

Longer Range | Higher Data Rates | Lowest SWaP

The THPR1009-D03, a Triad High Power Radio (THPR), contains a Silvus Streamcaster SC4210-435 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 +18 to +36 VDC Input Voltage, this THPR contains BDAs, and RF filtering, with link diagnostics.

THPR1009-D03

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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

The BDA modules in the THPR shut off automatically when either baseplate has reached ~90 °C.

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

Status LED Circuit

The THPR passes through the status LED of the SC4210 with a circuit that allows the LED to operate properly, when wired to a remote part of the system with up to 30 feet of 22AWG wire.

The circuit boosts the voltage / current as necessary to accommodate the voltage drop along that length of wire, if insufficient to operate the LED.

Temperature and Run-Time Logging

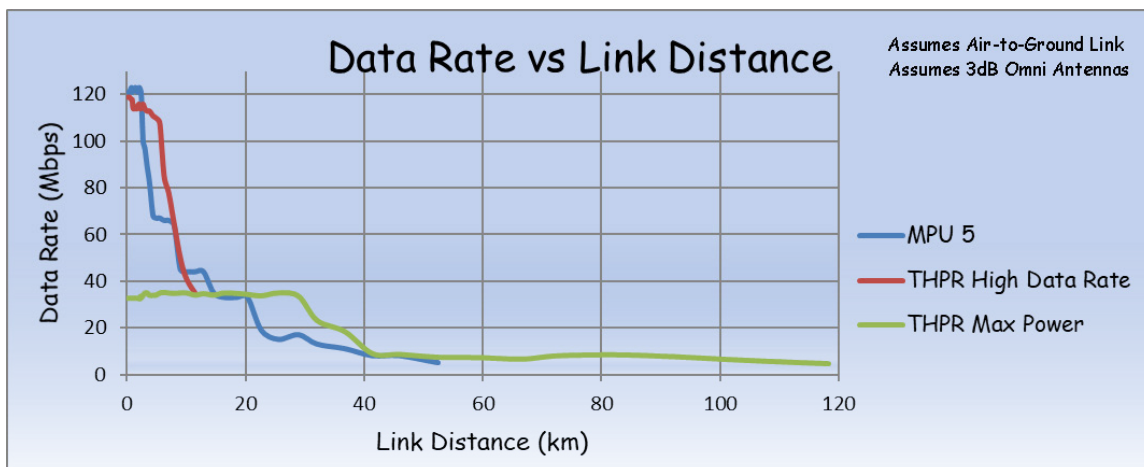
The THPR contains an internal microcontroller and non-volatile memory that logs "high" or "low" temperature events when the unit is operational. It records the following:

- Unit identifying information and firmware revision of logging software
- Run time counter (in seconds) that accumulates the total time THPR is powered on after the main supply voltage has reached +28V
- Run-time counter (in seconds) for each amplifier bank that accumulates when the amplifiers are operating at a temperature greater than +85 °C, or less than -20 °C.

Instructions can be provided upon request.

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	—	4700	MHz	Operating frequency of SC4210-435
Power output per Channel (Low Data Rate)	25	—	—	W	Minimum RF output power per stream (2 total) achievable by the system when the SC4210 is operating at a low data rate MCS.
Power output per Channel (High Data Rate)	10	—	—	W	Minimum RF output power per stream (2 total) achievable by the system when the SC4210 is operating at a high data rate MCS.

Electrical Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Supply Voltage Range	+18	+28	+36	VDC	—
Average Operating Current Draw (Idle)	—	.61	—	A	+28V supply voltage.
Average Operating Current Draw (Low Data Rate)	—	9	—	A	+28V supply voltage, RF power is set to minimum of 25W per Stream operating at a low data rate MCS.
Average Operating Current Draw (High Data Rate)	—	6	—	A	+28V supply voltage, RF power is set to minimum of 10W per Stream operating at a high data rate MCS.

