

2755/2755P

GPIB
IEEE-488

The 2755 and 2755P comply with IEEE Standard 488-1978 and with Tektronix Standard Codes and Formats.

- Lab Performance Packaged for Engineering and Manufacturing Productivity
- 50 kHz to 21 GHz Coverage in Coax and to 325 GHz Using Tek Waveguide Mixers
- Marker and Center Frequency Accuracy of One Part in 10^5
- Built-in Marker Intelligence
 - Exclusive Occupied Bandwidth Mode
 - Menu-Selectable Signal Processing
 - Signal Search Functions
 - Noise Normalization to 1 Hz
 - Alternate Reference Units
- Large, Easy-to-Use Controls
- Nonvolatile Memory for Up to Nine Waveforms and Nine Front-Panel Displays
- Direct Keypad Entry of Control Parameters
- Direct Plot Capability (All Versions)
- GPIB/Fully Programmable (2755P)
- Optional Preselector

Now There is a Tek Spectrum Analyzer Especially for the Laboratory

The Tektronix 2755 is a benchtop instrument that combines cost-effective lab performance and ease of use with a new dimension in spectrum analyzer processing intelligence. Packaged for enhanced engineering productivity, it reduces operator interface requirements and risk of human error. You'll make measurements faster and more accurately than ever before, all with the high standard of Tektronix quality and reliability.

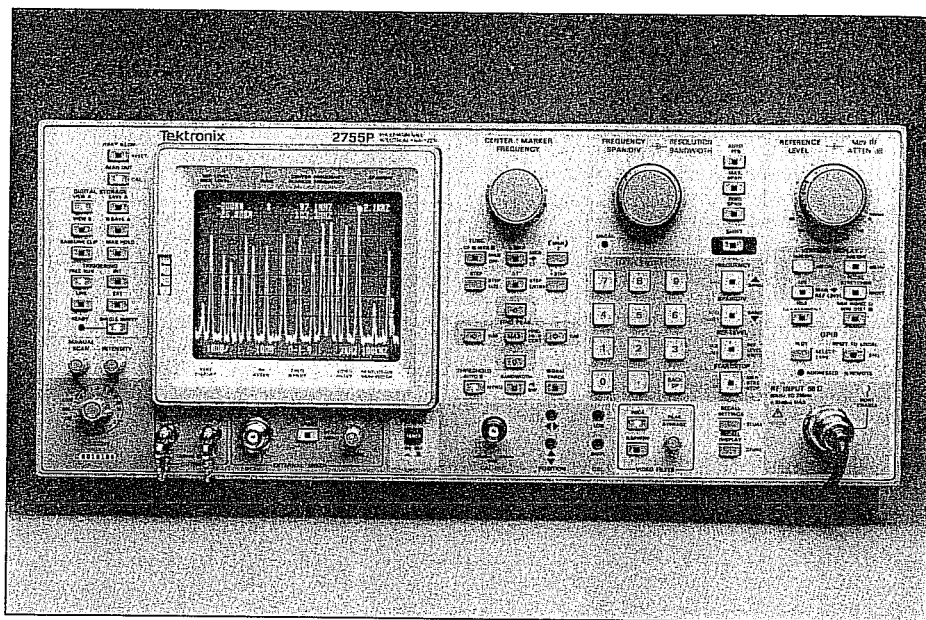
Decision-Making Power at the Touch of a Button

Tek exclusives include signal processing intelligence that can discriminate and sort among continuous wave (CW), pulse and spurious signals. Hands-off convenience for measuring the bandwidth of filters, amplifiers, and channelized spectrum occupancy is provided by Tek's new BANDWIDTH mode. For a summary of signal processing functions, see page 167.

Tedious, time-consuming calculations are eliminated with automatic noise normalization to 1 Hz and alternate reference units such as dBm, dBmV, dBμV, and dBV.

Feature for feature, the 2755 is optimized for straightforward operation and outstanding ease of use—from the ergonomically designed front panel and larger controls to direct keypad entry of important control factors.

