

Keysight S9100A 5G Base Station Manufacturing Test Solution

380 MHz to 6 GHz and 24.25 to 43.5 GHz

This configuration guide contains information to help configure the Keysight S9100A 5G Base Station Manufacturing Test Solution to meet your requirements. Ordering optional capabilities at time of purchase provides the lowest overall cost.



Included in the Base Product



The Keysight S9100A 5G Base Station Manufacturing Test Solution contains:
a transceiver, a vector signal generator, and a vector signal analyzer
covering FR1 frequencies ranging from 380 MHz to 6 GHz
along with a remote radio head (mmWave transceiver)
covering FR2 banded mmWave frequencies from 24.25 to 43.5 GHz.

Standard products, options, and accessories are included with the S9100A base product
at no additional charge and do not need to be ordered.


The S9100A base product is available as S9100A-RH1 or S9100A-RH2:


Hardware Selection




A. Select either Option RH1 (one) or Option RH2 (two) remote radio heads

Select Option RH1 with one Remote Radio Head (M1740A mmWave Transceiver)		
Option RH1	S9100A 5G Base Station Manufacturing Test Solution: includes an S9100AX (S9100A IF Subsystem) and an E7770A Common Interface Unit (CIU), with a Channel Card - No DUT IF and one M1740A mmWave Transceiver	 The diagram shows the hardware for Option RH1. At the top, a rack of three units is shown: the S9100AX IF Subsystem (top), the E7770A Common Interface Unit (middle), and a Channel Card (bottom). A single M1740A mmWave Transceiver is shown below the rack. A red box highlights the connection between the Channel Card and the transceiver.
Select Option RH2 with two Remote Radio Heads (M1740A mmWave Transceivers)		
Option RH2	S9100A 5G Base Station Manufacturing Test Solution: includes an S9100AX (S9100A IF Subsystem) and an E7770A Common Interface Unit (CIU), with a Channel Card - No DUT IF and two M1740A mmWave Transceivers	 The diagram shows the hardware for Option RH2. At the top, a rack of three units is shown: the S9100AX IF Subsystem (top), the E7770A Common Interface Unit (middle), and a Channel Card (bottom). Two M1740A mmWave Transceivers are shown below the rack. A red box highlights the connection between the Channel Card and the two transceivers.

B. Select either Option EC1 (embedded) or Option SM1 (external) Controller

Select Option EC1, M9037A PXIe Embedded Controller		
M9037A	PXIe High Performance Embedded Controller: 4-Slot, 3U, Gen 3	
<p>M9037A-M16 PXIe High Performance Embedded Controller with Intel i7-4700EQ quad-core processor, 2.4 GHz, 8-thread, 16 GB RAM is required for 5G NR measurements. Select the M9037A for the best performance if you have memory intensive applications, multiple applications running in parallel, or if a lot of data is sent to the PC from the PXIe chassis. Features removable SSD drive for security and x8 connector from front for connection to second chassis.</p>		

Select Option SM1, M9024A PXIe System Module (use with an External PXIe Controller)		
M9024A	PXIe High Performance System Module with Connectivity Expansion: Dual Port (x16), 3-Slot, 3U, Gen 3	
<p>An external PXIe controller is required with Option SM1. For a list of tested external PXIe controllers that are compatible with the Keysight PXIe chassis and the S9100A, refer to Tested PC and PXI/AXIe Chassis Configurations - Technical Overview, https://literature.cdn.keysight.com/litweb/pdf/5990-7632EN.pdf</p>		

To use Option SM1, M9024A PXIe System Module with an external PXIe controller, a PCIe host adapter and PCIe cable are required:		
M9048B	PCIe Host Adapter: Single Port (x8), Gen 3	
(Alternate) M9049A	PCIe High Performance Host Adapter: Dual Port (x16), Gen 3	
Y1202A	PCIe Cable: x8, 2.0 m	

Software Selection

C. Select measurement application/software & license type

(Optional) Step 1. Add X-Series Measurement Applications (X-App)

Applications that start with the prefix “N” are measurement only applications and require waveform pack licenses for waveform playback.

Applications that start with the prefix “Y” combine measurement applications with unlimited waveform playback capability.

