

**SYNERGY TELECOM P. LTD.**



# PRODUCT CATALOG



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## Straight Waveguide

### Rectangular Straight Waveguide



WG Type EIA	Freq Range (GHz)	VSWR	Standard Length Range ...(mm)	Flange	Material
WR2300	0.32-0.49	≤1.05	0.2-500	FDP/FDM	Al
WR2100	0.35-0.53	≤1.05	0.2-500	FDP/FDM	Al
WR1800	0.41-0.62	≤1.05	0.2-500	FDP/FDM	Al
WR1500	0.49-0.75	≤1.05	0.2-500	FDP/FDM	Al
WR1150	0.64-0.98	≤1.05	0.2-500	FDP/FDM	Al
WR975	0.75-1.15	≤1.05	0.2-500	FDP/FDM	Al
WR770	0.96-1.46	≤1.05	0.2-500	FDP/FDM	Al
WR650	1.13-1.73	≤1.05	0.2-2000	FDP/FDM	Al
WR510	1.45-2.20	≤1.05	0.2-2000	FDP/FDM	Al
WR430	1.72-2.61	≤1.05	0.1-2000	FDP/FDM	Al
WR340	2.17-3.30	≤1.05	0.1-2000	FDP/FDM	Al
WR284	2.60-3.95	≤1.05	0.1-2000	FDP/FDM	Al
WR229	3.22-4.90	≤1.05	0.1-2000	FDP/FDM	Al
WR187	3.94-5.99	≤1.05	0.1-2000	FDP/FDM	Al
WR159	4.64-7.05	≤1.05	0.1-2000	FDP/FDM	Al
WR137	5.38-8.17	≤1.10	0.1-2000	FDP/FDM	Cu
WR112	6.57-9.99	≤1.10	0.1-2000	FBP/FBM	Cu
WR90	8.20-12.40	≤1.10	0.1-2000	FBP/FBM	Cu
WR75	9.84-15.0	≤1.10	0.1-2000	FBP/FBM	Cu
WR62	11.9-18.0	≤1.10	0.1-1000	FBP/FBM	Cu
WR51	14.5-22.0	≤1.10	0.1-1000	FBP/FBM	Cu
WR42	17.6-26.7	≤1.10	0.1-600	FBP/FBM	Cu
WR34	21.7-33.0	≤1.10	0.1-600	FBP/FBM	Cu
WR28	26.5-40.0	≤1.10	0.1-500	FBP/FBM	Cu
WR22	32.9-50.1	≤1.15	0.1-300	FUGP	Cu
WR19	39.2-59.6	≤1.15	0.1-300	FUGP	Cu
WR15	49.8-75.8	≤1.15	0.1-300	FUGP	Cu
WR12	60.5-91.9	≤1.15	0.1-300	FUGP	Cu
WR10	73.8-112	≤1.15	0.1-300	FUGP	Cu
WR8	92.2-140	-	0.1-100	FUGP	Cu
WR7	113-173	-	0.1-100	FUGP	Cu
WR5	145-220	-	0.1-100	FUGP	Cu
WR4	172-261	-	0.1-50	FUGP	Cu
WR3	217-330	-	0.1-50	FUGP	Cu

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## Straight Waveguide



### Double Ridge Straight Waveguide

WG Type EIA	Freq Range (GHz)	VSWR	Standard Length Range ...(mm)	Flange	Material
WRD84	0.84-2	≤1.15	0.1-500	FP/FM	Al
WRD150	1.5-3.6	≤1.15	0.1-500	FP/FM	Al
WRD200	2-4.8	≤1.15	0.1-500	FP/FM	Al
WRD250	2.6-7.8	≤1.15	0.1-500	FP/FM	Al
WRD350	3.5-8.2	≤1.15	0.1-500	FP/FM	Al
WRD475	4.75-11	≤1.15	0.1-500	FP/FM	Cu
WRD500	5-18	≤1.15	0.1-500	FP/FM	Cu
WRD580	5.8-16	≤1.15	0.1-500	FP/FM	Cu
WRD650	6.5-18	≤1.15	0.1-500	FP/FM	Cu
WRD750	7.5-18	≤1.15	0.1-500	FP/FM	Cu
WRD700	7-18.5	≤1.15	0.1-500	FP/FM	Cu
WRD110	11-26.5	≤1.2	0.1-200	FP/FM	Cu
WRD180	18-40	≤1.2	0.1-200	FP/FM	Cu



