

# X-Band Quad TR Module

MAIA - 100262, MAIA - 100240, MAIA - 100258

Frequency Range: 9-10 GHz

Versatile Quad Channel Transmit-Receive module for X-Band AESA radar and directional datalink systems incorporating latest GaN technology.

The X-BAND QTRM is a feature rich Quad Transmit Receive Module intended for AESA RADAR applications in the X band frequency range (9-10 GHz).

Easy to manage and control via RS485 serial interface. The AESA array can be controlled pulse-by-pulse using direction cosines or scan pattern can be pre-loaded with up to 512 steps.

Designed to run from a single +33V supply, and available at 3 power output levels to deliver up to 10W per channel of RF power for pulsed radar and Intermittent CW applications.

Each module has fault-detection and protections built in, and incorporates extensive self-test and status monitoring capabilities providing real-time status enabling smart array management and logistics.

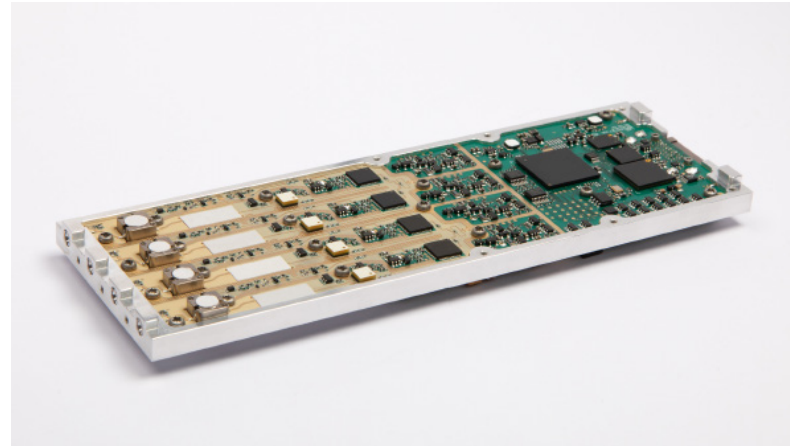
Temperature compensated and calibrated at factory, for frequency and phase variations. Modules include the capability of accepting user calibration offsets to compensate for array edge affects and side-lobe reduction windowing functions.

Calibrated modules reduce array-level test requirements during series array production and allows modules to be freely replaced within an array without affecting beam pattern when in service.

**Accessory kit available to aid integration and evaluation: MAIA-100259**

## Features

- Output power options available : 1W, 6W, and 10W
- Agile beam control via user accessible interface
- Power efficient design, single supply voltage
- Fully calibrated and temperature compensated units
- Comprehensive Built-in-Test and Monitoring
- Enables simple and rapid array development and integration
- Modular design for flexible array configurations



## Technical Specifications

Parameter	Unit	Typical	Notes
Frequency	GHz	9-10	
TX Psat	W	6	1W and 10W option available
TX Input Power Level	dBm	+10	For Psat Out
Return Loss	dB	-10	
RX Gain	dB	25	
RX Noise Figure	dB	3.6	
Receiver Protection	Wpk	15	Per channel
Phase Shift	Deg	0 – 355	6-bit, 5.625° Step
Supply Voltage	V	+33	
Supply Current	A	<2	30µs pulse 100µs period
Weight	grams	290	

Typical values are measured at 25°C into 50 ohms. Values are measured at midband frequencies. Modules are calibrated across -20°C to +30°C temperature range for phase and amplitude.

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## Instructions

RF Safety	The user is responsible for conforming with local rules and safety regulations for RF emissions. Modules should not be operated without being connected to appropriate dummy loads, RF test equipments or within system itself operated in safe manner and environment.
Grounding instructions	Care should be taken to effectively ground each unit.
Revisions	API reserves the right to make revisions to both product and/or the information contained within their datasheets without advanced notice.
Typical performance values are measured at 25°C.	

## Part Numbers

- QTRM – X-Band 1W: MAIA-100262
- QTRM – X-Band 6W: MAIA-100240
- QTRM – X-Band 10W: MAIA-100258

## Outline (All units in mm)

