CONFIGURATION GUIDE

N9344C/N9343C/N9342C Handheld Spectrum Analyzer (HSA)

Configure your Keysight N934xC* Handheld Spectrum Analyzer (HSA)

This configuration guide will help you determine which performance options, measurement application software, accessories, and services to include with your new Keysight Technologies, Inc. N9344C, N9343C and N9342C HSAs, or to add as upgrades to an existing HSA. This step-by-step process will help you configure your N9344C/N9343C/N9342C HSAs. Capabilities that are listed as standard come with the instrument at no additional charge. Tailor the performance, and service packages to meet your requirements. Ordering optional capabilities at the time of purchase provides the lowest overall cost.

KEYSIGHT TECHNOLOGIES

For performance information, refer to the N9344C/N9343C/N9342C Handheld Spectrum Analyzer Data Sheets. See literature numbers in the Additional Resources section on page 7.

Description	Option number	Additional information
Step 1. Select maximum frequency range (frequency range not upgradable)		
Frequency range, 1 MHz to 20 GHz	N9344C	Tunable to 9 kHz
Frequency range, 1 MHz to 13.6 GHz	N9343C	Tunable to 9 kHz
Frequency range, 100 kHz to 7 GHz	N9342C	Tunable to 9 kHz
Step 2. Add a preamplifier		
Preamplifier, 1 MHz to 20 GHz	N9344C-P20	For N9344C
Preamplifier, 1 MHz to 13.6 GHz	N9343C-P13	For N9343C
Preamplifier, 100 kHz to 7 GHz	N9342C-PA7	For N9342C
Step 3. Add a tracking generator		
Tracking generator, 5 MHz to 7 GHz	N934xC-TG7	Output level –20 dBm to 0 dBm, 1 dB step
Step 4. Add a cable and antenna tester		
Cable and antenna test, 5 MHz to 7 GHz	N9342C-CA7	• Exclusive to the N9342C HSA. • Offers return loss, VSWR, cable loss, and distance-to-fault (DTF). • Requires the tracking generator module (Option TG7). • Requires N9311X-201 precision mechanical calibrator (3-in-1 OSL). • Recommended accessories include N9311X-585 phase stable cable type N(m) to DIN(f), N9311X-586 phase stable cable type N(m) to N(f), and N9311X-547 adapter type N(m) to DIN(f).
Step 5. Add a GPS receiver		
GPS receiver, with built-in antenna	N934xC-GPS	Provides information on longitude, latitude, and altitude. An optional external antenna N934xC-GPA can be ordered.
Step 6. Add optional measurement features		
Spectrum monitor	N934xC-SIM	Adds spectrogram view, record, playback, and audio alert. Great tool for spectrum monitoring and interference analyzing.
Channel scanner	N934xC-SCN	Allows the user to easily measure channel power of multiple channels and export data to mapping applications like Google Earth and MapInfo.
Task planner	N934xC-TPN	Reduces test setup time by 95%, delivers test automation and consistency, and makes it easy to capture test results, generate reports, and share task plans with others. Find more information at www.keysight.com/find/taskplanner.
U2000 Series USB power sensor support	N934xC-PWM	Requires the Keysight U2000 Series USB power sensor.
U2020/2040 X-Series USB peak and average power sensor support	N934xC-PWP	Requires the Keysight U2020/2040 X-Series USB peak and average power sensor.
Security features	N934xC-SEC	Low-level and non-recoverable formatting of user memory and USB/LAN port control
EMI filters and quasi-peak detector	N934xC-EMC	Provides CISPR compliant resolution bandwidth (200 Hz, 9 kHz, 120 kHz and 1 MHz) and quasi-peak detector for basic EMI precompliance test.
Baseband input	N9342C-BB1	Exclusive to the N9342C HSA. Offers improved RF performance below 12 MHz.