### Inflatable Straight Waveguide

WG Type EIA	Freq Range (GHz)	VSWR	Standard Length (mm)	Pressure (Mpa)	Flange	Material
WR2300	0.32-0.49	≤1.05	200	≤0.1	FDP/FDM	Al
WR2100	0.35-0.53	≤1.05	200	≤0.1	FDP/FDM	Al
WR1800	0.41-0.62	≤1.05	200	≤0.1	FDP/FDM	Al
WR1500	0.49-0.75	≤1.05	200	≤0.1	FDP/FDM	Al
WR1150	0.64-0.98	≤1.05	200	≤0.1	FDP/FDM	Al
WR975	0.75-1.15	≤1.05	200	≤0.1	FDP/FDM	Al
WR770	0.96-1.46	≤1.05	100	≤0.1	FDP/FDM	Al
WR650	1.13-1.73	≤1.05	100	≤0.1	FDP/FDM	Al
WR510	1.45-2.20	≤1.05	100	≤0.1	FDP/FDM	Al
WR430	1.72-2.61	≤1.05	100	≤0.1	FDP/FDM	Al
WR340	2.17-3.30	≤1.05	100	≤0.1	FDP/FDM	Al
WR284	2.60-3.95	≤1.05	100	≤0.1	FDP/FDM	Al
WR229	3.22-4.90	≤1.05	100	≤0.1	FDP/FDM	Al
WR187	3.94-5.99	≤1.05	100	≤0.1	FDP/FDM	Al
WR159	4.64-7.05	≤1.05	100	≤0.1	FDP/FDM	Al

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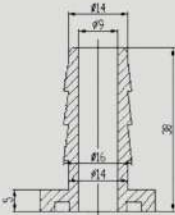

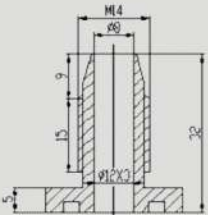
## Straight Waveguide



## Inflatable Straight Waveguide

WG Type EIA	Freq Range (GHz)	VSWR	Standard Length (mm)	Pressure (Mpa)	Flange	Material
WR137	5.38-8.17	≤1.10	50	≤0.1	FDP/FDM	Cu
WR112	6.57-9.99	≤1.10	50	≤0.1	FBP/FBM	Cu
WR90	8.20-12.40	≤1.10	50	≤0.1	FBP/FBM	Cu
WR75	9.84-15.0	≤1.10	50	≤0.1	FBP/FBM	Cu
WR62	11.9-18.0	≤1.10	50	≤0.2	FBP/FBM	Cu
WR51	14.5-22.0	≤1.10	50	≤0.2	FBP/FBM	Cu
WR42	17.6-26.7	≤1.10	50	≤0.2	FBP/FBM	Cu
WR34	21.7-33.0	≤1.10	50	≤0.2	FBP/FBM	Cu
WR28	26.5-40.0	≤1.10	50	≤0.2	FBP/FBM	Cu

## Inflatable Mouth Specifications

Description	Self-Locking Type	Agnail Clamp Type	Pagoda Clamp Type	Thread Type
Outline Drawings				
Inner Diameter (mm)	φ3.3	φ9	φ18	φ8
Outer Diameter (mm)	φ6.4	φ16	φ28	M14
Inner Diameter of Inflatable Tube (mm)	φ4	φ12	φ26	φ10
Outer Diameter of Inflatable Tube (mm)	φ6	φ16	φ30	φ14



