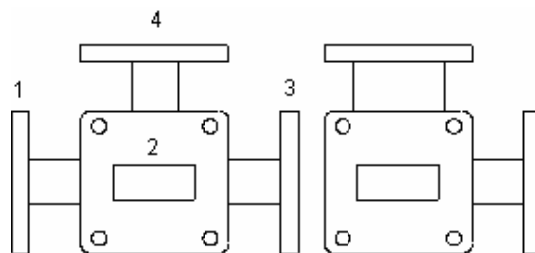




9 Waveguide Power Divider/Combiner

9.1 Magic Hybrid Tee

Vector Telecom's Magic Hybrid Tee is four-port coupler for matching, balance and isolation. E- plane to H-plane Isolation is a function of the symmetry which is carefully balanced on each unit. If the E-plane port 4 or the H-plane port 2 are used as inputs the split is on the output collinear ports 1 and 3. When the input is E plane port 4 the outputs are out of phase 180 deg. When the input is H plane port 2 the outputs are in phase. The in-phase and equal amplitude signals inputting into two collinear ports can result combined signals at H-plane port and cancelled signal at E-plane port. This feature is widely used in monopulse antenna feed structure and phasing testing setup.



【Specifications】

Model No*	Freq Range (GHz)	Operating Bandwidth (%)**	VSWR (Max)		Isolation (H&E Arms)dB	Unbalance (Max) (dB)	WG Type		Flange	Material
			H-Arm	E-Arm			IEC	EIA		
VT3WMT...	0.32-0.49	≤20%	1.20	1.50	35	≤0.25	R3	WR2300	FDP	Al
VT4WMT...	0.35-0.53	≤20%	1.20	1.50	35	≤0.25	R4	WR2100	FDP	Al
VT5WMT...	0.41-0.62	≤20%	1.20	1.50	35	≤0.25	R5	WR1800	FDP	Al
VT6WMT...	0.49-0.75	≤20%	1.20	1.50	35	≤0.25	R6	WR1500	FDP	Al
VT8WMT...	0.64-0.98	≤20%	1.20	1.50	35	≤0.25	R8	WR1150	FDP	Al
VT9WMT...	0.75-1.15	≤20%	1.20	1.50	35	≤0.25	R9	WR975	FDP	Al
VT12WMT...	0.96-1.46	≤20%	1.20	1.50	35	≤0.25	R12	WR770	FDP	Al
VT14WMT...	1.13-1.73	≤20%	1.20	1.50	35	≤0.25	R14	WR650	FDP	Al
VT18WMT...	1.45-2.20	≤20%	1.20	1.50	35	≤0.25	R18	WR510	FDP	Al
VT22WMT...	1.72-2.61	≤20%	1.20	1.50	35	≤0.4	R22	WR430	FDP	Al
VT26WMT...	2.17-3.30	≤20%	1.20	1.50	35	≤0.4	R26	WR340	FDP	Al
VT32WMT...	2.60-3.95	≤20%	1.20	1.50	35	≤0.4	R32	WR284	FDP	Al



