SELECTION GUIDE

Power Meters and Power Sensors

KEYSIGHT TECHNOLOGIES

Peak power measurement

8990B peak power analyzer

- 5 ns rise time/fall time
- 160 MHz VBW
- 100 MSa/s sampling rate
- 2 RF channels and 2 oscilloscope channels
- 15 inch XGA color and touchscreen display

N8262A P-Series modular power meters

- 1U half-rack size
- 100 MSa/s continuous sampling, single-shot 30 MHz VBW
- Wireless presets include WLAN, radar and MCPA
- Code-compatible with N1912A P-Series power meter

N1911A/2A P-Series power meters

- 100 MSa/s continuous sampling, single-shot 30 MHz VBW
- Includes time-gated and statistical (CCDF) power measurements
- Wireless presets include WiMAX™, HSDPA and DME

E4416A/7A EPM-P Series power meters

- 20 MSa/s continuous sampling, 5 MHz VBW
- Bundled analyzer software for pulse and statistical analysis
- Wireless presets include GSM, *Bluetooth*® and W-CDMA

Average power measurement

N1913A/14A EPM Series power meters

- Single, dual or four-channel measurements
- Frequency range of 9 kHz to 110 GHz; power range of –70 dBm to +44 dBm (depending on power sensor)
- Fast measurement speed of 400 readings/s
- Code-compatible with legacy E4418B/9B EPM Series, 436A, 437B and 438A power meters (43X compatibility only with option N191xA-200)

N432A thermistor power meters

- High Accuracy (≤ 0.2% ± 0.5 uW), excellent for 1 mW transfer calibration (with 478A-H75/H76)
- Built-in 6.5-digit ADC eliminates the need for an external DMM
- Digital color LCD display and user-friendly interface

Portable power measurement

V3500A handheld RF power meter

- Broad 10 MHz to 6 GHz frequency range
- Wide dynamic range (–60 dBm to +20 dBm)
- Absolute accuracy up to ± 0.21 dB
- Built-in display with backlight and integrated power sensor
- Internal power reference enables self-calibration before use
- 3-ways power up capability (via AA batteries, USB interface, and AC power adaptor)

U2000 Series USB power sensors

- –60 dBm to +44 dBm, 9 kHz to 26.5 GHz average power measurements without power meters
- Quick and easy set up with USB connectivity
- Internal zeroing without disconnecting from device under-test

U8480 Series USB thermocouple power sensors

- DC to 18/33/50/67/120 GHz –35 dBm to +20 dBm
- Measurement speed of 900 readings/second and power linearity of < 0.8%
- Real time measurement uncertainty feature

U2020 X-Series USB peak and average power sensors

- –40 dBm to +20 dBm (peak/gated), –45 dBm to 20 dBm (average only mode), 50 MHz to 18/40/50 GHz
- 25,000 readings/second measurement speed (buffer mode)
- Internal zero and calibration
- Built-in trigger in/trigger out

U2040/53/63 and L2050/60 X-Series USB/LAN wide dynamic range power sensors

- 50000 readings/second (fast/buffered mode)
- USB sensors
- 10 MHz to 6/18 GHz
- –70 dBm to +26 dBm
- LAN sensors
- 10 MHz to 6/33 GHz
- –70 dBm to +20/26 dBm

Power sensors

Peak and average power sensors

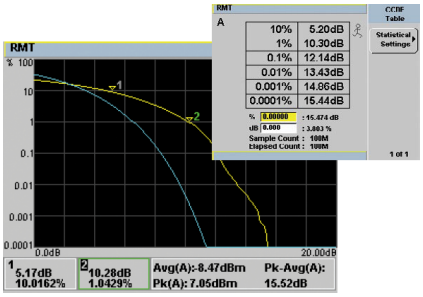
- N1921A/22A P-Series power sensors
- N1923A/24A wideband power sensors
- E9320 E-Series power sensors

Average power sensors

- E4410, E9300 E-Series power sensors
- N8480 Series thermocouple power sensors
- 848xD Series, E/V/W8486A diode power sensors
- 478A thermistor power sensors