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## Waveguide Bend

### Waveguide ARC Bend



WG Type EIA	Freq Range (GHz)	VSWR	Standard Dimensions (AXB)mm	Min Dimensions (AXB)mm	Flange	Material
WR430	1.72-2.61	≤1.10	150X150	145X145	FDP/FDM	Al
WR430	1.72-2.61	≤1.10	150X150	150X150	FDP/FDM	Al
WR340	2.17-3.30	≤1.10	100X100	80X80	FDP/FDM	Al
WR340	2.17-3.30	≤1.10	180X180	150X150	FDP/FDM	Al
WR284	2.60-3.95	≤1.10	100X100	100X100	FDP/FDM	Al
WR284	2.60-3.95	≤1.10	150X150	150X150	FDP/FDM	Al
WR229	3.22-4.90	≤1.10	80X80	80X80	FDP/FDM	Al
WR229	3.22-4.90	≤1.10	100X100	100X100	FDP/FDM	Al
WR187	3.94-5.99	≤1.10	80X80	70X70	FDP/FDM	Al
WR187	3.94-5.99	≤1.10	80X80	75X75	FDP/FDM	Al
WR159	4.64-7.05	≤1.10	80X80	65X65	FDP/FDM	Al
WR159	4.64-7.05	≤1.10	80X80	80X80	FDP/FDM	Al
WR137	5.38-8.17	≤1.10	50X50	50X50	FDP/FDM	Cu
WR137	5.38-8.17	≤1.10	70X70	60X60	FDP/FDM	Cu
WR112	6.57-9.99	≤1.10	50X50	45X45	FBP/FBM	Cu
WR112	6.57-9.99	≤1.10	70X70	50X50	FBP/FBM	Cu
WR90	8.20-12.40	≤1.10	40X40	35X35	FBP/FBM	Cu
WR90	8.20-12.40	≤1.10	50X50	40X40	FBP/FBM	Cu
WR75	9.84-15.0	≤1.10	40X40	35X35	FBP/FBM	Cu
WR75	9.84-15.0	≤1.10	40X40	40X40	FBP/FBM	Cu
WR62	11.9-18.0	≤1.10	40X40	30X30	FBP/FBM	Cu
WR62	11.9-18.0	≤1.10	40X40	35X35	FBP/FBM	Cu
WR51	14.5-22.0	≤1.10	30X30	30X30	FBP/FBM	Cu
WR51	14.5-22.0	≤1.10	30X30	35X35	FBP/FBM	Cu
WR42	17.6-26.7	≤1.10	30X30	25X25	FBP/FBM	Cu
WR42	17.6-26.7	≤1.10	30X30	30X30	FBP/FBM	Cu
WR34	21.7-33.0	≤1.15	30X30	20X20	FBP/FBM	Cu
WR34	21.7-33.0	≤1.15	30X30	25X25	FBP/FBM	Cu
WR28	26.5-40.0	≤1.15	30X30	20X20	FBP/FBM	Cu
WR28	26.5-40.0	≤1.15	30X30	20X20	FBP/FBM	Cu
WR22	32.9-50.1	≤1.15	30X30	20X20	FUGP	Cu
WR22	32.9-50.1	≤1.15	30X30	25X25	FUGP	Cu
WR19	39.2-59.6	≤1.15	30X30	20X20	FUGP	Cu
WR19	39.2-59.6	≤1.15	30X30	20X20	FUGP	Cu
WR15	49.8-75.8	≤1.15	30X30	20X20	FUGP	Cu
WR15	49.8-75.8	≤1.15	30X30	20X20	FUGP	Cu

