

Alto S-band Redundant Amplifier Module

with variable gain & slope, internal amplifier redundancy, RF detection & LNB powering - for 3U GENUS chassis

The Genus is a new generation of equipment for the ground segment to meet today's and future ground segment V/HTS requirements. The Genus Habitat accommodates up to 17 RF modules. These can be inserted whilst the shelf is in service giving excellent levels of flexibility and resilience.

Resilience

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

Compact

housed in a 2U chassis

Remote control & monitoring

via RJ45 Ethernet port with SNMP & web browser interface

S-Band

850-2450MHz operating frequency range

Balance input signals

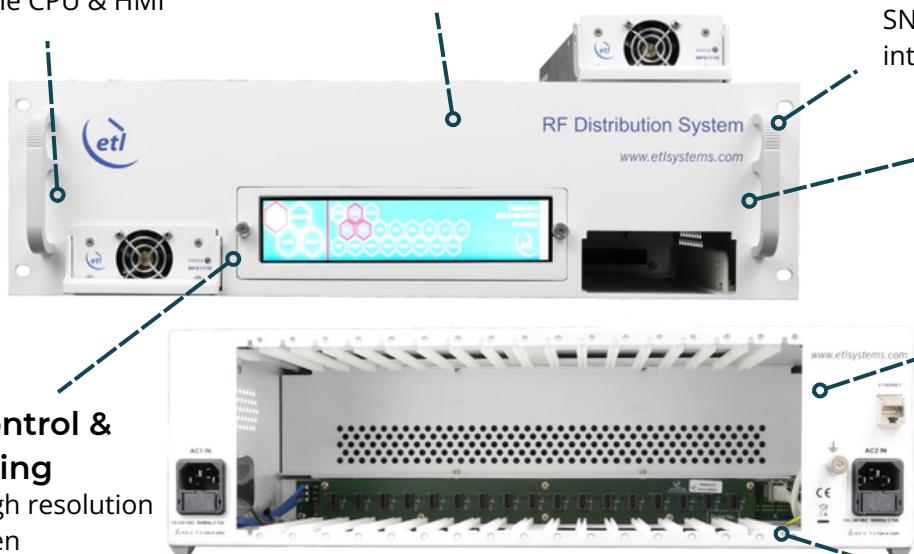
with variable gain or variable output level (AGC) modes & slope control

Local control & monitoring

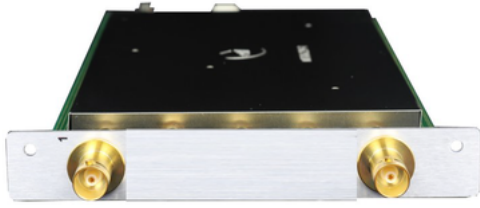
via HMI high resolution touchscreen

Hot swap & replaceable

RF amplifier modules. Up to 16 RF modules.



Chassis Specification	
Dimensions/Weight/Colour	3U high x 550mm deep x 19" wide / <10kg / RAL9003 - white (semi-matte)
Capacity	17 module slots. 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 / 2,000m AMSL (Operational) 8,000m AMSL (Storage) Above Mean Sea Level
Control & Monitoring	Local: HMI, capacitive touch screen Remote: Ethernet via RJ45, 10BaseT/100 BaseTx. ETL TCP/IP, SNMPv2/3, HTTPS & built-in web server. HMI and CPU field replaceable.
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 / 275W max. consumption at steady state
PSU Redundancy	Dual redundant and alarmed. Diode OR. Hot swappable.
Input & Output Ports	Dependant upon module fitted



Smart Amplifier Module

Compact form factor allows multiple modules to be housed in the 3U GENUS chassis. Each module occupies 1 slot in the chassis.

RF Parameters			
Model Numbers		ALT-G3S-S3-160-XXXX	
Frequency Range		850 - 2450 MHz	
Size		1 slot wide	
MTBF		>150,000 hours	
RF Connectors		50Ω SMA / 50Ω N-Type	
Gain		28 ± 2.0 dB max. 0 ± 2.0 dB min.	
Gain Flatness	850 - 2150MHz	± 1.0 dB	
	> 2150 MHz	± 1.5 dB	
	Any 36MHz	± 0.3 dB	
Gain Steps		0.5 ± 0.25 dB in manual gain mode	
Slope Control Range		0 to 8 dB	Pivot point is at 2450MHz. Standing slope 2dB, controllable range 0-7dB in addition to this
Slope Control Steps		1 ± 0.25 dB	
Input Return Loss		16 dB typ. 12 dB min.	
Output Return Loss		16 dB typ. 12 dB min.	
Isolation	≤20dB Gain	60 dB typ. 50 dB min.	With amplifiers set at the same gain level.
	>20dB Gain	50 dB typ. 40 dB min.	With amplifiers set at the same gain level.
Reverse Gain		< -60 dB typ.	
Noise Figure		8 dB typ. 10 dB max.	At max. gain
1db GCP		18 dB typ. 15 dB min.	At max. gain
OIP3		28 dBm typ. 25 dBm min.	At max. gain
OIP2		38 dBm typ. 35 dBm min.	At max. gain
Input RF Detection		-45 dBm to -10 dBm	
Input detection accuracy		± 5 dB	
Amplifier Redundancy		1:1 Auto switch over from main to standby is based on current sensing. Standby amp chain is cold standby redundant.	
In band, signal independent spuri		<-85 dBm max.	Very low level spuri from CPU clock, switch mode PSU and other control electronics inside the chassis.
Maximum Input Level		+20 dBm	For no damage. Non-operational.

Interface, Monitoring & Alarms		
Control Method	Local and remote as provided by selected chassis	
LNB Power	13/18 V DC , 500 mA max per card Maximum allowed power per chassis shall NOT exceed 100 W	
Environmental		
Operating Temperature	-0°C to +50°C	Up to 8 modules in a chassis.
	-0°C to +45°C	Up to 16 modules in a chassis.
Storage Temperature	-20°C to +75°C	
Location	Indoor use only, within parent GENUS chassis	
Humidity	20 to 90% non-condensing, relative humidity	
Altitude	10,000ft / 3,000m above mean sea level	
Physical Dimensions & Parameters		
Weight	<0.35kg typ.	

The performance quoted above is for a standalone amplifier. For in-chassis performance, see relevant spec. tables.

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.

*Measured values taken at room temperature