Key Features

Designed for manufacturing

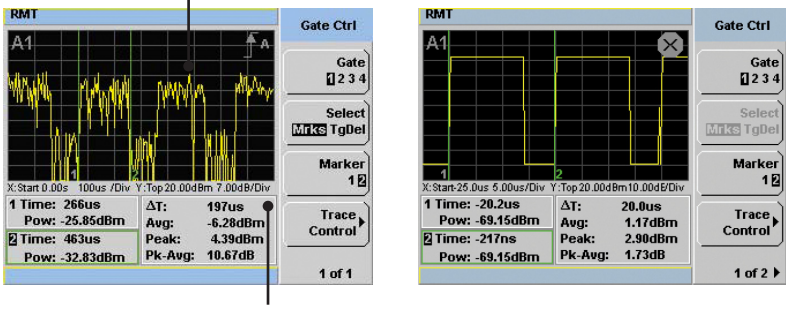


- Up to 100 MSa/s sampling rate and 1500 readings/s for high productivity with P-Series power meters
- Achieve super-fast measurement speed of 50,000 readings/s for higher manufacturing throughput with U2040/53/63 and L2050/60 X-Series wide dynamic range power sensors
- Code-compatible with legacy power meter so you save time and effort in developing new codes
- Backward-compatible with all legacy power sensors to protect sensor investment
- Wide selection of average and peak power sensors for various applications
- CCDF statistical measurement in graphical and tabular formats for wireless component manufacturing

Designed for R&D

- Calibration factors in EEPROM ensures accurate measurements
- Intuitive user interface enables quick setup time
- Graphical representation of delta measurements eases visualization and analysis
- Trace zoom helps in investigating glitches, overshoot, and rise/fall time
- Enable faster and easier testing with built-in wireless and radar presets for common
- signals such as DME, GSM, EDGE, WCDMA, WLAN and LTE

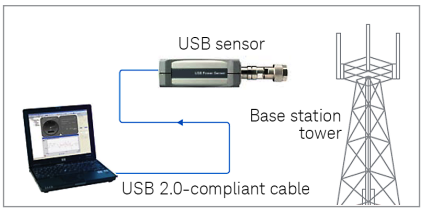
100 MSa/s continuous sampling
ensures signal glitches are not missed



Time-gated peak, average and peak-to-average ratio power measurements

Designed for installation and maintenance and remote measurements

- Light weight and palm size V3500A and the U2040/53/63 X-Series, U2020 X-Series, U8480 Series and U2000 Series USB power sensors bring greater convenience in field tasks
- Lightweight U2049XA and L2050/60 X-Series LAN power sensor for remote operation via LAN network



When you need to take power measurements on the road or up a base station tower, smaller, lighter and fewer is better. With Keysight Technologies, Inc. USB/LAN power sensors, the only other thing you'll need is a laptop with BenchVue BV0007B Power Meter/Sensor Control and Analysis App.

Aerospace and Defense applications

- The 8990B peak power analyzer (5ns rise/fall time), the U2020 X-series peak and average power sensors (13ns rise/fall time), and the N1911/2A P-series power meters with the N1921/22A peak power sensors (13ns rise/fall time) allow you to capture pulsed radar signals and evaluate several power and waveform parameters: peak, min, average, and peak-to-average ratio power, rise time, fall time, pulse width, pulse period, duty cycle, time to positive occurrence, and time to negative occurrence time.
- The U2049XA LAN power sensor with Option TVA is meticulously designed by selecting components with minimum outgassing properties. The sensor is also subject to temperature cycling in a vacuum chamber to stabilize the materials and to remove outgassing particles.

Wireless applications

- The U2040/53/63 and L2050/60 X-Series USB/LAN power sensors have wide dynamic ranges (96/90 dB) and make very fast measurements (50000 readings/second). Both these power sensors and the N1911/2A P-Series power meters with the N1921/22A power sensors allow you to easily set up and make the measurements with built-in wireless presets for common signals such as DME, GSM, EDGE, WCDMA, WLAN and LTE. You can also make CCDF statistical measurements in graphical and tabular formats.
- The 8990B peak power analyzer is a combination of high performance power meter and oscilloscope. It has two RF channels and two oscilloscope channels. You can easily evaluate the power added efficiency (PAE) of power amplifiers by capturing the input and output RF signals with the RF channels and the DC voltage and current with the oscilloscope channels and showing each data over time with multiple traces on the display.
- The 8990B peak power analyzer with the N1923A/24A power sensors can measure the peak power of modulated signals up to 160 MHz like IEEE802.11ac.

Calibration lab applications

- The N432A thermal power meter with the 478A thermistor mount sensors provides metrology-class accuracy for instrument calibration.