EASY TO USE... LAB PERFORMANCE PACKAGES



Millimeter Wave Capability

Using Tek's high performance waveguide mixers, you get calibrated amplitude and frequency coverage from 18 to 325 GHz. Real signals are determined in two sweeps with Tek's accurate millimeter wave identification mode. No costly L.O. amp is needed—just some simple connections and you're ready to measure.

Use as a Systems Component

The 2755P is the GPIB-programmable version of the 2755. Featuring Tek Codes and Formats, programming is easy to implement with English-like commands. With TekSPANS® software you can use the 2755P with popular controllers including the Compaq PC and PC-compatibles.

As an option, you can also rackmount the 2755 for use in the manufacturing or test environment not requiring instrument mobility.

CHARACTERISTICS

FREQUENCY RELATED

Frequency Range—50 kHz to 21 GHz coaxial input; 50 kHz to 325 GHz external mixer input (amplitude specified from 18 to 325 GHz with Tektronix WM 490 Series Waveguide Mixers).

Center and Marker Frequency Accuracy*1—Phase Locked: $\pm[20\%D + (F \times 10^{-5})]$ Hz, Bands 1 and 5-12 with span/div ≤ 200 kHz, and Bands 2-4 with span/div ≤ 100 kHz. Unlocked: $\pm[20\%D + (F \times 10^{-5}) + 15$ NkHz].

Where: D=Span/div or Res BW, whichever is greater.

F=Center or Marker Frequency

N=Harmonic Mixing Number

*1 Over the operating temperature extremes of 0 to +50°C, 1.5×10^{-5} .

Delta Marker Frequency Accuracy—1% of total span.

Center Frequency Drift (After 1-Hour Warm-Up)—Phase Locked: ≤ 50 Hz per minute of sweep time corrected at least every 30 seconds. Bands 1 and 5-12 with span/div ≤ 200 kHz, and bands 2-4 with span/div ≤ 100 kHz. Unlocked: $\leq (5$ kHz) N per minute of sweep time.

Frequency Readout Resolution— $\leq 10\%$ span/div to 1 kHz minimum. (100 Hz in Delta Marker Mode.)

Residual FM—Phase Locked: $\leq (10 + 2N)$ Hz p-p in 20 ms, Bands 1 and 5-12 with span/div ≤ 200 kHz, and Bands 2-4 with span/div ≤ 100 kHz. Unlocked: $\leq (7$ kHz) N p-p in 20 ms.

Noise Sidebands

dBc/Hz	Offset from Center
≤ -95	3 kHz
≤ -105	30 kHz
≤ -115	300 kHz

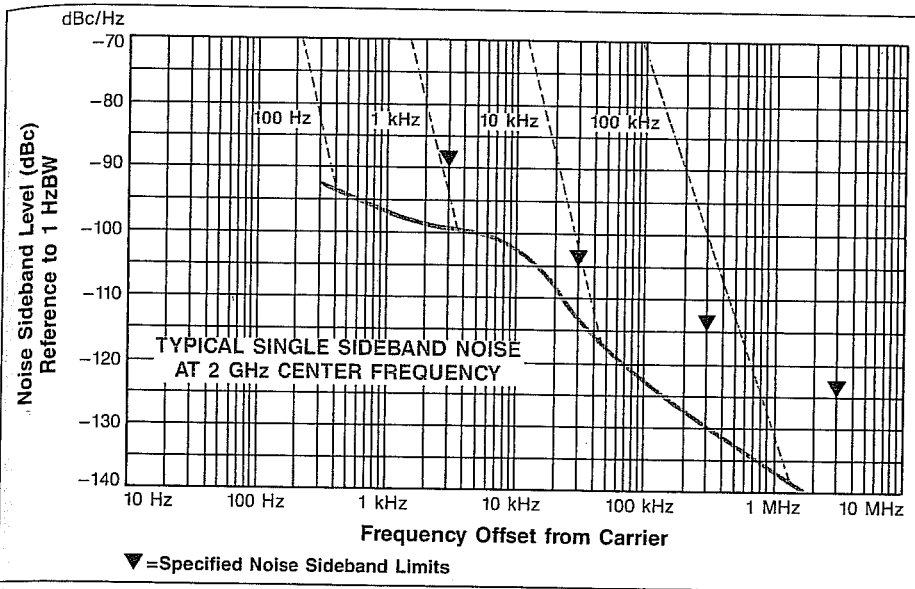
Resolution Filters—100 Hz to 1 MHz (6 dB bandwidth $\pm 20\%$) in decade steps. Shape factor $\leq 7.5: 1$ (60 dB/6 dB).

