

REDUNDANT LINE AMPLIFIER SYSTEMS



OUTDOOR 1:1; DUAL 1:1 AND 1:2 SYSTEMS



FEATURES

- Fault-tolerant design
- Fully redundant, hot-swappable power supplies with independent AC inputs
- Remote control via RS-485 or RS-422; user-selectable
- Automatic/manual control from both local and remote modes
- Remote status contact closure alarms
- Off-line input/output access
- Amplifier current fault-detection
- Time-stamped alarm history

OPTIONS

- Remote RS-232 or contact closure or Ethernet
- Input/output signal monitors
- Level control input and/or output
- Higher gain
- Increased output power (1 dB compression point)

The 1:1, dual 1:1 and 1:2 redundant line amplifier systems are designed to ensure continuous operation without disruption of signal transmission. A fault condition in the online amplifier or an operator-generated command, will switch the standby amplifier to the online position and remove the online amplifier from the signal path.



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SPECIFICATIONS

FREQUENCY (GHz)	1:1 MODEL NUMBER	1:2 MODEL NUMBER	DUAL 1:1 MODEL NUMBER
0.95 to 1.45	RL1-095145-W*	RL2-095145-W*	RL3-095145-W*
0.95 to 1.75	RL1-095175-W*	RL2-095175-W*	RL3-095175-W*
0.95 to 2.15	RL1-095215-W*	RL2-095215-W*	RL3-095215-W*
1.5 to 1.8	RL1-150180-W	RL2-150180-W	RL3-150180-W
2.0 to 2.7	RL1-200270-W	RL2-200270-W	RL3-200270-W
3.4 to 4.2	RL1-340420-W	RL2-340420-W	RL3-340420-W
4.5 to 4.8	RL1-450480-W	RL2-450480-W	RL3-450480-W
5.725 to 6.725	RL1-572672-W	RL2-572672-W	RL3-572672-W
5.845 to 6.430	RL1-584643-W	RL2-584643-W	RL3-584643-W
6.4 to 7.2	RL1-640720-W	RL2-640720-W	RL3-640720-W
7.25 to 8.4	RL1-725840-W	RL2-725840-W	RL3-725840-W
10.7 to 12.75	RL1-107128-W	RL2-107128-W	RL3-107128-W
13.75 to 14.8	RL1-137148-W	RL2-137148-W	RL3-137148-W
17.7 to 21.2	RL1-177212-W	RL2-177212-W	RL3-177212-W
17.7 to 22.0	RL1-177220-W	RL2-177220-W	RL3-177220-W
27.5 to 31.0	RL1-275310-W*	RL2-275310-W*	RL3-275310-W*
31.0 to 33.0	RL1-310330-W*	RL2-310330-W*	RL3-310330-W*

* References input/output return loss specification.

Gain	30 dB minimum (higher gain optional)
Gain flatness	0.4 dB/any 40 MHz, 1.0 dB peak-to-peak/RF bands up to 500 MHz, 1.5 dB peak-to-peak/RF bands up to 800 MHz, 2.0 dB peak-to-peak/RF bands greater than 800 MHz
Gain slope	0.2 dB/10 MHz maximum
Gain stability	±0.2 dB/24 hours (constant temperature)
Power output (1 dB compression)	+10 dBm minimum (higher output power optional)
Channel-to-channel gain match	2 dB maximum
Noise figure	
Below 4.2 GHz	3 dB maximum
4.2 GHz to 12.75 GHz	4 dB maximum
12.75 GHz to 14.5 GHz	5 dB maximum
Above 14.5 GHz	8 dB maximum
Spurious outputs	Below thermal noise
AM/PM conversion	0.5 °/dB maximum to 0 dBm output
Isolation	50 dB minimum
Input return loss	20 dB minimum, *10 dB minimum (refer to table above)
Input/output impedance	50 ohms

PRIMARY POWER REQUIREMENTS

Voltage	90 VAC to 250 VAC
Frequency	47 Hz to 63 Hz
Power consumption	40 W typical during switching

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 FCI clipper series CL1M1102*
RF connectors.....	SMA female, 3.5 mm compatible above 22 GHz
Remote interface	MS3116F14-18S for summary alarm, RS-422/RS-485, Ethernet RJ45 (Option 17H only)
Weight.....	20 lb. [9.07 kg] typical
Overall dimensions	19.38" [492.2 mm] x 12.38" [314.4 mm] panel x 9.38" [238.3 mm] maximum (chassis depth 20")

ENVIRONMENTAL

Operating

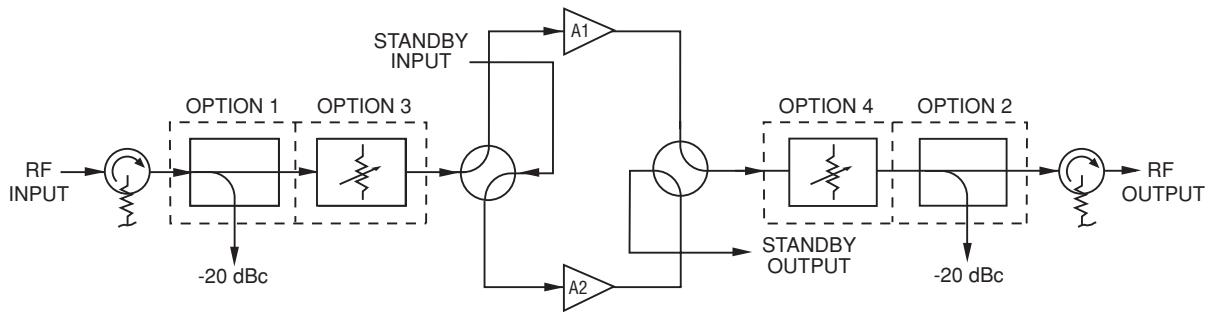
Ambient temperature	-40 °C to +60 °C, 0 to 50 °C
Relative humidity	Up to 100% condensing
Atmospheric pressure.....	Up to 10,000 feet

