



ETL Systems

New technologies
in RF distribution

Model Number:
ALT-G1S-C5-114-xxxx

Alto C-Band Smart Amplifier Module

with low noise, high linearity, and variable gain

Typical applications:

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

The C-Band low noise amplifier module is designed to work in the Genus 1U chassis series, operating over 850-4200 MHz. The module has low noise, high linearity, and +38 to 0 dB variable gain. 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

C-Band 850-4200 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 signal performance is optimised

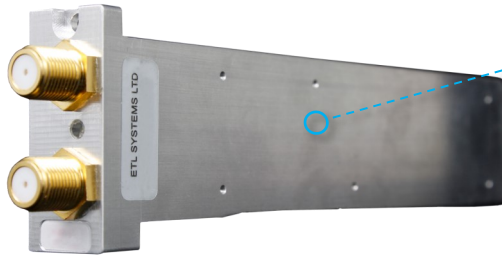
Variable Gain for signal optimisation

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-C5-114-xxxx	
Frequency Range		850-4200 MHz	
RF Ports		50 ohm SMA	
Gain (dB)	Max.	38±2	
	Min.	0±2	
Gain Flatness (dB)	Full band	±1.75	
	850 to 2450 MHz	±1.25	
	3400 to 4200 MHz	±1.25	
	Any 36 MHz	±0.25	
Gain Steps (dB)		0.25±0.15	
Input Return Loss (dB)		18 typ., 12 min	
Output Return Loss (dB)		18 typ., 12 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	
Reverse Gain (dB)		< -60 typ.	
Noise Figure (dB)	Typ.	6.0 At max gain setting	
	Min.	9.0 At max gain setting	
1dB GCP (dBm)	Typ.	16 At max gain setting	
	Min.	13 At max gain setting	
OIP3 (dBm)	Typ.	26 At max gain setting	
	Min.	23 At max gain setting	
OIP2 (dBm)	Typ.	38	
	Min.	35	
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/Location		0 to 50°C/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		0.1	

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.