Frequency Span/Division—0 Hz (zero span pushbutton or data entry keypad); 200 Hz to 10 GHz (in a 1-2-5 sequence) via span/div knob; 200 Hz to 15 GHz (to two significant digits) via keypad or start/stop data entry, or marker start/stop; full band via MAX SPAN pushbutton (12 bands). Accuracy $\pm 5\%$ of selected span/div.

AMPLITUDE RELATED

Display Dynamic Range—80 dB log mode; eight divisions linear.

Frequency Response and Sensitivity—Refer to chart on page 175.



SENSITIVITY AND FREQUENCY RESPONSE*4

Band and Frequency Range	Harmonic Number	Sensitivity (dBm) at Minimum Resolution	Frequency Response (dB)*1
1 (50 kHz-4.2 GHz)*2	1	-125	±1.5
2 (1.7-5.5 GHz)*2	1	-125	±1.5
3 (3.0-7.1 GHz)*2	1	-125	±1.5
4 (5.4-18 GHz)*2	3	-110	±2.5
5 (15-21 GHz)	3	-106	±3.5
6 (18-27 GHz)	6	-108	±2.0
7 (26-40 GHz)	10	-103	±2.0
8 (33-60 GHz)	10	-103	±2.2 33 to 50 GHz ±2.5 40 to 60 GHz
9 (50-90 GHz)*3	15	-105 at 50 GHz; -95 at 90 GHz	±3.0
10 (75-140 GHz)*3	23	-100 at 75 GHz; -85 at 140 GHz	±3.0
11 (110-220 GHz)*3	37	-90 at 110 GHz; -75 at 220 GHz	±3.0
12 (170-325 GHz)*3	56	-70 at 170 GHz; -55 at 325 GHz	±3.0

*1 Measured with 10 dB RF Attenuation and peaking optimized (when applicable). Frequency response within ±3.5 dB from 50 kHz to 18 GHz referenced to 100 MHz (±4.5 dB for Option 01).

*2 Band 1 is limited to 50 kHz to 1.8 GHz for preselected (Option 01) units. The preselector degrades minimum sensitivity by 5 dB (6 dB in BAND 3) and degrades frequency response by ±1.0 dB to 18 GHz; ±1.5 dB to 21 GHz.

*3 Frequency response for any 5 GHz band. Response is within ±6 dB referenced to 100 MHz.

*4 Refer to page 177 for 2755/2755P typical low frequency response graph.

Harmonic Distortion—≤ -60 dBc for a -40 dBm input 50 kHz to 21 GHz in MIN Distortion mode. Not discernible above the noise (typically -100 dBc) for preselected bands (Option 01 only).

INPUT SIGNAL

RF Input Type—"N" female 50 Ω nominal impedance. Refer to Option 07 characteristics.

Maximum Safe Input—+30 dBm CW with ≥20 dB attenuation; +13 dBm CW with 0 dB attenuation; 0 V dc. Option 01: +30 dBm (1 W) CW; 75 W peak, 1 μs Pulse width, 0.001 duty; 0 dB attenuation. Do not apply dc.

1 dB Gain Compression—≥ -18 dBm in MIN Distortion Mode.

VSWR

Frequency	10 dB Attenuation	(Typical) 0 dB Attenuation
50 kHz to 2.5 GHz	1.3:1 Max; 1.2:1 Typical	1.9:1
2.5 to 6.0 GHz	1.7:1 Max; 1.5:1 Typical	1.9:1
6.0 to 18 GHz	2.3:1 Max; 1.9:1 Typical	2.3:1
18 to 21 GHz	3.5:1 Max; 2.7:1 Typical	3.0:1

Measured at ±3 MHz of preselector peak for Option 01.

