



ETL Systems

New technologies
in RF distribution

Model Number:
ALT-G1S-S3-100A-xxxx

Alto Extended L-band Smart Amplifier Module

with low noise, high linearity, variable gain and slope control

Typical applications:

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

The extended L-Band low noise amplifier module is designed to work in the Genus 1U chassis series, operating over 850-2450 MHz. The module has low noise, high linearity, +45 to -4 dB variable gain with variable slope control. The chassis has the capacity for up to 16 amplifier modules, or can house a mixture of other hot-swap module types.

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 high chassis with capacity for up to 16 modules

Extended L-Band 850-2450 MHz operating frequency range

Hot Swap & replaceable RF Amplifier modules. Up to 16 RF modules housed in a 1U chassis

Low Noise For prime signal quality

High Linearity Ensures overall RF gain signal performance is optimised

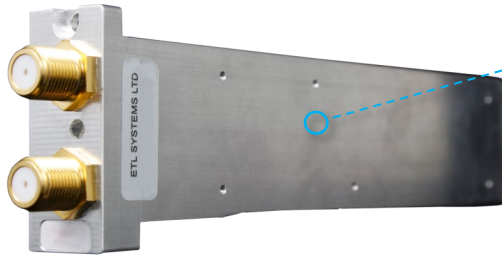
Variable gain & slope control to balance input signals

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

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) <i>Above Mean Sea Level</i>
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-G1S-S3-100A-xxxx
Frequency Range	850-2450 MHz
RF Connectors	50Ω SMA 50Ω N-type
Gain (dB)	Max. 45±2
	Min. -4±2
Gain Flatness (dB)	850 to 2450 MHz ±0.6
	Any 36 MHz ±0.2
Gain Steps (dB)	0.25±0.15
Slope Control Range (dB)	0 to 8. Pivot point at 2450 MHz
Slope Control Steps (dB)	1±0.25
Input Return Loss (dB)	18 typ. 14 min
Output Return Loss (dB)	18 typ. 14 min
Isolation (dB)	Typ. 60. With amplifiers set at the same gain level. Worst case isolation is between adjacent amps, isolation degrades dB-to-dB for different gain levels.
	Min. 50 With amplifiers set at the same gain level. Worst case isolation is between adjacent amps, isolation degrades dB-to-dB for different gain levels.
Reverse Gain (dB)	< -60 Typical
Noise Figure (dB)	Typ. 2.0 At max gain setting
	Min. 3.0 At max gain setting
1dB GCP (dBm)	Typ. 23 At max gain setting
	Min. 20 At max gain setting
OIP3 (dBm)	Typ. 35 At max gain setting
	Min. 32 At max gain setting
OIP2 (dBm)	Typ. 45
	Min. 41
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 and for indoor use only
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	1.1

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.

Note 3: All specs are for 50 Ohm connectors unless detailed otherwise.