Model No*	Freq Range (GHz)	Operating Bandwidth (%)**	VSWR (Max)		Isolation (H&E Arms)dB	Unbalance (Max) (dB)	WG Type		Flange	Material
			H-Arm	E-Arm			IEC	EIA		
VT40WMT...	3.22-4.90	≤20%	1.20	1.50	35	≤0.4	R40	WR229	FDP	Al
VT48WMT...	3.94-5.99	≤20%	1.20	1.50	35	≤0.4	R48	WR187	FDP	Al
VT58WMT...	4.64-7.05	≤20%	1.20	1.50	35	≤0.4	R58	WR159	FDP	Al
VT70WMT...	5.38-8.17	≤20%	1.20	1.50	35	≤0.4	R70	WR137	FDP	Cu
VT84WMT...	6.57-9.99	≤20%	1.20	1.50	35	≤0.4	R84	WR112	FBP	Cu
VT100WMT...	8.20-12.4	≤20%	1.20	1.50	35	≤0.4	R100	WR90	FBP	Cu
VT120WMT...	9.84-15.0	≤20%	1.20	1.50	35	≤0.4	R120	WR75	FBP	Cu
VT140WMT...	11.9-18.0	≤20%	1.20	1.50	35	≤0.4	R140	WR62	FBP	Cu
VT180WMT...	14.5-22.0	≤20%	1.20	1.50	35	≤0.4	R180	WR51	FBP	Cu
VT220WMT...	17.6-26.7	≤20%	1.20	1.50	30	≤0.4	R220	WR42	FBP	Cu
VT260WMT...	21.7-33.0	≤20%	1.20	1.50	30	≤0.4	R260	WR34	FBP	Cu
VT320WMT...	26.5-40.0	≤20%	1.20	1.50	30	≤0.4	R320	WR28	FBP	Cu
VT400WMT...	32.9-50.1	≤20%	1.20	1.50	30	≤0.5	R400	WR22	FUGP	Cu
VT500WMT...	39.2-59.6	≤20%	1.20	1.50	30	≤0.5	R500	WR19	FUGP	Cu
VT620WMT...	49.8-75.8	≤20%	1.20	1.50	30	≤0.5	R620	WR15	FUGP	Cu
VT740WMT...	60.5-91.9	≤20%	1.20	1.50	30	≤0.5	R740	WR12	FUGP	Cu
VT900WMT...	73.8-110	≤20%	1.20	1.50	30	≤0.5	R900	WR10	FUGP	Cu

*Indicates Model Number. See Ordering Information for complete part number.

**Typical operating bandwidth of the hybrid tee is up to 15% of waveguide bandwidth.

*** Performance degradation may occur while it covers wider waveguide bandwidth.

【Ordering Information】

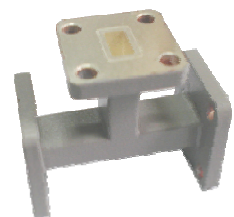
Example Part No: VT 100 WMT A

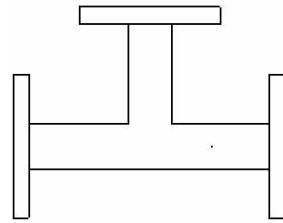
Vector Telecom ——— Material: A=Aluminum C=Copper
WG Type: R100 ——— Product Type: WG Magic Tee

- Flange type: Multiple types available - see VT Flanges page
- Finish: Corrosion protection plus black top coat

9.2 E-Plane Tee

Vector Telecom manufactures a wide variety of E-Plane Tees. The junction of the auxiliary arm is made on the broad wall of the main waveguide.





