

## Description

Mi-Wave's 511 Series Precision Programmable Rotary Vane Attenuators are available in full waveguide bands from 7.0 to 220GHz. Attenuation control is performed manually via a front panel or remote controlled using a standard IEEE-488 or USB interface. The attenuators small compact size incorporates both the electronic controller and the microwave components. The unit operates from a single +24 Volt DC source or with an optional adapter.

- *Low Cost*
- *Compact Size*
- *7.0 to 220 GHz*
- *High Accuracy*
- *Highly Reliable*
- *Digital Readout*
- *Low Insertion Loss*
- *IEEE-488 & USB Interface*
- *Full Waveguide Bands*
- *Manual Operation Mode*

Attenuation range is from 0 to 70 dB in .01 dB steps from 0 to 70 dB. A digital readout is provided on the front panel to display attenuation settings. USB & GPIB interface available. Tested to over 1 million cycles

New company proprietary internal absorbing material that will handle high power levels and yield low insertion loss and mode free operation to 70 db attenuation levels.

## Applications

- Fade Margin Testing of Microwave Radios
- Remote Control of RF Power Levels
- Fade Margin Testing of Microwave Radio Equipment
- Instrumentation

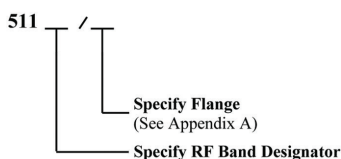
Technical Specifications (typical)						
Model No.	Frequency Band	Waveguide	Insertion Loss	VSWR	Avg Low Power Handling	High Power Handling
	GHz	WR	Max.	Max.	Max. n/a	n/a
511K	18.0–26.5	42	0.5 dB	1.15:1	0.3 watt	n/a
511A	26.5–40.0	28	0.5 dB	1.15:1	0.3 watt	n/a
511B	33.0–50.0	22	0.6 dB	1.15:1	0.3 watt	n/a
511U	40.0–60.0	19	0.7 dB	1.15:1	0.2 watt	n/a
511V	50.0–75.0	15	0.9 dB	1.20:1	0.2 watt	3
511E	60.0–90.0	12	1.0 dB	1.2:1	0.1 watt	3
511W	75.0–110.0	10	1.3 dB	1.2:1	0.1 watt	3
511F	90.0–140.0	8	1.5 dB	1.3:1	0.1 watt	n/a
511D	110.0–170.0	7	3.0 dB	1.3:1	0.1 watt	n/a
511G	140.0–220.0	5	3.0 dB	1.3:1	0.1 watt	n/a
511H	170-260	4	3.0 dB	1.3:1	0.1 watt	n/a
511J	220-325	3	3.0 dB	1.3:1	0.1 watt	n/a



## 511 v2 Upgrades Include:

- *Attenuation from 0 to 70 dB*
- *USB & IEEE-488 Interface*
- *Higher Speed*
- *Less than 2sec. to change attenuation level from 0 to 70 dB*
- *Significantly Quiet Operation*
- *Programmable GPIB address (now goes up to 30),*
- *“xx.xx dB Command Complete,” message sent via USB or GPIB after attenuation level is reached*
- *Rocker switch replaced by LED buttons for changing*
- *Attenuation levels efficiently and quickly*
- *Interactive User Menu*
- *Improved resolution with 0.01 steps from 0 to 70 dB*
- *Backlit Display*
- *Integrated shutdown safety feature in the event of*
- *Hall effect sensor failure*
- *Mode free*
- *Higher Power Handling capability*

## Ordering Information



### EXAMPLE:

511A/599  
Frequency range 26.5 to 40 GHz  
UG-599/U Flange

Test Data for 511 Version 2

