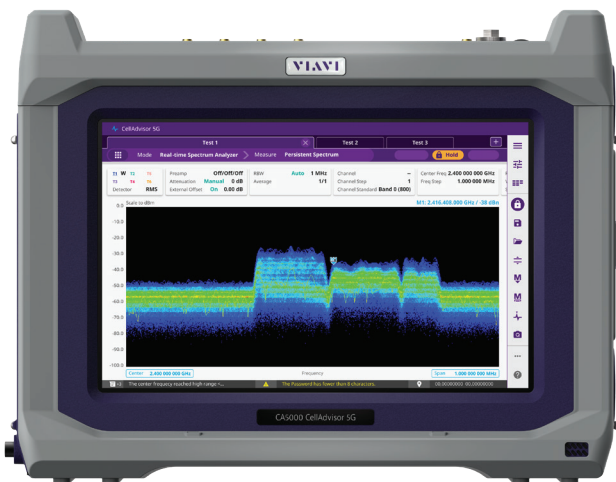


Data Sheet

VIAVI CellAdvisor 5G

Option F030 and F044 Specifications

VIAVI CellAdvisor™ 5G is the ideal field portable solution to validate 5G radio access.



Portable Real-Time Contiguous Spectrum Analyzer:

9 kHz to 30 GHz

9 kHz to 44 GHz

Support for 5G NR Demodulation and Beamforming Analysis

Signal Analysis Bandwidth up to 100 MHz

Cable and antenna analysis up to 6 GHz*

RF source*

OTDR test for fronthaul, DAS and C-RAN***

Interference hunting with InterferenceAdvisor software

Specification** Conditions

- CA5000 specifications apply under these conditions:
 - The instrument has been turned on for at least 15 minutes
 - The instrument is operating within a valid calibration period
 - Data with no tolerance are considered typical values
 - Typical and nominal values are defined as:
 - Typical: An average value of 80% performance of production units
 - Nominal: a general, descriptive term or parameter

* Requires a CAA module. Refer to CAA06M Data Sheet

**All specifications are subject to change without notice

*** Requires OTDR Module. Refer to 4100-Series OTDR Modules and DWDM OTDR Module datasheets

Spectrum Analyzer (Standard)

Frequency and time specifications

| Option | Frequency range |
|-------------|-----------------|
| Option F030 | 9 kHz to 30 GHz |
| Option F044 | 9 kHz to 44 GHz |

Frequency reference

| | | |
|-------------------|---|----------------------|
| Accuracy | ±0.05 ppm (0 to 50°C (32 to 122°F)) + aging | |
| Accuracy with GPS | ±25 ppb | GPS lock |
| | ±50 ppb | Hold over (72 hours) |
| Aging | ±0.5 ppm/year | |
| | ±25 ppb with GPS | |

Frequency readout accuracy (start, stop, center, marker)

\pm (readout frequency x frequency reference accuracy + RBW centering + 0.5 x horizontal resolution + 2 Hz)

horizontal resolution = frequency span/trace #, RBW centering = 15% x RBW

Frequency span

| | |
|--------------------|--|
| Range | 0 Hz (zero span), 9 kHz to max frequency of each option |
| Resolution | 1 Hz |
| Accuracy | \pm (2 x RBW centering + horizontal resolution) |
| Sweep time readout | The time required to complete a sweep from start to finish, including tuning, data acquisition and process |

Trace update

| | | Nominal |
|--|--------------|------------------------------|
| | 15 trace/sec | Span= 260 MHz RBW 100 kHz |

Sweep time

| | | Nominal |
|----------|---|-----------|
| Range | 0.4 ms to 1000 s 24 μ s to 200 s | zero span |
| Accuracy | \pm 2 % | zero span |
| Type | Continuous, Single | |
| Mode | Gated sweep (requires option S015), Normal, Fast | |

Trigger

| | |
|----------------|---------------------------|
| Trigger source | Free run, Video, External |
| Trigger delay | Range: 0 to 200 s |
| | Resolution: 6 μ s |

Resolution bandwidth (RBW)

| | | Nominal |
|----------|---------------|-------------------------------------|
| Range | 1 Hz to 3 MHz | - 3 dB bandwidth 1-3-10 sequence |
| Accuracy | \pm 10% | |

Video bandwidth (VBW)

| | | Nominal |
|----------|---------------|-------------------------------------|
| Range | 1 Hz to 3 MHz | - 3 dB bandwidth 1-3-10 sequence |
| Accuracy | \pm 10% | |

Amplitude accuracy and range specifications

| Amplitude range | | |
|---|--|----------------------------|
| Measurement range | 9 kHz to 18.5 GHz: DANL to +25 dBm | |
| | >18.5 GHz to 30 GHz: DANL to +20 dBm (Option 030) | |
| | >18.5 GHz to 44 GHz: DANL to +20 dBm (Option 044) | |
| Input attenuator range | 9 kHz to 18.5 GHz: 0 to 55 dB in 5 dB steps | |
| | >18.5 GHz to 30 GHz: 0 to 50 dB in 5 dB steps (Option 030) | |
| | >18.5 GHz to 44 GHz: 0 to 50 dB in 5 dB steps (Option 044) | |
| Preamplifier | | |
| Frequency range | Nominal | |
| | 10 MHz to 30 GHz (Option 030) | |
| | 10 MHz to 44 GHz (Option 044) | |
| Gain | 20 dB | |
| Max RF input operating level | | |
| | 9 kHz to 18.5 GHz: +25 dBm, ± 50 VDC | Average CW power |
| | >18.5 GHz to 30 GHz: +20 dBm, ± 50 VDC (Option 030) | Average CW power |
| | >18.5 GHz to 44 GHz: +20 dBm, ± 50 VDC (Option 044) | Average CW power |
| Display range | | |
| Log/Linear scale | 10 divisions | |
| | 1 to 20 dB/Division in 1 dB | |
| Scale units | dBm, dBV, dBmV, dB μ V, V, mV, W, mW | |
| Reference level | | |
| Range | -150 to +100 dBm | |
| Resolution | Log scale: 0.1 dB | |
| | Linear scale: 1 % of reference level | |
| Trace | | |
| Detectors | Normal, Positive peak, Negative peak, Sample, Average (RMS) | |
| Number of traces | 6 | |
| States | Clear/write, Maximum hold, Minimum hold, Capture, Load, Blank, Trace math, Trace info | |
| Functions | Time expired maximum hold and minimum hold, Trace math, Trace info | |
| Marker | | |
| Type | Normal, Delta, Delta pair, Marker table | |
| Number of markers | 6 | |
| Functions | Noise marker | |
| Marker to -> | Peak, Next peak, Next peak right, Next peak left, Min search, Always peak Center, Start, Stop | |
| Audio beep | Tone change with signal strength | |
| Marker table | Display 6 markers | |
| Absolute amplitude accuracy | | |
| Preamplifier off: input signal \geq -50 dBm, auto-coupled, 15-minute warm-up | | |
| Preamplifier on: -90 dBm < input signal < -50 dBm with >10 MHz frequency range, auto-coupled, 15-minute warm-up | | |
| 250 kHz to 6 GHz | ± 1.0 dB, ± 0.5 dB (T) | 20 to 30°C (68 to 86°F) |
| | ± 2.0 dB, ± 1.2 dB (T) | -10 to 55°C (14 to 131°F) |
| >6 GHz to 18.5 GHz | ± 1.5 dB, ± 0.5 dB (T) | 20 to 30°C (68 to 86°F) |
| | ± 2.5 dB, ± 1.2 dB (T) | -10 to 55°C (14 to 131°F) |

| | | |
|--|------------------------------------|---------------------------|
| >18.5 GHz to 30 GHz (Option 030) | ± 1.5 dB, ± 0.8 dB (T) | 20 to 30°C (68 to 86°F) |
| | ± 3.0 dB, ± 1.5 dB (T) | -10 to 55°C (14 to 131°F) |
| >18.5 GHz to 44 GHz (Option 044) | ± 1.5 dB, ± 0.8 dB (T) | 20 to 30°C (68 to 86°F) |
| | ± 3.0 dB, ± 1.5 dB (T) | -10 to 55°C (14 to 131°F) |
| Input VSWR | Nominal | |
| 10 MHz to 22 GHz: 1.5:1 | 10 dB Attenuation with Normal Mode | |
| >22 GHz to 30 GHz: 1.7:1 (Option 030) | | |
| >22 GHz to 44 GHz: 1.7:1 (Option 044) | | |

