

## K-Band Orthomode Transducer

### Description:

**Model SAT-FK-42042-S1-1** 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. **This item**



**has limited stock. If you need more units than what is available, we recommend purchasing this version under model number SAT-FK-42042-S1.**

### Features:

- High Isolation
- Low Insertion Loss
- Full Band Performance

### 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		0.5 dB	1.0 dB
Isolation	40 dB	45 dB	
Cross Polarization		35 dB	
Return Loss	-12 dB	-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	3.50" (L) x 2.75" (W) x 0.87" (H)
Material	Aluminum
Finish	Gold Plated



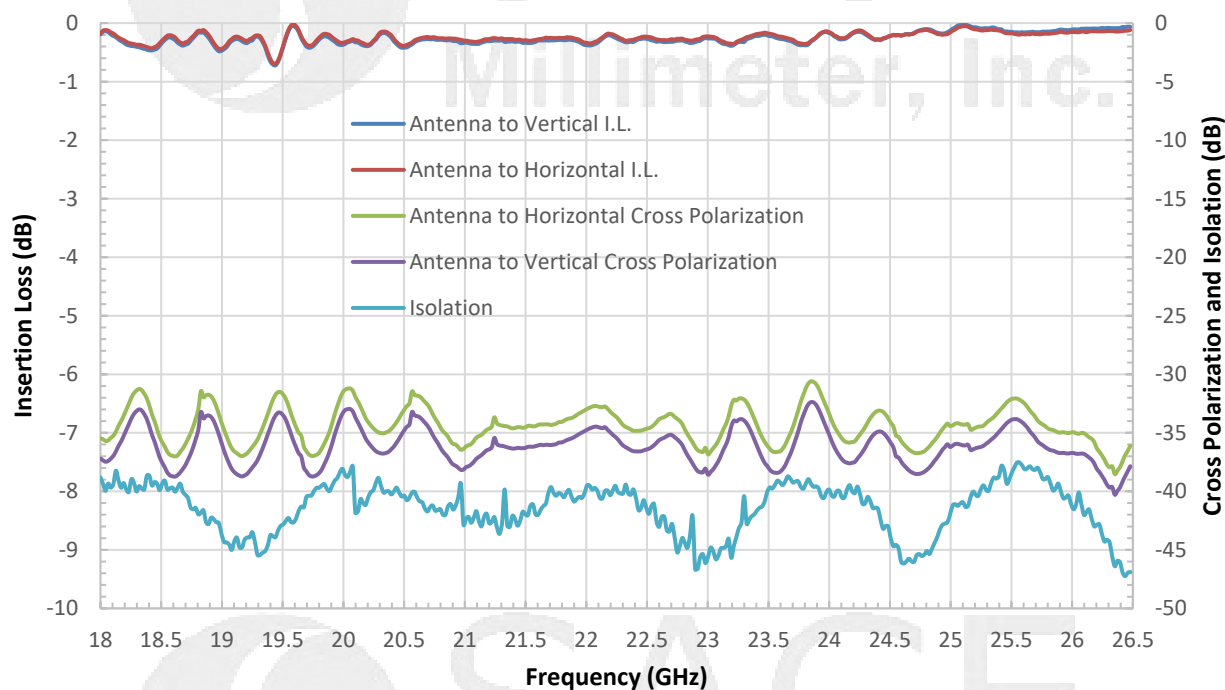
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## K-Band Orthomode Transducer

Weight	9.2 Oz
Outline	AT-KS-420-F-1

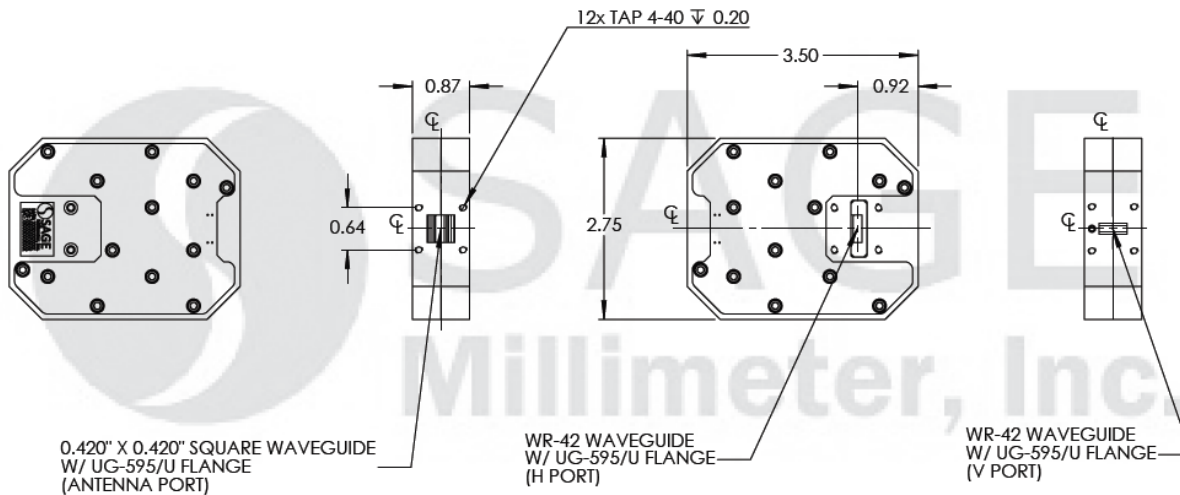
### Typical Performance vs. Frequency



**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches)



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**Note:**

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25°C case temperature.
- 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.

