



## WR-42 Orthomode Transducer

### Description:

**Model SAT-FK-42042-S1** is a full band, WR-42 orthomode transducer (OMT) that operates between 18 and 26.5 GHz. The OMT separates a circularly or elliptically polarized waveform into two linear, orthogonal waveforms or combines two linearly polarized waveforms into one circularly or elliptically polarized waveform. The OMT shows high port isolation and high cross-polarization cancellation while maintaining a low insertion loss. The OMT is configured with a 0.420" x 0.420" square waveguide for the antenna port and two WR-42 waveguides for the horizontal and vertical ports. All ports have UG-595/U flanges with 4-40 threaded holes.



### Features:

- High Isolation
- Low Insertion Loss
- Full Band Performance
- High Crosspol Rejection

### Applications:

- Radar Systems
- Communication Systems
- Antenna Ranges
- Waveform polarization separation and combination

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	18.0 GHz		26.5 GHz
Insertion Loss (A to V Port)		0.5 dB	
Insertion Loss (A to H Port)		0.5 dB	
Isolation		40 dB	
Cross Polarization (A to V Port)		-35 dB	
Cross Polarization (A to H Port)		-35 dB	
Return Loss (V Port)		15 dB	
Return Loss (H Port)		15 dB	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

### Mechanical Specifications:

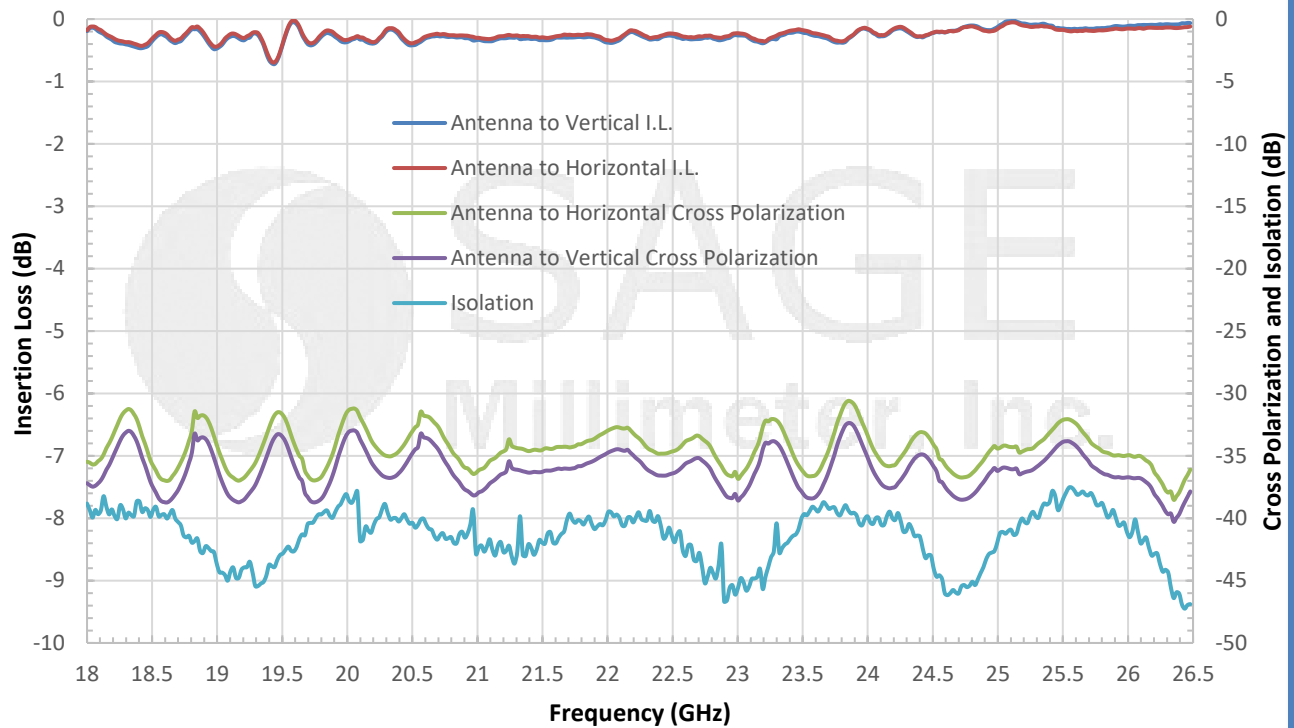
Item	Specification
Antenna Port	0.420" x 0.420" Square Waveguide
Horizontal and Vertical Ports	WR-42 Waveguide
Flange Type	UG-595/U Threaded Flange (on all ports)
Size	2.00" (L) x 1.65" (W) x 1.00" (H)
Material	Aluminum
Finish	Gold Plated
Weight	5 Oz
Outline	AT-KS-420-F



