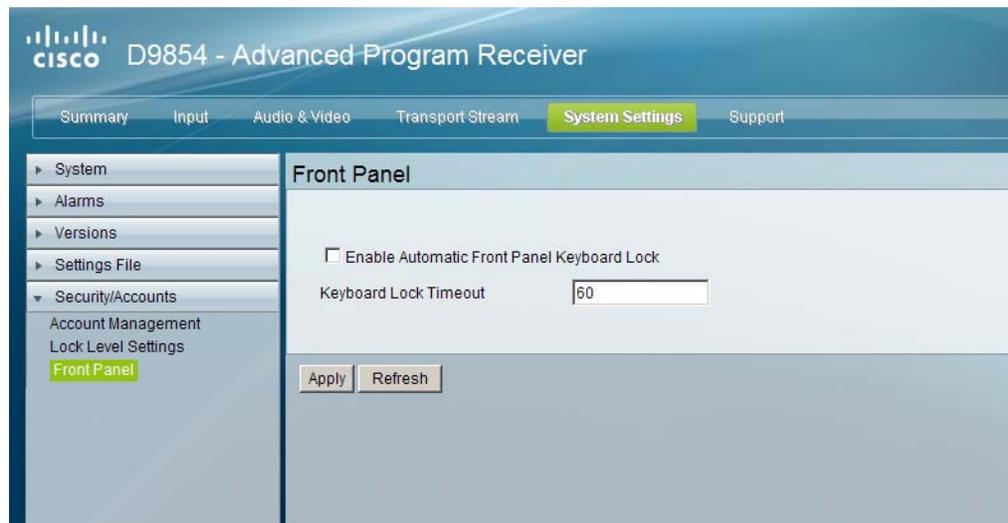
Note: If the password is lost or is unavailable, contact Cisco customer support.

Configuring Front Panel Settings

To Configure the Front Panel settings

Proceed as follows to configure the front panel settings:

1. From the user interface of the D9854, click **System Settings > Security/Accounts > Front Panel**. The Front Panel page is displayed.



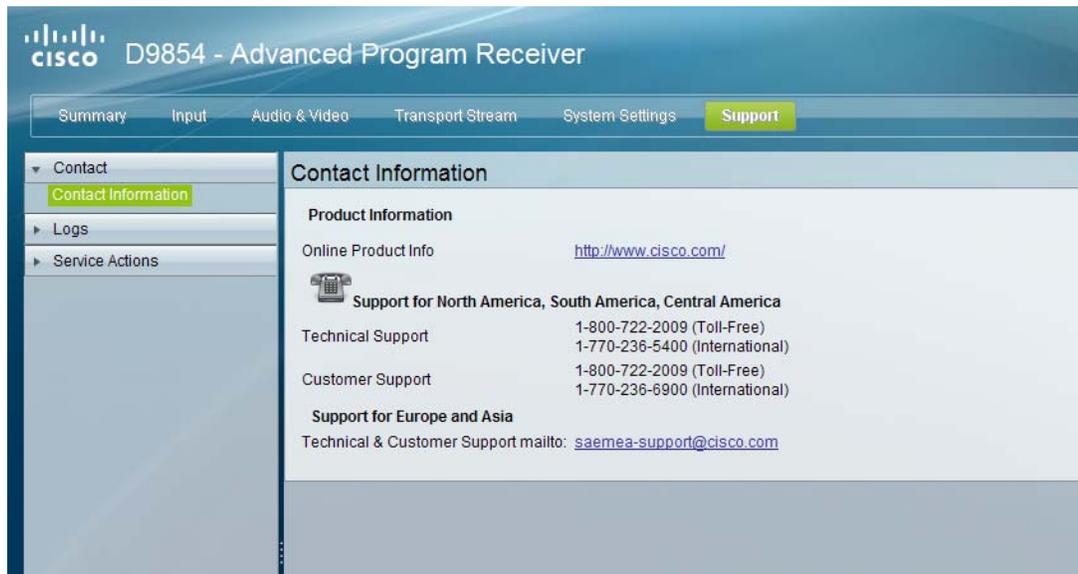
2. Select the **Enable Automatic Front Panel Keyboard Lock** to enable the front panel keypad lock state.
3. The **Keyboard Lock Timeout** sets the keypad lock timeout period. The lock timeout period takes effect when the keypad has not been touched (i.e., a key has not been pressed) when on the Main Menu for the set period. Avoid setting the period to a short duration when the keypad is used often. Enter a value in the range from 5 to 1800 seconds. The default is 60 seconds.
4. Click **Apply**.

Viewing Contact Information

To View Cisco Contact Information

Proceed as follows to view contact information:

From the user interface of the D9854, click **Support > Contact > Contact Information**. The Contact Information page is displayed.



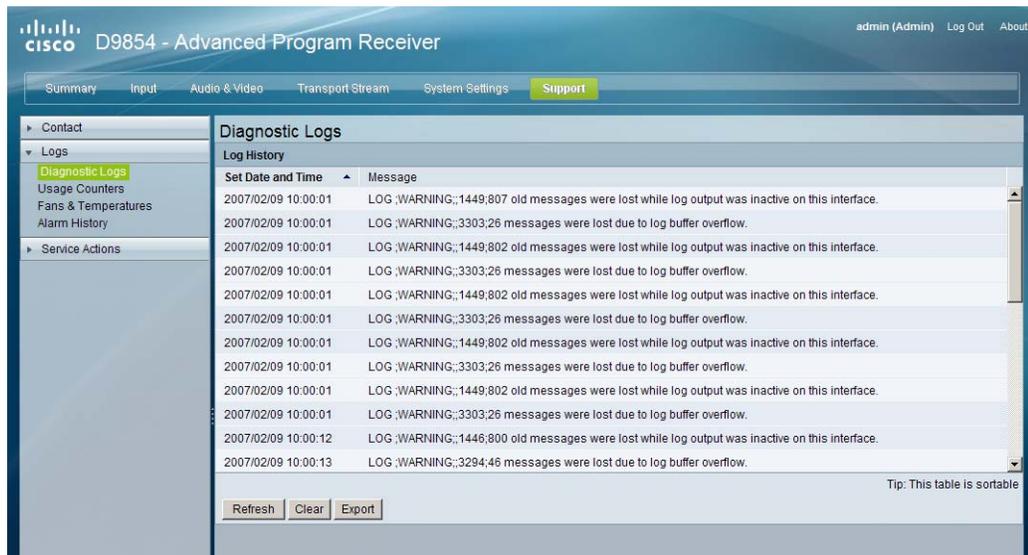
The Contact Information page displays all the Cisco customer support information.

Viewing Diagnostic Logs

To View the Diagnostic Logs

Proceed as follows to view the diagnostic logs:

From the user interface of the D9854, click **Support > Logs > Diagnostic Logs**. The Diagnostic Logs page is displayed.



The Diagnostic Logs page displays all the system log messages with their dates and times.

Click on the arrow next to **Set Date and Time** column to sort by date and time.

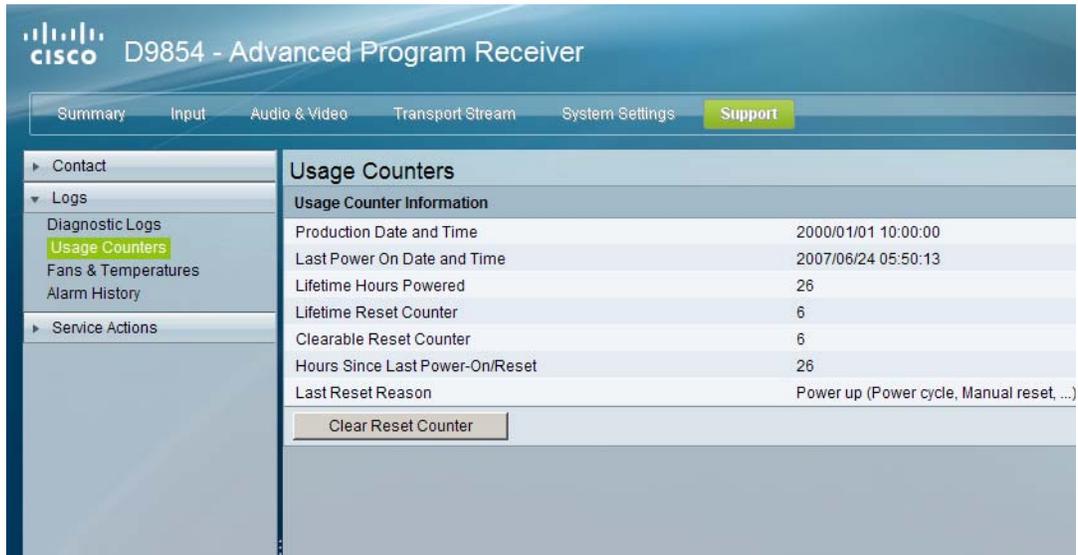
Click **Export** to export the log history to a *.csv* file. The File Download dialog is displayed. Click **Save** to save the file to your local drive.

Viewing the Usage Counters

To View the Device Usage Counters

Proceed as follows to view the usage counters:

From the user interface of the D9854, click **Support > Logs > Usage Counters**. The Usage Counters page is displayed.



The following table describes the Usage Counter Information:

Device Status Information	Description
Production Date & Time	Displays the date and time when the receiver was manufactured.
Last Power On Date and Time	Displays the date and time when the receiver was powered up.
Lifetime Hours Powered	Displays the number of hours since the last power-on.
Lifetime Reset Counter	Displays the total number of times the receiver has been restarted.
Clearable Reset Counter	Displays the number of restarts since the last time the restart counter was cleared. To clear or reset the Clearable Reset Count, click Clear .
Hours Since Last Powered-On/Reset	Displays the total number of hours that the receiver has been operating since the last power-on or restart.

Device Status Information	Description
Last Reset Reason	Displays the reason for the last restart, i.e., power cycle or manual reset.

Click **Clear Reset Counter** to clear the **Clearable Reset Counter** field and it resets the counter back to 0.