Dynamic range specifications

Displayed average noise level (DANL)

1 Hz RBW, 1 Hz VBW, 50 Ω termination, 0 dB attenuation, RMS detector

| | | | |
|--|------------------------------------|------------------------|----------------|
| High Linear Mode (Preamplifier Off) | 10 MHz to 8.0 GHz | -134 dBm, -139 dBm (T) | |
| | >8.0 GHz to 14.7 GHz | -130 dBm, -135 dBm (T) | |
| | >14.7 GHz to 18.5 GHz | -128 dBm, -134 dBm (T) | |
| | >18.5 GHz to 22.5 GHz | -125 dBm, -130 dBm (T) | |
| | >22.5 GHz to 30.0 GHz (Option 033) | -117 dBm, -122 dBm (T) | |
| | >22.5 GHz to 32.0 GHz (Option 044) | -117 dBm, -122 dBm (T) | |
| | >32.0 GHz to 40.0 GHz (Option 044) | -110 dBm, -117 dBm (T) | |
| | >40.0 GHz to 44.0 GHz (Option 044) | -105 dBm, -112 dBm (T) | |
| Normal Mode (Preamplifier Off) | 10 MHz to 8.0 GHz | -137 dBm, -141 dBm (T) | |
| | >8.0 GHz to 14.7 GHz | -134 dBm, -138 dBm (T) | |
| | >14.7 GHz to 18.5 GHz | -131 dBm, -137 dBm (T) | |
| | >18.5 GHz to 30.0 GHz (Option 033) | -133 dBm, -137 dBm (T) | |
| | >18.5 GHz to 32.0 GHz (Option 044) | -133 dBm, -137 dBm (T) | |
| | >32.0 GHz to 40.0 GHz (Option 044) | -130 dBm, -137 dBm (T) | |
| | >40.0 GHz to 44.0 GHz (Option 044) | -125 dBm, -133 dBm (T) | |
| Preamplifier on | 10 MHz to 8.0 GHz | -158 dBm, -161 dBm (T) | Preamp 1 |
| | >8.0 GHz to 14.7 GHz | -155 dBm, -158 dBm (T) | Preamp 1 |
| | >14.7 GHz to 18.5 GHz | -150 dBm, -153 dBm (T) | Preamp 1 |
| | >18.5 GHz to 30.0 GHz | -158 dBm, -161 dBm (T) | Preamp 1 |
| | >18.5 GHz to 32.0 GHz (Option 044) | -158 dBm, -161 dBm (T) | Preamp 1 |
| | >32.0 GHz to 44.0 GHz (Option 044) | -148 dBm, -152 dBm (T) | Preamp 1 |
| | 10 MHz to 8.0 GHz | -163 dBm, -166 dBm (T) | Preamp 1 and 2 |
| | >8.0 GHz to 14.7 GHz | -160 dBm, -163 dBm (T) | Preamp 1 and 2 |
| | >14.7 GHz to 18.5 GHz | -157 dBm, -160 dBm (T) | Preamp 1 and 2 |
| | >18.5 GHz to 30.0 GHz | -158 dBm, -163 dBm (T) | Preamp 1 and 2 |
| | >18.5 GHz to 32.0 GHz (Option 044) | -158 dBm, -163 dBm (T) | Preamp 1 and 2 |
| | >32.0 GHz to 44.0 GHz (Option 044) | -155 dBm, -160 dBm (T) | Preamp 1 and 2 |

Dynamic range specifications continued

| Second harmonic distortion | | | |
|---|--|-------------------|---|
| | 10 MHz to 30.0 GHz | <-75 dBc, Typical | Input -30 dBm, Peak detector, High Linearity Mode |
| | >30.0 GHz to 32.0 GHz (Option 044) | <-75 dBc, Typical | |
| | >32.0 GHz to 44.0 GHz (Option 044) | <-72 dBc, Typical | |
| Third-order inter-modulation (third-order intercept: TOI) | | | |
| | 10 MHz to 8.0 GHz | +16 dBm, Typical | High Linearity Mode |
| | >8.0 GHz to 18.5 GHz | +20 dBm, Typical | |
| | >18.5 GHz to 22.0 GHz | +15 dBm, Typical | |
| | >22.0 GHz to 30.0 GHz (Option 030) | +20 dBm, Typical | |
| | >22.0 GHz to 44.0 GHz (Option 044) | +20 dBm, Typical | |
| Spur free dynamic range | | | |
| 2/3 (TOI-DANL) in 1 Hz RBW | >105 dB, 107 dB (T) | | @ 2 GHz |
| Spurious | | | |
| Inherent residual response | Input terminated, 0 dB attenuation, Preamp off Sweep Tuned: 10 kHz RBW, 1 kHz VBW, RMS detector, Normal Mode Real time: 30 kHz RBW, 30 kHz VBW, Peak detector, Span= 100 MHz, Normal Mode | | |
| | <p>9 kHz to 6 GHz</p> <p>Sweep tuned: -90 dBm Typical</p> <p>Exceptions: -90 dBm @ 202.424 MHz, 283.394 MHz, 364.359 MHz @ 407.316 MHz, 2174.864 MHz</p> <p>-85 dBm @ 3095.6 MHz</p> <p>Real time: -75 dBm Typical</p> <p>Exceptions: -70 dBm @ 5386 MHz</p> <p>Notice Spurs: -80 dBm @ 2909 MHz</p> | | |
| | <p>>6 GHz to 18.5 GHz</p> <p>Sweep tuned: -85 dBm Typical</p> <p>Notice spurs: -90 dBm @ 6.163 GHz, 10.665 GHz, 14.220 GHz</p> <p>Real time: -70 dBm Typical</p> | | |
| | <p>>18.5 GHz to 30.0 GHz</p> <p>Sweep tuned: -85 dBm Typical</p> <p>Notice Spurs: -90 dBm @ 19.750 GHz</p> <p>Real time: -70 dBm Typical</p> | | |
| | <p>>30.0 GHz to 33.0 GHz (Option 044)</p> <p>Sweep tune: -85 dBm Typical</p> <p>Real time: -70 dBm Typical</p> | | |
| | <p>>33.0 GHz to 44.0 GHz (Option 044)</p> <p>Sweep tune: -85 dBm Typical</p> <p>Real time: -65 dBm Typical</p> | | |

| | | |
|--|--|--|
| Input-related spurious | 0 dB attenuation, Preamp off Sweep tuned: Peak detector, Span < 1 GHz, 1 kHz RBW, 100 Hz VBW, Normal Mode, carrier offset > 5 MHz | |
| | 9 kHz to 18.5 GHz Sweep tuned: -70 dBc | -25 dBm Input signal Typical |
| | >18.5 GHz to 30.0 GHz Sweep tuned: -65 dBc | -30 dBm input signal Typical |
| | >18.5 GHz to 33.0 GHz (Option 044) Sweep tuned: -65 dBc | -30 dBm input signal Typical |
| >33.0 GHz to 44.0 GHz (Option 044) Sweep tuned: -60 dBc | -30 dBm input signal Typical | |
| | | |
| LO feedthrough to input | 9 kHz to 18.5 GHz: <-80 dBm >18.8 GHz to 30 GHz: <-70 dBm (Option 030) >18.5 GHz to 44 GHz: <-70 dBm (Option 044) | |
| Single sideband (SSB) phase noise | | |
| | -102 dBc/Hz, -105 dBc/Hz (T) @ 10 kHz offset -106 dBc/Hz, -109 dBc/Hz (T) @ 100 kHz offset -117 dBc/Hz, -120 dBc/Hz (T) | @ 1GHz, Input level -18 dBm, RMS detector, Normal Mode |
| Measurements | | |
| Channel power | Channel power | |
| | Spectral density | |
| | PAR (Peak to average ratio) | |
| Occupied bandwidth | Occupied bandwidth | |
| | Integrated power | |
| | Occupied power | |
| | x dB bandwidth | |
| Spectrum emission mask | Reference power | |
| | Peak level at defined range | |
| | Reference power | |
| | Peak level at defined range | |
| Adjacent channel power (ACP) | Reference power | |
| | Absolute power at defined frequency offset | |
| | Relative power at defined frequency offset | |
| Multi-ACP (Adjacent channel power) | Reference power at lowest defined frequency | |
| | Reference power at highest defined frequency | |
| | Absolute power at defined frequency offset | |
| | Relative power at defined frequency offset | |
| Spurious emissions | Peak power at defined range | |
| | Frequency of peak power at defined range | |
| Total harmonic distortion | Power level at each harmonic | |
| | % of THD | |
| Field strength | Field strength power at markers | |