Various average power measurement solutions

- U8480 series USB thermocouple sensors have wide frequency ranges, In particular, the U8489A covers DC to 120 GHz. The power calibration of broadband RF/uW measurements such as network analyzers can be performed with a single connection of the U8480 series.
- The 8486 waveguide power sensors with N1913/14A EPM power meter offer power measurements to microwave and millimeter waveguide banded applications.
- The U2041/43/53 and L2051/52/53XA USB/LAN power sensors have the widest dynamic range of 96 dB and achieve very fast measurements at 50000 readings/second and meet various power measurement needs in both R&D and manufacturing applications.
- The classic power meter and power sensor configuration with the N1913A/14A EPM power meters with the E9300 E-series power sensors fit rack and stack style test systems.

Power Measurement Software for Simplified Data Capture

BenchVue software

The Keysight BenchVue software for the PC accelerates testing by providing intuitive, multi instrument measurement visibility and data capture with no programming necessary. You can derive answers faster than ever by easily viewing, capturing and exporting measurement data and screenshots.

The Power Meter/Sensor Control and Analysis App (BV0007B) for BenchVue enables control of power meters and power sensors to data log and visualize measurements in a wide array of display formats. It can control multiple meters/sensors from a single instance. Calibrations can be done fast with software buttons. Presets allow quick analysis of power levels of industry standard communications signals. Trial licenses can be started with one-click using the button to the left. Licenses may be purchased from Keysight or directly from your preferred Keysight Distributor. This app supports Keysight's USB/LAN power sensors and some power meters. Measurement Display options include:

- **Digital Meter View:** Displays precise and exact reading (up to 4 decimal points) measured by the instrument
- **Analog Meter View:** Displays measured reading in analog form for easier visualization of large measurement differences
- **Strip Chart:** Displays measured reading in a graphical form (Power/time)
- **CCDF View:** Displays the Complementary Cumulative distribution function
- **Trace View:** Displays traces of modulated signal
- **Multilist View:** Displays multiple power measurements

Key features and specifications

- Control and setup your Power meters and sensors
- Setup all necessary parameters for your critical measurements
- Control multiple power meters/sensors from one instance of the software
- Log and view measurement data in the format you need:
  - With 6 different display types seeing what you care about has never been easier or more flexible
- Export results in three clicks:
  - Export data quickly to popular tools such as Matlab and Microsoft Excel or Word for documentation or further analysis.

Supported models

- U2021XA, U2022XA, U2041XA, U2042XA, U2043XA, U2044XA, U2049XA, U2053XA, U2063XA, L2051XA, L2052XA, L2053XA, L2061XA, L2062XA, L2063XA, U2000A, U2000B, U2000H, U2001A, U2001B, U2001H, U2002A, U2004A
- U8481A, U8485A, U8487A, U8488A, U8489A
- N1911A, N1912A, N1913A, N1914A
- N8262A

Highlights

- Visualize multiple measurements simultaneously
- Easily log data, screen images and system state
- Recall past state of your bench to replicate results
- Fast measurement data export in desired formats
- Quickly access manuals, drivers, FAQs and videos
- Monitor and control your bench from mobile devices

Power Meters Selection Chart for Wireless Communication

Peak power measurement

EPM-P E4416A/17A (VBW: 5 MHz)

Power sensor options

- E932x Peak-and-Average Sensors (300 kHz, 1.5 MHz, 5 MHz)
- * Also compatible with all average power sensors

P-Series N1911A/12A (VBW: 30 MHz)

U2020 X-Series USB power sensors (VBW: 30 MHz)

P-Series modular N8262A (VBW: 30 MHz)

Power sensor options for the P-Series meters

- N1921A/22A Wideband Sensors (30 MHz)
- E932x Peak-and-Average Sensors (300 kHz, 1.5 MHz, 5 MHz)
- * Also compatible with all average power sensors

U2042/44/49/63 and L2061/62/63XA X-Series USB/LAN power sensors (VBW: 5 MHz)

8990B peak power analyzer (VBW: 160 MHz)

Power sensor options

- N1923A/24A Wideband Sensors (150 MHz)
- N1921A/22A Wideband Sensors (30 MHz)

Average power measurement

EPM N1913A/14A

Power sensor options
- 848xD Diode Sensors
- N848x Thermocouple Sensors
- 8486 Waveguide Sensors
- E441x 1-Path Diode CW-only Sensors
- E930x 2-Path Diode True-Average Sensors
- USB Sensors

