

3026

Real-time Spectrum Analyzer

Characteristics

Frequency Related

Frequency Range -

RF Mode: 10 MHz to 3 GHz.

Baseband Mode: 50 Hz to 10 MHz.

Frequency Span -

RF Mode: 100 Hz to 3 GHz.

Baseband Mode: 100 Hz to 10 MHz.

Stability of Frequency Standard - $\pm 5 \times 10^{-9}$ /day.

Residual FM - 3 Hz max.

Spectrum Purity - -100 dBc/Hz (10 kHz offset).

Center Frequency Settability - 0.1 Hz.

Amplitude Related

Reference Level Range -

RF mode: -50 to +30 dBm.

Baseband Mode: -30 to +30 dBm.

Input Impedance - 50 Ohm.

Input VSWR - ≤ 1.5 (at reference level ≥ -20 dBm).

Maximum Nondestructive Input Voltage - +30 dBm.

Internal Gain - ± 1.0 dBm at 25 MHz.

Flatness -

± 2.0 dB (> 500 Hz).

+2.0, -5.0 dB (≤ 500 Hz).

Input Equivalent Noise - -140 dBm/Hz at 1 GHz.

2nd Harmonic Distortion - ≤ -70 dBc (-10 dBfs input level).

3rd Order Distortion -

≤ -60 dBc (< 20 MHz, ≤ -10 dBfs input).



[Features](#)

[> Specs](#)

[Ordering Information](#)

[Pricing Information](#)

[Print Data Sheet \(166kB\)](#)



[Request a Quote](#)

≤ -70 dBc (≤ 20 MHz, ≤ -10 dBfs input).

Spurious Response -

≤ -65 dBc (< 400 kHz offset).

≤ -70 dBc (≥ 400 kHz offset).

Residual Response -

≤ -40 dBfs (50 Hz +10 bin).

≤ -65 dBfs (\geq center ± 2 bin).

≤ -70 dBfs (\geq exclude above).

Image Suppress - -70 dB.

A/D Converter - 12-Bits, 25.6 MS/s.

Input Anti-aliasing Filter -

± 0.3 dB (≤ 10 MHz).

-60 dB (≥ 15.5 MHz).

Frame Time Related

FFT Points - 1024, 256.

FFT Window - Blackman-Harris, Hamming, Rectangle.

Operation Accuracy - 16-Bit, Block-Floating.

Maximum Overlapping at 1024 FFT Point -

512 point at 5 MHz.

768 point at 2 MHz span.

896 point at 1 MHz.

960 point at 500 kHz span.

960 point at 200/20/2 kHz span.

992 point at 100/10/1 kHz span.

1008 point at 50/5 kHz span.

1008 point at 500/200/100 Hz span.

Maximum Overlapping at 256 FFT Point -

192 point at 2 MHz.

224 point at 1 MHz.

240 point at 500 kHz span.

192 point at 200/20/2 kHz span.

224 point at 100/10/1 kHz span.

240 point at 50/5 kHz span.

240 point at 500/200/100 Hz span.

Decimation Filter Related

Filter Type -

5 MHz span: 134-tap FIR Filter.

2 MHz span: 201-tap FIR Filter.
 1 MHz span: 268-tap FIR Filter.
 500 kHz span: 317-tap FIR Filter.
 200 kHz span: 391-tap FIR Filter.
 100 kHz span: 503-tap FIR Filter.
 50 kHz span: 503-tap FIR Filter with 4-stage Comb Filter.
 10 kHz span: 503-tap FIR Filter with 4-stage Comb Filter.
 5 kHz span: 459-tap FIR Filter with 4-stage Comb Filter.
 2 kHz span: 503-tap FIR Filter with 4-stage Comb Filter.
 1 kHz span: 459-tap FIR Filter with 4-stage Comb Filter.
 500 Hz span: 459-tap FIR Filter with 4-stage Comb Filter.
 200 kHz span: 459-tap FIR Filter with 4-stage Comb Filter.
 100 kHz span: 503-tap FIR Filter with 4-stage Comb Filter.

Word Length FIR Filter Coefficient - 20-Bit.

Stopband Attenuation - 90 dB.

Passband Ripple - 0.2 dB.

Minimum Frame Update Rate

| Span | 1024 point | 512 point |
|-------------------|-------------|-------------|
| 500 kHz to 5 MHz | 16 μ s | |
| 500 kHz to 2 MHz | | 40 μ s |
| 50 kHz to 200 kHz | 400 μ s | 400 μ s |
| 5 kHz to 20 kHz | 4 ms | 4 ms |
| 500 Hz to 2 kHz | 40 ms | 40 ms |
| 200 Hz | 100 ms | 100 ms |
| 100 Hz | 200 ms | 200 ms |

Real Time Span - \leq 2 MHz.

