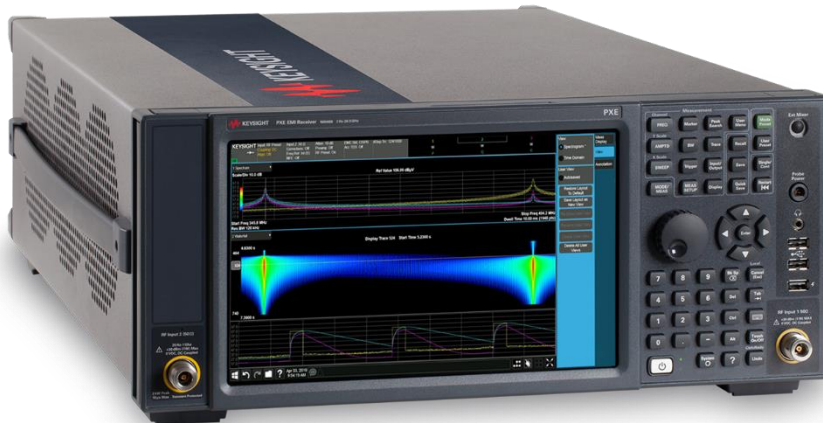


N9048B PXE EMI Receiver

Overview

This configuration guide contains information to help you configure your N9048B PXE EMI receiver to meet your requirements. Ordering optional capabilities at time of purchase provides the lowest overall cost.



Included in the Base Product

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

- Spectrum analyzer measurement application
- EMI receiver measurement application
- Hex-core, high-performance processor, 32 GB RAM, with flash calibration file memory
- High-performance digital signal processing with 2 GB capture memory
- 10 MHz analysis bandwidth
- Fast sweep capability
- Low frequency enabled
- Noise floor extension
- Front panel control for two automatic external line impedance stabilization networks (LISN)
- Enhanced display package with spectrogram, trace zoom, and zone span
- Microsoft Windows 10 operating system
- Multi-touch user interface
- User guides
- Power cord

Step 1. Select maximum frequency range (required option)

| Description | Option number | Additional information |
|-----------------------------------|---------------|------------------------|
| Frequency range, 1 Hz to 3.6 GHz | N9048B-503 | |
| Frequency range, 1 Hz to 8.4 GHz | N9048B-508 | |
| Frequency range, 1 Hz to 26.5 GHz | N9048B-526 | |
| Frequency range, 1 Hz to 44 GHz | N9048B-544 | |

Step 2. Add a preamplifier

| Description | Option number | Additional information |
|-----------------------------------|---------------|--|
| Preamplifier, 100 kHz to 3.6 GHz | N9048B-P03 | Compatible with frequency range option N9048B-503 |
| Preamplifier, 100 kHz to 8.4 GHz | N9048B-P08 | Compatible with frequency range option N9048B-508 |
| Preamplifier, 100 kHz to 26.5 GHz | N9048B-P26 | Compatible with frequency range option N9048B-526 |
| Preamplifier, 100 kHz to 44 GHz | N9048B-P44 | Compatible with frequency range option N9048B-544 |
| Low noise amplifier | Standard | Standard when Option P03, P08, P26 or P44 is installed; licensed as N9048B-LNA |

Step 3. Choose frequency reference

| Description | Option number | Additional information |
|-------------------------------|---------------|---|
| Frequency reference | Standard | Aging rate: $\pm 1 \times 10^{-6}$ /year |
| Precision frequency reference | N9048B-PFR | Reduces frequency drift for more accurate measurements Aging rate: $\pm 1 \times 10^{-7}$ /year |

Step 4. Choose analysis bandwidth

| Description | Option number | Additional information |
|---------------------------|---------------|--|
| 10 MHz analysis bandwidth | Standard | |
| 25 MHz analysis bandwidth | N9048B-B25 | Extends the analysis bandwidth to 25 MHz |
| 40 MHz analysis bandwidth | N9048B-B40 | Extends the analysis bandwidth to 40 MHz |

Step 5. Choose performance options

| Description | Option number | Additional information |
|--|---------------|---|
| Digital processor with 2 GB capture memory | Standard | Licensed as N9048B-DP2 |
| Fast sweep capability | Standard | Improves sweep speed at swept-tune mode; licensed as N9048B-FS1 |
| LO/IM nulling | Standard | Minimizes the LO feed-thru and intermodulation distortion; licensed as N9048B-NUL |
| Noise floor extension | Standard | Improves displayed average noise level (instrument alignment based processes); licensed as N9048B-NF2 |
| Type-N RF connector, female | N9048B-CNF | Choose Type-N RF connector for Input 1 |
| APC 3.5 mm connector, male | N9048B-C35 | Choose 3.5 mm connector for Input 1 (Input 2 remains type-N); compatible with Option 526 only |
| External mixing | N9048B-EXM | Provides external mixing with Keysight and third party mixers; single port for LO out and IF in (SMA female) |
| Wideband digital IF | N9048B-WF1 | Provides wideband digital IF hardware to support Time Domain Scan capabilities; licensed as N9048B-WF1; also enables Option B25 and B40 |

