

### Features:

- \* 10 MHz to 20GHz measurement range
- \* 0.1dB resolution
- \* Digital Display on backlit LCD with bargraph
- \* RS 232 interface
- \* Wide range from +20dBm(100mW) to -30dBm(1uW)
- \* dB relative mode
- \* Measurement in dBm, mW, dBm, dBW, dBuW
- \* Shock/Drop resistant Thermistor Sensor
- \* In built X band source for scalar network analysis
- \* Measure Gunn and Klystron Source outputs without PIN modulator.
- \* Can be used for swept measurement with CRO interface capability.
- \* The high dynamic range is useful for experimentation in microwave test benches.
- \* It can effectively replace the SWR meter for most experiments and allow measurements with unprecedented accuracy.

### Amitec MPM20 Technical Specifications

#### POWER METER

Frequency range	: 10MHz to 20 Ghz
Display	: 16X2 Backlit LCD
Power range	: -30dBm to +20dBm
Measurement	: dBm, dBm, mW, dBW, dBuW with Digital Display
Resolution	: 0.1, 0.5 and 1dB
Ranging	: Auto-ranging
Sampling	: 1, 10, 100 readings per sec.
Relative Offset	: +20.0 to -30.0dBm for relative measurement
User setting	: +3.0dB to -3.0dB in 0.1dB step
Level Indicator	: Bar Graph
Recorder output	: For CRO interface
PC interface	: RS232 serial port
Power	: 100-240VAC, 47-63 Hz



#### POWER SENSOR

RF Connector	: SMA
Impedance	: 50 ohms
Frequency range	: 10MHz to 20GHz
Maximum input	: +20dBm
Return Loss	: 20dB upto 12.4GHz
	: 15dB upto 20GHz
Compensation	: Temperature compensated thermistor
Cable	: Sensor/meter cable 3m
Adapter	: N-SMA, X-band waveguide to coax adapter



#### MICROWAVE SOURCE

Frequency	: 10.5 Ghz typical
Power level	: 1mW typical

#### E-Manual: Installation Video for ease of Learning

#### List of Experiments

1. To learn different ways of measuring power.
2. To evaluate the accuracy of the power measurements.
3. To plot the power output of Gunn/Klystron Oscillator with supply voltage.
4. To plot the power output of a Gunn/Klystron Oscillator with frequency.
5. Study of square law modulation and square law characteristics of a crystal detector.
6. To measure PIN modulator insertion loss & modulation depth.
7. To measure the accuracy of SWR meter reading.
8. To calculate the relationship between Q and bandwidth of resonance cavity.
9. To measure the insertion loss of the waveguide.
10. To measure the insertion loss in the main line of a directional coupler.
11. To measure the coupling factor of a directional coupler.
12. To measure the isolation & directivity of a directional coupler.
13. To measure the return loss of a unknown load.
14. To measure the decoupling between H and E arms of magic Tee.
15. To measure the insertion loss of the hybrid Tee.
16. To measure the return loss of H arm in a magic Tee.
17. To measure and plot the attenuation characteristics of variable attenuator.
18. To measure the attenuation of a fixed attenuator.
19. To measure the input SWR of attenuator.
20. To measure the gain of a pyramidal horn.
21. To plot the E and H Plane polar pattern of a antenna and compute the beamwidth.
22. To measure the coupling coefficient of a waveguide E & H Plane Tee.
23. To measure the isolation of a waveguide E & H plane Tee.
24. To measure the input VSWR of a E & H plane Tee.
25. To study the operation of ferrite circulator and measure its insertion loss.
26. To measure isolation of a ferrite circulator.
27. To measure the cross coupling of a circulator.
28. To study the variation of characteristics of ferrite circulator with frequency.

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