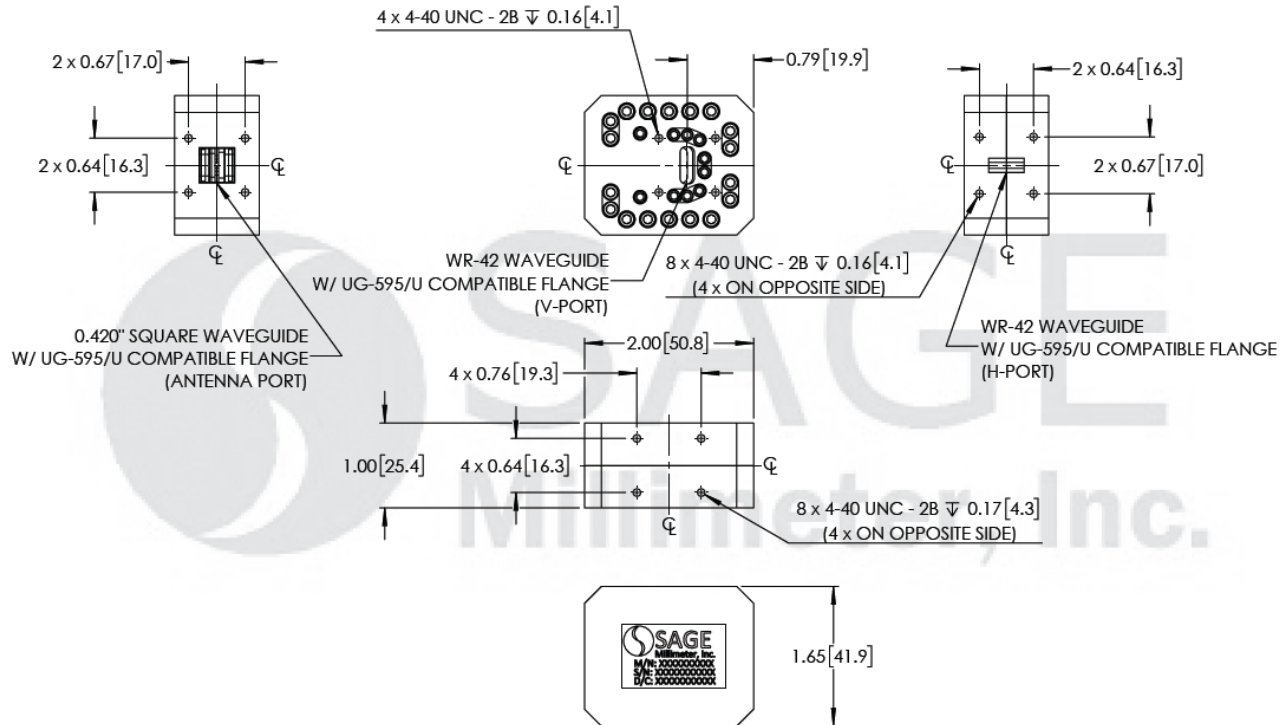
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## WR-42 Orthomode Transducer

### Simulated Performance vs. Frequency



### Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



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**Note:**

- All data presented is simulated. Actual data may vary slightly.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

**Caution:**

- Any foreign objects in the waveguides will cause performance degradation and possible device damage.

