

The 6250 series adds millimetric wave measurement capability to a standard 6200B series MTS



- **Accurate Return Loss and Insertion Loss measurements to 110 GHz**
- **Compatible with standard 6200B, 6203B or 6204B series Microwave Test Set**
- **Millimetric detectors for transmission measurement**
- **50 to 75 GHz and 75 to 110 GHz frequency versions**

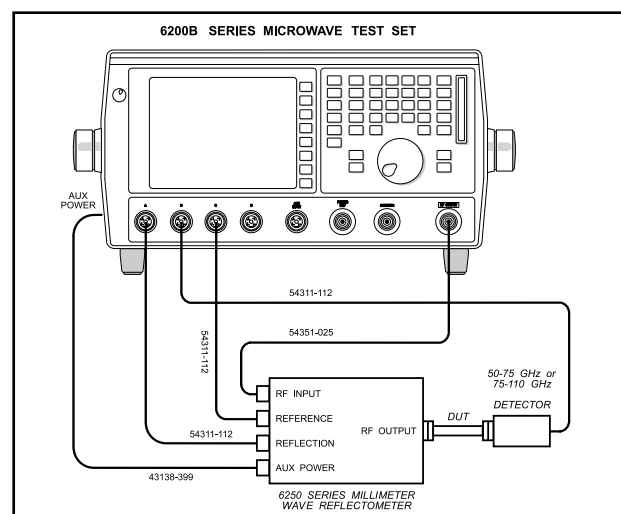
The Millimeter Wave Reflectometers are used to extend the measurement capabilities of the 6200B series Microwave Test Set (MTS) to millimeter wave frequencies. The Model 6255 (V-band) extends the frequency range to cover 50 to 75 GHz, and the Model 6256 (W-Band) extends the range to cover 75 to 110 GHz. Millimetric bands are most commonly used in the communications, radar and electronic warfare markets.

The 6250 series contain frequency multipliers that convert the RF output of the 6200B series Microwave Test Set to either of two bands. RF output power levels in the millimeter wave band typically exceed 0 dBm. Model 6255 (V-Band) multiplies the input frequency, 12.5 to 18.75 GHz, by 4 times, resulting in output frequencies from 50 to 75 GHz (V-Band); Model 6256 (W-Band) multiplies the input frequency, 12.5 to 18.333 GHz, by 6 times, thus producing output between 75 and 110 GHz (W-Band). The display of the 6200B series MTS can be scaled to show all traces with their true millimetric frequencies.

The units contain the necessary amplifier/multiplier circuits, and appropriate filters. The source module in each unit includes a full band isolator to provide a good source match. Each unit also contains a high directivity dual waveguide directional coupler, an internal reference detector for ratioed measurements and a separate reflection detector for return loss measurements. Each detector output is linearized to provide excellent accuracy over the entire dynamic range. The transmission detectors are also linearized and are equipped with a full band waveguide isolator to provide a good match.

A set of two band pass filters and one all pass filter are supplied with the units. All frequency multipliers produce undesired harmonic and spurious products. In addition to undesired higher order multiples of the output frequency, mixing products are also created. The filters are used to suppress the undesired harmonics and mixing products resulting in higher quality measurements.

DC power for the units is supplied by the 6200B MTS.