RF Power Meter (Standard)

| General parameters | |
|--------------------------|---|
| Display range | -100 to +100 dBm |
| Offset range | 0 to 60 dB |
| Resolution | 0.01 dB or 0.1 x W (x = m, μ, p) |
| Internal RF power sensor | |
| Frequency range | Option F030: 10 MHz to 30 GHz |
| | Option F044: 10 MHz to 44 GHz |
| Span | 1 kHz to max frequency of each option |
| Dynamic range | 10 MHz to 18.5 GHz: -100 to +25 dBm |
| | >18.5 GHz to 30 GHz: -100 to +20 dBm (Option 030) |
| | >18.5 GHz to 44 GHz: -100 to +20 dBm (Option 044) |
| Maximum power | 10 MHz to 18.5 GHz: +25 dBm |
| | >18.5 GHz to 30 GHz: +20 dBm (Option 030) |
| | >18.5 GHz to 44 GHz: +20 dBm (Option 044) |
| Accuracy | Same as spectrum analyzer |

External RF Power Sensor (Standard, requires external RF power sensor)

| General parameters | | | |
|--------------------------|---|----------------------|------------------|
| Display range | -100 to +100 dBm | | |
| Offset range | 0 to 60 dB | | |
| Resolution | 0.01 dB or 0.1 x W (x = m, μ, p) | | |
| Directional power sensor | | | |
| Model | JD731B | JD733A | |
| Frequency range | 300 MHz to 3.8 GHz | 150 MHz to 3.5 GHz | |
| Dynamic range | Average: 0.15 to 150 W | Average: 0.1 to 50 W | |
| | Peak: 4 to 400 W | Peak: 0.1 to 50 W | |
| Measurement type | Forward/Reverse average power, Forward peak power, VSWR | | |
| Accuracy | $\pm(4\% \text{ of reading} + 0.05 \text{ W})^{1,2}$ | | |
| Connector type | Type-N female on both ends | | |
| Terminating power sensor | | | |
| Model | JD732B | JD734B | JD736B |
| Measurement type | Average | Peak | Average and Peak |
| Frequency range | 20 MHz to 3.8 GHz | | |
| Dynamic range | -30 to + 20 dBm | | |
| Accuracy | $\pm 7\%$ ¹ | | |
| Connector type | Type-N female | | |

¹ CW condition at 15 to 35°C (59 to 95°F)

² Forward power

GPS Connectivity with Antenna (Option S002)

| GPS receiver type | |
|-------------------------|--|
| Built-in type | |
| GPS time and location | |
| GPS information | Latitude, Longitude, Satellite, Status, GPS Engine, Satellite view, ID, and C/N |
| GPS time and location | Time, Latitude, and Longitude on display Time, Latitude, and Longitude on trace |
| High-frequency accuracy | |
| GPS lock | ±25 ppb |
| Hold over for 3 days | ±50 ppb (0 to 50°C (32 to 122°F)) 15 minutes after satellite locked |
| Connector | SMA, female |
| Supplied antenna | SMA (m), 3.3 VDC or 5 VDC |

Bluetooth Connectivity (Option S003)

| | |
|----------------|-----------------------------|
| Interface type | Build-in type |
| Mode | File transfer profile (FTP) |

Wi-Fi Connectivity (Option S004)

| | |
|---------------------------|---------------------|
| Interface type | Build-in type |
| Interface standard | IEEE 802.11 b/g/n |
| Wireless mode | Infrastructure mode |
| Internet protocol version | IPv4, IPv6 |

Real Time Spectrum Analyzer (Option S010 and S011)

| Frequency range | | |
|--------------------------------|---------------------------------------|---|
| Option F030 | 9 kHz to 30 GHz | |
| Option F044 | 9 kHz to 44 GHz | |
| Frequency span | | |
| Option S010 | 50 MHz real time | |
| Option S011 | 100 MHz real time | Supports panoramic persistence view up to 800 MHz analysis span |
| Acquisition | | |
| IF bandwidth | 50 MHz or 100 MHz | |
| A/D converter | 245.76 Msps, 16 bits | |
| FFT lengths | 8192 | |
| Maximum acquisition time | 1000 ms | |
| Minimum IQ resolution | 8.138 ns | |
| Probability of intercept (POI) | 33.59 us at normal 1.92 us at high | Span: 100 MHz |

Real Time Spectrum Analyzer (Option S010 and S011) continued

| Spectrum display | |
|---------------------------------|--|
| Trace detectors | Normal, Positive peak, Negative peak, Sample, Average (RMS) |
| Number of traces | 6 |
| Trace states | Clear/write, Maximum hold, Minimum hold, Capture, Load, Blank |
| Marker type | Normal, Delta, Delta pair, Marker table |
| Number of markers | 6 |
| Marker to -> | Peak, Next peak, Next peak right, Next peak left, Min search, Always peak Center, Start, Stop |
| Audio beep | Tone change with signal strength |
| Marker table | Display 6 markers |
| Persistence spectrum display | |
| Spectrum processing rate | ≤ Max 15,000/s |
| Bitmap resolution | 201 x 801 |
| Marker information | Frequency, Amplitude, Signal density |
| Dwell time per step | 100 ms to 100 s |
| Trace processing | Color-graded bitmap, +Peak, -Peak, Average |
| Trace length | 801 |
| Marker type | Normal, Delta, Marker table |
| Number of markers | 6 |
| Marker to -> | Peak, Next peak, Next peak right, Next peak left, Min search, Always peak Center, Start, Stop |
| Audio beep | Tone change with signal strength |
| Marker table | Display 6 markers |
| Persistence spectrogram display | |
| Trace detection | +Peak, -Peak, Average (RMS) |
| Trace length, Memory depth | |
| Time resolution per line | 100 ms to 1 s, user selectable |

Interference Analyzer (S013)

| Measurement | |
|---------------------|---|
| Spectrum analyzer | Sound indicator, Interference ID, Spectrum recorder |
| Spectrogram | Collect up to 72 hours of data |
| RSSI | Collect up to 72 hours of data |
| Interference finder | |
| Radar chart | |
| Spectrum replayer | Playback recorded data using CA5000 |

Route Map (S014)

| | | |
|--------------|---|------------------------------------|
| Mode | Spectrum analyzer | |
| Plot method | Time, Position, GPS | |
| Plot legend | Excellent, Very good, Good, Poor | User definable range |
| Map type | Outdoor (position information embedded) | Import maps using VIAVI Mapcreator |
| | Indoor (no position information embedded) | Import maps using VIAVI Mapcreator |
| Measurements | RSSI, ACP, Peak search | |

Gated Sweep (S015)

| | |
|-------------------|-------------------------|
| Gated method | FFT |
| Gated delay range | 0 to 100 ms |
| Gated length | 1 us to 100 ms |
| Trigger source | External, Video and GPS |

