

Longer Range | Higher Data Rates | Lowest SWaP

The THPR1039, a Triad High Power Radio (THPR), uses a magnesium housing and contains a DTC SOL8SDR-C-132043 radio at its core, combining with our high-power RF subsystems in a low SWaP package. It integrates the necessary RF amplification, control circuitry, and interfaces to achieve higher RF output power, greater throughput, and longer link distances than the stand-alone radio. Offering +9 to +28 VDC Input Voltage, this THPR contains BDAs, RF filtering, and innovative SoC-based monitoring and controls, with link diagnostics.



THPR1039

TABLE OF CONTENTS

- Link Distance Capabilities
- RF Performance Specifications
- Electrical Specifications
- Environmental Specifications
- Mechanical Specifications
- Mechanical Drawing
- DC/Control Connectors

THPR SERIES FEATURES

- Fully Integrated High-Power RF Sub-System & Radio
- Extended Range/Data Rate over Stand-Alone Radio
- Enhanced RF Link Control via USB
- Wide Input Voltage, Single DC Supply
- AES-128/AES-256 Encryption
- Interference Avoidance System [IAS]

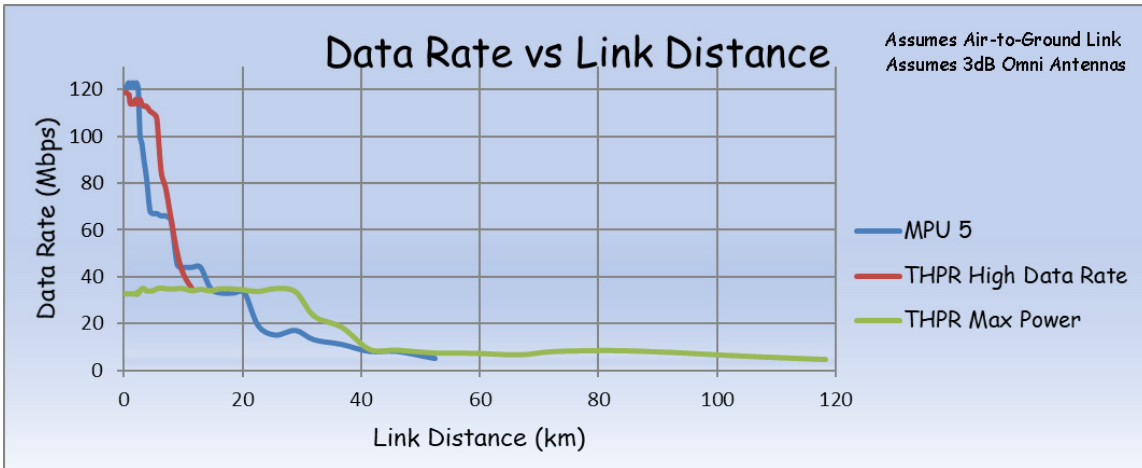
THPR SERIES APPLICATIONS

- Long Distance High Data Rate ISR Links
- UAS, UGV, and USV Video/Data Links
- Military MANET
- Maritime High-Throughput LOS/NLOS Systems
- Point-To-Point and Mesh Networking



LINK DISTANCE CAPABILITIES

The chart below provides estimates for our THPR series' achievable link distances, based on typical bandwidth needs and antenna configurations. [Contact Triad](#) for our expert ISR link team to assess your link requirements.



CHARACTERISTICS/SPECIFICATIONS

RF Performance Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Operating Frequency	1350	—	1500	MHz	Operating frequency of SOL8SDR-C-132043
Power output (Antenna 1)	5	—	—	W	Minimum RF output power per antenna.
Power output (Antenna 2)	5	—	—	W	Minimum RF output power per antenna.

Electrical Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Supply Voltage Range	+10	+12	+28	VDC	—
Average Operating Current Draw (Idle)	—	1	—	A	+12V supply voltage.
Average Operating Current Draw (Low Data Rate)	—	2.7	—	A	+12V supply voltage at 5 Mbps.
Average Operating Current Draw (High Data Rate)	—	3.5	—	A	+12V supply voltage at 10 Mbps.