Step 6. Add rear panel output utilities

| Description | Option number | Additional information |
|----------------------------|---------------|--|
| Second IF output | N9048B-CR3 | Wideband IF out; center frequency depends on IF path; output on Aux IF connector at rear panel |
| Y-axis screen video output | N9048B-YAS | Screen video (0-1 volt open circuit) on rear panel analog out |

Step 7. Add security features

| Description | Option number | Additional information |
|--|---------------|--|
| Additional removable solid-state drive (SSD) | N9048B-SS2 | Provides a fully-imaged, removable SSD in addition to the one installed in instruments, with Windows 10 operating system |
| Exclude launch program | N9048B-SF1 | Prevents the launching of Windows programs from the instrument application |
| Prohibit saving results | N9048B-SF2 | Prevents the saving/recall of measurement results or user configurations to/from instrument's data storage |

Step 8. Choose measurement application or software and license type

Note: Keysight offers 4 license types for the measurement applications and instrument features, in 2 license terms: Perpetual or Subscription.

License types:

Node-locked: Allows you to use the license on one instrument/computer at a time

Transportable: Allows you to use the license on one instrument/computer at a time. This license may be transferred to another instrument/computer using Keysight's online tool

Floating: Allows you to access the license on the networked instruments/computers from a server, one at a time. For concurrent access, multiple licenses may be purchased

USB Portable: Allows you to access the license from one instrument/computer to another by end-user only with certified USB dongle, purchased separately

License terms:

Perpetual: License can be used in perpetuity. For perpetual license holders, a separate support contract is required to access Keysight technical support and software updates

Subscription: License is time limited to a defined period, such as 12-months. A valid support contract is included in the pricing for subscription licenses.

For detailed information, we strongly recommend you visit the X-Series measurement application collection page: www.keysight.com/find/xseriesapps

| Description | Option number | Additional information |
|---|---------------|--|
| Spectrum analyzer and IQ analyzer | Standard | Traditional spectrum analysis plus many new and enhanced functions; licensed as N9060ES1E |
| Power Suite | N90EMPSMB | Power measurements based on industry specifications |
| EMI receiver | Standard | Performs EMI conducted and radiated emission measurements; licensed as N6141EM1E |
| Enhance display package | Standard | Includes spectrogram, trace zoom, and zone span; licensed as N90E1EDPB |
| Time domain scan | N9048TDSB | Provides high-overlap FFT scanning for fast signal capture and measurement; requires Option WF1 |
| Wideband time domain scan and real time scan, basic detection | N9048WT1B | Provides Accelerated Time Domain Scan with 350 MHz acquisition bandwidth and gapless Real Time Scan in 170 MHz bandwidth; requires Option WF1 and N9048TDSB |
| Wideband time domain scan and real time scan, optimum detection | N9048WT2B | Provides Accelerated Time Domain scan with 350 MHz acquisition bandwidth and gapless Real Time Scan in 350 MHz bandwidth; requires Option WF1 and N9048TDSB |
| Multi-channel click | N90484CKB | Provides disturbance analyzer (Click) measurements for up to 5 channels in parallel; requires Option WF1 |
| Analog demodulation | N9063EM0E | Adds one-button measurement for AM/FM/PM demodulation with metrics, tune and listen, and AF spectrum; supports audio output (output voltage proportional to frequency deviation). FM Stereo and RDS are included |
| SCPI command language compatibility | N9062EM0E | Adds capability to emulate the R&S ESU, ESR, and ESL EMI receivers |
| External source control | N90EMESCB | Controls EXG, MXG and PSG sources from the front panel of the PXE |