N432A thermistor power meter

Power sensor options
- 478A and 8478B Thermistor Sensor

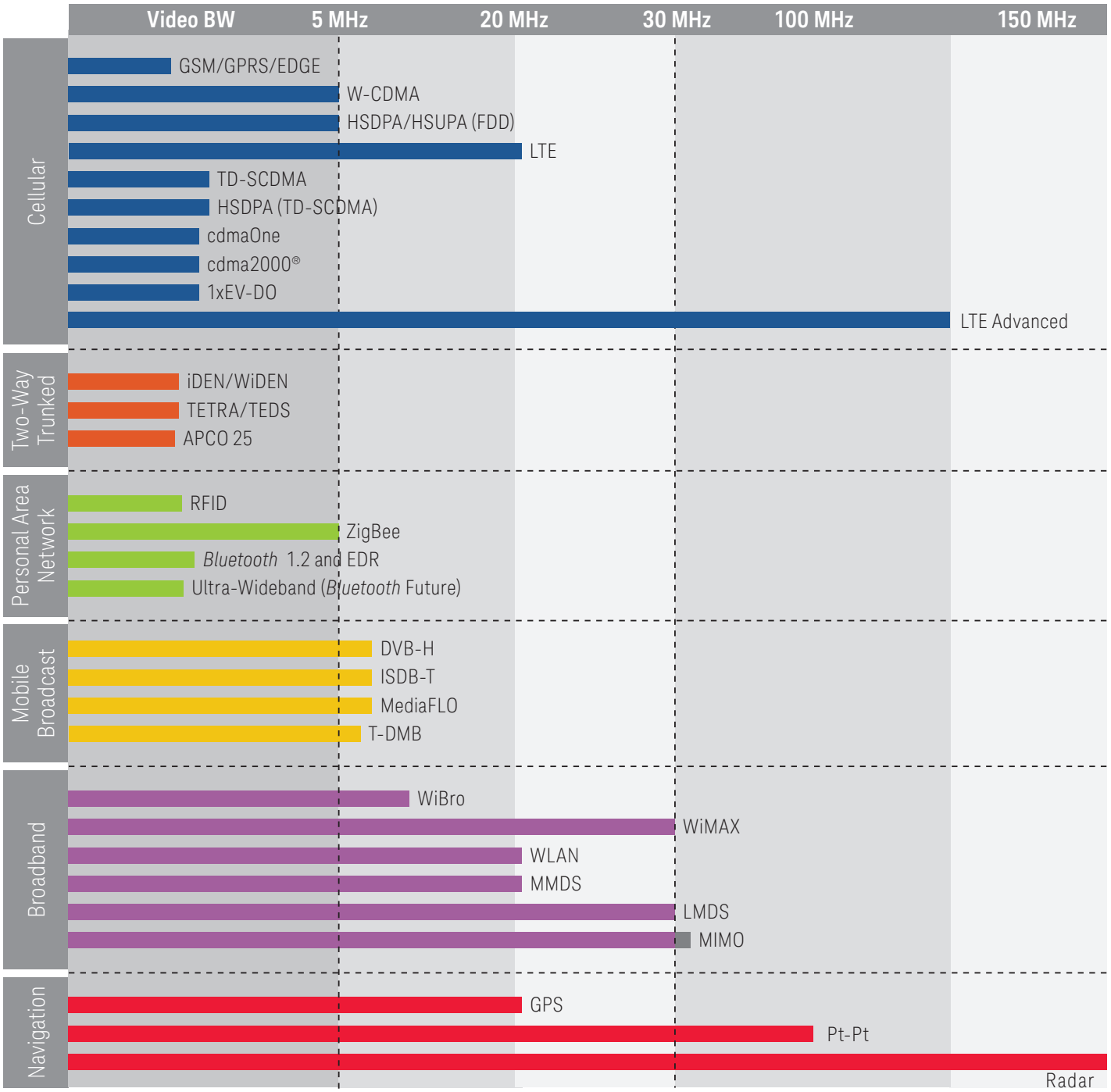
U8480 Series USB thermocouple power sensors

