

Keysight M8920A Radio Test Set

100 kHz to 3.8 GHz or 6 GHz

The Keysight M8920A PXIe Radio Test Set is a combination of PXI hardware, software and measurement expertise, providing the essential components of a radio test system in a single flexible and scalable chassis. The M8920A includes RF and audio signal generation and analysis for fast and accurate test of transmitter and receiver performance of tactical and public safety radios.



Table of Contents

Hardware Included in base product of then M8920A Radio Test Set.....	3
Select hardware options for M8920A PXIe Radio Test Set	3
Software for the M8920A PXIe Radio Test Set.....	3
The M8920A Radio Test Set requires the following software:	3
Software Included with the M8920A at no additional charge:	4
Additional Optional Radio Test Software available for the M8920A.....	4
Optional Measurement Software available for the M8920A	4
Optional Signal Generation Software available for the M8920A	4
Optional Signaling Generation and Analysis Design Software available for the M8920A	5
Select a Controller for M8920A PXIe Radio Test Set	5
Select a Chassis and Accessories for M8920A PXIe Radio Test Set	6
Optional Hardware and PXI Modules.....	6
M8920A Upgrades	7
Calibration Services	7
Related Literature.....	8
Additional Information	8

Hardware Included in base product of then M8920A Radio Test Set

Standard options and accessories come with the M8920A base model at no additional charge and do not need to be ordered. They include:

- M9421A PXIe RF vector analyzer/generator
- M9260A PXI audio module
- M9470A RF 50 W interface module
- 40 MHz modulation and analysis bandwidth
- 256 MSa memory
- Getting Started Guide
- 1-year return-to-Keysight warranty
- I/Q analyzer

This configuration guide provides hardware and software options for the M8920A.

Select hardware options for M8920A PXIe Radio Test Set

Included base standard options with the Radio Test Set indicated by ■ below.



Easily test multiple formats

Test analog AM, SSB, and FM.

Test MilCom Custom formats.

Test APCO P1/P2, TETRA1, DMR, dPMR.

Test commercial connectivity formats including WLAN, LTE, Bluetooth®, etc.

Step 1. Choose a frequency range for the Radio Test Set (required option; frequency range not upgradeable)			
Base M8920A hardware requires 7 slots total: (generator/analyzer (4-slots), audio (1-slot), RF interface (2-slots))			
■	M8920A-504	100 kHz to 3.8 GHz	Included
□	M8920A-506	100 kHz to 6 GHz	Option
Step 2. Choose modulation and analysis bandwidth			
■	M8920A-B40	40 MHz	Included
□	M8920A-B85	80 MHz	Option
□	M8920A-B1X	160 MHz	Option
Step 3. Choose memory size			
■	M8920A-M02	256 MSa	Included
□	M8920A-M05	512 MSa	Option
Other M8920A Options:			
□	M8920A-1EA	High Power Output	Option
□	M8920A-UK6	Commercial Calibration Certificate with test data	Option: Must be ordered at time of purchase

Software for the M8920A PXIe Radio Test Set

The M8920A Radio Test Set requires the following software:

- N9093EM0E Basic Analog Measurement Application Software¹ (additional cost)
 - When ordering the M8920A Radio Test Set, the N9093EM0E is essential software that must be ordered with the M8920A for the Radio Test Set to function.
1. N9093EM0E is only offered as Node-Locked Perpetual License as it is essential software that must be ordered with the M8920A for the instrument to function.

Software Included with the M8920A at no additional charge:

- Keysight IO Libraries Suite including Connection Expert
- Drivers for use with MatLab, LabVIEW, Visual Studio (including VB Net, C#, C/C++), Keysight VEE
- Pre-configured measurement setups

