Table 1-1. 8553B/8552B Specifications

GENERAL SPECIFICATIONS

[1]**Input Impedance**: 50 ohm nominal. Reflection coefficient <0.13 (1.3 SWR), input attenuator ≥10 dB.

[1]**Maximum Input Level**: Peak or average power ± 13 dBm (1.4V ac peak), ±50 V dc.

Scan Time: 16 internal scan rates from 0.1 ms/div to 10 sec/div in a 1,2, 5 sequence, or manual scan.

Scan Time Accuracy:
0.1 ms/div to 20ms/div: ±10%
50 ms/div to 10 sec/div: ±20%.

Scan Mode:

Int: Analyzer repetitively scanned by internally generated ramp; synchronization selected by scan trigger.

Single: Single scan with reset actuated by front panel pushbutton.

Ext: Scan determined by 0 to ±8 volt external signal; scan input impedance >10 kΩ,

Blanking: -1.5V external blanking signal required.

Manual: Scan determined by front panel control; continuously variable across CRT in either direction.

Scan Trigger: For Internal Scan Mode, select between:

Auto: Scan free runs.

Line: Scan synchronized with power line frequency.

Ext: Scan synchronized with > 2 volt (20 volt max.) trigger signal (polarity selected by internally located switch in Model 8552B IF Section).

Video: Scan internally synchronized to envelope of RF input signal (signal amplitude of 1.5 major divisions peak-to-peak (required on display section CRT).

Auxiliary Outputs:

Vertical Output: Approximately 0 to --0.8V for 8 division deflection on CRT display; approx. 100 Ω output impedance.

Scan Output: Approx. -5 to ±5V for 10 div CRT deflection, 5 k.Ω output impedance.

Pen Lift Output: 0 to 14V (0V, pen down). Output available in Int and Single Scan modes and Auto, Line, and Video scan trigger.

Power Requirements: 115 or 230 volts ±10%, 50 to 60 Hz, normally less than 225 watts.

Dimensions:

Model 140T or 141T Display Section: 9-1/5 in. high (incl. height of feet) x 163/4 in wide x 18-3/8 in. deep (229 x 425 x 467 mm).

Model 143S Display Section: 21 in. high (incl. height of feet) x 163/4 in. wide x 18-3/8 in. deep (533 x 425 x 467 mm).

Weight:

[1]Model 8553B RF Section: Net 12 lb (5,5 kg).

AMPLITUDE SPECIFICATIONS

Absolute Amplitude Calibration Range:

LOG: From -130 to ±10 dBm, 10 dB/div on a 70 dB display; or 2 dB/div on a 16 dB display.

LINEAR: From 0.1 µV/div to 100 mV/div in a 1, 2 sequence on an 8-division display.

[1]**Dynamic Range**:

Average Noise Level: <-100 dBm with 10 kHz IF bandwidth.

Spurious Responses: For -40 dBm signal level at the input mixer. 2 Image responses, out-of-band mixing responses, harmonic and intermodulation distortion are all more than 70 dB below the signal level at input mixer 2, 2 MHz to 110 MHz; 60 dB, 1 KHz. to 2 MHz.

Third Order Intermodulation Products: For -40 dBm total signal level at input mixer, 2 third order intermodulation products are more than 70 dB down for input signals of 100 kHz to 110 MHz; signal separation >300 Hz.

[1]**Residual Responses**: 200 kHz 100 MHz < -110 dBm, 20 kHz 200 kHz < -95 dBm.

Amplitude Accuracy:

	Log	Linear
[1]Frequency Response (Flatness: attenuator settings ≥10 dB)		
1 kHz to 110 MHz	±0.5 dB	±5.8%
Switching between Bandwidths (at 20°C)		
0.1-300 kHz	± 0.5 dB	± 5.8%
0.03-300 kHz	± 1.0 dB	± 12%o
0.01-300 kHz	± 1.5 dB	± 19%
Amplitude Display	±0.25 dB/dB but not more than ± 1.5 dB over the full 70 dB display range	±2.8% of full 8 div deflection

Calibrator Output:

Amplitude: -30 dBm, ±0.3 dB.

Frequency: 30 MHz, ±3 kHz.

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[1]Applies to 8553B

[2]Signal level at input mixer = Signal level at RF INPUT - INPUT ATTENUATION

Table 1-1. 8553B/8552B Specifications (cont'd)

FREQUENCY SPECIFICATIONS

[1]**Frequency Range**: 1 kHz -110 MHz (0-11 MHz and 0-110 MHz tuning ranges).

