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TECHNICAL PRODUCT DATA SHEET

IRMS18

1x8 Integrated Rack Mount GNSS Splitter



DESCRIPTION

The IRMS18 single input, 8 output splitter amplifies and splits the GPS/GNSS signal from one GPS receive antenna while granting up to 8 GPS/GNSS receivers signal access at any time.

The standard configuration of the IRMS18 has dual +/-48V telecom power and a regulated DC output voltage, with multiple power options available. The output voltage passes through the antenna input port and powers the active GPS antenna connected to the port. The DC blocked outputs feature a 200 Ohm DC resistive load to ground simulating an antenna DC current draw for any receiver connected to those ports.

A GNSS receiver within the IRMS18 monitors the antenna signal strength. There is also internal monitoring of the antenna current draw.

The dual power supply option allows two internal power supply units to share the load. If one unit is not available, the other will seamlessly take over without any loss of power. The power supply LED fault indicator is clearly visible on the front panel, and can also transmit using the contacts made available on the back panel.

FEATURES

- 8 GPS/GNSS Output Ports
- Single Antenna Input Port
- +/-48VDC Redundant Power Supplies
- Embedded Antenna Health Sensor
- Passes GPS L1/L2, GLONASS L1/L2, Galileo, Beidou
- Antenna Fault Indicator Light
- Power Fault Indicator Light
- Embedded Receiver to Monitor Signal
- Dual Power Option
- Standard 19 Inch Rack Mount Configuration

OPTIONS

The IRMS18 splitter comes with many available options to meet specific needs. Please contact GPS Source via phone, email, or visit the website for further information on product options and specifications.

1. IRMS18 Specifications

1.1 Electrical Specifications

Table 1-1. Operating Temperature -40°C to 85°C

Parameter		Conditions	Min	Typical	Max	Units
Frequency Range		Antenna (IN): Any Port; Unused Ports: 50 Ohm	1.0		1.65	GHz
Gain	Amplified (Normal)	Antenna (IN): Any Port; Unused Ports: 50 Ohm	-2	0	+2	dB
	Amplified (Custom)	As Specified (XdB, 0dB to 20dB)	X - 2	X	X + 2	dB
In/Out Impedance		Antenna:(IN), OUT1 - OUT8		50		Ohm
Input SWR		All Ports 50 Ohm			2.0:1	—
Output SWR		All Ports 50 Ohm			2.0:1	—
Noise Figure		Antenna (IN): Any Port; Unused Ports: 50 Ohm, Gain = 0dB			7	dB
Gain Flatness		|L1 – L2| Antenna: (IN) - Any Port; Unused Ports: 50 Ohm			4	dB
Amp. Balance		|Output 1 – 8|, Antenna: (IN) - Any Port: Unused Ports: 50 Ohm			4	dB
Phase Balance		Phase (Output 1 - 8), Antenna: (IN) - Any Port; Unused Ports: 50 Ohm			1.0	Degree
Signal Delay		T_d, Antenna - Any Port			8	ns
Delay Flatness		$T_{d, max} - T_{d, min}$, Antenna - Any Port			1	ns
Isolation	Amp (Gain = 0dB)	Measured at 1227MHz and 1575MHz Opposite Ports: Antenna – 50 Ohm Adjacent Ports: Antenna – 50 Ohm	 30 20			dB
Input I_{P3} (Amplified)		Antenna: Any Port; Unused Ports 50 Ohm, Tone Spacing = 1MHz	2			dBm
Input P_{1dB} (Amplified)		Antenna: Any Port; Unused Ports 50 Ohm	-8			dBm
AC IN		Wall Mount Transformer (Various international plug types included)	110		240	VAC
DC IN	12V	Push-in Terminal Connector (Mating Connector)	12		16	VDC
	+48V -48V	Push-in Terminal Connector (Mating Connector)	+20 -20	+48 -48		VDC
DC Blocked	DC Blk	All Output Ports Blocked with a 200 Ohm Load			14	VDC
Current (Internal)		Current Consumption of Device (excludes antenna current) 12V			450	mA
		Current Consumption of Device (excludes antenna current) 48V			75	mA
Antenna Output Voltage		DC Voltage Out on Antenna: (IN)		5		VDC
Antenna/Thru Current	Powered	Input Port			120	mA
Max RF Input	Amplified	Max RF Input Without Damage			20	dBm

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1.2 Antenna Fault Status Specifications

1.2.1 Antenna Fault Status

The health status of the antenna input is determined by the current draw on antenna and or signal strength available to the antenna. A current draw below 10 mA and above 150mA will signal a fault for the input port. A current draw fault status is indicated by a solid yellow light on the front panel. An antenna experiencing a weak RF signal will be indicated by a flashing yellow light on the front panel.