Trigger Related

Trigger Mode - Auto/Normal (Frequency and Time Events).

Trigger Source - Internal/External.

Internal Trigger Level -

Max: 0 dBfs.

Min: -55 dBfs.

Level Resolution of Internal Trigger - 19-Bit.

Frequency Resolution of Internal Trigger -
 Span/800: 5 MHz span, 1024 point FFT.

Span/640: 2 MHz span, 1024 point FFT.

Span/160: 256 point FFT.

Time Resolution of Internal Trigger - Same as the interval of spectrum frame update.

External Trigger Level - 1.6 V \pm 0.2 V.

Voltage Range of External Trigger Input - 0 to 5 V.

Acquire Mode - Block/Roll.

Maximum Block Length -

1,000 frames (1024 point FFT).

4,000 frames (256 point FFT).

Roll Mode Update Rate - 10 frame/sec.

Acquisition Related

The 3026 offers a full 2 MHz of real-time bandwidth with measurement speed of 25,000 frames/second and a 1024 point update interval of 160 microseconds.

System Controller

486DX4-100 (100 MHz Clock), 32 MB 60 ns fast page SIMM (nonparity), 2.5 in. 3 MB solid state drive, 2.5 in. 2.1 GB hard disk, 3.5 in. 2 HD (1.44 MB) floppy disk, on board Ethernet LAN I/F, ISA half size GPIB.

Environmental

Temperature -

Operating: +10°C to 40°C.

Nonoperating: -20°C to +60°C.

Temperature Gradient -

Operating: \leq 5 per hour (no condensation).

Nonoperating: \leq 30 per hour (no condensation).

Relative Humidity -

Operating: 20% to 80% (no condensation). Maximum wet-bulb temperature 29.4.

Nonoperating: 5% to 90% (no condensation). Maximum wet-bulb temperature 40.0.

Altitude -

Operating: up to 4.5 km (15,000 ft). Maximum operating temperature decreases 1 each 300 m above 1.5 km.

Nonoperating: Up to 15 km (50,000 ft).

Vibration -

Operating: 0.27 G_{RMS}, 5 Hz to 500 Hz.

Nonoperating: 2.28 G_{RMS}, 5 Hz to 500 Hz.

Shock -

Nonoperating: 294 m/s (30 G), half-sine, 11 ms duration. Three shocks per axis in each direction (18 shocks total).

Bench Handling -

Operating: drop from 10 cm (4") tilt, or 45° which ever less (tilt not to balance to point).

EMC Compliance**Emissions -**

Enclosure: EN 55011 class A limits for radiated emissions.

AC Main: EN 55011 class A limits for conducted emissions.

EN 61000-3-2 power line harmonics.

Immunity -

Enclosure: EN 61000-4-2 electrostatic discharge immunity.

EN 61000-4-3 RF electromagnetic field immunity.

AC Main: EN 61000-4-4 electrical fast transient immunity.

EN 61000-4-5 Surge. EN 61000-4-6 conducted disturbance induced by radio-frequency field. EN 61000-4-8 power frequency electromagnetic field. EN 61000-4-11 power line interruption immunity.

Power

Line Voltage Range - 90 to 250 VAC.

Line Frequency - 48 to 63 Hz.

Maximum Power - 300 W.

Maximum Current - 4 A.

Fuse Rating - 6 A, 250 V, Fast blow.

Grounding Impedance - Verify continuity of grounding connection by any suitable means between a representative part required to be grounded and the attachment-plug cap grounding pin (0.1 Ohm at 30 A).

Primary Circuit Dielectric Voltage Withstand Test -

1500 V_{RMS}, 50 Hz for 15 seconds, without breakdown.

Physical Characteristics

| Dimensions | mm | in. |
|-------------------|-----------|------------|
| Height | 165 | 6.5 |
| Width | 376 | 14.8 |
| Depth | 495 | 19.5 |
| Weight | kg | lb. |
| Net | 13 | 29 |

Warranty

One year parts and labor.

Safety

UL3111-1, CSA231, EN61010-1, IEC61010-1.

Self-declaration - EN61010-1 with second amendment.
For more comprehensive and environmental specifications, please see the Tektronix website.

 [Top of Page](#)

[Features](#)

[> Specs](#)

[Ordering Information](#)

[Pricing Information](#)

[Print Data Sheet \(166kB\)](#)



[Request a Quote](#)



Product(s) complies with IEEE standard 488.2-1987, RS-232-C, and with Tektronix Standard Codes and Formats.



Product Area Assessed: The planning, design/development and manufacture of electronic Test and Measurement instruments.



2EW-12987-0Ap1, 02/1999, 08/03/2000