[1]**Scan Width**: (on 10 division CRT horizontal axis).

Per Division: 18 calibrated scan widths from 10 MHz/div to 20 Hz/div in a 1, 2, 5 sequence.

Preset: 0-100 MHz.

Zero: Analyzer is fixed tuned receiver.

[1]**Frequency Accuracy**:

Center Frequency Accuracy: The dial indicates the display center frequency within ±1 MHz on the 0-110 MHz tuning range; ±200 kHz on the 0-11 MHz tuning range with FINE TUNE centered, and temperature range of 20 to 30 degrees C.

Scan Width Accuracy.: Scan widths 10 MHz/div to 2 MHz/div and 20 kHz/div to 20 Hz/div: Frequency error between two points on the display is less than ±3% of the indicated frequency separation between the two points. Scan widths 1 MHz/div to 50 kHz/div: Frequency error between two points on the display is less than ±10% of the indicated frequency separation.

Resolution:

Bandwidth: IF bandwidths of 10 Hz to 300 kHz provided in a 1, 3 sequence.

Bandwidth Accuracy: Individual IF bandwidth 3 dB points calibrated to ±20% (10 kHz bandwidth ±5%).

Bandwidth Selectivity: 60 dB/3 dB IF bandwidth ratios: <11: 1 for IF bandwidths 10 Hz to 3 kHz, <20: 1 for IF bandwidths from 10 kHz to 300 kHz, 60 dB points separated by <100 Hz for 10 Hz bandwidth.

[1]**Stability**:

Residual FM:

Stabilized: Sidebands >60 dB down 50 Hz or more from CW signal, scan time ≥1 sec/div, 10 Hz bandwidth.

Unstabilized: <1 kHz peak-to-peak.

Noise Sidebands: More than 70 dB below CW signal, 50 kHz or more away from signal, with 1 kHz IF bandwidth.

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[1]Applies to 8553B.

[2]Signal level at input mixer = Signal level at RF INPUT- INPUT ATTENUATION

H01/H02 SPECIFICATIONS

NOTE

All specifications for the 75-ohm 8553B/8553B are identical to the 50-ohm 8553B/8552B except for the following.

[1]**Input Impedance**: 75 ohms nominal. Reflection Coefficient ≤0.13 (6≤1.30 SWR, 18 dB return loss).

[1]**Maximum Input Level**: Peak or average power to RF Input <±23 dBm[3](4V rms, 5.6V peak, ±50 Vdc).

Absolute Amplitude Calibration Range:

LOG: From -120 to ±20 dBm, 10 dB/div on a 70 dB display, or 2 dB/div on a 16 dB display.

LINEAR: From 0.2 µV/div to 200 mV/div in a 1, 2 sequence on an 8-division display.

[1]**Dynamic Range**:

Average Noise Level:

IF Bandwidth (kHz)	Avg. Noise Level (dBm)3	Frequency[4] Range (MHz)
1	-110	1-110
10	-100	1-110
100	90	1-110

Spurious Responses:

For -30 dBm Signal Level at Input Mixer:[2]

Image responses, out-of band mixing responses, harmonic and intermodulation distortion products, and IF feedthrough responses are all more than 70 dB below the Signal Level at Input Mixer. 2 (2 MHz to 110 MHz); 60 dB, 1 kHz to 2 MHz.

Third Order Intermodulation Products:

For -30 dBm Signal Level at Input Mixer 2 third order intermodulation products are more than 70 dB down for input signals of 100 kHz to 110 MHz.

Residual Responses:

(Referred to Signal Level at Input Mixer[2]):

200 KHz to 110 MHz: <-100 dBm

20 kHz to 200 kHz: <-85 dBm.

Calibrator Output:

Amplitude: -30 dBm3 ±0.3 dB (8.66 mV into 75 ohms).

NOTE

RF INPUT and CAL OUTPUT connectors: Option H01, equivalent to Western Electric WE-560A; Option H02, standard BNC.

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[1]Applies to 8553B.

[2]Signal level at input mixer = Signal level at RF INPUT (10 dB ± INPUT ATTENUATION).

[3]0 dBm = 1 mW into 75 ohms.

[4]Typical sensitivity vs. input frequency curves for frequencies from 1 kHz to 1 MHz shown in Figure 1-4 must be derated by 10 dB.