

Data Sheet

Handheld Spectrum Analyzers

Models 2650 and 2658



Features and Benefits

- Channel power measurement
- Adjacent channel power measurement
- Occupied bandwidth measurement
- Electric field strength measurement (with optional dipole antennas)
- Magnetic field strength measurement (with optional magnetic field probe)
- Min/Max hold
- Average and overwrite mode
- Marker measurement
- Switchable 50 or 75 ohm input impedance
- Peak search
- Auto tuning
- Auto range
- Save/Load
- Hard copy of display (with optional printer accessory)
- cUL approved

The 2650 and 2658 are high-performance handheld spectrum analyzers providing excellent performance and functions perfect for many different applications. It is a compact, lightweight and cost-effective unit that is ideal for testing W-CDMA, CDMA, GSM, PDC, PHS, Wireless LAN and Bluetooth systems.

Many different accessories are available for use with the 2650 and 2658 spectrum analyzers, which may be necessary for your application. These accessories include a wide selection of dipole antennas, a magnetic field probe, printer, PC software, and coaxial cable and adapter kits.

| Model | 2650 | 2658 |
|-----------------|------------------|------------------|
| Frequency Range | 50 kHz - 3.3 GHz | 50 kHz - 8.5 GHz |

Specifications

| Specifications | |
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| Frequency Section | |
| Frequency Range | 50 kHz to 3.3 GHz (2650) 50 kHz to 8.5 GHz (2658) |
| Center Frequency | |
| Setting resolution | 100 kHz |
| Accuracy | within $\pm(30+20T)$ kHz ± 1 dot T: Sweep time(s) (frequency span: 200 kHz to 10 MHz, RBW: 30 kHz, 23 ± 5 °C) within $\pm(100+700T)$ kHz ± 1 dot T: Sweep time(s) (2650) (frequency span: 20 MHz to 3.3 GHz (2650), RBW: 100 kHz, 23 ± 5 °C) within $\pm(60+300T)$ kHz ± 1 dot T: Sweep time(s) (2658) (frequency span: 20 MHz to 8.5 GHz (Model 2658), RBW: 100 kHz, 23 ± 5 °C) |
| RBW frequency error | within $\pm 6\%$ of RBW (RBW: 3 kHz, 30 kHz) within $\pm 30\%$ of RBW (RBW: 100 kHz to 3 MHz) |
| Frequency Span | |
| Setting range | 0 Hz(zero span), 200 kHz to 2 GHz (2650) (1-2-5step) or 200 kHz to 5 GHz (2658) (1-2-5step), and 3.3 GHz (full span/ 2650) or 8.5 GHz (full span/ 2658) |
| Accuracy | within $\pm 3\% \pm 20T$ kHz ± 1 dot (frequency span: 200 kHz to 10 MHz, 23 ± 5 °C) within $\pm 3\% \pm 200T$ kHz ± 1 dot (frequency span: 20 MHz to 3.3 GHz (2650), 20 MHz to 8.5 GHz (2658) 23 ± 5 °C) T: Sweep time(s) |
| Display resolution | Frequency span/250 Frequency span/1000 (only measurement by RS-232C communication) |
| Display dot number | 251 dots, 1001 dots (only measurement by RS-232C communication) (The unit displays data in 251 horizontal dots, but it internally captures the trace in 1001 dots) |
| Resolution bandwidth | 3 dB bandwidth |
| Setting range | 3 kHz to 3 MHz(1-3step) and AUTO |
| Accuracy | within $\pm 20\%$ |
| Selectivity | 1:12 (typical, 3 dB : 60 dB) |
| Video bandwidth | 100Hz to 1MHz(1-3step), and AUTO |
| SSB phase noise | -90 dBc/Hz (typical, 100 kHz offset, RBW: 3 kHz, VBW: 100 Hz, Sweep time: 0.3s) |
| Spurious response | less than -60 dBc |
| Harmonics | less than -40 dBc (100 MHz to 3.3GHz/2650), (100 MHz to 8.5 GHz/2658) |
| Amplitude Section | |
| Reference level | |
| Setting range | + 10 to -60 dBm (1 dB step) |
| Accuracy | within ± 0.8 dB ± 1 dot, (center frequency: 100 MHz, RBW: 3 MHz, VBW: 1 MHz, ATT: 0 dB, 23 ± 5 °C) dBm, dBV, dBmV, dB μ V, dB μ V/m, dB μ A/m |
| Unit | (dB μ V/m and dB μ A/m using the measuring function) |
| Average noise level | -110 dBm (typical, center frequency: 100 MHz, RBW: 3 kHz, VBW: 100 Hz) |
| Frequency Characteristic | within ± 2.0 dB ± 1 dot (100 kHz to 100 MHz) within ± 1.0 dB ± 1 dot (100 MHz to 3.3 GHz/2650), (100 MHz to 8.5 GHz/2658) |
| Input impedance | 50 Ω |
| Input VSWR | less than 2.0 |
| Input Attenuator | |
| Operating range | 0 to 25 dB (1 dB step), coupled with reference level |
| Switching error | within ± 0.6 dB |
| RBW switching error | within ± 0.6 dB |
| Display dot number | 200 dots |
| Display Scale | |
| Scale | 10 dB/div, 2 dB/div |
| Accuracy | within ± 0.8 dB/10 dB ± 1 dot, within ± 0.2 dB/2 dB ± 1 dot, within ± 1.6 dB/ 70 dB ± 1 dot |
| Input damage level | +23 dBm(CW average power), 25 VDC |