U2000 Series USB power sensors

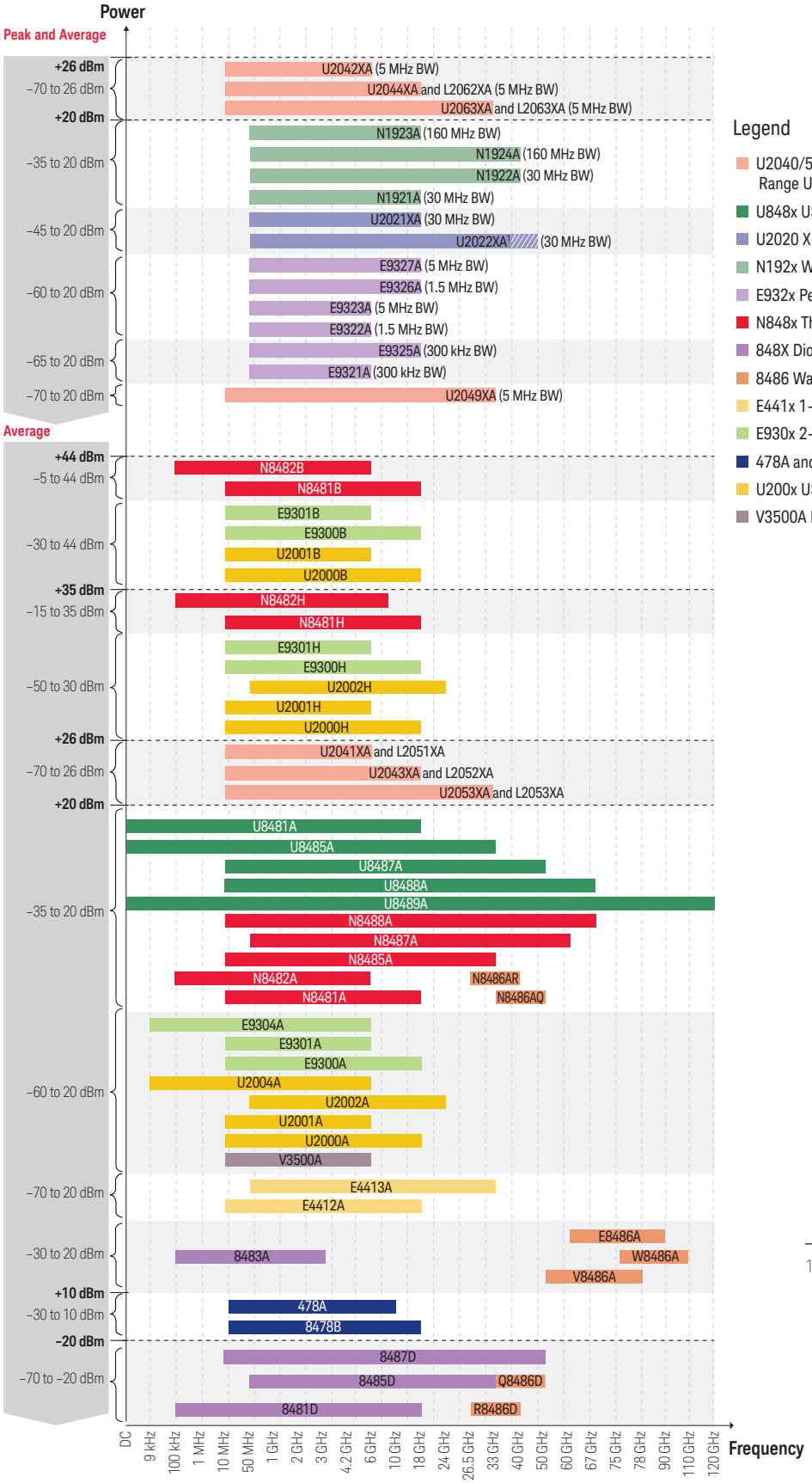
U2041/43/53 and L2051/52/53XA X-Series USB/LAN power sensors

V3500A handheld RF power meter

Power Meters Selection Chart for Wireless Communication (Continued)



Power Sensors Selection Chart



Legend

- U2040/53/63 and L2050/60 X-Series Wide Dynamic Range USB/LAN Power Sensors
- U848x USB Thermocouple Power Sensors
- U2020 X-Series USB Peak and Average Power Sensors
- N192x Wideband Sensors
- E932x Peak-and-Average Sensors
- N848x Thermocouple Sensors
- 848X Diode and Thermocouple Sensors
- 8486 Waveguide Sensors
- E441x 1-Path Diode CW-only Sensors
- E930x 2-Path Diode True-Average Sensors
- 478A and 8478B Thermistor Sensors
- U200x USB Sensors
- V3500A Handheld RF Power Meter

1. With Option H50, warranted specifications to +8 dBm only from 40 GHz to 50 GHz. Options 1A7/A6J/UK6 are not available with Option H50. Refer to the U2020XA datasheet or the Option H50 product note, U2022-90001 for more information.

