AmpliTech

"Amplify Your Potential"

SATELLITE COMMUNICATIONS LOW NOISE WAVEGUIDE AMPLIFIERS

DESCRIPTION

AmpliTech's line of SATCOM amplifiers are high quality, high performing units designed specifically for the most difficult satellite communication applications. These units are available for INTELSAT type configurations as well as other wideband configurations. Our cooling option will provide even further noise level reductions for the more sophisticated applications. The LNA comes in a compact package which allows easy installation on all types of antenna hubs.

All our amplifiers can be easily optimized to provide quick, customized solutions for any specific applications. Amplifiers are available with field-replaceable connectors, or waveguide interface. These Low Noise Amplifiers are specially designed for satellite earth station, telecommunications applications, and transportable applications.

AmpliTech is very competitive and will provide you with the best prices and customer service. Our goal is to offer the best quality amplifier available and we show this by offering a standard 3 year warranty on all our amplifiers.

FEATURES

- Lowest Noise Temperatures
- Very Stable, High Gains
- State-of-the-Art Technology
- Compact size
- Reverse polarity protection
- Operating temperature range of -40 °C to +70 °C
- MIL-STD 883 and Space Level screening
- Wide Dynamic Range
- Available for Ka band frequencies
- High Reliability
- Multiple Connector Interfaces
- Cryogenically Cooled Options for Ultra Low Noise

OPTIONS

- Higher output power, (up to +20 dBm)
- Cryogenically cooled options
- Extended operating temperature range
- Universal input AC power supply
- Transmit Reject Filter
- Input/Output Test Coupler
- Higher gains optional

LOW NOISE WAVEGUIDE AMPLIFIER SPECIFICATIONS

Frequency (wider bands optional):
L Band . . . . . 1.5-1.6 GHz
S Band . . . . . 2.2-2.3 GHz
C Band . . . . . 3.6-4.2 GHz
X Band . . . . . 7.25-7.75 GHz
Ku Band . . . . . 10.95-11.70 GHz
Ka Band . . . . . 20.2-21.2 GHz

Specification temperature. . . . . +25° C

Noise temperature (max)
L Band . . . . . 30° K
S Band . . . . . 33° K
C Band . . . . . 35° K
X Band . . . . . 55° K
Ku Band . . . . . 80° K
Ka Band . . . . . 125° K

Connectors (Input / Output)
L Band . . . . . SMA/SMA
S Band . . . . . SMA/SMA
C Band CPR-229G/SMA
X Band CPR-112G/SMA
Ku Band WR-75/SMA
Ka Band WR-42/SMA

Gain slope . . . . . 0.2 dB/10 MHz maximum

Gain stability . . . . . ±0.25 dB/24 hours @constant temp

Power output (1dB compression). . . .+10 dBm minimum (higher power optional)

3rd Order output IP. . . . . +20 dBm minimum (higher outputs optional)

Group delay (±18 MHz)
Linear . . . . . 0.01 ns/MHz maximum
Parabolic . . . . . 0.001 ns/MHz^2 maximum
Ripple . . . . . 0.1 ns peak-to-peak maximum

Spurious outputs
Signal Independent . . . . . -80 dBm
Signal Related . . . . . -50 dBc

Input impedance. . . . . 50 ohms
Output impedance . . . . . 50 ohms

Non-damage input power . . . . . -25 dBm maximum

Voltage/Current. . . . . +15VDC/500 mA max (Internal regulator included. 90-250VAC supply optional)

Operating temperatures . . . . . -30° to 60°C (other ranges optional)

Non-Operating temperatures. . . . . -50° to 70°C

Operating Humidity. . . . . Up to 100% condensing

Atmospheric pressure . . . . . 10,000 feet AMSL Max

Shock and Vibration . . . . . Normal handling by commercial carriers

Weight . . . . . LNA: 1lb Nominal

SATCOM LNA's

MODEL NUMBER	FREQ. RANGE (GHz)	GAIN (dB, Min.)	GAIN* FLATNESS (dB, Max.)	NOISE TEMP (°K, Max.)	RETURN LOSS - IN (dB Min.)	RETURN LOSS-OUT (dB Min.)	P1dB (dBm, Min.)	NOM. DC POWER (+15 V, mA)	AmpliTech OUTLINE DRAWING
APTW4-01500160-30K10-D6	1.5-1.6	50	± 0.5	30	18	18	10	200	D6
APTW5-02190240-33K10-D6	2.19-2.40	60	± 0.5	33	18	18	10	250	D6
APTW4-02200230-33K10-D8	2.2-2.3	50	± 0.5	33	18	18	10	225	D6
APTW3-03600420-30K10-229	3.6-4.2	35	± 0.5	30	15	15	10	200	229-D4
APTW5-03600420-35K10-229	3.6-4.2	50	± 0.75	35	15	15	10	300	229-D6
APTW4-0440550-39K10-187	4.4-5.5	40	± 0.75	39	15	15	10	250	187-D4
APTW4-0590720-43K10-137	5.9-7.2	35	± 0.75	43	15	15	10	200	137-D4
APTW5-07250775-44K10-112	7.25-7.75	50	± 0.75	44	15	15	10	350	112-D6
APTW6-07100840-45K10-112	7.1-8.4	60	± 1.0	45	14	14	10	275	112-D6
APTW5-10951170-80K10-75	10.95-11.7	50	± 1.0	80	14	14	10	375	75-D6
APTW22-17802130-135K10-42	17.8-21.3	45	± 1.0	135	10	10	10	350	42+D22
APTW22-20202120-135K10-42	20.2-21.2	50	± 1.0	135	10	10	10	350	42+D22
APTW22-18002650-192K10-42	18.0-26.5	36	± 2.0	192	9	9	10	275	42+D22

NOTE: Noise figures increase below 500 MHz in bands wider than .1-10 GHz.
NOTE: Custom designs available. Better Return Loss is also available. Consult factory for specific requirements.

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