Channel Scanner (S016)

| | |
|-------------------|---|
| Frequency range | Option F030: 10 MHz to 30 GHz |
| | Option F044: 10 MHz to 44 GHz |
| Measurement range | 10 MHz to 18.5 GHz: -110 to +25 dBm |
| | >18.5 GHz to 30 GHz: -110 to +20 dBm (Option 030) |
| | >18.5 GHz to 44 GHz: -110 to +20 dBm (Option 044) |
| Measurements | >18.5 GHz to 44 GHz: -110 to +20 dBm (Option 044) |
| | Frequency scanner: 1 to 20 frequencies |
| | Customer scanner: 1 to 20 channels or frequencies |

LTE/LTE-A FDD Signal Analyzer (S032)

| General Parameters | | |
|---------------------------------------|--|-----------|
| Frequency range | Band 1 to 14, 17 to 26 | |
| Minimum detectable level | -125 dBm | S-SS RSRP |
| Input signal level | -75 to +25 dBm | |
| Channel power accuracy | ±1.0 dB (typical) | |
| Supported bandwidths | 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, and 20 MHz | |
| Frequency error | ±0.05 ppm | |
| Residual EVM | 2.0% (typical) | @ -20 dBm |
| Measurements | | |
| Channel Power | Constellation | |
| Channel power | MBSFN* | |
| Spectral density | RS power | |
| Peak to average ratio | PDSCH/Data* QPSK EVM | |
| Occupied Bandwidth | PDSCH/Data* 16 QAM EVM | |
| Occupied bandwidth | PDSCH/Data* 64 QAM EVM | |
| Integrated power | PDSCH/Data* 256 QAM EVM | |
| Occupied power | Data EVM RMS | |
| Spectrum Emission mask | Data EVM peak | |
| Reference power | Frequency error | |
| Peak level at defined range | Time Error | |
| ACLR | Data Channel | |
| Reference power | Physical Cell ID, Group ID, Sector ID | |
| Absolute power at defined range | MBSFN* | |
| Relative power at defined range | Resource block power | |
| Multi-ACLR | I-Q diagram | |
| Lowest reference power | Resource block power | |
| Highest reference power | Modulation power, IQ origin offset | |
| Absolute power at defined range | EVM RMS, EVM peak | |
| Relative power at defined range | Control Channel | |
| Spurious Emissions | Physical Cell ID, Group ID, Sector ID | |
| Peak frequency at defined range | MBSFN* | |
| Peak level at defined range | EVM, relative or absolute power, modulation type for P-SS, S-SS, PCFICH, PHICH, PDCCH, RS, MBSFN RS* | |
| Power vs. Time (frame) | Each control channels' | |
| Frame average power | IQ diagram, Modulation format, Frequency error, IQ origin offset, EVM RMS, EVM peak | |
| I-Q origin offset, Time Offset | | |
| Subframe power | Subframe | |
| First slot power | Physical Cell ID, Group ID, Sector ID | |
| Second slot power | MBSFN* | |
| Physical Cell ID, Group ID, Sector ID | Subframe power | |
| | Channel summary table EVM, relative or absolute power, modulation type for P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN RS* Data QPSK, 16/64/256 QAM | |
| | Subframe summary OFDM symbol power, Frequency error, time error Data EVM RMS, data EVM peak, RS EVM RMS, RS EVM peak IQ Imbalance | |

LTE/LTE-A FDD Signal Analyzer (S032) continued

| Measurements continued | | |
|---|---|---|
| Frame | Carrier Aggregation | Control Channel |
| Physical Cell ID, Group ID, Sector ID | Component carriers: up to 5 | Physical Cell ID, Group ID, Sector ID |
| MBSFN* | Subframe, P-SS, S-SS, PBCH, RS power | MBSFN* |
| Frame power | Data QPSK, 16/64/256 QAM power | RS/EVM power trend |
| Channel summary table | MBSFN RS power* | Control channel table |
| EVM, relative or absolute power, modulation type for P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN RS* PBSCH/PMCH QPSK, 16/64/256 QAM | Subframe, P-SS, S-SS, PBCH, RS EVM | Absolute power, EVM, phase for P-SS, S-SS, PBCH, PCFICH, RS0, RS1, RS2, RS3 |
| | Data QPSK, 16/64/256 QAM EVM | Frequency error |
| | MBSFN RS EVM* | Time alignment error |
| | MBSFN*, Physical Cell ID | Time offset |
| | Frequency error, time alignment error | |
| | Antenna port | |
| Subframe summary | Power Statistics CCDF | Datagram |
| OFDM symbol power, Frequency error, IQ-origin offset, Data EVM RMS, Data EVM peak EVM RMS, EVM peak | Average power | Datagram |
| | Max power | Resource block power |
| | Crest factor | Data utilization |
| | OTA Channel Scanner (up to 6) | Resource block allocation |
| | Frequency or channels | Route Map |
| Time Alignment Error | Physical Cell ID, Group ID, Sector ID | RSRP, RSRQ, RS-SINR, S-SS RSSI |
| Time alignment error trend | Channel power, RSSI, RSRP, RSRQ | P-SS,/S-SS power, S-SS Ec/Io |
| Time alignment error | RS-SINR, Antenna port | |
| RS power difference | OTA ID Scanner (up to 6) | |
| Antenna 0 RS power, EVM, time difference | RSRP, RSRQ dominance | |
| Antenna 1 RS power, EVM, time difference | S-SS RSSI, S-SS Ec/Io dominance | |
| Antenna 2 RS power, EVM, time difference | Physical Cell ID, Group ID, Sector ID | |
| Antenna 3 RS power, EVM, time difference | RSRP, RSRQ, RS-SIN, S-SS RSSI, P-SS, S-SS, S-SS Ec/Io | |
| | Multipath Profile | |
| | Physical Cell ID, Group ID, Sector ID | |
| Data Allocation Map | Antenna 0 RS Ec/Io, delay | |
| Frame data utilization | Antenna 1 RS Ec/Io, delay | |
| OFDM symbol power | Antenna 2 RS Ec/Io, delay | |
| Data allocation vs frame | Antenna 3 RS Ec/Io, delay | |
| Subframe data utilization | | |
| Resource block power | | |
| Data allocation vs subframe | | |

*Measurement is performed when MBMS is enabled

LTE/LTE-A TDD Signal Analyzer (S033)

| General Parameters | | |
|---------------------------------------|--|---------------------------------------|
| Frequency range | Band 33 to 43 | |
| Minimum detectable level | -125 dBm | S-SS RSRP |
| Input signal level | -75 to +25 dBm | |
| Channel power accuracy | ±1.0 dB (typical) | |
| Supported bandwidths | 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, and 20 MHz | |
| Frequency error | ±0.05 ppm | |
| Residual EVM | 2.0% (typical) | @ -20 dBm |
| Measurements | | |
| Channel Power | | Constellation |
| Channel power | MBSFN* | |
| Spectral density | RS power | |
| Peak to average ratio | PDSCH/Data* QPSK EVM | |
| Occupied Bandwidth | | PDSCH/Data* 16 QAM EVM |
| Occupied bandwidth | PDSCH/Data* 64 QAM EVM | |
| Integrated power | PDSCH/Data* 256 QAM EVM | |
| Occupied power | Data EVM RMS | |
| Spectrum Emission mask | | Data EVM peak |
| Reference power | Frequency error | |
| Peak level at defined range | Time error | |
| ACLR | | Data Channel |
| Reference power | Physical Cell ID, Group ID, Sector ID | |
| Absolute power at defined range | MBSFN* | |
| Relative power at defined range | Resource block power | |
| Multi-ACLR | | I-Q diagram |
| Lowest reference power | Resource block power | |
| Highest reference power | Modulation power, IQ origin offset | |
| Absolute power at defined range | EVM RMS, EVM peak | |
| Relative power at defined range | Control Channel | |
| Spurious Emissions | | Physical Cell ID, Group ID, Sector ID |
| Peak frequency at defined range | MBSFN* | |
| Peak level at defined range | EVM, relative or absolute power, modulation type for P-SS, S-SS, PCFICH, PHICH, PDCCH, RS, MBSFN RS* | |
| Power vs. Time (frame) | | Each control channels' |
| Frame average power | IQ diagram, Modulation format, | |
| I-Q origin offset, Time Offset | Frequency error, IQ origin offset, | |
| Subframe power | EVM RMS, EVM peak | |
| First slot power | Subframe | |
| Second slot power | Physical Cell ID, Group ID, Sector ID | |
| Physical Cell ID, Group ID, Sector ID | MBSFN* | |
| Power vs. Time (slot) | | Subframe power |
| Slot average power | Channel summary table | |
| Transition period length | EVM, relative or absolute power, modulation type for P-SS, S-SS, | |
| Off Power | PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN RS* | |
| Physical Cell ID, Group ID, Sector ID | Data QPSK, 16/64/256 QAM | |