Viewing Temperatures

To View the operating temperatures

Proceed as follows to view the operating temperatures:

From the user interface of the D9854, click **Support > Logs > Fans & Temperatures**. The Fans & Temperatures page is displayed.



The screenshot shows the Cisco D9854 Advanced Program Receiver web interface. The top navigation bar includes 'Summary', 'Input', 'Audio & Video', 'Transport Stream', 'System Settings', and 'Support'. The left sidebar contains 'Contact', 'Logs', 'Diagnostic Logs', 'Usage Counters', 'Fans & Temperatures', 'Alarm History', and 'Service Actions'. The main content area is titled 'Fans & Temperatures' and contains a 'Board Temperature' table.

Current	Maximum	Average	Intake 1	Intake 2	FPGA Vicinity	FPGA Value
25.0 °C	26.0 °C	25.0 °C	26.0 °C	25.0 °C	34.0 °C	38.0 °C

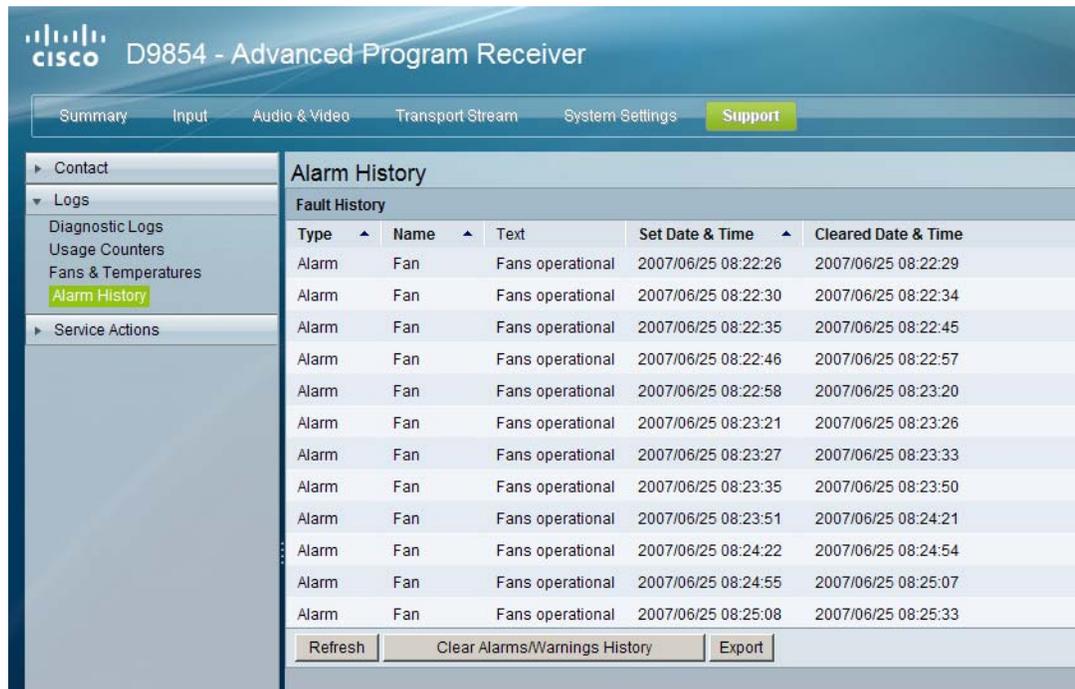
The Board Temperature section displays the current operating temperature (**Current**), the maximum operating temperature (**Maximum**) that has been reached, and the average operating temperature (**Average**). The values are displayed in Degrees Celsius.

Viewing Alarm/Warning History

To View the Alarm and Warning History Information

Proceed as follows to view the Alarm History page:

From the user interface of the D9854, click **Support** > **Logs** > **Alarm History**. The Alarm History page is displayed.



Type	Name	Text	Set Date & Time	Cleared Date & Time
Alarm	Fan	Fans operational	2007/06/25 08:22:26	2007/06/25 08:22:29
Alarm	Fan	Fans operational	2007/06/25 08:22:30	2007/06/25 08:22:34
Alarm	Fan	Fans operational	2007/06/25 08:22:35	2007/06/25 08:22:45
Alarm	Fan	Fans operational	2007/06/25 08:22:46	2007/06/25 08:22:57
Alarm	Fan	Fans operational	2007/06/25 08:22:58	2007/06/25 08:23:20
Alarm	Fan	Fans operational	2007/06/25 08:23:21	2007/06/25 08:23:26
Alarm	Fan	Fans operational	2007/06/25 08:23:27	2007/06/25 08:23:33
Alarm	Fan	Fans operational	2007/06/25 08:23:35	2007/06/25 08:23:50
Alarm	Fan	Fans operational	2007/06/25 08:23:51	2007/06/25 08:24:21
Alarm	Fan	Fans operational	2007/06/25 08:24:22	2007/06/25 08:24:54
Alarm	Fan	Fans operational	2007/06/25 08:24:55	2007/06/25 08:25:07
Alarm	Fan	Fans operational	2007/06/25 08:25:08	2007/06/25 08:25:33

The Alarm and Warning History page displays all the past system event messages and their set and cleared dates and times. For more information on the alarm messages, refer to **Messages**, page 6-3.

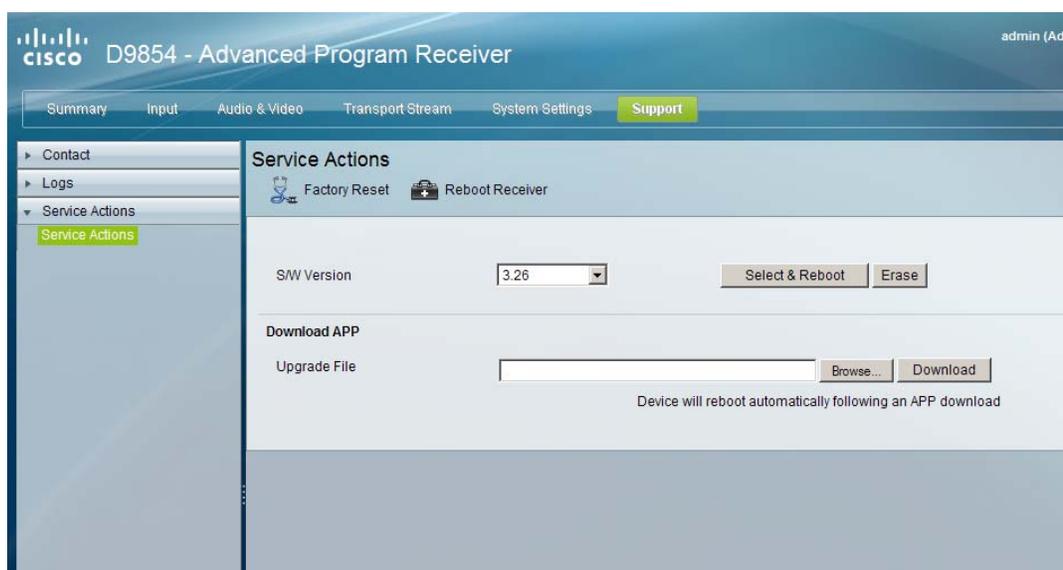
Click **Clear Alarms/Warnings History** to clear all the messages in the Fault History table. Click **Export** to export the alarm history to a *.csv* file. The File Download dialog is displayed. Click **Save** to save the file to your local drive.

Performing Service Actions

To Load a Software Version

Proceed as follows to load a software version:

1. From the user interface of the D9854, click **Support > Service Actions > Service Actions**. The Service Actions page is displayed.



The **S/W Version** drop-down list allows you to select/load a different application version to your receiver. Click **Select & Reboot** to load the selected application version and reboot the receiver.

Click **Erase** to remove the selected application version. You will be prompted to continue or not. Press **OK** to continue the deletion.

Click **Factory Reset** to perform a reset of receiver settings back to the factory set (default) values. A warning message prompts you to confirm the operation. Click **OK** to continue or **No** to cancel the operation.

Click **Reboot Receiver** to reboot the receiver. You will be prompted to verify the operation. Click **Yes** to reboot the receiver or **No** to cancel the operation.

To Change the Download Application

In the **Download APP** section, click **Browse** to select the new version of FPGA or the D9854 Advanced Program Receiver's software application. The Choose File dialog opens. Select the upgrade file and click **Open**. Click **Download** to download the selected upgrade file.

Note: For application downloads, once the download is complete, the D9854 receiver will reboot automatically. For FPGA downloads, you must click **Reboot Receiver** to manually reboot the D9854 receiver and complete the download. This is to facilitate the typical case in which the user intends to flash the FPGA file (no auto reboot) followed by an APP download (auto reboot).

Chapter 6

Service and Maintenance

Overview

Introduction

This chapter gives information to assist you in upgrading firmware to the D9854 Advanced Program Receiver. It also describes how the status of the D9854 receiver is communicated via front panel LEDs.

In This Chapter

This chapter contains the following topics.

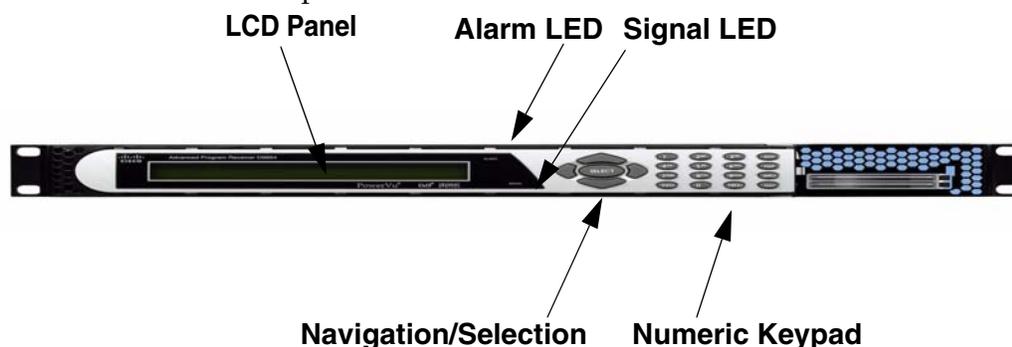
Topic	See Page
Section A - Front Panel LEDs	6-2
Introduction	6-2
Messages	6-3
Section B - Power Supply Replacement	6-23
Introduction	6-23

Section A - Front Panel LEDs

Introduction

Overview

To help signal the status of operation or the presence of an alarm, the D9854 receiver makes use of front panel LEDs. The photograph below shows the location of the LEDs on the front panel of the D9854 receiver.



