



Longer Range | Higher Data Rates | Lowest SWaP

The THPR1021, a Triad High Power Radio (THPR), contains a Silvus Streamcaster SC4210P-467-O OEM radio at its core and combines with our high-power RF subsystems in a low SWaP package. This 2 channel, C-band amplified radio 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 +10 to +32 VDC, this THPR contains BDAs, RF filtering, and innovative SoC-based monitoring and controls, with link diagnostics.

THPR1021

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THPR SERIES FEATURES

- Fully Integrated High-Power RF Sub-System & Radio
- Extended Range/Data Rate over Stand-Alone Radio
- Wide Input Voltage, Single DC Supply

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



FEATURES

Thermal Protection

Each BDA module in the THPR1021 is able to independently shut off automatically when the baseplate has reached approximately +90 °C.

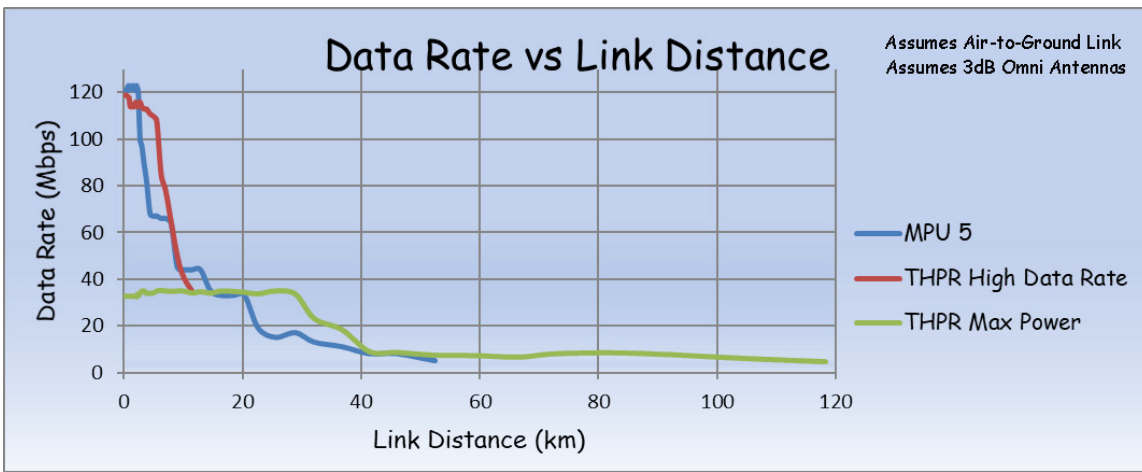
When a thermal trip has occurred, the module remains off until the temperature has dropped to approximately 10 degrees below the trip point.

Status LED Circuit

Both RF module status LEDs can be enabled/disable on the THPR1021.

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	4400	—	4940	MHz	Operating frequency of SC4210P-467-O
Power output per Channel (Low Data Rate)	—	10	—	W	Typical RF output power per stream (4 total) achievable by the system when the SC4210P is operating at a low data rate MCS.
Power output per Channel (High Data Rate)	—	2	—	W	Typical RF output power per stream (4 total) achievable by the system when the SC4210P is operating at a high data rate MCS.

Electrical Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Supply Voltage Range	+10	+24	+32	VDC	—
Average Operating Current Draw (Idle)	—	0.7	—	A	+24V supply voltage.
Average Operating Current Draw (Low Data Rate)	—	3.4	4	A	+24V supply voltage, RF power is set to minimum of 10W per Stream operating at a low data rate MCS.
Average Operating Current Draw (High Data Rate)	—	1.7	—	A	+24V supply voltage, RF power is set to minimum of 2W per Stream operating at a high data rate MCS.