*Measurement is performed when MBMS is enabled

LTE/LTE-A TDD Signal Analyzer (S033) continued

| Measurements continued | |
|---|---|
| Subframe summary OFDM symbol power, Frequency error, time error Data EVM RMS, data EVM peak, RS EVM RMS, RS EVM peak IQ Imbalance | Power Statistics CCDF Average power Max power Crest factor |
| Frame | OTA Channel Scanner (up to 6) Frequency or channels |
| Physical Cell ID, Group ID, Sector ID | Physical Cell ID, Group ID, Sector ID |
| MBSFN* | Channel power, RSSI, RSRP, RSRQ |
| Frame power | RS-SINR, Antenna port |
| Channel summary table EVM, relative or absolute power, modulation type for P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS, MBSFN RS* PBSCH/PMCH QPSK, 16/64/256 QAM | OTA ID Scanner (up to 6) RSRP, RSRQ dominance S-SS RSSI, S-SS Ec/Io dominance Physical Cell ID, Group ID, Sector ID RSRP, RSRQ, RS-SIN, S-SS RSSI, P-SS, S-SS, S-SS Ec/Io |
| Subframe summary OFDM symbol power, Frequency error, IQ-origin offset, Data EVM RMS, Data EVM peak EVM RMS, EVM peak | Multipath Profile Physical Cell ID, Group ID, Sector ID Antenna 0 RS Ec/Io, delay Antenna 1 RS Ec/Io, delay Antenna 2 RS Ec/Io, delay Antenna 3 RS Ec/Io, delay |
| Time Alignment Error | Control Channel |
| Time alignment error trend | Physical Cell ID, Group ID, Sector ID |
| Time alignment error | MBSFN* |
| RS power difference | RS/EVM power trend |
| Antenna 0 RS power, EVM, time difference | Control channel table Absolute power, EVM, phase for P-SS, S-SS, PBCH, PCFICH, RS0, RS1, RS2, RS3 |
| Antenna 1 RS power, EVM, time difference | |
| Antenna 2 RS power, EVM, time difference | |
| Antenna 3 RS power, EVM, time difference | |
| Data Allocation Map | |
| Frame data utilization | Frequency error |
| OFDM symbol power | Time alignment error |
| Data allocation vs frame | Time offset |
| Subframe data utilization | Datagram |
| Resource block power | Datagram |
| Data allocation vs subframe | Resource block power |
| Carrier Aggregation | Data utilization |
| Component carriers: up to 5 | Resource block allocation |
| Subframe, P-SS, S-SS, PBCH, RS power | Route Map |
| Data QPSK, 16/64/256 QAM power | RSRP, RSRQ, RS-SINR, S-SS RSSI |
| MBSFN RS power* | P-SS,/S-SS power, S-SS Ec/Io |
| Subframe, P-SS, S-SS, PBCH, RS EVM | |
| Data QPSK, 16/64/256 QAM EVM | |
| MBSFN RS EVM* | |
| MBSFN*, Physical Cell ID | |
| Frequency error, time alignment error | |
| Antenna port | |

*Measurement is performed when MBMS is enabled

DSS Signal Analyzer (S034)

| General parameters | | |
|--|---|---|
| Frequency range | LTE FDD: Band 1 to 14, 17 to 26 LTE TDD: Band 33 to 43 | |
| Minimum detectable level | LTE: -125 dBm NR: -110 dBm | S-SS RSRP S-SS RSRP |
| Input signal level | FR1 Band: -75 to +25 dBm | |
| Channel power accuracy | ±1.0 dB (typical) | |
| Supported bandwidth | 5 MHz, 10 MHz, 15 MHz, and 20 MHz | |
| Frequency error | ±0.05 ppm | |
| Residual EVM | 2.0 % (typical) | @ -20 dBm |
| Measurement | | |
| Channel Power | | Constellation |
| Channel power | | RS power |
| Spectral density | | PBCH DMRS power |
| Peak to average power | | PDSCH LTE/NR QPSK EVM |
| Occupied bandwidth | | PDSCH LTE/NR 16 QAM EVM |
| Occupied bandwidth | | PDSCH LTE/NR 64 QAM EVM |
| Integrated power | | PDSCH LTE/NR 256 QAM EVM |
| Occupied power | | LTE/NR Data EVM RMS, peak |
| Spectrum Emission mask | | Frequency Error, Time error |
| Reference power | | Channel Mapper |
| Peak level at defined range | | LTE channels' allocation in RB block P-SS, S-SS, PBCH, RS, PDCCH, PDSCH, PCFICH, PHICH |
| ACLR | | NR channels' allocation in RB block P-SS, S-SS, PBCH, PBCH DMRS, PDCCH, PDSCH |
| Reference power | | LTE/NR Physical cell ID, Group ID, Sector ID |
| Abs power at defined range | | Control Channel |
| Rel power at defined range | | Subframe power |
| Multi-ACLR | | Channel summary on EVM, power and mod. type LTE control channels (P-SS, S-SS, PBCH, PCFICH PHICH, PDCCH, RS) NR control Channels (P-SS, S-SS, PBCH DMRS, PBCH, PDCCH DMRS, PDCCH) |
| Lowest reference power | | Each control channel's IQ diagram, Modulation format, Frequency error, IQ origin offset, EVM RMS, EVM peak |
| Highest reference power | | LTE/NR Physical cell ID, Group ID, Sector ID |
| Abs power at defined range | | |
| Rel power at defined range | | |
| Spurious Emissions | | |
| Peak frequency at defined range | | |
| Peak level at defined range | | |
| Power vs. Time (frame) | | |
| Frame average power | | |
| I-Q origin offset, Time offset, Subframe power, First slot power, Second slot power | | |
| LTE Physical cell ID, Group ID, Sector ID | | |
| Power vs. Time (Slot) | | |
| Slot average power | | |
| Transition period length | | |
| Off power | | |
| LTE Physical cell ID, Group ID, Sector ID | | |