Each of the following license types are offered as **perpetual** (licenses can be used indefinitely) or **time-based** (licenses can be used through the term of the license: 6, 12, 24, or 36 months). For more information, visit: [KeysightCare Software Support Subscriptions, 5992-3419EN](#) and www.keysight.com/find/X-Series_apps

Keysight offers 4 license types for measurement applications.

- **Node-locked:** Allows you to use the license on one specified instrument or computer.
- **Transportable:** Allows you to move the license from one instrument or computer to another using Keysight’s online tool.
- **USB portable:** Allows you to move the license from one instrument or computer to another with a certified USB dongle.
- **Floating:** Allows you to access the license on networked instruments or computers from a server, one at a time.

Model name	Description
N90E1S91A	5G Base Station Manufacturing Test Solution (X-App included with S9100A)
N9085EM0E	5G NR Measurement Application (X-App)
Y9085EM0E	5G NR Waveform and Measurement Application
N9054EM0E	VMA Digital Demodulation Measurement Application
N9054EM1E	VMA Custom OFDM Measurement Application
N9080EM0E	LTE and LTE-Advanced FDD Measurement Application
Y9080EM0E	LTE and LTE-Advanced FDD Waveform and Measurement Application
N9082EM0E	LTE and LTE-Advanced TDD Measurement Application
Y9082EM0E	LTE and LTE-Advanced TDD Waveform and Measurement Application

(Optional) Step 2. Add Signal Studio software ¹

Generate standard-compliant test signals validated by Keysight for receiver and component test.

Model name	Description
N7624EMBC	Signal Studio for LTE and LTE-Advanced/LTE-A Pro FDD, waveform playback
N7625EMBC	Signal Studio for LTE and LTE-Advanced TDD, waveform playback
N7608EMBC	Signal Studio Pro for Custom Modulation, waveform playback
N7630EMBC	Signal Studio Pro for Pre-5G, waveform playback
N7631EMBC	Signal Studio Pro for 5G NR, waveform playback
N7650B	5/50 pack Signal Studio Waveform Licenses

¹: For more information, see the Signal Studio brochure, literature number 5989-6448EN or Signal Studio at: www.keysight.com/find/<product model name>

(Optional) Step 3. Add 89600 VSA Software		
89600 vector signal analysis (VSA) software	89601B (transportable license is standard)	Industry-leading measurement software for evaluating and troubleshooting signals in R&D; PC-based software supporting more than 30 measurement platforms, plus more than 75 signal standards and modulation types including MIMO analysis; www.keysight.com/find/89600_VSA
(Optional) Step 4. Add MATLAB Software ¹		
MATLAB software	N6171A	Create arbitrary waveforms, customize measurement and data analysis routines, create your own instruments applications and test systems, automate measurements, signal generation, and report generation

¹ For more information on MATLAB software, visit www.keysight.com/find/n6171a

Global Warranty

Keysight provides the peace of mind that today's high-tech industry requires. Your investment is protected by Keysight's global reach in more than 100 countries (either directly or through distributors). The warranty gives you convenient standard coverage for the country in which the product is used, eliminating the need to ship equipment back to the country of purchase. Keysight's warranty service provides:

- All parts and labor necessary to return your investment to full specified performance
- Recalibration for products supplied originally with a calibration certificate
- Return shipment

Calibration Services

The 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:

- Keysight S9100A 5G Base Station Manufacturing Test Solution, Startup Guide (literature no. [S9100-90001](#))
- Keysight S9100A 5G Base Station Manufacturing Test Solution, Data Sheet (literature no. [5992-3561EN](#))
- Keysight M9019A PXIe 18 slot Chassis, Data Sheet (literature no. [5992-1481EN](#))
- Keysight M9037A PXIe High Performance Embedded Controller (Option EC1), Data Sheet (literature no. [5991-3661EN](#))
- Keysight M9024A PXIe High Performance System Module (Option SM1), Data Sheet (literature no. [5992-0377EN](#))
- Keysight M9410A and M9411A PXIe VXT Vector Transceivers, Data Sheet (literature no. [5992-3331EN](#))
- Keysight X-Series Measurement Applications, Brochure (literature no. [5989-8019EN](#))
- Keysight Signal Studio Software, Brochure (literature no. [5989-6448EN](#))

Web

Product page:

<http://www.keysight.com/find/solution-5GNR>

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

