8-Way S-Band Active Combiner

with variable gain & slope, internal amplifier redundancy, RF detection & RF output power limiting - 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.

Combiner Modules

850 - 2500 MHz
operating frequency range

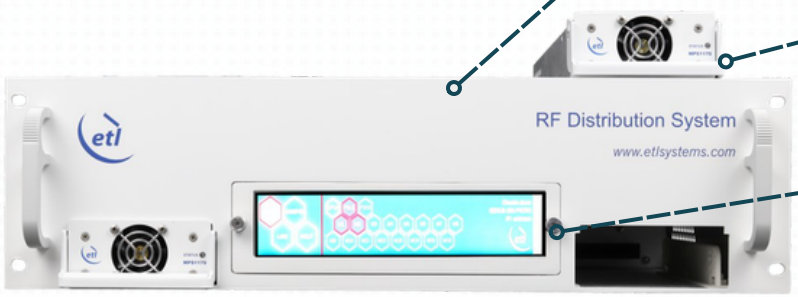
RF detection
for monitoring output signal levels

Variable gain & slope
to balance input signals

1:1 redundant amplifiers
for added resilience

Compact & Flexible
3U chassis holding up to 17 RF modules, which can be mixed.

Chassis



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

Local control & monitoring
via front panel capacitive HMI touchscreen.

Remote control & monitoring
via RJ45 Ethernet via RJ45, 10BaseT/100BaseTx, ETL TCP/IP protocol, SNMPv3 & Web Browser Interface

Secure Communications
with SNMPv3, HTTPS

Combiner Module - Technical specifications and operating parameters					
Function		8-Way Active Combiner			
Module Slots Used		2			
Frequency Range		850 - 2500 MHz			
Gain	Minimum	0 ± 2 dB			
	Maximum	24 ± 2 dB			
Gain Flatness	850 to 2500 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 2500 MHz			
Slope Control Steps		1 ± 0.25 dB			
RF Connectors & Impedances		50Ω SMA	50Ω BNC	75Ω BNC	75Ω F-type
Input Return Loss		18 dB typ., 12 dB min.	18 dB typ., 12 dB min.	16 dB typ., 10 dB min.	16 dB typ., 10 dB min.
Output Return Loss		18 dB typ., 12 dB min.	18 dB typ., 12 dB min.	16 dB typ., 10 dB min.	16 dB typ., 10 dB min.
Reverse Gain		< -60 dB typical			
Noise Figure @ max gain & 0 dB slope setting		21 dB typ., 23 dB max.			
1dB GCP @ max gain & 0 dB slope setting		14 dB typ., 12 dB min.			
OIP3 @ max gain & 0 dB slope setting		30 dB typ., 28 dB min.			
OIP2 @ max gain & 0 dB slope setting		40 dB typ., 38 dB min.			
Isolation		In to In: 23 dB min Card to Card: 50 dB min (Between cards set to the same gain within the parent chassis)			
In band, signal dependent spurii		<-85 dBm max Very low level spurii from CPU clock, switch mode PSU and other control electronics inside the chassis.			
Output RF Detection		0 to –40 dBm			
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			
Maximum Input Level		+20 dBm For no damage. None operational.			
Tech Spec Version		0.1			

Interface	
Control & Monitoring	Via Chassis - Local and remote as provided by selected chassis
LNB Power	None
DC Coupling	All RF Input Ports DC blocked

Environmental	
Temperature	Operating: 0 to 50°C Storage: -20°C to +75°C (equipment not powered)
Location / Humidity	Location: Indoor only Humidity: 20 to 90% non-condensing (relative)
Altitude	Altitude: 10,000ft/3000m AMSL (Above Mean Sea Level)

Physical	
Weight	0.35 Kg

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

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.