Power Meters and Sensors Compatibility Table

			POWER METERS							
			N432A	N1913A/14A	N1911A/12A N8262A P-Series	8990B	E4416A/17A EPM-P	Product description/ Sensor tech.	Frequency range	Power range
POWER SENSORS	U2040/53/53 and L2050/60 X-Series wide dynamic range power sensors	U2041XA	–	√[2]	–	√[1]	–	Diode Power Sensor	10 MHz to 6 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		U2042XA	–	√[2]	–	√[1]	–	Diode Power Sensor	10 MHz to 6 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		U2043XA	–	√[2]	–	√[1]	–	Diode Power Sensor	10 MHz to 18 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		U2044XA	–	√[2]	–	√[1]	–	Diode Power Sensor	10 MHz to 18 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		U2049XA	–	√[2]	–	–	–	Diode Power Sensor	10 MHz to 33 GHz	–70 dBm (100 pW) to +20 dBm (100 mW)
		U2053XA	–	√[2]	–	√[1]	–	Diode Power Sensor	10 MHz to 33 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		U2063XA	–	√[2]	–	√[1]	–	Diode Power Sensor	10 MHz to 33 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		L2051XA	–	–	–	√[1]	–	Diode Power Sensor	10 MHz to 6 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		L2052XA	–	–	–	√[1]	–	Diode Power Sensor	10 MHz to 18 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		L2053XA	–	–	–	√[1]	–	Diode Power Sensor	10 MHz to 33 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		L2061XA	–	–	–	√[1]	–	Diode Power Sensor	10 MHz to 6 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		L2062XA	–	–	–	√[1]	–	Diode Power Sensor	10 MHz to 18 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
		L2063XA	–	–	–	√[1]	–	Diode Power Sensor	10 MHz to 33 GHz	–70 dBm (100 pW) to +26 dBm (398 mW)
	U8480 Series USB thermocouple sensors	U8481A	–	√	–	√[1]	–	Thermocouple Power Sensor	DC/10 MHz to 18 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		U8485A	–	√	–	√[1]	–	Thermocouple Power Sensor	DC/10 MHz to 33 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		U8487A	–	√	–	√[1]	–	Thermocouple Power Sensor	10 MHz to 50 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		U8488A	–	√	–	√[1]	–	Thermocouple Power Sensor	10 MHz to 67 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		U8489A	–	√	–	√[1]	–	Thermocouple Power Sensor	DC MHz to 120 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
	U2020 X-Series USB sensors	U2021XA	–	–	–	√[1]	–	Diode Power Sensor	50 MHz to 18 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		U2022XA	–	–	–	√[1]	–	Diode Power Sensor	50 MHz to 40 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
	Wideband power sensors	N1923A	–	–	√	√	–	Diode Power Sensor	50 MHz to 18 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		N1924A	–	–	√	√	–	Diode Power Sensor	50 MHz to 40 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
	P-Series Wideband sensors	N1921A		–	√	√	–	Diode Power Sensor	50 MHz to 18 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		N1922A	–	–	√	√	–	Diode Power Sensor	50 MHz to 40 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
	E-Series Peak-and-Average sensors	E9321A	–	–	√	–	√	Diode Power Sensor	50 MHz to 6 GHz	–65 dBm (320 pW) to +20 dBm (100 mW)
		E9322A	–	–	√	–	√	Diode Power Sensor	50 MHz to 6 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
		E9323A	–	–	√	–	√	Diode Power Sensor	50 MHz to 6 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
		E9325A	–	–	√	–	√	Diode Power Sensor	50 MHz to 18 GHz	–65 dBm (320 pW) to +20 dBm (100 mW)
		E9326A	–	–	√	–	√	Diode Power Sensor	50 MHz to 18 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
		E9327A	–	–	√	–	√	Diode Power Sensor	50 MHz to 18 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
	E-Series True Average sensors	E9300A	–	√	√	–	√	Diode Power Sensor	10 MHz to 18 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
		E9301A	–	√	√	–	√	Diode Power Sensor	10 MHz to 6 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
		E9304A	–	√	√	–	√	Diode Power Sensor	9 kHz to 6 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
		E9300B	–	√	√	–	√	Diode Power Sensor	10 MHz to 18 GHz	–30 dBm (1 µW) to +44 dBm (25 W)
		E9301B	–	√	√	–	√	Diode Power Sensor	10 MHz to 6 GHz	–30 dBm (1 µW) to +44 dBm (25 W)
		E9300H	–	√	√	–	√	Diode Power Sensor	10 MHz to 18 GHz	–50 dBm (10 nW) to +30 dBm (1 W)
		E9301H	–	√	√	–	√	Diode Power Sensor	10 MHz to 6 GHz	–50 dBm (10 nW) to +30 dBm (1 W)
	E-Series CW-only sensors	E4412A	–	√	√	–	√	Diode Power Sensor	10 MHz to 18 GHz	–70 dBm (100 pW) to +20 dBm (100 mW)
		E4413A	–	√	√	–	√	Diode Power Sensor	50 MHz to 26.5 GHz	–70 dBm (100 pW) to +20 dBm (100 mW)
	N8480/8480 Series Thermocouple and Diode sensors	N8481A	–	√	√	–	√	Thermocouple Power Sensor	10 MHz to 18 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		N8482A	–	√	√	–	√	Thermocouple Power Sensor	100 kHz to 6 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		8483A 75 ohms	–	√	√	–	√	Thermocouple Power Sensor	100 kHz to 2 GHz	–30 dBm (1 µW) to +20 dBm (100 mW)
		N8485A	–	√	√	–	√	Thermocouple Power Sensor	10 MHz to 26.5 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		N8487A	–	√	√	–	√	Thermocouple Power Sensor	50 MHz to 50 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)
		N8488A	–	√	√	–	√	Thermocouple Power Sensor	10 MHz to 67 GHz	–35 dBm (316 nW) to +20 dBm (100 mW)

