

SITUATION

DBS signals from a single dish are required in multiple and or distant locations connected via coax cable..

SOLUTION

SONORA automatic gain controlled amplifiers provide a quality signal, free of distortion, over a wide range of input levels.

RELATED CONSIDERATIONS

Multiple models are based on input windows and desired output levels. Model **PAL10** is best for cascades having a -10 dBm per transponder output.

Model **PAL5** is the mid-power unit with a -5 dBm per transponder output over a -25 to -45 dBm input.

Model **PAL1** is the high-power unit @ -1 dBm.

FEATURES

- *Indoor/Outdoor* *Die-cast Aluminum*
- *Selectable Gain*.....*5 dB switched*
- *Selectable Slope*.....*5 dB switched*
- *Selectable DC OUT*..... *Off or 19 Vdc*
- *Wide Frequency band**DBS Ka/Ku*
- *LED (3) color meter* *measures RF level*

APPLICATION NOTES

Model **PAL5-T** is used in the trunk to distribute single coax DBS signals through directional couplers. The AGC level of -5 dBm can be switched on the **PAL5** to create a **PAL10** (-10 dBm) for extended cascades.

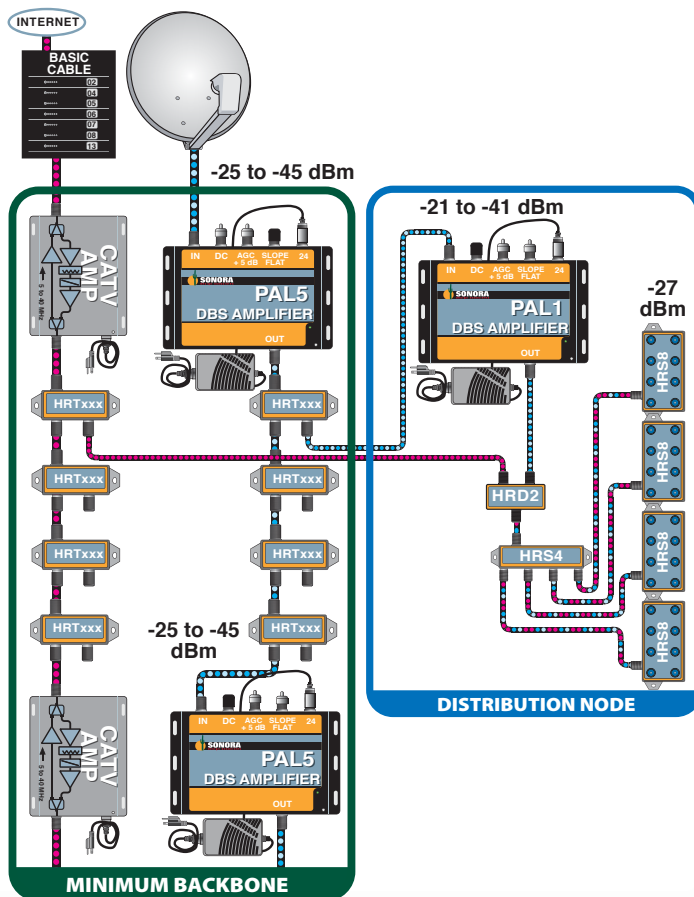
Model **PAL1-T** is used to drive splitters feeding drops. A **PAL1** can be reset to a **PAL5** if channel capacity increases.

