

DBS / ATSC AMPLIFIERS

PAL1510-T AUTOGAIN AMPLIFIER

SITUATION

DBS signals need amplification to a constant level for multiple distribution locations.

SOLUTION

Model **PAL1510-T** provides a user selectable automatic gain controlled output of +1 dBm, -5 dBm, or -10 dBm @ 2150 MHz. Slope is field selected to either 10 dB or 15 dB.

The input window adjusts with output level. At -10 dBm output, the LED indicators turn **Green** with an minimum input of -50 dBm. At +1 dBm output, the LED indicators turn **Green** with an minimum input of -40 dBm.

RELATED CONSIDERATIONS

An LNB may be powered by the amplifier. Terminate the LNB switch port to pass 19 volts DC to the RF input.

FEATURES

- Indoor/Outdoor Die-cast Aluminum
- Selectable Output Level 1, -5, -10 dBm switched
- Selectable Slope 10 / 15 dB switched
- Selectable DC OUT Off or 19 Vdc
- Wide Frequency band DBS Ka/Ku
- LED signal meter GREEN = AGC Lock

APPLICATION NOTES

Model **PAL1510-T** is used to distribute single coax DBS signals in large high rise distribution systems. The signal may be 950 to 2150 MHz Ku DBS, 250 to 2150 MHz Ka/Ku DBS or a combination of off-air ATSC signals and DBS Ku signals.

Model **HRT124**, **HRT120**, **HRT116**, **HRT112**, **HRT109** and **HRT106** directional couplers tap a portion of the signal to feed distribution nodes. The trunk level is indicated on the left and the tap level output is indicated on the right. **HRvTxx** taps are available in the vertical style