Additional Optional Radio Test Software available for the M8920A

Optional Digital LMR Radio Test Software¹			
Generate pre-configured Land Mobile Radio (LMR) test signals for receiver testing and analyze digital LMR transmitter perform validated by Keysight. Generate and analyze APCO P1/P2, DMR, dPMR, and TETRA1.			
<input type="checkbox"/>	N9093EM1E	Basic Digital Measurement Application	
Optional Custom Digital Radio Test Software¹			
Generate custom I/Q test signals with flexible modulation and flexible payloads for receiver testing. Also analyze complex digital transmitter waveforms (BPSK, QPSK, 8PSK, OOK, 2/4/8 ASK, 16-4096QAM, 2/4/8/16 FSK, MSK, S-OQPSK, AM/FM/PM, FMCW, MFSK, customized chirp, or user-defined constellations).			
<input type="checkbox"/>	Y9054EM0E	General-purpose Digital Application Bundle	

Optional Measurement Software available for the M8920A

Optional X-Series Measurement Application Software¹			
Provides essential RF conformance measurements and analysis for specific communications standards and formats.			
Commercial Wireless Connectivity test software			
<input type="checkbox"/>	N9077EM1E	WLAN 802.11ac	Standard-based 802.11ac measurement
<input type="checkbox"/>	N9081EM0E	Bluetooth®	Standard-based Bluetooth 2.1+ EDR, Low Energy (LE), and 5.0 measurements
LTE Wireless Communications Test Software			
<input type="checkbox"/>	N9080EM0E	LTE/LTE-Advanced FDD Uplink mobile testing only (UE)	Standard-based LTE-FDD and advanced measurements
<input type="checkbox"/>	N9082EM0E	LTE/LTE-Advanced TDD Uplink mobile testing only (UE)	Standard-based LTE-FDD and advanced measurements

Optional Signal Generation Software available for the M8920A

Optional Signal Studio Software¹ , generate standard-compliant test signals validated by Keysight for receiver testing.			
Commercial Wireless Connectivity Signal Studio Software			
<input type="checkbox"/>	N7617EMBC	WLAN 802.11a/b/g/n/ac	
<input type="checkbox"/>	N7606EMBC	Bluetooth®	
LTE Wireless Communications Signal Studio Software			
<input type="checkbox"/>	N7624EMBC	LTE / LTE-Advanced FDD	Uplink mobile testing only (UE)
<input type="checkbox"/>	N7625EMBC	LTE / LTE-Advanced TDD	Uplink mobile testing only (UE)
General Purpose LMR Signal Studio Software			
<input type="checkbox"/>	N7640C ²	LMR Advanced signal capabilities	APCO25 Phase 1 fully standard-compliant
<input type="checkbox"/>	N7650B-2XX	Signal Studio Waveform pack licenses	Choose 5 to 50 Signal Studio waveforms

1. Software perpetual licenses available in fixed (option 1FP), transportable (option 1TP), floating (option 1NP), and USB portable (option 1UP). Licenses also available as 12-month licenses: Node locked (option 1FL), transportable (option 1TL), floating (option 1NL), and USB portable (option 1UL). N9093EM0E is only offered as Node-Locked Perpetual License as it is essential software that must be ordered with the M8920A for the instrument to function.
2. See N7640C Signal Studio X for Land Mobil Radio (LMR) Test Technical Overview, literature number 5992-2614EN.

Optional Signaling Generation and Analysis Design Software available for the M8920A

Optional MATLAB software , create arbitrary waveforms; customize measurement and data analysis routines; create your own instrument applications and test systems; automate measurements, signal generation, and report generation.		
<input type="checkbox"/>	N6171A-M01	MATLAB basic package
<input type="checkbox"/>	N6171A-M02	MATLAB standard package
<input type="checkbox"/>	N6171A-M03	MATLAB advanced package
Optional Vector Signal Analysis Software , tools to demodulate and analyze your most complex signals		
<input type="checkbox"/>	89601B	89600 VSA Software

