



Antenna TV Reception Recommendations

With Spring fast approaching, your Antenna TV Engineering team wants to share some pointers as you check over your network reception system after the harsh winter months.

The Antenna TV network is distributed to affiliates as a C band signal via Intelsat's Galaxy 14 satellite located at 125 degrees West. Cisco PowerVue encoding and encryption is used to create a DVB compliant digital stream that is delivered to your local Cisco receiver. The key to reliable consistent network reception is a robust local affiliate reception system that ensures a stable RF signal is delivered to the input of the Cisco receiver.

Please consider the following as you check over your system's components:

Antenna

We recommend a minimum 3.8 meter dish – larger is generally better. The dish must have a “solid” reflector and be 2 degree satellite spacing compliant. Having the dish “peaked” on the satellite will ensure maximum signal reception. Don't forget to check, and if necessary re-peak, the polarity of your antenna as well – Antenna TV uses **Horizontal** polarization for our downlink signal. A spectrum analyzer is always best for these signal checks and adjustments. Extreme care must be used when working with devices that use satellite “signatures” as tuning guides, since there is at least one satellite adjacent to Galaxy 14 with an almost identical RF “signature.” Many people have inadvertently tuned to the wrong satellite using these devices.

Low Noise Block Down Converter – the “LNB”

The LNB for Antenna TV **MUST** be a digital signal capable, phase locked unit with a local oscillator stability of at least 1.0 ppm. A Terrestrial Interference (TI) filter is also **HIGHLY RECOMMENDED** installed between the actual antenna output and the LNB input. There are many high power interfering signals on either side of the C Band downlink spectrum – ground based and airborne radar systems, and a growing number of point to point microwave transmitters being most prevalent. These signals need to be attenuated before they reach your LNB input and contaminate the Antenna TV programming.

Connecting cable and connectors

Getting the signal from the LNB to the receiver with minimum loss is critical. LNBs require DC power to operate which is also passed down the cable. Typically “F” connectors are used at both ends of the cable. Be sure that only high quality compression type F connectors are used. Weather resistant models are available for

the LNB connection. Hex crimp type connectors exhibit significant RF “bumps” and “dips” at various random frequencies. Clean, tight connections at both cable ends ensure maximum signal transfer. Moisture brings corrosion that will attenuate RF levels and reduce the power available to operate the LNB, derogating the signal arriving at the receiver.

Receiver

The network Cisco receiver has several tools available to help you maximize your signal reception. The “Level” and “Margin” readouts are excellent diagnostic tools that you can use to determine if you are operating on the edge of the digital cliff, or if you have adequate margins to ensure high quality reception under all weather conditions. The “Level” meter operates between -70 dBm (no signal received) to -25 dBm (maximum signal accepted). Cisco receivers have internal AGC circuits to “smooth out” their response. The “ideal” signal will fall in the -50 to -40 dBm range. Very “Hot” signals can be reduced by using fixed “pads” inserted at the receiver input. Be sure to use pads that pass DC if you are powering your LNB from the receiver.

Margin in satellite communications is the difference between the receiver's sensitivity (i.e., the received power at which the receiver will stop working) and the actual received power arriving at the unit. The higher the Margin reading the better.

The “Level” and “Margin” readings can be used to maximize the operation of your entire system. Taking daily readings, and noting the weather conditions, allows you to see how robust your receive signal is, and just how close you are to the “digital cliff.” It will also highlight sudden or gradual changes that can cause you to lose your Antenna TV signal.

Feel free to contact the technical support team at Antenna TV if you would like to discuss any of these topics in greater detail.



ANTENNA TV TECH SUPPORT

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