ETL Systems

Excelling in RF Engineering

Model Number: PRN-10 chassis
PRN-L107-xxxx / PRN-L108-xxxx /
PRN-L110-xxxx / PRN-B148-xxxx /
PRN-B224-xxxx modules

Piranha series modular power chassis - holding up to 16 power inserter modules with variable voltage

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-15 with internal 10MHz source/ external 10MHz inject.

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

Local control & monitoring via front panel push buttons & display

Compact & expandable up to 16 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

Power Inserter Module Options

LNB Powering switchable 13/18/24/45V & 22kHz tone

BUC Powering 48V

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

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Chassis - Specification		
Model Number	PRN-10	
Spec Version	1.1	
Dimensions	1U high x 450mm deep x 19" wide	
Capacity	Up to 16 modules (Piranha 1xx series modules)	
AC Input	100-250VAC 50/60 Hz	Chassis fused 6A
AC Consumption	50W (no modules fitted) Maximum consumption at steady state with fans full speed 30W typical consumption for ambient 25°C	
Alarms	Via Ethernet Port (RJ45) / LCD / Web browser interface for power inserter, DC supply & RF power in	
Local control & monitoring	Via front panel LCD and keypad	
Remote control & monitoring	Via Ethernet port (RJ45) with SNMP & web browser interface. Monitored / controllable features defined in module specification below.	
Temperature	Operating: 0 to 45 °C	Storage: -20 to +75 °C
Humidity	20% to 90% non-condensing	Relative humidity
Location	Indoor use only	10,000 feet AMSL
Weight & Colour	8 kg fully loaded with 16 modules	RAL9003 White (semi-matte)

Power Supply Module- Specification		
PSU Module Model Number	HP225	HP350
Modular Power Supply Options	Modular Power Supply (MPS) 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	

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Power Inserter Module Option - RF Parameters				
Power Inserter Model Numbers		PRN-L107-xxxx (LNB)	PRN-L108-xxxx (LNB)	PRN-L110-xxxx (LNB)
Spec Version		1.1	1.1	1.1
Frequency Range		850-2450 MHz (Extended L-band)		3-30 MHz (IF band)
Capacity		Single path		
Impedance & RF Connectors		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		-
Return Loss	Typical	17 dB		
	Minimum	14 dB		
Isolation		80 dB minimum between any 2 modules		
LNB Voltage		0/13/18V selectable & 22kHz tone on/off - via port 1. Custom 12V to 24V in 0.5V steps		13/18/24/45 V selectable& 22kHz tone on/off. Custom 12V to 45V in 0.5V steps
LNB Load		Up to 500mA maximum. Fitted with 1A resettable fuse.		
10 MHz Pass		-	Between port 1 & 2	-
Input RF power		+5 dBm absolute maximum		+5 dBm absolute maximum
DC Consumption		12W full load / 2W no load		12W 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
Control & monitoring		Remote voltage / tone selection, LNB / BUC current monitoring & RF power in monitor		
Alarms		LNB / BUC current & RF power in - via chassis Ethernet / HMI / Web browser interface		
Weight / Module Finish		0.18kg / Machined Aluminium		

Power Inserter Module Option - RF Parameters			
Power Inserter Model Numbers		PRN-B148-xxxx (BUC)	PRN-B224-xxxx (BUC)
Spec Version		1.1	1.0
Frequency Range		850-2450 MHz (Extended L-band)	850-2450 MHz (Extended L-band)
Capacity		Single path	Single path
Impedance & RF Connectors		50Ω: BNC & SMA / 75Ω: BNC & F-type	50Ω: BNC & SMA / 75Ω: BNC & F-type
Insertion Loss		<1.5 dB (full band)	<1.5 dB (full band)
Flatness	Full band	± 0.40 dB	± 0.40 dB
	Any 36MHz	± 0.15 dB	± 0.15 dB
Return Loss	Typical	17 dB	17 dB
	Minimum	14 dB	14 dB
Isolation		80 dB minimum between any 2 modules	80 dB minimum between any 2 modules
BUC Voltage		48V via port 1. Tolerance ±1% typ.	12 to 24 V in 0.5 V steps
BUC Load		Up to 3A Maximum. Overcurrent protection: Current limited to 3A. Trip & restart.	Up to 3A Maximum. Overcurrent protection: Current limited to >3A. Trip & restart.
10 MHz Pass		-	Switchable on/off to port 1
Input RF power		+27 dBm absolute maximum	+5 dBm absolute maximum
DC Consumption		146W max load / 2W no load	54W max load / 3W no load
RF Power Detect		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, BUC current monitoring & RF power in monitor	Remote voltage / tone selection, BUC current monitoring & RF power in monitor
Alarms		BUC current & RF power in - via chassis Ethernet / HMI / Web browser interface	BUC current & RF power in - via chassis Ethernet / HMI / Web browser interface
Weight / Module Finish		0.18kg / Machined Aluminium	0.18kg / Machined Aluminium

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