Reflectometer Specification

REFLECTOMETER	6255	6256
Frequency Range (dependant on filter installed) with F AP (All Pass) with F LP (Low Pass) with F HP (High Pass)	50 to 75 GHz 50 to 58 GHz 57 to 75 GHz	75 to 110 GHz 75 to 92 GHz 89 to 110 GHz
Waveguide Interface Compatibility	MIL-F-3922/76B-008 Flange, WR-15	MIL-F-3922/76B-010 Flange, WR-10
Reflectometer Output Power, with F AP installed	0 dBm minimum +5 dBm typical	-5 dBm minimum, +2 dBm typical
Dynamic range when used with 6200B series MTS		
Transmission	50 dB (nominal)	50 dB (nominal)
Reflection	40 dB (nominal)	40 dB (nominal)
Source Spurs and Harmonics	-20 dBc typical with F AP -50 dBc maximum with F LP or F HP	-20 dBc typical with F AP -50 dBc maximum with F LP or F HP
Source Match	17 dB Typical	17 dB Typical
Reflectometer Directivity	35 dB minimum, 40 dB typical	35 dB minimum, 40 dB typical
Source Input Frequency	12.5 to 18.75 GHz (Internally multiplied by 4 for 50 to 75 GHz Output)	12.5 to 18.333 GHz (Internally multiplied by 6 for 75 to 110 GHz Output)
Required Input Power	+5 dBm min.	+5 dBm min.
Detector Output Connectors	BNC female	BNC female
Size	8.4 in x 4.25 in x 2.25 in 213 mm x 108 mm x 57 mm	7.4 in x 4.25 in x 2.25 in 187 mm x 108 mm x 57 mm
Supply Voltage	+25 VDC (supplied from MTS Auxiliary Power socket)	+25 VDC (supplied from MTS Auxiliary Power socket)

Detector Specification

DETECTOR	6255	6256
Frequency Range	50 to 75 GHz	75 to 110 GHz
Waveguide Interface Compatibility	MIL-F-3922/76B-008 Flange, WR-15	MIL-F-3922/76B-010 Flange, WR-10
Detector Return Loss	18 dB typical	18 dB typical
Detector Flatness	±3 dB	±3 dB
Detector Output	350 mV/mW typical	150 mV/mW typical
CW Input Power	100 mW maximum	100 mW maximum
Detector Output Connector	BNC female	BNC female

Order Codes

Order Number 6255	Millimeter Wave Reflectometer 50 to 75 GHz Supplied Accessories	Order Number 6256	Millimeter Wave Reflectometer 75 to 110 GHz Supplied Accessories
None	50 to 75 GHz Low VSWR detector	None	75 to 110 GHz Low VSWR detector
54311/112	Negative voltage measurement cable x 3	54311/112	Negative voltage measurement cable x 3
54351/025	RF Cable 3.5 mm (m) to 3.5 mm (m)	54351/025	RF Cable 3.5 mm (m) to 3.5 mm (m)
54311/177	Precision Adaptor N (m) to 3.5 mm (f)	54311/177	Precision Adaptor N (m) to 3.5 mm (f)
None	Waveguide calibration short	None	Waveguide calibration short
43138/399	DC power lead for connection to 6200B series MTS	43138/399	DC power lead for connection to 6200B series MTS
None	Flanged waveguide, 1 in (26 mm) long	None	Flanged waveguide, 1 in (26 mm) long
None	3 filters: all pass, low pass, high pass	None	3 filters: all pass, low pass, high pass
46882/292	Instruction Manual	46882/292	Instruction Manual
22951/031	Hexagonal key	22951/031	Hexagonal key
46662/608	Protective carrying case	46662/608	Protective carrying case



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IFR is a world leader in developing leading edge test and measurement equipment. The priority at IFR is to understand your communications test needs and respond to them. IFR has the flexibility and expertise to create just the right test solution for you. We understand that just as you are the expert in designing wireless products, we are expert in wireless test.

Combining the quality of our test products with their reliability, excellent price/performance ratio and minimal requirements for maintenance, every IFR test system represents an outstanding lifetime value.

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The added value IFR includes with each and every test set we sell will make you more productive. We offer a two-year standard warranty on all products and we will continue to support your product for five years beyond its final production. Our outstanding Customer Service Department offers calibration, out-of warranty repairs and consulting. Our Sales and Training Departments offer clear and concise product information with realistic performance specifications, technology training and application training. Our experienced engineers will help you develop application software and through continuous improvement programs, upgrades are always available.

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