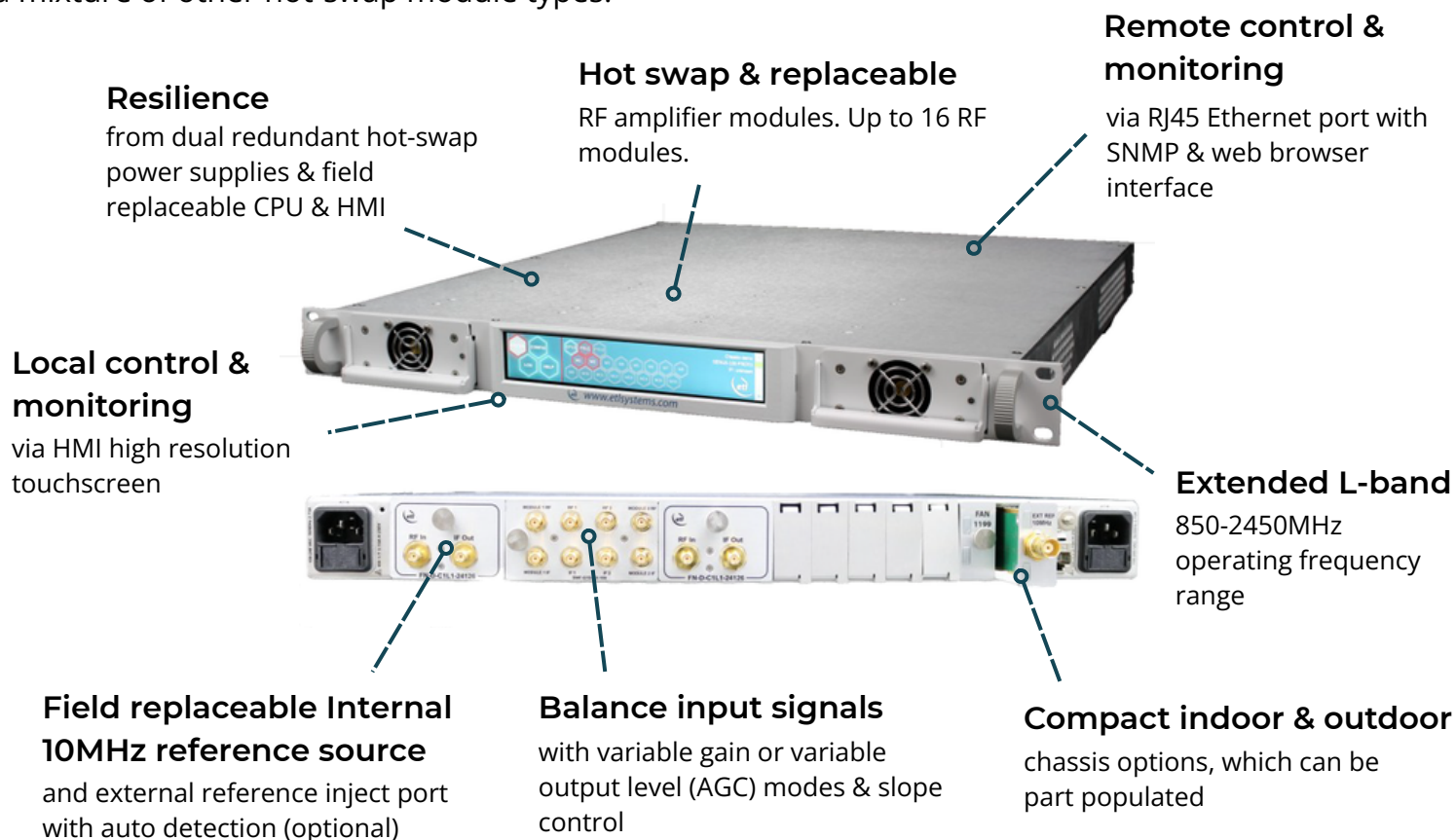


Alto Extended L-band Smart Amplifier Module

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

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.



Chassis Specification	
Dimensions/Weight/Colour	1U 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 1U GENUS chassis. Each module occupies 1 slot in the chassis.

High linearity ensures overall RF gain signal performance is optimised.

Low noise for prime signal quality.

RF Parameters			
Model Numbers		ALT-G1S-S3-100A-xxxx	
Frequency Range		850 - 2450 MHz	
Size		1 slot wide	
RF Ports		50 Ohm SMA	
MTBF		>150,000 hrs. MTBF of each amp module. These are hot-swap	
Gain		55 ± 1.5 dB max. 0 ± 1.5 dB min.	Gain range can extend up to 70dB. This may result in reduced performance, e.g. linearity
Gain Flatness	850 - 2150MHz	±1.5	When set to 0dB slope. In manual gain control mode, not AGC.
	Any 36MHz	±0.25	
Gain Steps		1 ± 0.25 in manual gain mode	
Slope Control Range		0 to 6 dB	Pivot point is at 2150MHz. This is the point of max gain when positive slope is set to a value other than 0dB.
Slope Control Steps		1 ± 0.50	
Input Return Loss		18 dB typ. 12 dB min.	
Output Return Loss		18 dB typ. 12 dB min.	
Isolation		>60 dB	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		<-40 dB typ.	
Noise Figure	At max. gain	14 dB	
	At 30dB gain	22 dB	
	At min. gain	42 dB	
1db GCP		17.5 dBm typ. 14.5 dBm min.	Output power, over full gain range
OIP3		30 dBm	At max. gain
In band, signal related spurii		-85 dBc typ. -70 dBc max.	
In band, signal independent spurii		<-85 dBm max.	Very low level spurii from CPU clock, switch mode PSU and other control electronics inside the chassis.
Maximum Input Level		+20 dBm	For no damage. Non-operational.

AGC Mode			
Output Power Levels		-20 to 0 dBm	User selectable in 2 dB steps.
Output Power Steps		2 dB	Finer output power steps available as an option.
Output Power Setting Accuracy		±1.0 dB	
Input Power Range	-10dBm output	-60 to -5 dBm	
	-5dBm output	-55 to 0 dBm	
	0dBm output	-50 to 0 dBm	
	5dBm output	-45 to 0 dBm	
	10dBm output	-40 to 0 dBm	
Time Constant	Rise time	75 ± 10 msec (factory default)	
	Decay time	75 ± 10 msec (factory default)	
Interface, Monitoring & Alarms			
Control Method		Local and remote as provided by selected chassis	
Temperature Monitors		Each amplifier module	
Amplifier Status		DC bias monitored	In each AGC module.
LNB Power		None	
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.