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| Sweep Section | |
| Sweep time | |
| Setting range | 10 ms to 30 s (1-3 step, frequency span: 0 to 2 GHz) and AUTO, 30 ms to 30 s (1-3 step, frequency span: full span) and AUTO (2650) 30 ms to 30 s (1-3 step, frequency span: 5 GHz) and AUTO (2658) |
| Accuracy | within $\pm 0.1\% \pm 1$ dot (frequency span: 0 to 2 GHz) (2650), within $\pm 0.1\% \pm 1$ dot (frequency span: 0 to 5 GHz) (2658), within $\pm 1.5\% \pm 1$ dot (frequency span: full span) (2650), within $\pm 2.5\% \pm 1$ dot (frequency span: full span) (2658) |
| Trigger mode | AUTO(frequency span: zero span) |
| Detection mode | Positive peak, Negative peak, Sample (When sweep time is 10 ms or 30 ms, only Sample can be set) |
| Functions | |
| Marker | NORM: displays frequency (7 digits max) and level (4 digits max) at marker point. DELTA: displays differential frequency and level between 2 markers. |
| Peak search | NORM: searches a peak point within 10 div. Available NEXT peak (10 max). ZONE: searches a peak point within a zone designated by center and width. Marker moves to a peak point each sweep. |
| Calculation | NORM, MAX HOLD, MIN HOLD, AVERAGE, OVER WRITE MAX/MIN HOLD: 2 to 1024 times, AVERAGE: 2 to 256 |
| Measuring | Channel power, Adjacent channel leakage power, Occupied frequency bandwidth, Electric field strength (needs antenna), Magnetic field strength (needs optional magnetic field probe) measurement. |
| AUTO tuning | When pushing AUTO TUNE key, the maximum level spectrum within 3.3 GHz (2650), 8.5 GHz (2658) bandwidth is adjusted to center, and reference level, RBW, VBW and sweep time are adjusted to optimum values. |
| Save/Load | |
| Save | Saves 100 traces and 100 setups |
| Load | Loads 1 trace and 1 setup |
| General | |
| Input connector | SMA(I) |
| Communication Interface | RS-232C |
| Baud rate | 2400 to 38400 bps |
| Hard copy | Allows direct hard copy with an optional printer. |
| Display | LCD |
| Backlight | CFL backlight |
| Resolution | 240 (V) x 320 (H) dots |
| Battery | Ni-MH battery (optional) |
| External DC source | DC jack, +4.75 to +5.25 VDC/4 A |
| Operating temperature | 0 to 40 °C (Guaranteed at 23 ± 10 °C, without soft carrying case) |
| Operating humidity | less than 40 °C/80% RH(Guaranteed at less than 33 °C /70% RH, without soft carrying case) |
| Storage temperature | -20 to 60°C, less than 60°C/70%RH |
| Dimensions | 162 (W) x 70 (H) x 260 (D) mm (exclude projections and stand) |
| Weight | approx. 1.8 kg (include battery), approx. 1.5 kg (without battery) |
| Two Year Warranty | |
| Supplied Accessories | AC adapter (BC 2650), Soft carrying case (LC 2650), Accessory pouch, Operating manual, Ni-MH Battery (BP 2650) |
| Optional Accessories: | Dipole antennas (AN 301, AN 302, AN 303, AN 304, AN 305, AN 306), Magnetic field probe (PR 26M) with a dedicated double shielded coaxial cable, PC software (AK 2650), Printer (PT 2650) with AC adapter, 4pcs of AA batteries, and roll paper, Roll paper refill (PX 2650) for optional printer PT 2650 (10 rolls), 1 GHz coaxial adapter kit for RF test instru- ments (CT 2701), Deluxe spectrum accessory kits (CC265 and CC560) |



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Как с нами связаться

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