DSS Signal Analyzer (S034) continued

| Measurements continued | |
|--|--|
| Subframe | OTA Channel Scanner (up to 3) |
| Subframe power | Channel power and RSRP bar graph |
| Channel summary on EVM, power and mod. type LTE control channels (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS) and data channels of QPSK, 16 QAM, 64 QAM, 256 QAM NR control Channels (P-SS, S-SS, PBCH, PBCH DMRS, PDCCH, PDCCH DMRS, PDSCH DMRS) and data channels of QPSK, 16 QAM, 64 QAM, 256 QAM | LTE: PCI, RS RSSI, RS RSRP, RS RSRQ, RS SINR |
| | NR: PCI, P-SS RSSI, P-SS RSRP, P-SS RSRQ, P-SS SINR |
| | OTA ID Scanner (up to 6) |
| Subframe summary OFDM symbol power, Frequency error, Time error, LTE/NR Data EVM RMS, peak, RS EVM RMS, peak, IQ imbalance | LTE: PCI, RSRP, RSRQ, P-SS SNR, S-SS SINR, S-SS RSSI, P-SS, S-SS, S-SS Ec/Io |
| | NR: PCI, SSB index, S-SS RSRP, P-SS RSRP, S-SS SINR, S-SS RSRQ |
| LTE/NR Physical cell ID, Group ID, Sector ID | OTA Multipath Profile |
| Frame Frame avg power | LTE: RS0, RS1, RS2, RS3 Ec/Io, Delay |
| | NR: P-SS, S-SS Ec/Io, Delay |
| | LTE/NR Physical Cell ID, Group ID, Sector ID |
| Channel summary on EVM, power and mod. type LTE control channels (P-SS, S-SS, PBCH, PCFICH, PHICH, PDCCH, RS) and data channels of QPSK, 16 QAM, 64 QAM, 256 QAM NR control Channels (P-SS, S-SS, PBCH, PBCH DMRS, PDCCH, PDCCH DMRS, PDSCH DMRS) and data channels of QPSK, 16 QAM, 64 QAM, 256 QAM | OTA Control Channel |
| | LTE: P-SS, S-SS, PBCH, RS power and EVM |
| | NR: P-SS, S-SS, PBCH power and EVM |
| Frame summary OFDM symbol power, Frequency error, Time error, LTE/NR Data EVM RMS, peak, RS EVM RMS, peak | Frequency error, Time error, |
| | Time alignment error |
| | LTE/NR Physical Cell ID, Group ID, Sector ID |
| LTE/NR Physical cell ID, Group ID, Sector ID | OTA Route map |
| | RSPR, RSRP, SINR, SNR, PCI |
| | Freq/Time Error Variation |
| | Frequency error trend |
| | Time error trend |
| | RS0, RS1, RS2, RS3 power trend |
| Time Alignment Error | |
| Time alignment error trend | |
| Time alignment error, RS power difference | |
| Antenna 0 LTE RS power, EVM, time difference | |
| Antenna 1 LTE RS power, EVM, time difference | |
| Antenna 2 LTE RS power, EVM, time difference | |
| Antenna 3 LTE RS power, EVM, time difference | |
| Antenna NR PSS power, EVM, time difference | |
| LTE/NR Physical cell ID, Group ID, Sector ID | |

5G NR Signal Analyzer (S041)

| General parameters | | |
|--|---|--|
| Frequency range | FR1 Band: 410 MHz to 7.125 GHz FR2 Band: 24 GHz to 44 GHz | |
| Minimum detectable level | FR1 Band: -120 dBm FR2 Band: -110 dBm | SS-RSRP SS-RSRP |
| Input signal level | FR1 Band: -75 to +25 dBm FR2 Band: -70 to +20 dBm | |
| Channel power accuracy | ±1.0 dB typical | |
| Supported bandwidth | Up to 100 MHz | |
| Frequency error | ±0.05 ppm | |
| Residual EVM | 2.0 % typical | @ -20 dBm |
| Measurements | | |
| Channel power Channel power/EIRP power Spectral density Peak to average power | Power vs. time Frame average power Subframe power Slot average power Transient period length Off power level | Channel scanner (up to 8) Channel scanner bar SS-RSRP Channel power Channel scanner summary Cell ID Center frequency SS-RSRP/SS-RSRQ Channel power SS-RSRP SS-RSRQ |
| Occupied bandwidth Occupied bandwidth Integrated power Occupied power | Constellation PDSCH/Data QPSK EVM PDSCH/Data 16QAM EVM PDSCH/Data 64QAM EVM PDSCH/Data 256QAM EVM Data EVM RMS, Peak Frequency error | Beam scanner (up to 8) Beam scanner bar Cell ID/Beam index SS-RSRP SS-RSRQ PSS/SSS power |
| Spectrum emission Reference power Peak level at defined range | | |
| ACLR Reference power Abs power at defined range Rel power at defined range | | Beam scanner summary Cell, Group, Sector ID Beam index SS-RSRP SS-RSRQ PSS/SSS power |
| Multi-ACLR Lowest reference power Highest reference power Abs power at defined range Rel power at defined range | | |
| Spurious emissions Peak frequency at defined range Peak level at defined range | | Route map SS-RSRP SS-RSRQ PSS power SSS Power |

5G TM Signal Analyzer (S042)

| General parameters | | |
|--|---|-----------|
| Frequency range | FR1 Band: 410 MHz to 7.125 GHz FR2 Band: 24 GHz to 44 GHz | |
| Input signal level | FR1 Band: -75 to +25 dBm FR2 Band: -70 to +20 dBm | |
| Channel power accuracy | ±1.0 dB (typical) | |
| Supported bandwidth | Up to 100 MHz | |
| Frequency error | ±0.05 ppm | |
| Residual EVM | 2.0 % (typical) | @ -20 dBm |
| Standard | 3GPP TS 38 series v15.2.0 | |
| Measurements | | |
| BS output power BS output power/EIRP power Spectral density Peak to average power | Transmit on/off power Symbol average power Transition period length Off power | |
| Occupied bandwidth Occupied bandwidth Integrated power Occupied power | Modulation Quality PDSCH QPSK EVM PDSCH 16QAM EVM PDSCH 64QAM EVM PDSCH 256QAM EVM Frequency error | |
| ACLR Reference power Abs power at defined range Rel power at defined range | MIMO Time Alignment Error Time alignment error PDSCH DM-RS power difference Antenna 1000: PDSCH DM-RS power, Time offset Antenna 1001: PDSCH DM-RS power, Time offset Antenna 1000/1001 Time offset trend | |
| Multi-ACLR Lowest reference power Highest reference power Abs power at defined range Rel power at defined range | CA time Alignment Error (up to 8 carriers) Time alignment error trend Time alignment error PDSCH DM-RS power difference PDSCH DM-RS power, Time offset | |
| Operation band unwanted emissions Reference power Peak level at defined range | | |
| Transmitter spurious emissions Peak frequency at defined range Peak level at defined range | | |

NSA Analyzer (S043)

| General parameters | | |
|--|---|---|
| Frequency range | LTE-FDD: Band 1 to 14, 17 to 26 LTE-TDD: Band 33 to 43 NR: FR1 Band: 410 MHz to 7.125 GHz FR2 Band: 24 GHz to 44 GHz | |
| Minimum detectable level | LTE: -125 dBm NR: FR1 Band: -120 dBm FR2 Band: -110 dBm | SS-RSRP SS-RSRP SS-RSRP |
| Input signal level | FR1: -75 to +25 dBm FR2: -70 to +20 dBm | |
| Channel power accuracy | ±1.0 dB (typical) | |
| Supported bandwidth | Up to 100 MHz | |
| Frequency error | ±0.05 ppm | |
| Residual EVM | 2.0 % (typical) | @ -20 dBm |
| Measurements | | |
| NSA Analyzer Up to 8 LTE/NR carriers Fast mode: Strongest PCI Normal mode: Multi PCIs NR Analyzer Cell ID/SSB index SS-RSRP/PS-RSRP PS-SNR/SS-SINR/SS-RSRQ LTE Analyzer Cell ID RSRP,RSRQ,PS-SNR,SS-SINR S-SS RSSI, P-SS,S-SS, S-SS Ec/Io | NSA Scanner Up to 8 LTE/NR carriers Fast mode NR scanner Strongest Cell ID SS-RSRP/Channel power LTE scanner Strongest Cell ID RSRP/Channel power Normal mode NR scanner Strongest Cell ID/SSB index SS-RSRP/Channel power PBCH EVM Frequency error, Time error LTE scanner Strongest Cell ID RSRP/Channel power RS EVM Frequency error, Time error | Route map Up to 8 LTE/NR carriers Fast mode: Strongest PCI Normal mode: Multi PCIs NR Analyzer Cell ID/SSB index SS-RSRP/PS-RSRP PS-SNR/SS-SINR/SS-RSRQ LTE Analyzer Cell ID RSRP,RSRQ,PS-SNR,SS-SINR S-SS RSSI, P-SS,S-SS,S-SS Ec/Io |

