

GENUS Outdoor Unit

With Internal 10 MHz reference source.

The GENUS outdoor unit (ODU) has a modular design which can house any combination of compatible modules within the unit. Supplying operators with a flexible and scalable solution, that reduces spare parts and space requirements.

The ODU chassis houses up to 19 RF modules including Amplifiers, BUC/LNB Power Supply's, Frequency Converters, Matrices, RF over Fibre, Redundancy Switches and Test Loop Translators, which can be mixed. The GENUS chassis provides a cost-efficient solution with field-replaceable components.

The RF modules are field-serviceable and can be inserted whilst the shelf is in service, giving excellent levels of flexibility and resilience. With additional reliability from dual redundant hot-swap power supplies & field serviceable RF modules, CPU and user replaceable internal and external 10MHz reference source & HMI.

Available with the additional option of air-conditioning units for higher operating temperature environments. (Model GNS-391-ODU-A) and with heating for lower temperature operation (Model GNS-391-ODU-H). See Air Conditioning/Heating Model Numbers

Compact & flexible

ODU chassis holding up to 19 RF modules, which can be mixed.



10MHz reference source

User replaceable internal and external 10MHz reference & distribution source.

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

Resilience

from dual redundant hot-swap power supplies & field serviceable RF modules & CPU. Optional Air Conditioning units for higher operating temperature. Optional hot swap HMI



General Specifications		
Capacity	Up to 19 RF modules Note: Actual number dependent upon module type fitted. (Can accommodate FALCON 4-slot modules in 2+1 configuration, please enquire if required).	
Dimensions	500mm high x 500mm wide x 300mm (TBC for AC option) deep Please confirm size requirements with ETL prior to order	
Weight	<18 kg (TBC)	
Colour	RAL9003 White (Semi-Matte)	
AC Power	100-240 VAC (50/60Hz) 'A' aircon option is 220-240 VAC only 'A1' aircon option is 100-120 VAC only	
AC Consumption	TBC	
PSU	Dual redundant & alarmed, Diode OR, Hot-swap	
RF Modules	Single, field replaceable & hot-swap	
Heat Load	<145W, 495 BTU/Hour (for GNS-301-ODU-A)	
Tech Spec Version	1.0	
Reliability		
MTTR	15 minutes to replace. Assumes spares at hand. Applies to LRUs only and assumed in house stock.	
MTBF	Chassis	> 250 000
	CPU	> 250 000
Hot-swap / Field-serviceable Components	Dual redundant power supplies, RF modules, CPU, internal 10MHz reference source & HMI (if fitted)	
Control & Monitoring		
Local Control	HMI, capacitive touchscreen (option)	
Remote Control & Monitoring	Ethernet via RJ45, 10BaseT/100BaseTx ETL TCP/IP protocol SNMPv3 & HTTPS Built-in Web Server	
Environmental		
Operating temperature	-20°C to 45°C	
	-40°C to +65°C with optional Air-Conditioning units -40°C requires optional heat pad Please see Air Conditioning/Heating Model Numbers for options	
Storage temperature	Outdoor or Indoor use IP65 AC unit reduces IP rating to IP54	
Location	-40°C to +80°C Not Powered	
Humidity	20% - 90% non-condensing Relative Humidity	
Altitude	Operational	10,000 ft AMSL (Above Mean Sea Level)
	Storage	30,000 ft AMSL (Above Mean Sea Level)

Air Conditioning/Heating Model Numbers						
Model Number	Option	Operating Temperature	Comments			
GNS-391-ODU	ODU no Air-conditioning or heater	-20°C to +45°C	-			
GNS-391-ODU-H	ODU fitted with Heater	-40°C to +45°C	-			
GNS-391-ODU-A	ODU fitted with Air Conditioning	-20°C to +65°C	Max air ambient 55°C, spot temperature up to 65°C			
GNS-391-ODU-AH	ODU fitted with Air Conditioning and Heater	-40°C to +65°C				
RF Module Options						
Amplifier	BUC/LNB Power Supply	Frequency Converter	Matrices	Redundancy Switch	RF Over Fibre	Test Loop Translator (TLT)

Internal 10MHz reference and distribution module for ODU 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 the EXT input connector.

Internal 10 MHz - High Stability Oscillator		
Frequency Setting	10±0.000001 MHz	
Output Type	Sinewave	
Output Power Range	-10 dBm to +10dBm	±2 dBm
Harmonic Rejection (at 0dBm power out)		
2nd	>40 dBc	
3rd	>50 dBc	
4th	>60 dBc	
5th	>60 dBc	
SSB Phase Noise (typical, dBc/Hz)		
10 Hz	<-120	
100 Hz	<-140	
1000 Hz	<-145	
10 000 Hz	<-155	
100 000 Hz	<-155	
Frequency Stability:		
Over operating temperature	<±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)
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.