1. Requires BenchVue Power Meters/Sensors Control and Analysis App software.
2. Available in average mode only.

For the complete list of sensor options, please visit our Web site at **www.keysight.com/find/powermeters**.

Power Meters and Sensors Compatibility Table (Continued)

			POWER METERS							
			N432A	N1913A/14A	N1911A/12A N8262A P-Series	8990B	E4416A/17A EPM-P	Product description/Sensor Tech.	Frequency range	Power range
POWER SENSORS	N8480/8480 Series Thermocouple and Diode sensors	N8481B	–	√	√	–	√	High Power Thermocouple Sensor	10 MHz to 18 GHz	–5 dBm (316 µW) to +44 dBm (25 W)
		N8482B	–	√	√	–	√	High Power Thermocouple Sensor	100 kHz to 6 GHz	–5 dBm (316 µW) to +44 dBm (25 W)
		N8481H	–	√	√	–	√	High Power Thermocouple Sensor	10 MHz to 18 GHz	–15 dBm (32 µW) to +35 dBm (3 W)
		N8482H	–	√	√	–	√	High Power Thermocouple Sensor	100 kHz to 6 GHz	–15 dBm (32 µW) to +35 dBm (3 W)
		8481D	–	√	√	–	√	Diode Power Sensor	10 MHz to 18 GHz	–70 dBm (100 pW) to –20 dBm (10 µW)
		8485D	–	√	√	–	√	Diode Power Sensor	50 MHz to 26.5 GHz	–70 dBm (100 pW) to –20 dBm (10 µW)
		8487D	–	√	√	–	√	Diode Power Sensor	50 MHz to 50 GHz	–70 dBm (100 pW) to –20 dBm (10 µW)
	Waveguide sensors	R8486D	–	√	√	–	√	Waveguide Power Sensor	26.5 GHz to 40 GHz	–70 dBm (100 pW) to –20 dBm (10 µW)
		Q8486D	–	√	√	–	√	Waveguide Power Sensor	33 GHz to 50 GHz	–70 dBm (100 pW) to –20 dBm (10 µW)
		N8486AR	–	√	√	–	√	Thermocouple Waveguide Power Sensor	26.5 GHz to 40 GHz	–35 dBm (316 µW) to +20 dBm (100 mW)
		N8486AQ	–	√	√	–	√	Thermocouple Waveguide Power Sensor	33 GHz to 50 GHz	–35 dBm (316 µW) to +20 dBm (100 mW)
		V8486A	–	√	√	–	√	V-band Power Sensor	50 GHz to 75 GHz	–30 dBm (1 µW) to +20 dBm (100 mW)
		W8486A	–	√	√	–	√	Waveguide Power Sensor	75 GHz to 110 GHz	–30 dBm (1 µW) to +20 dBm (100 mW)
		E8486A	–	√	√	–	√	E-band Power Sensor	60 GHz to 90 GHz	–30 dBm (1 µW) to +20 dBm (100 mW)
	Thermistor mount sensors	478A	√	–	–	–	–	Coaxial Thermistor Mount	10 MHz to 10 GHz	–30 dBm (1 µW) to +10 dBm (10 mW)
		8478B	√	–	–	–	–	Coaxial Thermistor Mount	10 MHz to 10 GHz	–30 dBm (1 µW) to +10 dBm (10 mW)
	USB average sensors	U2000A	–	√	–	√[1]	–	Diode Power Sensor	10 MHz to 18 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
		U2001A	–	√	–	√[1]	–	Diode Power Sensor	10 MHz to 6 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
		U2002A	–	√	–	√[1]	–	Diode Power Sensor	50 MHz to 24 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
		U2004A	–	√	–	√[1]	–	Diode Power Sensor	9 kHz to 6 GHz	–60 dBm (1 nW) to +20 dBm (100 mW)
		U2000B	–	√	–	√[1]	–	Diode Power Sensor	10 MHz to 18 GHz	–30 dBm (1 µW) to +44 dBm (25 W)
		U2001B	–	√	–	√[1]	–	Diode Power Sensor	10 MHz to 6 GHz	–30 dBm (1 µW) to +44 dBm (25 W)
		U2000H	–	√	–	√[1]	–	Diode Power Sensor	10 MHz to 18 GHz	–50 dBm (10 nW) to +30 dBm (1 W)
		U2001H	–	√	–	√[1]	–	Diode Power Sensor	10 MHz to 6 GHz	–50 dBm (10 nW) to +30 dBm (1 W)
		U2002H	–	√	–	√[1]	–	Diode Power Sensor	50 MHz to 24 GHz	–50 dBm (10 nW) to +30 dBm (1 W)

