



## 1:1 Redundant Low-Noise Amplifier System

PMI & Amplitech bring to you our 1:1 redundant low-noise amplifier systems which are designed to offer continuous operation without disruption of signal transmission.

If a fault with the main LNA occurs, the unit will automatically switch to the standby LNA to avoid a disruption of signal transmission. The unit can be manually switched as well.

The redundant LNA system consists of an outdoor amplifier/switch assembly which can be mounted to the antenna hub and a rack mounted indoor control module.

### FEATURES

- Lowest Noise Temperatures Available
- Fully Redundant
- Hot Swappable Power Supplies
- Remote Control via
  - RS422
  - RS485
  - Ethernet
- Automatic/manual Control Modes
- Remote Status
- Amplifier Current Fault Detection
- Weather Resistant LNA/Switch Assembly
- Time-Stamped Alarm Histroy
- Front Panel LNA Bias Control & Monitoring

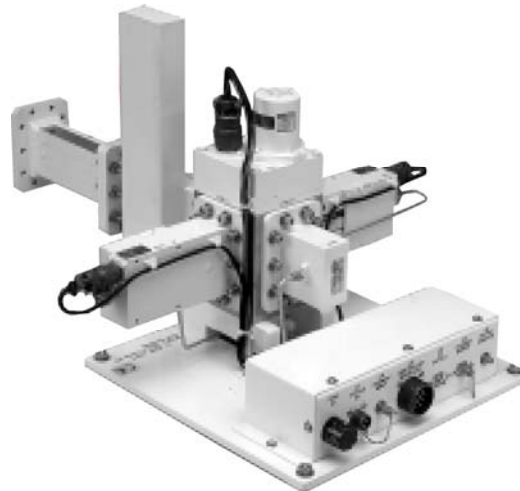
### OPTIONS

- Transmit Reject Filter
- Internal Noise Source
- Input / Output Signal Monitors
- High Gain
- Increased Linear Output Power
- Remote Control Unit

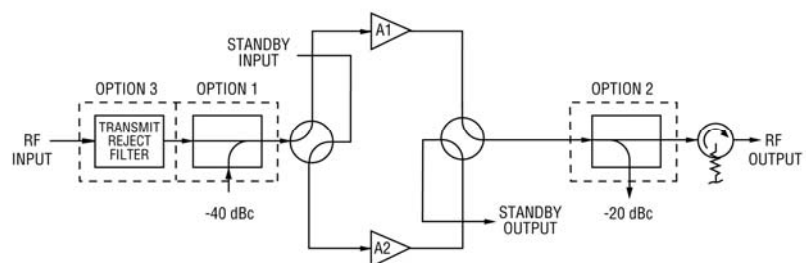
### 1:1 Redundant Controller



### Outdoor Amplifier/Switch Assembly



### Functional Block Diagram





Frequency Range (GHz)	Noise Temperature @ +25°C Maximum	Interface Options
1.5 - 1.6	33K	SMA / SMA
2.2 - 2.3	33K	SMA / SMA
3.4 - 4.2	30K	CPR-229G/N
3.4 - 4.8	30K	CPR-229G/N
3.62 - 4.205	30K	CPR-229G/N
4.5 - 4.8	30K	CPR-229G/N
7.1 - 8.4	50K	CPR-112G/SMA
7.25 - 7.75	45K	CPR-112G/SMA
8.0 - 8.4	50K	CPR-112G/SMA
10.7 - 12.75	70K	WR-75/SMA
10.95 - 12.75	65K	WR-75/SMA
10.95 - 11.70	65K	WR-75/SMA
11.70 - 12.75	65K	WR-75/SMA
17.7 - 21.2	120K	WR-42/SMA
17.7 - 22.0	130K	WR-42/SMA
18.7 - 20.3	120K	WR-42/SMA
20.2 - 21.2	120K	WR-42/SMA

OTHER FREQUENCY BANDS AVAILABLE

Each low-noise amplifier system is supplied with:

- Redundant amplifier / switch assembly
- Local control and monitoring unit
- 100 foot interconnection control cable (other lengths available)

**RF Specifications:**

Gain .....	50dB minimum, 52dB typical (higher gain available)
Gain Flatness.....	0.4dB/40MHz
	1.0dB peak-to-peak/RF bands up to 500MHz
	1.5dB peak-to-peak/RF bands up to 800MHz
	2.0dB peak-to-peak/RF bands > 800MHz
Gain Slope.....	0.2dB/10MHz minimum
Gain Stability.....	±0.2dB/24 hours (constant temperature)
	5dB maximum (-40 to +60°C)
Power Output (1dB compression).....	+10dBm minimum (higher output available)
AM/PM conversion.....	0.5°/dB maximum to 0dBm output
Group Delay (±18MHz)	
Linear.....	0.02ns/MHz maximum
Parabolic.....	0.001ns/MHz <sup>2</sup> maximum
Ripple.....	0.1ns peak-to-peak maximum



Spurious Outputs .....	Below thermal noise
Isolation.....	50dB minimum
Input Return Loss.....	14dB minimum
Output Return Loss.....	20dB minimum
Input / Output Impedance.....	50 Ohms
Switchover Time.....	100ms maximum
Non-Damage Input Power.....	+10dBm CW maximum
Transmit de-sensitivity threshold	
C-Band.....	-20dBm maximum
X-Band.....	-50dBm maximum
Ku-Band.....	-20dBm maximum
Ka-Band.....	-50dBm maximum

**Local Control Unit Primary Power Requirements:**

Voltage.....	90-250VAC
Frequency.....	47-63Hz
Power Consumption.....	20W typical, 50W peak during switchover

**Summary Alarm:**

Contact closure / open for DC voltage and/or amplifier alarm  
 Status alarm readout on remote control bus

**Physical:**

AC input connectors.....	IEC-320
Summary alarm interface mating connector.....	DEM-9P
Remote interface connector.....	DEM-9S for RS422/485 DB-25P for RS232 DB-37S for contact closure
Switch/amplifier weight.....	10 pounds nominal

**Environmental:**

Operating

Ambient temperature (Controller).....	0 to +50°C
Ambient temperature (Amplifier assembly).....	-40 to +60°C (other ranges available)
Atmospheric Pressure.....	Up to 10,000 feet

Non-Operating

Temperature.....	-50 to +70°C
Atmospheric pressure.....	Up to 40,000 feet
Shock and Vibration.....	Normal handling by commercial carriers