General Information

| RF in | | |
|---|--|------------------|
| Connector type | 9 kHz to 18.5 GHz: Type-N female | |
| | 9 kHz to 30 GHz, Type-N female/2.92 mm male (Option 030) | |
| | 9 kHz to 44 GHz, Type-N female/2.92 mm male (Option 044) | |
| Impedance | 50 Ω | Nominal |
| Damage level | +27 dBm, \pm 50 VDC | Average CW power |
| Trigger in/out, GPS | | |
| Connector type | SMA, female | |
| Impedance | 50 Ω nominal | |
| Reference clock in/out | | |
| Connector type | SMA, female | |
| Impedance | 50 Ω nominal | |
| Frequency | 10 MHz, 13 MHz, 15 MHz | |
| Input range | -5 to +5 dBm | |
| USB | | |
| USB host | Type A, 2 ports USB2.0 | |
| USB client | Mini USB, 1 port | |
| | Used for SCPI programming, USBTMC, and connection to AppSW | |
| LAN | | |
| RJ45, 1000 Base-T | | |
| Used for SCPI programming, remote control and connection to AppSW | | |
| Audio jack | | |
| 3.5 mm headphone jack | | |
| Built-in speaker | | |
| Display | | |
| Type | 10" capacitive touch screen | |
| Resolution | 1280 x 800 | |
| Power | | |
| Connector | Rectangular DC jack | |
| External DC input | 19 VDC | |
| Power consumption | Option F030: 67 W | |
| | Option F044: 67 W | |

General Information continued

| Battery | | |
|--|---|-----------------------|
| Type | 14.4 V, 6800 mAh (Lithium ion) | Accepts two batteries |
| Operating time | Option F030 standard (one battery): > 1:30 hrs optional (two batteries): > 3:00 hrs | Typical Typical |
| | Option F044 standard (one battery): > 1:30 hrs optional (two batteries): > 3:00 hrs | Typical Typical |
| | New battery with fully charged battery | |
| Charging time | 100 % charging Standard (one battery): > 2:30 hrs Optional secondary battery: > 4:30 hrs | |
| | Up to 80 % charging Standard (one battery): > 1:40 hrs Optional secondary battery: > 3:20 hrs | |
| Charging temperature | 0 to 45°C (32 to 113°F) ≤ 85% RH | |
| Discharging temperature | -20 to 55°C (-4 to 131°F) ≤ 85% RH | |
| Storage temperature | -20 to 60°C (-4 to 140°F) | |
| Operating temperature | | |
| AC power | 0 to 40°C (32 to 104°F) | Battery charging |
| Battery | -10 to 55°C (14 to 131°F) | Without optic HW |
| | -10 to 40°C (14 to 104°F) | With optic HW |
| Storage temperature | | |
| -20 to 60 °C (-4 to 140 °F) | | |
| Maximum humidity | | |
| 95% RH (noncondensing) | | |
| Memory | | |
| Internal | Maximum 4 GB | |
| External | Limited by size of USB/SD flash drive | |
| | SD card (not supplied), size ≤ 32 Gbyte | |
| Data storage | | |
| Internal | > 1000 instrument setups and traces | |
| External | > 5000 instrument setups and traces | |
| Environmental | | |
| Vibration | MIL-PRF-28800F Class 2 | |
| Shock | MIL-PRF-28800F | |
| Bench handling | MIL-PRF-28800F | |
| Transit drop | MIL-PRF-28800F Class 2 | |
| EMC | | |
| IEC/EN 61326-1:2006 (complies with European EMC) | | |
| CISPR11:2009 +A1:2010 | | |
| ESD | | |
| IEC/EN 61000-4-2 | | |

General Information continued

| Size and weight (Standard configuration) | |
|---|---|
| Weight (with one battery) | Option F030: <5.7 kg (12.56 lb.) |
| | Option F044: <5.7 kg (12.56 lb.) |
| Size (W x H x D) | 309 mm x 241 mm x 113 mm with top bumper |
| | 309 mm x 225 mm x 113 mm without top bumper |
| Recommended calibration cycle | |
| 1 year | |

Ordering Information

| Part number | Description |
|---------------------------------|---|
| CA5000 | CellAdvisor 5G Includes: Spectrum analyzer, RF power meter |
| Internal hardware option | |
| CA5000-F030 | Frequency 9 kHz to 30 GHz with two RF ports |
| CA5000-F044 | Frequency 9 kHz to 44 GHz with two RF ports |
| Hardware upgrade options | |
| CA5000-FU30 | Frequency upgrade to 30 GHz with two RF ports |
| CA5000-FU44 | Frequency upgrade to 44 GHz with two RF ports |
| Bandwidth range | |
| CA5000-B100 | 100 MHz/100 MHz analysis bandwidth |
| Options | |
| CA5000-S002 | GPS connectivity with antenna |
| CA5000-S003 | Bluetooth connectivity |
| CA5000-S004 | Wi-Fi connectivity |
| CA5000-S010 | 50 MHz bandwidth real time spectrum analyzer |
| CA5000-S011 | 100 MHz bandwidth real time spectrum analyzer |
| CA5000-S013 | Interference analyzer |
| CA5000-S014 | Route map |
| CA5000-S015 | Gated sweep |
| CA5000-S016 | Channel scanner |
| CA5000-S032 | LTE/LTE-A FDD signal analyzer |
| CA5000-S033 | LTE/LTE-A TDD signal analyzer |
| CA5000-S034 | DSS Signal Analyzer |
| CA5000-S041 | 5G NR signal analyzer |
| CA5000-S042 | 5G NR TM signal analyzer |
| CA5000-S043 | 5G NSA analyzer |
| CA5000-S044 | 5G PDSCH analysis |
| SAA-ADVISOR | Smart Access Anywhere for CellAdvisor products |

Optional Accessories

| Accessory - RF cables | |
|-------------------------|--|
| G700050530 | RF cable DC to 8 GHz Type-N(m) to Type-N(m), 1.0 m |
| G700050531 | RF cable DC to 8 GHz Type-N(m) to Type-N(f), 1.5 m |
| G700050532 | RF cable DC to 8 GHz Type-N(m) to Type-N(f), 3.0 m |
| G710050533 | RF cable DC to 18 GHz Type-N(m) to SMA(m), 1.5 m |
| G710050534 | RF cable DC to 18 GHz Type-N(m) to QMA(m), 1.5 m |
| G710050535 | RF cable DC to 18 GHz Type-N(m) to SMB(m), 1.5 m |
| G710050536 | RF cable DC to 6 GHz Type-N(m) to DIN(f), 1.5 m |
| G710050537 | RF cable DC to 4 GHz Type-N(m) to 1.0/2.3 (m), 1.5 m |
| G700050540 | Phase-stable RF cable w grip DC to 6 GHz Type-N(m) to Type-N(f), 1.5 m |
| G700050541 | Phase-stable RF cable w grip DC to 6 GHz Type-N(m) to DIN(f), 1.5 m |
| G710050531 | RF cable DC to 18 GHz Type-N(m) to Type-N(f), 1.5 m |
| G700050550 | RF cable DC to 40 GHz, K(m) to K(m), 0.8 m |
| G700050551 | RF cable DC to 40 GHz, K(m) to K(f), 0.8 m |
| G700050552 | RF cable DC to 40 GHz, K(m) to K(f), 1.5 m |
| Accessory - RF antennas | |
| G700050340 | Mag mount RF omni antenna Type-K(f), 26 GHz to 40 GHz |
| G700050342 | Mag mount RF omni antenna with LNA; Type-K(f); 26 GHz to 40 GHz |
| G700050344 | Mag mount RF omni antenna SMF(f), 600 MHz to 6 GHz |
| G700050350 | RF omni antenna Type-N(m); 3300 to 3800 MHz |
| G700050353 | RF omni antenna Type-N(m), 806 to 896 MHz |
| G700050354 | RF omni antenna Type-N(m), 870 to 960 MHz |
| G700050355 | RF omni antenna Type-N(m), 1710 to 2170 MHz |
| G700050356 | RF omni antenna Type-N(m), 720 to 800 MHz |
| G700050357 | RF omni antenna Type-N(m), 2300 to 2700 MHz |
| G700050363 | RF yagi antenna Type-N(f), 1750 to 2390 MHz, 10.2 dBd |
| G700050365 | RF yagi antenna Type-N(f), 866 to 960 MHz, 9.8 dBd |
| G700050366 | RF yagi antenna SMA(f), 700 to 4000 MHz, 1.85 dBd |
| G700050367 | RF yagi antenna SMA(f), 700 to 6000 MHz, 2.85 dBd |
| G700050370 | RF directional horn antenna kit, K(f), 26.5 GHz to 40 GHz, 20 dBi |
| G700050390 | GPS SMA mount antenna |
| Accessory - RF adapters | |
| G700050572 | Adapter DIN(m) to DIN(m), DC to 7.5 GHz, 50 ohm |
| G700050573 | Adapter Type-N(m) to SMA(f) DC to 18 GHz, 50 ohm |
| G700050574 | Adapter Type-N(m) to BNC(f), DC to 4 GHz, 50 ohm |
| G700050575 | Adapter Type-N(f) to Type-N(f), DC to 18 GHz 50 ohm |
| G700050576 | Adapter Type-N(m) to DIN(m), DC to 7.5 GHz, 50 ohm |
| G700050577 | Adapter Type-N(f) to DIN(f), DC to 7.5 GHz, 50 ohm |
| G700050578 | Adapter Type-N(f) to DIN(m), DC to 7.5 GHz, 50 ohm |
| G700050579 | Adapter DIN(f) to DIN(f), DC to 7.5 GHz, 50 ohm |
| G700050580 | Adapter Type-N(m) to Type-N(m), DC to 11 GHz 50 ohm |
| G700050581 | Adapter N(m) to QMA(f), DC to 6.0 GHz, 50 ohm |
| G700050582 | Adapter N(m) to QMA(m), DC to 6.0 GHz, 50 ohm |

