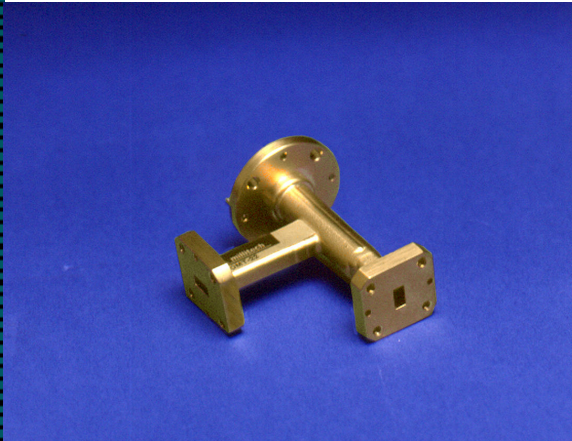


SERIES OMT

## ORTHOMODE TRANSDUCERS



### FEATURES:

- High isolation (greater than 25 dB)
- Broadband operation
- Low insertion loss

### APPLICATIONS:

- Dual-polarized radar antennas
- Radiometers
- Diplexer for communications links

### DESCRIPTION

Millitech series OMT orthomode transducers are used to combine or separate two orthogonal linearly-polarized signals simultaneously. Typical output (or input port) is a circular waveguide, which can support both linear polarizations or circular (left-hand and right-hand) polarization, and is generally connected to an antenna feedhorn.

Greater than 25 dB isolation between the two linear polarizations is achieved over a significant portion of the waveguide band.

The orthomode transducer has both output linear polarization ports in rectangular waveguide, as it incorporates a built-in transition from circular-to-rectangular waveguide.

Millitech also offers orthomode transducers that cover over 50% of the waveguide band.

### ELECTRICAL SPECIFICATIONS

Performance Parameter	Specification
Frequency Range (GHz)	18 to 100 <sup>*1</sup>
Bandwidth <sup>*2</sup>	---
Isolation <sup>*3</sup> (dB)	25 to 40 dB
VSWR <sup>*4</sup>	1.4:1
Power Handling (Watts CW) (not tested)	100

\*1 – Higher frequencies quoted upon request

\*2 – Please contact Millitech to discuss bandwidth options

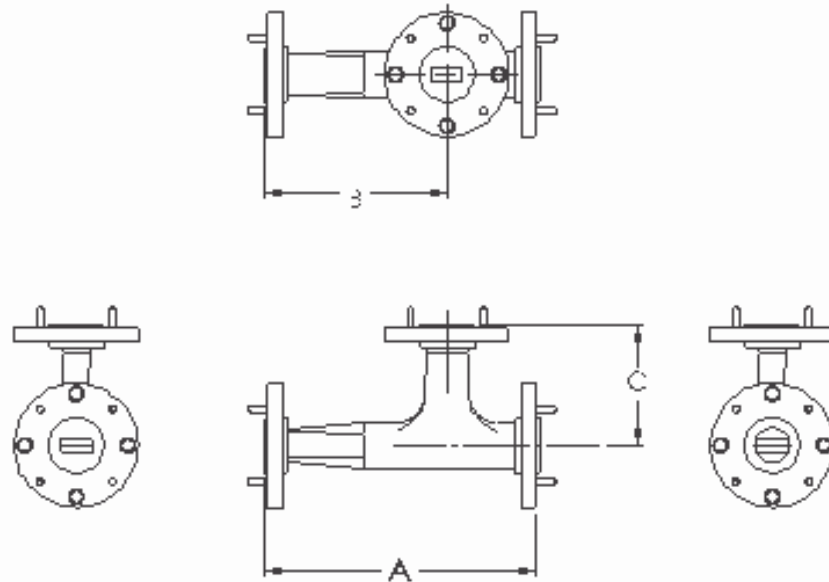
\*3 – Depending on requirements

\*4 – Typical value. Lower VSWR option may be available depending on requirements

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**OUTLINE DRAWINGS**

**MECHANICAL SPECIFICATIONS**

Model Number	OMT-42	OMT-28	OMT-22	OMT-19	OMT-15	OMT-10
A (in/mm)	3.75/95	2.50/64	1.93/49	2.15/55	2.00/51	1.62/41
B (in/mm)	2.75/70	1.66/42	1.21/31	1.40/36	1.28/33	.90/23
C (in/mm)	1.75/44	1.10/28	1.10/28	1.10/28	1.10/28	1.10/28

**HOW TO ORDER**

Specify Model Number OMT-XX-ABCCC
<b>XX</b> = Waveguide Band <b>WR</b> – number
<b>A</b> = Flange Type* (rectangular waveguide) <b>R</b> – round (not available in WR-42) <b>S</b> – square (WR-42 and WR-28 only)
<b>B</b> = Flange Type (circular waveguide) <b>R</b> – round (not available in WR-42) <b>S</b> – square (WR-42 and WR-28 only) <b>P</b> – pin contact (WR-08 and WR-06 only)
<b>CCC</b> = Circular Waveguide Diameter (inches) See <b>Waveguide Sizes Table</b> (on next page)
<b>*For WR-42 and WR-28 waveguide please specify threaded or clear mounting holes</b>

**CIRCULAR WAVEGUIDE SIZES**

Rectangular Waveguide Band	Circular Diameter Size	Frequency Range (GHz)*	Circular Waveguide Diameter (in/mm)	Specify When Ordering
<b>K</b>	Large	17.5-20.5	0.455/11.56	<b>455</b>
	Medium	20.0-24.5	0.396/10.06	<b>396</b>
	Small	24.0-26.5	0.328/8.33	<b>328</b>
<b>Ka</b>	Large	26.5-33.0	0.315/8.00	<b>315</b>
	Medium	33.0-38.5	0.250/6.35	<b>250</b>
	Small	38.5-40.0	0.219/5.56	<b>219</b>
<b>Q</b>	Large	33.0-38.5	0.250/6.35	<b>250</b>
	Medium	38.5-43.0	0.219/5.56	<b>219</b>
	Small	43.0-50.0	0.188/4.78	<b>188</b>
<b>U</b>	Large	40.0-43.0	0.210/5.33	<b>210</b>
	Medium	43.0-50.0	0.188/4.78	<b>188</b>
	Small	50.0-60.0	0.165/4.19	<b>165</b>
<b>V</b>	Large	50.0-58.0	0.165/4.19	<b>165</b>
	Medium	58.0-68.0	0.141/3.58	<b>141</b>
	Small	68.0-75.0	0.125/3.18	<b>125</b>
<b>E</b>	Large	60.0-66.0	0.136/3.45	<b>136</b>
	Medium	66.0-82.0	0.125/3.18	<b>125</b>
	Small	82.0-90.0	0.094/2.39	<b>094</b>
<b>W</b>	Large	75.0-88.0	0.112/2.84	<b>112</b>
	Small	88.0-110.0	0.094/2.39	<b>094</b>
<b>F</b>	Large	90.0-115.0	0.089/2.26	<b>089</b>
	Small	115.0-140.0	0.075/1.91	<b>075</b>
<b>D</b>	Large	110.0-140.0	0.073/1.85	<b>073</b>
	Small	140.0-160.0	0.059/1.50	<b>059</b>
<b>G</b>	Large	140.0-180.0	0.058/1.47	<b>058</b>
	Small	180.0-220.0	0.045/1.14	<b>045</b>
---	---	170.0-260.0	0.049/1.25	<b>049</b>
---	---	220.0-325.0	0.039/0.99	<b>039</b>

\*If the required frequencies fall within two waveguide diameter sizes, the larger one should be selected.