GENUS 3U Modular Chassis

With Internal 10 MHz reference source.

GENUS is ETL's next generation of ground segment equipment, designed to meet today's and future ground segment V/HTS requirements. The 3U GENUS chassis accommodates up to 17 RF modules. These can be inserted whilst the shelf is in service, giving excellent levels of flexibility and resilience.

Compact & flexible
3U chassis holding up to 17 RF modules, which can be mixed.
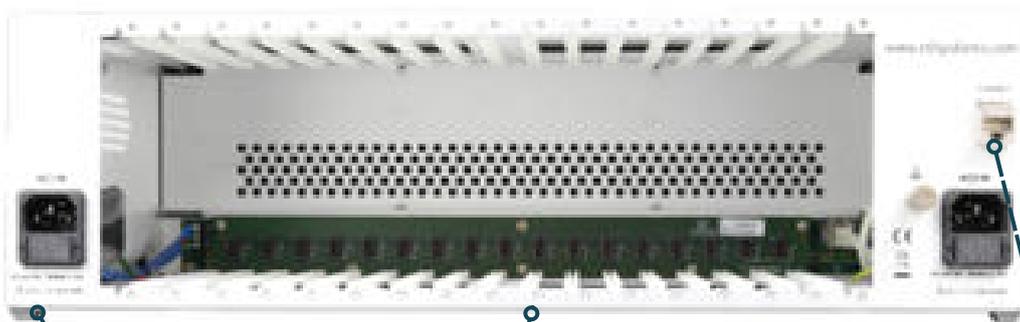
Resilience
from dual redundant hot-swap power supplies & field serviceable RF modules, HMI, CPU & Fans

10MHz reference source
User replaceable internal 10MHz reference & distribution module. External 10MHz input card also avaliable.

Local control & monitoring
via front panel capacitive HMI touchscreen.

Secure communications
with SNMPv3, HTTPS

Splitters & combiners
4-way high performance active splitter and combiner RF modules. With fixed / variable gain & slope options, optional dual redundant amplifiers & LNB powering

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

General Specifications	
Capacity	Up to 17 modules
Dimensions	3U high x 550mm deep x 19" wide
Weight	<10 kg
Colour	RAL9003 White (Semi-Matte)
AC Power	85-264V AC (50/60Hz)
AC Consumption	275W Max. consumption at steady state
PSU	Dual redundant & alarmed, Diode OR, Hot-swap
RF Modules	Refer to specific module datasheet

Reliability		
MTTR		20 minutes 15 minutes to retrieve spare part and 5 mins to replace. Applies to LRUs only and assumed in house stock.
MTBF	Chassis	>250,000
	CPU	>250,000
Field Serviceable Components		RF modules, CPU & HMI & Fans
Hot Swap Components		Dual redundant power supplies

Control & Monitoring	
Local Control	HMI, capacitive touchscreen
Remote Control & Monitoring	Ethernet via RJ45, 10BaseT/100BaseTx ETL TCP/IP protocol, HTTPS SNMPv3 Built-in Web Server

Environmental		
Operating Temperature		0 to 45˚C
Storage Temperature		-20˚C to +75˚C Not Powered
Location		Indoor use only
Humidity		20% - 90% non-condensing Relative Humidity
Altitude	Operational	2,000m AMSL (Above Mean Sea Level)
	Storage	8,000m 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.

Internal 10MHz reference and distribution module for 3U GENUS chassis.

The integrated 10MHz card has full control and monitoring via the parent chassis HMI or RJ45. The 10MHz reference source is switchable between this on-board ovenised 10MHz oscillator or the customer supplied external reference, connected to slot 17 EXT input module (if fitted). See separate datasheet for external 10MHz reference source inject card options.

Internal 10MHz - High Stability Ovenised Oscillator		
Frequency Setting	10±0.000001 MHz	
Output Type	Sinewave	
Output Power Range	-10dBm to +10dBm	±2dBm
Output Power Steps	1dB±0.5	
Harmonic Rejection 2nd 3rd 4th 5th	>40dBc >50dBc >60dBc >60dBc	At 0dBm power out
SSB Phase Noise dBc/Hz	0dBm 10MHz src	
10 Hz 100 Hz 1000 Hz 10 000 HZ 100 000 Hz	<-124 <-143 <-147 <-149 <-152	Typical
Frequency Stability: Over operating temperature Short-term (per second) Load change (±5%) Power supply variations (±5%)	$<±5 \times 10^{-9}$ $< 5 \times 10^{-12}$ $< ±5 \times 10^{-10}$ $< ±2 \times 10^{-8}$	
Frequency Aging Per Day Per Year	$±5 \times 10^{-10}$ $±5 \times 10^{-8}$	
Alarms	10MHz source RF power level. Card operational status	User settable auto switchover for reference source (Int/Ext)
Hot-swap	Field replaceable per year	

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