Step 9. Choose accessories

| Description | Option number | Additional information |
|-----------------------------------|---------------|---|
| User guide | Standard | US – English localization All user documentation is included in the PXE's embedded, context-sensitive help system. User documentation can be downloaded from: www.keysight.com/find/pxe_manuals |
| Power cord | Standard | Dependent upon the region of use |
| Adapter, 2.4 mm (F) to 2.9 mm (F) | Standard | Ship standard only for Option 544 |
| Adapter, 2.4 mm (F) to 2.4 mm (F) | Standard | Ship standard only for Option 544 |
| Front panel cover | CV1117A | Protective cover for front panel |
| Rack mount | 1CM113A | Adds rack mount flanges to the PXE |
| Front handles | 1CN103A | Adds front handles to the PXE |
| Rack mount with handles | 1CP105A | Adds rack mount flanges and handles to the PXE |
| Rack slide | 1CR014A | Adds a non-tilting rack slide to the PXE |
| USB DVD-ROM/CD-R/RW drive | 1DVR001A | Enhances the usability of the Windows operating system |
| Mouse, USB interface | 1MSE001A | |

Step 10. Add calibration, technical training, support, and upgrade services

| Description | Option number | Additional information |
|--|---------------|---|
| Commercial calibration certificate with test data | N9048B-UK6 | Calibration certificate only available at time of purchase; only provides measurement results |
| Keysight Calibration + Uncertainties + Guardbanding (accredited calibration) | N9048B-AMG | Provides ISO 17025A accredited calibration from factory; not compatible with Option 544 |
| Service: 1-day start-up assistance | PS-S20-01 | Training on how to operate your instrument effectively (recommended) |
| Calibration Assurance Plan, Return-to-Keysight, 3 years | R-50C-011-3 | |
| Calibration Assurance Plan, Return-to-Keysight, 5 years | R-50C-011-5 | |
| Calibration Assurance Plan, Return-to-Keysight, 7 years | R-50C-011-7 | |
| Calibration Assurance Plan, Return-to-Keysight, 10 years | | |

For more information on accessories go to:

www.keysight.com/find/accessories

Other calibration options may be available; for more information on calibration go to:

www.keysight.com/find/calibration

For more information on training and application support services go to:

www.keysight.com/find/training

Instrument 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. Redeem the certificate through the Web by following the instructions on the certificate
3. Install the license file and latest software in the PXE
4. Begin using the new capability ^{1,2}

Installation and testing information is available at: www.keysight.com/find/pxe_upgrades

1. At the time of manufacture, the hardware related to many of these options was fully adjusted and the option performance was verified to be within its warranted specifications. Within one year of the initial calibration date of the analyzer, this option is fully calibrated with no further adjustment or verification testing.
2. If this analyzer has been adjusted as part of a repair or calibration during its first year, or if the analyzer is more than one year old, additional adjustment and performance verification tests are required to ensure that some newly installed options are functioning properly. However, the completion of these tests does not guarantee that the analyzer meets all warranted specifications.

| Description | Upgrade number | Additional information |
|---|----------------|---|
| Upgrade to the precision frequency reference | N9048BU-PFR | |
| Add preamplifier, 3.6 GHz | N9048BU-P03 | Not compatible with Option 508, 526 or 544; Also enables low noise amplifier |
| Add preamplifier, 8.4 GHz | N9048BU-P08 | Not compatible with Option 503, 526 or 544; also enables low noise amplifier |
| Add preamplifier, 26.5 GHz | N9048BU-P26 | Not compatible with Option 503, 508 or 544; also enables low noise amplifier |
| Add preamplifier, 44 GHz | N9048BU-P44 | Not compatible with Option 503, 508 or 526; also enables low noise amplifier |
| Increase analysis bandwidth to 25 MHz | N9048BU-B25 | |
| Increase analysis bandwidth to 40 MHz | N9048BU-B40 | |
| Add second IF output | N9048BU-CR3 | |
| Add Y-axis screen video output | N9048BU-YAS | |
| Add security features, exclude launch program | N9048BU-SF1 | Prevents the launching of Windows programs from the instrument application |
| Add security features, prohibit saving results | N9048BU-SF2 | Prevents the saving/recall of measurement results or user configurations to/from instrument's data storage |
| Add removable solid-state drive (SSD) | N9048BU-SS1 | Provides additional, removable solid-state drive, with Windows 10 operating system, for PC6/PC6S processor |
| Add removable solid-state drive (SSD) | N9048BU-SS2 | Provides additional, removable solid-state drive, with Windows 10 operating system, for PC8 processor |
| Upgrade to PC8, hex-core, high-performance processor, 32 GB RAM, with flash calibration file memory | N9048BU-PC8 | Upgrade to PC8, hex-core, high-performance processor, 32 GB RAM, with flash calibration file memory and removable solid-state drive |
| Add wideband digital IF | N9048BU-WF1 | Provides wideband digital IF hardware to support Time Domain Scan capabilities; also enables Option B25 and B40 |

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

