Frequency Converter
18 to 40 GHz

Extends Your VM-7
Capabilities to 40 GHz in Coax

The Model 8853 Frequency Converter is intended for use with any TEGAM Model VM-7 Attenuator/Signal Calibrator to create an 18 to 40 GHz measurement system. This Frequency Converter downconverts the 18 to 40 GHz measurement signal to a 30 MHz IF signal which can be measured by the VM-7. Using the Model 8853 with the Model 8852 Frequency Converter will allow the user to measure attenuation from 0.01 to 40 GHz without the use of an additional LO source. Figure 1 shows a typical Model 8853 Measurement System setup.

This instrument can be easily stacked with other TEGAM instruments or mounted in any cabinet or rack designed according to EIA RS-310 and MIL-STD-189 using the appropriate rack mounting kit.

Weinschel PLANAR CROWN® Connector System

The use of Weinschel PLANAR CROWN® connectors at the INPUT connectors provides the Model 8853 user with easy exchange of connector types and eliminates the need for adapters and other devices that would create additional insertion loss. This “Torque Free” type of connector also provides quick replacement of defective connectors. All crowns will mate nondestructively with connectors per MIL-STD-39012 (refer to Weinschel PLANAR CROWN® data sheet for more details).
Figure 1. 8850/8853 (18-40 GHz) Measurement System

Specifications

Frequency Range
- Signal port: 18 to 40 GHz
- RF In: 6 to 13.333 GHz
- LO In: 5.99 to 13.323 GHz
- IF Out: 30 ± 2 MHz

RF Signal Levels
- RF Input: +5 dBm nominal, +10 dBm maximum
- LO Input: +7 ± 2 dBm, +10 dBm maximum
- Signal Port: -2 dBm maximum, -10 dBm minimum

Nominal Impedance: 50 Ω
Input Load SWR: <1.6

Connectors
- RF Input: SMA Female
- LO Input: SMA Female
- 30 MHz OUTPUT: Type-N Female
- Test Port: PLANAR CROWN 2.92 mm Female
- Signal Port: PLANAR CROWN 2.92 mm Female

Subharmonic: -55 dBm
Warm-up Period: 3 hours minimum

Input Power Requirements: 100, 120, 220, 240 VAC ± 10 % @ 50 to 60 Hz
Power Consumption: 180 Watts

Design and Construction
- Designed to meet requirements of MIL-STD-28800D TYPE III, CLASS 5, STYLE E

Temperature
- Operating: +10 °C to +40 °C (+50 °F to +104 °F)
- Storage: -40 °C to +75 °C (-40 °F to +167 °F)

Humidity: 95 %

Physical Dimensions
- Height: 88.9 mm (3.5 in)
- Width: 425 mm (16.75 in) standard rack width
- Depth: 520.7 mm (20 in)
- Weight: 10.66 kg (23.5 lb)

Included Accessories
- Power Cord: P/N 068-21
- Manual: P/N IM236
- Accessory Cable Kit (3 RF Cables): P/N 192-3009

Optional Accessories
- Rack Adapter Kit: R/N 190-2220
- Z540 Compliant Calibration with Certificate and Data for 8853: P/N OPT-Z540

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