Environmental Specifications

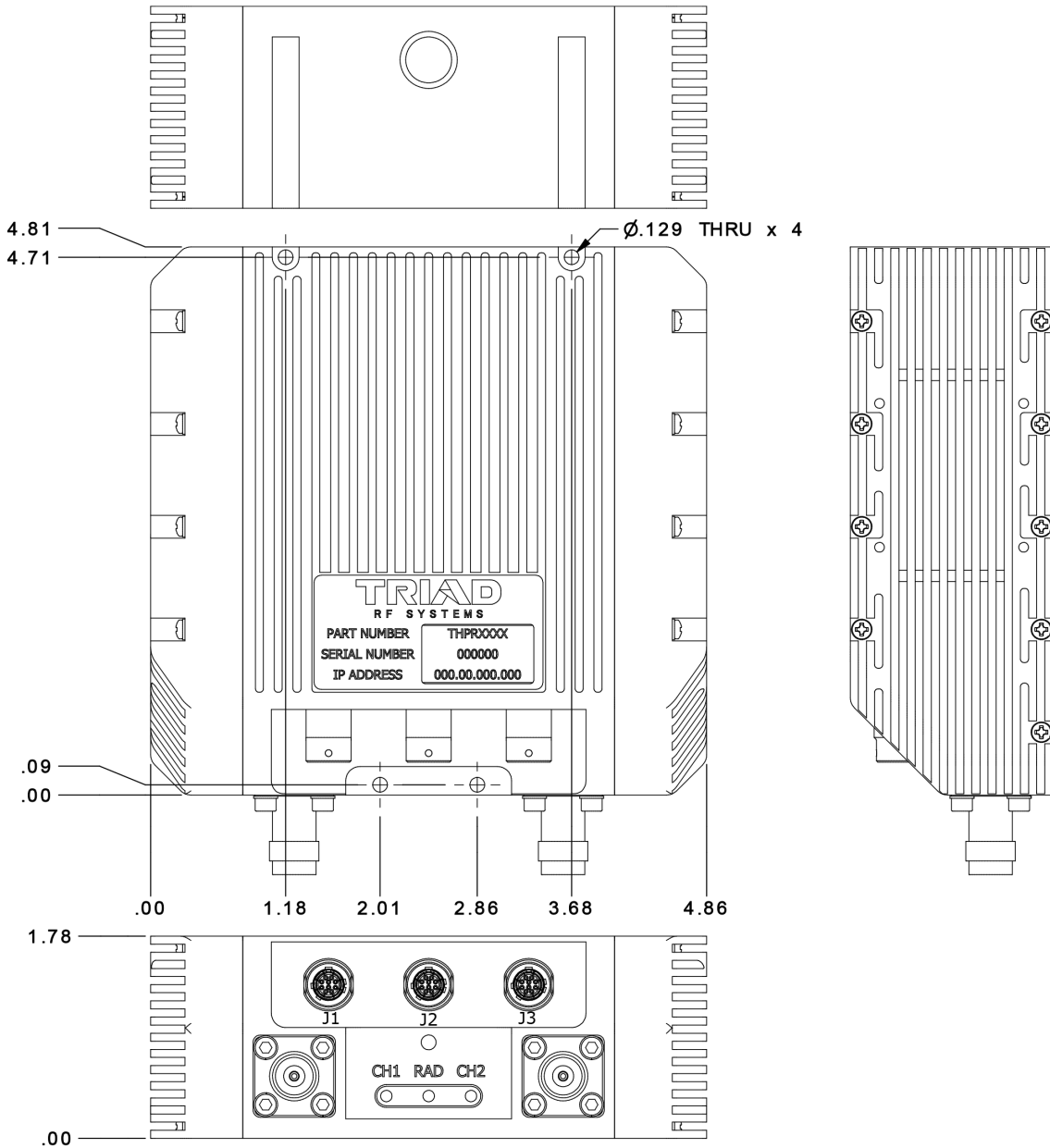
Parameter	Min.	Typ.	Max	Unit	Notes
Operating Temperature	-40	—	+40	°C	Ambient Temperature (Dependant on User Variables)
Cooling	Conduction/convection, Forced Air*			—	*Fan Option Required
Shock / Vibration	Designed to MIL-STD-810 and Equivalents			—	—
Ingress Protection Rating	IP68			—	—

Mechanical Specifications

Parameter	Value	Unit	Notes
Dimensions	4.86 x 4.81 x 1.78 (123.444 x 122.174 x 45.212)	in (mm)	L x W x H
RF Connectors	TNC-F	Connector Type	Mating Connector Type: TNC-M
DC Connector	GK0YBR-P10UC00-000L	Part Number	Mating Connector PN: S10YBR-P10XCD0-0000
Signal Connector	GK0YAR-P10UC00-000L	Part Number	Mating Connector PN: S10YAR-P10XCD0-0000
Auxiliary Connector	GK0YCR-P10UC00-000L	Part Number	Mating Connector PN: S10YCR-P10XCD0-0000
Mounting	#4 Through Holes	—	See Mechanical Drawing Below
Weight	32 (907.19)	oz (g)	—
Finish	Anodized Matte Black	—	MIL-A-8625



MECHANICAL DRAWING



DC/CONTROL CONNECTORS

J1 Connector - DC Connector (ODU PN: GK0YBR-P10UC00-000L)

Pin	Description	Type	I/O	Notes
1	GND	Power	—	Power Supply In
2	Reserved	—	—	—
3				
4				
5	+VDC	Power	Input	Power Supply In
6	+VDC	Power	Input	Power Supply In
7	Fan +VDC	Power	Output	+24V Output
8	GND	Power	—	Power Supply Return
9	Fan GND	Power	—	+24V Return
10	Reserved	—	—	—

J2 Connector - AUX Connector (ODU PN: GK0YCR-P10UC00-000L)

Pin	Description	Type	I/O	Notes
1	USB GND	Data	—	Ground Reference for USB
2	USB1_D-	Data	—	USB1_Data-
3	USB1_VBUS	Data	—	USB1_VBUS
4	USB0_VBUS	Data	—	USB0_VBUS
5	NC	None	—	—
6	USB0_D+	Data	—	USB0_Data+
7	USB0_D-	Data	—	USB0_Data-
8	GND	Signal	—	General Purpose Ground
9	USB1_ID	Data	—	USB OTG ID
10	USB1_D+	Data	—	USB1_Data+



J3 Connector - Primary Connector
(ODU PN: GK0YAR-P10UC00-000L)

Pin	Description	Type	I/O	Notes
1	+5V OUT	Power	Output	1A Max
2	NC	None	—	—
3	NC	None	—	—
4	Ethernet RX-	Data	Input	10/100 Base T Receive Data Negative
5	Ethernet RX+	Data	Input	10/100 Base T Receive Data Positive
6	Ethernet TX+	Data	Output	10/100 Base T Transmit Data Positive
7	RS232_RXD	Data	Input	RS232 Into THPR
8	RS232_TXD	Data	Output	RS232 From THPR
9	GND	Signal	—	General Purpose Ground
10	Ethernet TX-	Data	Output	10/100 Base T Transmit Data Negative

CABLE OPTIONS

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

