



ETL Systems

Excelling in RF Engineering

Model Number: PRN-16 chassis

PRN-L106-xxxx / PRN-L107-xxxx

PRN-L108-xxxx / PRN-L109-xxxx/

PRN-L110-xxxx \ PRN-B148\B224-xxxx modules

Piranha series modular power chassis - holding up to 8 power inserter modules with variable voltage options with dual 10MHz input.

The Piranha series of power inserters provide DC powering options in a compact 1U high 19" chassis for a range of components and devices in satellite ground station RF and power distribution chains.

Other chassis options in the Piranha range: Model PRN-10 with 13/18V LNB powering & 22kHz tone.

Typical applications:

- Providing power to multiple satellite dish LNBs & BUCs
- Large satellite teleports with multiple antennas
- Maintains optimum RF performance

Chassis



Variable voltage specified by power inserter module



10MHz input - option to inject from an external source



Local control & monitoring via front panel push buttons & display



Compact & expandable up to 8 power inserter modules housed in a 1U high chassis



Resilience from dual redundant hot-swap power supplies & hot-swap power inserter modules



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



RF input monitoring for LNB & BUC power inserter modules



Power Supply Module Options



Energy efficient consumption with SMART load monitoring from 200W & 350W power supply module options



Power Inserter Module Options



LNB Powering switchable 13/18V & 22kHz tone

BUC Powering 24V + 48V



3 - 30 MHz IF Band & 850 - 2450 MHz extended L-band operating frequency range





Chassis - Specification				
Model Numbers	PRN-16			
Spec Version	1.0			
Dimensions	1U high x 450mm deep x 19" wide			
Capacity	Up to 8 modules			
AC Consumption	55W (no modules fitted) Maximum consumption at steady state, internal source on & fans full speed. 35W typical consumption for ambient 25°C			
Internal 10MHz Reference	N/A			
External 10MHz Reference	Dual external 10MHz reference via SMA female connectors or rear at module position 16: 10MHz feed A to module positions 2-5. 10MHz feed B to module positions 12-15 Individual module feeds switchable on/off		Do not exceed +5 dBm 10 MHz input power. If 10MHz option required for a fitted module this module must be designed to work with 10MHz.	
External 10MHz Ref. Gain	Maximum: 15 ± 2 dB	Minimum: -10 ± 2 dB	Steps: 1 ± 0.5 dB	
1 dB Gain Compression	+5 dBm output (maximum gain)			
Return Loss	12 dB typical			
10MHz RF Input Power Detect	-40 dBm to 0 dBm—For indication only.			
Alarms	Via Ethernet Port (RJ45) for MPS and module status			
Local Control & Monitoring	Via front panel LCD and keypad			
Remote Control & Monitoring	Via Ethernet (RJ45) CPU hot-swap module, with SNMP & web browser interface. Monitored / controllable features defined in module specification below.			
Temperature / Humidity	Operating Temp: 0 to 45 °C	Storage Temp: -20 to +75 °C	Humidity: 20% to 90% non-condensing	Relative humidity
Location	Indoor use only		Altitude: 10,000 feet AMSL	
Weight / Colour	8 kg fully loaded with modules		RAL9003 – White (Semi-Matte)	

Power Supply Module Options - Specification		
PSU Module Model Numbers	HP225	HP350
Modular Power Supply Options	Power Supply selection dependent on client load requirement & number of modules fitted. SMART monitoring of chassis load & MPS prevents overloading of PSU & provides feedback	
PSU Power	195W	325W
PSU	Hot-swap, dual redundant & alarmed	

Power Inserter Module Options - RF Parameters							
PSU Module Model Numbers	PRN-L107-xxxx	PRN-L106-xxxx	PRN-L109-xxxx	PRN-L110-xxxx	PRN-L108-xxxx	PRN-B148-xxxx	PRN-B224-xxxx
Spec Version	1.1	1.2	1.1	1.1	1.1	1.1	1.0
Frequency Range	850-2450 MHz (Extended L-band)			3 to 30 MHz (IF Band)	850-2450 MHz (Extended L-band)		
Capacity	Single path						
Impedance & RF Connectors	50Ω: BNC & SMA / 75Ω: BNC & F-type		Input 50Ω: BNC & SMA Output 75Ω: BNC & F-type	50Ω: BNC & SMA / 75Ω: BNC & F-type			
Insertion Loss	<1.5 dB (full band)						
Flatness	Full band: ± 0.40 dB / Any 36MHz: ± 0.15 dB			Full band: ± 0.40 dB	Full band: ± 0.40 dB / Any 36MHz: ± 0.15 dB		
Return Loss	Typical: 17 dB / Minimum: 14 dB						
10 MHz	-	10MHz INJECT: To port 1. Switchable on/off	Switchable on/off to port 2.	-	10MHz PASS: Between port 1 and 2	Switchable on/off to port 1	
Isolation	80 dB minimum between any 2 modules						
LNB/BUC Voltage	0/13/18Vdc selectable & 22kHz tone on/off - via port 1. Custom - 12V to 24V in 0.5V steps		0/13/18Vdc selectable & 22kHz tone on/off - via port 2. Custom -12V to 24V in 0.5V steps	13/18/24/45 Vdc selectable Custom 12V to 45V in 0.5V steps	0/13/18Vdc selectable - via port 1. Custom - 12V to 24V in 0.5V steps	BUC voltage: 0/48Vdc via port . Tolerance ±1% typ.	0/13/18/24V Custom—0 to 24V in 0.5V steps Tracking—Voltage out equals voltage at port 2
LNB/BUC Load	Up to 500mA maximum. Fitted with 1A resettable fuse.					BUC: Up to 3A max. Overcurrent protection: Trip & restart	Up to 3A Maximum. Overcurrent protection: Current limited to >3A Trip & restart.
Input RF power	+5 dBm absolute max					+27dBm absolute max	+5 dBm absolute max
DC Consumption	12W full load / 2W no load		2W	12W full load / 2W no load		146W full load / 2W no load	54W Full Load 2W No Load
RF Power Detect	Range -50 dBm to -10 dBm total power across band			Range -40 dBm to 0 dBm total power across band	Range -50 dBm to -10 dBm total power across band	Range -25 dBm to +25 dBm total power across band	Range -50 dBm to -10 dBm total power across band
Control & Monitoring	Remote voltage / tone selection, LNB current monitoring & RF power in monitor						
Weight / Module Finish	Weight: 0.18kg / Module finish: Machined Aluminium						