Optional Accessories continued

| | |
|-------------------------------------|--|
| G700050583 | Adapter N(m) to 4.1/9.5 MINI DIN(f), DC to 6.0 GHz, 50 ohm |
| G700050584 | Adapter N(m) to 4.1/9.5 MINI DIN(m), DC to 6.0 GHz, 50 ohm |
| G700050585 | Adapter N(m) to 4.3-10(f), DC to 6.0 GHz, 50 ohm |
| G700050586 | Adapter N(m) to 4.3-10(m), DC to 6.0 GHz, 50 ohm |
| G700050587 | Adapter N(f) to SMA(f), DC to 18 GHz, 50 ohm |
| Accessory - RF filters | |
| G700050601 | Bandpass filter 696 MHz to 716 MHz, N(m) to N(f), 50 ohm |
| G700050602 | Bandpass filter 776 MHz to 788 MHz, N(m) to N(f), 50 ohm |
| G700050603 | Bandpass filter 806 MHz to 849 MHz, N(m) to N(f), 50 ohm |
| G700050604 | Bandpass filter 1710 MHz to 1755 MHz, N(m) to N(f), 50 ohm |
| G700050605 | Bandpass filter 1850 MHz to 1910 MHz, N(m) to N(f), 50 ohm |
| G700050606 | Bandpass filter 703 MHz to 748 MHz, N(m) to N(f), 50 ohm |
| G700050607 | Bandpass filter 832 MHz to 862 MHz, N(m) to N(f), 50 ohm |
| G700050608 | Bandpass filter 880 MHz to 915 MHz, N(m) to N(f), 50 ohm |
| G700050609 | Bandpass filter 1710 MHz to 1785 MHz, N(m) to N(f), 50 ohm |
| G700050610 | Bandpass filter 1920 MHz to 1980 MHz, N(m) to N(f), 50 ohm |
| G700050611 | Bandpass filter 2500 MHz to 2570 MHz, N(m) to N(f), 50 ohm |
| G700050612 | Bandpass filter 663 MHz to 698 MHz, N(m) to N(f), 50 ohm |
| G700050613 | Bandpass filter 3300 MHz to 3800 MHz, N(m) to N(f), 50 ohm |
| Accessory - RF power sensors | |
| JD731B | Directional power sensor (peak and average power) 300 to 3800 MHz |
| JD732B | Terminating power sensor (Average Power) 20 to 3800 MHz |
| JD733A | Directional power sensor (peak and average power) 150 to 3500 MHz |
| JD734B | Terminating power sensor (peak power) 20 to 3800 MHz |
| JD736B | Terminating power sensor (average/peak power) 20 to 3800 MHz |
| Accessory - RF miscellaneous | |
| G710050581 | Attenuator 40 dB, 100 W, DC to 4 GHz (unidirectional) |
| G710050585 | RF directional coupler, 700 to 4000 MHz, 30 dB, 50 W Input/output; Type-N(m) to Type-N(f), tap off; Type-N(f) |
| G710050586 | RF combiner, 700 to 4000 MHz, Type-N(f) to Type-N(m) |
| G710050587 | 4x1 RF combiner, 700 to 4000 MHz, Type-N(f) to Type-N(m) |
| JD70050007 | AntennaAdvisor handle |
| Accessory - general | |
| G700050431 | CellAdvisor 5G soft carrying case |
| G700050150 | 98 Wh Lithium-Ion Battery |
| G700050125 | CA5G Automotive cigarette lighter DC/DC adapter |
| G700050126 | CA5G AC/DC power adapter 160 W 19 V |
| G700050433 | CA5G backpack carrying case with monopod |
| G700050434 | CA5G harness for indoor application |
| G700050700 | CA5G hard carrying case with wheels |

| Accessory - OTDR Modules | |
|----------------------------|---|
| E4106MA2-PC / E4106MA2-APC | 1310/1625 nm, PC or APC connector - Short/medium-haul qualification |
| E4126MA2-PC / E4126MA2-APC | 1310/1550 nm, PC or APC connector - Short/medium-haul qualification |
| E4136MA2-PC / E4136MA2-APC | 1310/1550/1625 nm, PC or APC connector - Short/medium-haul qualification |
| E4126MA3-PC / E4126MA3-APC | 1310/1550 nm - Short/medium/long-haul qualification |
| E4136MA3-PC / E4136MA3-APC | 1310/1550/1625 nm - Short/medium/long-haul qualification |
| E4146QUAD | Multimode 850/1300 nm & Singlemode 1310/1550 nm - Short/medium-haul qualification |
| E41DWDMC-PC / E41DWDMC-APC | Tunable DWDM C-band 1528 nm to 1568 nm, PC or APC connector- Short/medium/long-haul qualification |

VIAVI Care Support Plans

Increase your productivity for up to 5 years with optional VIAVI Care Support Plans:

- Maximize your time with on-demand training, priority technical application support and rapid service.
- Maintain your equipment for peak performance at a low, predictable cost.

Plan availability depends on product and region. Not all plans are available for each product or in every region. To find out which VIAVI Care Support Plan options are available for this product in your region, contact your local representative or visit: viavisolutions.com/viavicareplan

Features

*5-year plans only

| Plan | Objective | Technical Assistance | Factory Repair | Priority Service | Self-paced Training | 5 Year Battery and Bag Coverage | Factory Calibration | Accessory Coverage | Express Loaner |
|---|------------------------------------|----------------------|----------------|------------------|---------------------|---------------------------------|---------------------|--------------------|----------------|
|  BronzeCare | Technician Efficiency | Premium | ✓ | ✓ | ✓ | | | | |
|  SilverCare | Maintenance & Measurement Accuracy | Premium | ✓ | ✓ | ✓ | ✓* | ✓ | | |
|  MaxCare | High Availability | Premium | ✓ | ✓ | ✓ | ✓* | ✓ | ✓ | ✓ |



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