GENUS 2U modular chassis

With internal 10 MHz reference source.

GENUS is ETL's next generation of ground segment equipment, designed meet today's and future ground segment V/HTS requirements. The 2U 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.

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

Compact & flexible
2U 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

Local control & monitoring
via front panel capacitive HMI touchscreen.

Secure communications
with SNMPv3, HTTPS

Flexible signal distribution
Frequency converters, Redundancy Switches (N+1), RF Over Fibre, Matrices and Power Supply Modules are available.

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		2U 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)

RF Module Options						
Amplifier	BUC/LNB Power Supply	Frequency Converter	Matrices	Redundancy Switch	RF Over Fibre	Test Loop Translator (TLT)

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Internal 10MHz - High Stability Ovenised Oscillator		
Internal 10MHz reference and distribution module for GENUS chassis. The integrated 10MHz card has full control and monitoring via the parent chassis HMI, or remotely via parent chassis Ethernet. The 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).		
Frequency Setting		10±0.000001 MHz
Output Type		Sinewave
Output Power Range		-10dBm to +10dBm (±2dBm)
Harmonic Rejection (at 0 dBm power out)	2nd	>40 dBc
	3rd	>50 dBc
	4th	>60 dBc
	5th	
SSB Phase Noise dBc/Hz (typ.)		0 dBm 10MHz src
	10 Hz	<-120
	100 Hz	<-140
	1000 Hz	<-145
	10,000 Hz	<-155
	100,000 Hz	
Frequency Stability	Over Operating Temp.	< ±5 x 10-9
	Short-term (per second)	< 5 x 10^{-12}
	Load Change (+5%)	< ±5 x 10^{-10}
	Power Supply Variations (+5%)	< ±2 x 10^{-8}
Frequency Aging	Per Day	±5 x 10^{-10}
	Per Year	±5 x 10^{-8}
Alarms		10MHz source RF power level. Card operational status. (User settable Auto switchover for reference source (Int/Ext) on RF power alarm trigger.)
Hot Swap		Field replaceable by user

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.