【Specifications】

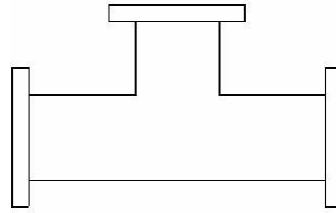
Model No	Freq Range (GHz)	WG Type		Flange	Material
		IEC	EIA		
VT3WET	0.32-0.49	R3	WR2300	FDP/FDM	Al
VT4WET	0.35-0.53	R4	WR2100	FDP/FDM	Al
VT5WET	0.41-0.62	R5	WR1800	FDP/FDM	Al
VT6WET	0.49-0.75	R6	WR1500	FDP/FDM	Al
VT8WET	0.64-0.98	R8	WR1150	FDP/FDM	Al
VT9WET	0.75-1.15	R9	WR975	FDP/FDM	Al
VT12WET	0.96-1.46	R12	WR770	FDP/FDM	Al
VT14WET	1.13-1.73	R14	WR650	FDP/FDM	Al
VT18WET	1.45-2.20	R18	WR510	FDP/FDM	Al
VT22WET	1.72-2.61	R22	WR430	FDP/FDM	Al/Cu
VT26WET	2.17-3.30	R26	WR340	FDP/FDM	Al/Cu
VT32WET	2.60-3.95	R32	WR284	FDP/FDM	Al/Cu
VT40WET	3.22-4.90	R40	WR229	FDP/FDM	Al/Cu
VT48WET	3.94-5.99	R48	WR187	FDP/FDM	Al/Cu
VT58WET	4.64-7.05	R58	WR159	FDP/FDM	Al/Cu
VT70WET	5.38-8.17	R70	WR137	FDP/FDM	Al/Cu
VT84WET	6.57-9.99	R84	WR112	FBP/FBM/FBE	Al/Cu
VT100WET	8.20-12.4	R100	WR90	FBP/FBM/FBE	Al/Cu
VT120WET	9.84-15.0	R120	WR75	FBP/FBM/FBE	Al/Cu
VT140WET	11.9-18.0	R140	WR62	FBP/FBM/FBE	Al/Cu
VT180WET	14.5-22.0	R180	WR51	FBP/FBM/FBE	Al/Cu
VT220WET	17.6-26.7	R220	WR42	FBP/FBM/FBE	Al/Cu
VT260WET	21.7-33.0	R260	WR34	FBP/FBM/FBE	Al/Cu
VT320WET	26.3-40.0	R320	WR28	FBP/FBM/FBE	Al/Cu
VT400WET	32.9-60.1	R400	WR22	FUGP	Cu
VT500WET	39.2-59.6	R500	WR19	FUGP	Cu
VT620WET	49.8-75.8	R620	WR15	FUGP	Cu
VT740WET	60.5-91.9	R740	WR12	FUGP	Cu
VT900WET	73.8-110	R900	WR10	FUGP	Cu

*Indicates Model Number. See Ordering Information for complete part number.



9.3 H-Plane Tee

Vector Telecom manufactures a wide variety of H-Plane Tees. The junction of the auxiliary arm is made on the narrow wall of the main waveguide



【Specifications】

Model No	Freq Range (GHz)	WG Type		Flange	Material
		IEC	EIA		
VT3WHT	0.32-0.49	R3	WR2300	FDP/FDM	Al
VT4WHT	0.35-0.53	R4	WR2100	FDP/FDM	Al
VT5WHT	0.41-0.62	R5	WR1800	FDP/FDM	Al
VT6WHT	0.49-0.75	R6	WR1500	FDP/FDM	Al
VT8WHT	0.64-0.98	R8	WR1150	FDP/FDM	Al
VT9WHT	0.75-1.15	R9	WR975	FDP/FDM	Al
VT12WHT	0.96-1.46	R12	WR770	FDP/FDM	Al
VT14WHT	1.13-1.73	R14	WR650	FDP/FDM	Al
VT18WHT	1.45-2.20	R18	WR510	FDP/FDM	Al
VT22WHT	1.72-2.61	R22	WR430	FDP/FDM	Al/Cu
VT26WHT	2.17-3.30	R26	WR340	FDP/FDM	Al/Cu
VT32WHT	2.60-3.95	R32	WR284	FDP/FDM	Al/Cu
VT40WHT	3.22-4.90	R40	WR229	FDP/FDM	Al/Cu
VT48WHT	3.94-5.99	R48	WR187	FDP/FDM	Al/Cu
VT58WHT	4.64-7.05	R58	WR159	FDP/FDM	Al/Cu
VT70WHT	5.38-8.17	R70	WR137	FDP/FDM	Al/Cu
VT84WHT	6.57-9.99	R84	WR112	FBP/FBM/FBE	Al/Cu
VT100WHT	8.20-12.4	R100	WR90	FBP/FBM/FBE	Al/Cu
VT120WHT	9.84-15.0	R120	WR75	FBP/FBM/FBE	Al/Cu
VT140WHT	11.9-18.0	R140	WR62	FBP/FBM/FBE	Al/Cu
VT180WHT	14.5-22.0	R180	WR51	FBP/FBM/FBE	Al/Cu
VT220WHT	17.6-26.7	R220	WR42	FBP/FBM/FBE	Al/Cu
VT260WHT	21.7-33.0	R260	WR34	FBP/FBM/FBE	Al/Cu
VT320WHT	26.3-40.0	R320	WR28	FBP/FBM/FBE	Al/Cu
VT400WHT	32.9-60.1	R400	WR22	FUGP	Cu
VT500WHT	39.2-59.6	R500	WR19	FUGP	Cu