LED Function

The functions of the LEDs are described in the table below.

LED	Signal State/Color	Explanation
ALARM	Red	Solid for five seconds indicates a Warning.
	Red	Flashing indicates an Alarm.
SIGNAL	Green	Solid indicates all of the following conditions: <ul style="list-style-type: none"> • all RF inputs are enabled, all inputs are locked to a signal, and are not muted. • all routed ASI outputs are operating without an error.
	Green	Flashing indicates one of the following conditions: <ul style="list-style-type: none"> • difficulty with an input, route or output. • one or more RF inputs, or the ASI input are not synchronized. • one or more ASI outputs are routed, but muted by a fault condition. • no RF signal is present or detected, or it is muted. • receiver is not authorized to receive the program.
	Off	Off indicates all of the following conditions: <ul style="list-style-type: none"> • no RF input signal is available, enabled or detected, or the input is muted. • no ASI input is present. • no valid inputs are available.

Messages

General

The status of the D9854 receiver and its immediate surroundings is reported to the front panel in the form of messages and alarms. You can enable or disable messages in the Alarm/Warning settings.

D9854 Receiver Message List

The following table shows an alphabetical list of the available messages and their default alarm status. The Set Messages and Clear Messages are displayed in the Warning History when the messages are set or cleared respectively.

Note: Only alarm conditions can be used to trigger rear panel relays to control external alarm equipment. Warnings are not associated with relay operation.

Alarms

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
Signal Status	Set	ASI Signal - No Content	Cause: Loss of ASI/RF lock. Loss of Transport data. Invalid frequency parameters. External to IRD. Remedy: Check tuning parameters and ASI/RF cables.	ASI Link Locked, but no TS content.	Minor
		RF Signal - No Content		RF Tuner locked, but no TS content.	
		Signal is lost		Loss of signal	
		Tuning Parameters Invalid		One of the tuning parameters is invalid	
	Clear	Signal is locked		Signal OK	
		Tuning Parameters Valid		Tuning parameters are valid	

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
PE n: ISE Not Auth	Set	Channel is not authorized	Cause: The channel is unauthorized for the current program. Remedy: Contact your (uplink) service provider to determine whether you are authorized to receive the current program.	Program unauthorized because the tier bits do not match.	Minor
		Channel requires an authorization key		Program is unauthorized because the unit does not have an authorization key.	
		Channel is blacked out		Program is unauthorized because at a minimum, it needs to match one blackout code.	
		Channel uses an unknown CA system	Cause: Conditional access not supported. Remedy: Contact your (uplink) service provider to determine whether you are authorized to receive the current program at this time.	Non-SA conditional access system.	
		Channel authorization refused		There is mismatch in the Conditional access.	
		Channel requires an IRD with CA support		Conditional access is not supported.	
		Channel requires the PE to have an ISE	Cause: Hardware issue. Remedy: Clear alarms, reset unit, and notify customer service if problem persists.	Hardware fault.	

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
	Clear	Fault Reset			
		Channel is authorized			
CI Top Slot Status	Set	Initialization Fail	Cause: CAM is damaged or not fully inserted, hardware issue, CAM software crash or you don't have subscription rights for the card. Remedy: Re-insert the CAM.	Initialization of CAM in top slot failed.	Major
		No Descrambling		All elementary streams of all selected programs are not descrambled.	
	Clear	CAM Operation OK			
CI Bottom Slot Status	Set	Initialization Fail	Cause: CAM is damaged or not fully inserted, hardware issue, CAM software crash or you don't have subscription rights for the smart card. Remedy: Re-insert the CAM, and/or check your rights for the smart card.	Initialization of CAM in top slot failed.	Major
		No Descrambling		All elementary streams of all selected programs are not descrambled.	
	Clear	CAM Operation OK			
PE n CI Status	Set	Program Not Descrambled	Cause: Hardware issue, CAM software crash or you don't have subscription rights for the smart card. Remedy: Reinsert the CAM and/or check your rights for the smart card.	All elementary streams for this service selected for descrambling were not descrambled by the CAM.	Major
		1 or more ES Not Descrambled		At least 1 elementary stream is not descrambled, but the CAM is still descrambling other elementary streams for this service.	
	Clear	Descrambling OK			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
PE n: Loss of Input	Set	Loss of input detected	Cause: Loss of input. Remedy: Ensure input has a valid stream.	Loss of input.	Minor
	Clear	Fault reset			
Digital Program Mapping	Set	PID Collision	Cause: Uplink settings may have changed since setting up the unit. Please check your DPM settings. Remedy: Correct the DPM settings. Check the uplink to find the appropriate system settings.	Two source service PIDs are being mapped to the same output PID. This will cause data corruption in the stream.	Minor
		Program Collision		Two source channel numbers are being mapped/passed to the same channel number in the output.	
		Mode-i PMT out of range		PMT PID to be used for Mode-i is outside of valid MPEG PID range.	
	Clear	Digital Program Mapping - OK			
Shutdown Event	Set	DL APP REBOOT	Cause: User request requires reboot or internal system error. Remedy: If it is an internal system error fault, clear alarms, reset the unit, notify customer service if the problem persists.	New application downloaded, system requires reboot.	Major
		I2C Failure		Internal system error.	
		User requested FPGA change		Runnable FPGA change requires reboot.	
		User requested APP change		Runnable application change requires reboot.	

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
		User requested factory reset		Factory reset requires reboot.	
		User requested reboot		User reboot request.	
		PRODUCTION - Protect Flash		Reboot after production tables removed.	
		osal_SetDataForAllTasks	Cause: Possible software issue. Remedy: Clear alarms, reset unit, notify customer service if problem persists.	Application initialization error.	
		aw_LoadFaultList			
		osal_Init			
		NVS FLASH mounted			
		DB_Table_Cl::populateNvsRecords			
		STAPI_Init			
		dprm startup			
		dprm clear startup			
		DB_Array32_Cl init failed			
		DB_FlagArray32_Cl init failed			
		Wrong DB Item detected: item = AAA, table = BBB			
		DB_Item_Cl::addItem() failed			
		Memory allocation error on DB table construction			
		DB_Table_Cl::addTable() failed			
		DB_Table_Cl::addItem() failed: too many DB Items			
		DBT Init Failed: AAA			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
		Framework Registration Error			
		7109 exception! Code = X, Address = Y, Task = Z			
		Memory Error: AAA, Phase X			
		Time Control object creation failed			
		Wrong UIC Item detected: item = AAA, table BBB			
		Memory allocation error on UIC table construction			
		Error adding UIC table(AAA)			
		UD - ud_init_phase_4() FAILED to allocate memory from System Partition			
		UD - ud_init_phase_4() FAILED to create partition			
		FW: Memory or List Full		Internal system error.	
		Framework Registration Error			
		WDOG task: wachdog aud st wdog has expired		Software detected an error in operation.	
		WDOG task: watchdog MC OCM has expired			
		WDOG task: watchdog MC SCRIPT has expired			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
		WDOG task: watchdog Secondary WD has expired			
		WDOG task: watchdog MCM[S] has expired			
SMI Setup	Set	Phase lock error on SMI SDRAM	Cause: Hardware Issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	SDRAM on SMI bus not working.	Major
		SMI SDRAM exhaust test failed			
	Clear	SMI SDRAM setup successful		SDRAM on SMI Bus OK.	
		SMI SDRAM exhaust test passed			
LMI setup	Set	LMI SDRAM exhaust test failed	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	DDR RAM on LMI bus not working.	Major
	Clear	LMI Video SDRAM exhaust test passed		DDR RAM on LMI bus OK.	
Param Storage	Set	DB NVS flushing ignored	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	Non-volatile storage system failed to update fully.	Major
		RAM flush to NVS failed			
		DB Factory Reset failed		Non-volatile storage system failed during factory reset.	
	Clear	DB flushing completed		Successful NVS update.	
		DB Factory Reset completed		Successful action.	

