



**ETL Systems**

New technologies  
in RF distribution

Model Number:  
**ALT-G1R-S3-103**

# Alto L-Band Redundant Amplifier with low noise, high linearity and variable gain

### Typical applications:

- Teleports & Earth Stations
- Satellite Operations
- Government & Defence applications
- Telemetry, Tracking & Command
- High Resilience applications

ALT-G1R-S3-103 is an L-Band hot swap low noise & high linearity redundant amplifier with, variable gain designed to fit into the 1U Genus chassis. The 1U redundancy chassis has the capacity for 1+1, 2+1 and 4+2 hot-swap module configurations.

**Resilience** from dual redundant hot-swap power supplies & field replaceable CPU & HMI

**Local control & monitoring** via HMI high resolution touchscreen

**Compact**, housed in a 1U chassis 1+1 & 2+1 & 4+2 redundancy supported

**L-band** 850-2450 MHz operating frequency range

**Hot Swap & replaceable** RF Amplifier & Switch modules.

**Low Noise** For prime signal quality

**High Linearity** Ensures overall RF gain signal performance is optimised

**Variable gain** to balance input signals

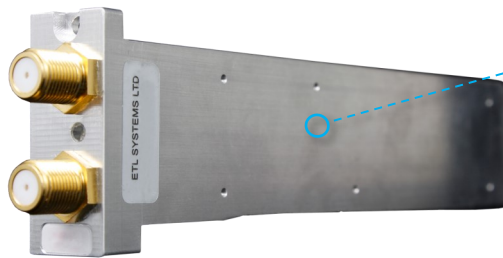
**Remote control & monitoring** via RJ45 Ethernet port with SNMP & web browser interface

For illustration only. Actually modules and layout may vary.

### Chassis - Specification

Dimensions / Weight / Colour	1U high x 550mm deep x 19" wide / <10 kg / RAL9003—White (Semi-matte)
Capacity	Total of 17 module slots. Note that 1 slot may be used for fan (if required) and 1 slot may be used for 10 MHz EXT inject module (if required). Note actual modules may require >1 slot. Refer to required module spec table.
Temperature	Operating: 0°C to +45°C / Storage: -20°C to +75°C
Location / Humidity / Altitude	Indoor use only / 20 to 90% non-condensing / 10,000 feet AMSL (Operational) 30,000 feet AMSL (Storage) Above Mean Sea Level
Control & Monitoring	Local: HMI touch screen Remote: Ethernet via RJ45, 10BaseT/100 BaseTx. TCP/IP, SNMP V3 & HTTPS & Web browser interface HMI and CPU field replaceable. Each module independently monitored and reported.
MTTR	20 minutes (15 minutes to retrieve spare part and 5 mins to replace) Applies to LRUs only and assumed in house stock
AC Input / Consumption	85-264Vac 50/60Hz / 150W
PSU Redundancy	Dual redundant and alarmed Diode OR. Hot swappable
Input & Output ports	Dependant upon module fitted





**Smart Amplifier Module**

Compact form factor allowing multiple modules to be housed in 1U chassis. Each module uses 1 slot in the chassis.

Smart Amplifier Module - RF Parameters	
Model Numbers	ALT-G1R-S3-103 <small>(The spec below is for ALT-G1R-S3-103 in 4+2 redundancy configuration with SWF-G1R-S5-103-S5S5)</small>
Frequency Range	850-2450 MHz
RF ports	50Ω SMA
Gain	Max. 36±2 dB
	Min. -13±2 dB
Gain Flatness	850 to 2450 MHz ±1.2 dB
	Any 36 MHz ±0.3 dB
Gain Steps	0.25±0.15 dB
Input Return Loss	14 dB typ. 10 dB min
Output Return Loss	14 dB typ. 10 dB min
Reverse Gain	< -60 dB Typical
Noise Figure	Typ. 6.0 dB At max gain setting
	Max. 8.0 dB At max gain setting
1dB GCP	Typ. 18 dBm At max gain setting
	Min. 15 dBm At max gain setting
OIP3	Typ. 30 dBm At max gain setting
	Min. 27 dBm At max gain setting
OIP2	Typ. 40 dBm At max gain setting
	Min. 36 dBm At max gain setting
In band, signal independent spuri	<-85 dBm max. Very low level spuria from CPU clock, switch mode PSU and other control electronics inside the chassis
Operating Temperature	0 to 50°C , for indoor use only
Storage Temperature	-20°C to +75°C. Equipment not powered
Altitude	10,000ft/3000m AMSL
Humidity	20 to 90% non-condensing RH
MTBF	>150,000 hrs. MTBF of each amp module. These are hot-swap
Maximum Input Level	+20 dBm. For no damage. None operational.
Module Weight	0.35 kg
Spec Version	0.2

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.  
Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.