1. Requires BenchVue Power Meters/Sensors Control and Analysis App software.

For the complete list of sensor options, please visit our Web site at **www.keysight.com/find/powermeters**.

Related Keysight Literature

Publication title	Publication number
Brochures	
Power Meters and Power Sensors - Brochure	5989-6240EN
Specifications	
N432A Thermistor Power Meter - Data Sheet	5990-5740EN
N8262A P-Series Modular Power Meter and Power Sensors - Data Sheet	5989-6605EN
N1911A/N1912A P-Series Power Meters and N1921A/N1922A Wideband Power Sensor – Data Sheet	5989-2471EN
U2000 Series USB Power Sensors - Data Sheet	5989-6278EN
E4416A/E4417A EPM-P Series Power Meters and E-Series E9320 Peak and Average Power Sensors – Data Sheet	5980-1469E
N1913A and N1914A EPM Series Power Meters E-Series and 8480 Series Power Sensors – Data Sheet	5990-4019EN
N8480 Series Thermocouple Power Sensors - Data Sheet	5989-9333EN
V3500A Handheld RF Power Meter – Data Sheet	5990-5483EN
8990B Peak Power Analyzer and N1923A/N1924A Wideband Power Sensors - Data Sheet	5990-8126EN
U2020 X-Series USB Peak and Average Power Sensors - Data Sheet	5991-0310EN
U8480 Series USB Thermocouple Power Sensors - Data Sheet	5991-1410EN
Waveguide Power Sensors - Data Sheet	5991-3676EN
U2040 X-Series Wide Dynamic Range Power Sensors - Data Sheet	5992-0040EN
Application notes	
Choosing the Right Power Meter and Sensor - Application Note	5968-7150E
Fundamentals of RF and Microwave Power Measurements (Part 1) - Application Note	5988-9213EN
Fundamentals of RF and Microwave Power Measurements (Part 2) - Application Note	5988-9214EN
Fundamentals of RF and Microwave Power Measurements (Part 3) - Application Note	5988-9215EN
Fundamentals of RF and Microwave Power Measurements (Part 4) - Application Note	5988-9216EN
P-Series Wideband Power Sensors - Application Note	5989-6509EN
N1911A/N1912A P-Series Power Meters For WiMAX™ Signal Measurements - Application Note	5989-6423EN
4 Steps for Making Better Power Measurements - Application Note	5965-8167E
EPM-P Series Power Meters used in Radar and Pulse Applications - Application Note	5988-8522EN
Compatibility of USB Power Sensors with Keysight Instruments - Application Note	5989-8743EN
N1918A Radar Pulse Measurement - Application Note	5990-3415EN
MIMO Measurement Tips with Keysight P-Series Power Meters and U2000 Series USB Power Sensors - Application Note	5990-3546EN
P-Series and EPM-P Power Meters for Bluetooth Testing - Technical Overview	5989-8459EN
Maximizing Measurement Speed using P-Series Power Meters - Application Note	5989-7678EN
Using Linux To Control U2000 Series USB Power Sensor - Application Note	5989-8744EN

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