OUTPUT

Terminator for -5 dBm

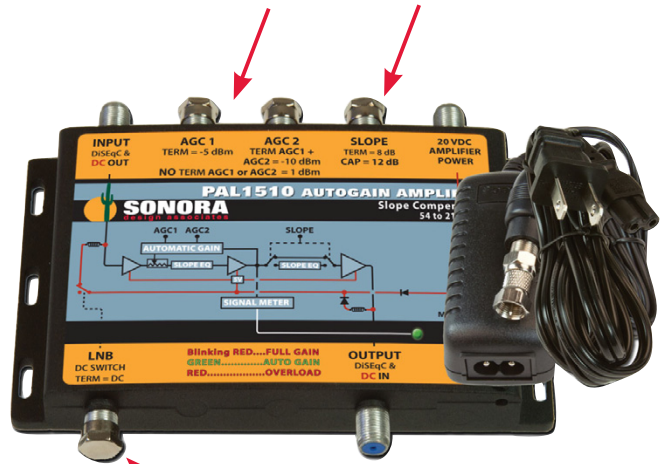
Two Terminators for -10 dBm

No Terminators for 1 dBm

SLOPE

Terminator for 10 dBm

No Terminators 15 dBm

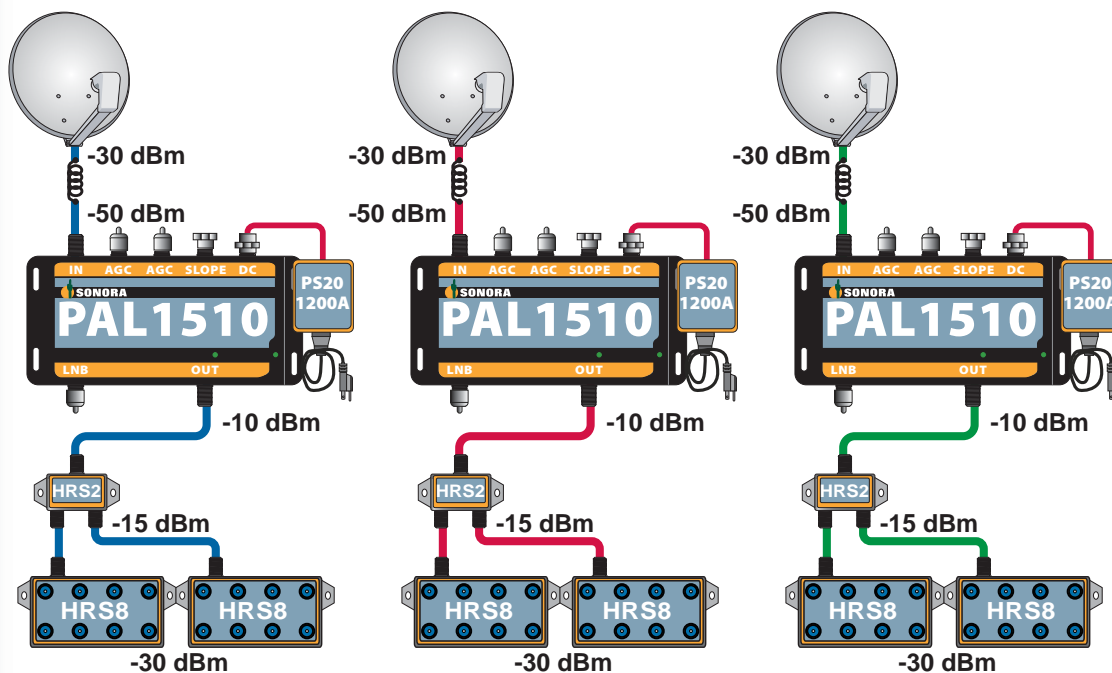


Terminate for DC to INPUT.

DESCRIPTION

Indoor / Outdoor 54 to 2150 MHz DBS / ATSC high output power amplifier with automatic gain, selectable slope and external powering.





Model **PAL1510-T** amplifiers set to -10 dBm output provide automatic gain control for DBS switches connected to model **HRS8** splitters. The splitter output of -30 dBm provides the maximum drive signal for switches without overload.

Terminating the LNB switch port send 19 V DC to the amplifier input to power the LNBs.

SPECIFICATIONS

RF Specifications TypicalQC Limit

| Passband Gain @ inputs below AGC threshold | | |
|--|-----------|-----------|
| Frequency | Min Slope | Max Slope |
| 54 MHz | 32 dB | 31 dB |
| 250 MHz | 34 dB | 32 dB |
| 950 MHz | 38 dB | 38 dB |
| 1450 MHz | 41 dB | 43 dB |
| 2150 MHz | 45 dB | 47 dB |
| Input Return Loss | 12 dB | 9 dB |
| Output Return Loss | 13 dB | 10 dB |

Noise Figure 7 dB @ 2150 MHz

Output Power

IM3 with 2 Tones @ 4 dbm -50 dBc min

Passband Flatness

| | | |
|---------------------|--------|--------|
| Any 24 MHz band | 0.1 dB | 0.2 dB |
| Slope Compensation | TERM | CAP |
| 250 MHz to 2150 MHz | 10 dB | 15 dB |
| 950 MHz to 2150 MHz | 7 dB | 10 dB |

Automatic Gain ControlKu (32 transponders)

| | |
|--------------------------|----------------|
| AGC Window @ 1 dBm out | -24 to -42 dBm |
| AGC Window @ -5 dBm out | -27 to -47 dBm |
| AGC Window @ -10 dBm out | -33 to -51 dBm |

Power Specifications

| | | |
|-------------------------|--------|---------|
| Current draw (amp only) | 20 V | 120 mA |
| Wall transformer | 20 VDC | 1200 mA |

Mechanical Specifications

| | |
|--------------------------|------------------------|
| Diecast Aluminum | 9.5" L, 5.5" W, 7/8" H |
| Connector Spacing | 1" |
| Weight | 2 lb (0.9 kg) |
| Master Carton (18 units) | 20" x 10" x 10" |
| Master Carton Weight | 34 lbs (15.5 kg) |

Environmental Specifications

| | |
|-----------------------|------------------|
| Operating Environment | Indoor/Outdoor |
| Ambient Temperature | -30° C to +70° C |