Table 1-2. IRMS18 Single Antenna Input

Single Antenna Input	
LED Indicator Condition	**Description**
Solid Green	Good SNR, No Current Fault, 3D Fix
Flashing Green	Acquisition Mode
Solid Yellow	Antenna Current Fault
Flashing Yellow	Low SNR

Note: *The acquisition light pattern may not be observable if unit acquires quickly after setup.*

1.3 Rack Mount Power Fault Status

Power supply health status is indicated through an LED light on the front panel. The LED is delineated next to the POWER text. When the unit is powered and no fault is present, a solid green LED is activated.

1.3.1 Redundant Power Supply

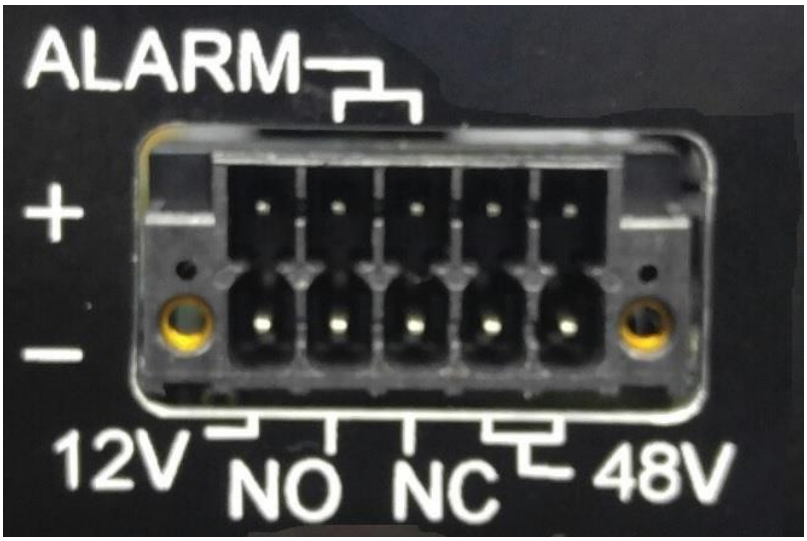
The IRMS18 is available with multiple power options for optimal redundancy. If one of the redundant power supplies fail, the LED delineated next to the POWER text flashes yellow. Slow flashing (2Hz rate) indicates a fault on the primary +/-48VDC power supply and a fast flashing of the LED (1Hz rate) indicates a fault on the secondary power supply.

Table 1-3. IRMS18 Dual Power Input

LED INDICATOR CONDITION		
LED Indicator Condition	**Description**	**Input**
Solid Green	No Power Faults	Both
Slow Flashing Yellow	Primary Supply Fault	Primary
Fast Flashing Yellow	Secondary Supply Fault	Secondary
No Light	No Power	Both

1.4 Remote Fault Monitoring

The antenna and power status is available to an external application via a set of signals in the Phoenix Contact push-in terminal connector. The signals enable the external application to identify antenna faults at IN or a faulty power input. The fault status is output via an SPDT relay. The relay is energized when unit is powered and no fault is present. The relay will be de-energized when a fault is present or when power is off. The relay can switch up to 100mA at up to 60VDC or 60VAC. The normally open **(NO)** contact, the normally closed **(NC)** contact, and the common are brought out in the rear panel Phoenix Contact push-in terminal connector.



Normally Open (NO) contact, Normally Closed (NC) contact.

1.5 Diagnostic Port

The IRMS18 comes with a standard DB9(F) connector that allows the manufacturer to access the unit.