Description	Option number	Additional information
AM/FM modulation analysis	N934xC-AMA	Provides modulation metrics, including carrier power, modulation rate, and AM depth/FM deviation.
ASK/FSK modulation analysis	N934xC-DMA	Provides modulation metrics, including carrier power, ASK depth/index, and FSK deviation.
Time-gated spectrum analysis	N934xC-TMG	Measures any one of several signals separated in time, or excludes periodic interfering signals.
Step 7. Add an accessory		
Spare battery	N934xC-BAT	Lithium ion, 10.8 V, 4.56 A-hr
Spare external battery charger	N934xC-BCG	
Spare AC/DC adapter	N934xC-ADP	1 output: 15 V, 5.33 A
Automotive 12 V DC adapter and charger	N934xC-1DN	Provides DC power supply and power charging
Hard transit case	N934xC-1TC	
Adaptor, 50 to 75 Ω	N934xC-TAD	Type N(m) 50 Ω to type N(f) 75 Ω
Ergonomic soft carrying case with backpack and shoulder strap	N934xC-SCC	
External GPS antenna	N934xC-GPA	SMA-M connector
Calibrator	N9311x-201	Precision mechanical calibrator, 3-in-1 OSL, DC to 7 GHz, N(m)
Antenna	N9311x-500	70 to 1000 MHz, 65 g, 180 degree tilt angle adjustable, N(m) telescopic whip antenna
Antenna	N9311x-501	700 to 2500 MHz, 70 g, 210 mm x 20 mm, omni-directional, N(m)
Antenna	N9311x-504	700 MHz to 4 GHz, 4 dBi gain, 270 g, 340 mm x 200 mm x 25 mm, logarithmic-periodic, N(m)
Antenna	N9311x-508	680 MHz to 8 GHz, 5 dBi gain, 250 g, 340 mm x 200 mm x 25 mm, logarithmic-periodic, N(m)
Antenna	N9311x-518	680 MHz to 18 GHz, 5 dBi gain, 250 g, 340 mm x 200 mm x 25 mm, logarithmic-periodic, N(m)
Bandpass filter	N9311x-550	• 3 dB passband 880 to 915 MHz • Rejection ≥ 35 dBc at 826 MHz, ≥ 36 dBc at 932 MHz • Insertion loss ≤ 1 dB • VSWR ≤ 1.5
Bandpass filter	N9311x-551	• 3 dB passband 880 to 915 MHz • Rejection ≥ 35 dBc at 826 MHz, ≥ 36 dBc at 932 MHz • Insertion loss ≤ 1 dB • VSWR ≤ 1.5
Bandpass filter	N9311x-552	• 3 dB passband 1707.5 to 1787.5 MHz • Rejection ≥ 35 dBc at 1550 MHz, ≥ 35 dBc at 1925 MHz • Insertion loss ≤ 0.4 dB • VSWR ≤ 1.5
Bandpass filter	N9311x-553	• 3 dB passband 1845 to 1915 MHz • Rejection ≥ 35 dBc at 1770 MHz, ≥ 35 dBc at 1986 MHz • Insertion loss ≤ 0.6 dB

Description	Option number	Additional information
		• VSWR ≤ 1.5
Bandpass filter	N9311x-554	• 3 dB passband 1910 to 1990 MHz • Rejection ≥ 35 dBc at 1825 MHz, ≥ 35 dBc at 2070 MHz, • Insertion loss ≤ 0.6 dB • VSWR ≤ 1.5
Adapter	N9311x-540	Type-N(m) to BNC(f), DC to 2 GHz
Adapter	N9311x-541	Type-N(m) to SMA(f), DC to 12.4 GHz
Adapter	N9311x-542	Type-N(f) to 7/16 DIN(f), DC to 7.5 GHz
Adapter	N9311x-543	Type-N(f) to BNC(m), DC to 4 GHz
Adapter	N9311x-544	Type-N(f) to 7/16 DIN(m), DC to 7.5 GHz
Adapter	N9311x-545	Type-N(f) to SMA(m), DC to 12.4 GHz
Adapter	N9311x-546	Type-N(f) to Type-N(f), DC to 18 GHz
Adapter	N9311x-547	Type-N(m) to DIN(f), DC to 7.5 GHz
Cable	N9311x-580	Phase stable, 1.5 m, N(m) to N(m)
Cable	N9311x-581	Phase stable, 3 m, N(m) to N(m)
Cable	N9311x-582	1.5 m, SMA(m) to SMA(m)
Cable	N9311x-583	1.5 m, BNC(m) to BNC(m)
Cable	N9311x-585	Phase stable, 1.5 m, N(m) to DIN(f)
Cable	N9311x-586	Phase stable, 1.5 m, N(m) to N(f)
Attenuator	N9311x-560	40 dB, N(m) to N(f), 10 watts average
Attenuator	N9311x-561	40 dB, N(m) to N(f), 50 watts average
Attenuator	N9311x-562	40 dB, N(m) to N(f), 100 watts average
Step 8. Add calibration service		
Select Keysight calibration plan		
Commercial calibration certificate with test data	N934xC-UK6	Keysight provides a commercial calibration certification; only available at time of purchase; provides measurement results.
3-year calibration assurance plan (return to Keysight)	R-50C-011-3	Priority calibration service covering all calibration costs for 3 years; 15% cheaper than buying stand-alone calibrations.
5-year calibration assurance plan	R-50C-011-5	Priority calibration service covering all calibration costs for 5 years; 20% cheaper than buying stand-alone calibrations.

Instrument Upgrades

Upgrade your existing Keysight N934xC (HSA)

Keysight provides a fast upgrade process for performance options that do not require additional hardware.

1. Place an order for the upgrade with Keysight and ask to receive the option upgrade entitlement certificate through email.
2. Redeem the certificate through the Web by following the instructions on the certificate.
3. Install the license file and latest software on the N934xC.
4. Begin using the new capability.