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
Flash STORAGE	Set	RECORD: init failed	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	Non-volatile storage system corrupted. Possible loss of configuration.	Major
		RECORD MANAGER: Record contents check error, erasing all		NVS Corruption, and loss of configuration data	
		RECORD: sector setup check error, erasing sector		NVS Corruption, and loss of sector data	
	Clear	RECORD: init done			
LNB PS	Set	LNBPS: No Load	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	LNB power overload	Minor
		LNBPS: Over Temperature			
		LNBPS: Over Loaded			
		LNBPS: Short Circuit			
	Clear	LNBPS: Normal		LNB power OK	
		LNBPS: Disabled			
LNBPS: Off					
Signal Quality	Set	Audio Muted due to RF noise	Cause: RF Signal quality is poor due to interference or signal level issues. Remedy: Check RF settings, re-aim dish, and add signal amplifier.	Signal is locked but BER is beyond Audio muting threshold.	Minor
		Unstable RF Signal		Signal lock status is toggling frequently.	
		Poor Quality RF Signal		Signal is locked but BER is beyond muting threshold.	
	Clear	Signal Quality Fault Cleared			
		Audio Unmuted			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
Transport Processing	Set	PTI lockup	Cause: Possible software issue Remedy: Clear alarms, reset unit, and notify customer service if problem persists	Programmable transport input module stopped processing any data packet.	Minor
	Clear	PTI running			
Temperature Alarm	Set	Temperature over Alarm threshold	Cause: Room temperature too high, or air flow is blocked. Remedy: Check openings on front and rear panels for blockage. Lower room temperature or improve air flow to device.	Temperature is above safe operating range.	Major
	Clear	Temperature normal			
Fan	Set	Fan Failure Alarm	Cause: Hardware issue. Remedy: Unit should be returned to customer service as soon as possible.	Fan failure	Major
		Fan RPM Alarm		Fan RPM out of normal operating range.	
	Clear	Fans Operational			
FPGA Temperature Alarm	Set	Temperature over Alarm threshold	Cause: Room temperature too high, or air flow is blocked. Remedy: Check openings on front and rear panels for blockage. Lower room temperature or improve air flow to device.	FPGA temperature is above safe operating range.	Major
	Clear	Temperature normal			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
ASI Out Status	Set	ASI Overflow. Output Muted. Reduce content.	Cause: Uplink settings may have changed since setup of the unit. Variable Bit Rate/Statmuxed streams may be in use. Remedy: Increase the output rate, drop unreferenced content in DPM Options, and/or drop programs not needed for downstream devices. Contact your (uplink) service provider to verify the expected bit rate settings.	Current transport rate exceeds configured rate for ASI output. Output has been muted to protect downstream devices.	Minor
	Clear	ASI Output Restored			
MPoIP Status	Set	MPEGoIP Overflow. Output Muted. Reduce content.	Cause: Uplink settings may have changed since setup of the unit. Variable Bit Rate/Statmuxed streams may be in use. Remedy: Increase the output rate, drop unreferenced content in DPM Options, and/or drop programs not needed for downstream devices. Contact your (uplink) service provider to verify the expected bit rate settings.	Current transport rate exceeds configured rate for MPEG over IP output. Output has been muted to protect downstream devices.	Minor
	Clear	MPEGoIP Output Restored			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
Boot Host	Set	KB not accessible	Cause: Hardware issue Remedy: Clear alarms, reset unit, and notify customer service if the problem persists.	KB is not detected by Boot code.	Major
		LCD not connected		LCD is not detected by Boot code.	
		FLASH Not Found		Flash memory not detected.	
		EMI SDRAM Test Failed		RAM Failure - memory testing failed.	
		BOOT Invalid		Boot SW cannot be read from memory correctly.	
		FPGA Invalid		FPGA Image cannot be read from memory correctly.	
		APP Invalid		Application SW cannot be read from memory correctly.	
	Clear	BOOT passed			
Boot Secondary	Set	FLASH Not Found	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	Flash memory not detected.	Major
		EMI SDRAM Test Failed		RAM Failure - memory testing failed.	
		BOOT Invalid		Boot SW cannot be read from memory correctly.	
		FPGA Invalid		FPGA Image cannot be read from memory correctly.	

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
		APP Invalid		Application SW cannot be read from memory correctly.	
	Clear	BOOT passed			
Decoder Processor Start	Set	DB Startup failed	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	Transfer of operational parameters to secondary processor failed.	Major
		No Response		Secondary processor not responding.	
		Synchronization Failure		Communication with secondary processor failing.	
LEC Timeout	Set	LEC Table Missing/ timeout:channels currently unavailable	Cause: Possible LEC Server or Uplink issue. Remedy: If using RF input, contact the content provider. If using ASI output, ensure the source has not been changed for the content provider. Clear alarm and notify customer service if the problem persists.	ECT Table is not received in the GDS stream.	
	Clear	LEC received			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
FPGA status	Set	FPGA Init failed to go high	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, notify customer service if the problem persists.	FPGA setup failure or the FPGA binary identity does not match the FPGA registers.	Major
		FPGA Init and Done failed to go low			
		FPGA Init went LOW (CRC error)			
		FPGA Done failed to go high			
		Invalid FPGA data			
		Invalid PCB version			
		FPGA mismatch, required=#.#.#.#, Running=#.#.#.#			
	Clear	FPGA loaded successfully and reset			
		FPGA code ver OK			

Messages, Continued

Warnings

The following table shows an alphabetical list of the available messages and their default warning status.

Warning	Message Type	Message	Cause/Remedy	Description
ASI TS Overflow	Set	ASI Output Overflow	Cause: Uplink settings may have changed since setting up the unit.	The output rate is higher than level set by the user.
	Clear	ASI Output Overflow Cleared	Remedy: Increase the output rate, drop unreferenced content in DPM Options, and drop the programs that are not needed for downstream devices. Contact your (uplink) service provider to verify the expected bit rate settings.	
MPoIP TS Overflow	Set	MPEGoIP Output Overflow	Cause: Uplink settings may have changed since setting up the unit.	The output rate is higher than the level set by the user.
	Clear	MPEGoIP Output Overflow Cleared	Remedy: Increase the output rate, drop unreferenced content in DPM Options, and drop the programs that are not needed for downstream devices. Contact your (uplink) service provider to verify the expected bit rate settings.	

Warning	Message Type	Message	Cause/Remedy	Description	
Transport Error	Set	Continuity Count Error	Cause: Possible uplink or signal issue. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	Transport packet continuity count jumped. Possible packet loss.	
		Buffer Overflow		The transport stream is faster than the maximum buffer or the decode engines are having difficulty handling the data sent to them.	
		Transport Error Indicator		Transport packets are marked as "errored" upstream of the decoder.	
		Transport Rate Error: FPGA Overflow		Cause: Uplink settings may have changed since setting up the unit. The output rate is higher than level set by the user.	
	Clear	Continuity Count Error Cleared	Remedy: Increase the output rate, drop unreferenced content in DPM Options, and/or drop programs not needed for downstream devices. Contact your (uplink) service provider to verify the expected bit rate settings.	Trap expires after 30 seconds.	
		Buffer Overflow Cleared			
		Transport Error Indicator Cleared			
		Transport Rate Error: FPGA Overflow Cleared			
	CI Status	Set	Different CA Systems in Top/Bottom Slots	Cause: Different CA systems are used in the slots. Remedy: Replace the CA cards to use the same CA system.	Different CA Systems in Top/Bottom slots.
		Clear	OK		
Video Format Mismatch	Set	Video format mismatch		Video Format Mismatch.	
	Clear	Video format match			

Warning	Message Type	Message	Cause/Remedy	Description
Temperature Warning	Set	Temperature over Warning threshold	Cause: Room temperature too high, or air flow is blocked. Remedy: Check openings on front and rear panels for blockage. Lower the room temperature or improve air flow to the device.	Temperature is above normal operating range.
	Clear	Temperature normal		
FPGA Temperature Warning	Set	Temperature over Warning threshold	Cause: Room temperature is too high, or air flow is blocked. Remedy: Check the openings on front and rear panels for blockage. Lower the room temperature or improve air flow to the device.	FPGA temperature is above normal operating range.
	Clear	Temperature normal		
TDT timeout #	Set	tdt timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Time Date Table was never received.
		tdt is lost		No longer receiving Time Date.
	Clear	tdt fault cleared		
SDT timeout #	Set	sdt # timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Service Description Table was never received.
		sdt # is lost		No longer receiving Service Description.
	Clear	sdt fault cleared		

Warning	Message Type	Message	Cause/Remedy	Description
PMT timeout #	Set	pmt # timed out	Cause: Uplink is not sending or is sending intermittently.	Program Mapping Table was never received.
		pmt # is lost	Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	No longer receiving Program Mapping Table.
	Clear	pmt fault cleared		
PAT timeout #	Set	pat # timed out	Cause: Uplink is not sending or is sending intermittently.	Program Association Table was never received.
		pat # is lost	Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	No longer receiving Program Association Table.
	Clear	pat fault cleared		
NIT timeout #	Set	nit timed out	Cause: Uplink is not sending or is sending intermittently.	Network Information Table was never received.
		nit is lost	Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	No longer receiving Network Information Table.
	Clear	nit fault cleared		
CAT timeout #	Set	cat timed out	Cause: Uplink is not sending or is sending intermittently.	Conditional Access Table was never received.
		cat is lost	Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	No longer receiving Conditional Access Table.
	Clear	cat fault cleared		

Warning	Message Type	Message	Cause/Remedy	Description
DRT timeout #	Set	drt # timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Disaster Recovery Table was never received.
		drt # is lost		No longer receiving Disaster Recovery Table.
	Clear	drt fault cleared		
MCT Timeout #	Set	mct # timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Inband Control Table was never received.
		mct # is lost		No longer receiving Inband Control Table.
	Clear	mct fault cleared		
ECT Timeout #	Set	ect # timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Event Control Table was never received.
		ect # is lost		No longer receiving Event Control Table.
	Clear	ect fault cleared		
Memory Usage Host	Set	Excessive (stack/partition) memory usage	Cause: Possible software issue. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	SW exceeding allowable memory usage.
	Clear	Normal (stack/partition) memory usage		

Warning	Message Type	Message	Cause/Remedy	Description
Memory Usage Secondary	Set	Excessive (stack/partition) memory usage	Cause: Possible software issue. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	Software exceeding allowable memory usage.
	Clear	Normal (stack/partition) memory usage		
FPGA Code Version	Set	FPGA newer than SW, Supported=%02u.%02u.%02u, Running=%02u.%02u.%02u	Cause: FPGA version is newer than the software can support. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	Software indicates FPGA version is newer than it can support.
	Clear	FPGA code ver OK		
Ethernet PHY n	Set	Link is down	Cause: No ethernet cable connected, faulty cabling, multiple devices sharing MAC address on same IP segment, or possible HW issue. Remedy: Check cabling, check MAC addresses, clear warnings, reset the unit, and notify customer service if the problem persists.	Ethernet MAC PHY device is attempting to reconnect to external devices.
	Clear	Connection OK		
FW: Resource Use Host	Set	Memory or List Near Full	Cause: Possible software issue. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	Software exceeding allowable usage of internal constructs.
	Clear	Normal Level		
FW: Resource Use Second	Set	Memory or List Near Full	Cause: Possible software issue. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	Software exceeding allowable usage of internal constructs.
	Clear	Normal Level		

Warning	Message Type	Message	Cause/Remedy	Description
MIP Output Spacing	Set	MIP Output Spacing Erractic - Data lost	Cause: Current transport rate exceeds configured rate for ASI output. Remedy: Increase output rate. Contact uplink to verify expected bitrate settings.	Severe differences in the MIP packets detected on the input versus MIP packets transmitted to the ASI output. Note: This warning is only generated on SFN units.
	Clear	MIP Output Spacing Stable		
SFN MIP Counter	Set	Transport Error SFN MIP Input Output Difference	Cause: Extra packets may have been inserted, or packets were deleted between the receiver's input and output. Remedy: Clear warnings, reset unit, notify customer service if the problem persists.	Input and output packet counts on MIP reception. Note: This warning is only generated on SFN units.
	Clear	Transport Error SFN MIP Input Output Difference Cleared		

Section B - Power Supply Replacement

Introduction

Removal and Replacement

There are no user-serviceable parts in the D9854 receiver supply. If the power supply requires replacement, contact your service provider or Cisco for information on how to return the unit for repair.