Option 07—See page 177 for information.

ORDERING INFORMATION

2755 Spectrum Analyzer \$28,500

Includes: 50 Ω coax cable, N to N connector, 6 ft (012-0114-00); 50 Ω coax cable, BNC to BNC connector, 18 in. (012-0076-00); service manual Vol. 1 (070-6032-00); service manual Vol. 2 (070-6033-00); operator's manual (070-6031-00); N male to BNC female adaptor; 2 Fast-Blo, 4A fuses; power cord (161-0104-00); power cord clamp (343-0170-00); CRT amber light filter (378-0115-01); gray CRT light filter (378-0115-02); CRT mesh filter (378-0887-00).
2755P Programmable Spectrum Analyzer \$30,000

Includes: Same as 2755 plus programmer's manual (070-6034-00).

OPTIONS

Option 01—Adds preselection + \$3,995

Option 07—75 Ω input. + \$750

Includes: BNC male to female adaptor connector (013-0126-00); 42-in. BNC to BNC connector 75-Ω coax cable (012-0074-00).

Option 08—Deletes external mixer. - \$1,750

Option 21—18 to 40 GHz High Performance Waveguide Mixer Set. + \$2,650

Includes: Diplexer assembly (015-0385-00); BNC-to-SMA adaptor (015-0388-00); power cord clamp (343-0170-00); SMA-to-SMA cable (012-0649-00).

Option 22—18 to 60 GHz High Performance Waveguide Mixer Set. + \$4,460

Includes: Same as Option 21.

Options 23, 24, 25, 26, 27, 28, 29—Bundled software and computer packages available in U.S. only. Contact your local sales representative.

Option 30—Rackmount. + \$250

Option 31—Rackmount with rear-panel input/output connectors. + \$450

Option 39—Replaces Lithium with Silver batteries for instrument memory. + \$50

Option 41—Digital Radio Enhancement. + \$450

Option 42—110 MHz, >5 MHz bandwidth, IF Output suitable for broadband receiver measurements. + \$750

Option 43—Alternate CRT*1.

Option 45—MATE/CIL language interface. + \$4,975

Option 52*1—North American 220 V configuration with standard power cord.

INTERNATIONAL POWER PLUG OPTIONS

Option A1—Universal Euro 220 V, 50 Hz.

Option A2—UK 240 V, 50 Hz.

Option A3—Australian 240 V, 50 Hz.

Option A4—North American 240 V, 60 Hz.

Option A5—Switzerland 220 V, 50 Hz.

WARRANTY-PLUS SERVICE PLANS

See Service section.

Option M1—2 Calibrations. (2755) + \$1,995

(2755P) + \$2,025

Option M2—2 Years Service. (2755) + \$3,380

(2755P) + \$3,510

Option M3—2 Years Service and 4 Calibrations. (2755) + \$3,995

(2755P) + \$4,045

OPTIONAL ACCESSORIES

External Waveguide Mixers—

(18 to 26.5 GHz) Order WM 490K. \$1,310

(26.5 to 40 GHz) Order WM 490A. \$1,310

(33 to 50 GHz) Order WM 490Q. \$1,520

(40 to 60 GHz) Order WM 490U. \$1,805

(50 to 75 GHz) Order WM 490V. \$2,045

(60 to 90 GHz) Order WM 490E. \$2,225

(75 to 110 GHz) Order WM 490W. \$2,280

(90 to 140 GHz) Order WM 490F. \$2,445

(110 to 170 GHz) Order WM 490D. \$3,410

(140 to 220 GHz) Order WM 490G. \$3,490

Tapered Transition—Used with WM 490G, 220 to 325 GHz.

Order 119-1728-00 \$1,200

Microwave Comb Generator—

TM 500-Series compatible.

Order 067-0885-00 \$1,815

1405 TV Sideband Analyzer

Adaptor—525/60 markers (Opt 02 required for 275X & 49X). \$5,780

TR 503 Tracking Generator—

100 kHz to 1.8 GHz. \$7,080

*1 To order, contact your local Tektronix Sales Office.