Select a Controller for M8920A PXIe Radio Test Set

For PXI Embedded Controller¹		
Step 1. Select M9037A PXIe Embedded Controller, for dedicated slot 1 of chosen chassis		
<input type="checkbox"/>	M9037A	High-performance embedded controller Intel i7-4700EQ quad-core, 2.4 GHz, 4 GB RAM standard
<input type="checkbox"/>	M9037A-M16	Memory Upgrade from 4 GB to 16 GB Required option
Step 2. Select an operating system (requires 64-bit)		
<input type="checkbox"/>	M9037A-WE6	Windows embedded standard 7 (64-bit)
<input type="checkbox"/>	M9037A-WE16	Windows 10 IoT core operating system 7 (64-bit) (recommended)
Step 3. Select optional accessories for M9037A		
<input type="checkbox"/>	Y1206A	Keyboard and optical mouse
<input type="checkbox"/>	Y1260A	GPIB cable
<input type="checkbox"/>	Y1261A	Display Port to DVI adapter
<input type="checkbox"/>	Y1262A	DisplayPort cable
<input type="checkbox"/>	Y1265A	Spare SSD with carrier: WES 7/64
<input type="checkbox"/>	Y1265B	Spare SSD with carrier: Win 10/64 10 IoT Core
For External PC Controller¹		
Select options for desktop Host Adapter ² hardware		
<input type="checkbox"/>	M9048A	PCIe Desktop PC Adapter (x8) Gen 2
<input type="checkbox"/>	M9048B	PCIe Desktop PC Host Adapter: Single Port (x8) Gen 3
<input type="checkbox"/>	M9049A	PCIe Desktop PC High Performance Host Adapter: Dual Port (x16), Gen 3
Select interface cable Accessory		
<input type="checkbox"/>	Y1202A	PCIe Cable: x8, 2.0 m, for connection between Host Adapter and PXIe System Module
<input type="checkbox"/>	Y1203A	PCIe Cable: x8, 0.5 m, for connection between Host Adapter and PXIe System Module
Select option for System Module ² that is installed in the Chassis System Slot 1		
<input type="checkbox"/>	M9021A	PCIe Cable Interface: x8, Gen 2, supported in M9018B Only
<input type="checkbox"/>	M9022A	PXIe System Module, Single Port (x8), Gen 3
<input type="checkbox"/>	M9023A	PXIe High Performance Host Adapter: Dual Port (x16), Gen 3
<input type="checkbox"/>	M9024A	PXIe High Performance Host Adapter: Dual Port (x16), Gen 3, Multi Chassis Expansion

1. For a list of qualified controllers, please see PC Tested Configurations with PXI/AXIe Chassis, Technical Overview, literature number 5990-7632EN

2. See Interface Modules and Adapters for PXIe and AXIe Systems Data Sheet, Literature number: 5992-0377EN

Select a Chassis and Accessories for M8920A PXIe Radio Test Set

Choose your chassis!: Base hardware (generator/analyzer (4-slots), audio (1-slot), RF interface (2-slots) require 7 slots total. The embedded controller requires the dedicated slot '1' in any selected chassis.		
<input type="checkbox"/>	M9010A	PXIe Gen 3 chassis: 10-slot, 3U, 24 GB/s
<input type="checkbox"/>	M9018B	PXIe Gen 2 chassis: 18-slot, 3U, 8 GB/s
<input type="checkbox"/>	M9019A	PXIe Gen 3 chassis: 18-slot, 3U, 24 GB/s
Choose Optional Chassis Accessories		
<input type="checkbox"/>	Y1212A	Slot blocker kit: 5 single-slot
<input type="checkbox"/>	Y1213A	PXI EMC filler panel kit: 5 signal-slot
<input type="checkbox"/>	Y1214B	Air inlet kit: M9018B and M9019A
<input type="checkbox"/>	Y1215C	Flush mount adapter: M9018B and M9019A
<input type="checkbox"/>	Y1217A	Rack rail kit: M9010A, M9018B, M9019A
<input type="checkbox"/>	Y1218A	Cable tray: M9018B and M9019A
<input type="checkbox"/>	Y1271A	Rack mount kit: M9010A
<input type="checkbox"/>	Y1270A	Front panel interfacing kit: M9018B and M9019A

1. The PXIe chassis includes empty space to the left of the first functional slot. The embedded controller occupies that empty space and the first functional slot.; please see www.keysight.com/find/pxi-chassis