Chapter 7

Customer Information

Overview

In This Chapter

This chapter contains the following topics.

Topic	See Page
Product Support	7-2
Returning Products	7-4

Product Support

Cisco provides its customers who have purchased support agreements with telephone support from anywhere in the world. If you require technical telephone assistance or product training support, or if you have any questions concerning your Cisco product, you may contact the appropriate Customer Support Center from those listed below. Charges may apply for customers without a current and applicable product support agreement.

Customers	Location	Phone Number
Programmers and Broadcasters	USA and Canada	Toll-free: 1.888.949.4786 +1.770.236.4786 dmn_support@cisco.com
Telcos and Cable Service Providers	Cisco Services	Toll-free: 1.800.722.2009 Local: 678.277.1120 (press 2 at the prompt) customer-service@cisco.com
All Customers	Europe	+32.56.445.155 or +32.56.445.197 saemea-support@cisco.com
All Customers	Asia	+852.2588.4746 saapac-support@cisco.com

Customers who call a Customer Support Center are asked specific questions in order to identify their needs. In this way, each call can be directed to the customer support representative most experienced with their Cisco product. Customer Support Centers also provide the following pre- and post-sales support services for Cisco products.

Training Support

On and off-site training plus technical support services are available for purchase for both equipment operators and system administrators.

Warranty and Post-Warranty Support

Warranty and post-warranty support services are available to help customers return Cisco products for service or repair.

Product Support, Continued

Customer Responsibility

When returning equipment, the customer is solely responsible for equipment packaging and transportation costs to the factory.

At the customer's request, Cisco will make reasonable efforts to provide warranty service at the customer's premises, provided that the customer pays current field service rates plus direct travel and accommodation expenses.

In Case of Repair

If your product requires repair, perform the following steps:

1. Notify Cisco of the problem immediately, providing the model number and serial number of the equipment plus details of the problem. Upon receipt of this information, service information and shipping instructions will be provided.
2. Upon receipt of instructions, return the product by prepaid freight. Refer to the section Returning Products for details.

In Case of a Fault

If your product requires repair, perform the following steps:

1. Notify Cisco of the problem immediately, providing the model number and serial number of the equipment plus details of the problem. Upon receipt of this information, service information and shipping instructions will be provided.
2. Upon receipt of instructions, return the product by prepaid freight. Refer to the section Returning Products for details.

Returning Products

Introduction

You must have a return material authorization (RMA) number to return a product. Contact the nearest customer service center and follow their instructions.

Returning a product to Cisco for repair includes the following steps:

- Obtaining a RMA number
- Obtaining a customer service center shipping address
- Packing and shipping the product

Obtaining an RMA Number and Shipping Address

You must have an RMA number to return products.

RMA numbers are valid for 60 days. If you already have a number, but it is older than 60 days, you must contact a customer service representative to revalidate the number. You can return the product after the RMA number is revalidated.

Follow these steps to obtain an RMA number and shipping address.

1. Contact a customer service representative to request a new RMA number or revalidate an existing one.
2. Provide the following information to the customer service representative:
 - Product name, model number, part number, serial number (if applicable)
 - Quantity of products to return
 - A reason for returning the product
 - Your company name, contact, telephone number, email address, and fax number
 - Any service contract details
 - Purchase order number of repair disposition authority, if available

Note: If you cannot provide a purchase order number:

- A proforma invoice listing all costs incurred will be sent to you at the completion of product repair.
 - Customer service must receive a purchase order number within 15 days after you receive the proforma invoice.
 - Products can accrue costs through damage or misuse, or if no problem is found. Products incurring costs will not be returned to you without a valid purchase order number.
3. The customer service representative issues the RMA number and provides the shipping address.

Note: Absence of the RMA number may delay processing of product repair and/or result in the equipment being returned unrepaired. Include the RMA number in all correspondence.

Returning Products, Continued

Packing and Shipping the Product

Follow these instructions to pack the product and ship it to Cisco.

1. Are the product's original container and packing material available?
 - If **yes**, pack the product in the container using the packing material.
 - If **no**, pack the product in a sturdy, corrugated box, and cushion it with packing material.

Important:

- You are responsible for delivering the returned product to Cisco safely and undamaged. Shipments damaged due to improper packaging may be refused and returned to you at your expense.
 - Do not return any power cords or accessories.
2. Write the RMA number on the outside of the container.

Note: Absence of the RMA number may delay processing of product repair and/or result in the equipment being returned unrepaired. Include the RMA number in all correspondence.
 3. Ship the product to the address provided by the customer service representative.

Note: Cisco does not accept freight collect. Be sure to prepay and insure all shipments.



Appendices

Appendix A - Technical Specifications

Appendix B - Default Settings

Appendix C - Lock Levels

Appendix D - Equipment and Accessories

Appendix E - Compliance

Appendix A

Technical Specifications

Overview

Introduction

This appendix contains the technical specifications for the Model D9854 Advanced Program Receiver.

Note: The technical specifications are subject to change without prior notice.

In This Appendix

This appendix contains the following topics.

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Section A - L-Band Input and Processing

General

Parameter	Specification
System	MPEG-2/DVB Compatible DVB-S EN 300 421, EN 300 468
Demodulation	DVB-S QPSK, DVB-S2 QPSK and 8PSK
Number of RF Inputs	4 (only one active at a time)

LNB LO Stability

DVB-S and DVB-S2

Symbol Rate	Stability
1 to 4.99 MSymbols/s	$\leq \pm 125$ kHz
5.0 to 9.99 MSymbols/s	$\leq \pm 1.0$ MHz
10.0 to 45 MSymbols/s	$\leq \pm 3.0$ MHz

Parameter	Specification
LNB Phase Noise Requirement	-35 dBc/Hz at $\delta F = 100$ Hz -53 dBc/Hz at $\delta F = 1$ kHz -76 dBc/Hz at $\delta F = 10$ kHz -96 dBc/Hz at $\delta F = 100$ kHz -106 dBc/Hz at $\delta F = 1$ MHz -117 dBc/Hz at $\delta F = 10$ MHz

LNB Power and Control

Parameter	Specification
Voltage (RF1to RF3, RF4 does not have an LNB supply)	13 V Vertical/circular right, 18 V Horizontal/circular left Off
Current	350 mA maximum LNB Alarms: No load - 6 mA Overload - 360 mA minimum

DVB-S/DVB-S2

DVB-S/DVB-S2 Satellite Receiver

Parameter	Specification
L-Band Input	
Number of Inputs	4
Input Connector Type	F-type, female, 75 ohms
Input Impedance	75 ohms
Return Loss	> 10 dB
Isolation Between Inputs	> 40 dB
L-band Frequency	950 to 2150 MHz
Tuning Step Size	1 MHz
Receive Spectrum Sense	Normal and Inverted
L-Band Power	
Input Power Level per Carrier	-25 to -65 dBm (full transponder power)
DVB-S Modulation (EN 300 421)	
Modulation	QPSK
Convolutional FEC Rates	1/2, 2/3, 3/4, 5/6, 7/8
Symbol Rate Range	1.0 to 45 MSymbols/s
Eb/No (C/N) Ratio	See DVB-S2 Satellite Receiver Input, DVB-S Eb/No (C/N) Ratio Table
DVB-S2 Modulation (EN 302 307)	
Modulation	QPSK, 8PSK
Pilots On/Off	Pilots On
QPSK LDPC FEC Rates	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
8PSK LDPC FEC Rates	3/5, 2/3, 3/4, 5/6, 8/9, 9/10
LDPC FEC Frame Length	Normal
Symbol Rate Range	1 to 30 Ms/s
Maximum Channel Bit Rate	90 Mb/s
Maximum User Bit Rate	78.55 Mb/s

DVB-S/DVB-S2, Continued

DVB-S Eb/No (C/N) Ratio

Convolutional FEC Rate	Eb/No Ratio (dB) in Linear Channel and IF Loop configuration	C/N at DVB Threshold (BW = Symbol Rate)
1/2	4.5	4.1
2/3	5.0	5.9
3/4	5.5	6.9
5/6	6.0	7.9
7/8	6.4	8.5

$$C/N = Eb/No + 10 \log (2 \times FEC \times 188/204)$$

The D9854 receiver displays the C/N Ratio.