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2. Performance Data

2.1 IRMS18

Figure 2-1. IRMS18 Splitter: Gain vs. Frequency

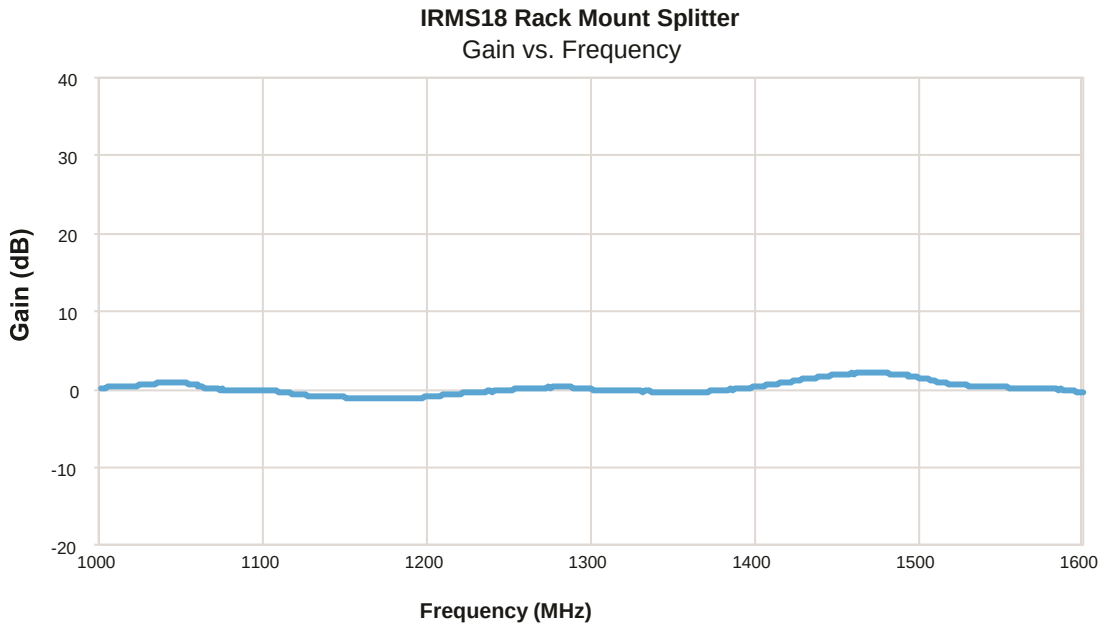
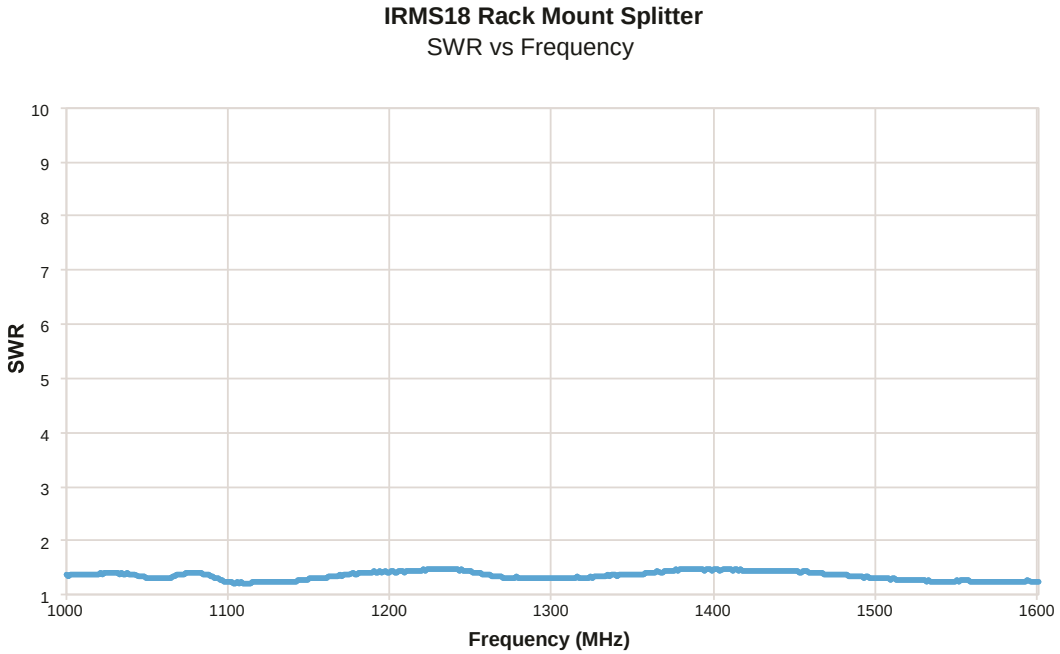