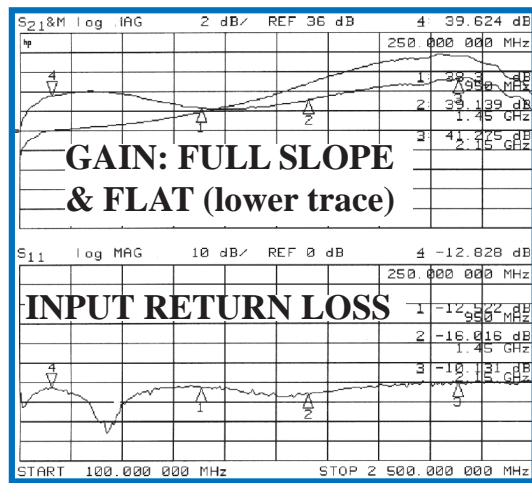
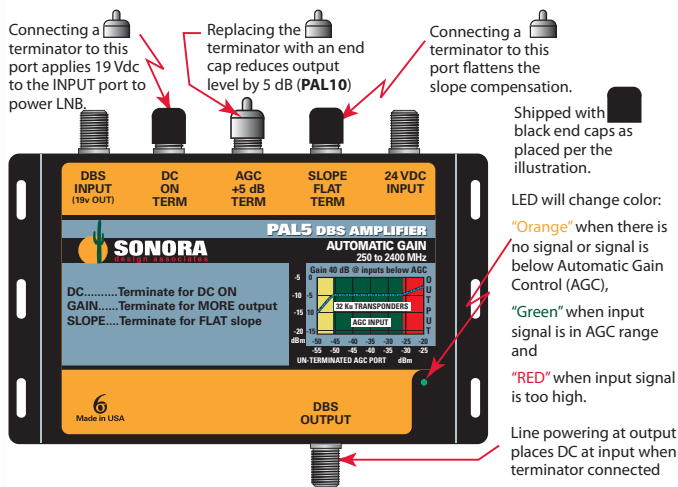
Each model offers slope compensation adjustments: full or flat.



DESCRIPTION

Model **PAL1-T**, **PAL5-T** & **PAL10-T** amplifiers increase DBS Ka/Ku signal levels using automatic gain control.





This series of amplifiers offers the installer options based on measured signal power as measured by the included power meter.

Gain and slope can be set to bring the amplifiers into the "GREEN" operating window.

DC power can be sent out the DBS input to power LNBs or other amplifiers.

SPECIFICATIONS

RF Specifications Typical QC Limit

Passband Gain	@ inputs below AGC threshold	
Frequency	Flat	Slope
250 MHz	40 dB	36 dB
950 MHz	38 dB	38 dB
1450 MHz	39 dB	40 dB
2150 MHz	41 dB	44 dB
2400 MHz	38 dB	41 dB
Input Return Loss	12 dB	9 dB
Output Return Loss	13 dB	10 dB

Noise Figure..... 7 dB @ 2150 MHz

Output Power

IM2 with 2 tones @ 1 dBm	-35 dBc	-32 dBc min
IM3 with 2 Tones @ 1 dbm	-53 dBc	-50 dBc min

Passband Flatness

Any 24 MHz band	0.1 dB	0.2 dB
Slope Compensation	ON	OFF
250 MHz to 2150 MHz	8 dB	1 dB
950 MHz to 2150MHz	6 dB	3 dB

Automatic Gain ControlKu(32 transponders)

PAL1 AGC Output	-1 dBm
AGC Window @ -1 dBm out	-21 to -41 dBm

HP network analyzer plots of frequency response and input return loss are illustrated above.

The top plot shows the affect of the slope control switch.

The bottom plot illustrates the return loss which is an indication of the amps ability to reduce reflections.

RF Specifications Typical QC Limit

Automatic Gain ControlKu(32 transponders)	
PAL5 AGC Output	-5 dBm
AGC Window @ -10 dBm out	-25 to -45 dBm
PAL10 AGC Output	-10 dBm
AGC Window @ -10 dBm out	-29 to -49 dBm

Power Specifications.....(2) models based on transformer

Voltage	20 or 24 VDC
Current draw (amp only)	200 mA
Powering options:	"F" Power Port or RF Output In-line Power (requires HRFPI)
Wall transformer	20 VDC, 1200 mA or 24 VDC 1000 mA short circuit protected

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