DVB-S/DVB-S2, Continued

DVB-S2 Error Rate Performance Es/No (C/N) Ratio

Mode	Simulated Es/No (dB) for FEC Frame length = 64,800	Typical Performance (dB) in Linear Channel and IF Loop configuration
QPSK 1/2	1.00	1.2
QPSK 3/5	2.23	2.4
QPSK 2/3	3.10	3.2
QPSK 3/4	4.03	4.2
QPSK 4/5	4.68	4.8
QPSK 5/6	5.18	5.3
QPSK 8/9	6.20	6.4
QPSK 9/10	6.42	6.6
8PSK 3/5	5.50	5.8
8PSK 2/3	6.62	6.8
8PSK 3/4	7.91	8.1
8PSK 5/6	9.35	9.6
8PSK 8/9	10.69	10.9
8PSK 9/10	10.98	11.3

Section B - Video Inputs/Outputs and Processing

General

Item	Specification
System	MPEG-2/DVB Compatible EN 300 421, EN 300 468

Video Outputs

Analog SD Video Output

Item	Test Signal	Specification CVBS1	Specification CVBS2
Number of Channels		One SD source program	One SD source program
Video Decompression Type		MPEG-2 4:2:0	MPEG-2 4:2:0
Output Impedance		75 Ω	75 Ω
525 Line			
Bar level	NTC-7 comp	700 mV \pm 7 mV (\pm 1%)	700 mV \pm 35 mV (\pm 5%)
Line Time Distortion	VITS17	\leq 1%	\leq 1%
Bar Tilt	NTC-7 comp	$<$ 0.5%	$<$ 0.5%
Sync Level	NTC-7 comp	40 IRE \pm 0.5 IRE	40 IRE \pm 2.0 IRE
DC Offset	NTC-7 comp	\pm 100 mV	\pm 100 mV
Chrominance-to-Luminance Gain Inequality	NTC-7 comp	100 \pm 5%	100 \pm 5%
Chrominance-to-Luminance Phase Inequality	NTC-7 comp	$<$ 20 ns	$<$ 20 ns
K factor K 2T	NTC-7 comp	$<$ 1%	$<$ 1%
Jitter		$<$ 5 ns	$<$ 5 ns
Frequency Response	FCC multi-burst	0.5 MHz, 0 dB 1.25 MHz, 0 dB \pm 0.2 dB 2 MHz, 0 dB \pm 0.2 dB 3 MHz, 0 dB \pm 0.3 dB 3.58 MHz, 0 dB \pm 0.3 dB 4.1 MHz, 0 dB \pm 0.3 dB	0.5 MHz, 0 dB 1.25 MHz, 0 dB \pm 0.2 dB 2 MHz, 0 dB \pm 0.2 dB 3 MHz, 0 dB \pm 0.3 dB 3.58 MHz, 0 dB \pm 0.3 dB 4.1 MHz, 0 dB \pm 0.3 dB
Differential Gain	NTC-7 comp	$<$ 3.0%	$<$ 3.0%
Differential Phase	NTC-7 comp	$<$ 3 $^\circ$	$<$ 3 $^\circ$
Luminance Non-linearity		$<$ 5%	$<$ 5%
Line Time Distortion	NTC-7 comp	\leq 1%	\leq 1%
Weighted Signal Video -to-Noise	50% Grey Field	\leq -70 dB rms	\leq -70 dB rms
Weighted Signal Video -to-Noise	Luminance Ramp	\leq -55 dB rms	\leq -55 dB rms
Return Loss		DC to 10 MHz, $>$ 30 dB	DC to 10 MHz, $>$ 30 dB

Video Outputs, Continued

Item	Test Signal	Specification CVBS1	Specification CVBS2
625 Line			
Bar level	VITS17	700 mV \pm 7 mV (\pm 1%)	700 mV \pm 35 mV (\pm 5%)
Line Time Distortion	VITS17	\leq 1%	\leq 1%
Bar Tilt	VITS17	< 0.5%	< 0.5%
Sync Level	VITS17	300 mV \pm 3 mV	300 mV \pm 15 mV
DC Offset	VITS17	\pm 100 mV	\pm 100 mV
Chrominance-to-Luminance Gain Inequality	Colour Bars	100 \pm 5%	100 \pm 5%
Chrominance-to-Luminance Phase Inequality	Colour Bars	< 20 ns	< 20 ns
K factor K 2T	VITS17	< 1%	< 1%
Jitter		< 5 ns	< 5 ns
Frequency Response	VITS18	0.5 MHz, 0 dB 1 MHz, 0 dB \pm 0.2 dB 2 MHz, 0 dB \pm 0.3 dB 4 MHz, 0 dB \pm 0.3 dB 4.8 MHz, +0 dB, -0.5 dB	0.5 MHz, 0 dB 1 MHz, 0 dB \pm 0.2 dB 2 MHz, 0 dB \pm 0.2 dB 4 MHz, 0 dB \pm 0.3 dB 4.8 MHz, +0 dB, -0.5 dB
Differential Gain	VITS330	< 3.0%	< 3.0%
Differential Phase	VITS330	< 3°	< 3°
Luminance Non-linearity	VITS17	< 5%	< 5%
Weighted Signal Video-to-Noise	50% Grey Field	\leq -70 dB rms	\leq -70 dB rms
Weighted Signal Video-to-Noise	Luminance Ramp	\leq -55 dB rms	\leq -55 dB rms
Return Loss		DC to 10 MHz, > 30 dB	DC to 10 MHz, > 30 dB

Video Outputs, Continued

Analog SD Video Output, CVBS1 and CVBS2 for monitoring

Item	Specification
Number of Channels	One down-converted source HD program
Video Decompression Type	MPEG-2 4:2:0
Output Level	1.0 Vpp \pm 5%
Output Impedance	75 ohms

HD Component Video Output (Monitoring Output)

Item	Test Signal	Typical Performance Values	
		Y	Pb, Pr
Amplitude	100% Color Bars	700 mV \pm 5%	700 mV \pm 5%
Sync Amplitude	100% Color Bars	300 mV \pm 5%	300 mV \pm 5%
Bandwidth	Multi-burst	DC to 30 MHz, \pm 0.6 dB	DC to 15 MHz, \pm 0.6 dB
Noise, Unified Weighting	Flat Field	-70 dB	-70 dB
Linearity	5-step	3%	3%
Interchannel Delay	100% Color Bars	2 ns	2 ns
DC Offset		\pm 50 mV	\pm 50 mV
Return Loss		DC to 30 MHz, -20 dB	DC to 30 MHz, -20 dB

Aspect Ratio

Item		Specification	
Aspect Ratio Conversions for Down-Conversion		Aspect Ratio Conversions for SD Programs	
4:3 :	16:9	4:3	16:9
16:9 Letterbox 14:9 Letterbox Center	Center Cutout	16:9 Letterbox 14:9 Letterbox Center Cutout	Scale to 16:9

Embedded Data in SDI

VBI Processing

Item	Specification
Closed Captioning	
Output formats	SMPTE-334M embedded in HD-SDI

Embedded Audio

Item	Specification
Format	According to SMPTE-299M
Audio sampling frequency	48 kHz locked to the video. According to SMPTE-272M
Resolution	20 bits

Audio Outputs

Analog Audio Outputs

Item	Specification
Number of Channels	2 stereo pairs/4 mono channels, 5.1 channel downmix Audio decompression: MPEG or Dolby Digital (AC-3). HE-AAC single stereo pair or Dolby Digital Plus single stereo pair available as future software download.
Frequency Response	±0.5 dB, 20 Hz to 20 kHz (ref., 100 kilohms)
Total Harmonic Distortion	< 0.3% at 1 kHz (ref. 100 kilohms)
Dynamic Range	85 dB (CCIR/ Arm weighting)
Crosstalk	80 dB at 1 kHz (typical)

Digital Audio Outputs

Item	Specification
Number of Channels	2 (one stereo channel each)
Format	AES-3id
Connector	BNC

Conditional Access

Item	Specification
PowerVu CA	DES or DVB
DVB Scrambling	BISS Mode 1, Biss Mode E
DVB-CI	Interface: 2 CI slots - EN 50221 CA Method: Multicrypt, Simulcrypt, Roscrypt (CI only supports one Roscrypt CAM at a time) CAS: Irdeto, Viaccess, Nagravision, Conax CAS: MediaGuard, Cryptoworks available in an anticipated future software release Note: Viasat (uses NDS/VideoGuard) only authorizes decoders equipped with an ASI output to receive/decrypt Viasat-encrypted programs.

Section C - Transport Stream Outputs

ASI Output

Item	Specification
Number of outputs	1
Type of connector	75 ohms BNC
Output impedance	75 ohms according to EN 50083-9
Data amplitude	800 mV peak-peak \pm 10% according to EN 50083-9
Return loss	>17 dB, 27 to 270 MHz
Transport stream bit rate	1 to 120 Mbit/s \pm 100 ppm
ASI bit rate	200 Mbit/s \pm 100 ppm
Transport stream formats	According to EN 50083-9. 188 bytes structure, 204 bytes without Reed Solomon, Burst or packet format.

MPEGoIP Output (optional)

Item	Specification
Number of outputs	1
Type of connector	RJ-45, 10/100/1000BaseT
Output modes	UDP RAW, RTP
IP Addressing	Multicast
TS Streaming	MPTS
TS Bit Rate	1 to 120 Mbps

MPE Output

Item	Specification
Number of outputs	1
Type of connector	RJ-45, 10/100/1000 BaseT
Output modes	IPv4 datagrams
IP Addressing	Multicast, up to 5 addresses
TS Input	up to 5 PIDs
Bit Rate	up to 10 Mbps (for 1500 byte packets)

Section D - Control, Management and Data Interfaces

Ethernet Management Interface

Item	Specification
Number of connectors	1
Type of connector	Eight-pin RJ-45
Ethernet type	10/100/1000 BaseT
Required setup	IP address, default gateway and subnet mask

Ethernet Data Interface

Item	Specification
Number of connectors	1
Type of connector	Eight-pin RJ-45
Ethernet type	10/100/1000 BaseT
Required setup	IP address, default gateway and subnet mask

RS-232 Data Interface

Item	Specification
Connector type	9-pin sub-D female
Data rates	RS-232 asynchronous data at selectable rates up to 38.4 kb/s: 300, 1200, 2400, 4800, 9600, 19,200, 38,400 b/s

Alarm Interface

Item	Specification
Number of outputs	3, each having one set of contacts closed and one set open during normal operation. Alarms are signalled by reversing the polarity of the two contact sets.
Type of connector	Terminal block
Max. voltage	≤ 30 V AC, ≤ 30 V DC
Max. current	≤ 1 A

Contact Closure Interface

Item	Specification
Connector type	9-pin sub-D female
Minimum duration of event guaranteed to be detected	250 ms, 1 frame period, e.g., for 1080i/25 Hz 40 ms for DPI applications
Max. on generator impedance	100 ohms
Min. off generator impedance	100 kilohms

Section E - Power and General Specifications

General

Item	Specification
LCD	2 lines of 40 characters, backlit LCD.
Keypad	Arrow keys, 0 to 9, SELECT, MENU, INFO, ADV, MAP, APPLY and NAV keys.
LEDs	Green LED for Signal status. Red LED for Alarm indication.