Figure 2-2. IRMS18 Splitter: SWR vs. Frequency



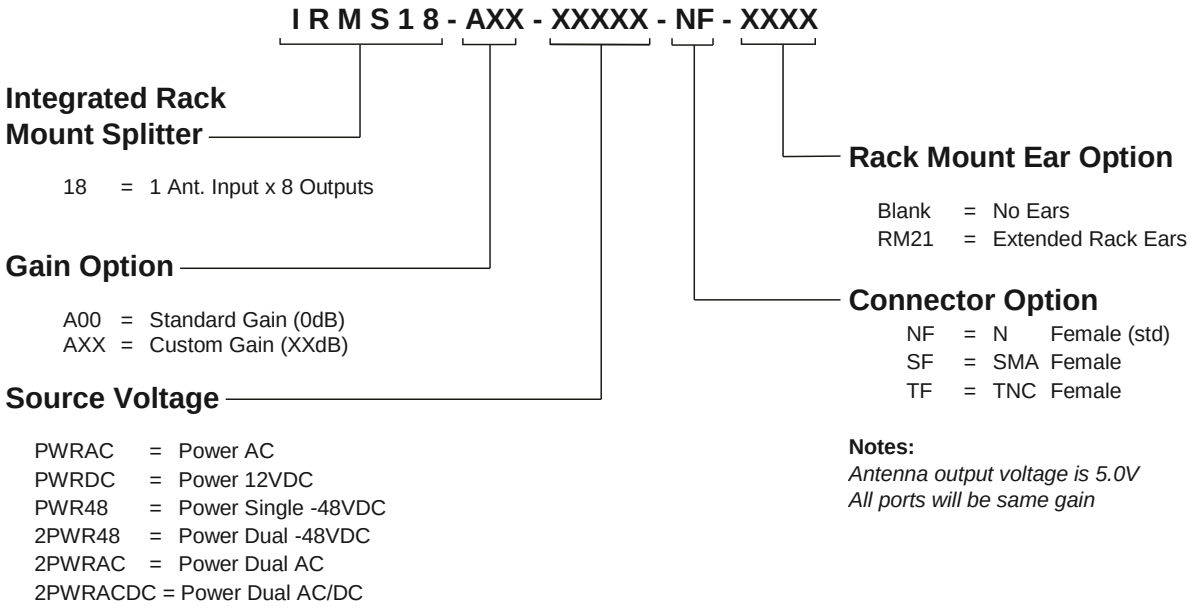
3. Product Options

Table 3-1. IRMS18 Available Options

Power Options		
Source Voltage Options	**Voltage Input**	**Type**
	DUAL 48VDC	Push-in Terminal Connector (Mating Connector)
	SINGLE 48VDC	Push-in Terminal Connector (Mating Connector)
	12VDC	Push-in Terminal Connector (Mating Connector)
	SINGLE AC IN	Wall Mount Transformer Attached to Mating Connector (Power Cable)
	Dual AC IN	(2) Wall Mount Transformers Attached to Mating Connector (5 ft AC Power Cable)
	Dual AC/DC IN	Wall Mount Transformer Attached to 1 Input of the Mating Connector, (24V DC Input is Vacant) (5 ft AC Power Cable)
Connector	**Connector Type**	**Limitations**
RF	N (Female) (Std)	N/A
	TNC (Female)	
	SMA (Female)	
Housing		
Housings	**Housing Type**	**Limitations**
	19 x 8 x 1.75 in Rack Mount	None
Port Options		
DC Blocked	Outputs 1 thru 8 are DC Blocked and 200 Ohm Loaded, DC is passed to IN	

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4. Product Code Decoder



Note: *If there are questions please contact GPS Source at GPSS-Sales@gd-ms.com or visit the website at www.gpssource.com*



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