Environmental Specifications

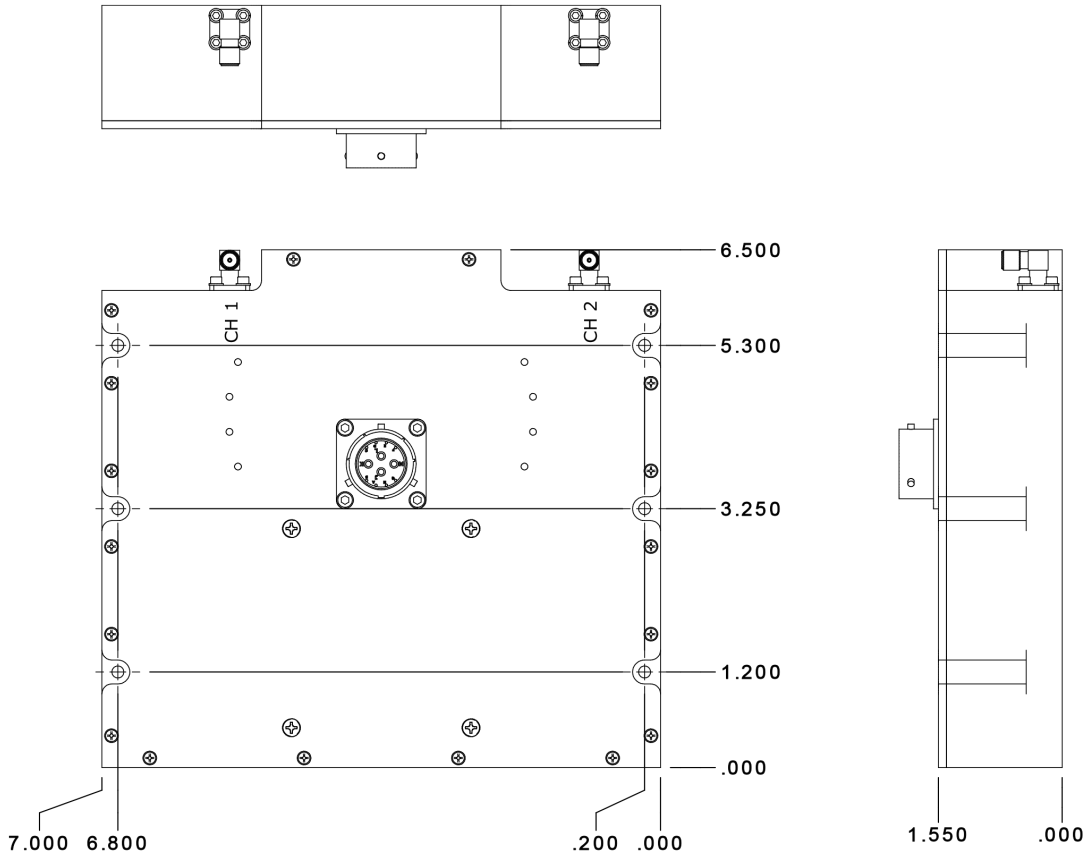
Parameter	Min.	Typ.	Max	Unit	Notes
Operating Temperature	-20	—	+85	°C	Baseplate Temperature
Cooling	Conduction/convection			—	—
Shock / Vibration	Designed to MIL-STD-810 and Equivalents			—	—
Ingress Protection Rating	IP54			—	—

Mechanical Specifications

Parameter	Value	Unit	Notes
Dimensions	7.00 x 6.50 x 1.55 (177.8 x 165.1 x 39.37)	in (mm)	L x W x H
RF Connectors	SMA-F	Connector Type	Mating Connector Type: SMA-M
DC Connector	PT02E-14-12P	Part Number	Mating Connector PN: PT06E-14-12S
Mounting	#4 Through Holes	—	See Mechanical Drawing Below
Weight	57.6 (1600)	oz (g)	—
Finish	MIL-DTL-5541	—	Material: Alloy 6061



MECHANICAL DRAWING



DC/CONTROL CONNECTORS

J1 Connector - DC Connector (Amphenol Connex PN: PT02E-14-12P)

Pin	Description	Type	I/O	Notes
A	Ethernet TX+	Data	Output	10/100 Base T Receive Data Positive
B	Ethernet TX-	Data	Output	10/100 Base T Receive Data Negative
C	Ethernet RX+	Data	Input	10/100 Base T Receive Data Positive
D	Ethernet RX-	Data	Input	10/100 Base T Receive Data Negative
E	NC	None	—	—
F	NC	None	—	—
G	Radio Status LED 1	Signal	Output	Red LED per Silvus Manual
H	Radio Status LED 2	Signal	Output	Green LED per Silvus Manual
J	VDC +18 to +36V	Power	Input	Power Supply In
K	VDC +18 to +36V	Power	Input	Power Supply In
L	VDC Return	Power	Input	Power Supply Return
M	VDC Return	Power	Input	Power Supply Return

CABLE OPTIONS

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