Model No	Freq Range (GHz)	WG Type		Flange	Material
		IEC	EIA		
VT620WHT	49.8-75.8	R620	WR15	FUGP	Cu
VT740WHT	60.5-91.9	R740	WR12	FUGP	Cu
VT900WHT	73.8-110	R900	WR10	FUGP	Cu

*Indicates Model Number. See Ordering Information for complete part number.

【Ordering Information】

Example Part No: VT 100 WHT A

Vector Telecom — Material: A=Aluminum C=Copper
WG Type: R100 — Product Type: WHT: H-Plane Tee
WET: E-Plane Tee

- Flange type: Multiple types available - see VT Flanges page
- Finish: Corrosion protection plus black top coat

9.4 In-Phase Waveguide Power Divider / Combiner



【Specifications】

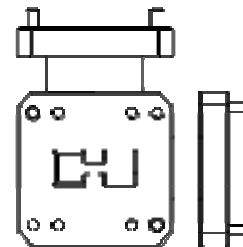
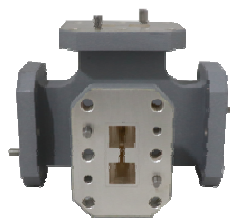
Model No*	WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR (Max)		Isolation (2 Balance Arms)(dB)	Distributi on Ratio(dB)	Flange	Material
				H-Arm	Balance Arm				
VT3WMTPC/D	WR2300	0.32-0.49	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
VT4WMTPC/D	WR2100	0.35-0.53	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
VT5WMTPC/D	WR1800	0.41-0.62	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
VT6WMTPC/D	WR1500	0.49-0.75	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
VT8WMTPC/D	WR1150	0.64-0.98	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
VT9WMTPC/D	WR975	0.75-1.15	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
VT12WMTPC/D	WR770	0.96-1.46	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
VT14WMTPC/D	WR650	1.13-1.73	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
VT18WMTPC/D	WR510	1.45-2.20	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
VT22WMTPC/D	WR430	1.72-2.61	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
VT26WMTPC/D	WR340	2.17-3.30	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
VT32WMTPC/D	WR284	2.60-3.95	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
VT40WMTPC/D	WR229	3.22-4.90	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
VT48WMTPC/D	WR187	3.94-5.99	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
VT58WMTPC/D	WR159	4.64-7.05	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
VT70WMTPC/D	WR137	5.38-8.17	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Cu



Model No*	WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR (Max)		Isolation (2 Balance Arms)(dB)	Distributi on Ratio(dB)	Flange	Material
				H-Arm	Balance Arm				
VT84WMTPC/D	WR112	6.57-9.99	≤20%	≤1.20	≤1.50	≥17	3±0.4	FBP	Cu
VT100WMTPC/D	WR90	8.20-12.4	≤20%	≤1.20	≤1.50	≥17	3±0.4	FBP	Cu
VT120WMTPC/D	WR75	9.84-15.0	≤20%	≤1.20	≤1.50	≥17	3±0.4	FBP	Cu
VT140WMTPC/D	WR62	11.9-18.0	≤20%	≤1.20	≤1.50	≥17	3±0.4	FBP	Cu
VT180WMTPC/D	WR51	14.5-22.0	≤20%	≤1.20	≤1.50	≥17	3±0.4	FBP	Cu
VT220WMTPC/D	WR42	17.6-26.7	≤20%	≤1.20	≤1.50	≥15	3±0.4	FBP	Cu
VT260WMTPC/D	WR34	21.7-33.0	≤20%	≤1.20	≤1.50	≥15	3±0.4	FBP	Cu
VT320WMTPC/D	WR28	26.5-40.0	≤20%	≤1.20	≤1.50	≥15	3±0.4	FBP	Cu
VT400WMTPC/D	WR22	32.9-50.1	≤20%	≤1.20	≤1.50	≥15	3±0.5	FUGP	Cu
VT500WMTPC/D	WR19	39.2-59.6	≤20%	≤1.20	≤1.50	≥15	3±0.5	FUGP	Cu
VT620WMTPC/D	WR15	49.8-75.8	≤20%	≤1.20	≤1.50	≥15	3±0.5	FUGP	Cu
VT740WMTPC/D	WR12	60.5-91.9	≤20%	≤1.20	≤1.50	≥15	3±0.5	FUGP	Cu
VT900WMTPC/D	WR10	73.8-112	≤20%	≤1.20	≤1.50	≥15	3±0.5	FUGP	Cu