Environmental Specifications

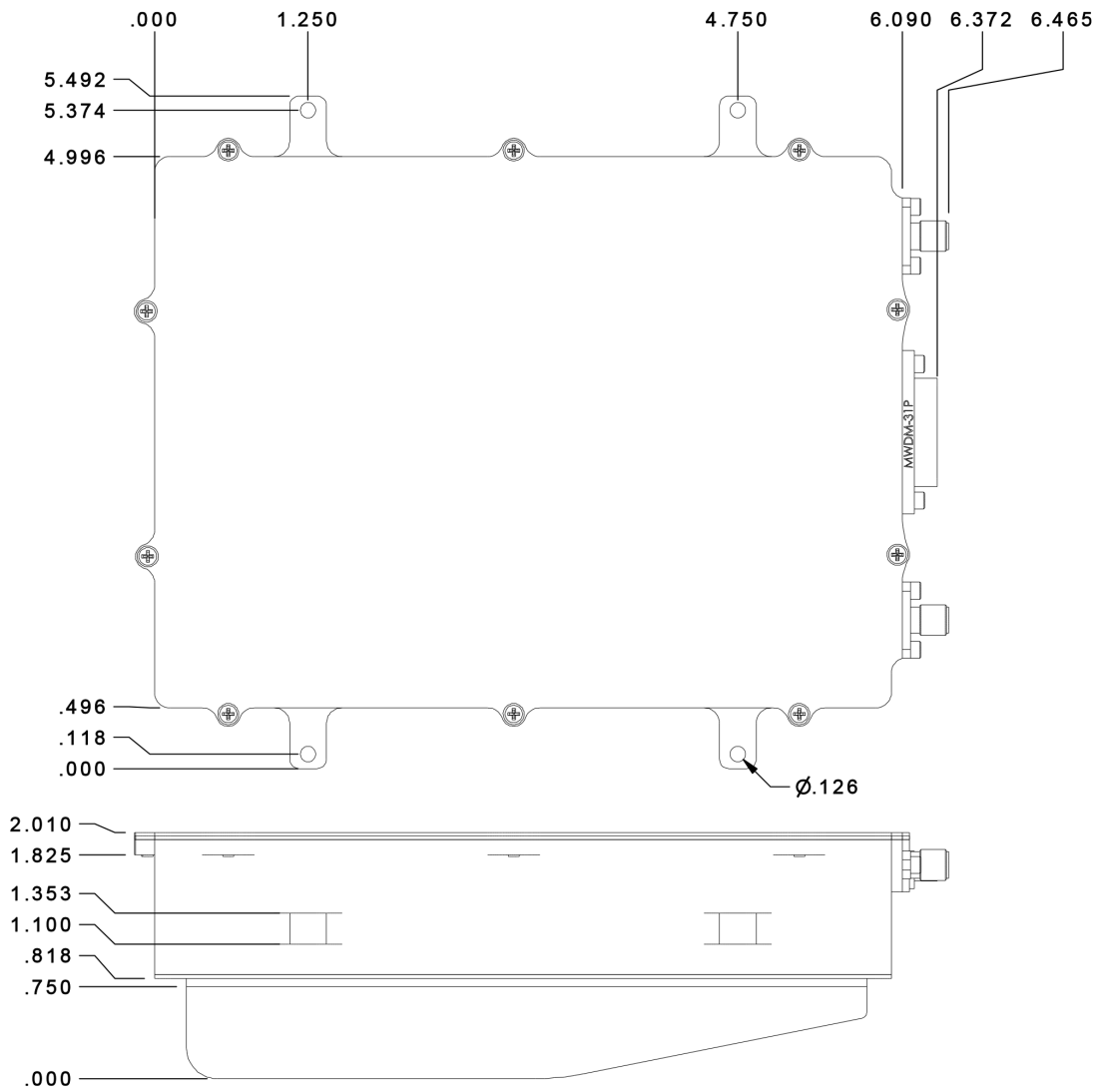
Parameter	Min.	Typ.	Max	Unit	Notes
Operating Temperature	-30	—	+55	°C	Ambient Temperature (Dependant on User Variables)
Cooling	Free Air Convection/Moving Air Flow			—	—
Altitude	0	—	20,000	ft.	—
Shock / Vibration	Designed to MIL-STD-810 and Equivalentents			—	—
Ingress Protection Rating	IP66			—	—

Mechanical Specifications

Parameter	Value	Unit	Notes
Dimensions	6.09 x 4.50 x 1.26 (154.69 x 114.3 x 32)	in (mm)	L x W x H
RF Connectors	SMA-F	Connector Type	Mating Connector Type: SMA-M
DC Connector	M83513/03-E03C	Part Number	Mating Connector PN: M83513/04-E04C
Mounting	#4 Through Holes	—	Mounting holes can also accept M3 mounting screws. See Mechanical Drawing below.
Weight	32 (907.19)	oz (g)	—
Finish	Magnesium Alloy	—	MIL-DTL-5541



MECHANICAL DRAWING



DC/CONTROL CONNECTORS

J1 Connector - DC Connector (PN: M83513/03-E03C)

Pin	Description	Type	I/O	Notes
1	+VDC	Power	Input	Supply Voltage Input
2	+VDC	Power	Input	Supply Voltage Input
3	+VDC	Power	Input	Supply Voltage Input
4	+VDC	Power	Input	Supply Voltage Input
5	GND	Power	—	Supply Voltage Return
6	GND	Power	—	Supply Voltage Return
7	GND	Power	—	Supply Voltage Return
8	GND	Power	—	Supply Voltage Return
9	Ethernet MDIP2	Data	Input and Output	Gigabit Ethernet Interface
10	Ethernet MDIN2	Data	Input and Output	Gigabit Ethernet Interface
11	Ethernet MDIP0	Data	Input and Output	Gigabit Ethernet Interface
12	Ethernet MDIN0	Data	Input and Output	Gigabit Ethernet Interface
13	Ethernet MDIP1	Data	Input and Output	Gigabit Ethernet Interface
14	Ethernet MDIN1	Data	Input and Output	Gigabit Ethernet Interface
15	Ethernet MDIP3	Data	Input and Output	Gigabit Ethernet Interface
16	Ethernet MDIN3	Data	Input and Output	Gigabit Ethernet Interface
17	RS485TX+	Data	Output	RS-485 Full Duplex
18	RS485TX-	Data	Output	RS-485 Full Duplex
19	RS485RX+	Data	Input	RS-485 Full Duplex
20	RS485RX-	Data	Input	RS-485 Full Duplex
21	RS232TX	Data	Output	RS-232 Full Duplex
22	RS232RX	Data	Output	RS-232 Full Duplex
23	Gain Control	Signal	Input	TL or LVTTTL compatible signal for gain control. 0V or no connection / open circuit = default gain 3.3 - 5V = 3dB gain reduction

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Pin	Description	Type	I/O	Notes
24	GND	Signal	—	3.3V TTL Signal = No fault Found. TTL Low or No Connection = Temp failure or Amplifier failure
25	ERROR Out	Signal	Output	—
26	NC	None	—	—
27	NC	None	—	—
28	NC	None	—	—
29	NC	None	—	—
30	NC	None	—	—
31	NC	None	—	—

CABLE OPTIONS

For available cable options, please [contact us](#) at inquiries and pricing.