Optional Hardware and PXI Modules

Select optional hardware and modules that can be added to the PXIe Chassis		
<input type="checkbox"/>	U2004A	USB 9 kHz to 6 GHz Power Sensor
<input type="checkbox"/>	M9181A	PXI Digital Multimeter, 6.5 Digits Basic
<input type="checkbox"/>	M9182A	PXI Digital Multimeter, 6.5 Digits High Performance
<input type="checkbox"/>	M9183A	PXI Digital Multimeter, 6.5 Digits Enhanced Performance
<input type="checkbox"/>	34138A	Test Lead Set for DMM
<input type="checkbox"/>	M9241A	PXIe 200 MHz Oscilloscope
<input type="checkbox"/>	M9242A	PXIe 500 MHz Oscilloscope
<input type="checkbox"/>	M9243A	PXIe 1 GHz Oscilloscope
<input type="checkbox"/>	M9370A	PXIe Vector Network Analyzer, 300 kHz to 4 GHz
<input type="checkbox"/>	M9371A	PXIe Vector Network Analyzer, 300 kHz to 6.5 GHz
<input type="checkbox"/>	M9372A	PXIe Vector Network Analyzer, 300 kHz to 4 GHz
<input type="checkbox"/>	M3406A	PXI Avionics Interface Module, AIT MIL-STD 1553
<input type="checkbox"/>	M3407A	PXI Avionics Interface Module, AIT ARINC 429
<input type="checkbox"/>	M3408A	PXIe Avionics Interface Module, AIT ARINC 664p7
<input type="checkbox"/>	M3409A	PXIe Avionics Module, AIT Fiber Channel

M8920A Upgrades

Fast license-key upgrades for performance options that do not require additional hardware:

1. Place an order for the upgrade with Keysight and request to receive the option upgrade entitlement certificate and a one-time software upgrade license through email
2. You will receive your hardware entitlement certificate via email.
3. Redeem the certificate online by following the instructions provided to receive a license key file.
4. Install the license key file using the Keysight License Manager.
5. Begin using the new capability.

You can upgrade!

Options can be added after your initial purchase.



All of our software application options are license-key upgradeable.

Description	Upgrade number
Add High Power Output	M8920AU-1EA
Upgrade Memory from 256 MSa to 512 MSa	M8920AU-M05
Upgrade Bandwidth from 40 MHz to 160 MHz	M8920AU-B1X
Upgrade Bandwidth from 40 MHz to 80 MHz	M8920AU-B85
Upgrade Bandwidth from 80 MHz to 160 MHz	M8920AU-BU5

Calibration Services

Keysight modular products are factory-calibrated and shipped with an ISO-9002, NIST-traceable calibration certificate. A one-year calibration cycle is recommended.

Related Literature

For more detailed product and specification information refer to the following literature and web pages:

Publication title	Publication number
M8920A PXIe Radio Test Set Technical Overview	5992-2821EN
M8920A PXIe Radio Test Set Data Sheet	5992-2802EN
M8920A PXIe Radio Test Set Getting Started Guide	M8920-90001
M9470A PXIe 50W Interface Module Data Sheet	5992-3140EN
M9421A VXT PXIe Vector Transceiver Data Sheet	5992-1646EN
M9260A PXIe Audio Analyzer Data Sheet	5992-1918EN
PXIe Chassis Spec Guide	M9019-90015
PC Tested Configurations with PXIe Chassis Technical Overview	5990-7632EN
M9037A PXIe Embedded Controller Spec Guide	M9037-90015
Interface Modules and Adapters for PXIe Systems	5992-0377EN
M924XA InfiniiVision PXIe Modular Oscilloscopes Data Sheet	5992-2003EN
6.5 Digit PXI Digital Multimeter Data Sheet	5992-2757EN
PXIe Vector Network Analyzer Configuration Guide	5991-4885EN
PXI Avionics Bus Interface Cards Configuration Guide	5992-2448EN
89600 VSA Software Configuration Guide	5990-6386EN

Additional Information

Product webpages:

www.keysight.com/find/M8920A

www.keysight.com/find/N9093

www.keysight.com/find/PXI

X-Series measurement applications:

www.keysight.com/find/X-Series_Apps

Signal Studio Software:

www.keysight.com/find/signalstudio

89600 VSA Software:

www.keysight.com/find/89600

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