Installation, calibration, and verification information is available at:

- For N9344C, it is www.keysight.com/find/N9344C_upgrades
- For N9343C, it is www.keysight.com/find/N9343C_upgrades
- For N9342C, it is www.keysight.com/find/N9342C_upgrades

Description	Option number	Additional information
Instrument upgrades		
Preamplifier, 1 MHz to 20 GHz	N9344CK-P20	For N9344C
Preamplifier, 1 MHz to 13.6 GHz	N9343CK-P13	For N9343C
Preamplifier, 100 kHz to 7 GHz	N9342CK-PA7	For N9342C
GPS receiver, with built-in antenna	N934xCK-GPS	Provides information on longitude, latitude, and altitude.
Spectrum monitor	N934xCK-SIM	Adds spectrogram view, record, playback and audio alert. Great tool for spectrum monitoring and interference analyzing.
Channel scanner	N934xC-SCN	Allows the user to easily measure channel power of multiple channels and export data to mapping applications like Google Earth and MapInfo.
Task planner	N934xCK-TPN	Reduces test setup time by 95%, delivers test automation and consistency, and makes it easy to captures test results, generate reports and share task plans with others. Find more information at www.keysight.com/find/taskplanner.
U2000 Series USB power sensor support	N934xCK-PWM	Requires the Keysight U2000 Series USB power sensor.
U2020/2040 X-Series USB peak and average power sensor support	N934xCK-PWP	Requires the Keysight U2020/2040 X-Series USB peak and average power sensor.
Security features	N934xCK-SEC	Low-level and non-recoverable formatting of user memory and USB/LAN port control.
AM/FM modulation analysis	N934xCK-AMA	Provides modulation metrics, including carrier power, modulation rate, and AM depth/FM deviation.
ASK/FSK modulation analysis	N934xCK-DMA	Provides modulation metrics, including carrier power, ASK depth/index, and FSK deviation.

Description	Option number	Additional information
Time-gated spectrum analysis	N934xCK-TMG	Measures any one of several signals separated in time, or excludes periodic interfering signals.
Baseband input	N9342CK-BB1	Exclusive to the N9342C HSA. Offers improved RF performance below 12 MHz. To install this option upgrade, the N9342C HSA must have the digital board with S/N starting with “N934463012”. The digital board S/N can be viewed at the System menu, [Shift], [System], {System Info}, {Show System}.
EMI filters and quasi-peak detector	N934xCK-EMC	Supports basic EMI precompliance test
Cable and antenna test, 5 MHz to 7 GHz	N9342CK-CA7, or N9342CK-CAU	Exclusive to the N9342C HSA. Requires the tracking generator module (Option TG7). If Option TG7 is not installed on the N9342C, please order both N9342CK-TG7 and N9342CK-CA7. Otherwise please check the TG module S/N: If the TG module S/N starts with “N934263004”, please order N9342CK-CA7. If the TG module S/N starts with “N934263003”, please order N9342CK-CAU. TG module S/N can be viewed at the System menu, [Shift], [System], {System Info}, {Show System}. Requires N9311X-201 precision mechanical calibrator (3-in-1 OSL). Recommended accessories include N9311X-585 phase stable cable type N(m) to DIN(f), N9311X-586 phase stable cable type N(m) to N(f), and N9311X-547 adapter type N(m) to DIN(f).

Hardware Upgrades

Add additional accessories to your existing Keysight N934xC (HSA)

Description	Option number	Additional information
Hardware upgrades		
Tracking generator, 5 MHz to 7 GHz	N934xCK-TG7	Output level –20 to 0 dBm, 1 dBm step
Spare battery	N9910X-870	Lithium ion, 11.1 V, 4.6 A-hr
Spare external battery charger	N934xCK-BCG	
Spare AC/DC adapter	N934xCK-ADP	1 output: 15 V, 5.33 A
Automotive 12 V DC adapter and charger	N934xCK-1DN	Provides DC power supply and power charging
Hard transit case	N934xCK-1TC	
Adaptor, 50 to 75 Ω	N934xCK-TAD	Type N(m) 50 to type N(f) 75 Ω
Ergonomic soft carrying case with backpack and shoulder strap	N934xCK-SCC	
External GPS antenna	N934xCK-GPA	SMA-M connector

Other Information

Description	
Connectivity (standard)	
1 USB 2.0 type A port, female	N934xC behaves like a primary controller, USB 2.0 compatible port.
1 USB 2.0 type-mini AB port, female	N934xC behaves like a secondary device, USB 2.0 compatible port.
10 Base-T LAN interface	
HSA PC software	An easy-to-use, PC-based remote control tool for your N9344C/N9343C/N9342C handheld spectrum analyzer (HSA).
Instrument weight and dimensions	
Dimensions (W x H x D)	318 mm x 207 mm x 69 mm (12.5 in x 8.15 in x 2.7 in)
Weight (with battery)	3.6 kg (7.9 lbs)
Hard transit case weight and dimensions	
Dimensions (W x H x D)	560 mm x 460 mm x 270 mm
Weight (empty)	7.7 kg (16.9 lbs)
Standard shipped items	
N934xC HSA	
RoHS addendum	
USB cable	
Battery Li-Ion	
Screwdriver	
Help kit CD	
Ear phone	
AC/DC power supply	
Quick start tutorial	

Additional Resources

Related Keysight literature

Publication	
Publication number	**Publication title**
5990-7199EN	Keysight N9344C Handheld Spectrum Analyzer Data Sheet
5990-7193EN	Keysight N9343C Handheld Spectrum Analyzer Data Sheet
5990-5587EN	Keysight N9342C Handheld Spectrum Analyzer Data Sheet

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