

M9470A PXIe

50W RF Interface Module

100 kHz to 6 GHz

Overview

The Keysight M9470A is a PXIe 2-slot, RF extension module for the M9421A VXT Transceiver PXIe module to implement frequency coverage for RF radio transmitter and receiver testing. Frequency coverage from 100 kHz to 6 GHz and up to 160 MHz of bandwidth. The M9470A is well suited for RF signals used with Land Mobile Radios (LMR) and Military Communication Systems (MilCom) plus commercial connectivity standards (WLAN, LTE, *Bluetooth*[®]) needing wide bandwidths for newer radios. The M9470A has a 50-watt switchable attenuator for high power and low power paths along with a high-performance Frequency Reference used with the PXIe system. The M9470A is only compatible with the M9421A VXT Transceiver PXIe module.

Applications

- Aerospace and defense
- Wireless communications

Customer values

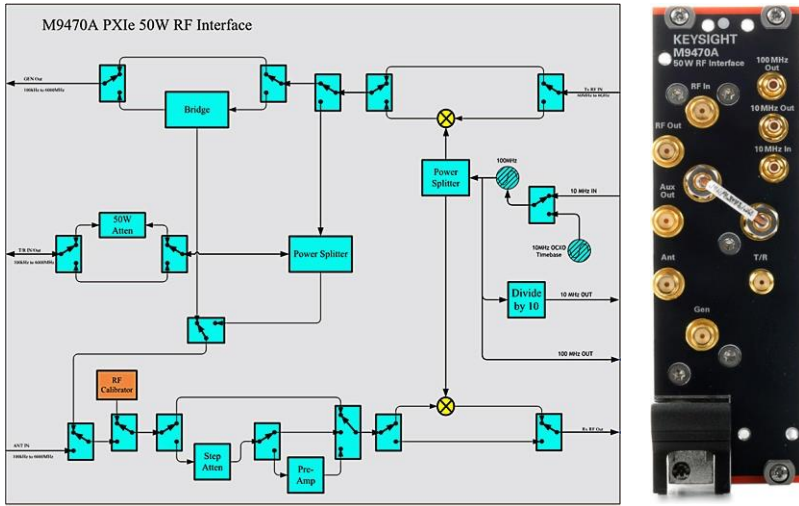
- RF up/down conversion to extend the frequency range of the M9421A
- Wide bandwidth capabilities in small form factor
- Built in Power Attenuator allowing testing of radios up to 50W of RF power
- Conforms to Modular Open Systems Approach (MOSA)



FEATURES:

- Frequency range: 100 kHz to 6 GHz
- Up to 160 MHz bandwidth
- Full Duplex Transmit/Receive port
- High Sensitivity Antenna Input port
- RF Generator Output port
- 100 MHz high performance timebase
- Timebase has one 10 MHz Input, one 10 MHz Output, one 100 MHz Output
- Chassis slot compatibility: PXIe hybrid, PXIe
- PXIe form factor

Technical Specifications and Characteristics



Definitions for specifications

Temperatures referred to in this document are defined as follows:

Operating ambient temperature = 0 to 55 °C and individual module temperature of ≤ 75 °C. Room temperature = 20 to 45 °C and individual module temperature of ≤ 45 °C.

Specifications describe the warranted performance of calibrated instruments. Data represented in this document are specifications unless otherwise noted.

Specifications are warranted under the following conditions: Calibrated instruments that have been stored for a minimum of 2 hours within the operating ambient temperature range 30 minute warm-up time Calibration cycle maintained

Characteristics describe product performance that is useful in the application of the product, but that is not covered by the product warranty. Characteristics are often referred to as Typical or Nominal values and are italicized.

Typical describes characteristic performance, which 80% of instruments will meet when operated at room temperature.

Nominal describes representative performance that is useful in the application of the product when operated at room temperature.

Recommended best practices in use

- Use slot blockers and EMC filler panels in empty module slots to ensure proper operating temperatures.
- Keysight chassis and slot blockers optimize module temperature performance and reliability of test.
- At operating ambient temperatures above 45 °C, chassis fan should be set to high.

Software applications/platform

The M9470A is only supported by the M8920A using N9093EM0E Radio Test Software and other X-Series Applications currently supported on the M8920A.

General Characteristics

Connector Ports	Frequency Range	Connectors	Impedance
RF T/R port	100 kHz to 6 GHz	SMA (f)	50 Ω nominal
Ant In port	100 kHz to 6 GHz	SMA (f)	50 Ω nominal
Gen Out port	100 kHz to 6 GHz	SMA (f)	50 Ω nominal

TB Ref Ports	Amplitude	Connectors	Impedance
100 MHz Out	> 8 dBm	SMB (f)	50 Ω nominal
10 MHz Out	> 0 dBm	SMB (f)	50 Ω nominal
10 MHz In	-5 to +15 dBm/± 100 Hz	SMB (f)	50 Ω nominal

Maximum Safe Power Input	
RF T/R port High Power Attenuation ON	+47 dBm (50 W) for 5 minutes
RF T/R port High Power Attenuation OFF	+33 dBm (2 W)
RF antenna port	+30 dBm (1 W)
Maximum Reverse Power Protection (RPP)	
RF Gen port	10 W for 15 sec. with alarm

Generator Standard Output Level Range		
RF T/R port High Power Attenuation OFF		
100 kHz to 6 GHz		-130 to +3 dBm
RF Gen port		
100 kHz to 6 GHz		-130 to +3 dBm
100 kHz to 6 GHz (Option 1EA)		-130 to +13 dBm, settable to +15 dBm
Signal analysis and generation bandwidth		
Maximum bandwidth		160 MHz
Environmental and physical specifications		
Temperature	Operating	0 to 45 °C
	Non-Operating (storage)	-40 to +70 °C
Humidity	Type tested at 95%, +40 °C (non-condensing)	
EMC		
Complies with European EMC Directive 2014/30/EU IEC/EN 61326-1 CISPR Pub 11 Group 1, class A AS/NZS CISPR ICES/NMB-001 This ISM device complies with Canadian ICES-001 Cet appareil ISM est conforme à la norme NMB-001 du Canada		
Size	2 PXIe slot	
Dimensions	Length 210 mm, width 44 mm, height 130 mm	
Weight	1.0 kg (2.2 lbs)	
Power drawn from chassis	≤ 18 W	
Environmental stress		
Samples of this product have been type tested in accordance with the Keysight Environmental Test Manual and verified to be robust against the environmental stresses of storage, transportation, and end-use; those stresses include, but are not limited to, temperature, humidity, shock, vibration, altitude, and power line conditions; test methods are aligned with IEC 60068-2 and levels are similar to MILPRF-28800F Class 3.		

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