Power

AC Power Connector

Item	Specification
Type of connector	IEC 320 style C14 appliance receptable
AC input	100 to 240 V AC, 50/60 Hz
Power	37 W max.
Current	0.34 A @ 240 V AC typical, 0.5 A @ 120 V AC typical
Power Quality	ANSI/IEEE Std C62.41.1-2002

Power

To operate the receiver, you must connect it to an AC power source.



WARNING:

Make sure that at least one end of the power cable(s) remains easily accessible for unplugging, if you need to switch off the unit. For example: Ensure that the socket outlet is installed near the product.



WARNING:

To avoid electrical shock, connect the three-prong plug on this product to an earth-grounded three-pin socket outlet only.

Mechanical

Item	Specification
Height	1 U (4.37 cm) (1.72")
Width	44.07 cm (17.35")
Depth	35.0 cm (13.78")
Weight	4.5 kg (10 lb.)

Environment

Item	Specification
Storage	
General	The product is within the original packaging.
Humidity	5 - 95% non-condensing
Temperature	-20 - +70°C (-4 to 158°F)
Operation	
Humidity (non-condensing)	95% humidity is valid up to 40°C 91% humidity is valid up to 45°C 70% humidity is valid up to 50°C
Temperature	0°C - +50°C (32°F to 122°F)
Altitude	
Operating	10,000 ft. (3048 m) max.
Non-operating	30,000 ft. (9144 m) max.

Appendix B

Default Settings

Overview

Introduction

The D9854 Advanced Program Receiver is factory configured with default settings unless you have requested a custom factory configuration. This appendix lists the factory default settings.

Topic	See Page
Factory Default Settings	B-2

Factory Default Settings

Administration

Parameter	Default
Lock Level	0
Password	1234
KB Lock	Disabled
KB Lock Timeout	60
LCD Contrast	30
DL Mode	Always
Date Format	DD_MM_YYYY
Time Format	24 Hr
GMT Off	+05.30

Factory Default Settings, Continued

RF Input

Parameter	Description
Tune Mode	Basic
CA Ctl	Std
Select	UserCfg
LO1 (GHz)	5.15
LO2 (GHz)	0.0
Crossover (GHz)	0.0
OrbPos	0.0
E/W	NA
Pol	H (horizontal)
Freq (GHz)	3.449
Sym Rate	28.3465 MS/s
FEC	Auto
Modulation	DVB-S
Roll-off	.35
InputIQ	Auto
NetID	1
LNB Power	Off
22kHz	Off

Factory Default Settings, Continued

Tune Mode

Parameter	Description
Service List Mode	Rigorous
Frequency Tuning	NIT
Use BAT in Service List	No
Use NIT in Service List	Yes
Use SDT in Service List	Yes
Use PAT in Service List	Yes

IP

Parameter	Default
Port ID	1
V4/V6	IPv4
IP Address	192.131.244.254
Mask	24
Gateway	255.255.255.0
SNMP Read Community String	public
SNMP Write Community String	public
Multicast Forwarding	Forward All, if Port ID is set to 2
SNTP Server	0.0.0.0
SNTP Enable	No
Password Complexity	Full Complexity Checking

Factory Default Settings, Continued

Video

Parameter	Default
PV Format	Auto
SD Format	Auto
Tri-Synch (Front Panel only)	Disabled
TV A/R	4:3
Convert	None
WSS Mode	Passthrough
Enable Banner Display (Web GUI only)	Enable

Audio

Parameter	Default
Stereo/Mono	Stereo
AC3 Compression	RF Mode
Left (dB)	0
Right (dB)	0
DDP (Front Panel only)	Trans
PMT Source	AUD1
Digital Out Pref	PCM Samples

Factory Default Settings, Continued

Subtitles

Parameter	Default
Op Mode	Off
Select Language By	Language Entry
Language List	eng
PMT Order	First
Entry	eng
Imitext Position	Standard
ForeGnd	Auto
BackGnd	Auto

CI

Parameter	Default
Decrypt	ON
CI Slot	Top
Query	Disabled
Auto Reset	Disabled
List Mgmt	AddDel
TS_ON_ID	Disable

Factory Default Settings, Continued

Cueing

Parameter	Default
Cueing Mode	Trigger
Trigger Polarity	High
Repeat	3
Tone (ms)	40
Silence (ms)	40
Relay Mode	Alarm
Cue Trigger Bit	1
State	Disable
Mode	*
Delay (sec)	1

TS Out - ASI

Parameter	Default
Name	ASI
Rate Control	User
User Rate	68.5
Output Mode	No Output
Descramble Mode	Descrambled
Insert Null Packet	Yes

Factory Default Settings, Continued

TS Out - MOIP1

Parameter	Default
Name	MOIP1
Rate Control	User
User Rate	0
Output Mode	No Output
Descramble Mode	Descrambled
Insert Null Packet	Yes
Instance Name	MPEG over IP 1
MOIP	UDP
Send SAP	No
SAP ID	Cisco Default SAP
DestAddr	225.1.1.1
UDPPort	49152
SrcPort	0
TS/IP	7
Min IP/s	0
PCR@IP Start	Yes
Mgmt Port Mode	No Output
DATA Port Mode	Always output
PCR Addition	Yes

Factory Default Settings, Continued

DPM - ASI/MOIP1

Parameter	Default
PMT	8192
Act	Drop
OutCh	0
PMT	8191
Map Mode	SVC ID & PID
Duplic Mode	Pkt Copy
Unref	Drop
PSI Options	Drop All
PSI Rate	SA Std
Service ID	Valid Ch
PAT	Pass
CAT	Pass
PMT	Pass
TSDT	Pass
NIT	Pass
NITO	Pass
SDT	Pass

Factory Default Settings, Continued

Parameter	Default
SDTO	Pass
BAT	Pass
EIT	Pass
TDT	Pass
RST	Pass
TOT	Pass
DIT	Pass
SIT	Pass
ECM	Pass
EMM	Pass
DRT	Pass
CDT	Pass

Noise Cutoff

Parameter	Default
Trnsprt (DVB-S/DVB-S2 Marg) Cutoff	0.0
Trnsprt (DVB-S/DVB-S2 Marg) Restore	0.1
Audio (DVB-S/DVB-S2 Marg) Cutoff	0.0
Audio (DVB-S/DVB-S2 Marg) Restore	0.1
Muting Control	Enable

Factory Default Settings, Continued

Import/Export (Web GUI only)

Parameter	Default
Settings File Name	file name
FTP Server IP Address	192.168.0.100
FTP Port Number	21
FTP User Name	user
FTP Password	USER

Appendix C

Lock Levels

Overview

Introduction

This appendix contains the lock levels for the D9854 Advanced Program Receiver.

In This Appendix

This appendix contains the following topics.

Topic	See Page
D9854 Receiver Lock Levels	C-2

D9854 Receiver Lock Levels

Four (4) lock levels (0, 1, 2, 3, and 4) are available for protecting your receiver and its settings against unauthorized use or modification (see the table below for full details).

Level	Description
0	All settings are unlocked (receiver lockout disabled)
1	All settings are unlocked except Factory Reset, Password options and receiver parameters.
2	All settings are unlocked except RF and ASI Input Tuning parameters.
3	All settings locked (access via password only), except IP address and RF power.
4	All settings locked (can be changed via PNC uplink signal only)

If a change made to the current Lock Level setting is not saved, the previously saved setting is restored.

Note: The user cannot select **NONE** as a Lock Level.

Video

Parameter	Lock Level
PV Format	2
SD Format	2

Aspect Ratio

Parameter	Lock Level
SD Aspect Ratio	2
AR Selection	2
AR Conversion	2
WSS Mode	2

D9854 Receiver Lock Levels, Continued

Closed Caption

Parameter	Lock Level
Preferred Mode	2

Subtitles

Parameter	Lock Level
Op Mode	2
Lang Menu	2
Lang List	2
PMT Order	2
Manual Entry	2
Imitext Position	2
Foreground	2
Background	2

Download

Parameter	Lock Level
Mode	2
DL Type	2
DL Bank	2
Command	2

Runnable Application

Parameter	Lock Level
Index	2
Select	2
Erase	2

D9854 Receiver Lock Levels, Continued

Runnable FPGA

Parameter	Lock Level
Index	2
Select	2
Erase	2

Audio

Parameter	Lock Level
Audio Sel Key	2
Mode	2
AC3 Comp	2
Left	2
Right	2
PMT Source	2

PV Muting Thresholds

Parameter	Lock Level
Transport Cutoff	2
Transport Restore	2
Audio Cutoff	2
Audio Restore	2

LDPC Muting Thresholds

Parameter	Lock Level
Transport Cutoff	2
Transport Restore	2
Audio Cutoff	2

Parameter	Lock Level
Audio Restore	2

Muting Thresholds

Parameter	Lock Level
Restore Defaults	2
Control	2

Fixed PID

Parameter	Lock Level
CH	1
Ch Stream IDX	1
PID	1
Stream Type	1

IP

Parameter	Lock Level
Port ID Key	3
Name	3
V4 IP Addr	3
V4 Mask	3
V4 Def Gateway	3

SNMP Comm

Parameter	Lock Level
Read String	2
Write String	2
Sys Name	2
Sys Location	2
Sys Contact	2