Nonoperating

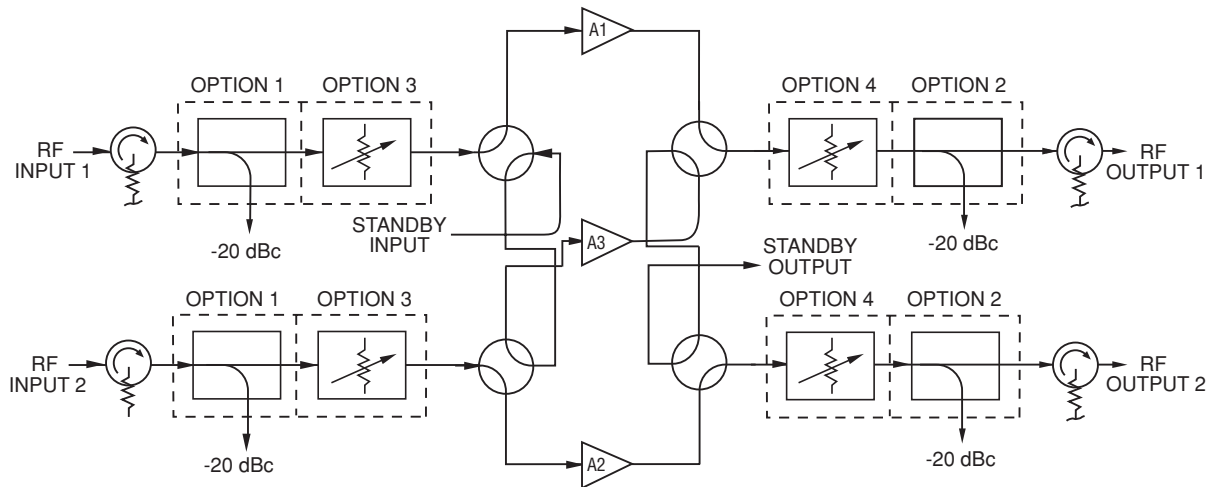
Temperature	-50 °C to +70 °C
Atmospheric pressure.....	Up to 40,000 feet
Shock and vibration.....	Normal handling by commercial carriers

* Note: Unit supplied with mating connectors.

1:1 REDUNDANT LINE AMPLIFIER FUNCTIONAL BLOCK DIAGRAM



1:2 REDUNDANT LINE AMPLIFIER FUNCTIONAL BLOCK DIAGRAM



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OPTIONS

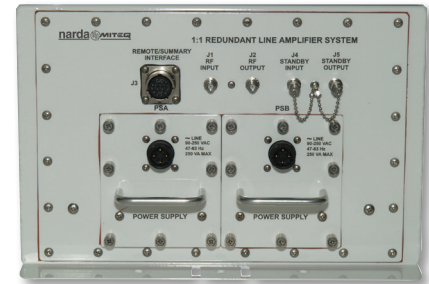
Missing option numbers are not applicable to this product.

1. RF input monitor with -20 dBc nominal level
2. RF output monitor with -20 dBc nominal level
3. Input level control, 30 dB in 0.2 dB steps, local and remote control
4. Output level control, 30 dB in 0.2 dB steps, local and remote control
11. Increased output power
 - A. +15 dBm output power at 1 dB compression
 - B. +20 dBm output power at 1 dB compression
16. Higher gain
 - A. 40 dB minimum gain
 - B. 50 dB minimum gain
17. Remote control
 - B. RS-422/RS-485 (supplied as standard)
 - C. RS-232 (This option will delete RS-422/RS-485)
 - D. Contact closure (This option will delete RS-422/RS-485)
 - Options 3 and 4 are not controllable with contact closure option
 - H. Ethernet (This option will delete RS-422/RS-485)
 - 10/100 Base-T Ethernet interface providing:
 - HTTP-based web server
 - SNMP 1.0 configuration
 - Alarm reporting via SNMP trap
 - Telnet access
 - Password protection

Option Notes:

- Options 1 and 3 will degrade noise figure proportional to insertion loss of devices inserted before amplifiers
- Options 2 and 4 will reduce output power compression point proportional to insertion loss of devices inserted after amplifier
- For literature describing local control (bus protocols), refer to L3 Narda-MITEQ Technical Note 25T043

TYPICAL PANEL VIEW



The material presented in this datasheet was current at the time of publication. L3 Narda-MITEQ's continuing product improvement program makes it necessary to reserve the right to change our mechanical and electrical specifications without notice. If either of these parameters is critical, please contact the factory to verify that the information is current.

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