



# 4-way L-band active combiner with variable gain & slope, internal amplifier redundancy & RF detection - 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.

### Typical applications:

- Distribution of multiple polarities into a teleport
- Signal distribution into standby IRDs
- Expansion of ETL's RF matrix range
- Linking RF Matrices in expanding satellite teleports.
- Can be used for a high density RF distribution chassis where rack space is limited.
- As a replacement for non hot-swap passive systems to improve system design.

## Combiner Modules



**850 - 2150 MHz**  
operating frequency range



**RF detection** for monitoring output signal levels



**Variable gain & slope** to balance input signals



**1:1 redundant amplifiers** for added resilience

## Chassis



**Compact** chassis which can house up to 17 RF modules



**Resilience** from dual redundant hot-swap power supplies & field serviceable & replaceable RF modules, HMI & CPU



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



**Secure Communications** with SNMPv3, HTTPS



**Local control & monitoring** via LEDs on modules





Combiner Module - Technical specifications and operating parameters					
Function		4-way Active Combiner			
Module Slots Used		1			
Frequency Range		850-2150 MHz			
Gain	Minimum	0 ± 2 dB			
	Maximum	28 ± 2 dB			
Gain Flatness	850 to 2150 MHz	± 1.0 dB			
	Any 36 MHz	± 0.25 dB			
Gain Steps		0.25 ± 0.15 dB Monotonic Gain Control			
Slope Control Range		0 to 8 dB Pivot Point at 2150 MHz			
Slope Control Steps		1 ± 0.25 dB			
RF Connectors & Impedances		50Ω SMA	50Ω BNC	75Ω BNC	75Ω F-type
Input Return Loss	Typical	18 dB	18 dB	13 dB	13 dB
	Minimum	12 dB	12 dB	10 dB	10 dB
Output Return Loss	Typical	18 dB	18 dB	10 dB	10 dB
	Minimum	12 dB	12 dB	8 dB	8 dB
Reverse Gain		< -60 dB typical			
Noise Figure	Typical	17 dB At maximum gain & 0 dB slope setting			
	Maximum	19 dB At maximum gain & 0 dB slope setting			
1dB GCP	Typical	14 dBm At maximum gain & 0 dB slope setting			
	Minimum	12 dBm At maximum gain & 0 dB slope setting			
OIP3	Typical	30 dBm At maximum gain & 0 dB slope setting			
	Minimum	28 dBm At maximum gain & 0 dB slope setting			
OIP2	Typical	40 dBm At maximum gain & 0 dB slope setting			
	Minimum	38 dBm At maximum gain & 0 dB slope setting			
In band, signal dependent spuri		<-85 dBm max Very low level spuri from CPU clock, switch mode PSU and other control electronics inside the chassis.			
Output RF Detection		0 to -40 dBm			
Amplifier Redundancy		1:1 Auto switch over from main to standby is based on current sensing. Standby amp chain is cold standby redundant.			
MTBF		>150,000 hrs MTBF of each amp module. These are hot swap.			
Maximum Input Level		+20 dBm For no damage. None operational.			
Control Method		Via Chassis Local and remote as provided by selected chassis			
DC Coupling		All RF Input Ports DC blocked			
Temperature		Operating: 0 to 50°C Storage: -20°C to +75°C (equipment not powered)			
Location / Humidity / Altitude		Location: Indoor only Humidity: 20 to 90% non-condensing (relative) Altitude: 10,000ft/3000m AMSL (Above Mean Sea Level)			

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.

Please see separate datasheet for full 3U Genus chassis specifications (Model GNS-103-3U).