D9854 Receiver Lock Levels, Continued

Trap Destination

Parameter	Lock Level
Index	2
IP Addr	2

Active Settings

Parameter	Lock Level
ACQ Mode	1
CA Mode	1
Input Sel	1
Freq Sel	1
Ser List Mode	1
Use BAT	1
Use NIT	1
Use SDT	1
Use PAT	1

Active Tuning

Parameter	Lock Level
Net ID	1
ASI	1
RF1	1
RF2	1
RF3	1
RF4	1
Input	1
Modulation	1
Frequency	1

Parameter	Lock Level
Sym Rate	1
FEC	1
LNB Power	3
Polarization	1
IQ	1
22 kHz Tone	1
Rolloff	1

Active Inputs

Parameter	Lock Level
RF Sel Key	1
LNB Type	1
LNB Trim1	1
LNB Trim2	1
Crossover	1
LO Select	1
LOF 1	1
LOF 2	1
Orbital Pos	1
E/W Flag	1
Orb Polarization	1

BISS

Parameter	Lock Level
Mode	2
BISS 1 SW	2
BISS E SW	2
BISS E ID	2

D9854 Receiver Lock Levels, Continued

Program Entry

Parameter	Lock Level
PE Index	2
Channel Num	2
CA Resource	2
Resource ID	2
CH Cmd	2

Program Status

Parameter	Lock Level
PE Index	2
Channel Num	2

Decode Enable

Parameter	Lock Level
Decoder	2
Enabled	2

Power On

Parameter	Lock Level
Clr Reset Count	0

User Setting

Parameter	Lock Level
Date Format	2
Time Format	2
GMT Offset	2

Parameter	Lock Level
KB Lock Enable	2
KB Lock Timeout	2
M1 Port Type	2
M2 Port Type	2
Contrast	2
Menu Type	2
Clear ADP	2
Regenerate	2
Banner	2
Reboot	2

Admin

Parameter	Lock Level
Lock Level	3
Lock Level Pwd	3
Lock Level Pwd Cur	0
Lock Level Pwd New	0
Lock Level Pwd Conf	0
Factory Reset	0
Clean Unused Tbls	0

DPM Transmit

Parameter	Lock Level
Output Mode	2
Descramble Mode	2
Rate Ctrl	2
Rate	2
Ins Null Pkt	2

D9854 Receiver Lock Levels, Continued

DPM Global Configuration

Parameter	Lock Level
Instance ID	2
Instance Name	2
Map Mode	2
Dup Method	2
Reg Rate	2
Unref Content	2
PSI Output	2
PSI PAT	2
PSI CAT	2
PSI PMT	2
PSI TSDT	2
PSI NIT	2
PSI NITO	2
PSI SDT	2
PSI SDTO	2
PSI BAT	2
PSI EIT	2
PSI TDT	2
PSI ST	2
PSI RST	2
PSI TOT	2
PSI DIT	2
PSI SIT	2
PSI ECM	2
PSI EMM	2
PSI DRT	2

Parameter	Lock Level
PSI CDT	2
Svc ID Output	2
Modified	2
Activate	2

DPM PE Maps

Parameter	Lock Level
Instance ID	2
PE	2
Action	2
PMT PID	2
Output Channel	2
PID Map	2

DPM PID Map

Parameter	Lock Level
Index	2
In Use	2
Instance Name	2
PE	2
Row	2
Stream Type	2
Stream CAT	2
Stream Inst	2
Action	2
Output PID	2

D9854 Receiver Lock Levels, Continued

IP Configuration

Parameter	Lock Level
Enabled	2
Instance Name	2
TP Proto	2
Dest IP Addr	2
SAP Multicast IP Addr	2
Dest Port	2
Src Port	2
Min IP Per Sec	2
PCR Addition	2
PCR Start New Pkt	2
Send Sap	2
Send Sap Str	2
Max TPKT Per IP	2
SAP Str	2
Intf Mode 1	2
Intf Mode 2	2

Alarm Setting

Parameter	Lock Level
Enable	2
Relay	2
Trap	2

Warning Setting

Parameter	Lock Level
Name	2

Parameter	Lock Level
Enable	2
Relay	2
Trap	2

Fault Status

Parameter	Lock Level
Text ID	2
Fault Num	2
Name	2
Type	2
Severity	2
Last Date Time	2
Trap State	2
Details	2
Relay	2

Fault History

Parameter	Lock Level
Sequence	2
Name	2
Type	2
Set Date Time	2
Reset Date Time	2
State	2
Details	2

Log History

Parameter	Lock Level
Sequence	2

Parameter	Lock Level
Cur Date	2
Cur Time	2
Message	2

Appendix D

Equipment and Accessories

Overview

Introduction

This appendix contains names and part numbers of equipment and accessories for the D9854 Advanced Program Receiver.

In This Appendix

This appendix contains the following topics.

Topic	See Page
Accessory Kits for the D9854 Receiver	D-2

Accessory Kits for the D9854 Receiver

Accessory Kit

The accessory kit for the D9854 receiver contains the following items:

Part Number	Description
4021470 Rev F	Cisco D9854 Advanced Program Receiver Installation and Operation Guide

Appendix E

Compliance

Applicable Standards and Notices

Safety The D9854 Advanced Program Receiver has been approved for safety by the Standards Council of Canada and the OHSA (NRTL) Accredited Testing Laboratory to the following standards:

CAN/CSA-C22.2 No. 60950-1-03

UL Std No. 60950-1-2003

Also, this product is being evaluated under the IECEE CB scheme to the following international standard:

IEC 60950-1 (1st Ed)

For the CB report and Certificate, the product is evaluated for the country differences outlined in CB Bulletin 109A:

EMC Electrostatic Discharge (ESD) results from the static electricity buildup on the human body and other objects. This static discharge can degrade components and cause failures.

Take the following precautions against electrostatic discharge.

- Use an anti-static bench mat and a wrist strap or ankle strap designed to safely ground ESD potentials through a resistive element.
- Keep components in their anti-static packaging until installed.
- Avoid touching electronic components when installing a module.

Electromagnetic Compatibility Regulatory Requirements

Ethernet cables should be of single-shielded or double-shielded type. Coaxial cables should be of the double-braided shielded type. Where this equipment is subject to USA FCC and/or Industry Canada rules, the following statements apply:

FCC Notices

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions supplied in this manual may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the

Applicable Standards and Notices, Continued

equipment off and on), the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the television receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Connect the equipment to an AC outlet on a circuit different from that to which the receiver is connected.
4. Contact your dealer/ reseller or an experienced radio/ TV technician for help.

The user may find the booklet "Interference handbook" prepared by the Federal Communications Commission helpful. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, stock no. 004-000-00450-7.

Shielded cables should be used to interconnect this device with any other/ peripheral equipment (i.e., data sources, terminals, monitors, etc.) to ensure compliance with Class B limits. Failure to do so may result in radio or TV interference. Cables should be of braided shield construction with metal end shells.

Industry Canada Notice

This digital apparatus does not exceed the limits for Class B radio noise emissions from digital apparatus as set out in the radio interference regulations of the Industry Canada.

Le present appareil numerique n'emet pas de bruits radioelectriques qui dépassent les limites applicables aux appareils numeriques de Class B prescrites dans le reglement sur le brouillage radioelectrique edicte par Industrie Canada.

Unauthorized Modifications

The manufacturer is not responsible for any radio or TV interference resulting from unauthorized modifications made to this equipment. It is the responsibility of the user to correct such interference at his own expense.



Cisco Systems International BV
 Luipaardstraat 12
 8500 Kortrijk
 Belgium



Declaration of Conformity

The Product: Advanced Program Receiver

Model Number: D9854

Ratings: 100-240V~, 50/60Hz, 1.5Amax

Has been designed and manufactured in accordance with the following Harmonised Standards:

Number and Date of Issue	Title of Standard
EN 60065:2002/A11:2008	- Audio, video and similar electronic apparatus – Safety requirements
EN 55022:2006, Class B	- Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Devices
EN 55013:2003	- Electromagnetic Compatibility Requirements - Sound and Television Broadcast Receivers and Associated Equipment
EN 55024:1998 +A1:2001 & +A2:2003	- Information technology equipment - Immunity characteristics - Limits and methods of measurement
EN 61000-3-2:2001	- Electromagnetic Compatibility - Part 3: Limits Section 2: Limits for Harmonic Current Emissions (Equipment Input Current less than 16A per phase)

According to the provisions of the Low Voltage Directive 2006/95/EC and the EMC Directive 2004/108/EC

Toronto, Canada, August 1, 2010
 (Issue Place and date)

Cisco Systems Video Technology Canada Inc. (Digital Media Networks Business Unit)
 (Company Name)

100 Middlefield Road, Scarborough, Ontario, Canada, M1S 4M6
 (Company Address)

For the manufacturer: Steven Lawrence, Product Regulatory Compliance
 (Signature, Name and Title)

Appendix F

Software End User License Agreement

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Cisco Model D9854 Advanced Program Receiver

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Version 2, June 1991

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1.3 NTP 4.2.4 :P4

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29. [32]Louis A. Mamakos <louie@ni.umd.edu> MD5-based authentication
30. [33]Lars H. Mathiesen <thorinn@diku.dk> adaptation of foundation code for Version 3 as specified in RFC-1305
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38. [42]Rainer Pruy <Rainer.Pruy@informatik.uni-erlangen.de> monitoring/trap scripts, statistics file handling
39. [43]Dirce Richards <dirce@zk3.dec.com> Digital UNIX V4.0 port
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41. [45]Nick Sayer <mrapple@quack.kfu.com> SunOS streams modules
42. [46]Jack Sasportas <jack@innovativeinternet.com> Saved a Lot of space on the stuff in the html/pic/ subdirectory
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45. [49]Jeff Steinman <jss@pebbles.jpl.nasa.gov> Datum PTS clock driver

46. [50]Harlan Stenn <harlan@pfcs.com> GNU automake/autoconfiguremakeover, various other bits (see the ChangeLog)
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