*Indicates Model Number. See Ordering Information for complete part number.

9.5 Double-Ridged Waveguide Magic Tee and Power Divider / Combiner



【Specifications】

Model No*	WG Type EIA	Freq Range (GHz)	VSWR (Max)		Isolation (2 Balance Arm) (dB)	Distribution Ratio (dB)	Flange	Material
			H-Arm	E-Arm				
VT200DRWMTPC/D	WRD200	2.0-4.8	≤1.50	≤1.50	≥12	3±0.6	FP	Al
VT250DRWMTPC/D	WRD250	2.6-7.8	≤1.50	≤1.50	≥12	3±0.6	FP	Al
VT350DRWMTPC/D	WRD350	3.5-8.2	≤1.50	≤1.50	≥12	3±0.6	FP	Al
VT475DRWMTPC/D	WRD475	4.75-11	≤1.50	≤1.50	≥12	3±0.6	FP	Al
VT500DRWMTPC/D	WRD500	5.0-18.0	≤1.50	≤1.50	≥12	3±0.6	FP	Cu
VT650DRWMTPC/D	WRD650	6.5-18.0	≤1.50	≤1.50	≥12	3±0.6	FP	Cu
VT750DRWMTPC/D	WRD750	7.5-18.0	≤1.50	≤1.50	≥12	3±0.6	FP	Cu
VT700DRWMTPC/D	WRD700	7.0-18.0	≤1.50	≤1.50	≥12	3±0.6	FP	Cu

*Indicates Model Number. See Ordering Information for complete part number.



【Ordering Information】

Example Part No: VT 100 WMTPC/D P M A

Vector Telecom ———— |
 WG Type: R100 ———— |
 Product Type: WG Magic Tee Combiner/ Divider ———— |

Material: A=Aluminum C=Copper
 Flange 2 Type: M=FBM100
 Flange 1 Type: P=FBP100

Code	Description
WMTPC/D	Waveguide Magic Tee Power Combiner/Divider
DRWMTPC/D	Double Ridged WG Magic Tee Power Combiner/Divider

- Flange type: Multiple types available - see VT Flanges page
- Finish: Corrosion protection plus black top coat

9.6 Waveguide 90° Power Divider/Combiner

Vector Telecom offers a range of high-performance waveguide 90° power dividers/combiners with a frequency range of 1.8-40 GHz and standard rectangular waveguides from BJ22 to BJ320. The typical mainline VSWR in the operating bandwidth is 1.15, the coupling is 3-7dB, and the isolation is greater than 15-25dB.



【Product Type】



E Plane Coupling (WSWC Series)

H Plane Coupling (WTWC Series)

Model	I Type		U Type		X Type		Y Type		YU Type	
	WSWC	WTWC	WSWUC	WTWUC	WSWXC	WTWXC	WSWYC	WTWYC	WSWYUC	WTWYUC
Description	Narrow wall coupling	Wide wall coupling	Narrow wall coupling	Wide wall coupling	Narrow wall coupling	Wide wall coupling	Narrow wall coupling	Wide wall coupling	Narrow wall coupling	Wide wall coupling
Product Image										