# SYNERGY TELECOM P. LTD.

## Waveguide Bend

### Waveguide ARC Bend



WG Type EIA	Freq Range (GHz)	VSWR	Standard Dimensions (AXB)mm	Min Dimensions (AXB)mm	Flange	Material
WR12	60.5-91.9	≤1.15	30X30	20X20	FUGP	Cu
WR12	60.5-91.9	≤1.15	30X30	20X20	FUGP	Cu
WR10	73.8-112	≤1.15	30X30	20X20	FUGP	Cu
WR10	73.8-112	≤1.15	30X30	20X20	FUGP	Cu
WR8	92.2-140	-	20X20	-	FUGP	Cu
WR8	92.2-140	-	20X20	-	FUGP	Cu
WR7	113-173	-	20X20	-	FUGP	Cu
WR7	113-173	-	20X20	-	FUGP	Cu
WR5	145-220	-	20X20	-	FUGP	Cu
WR5	145-220	-	20X20	-	FUGP	Cu
WR4	172-261	-	20X20	-	FUGP	Cu
WR4	172-261	-	20X20	-	FUGP	Cu
WR3	217-330	-	20X20	-	FUGP	Cu
WR3	217-330	-	20X20	-	FUGP	Cu

### Waveguide Miter Bend



WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	Min Dimensions (AXB)mm	Flange	Material
WR2300	0.32-0.49	Full band	≤1.15	220 X220	FDP/FDM	Al
WR2300	0.32-0.49	≤15%	≤1.15	350 X350	FDP/FDM	Al
WR2100	0.35-0.53	Full band	≤1.15	200 X200	FDP/FDM	Al
WR2100	0.35-0.53	≤15%	≤1.15	330 X330	FDP/FDM	Al
WR1800	0.41-0.62	Full band	≤1.15	180 X180	FDP/FDM	Al
WR1800	0.41-0.62	≤15%	≤1.15	300 X300	FDP/FDM	Al
WR1500	0.49-0.75	Full band	≤1.15	150 X150	FDP/FDM	Al
WR1500	0.49-0.75	≤15%	≤1.15	240 X240	FDP/FDM	Al
WR1150	0.64-0.98	Full band	≤1.15	130 X130	FDP/FDM	Al
WR1150	0.64-0.98	≤15%	≤1.15	220 X220	FDP/FDM	Al
WR975	0.75-1.15	Full band	≤1.15	120 X120	FDP/FDM	Al
WR975	0.75-1.15	≤15%	≤1.15	200 X200	FDP/FDM	Al
WR770	0.96-1.46	Full band	≤1.15	110 X110	FDP/FDM	Al



# SYNERGY TELECOM P. LTD.

## Waveguide Bend



### Waveguide Miter Bend

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	Min Dimensions (AXB)mm	Flange	Material
WR770	0.96-1.46	≤15%	≤1.15	160 X160	FDP/FDM	Al
WR650	1.13-1.73	Full band	≤1.15	100 X100	FDP/FDM	Al
WR650	1.13-1.73	≤15%	≤1.15	140 X140	FDP/FDM	Al
WR510	1.45-2.20	Full band	≤1.15	90 X90	FDP/FDM	Al
WR510	1.45-2.20	≤15%	≤1.15	120 X120	FDP/FDM	Al
WR430	1.72-2.61	Full band	≤1.15	70 X70	FDP/FDM	Al
WR430	1.72-2.61	≤15%	≤1.15	100 X100	FDP/FDM	Al
WR340	2.17-3.30	Full band	≤1.15	70 X70	FDP/FDM	Al
WR340	2.17-3.30	≤15%	≤1.15	100 X100	FDP/FDM	Al
WR284	2.60-3.95	Full band	≤1.15	60 X60	FDP/FDM	Al
WR284	2.60-3.95	≤15%	≤1.15	65 X65	FDP/FDM	Al
WR229	3.22-4.90	Full band	≤1.15	45 X45	FDP/FDM	Al
WR229	3.22-4.90	≤15%	≤1.15	60 X60	FDP/FDM	Al
WR187	3.94-5.99	Full band	≤1.15	45 X45	FDP/FDM	Al
WR187	3.94-5.99	≤15%	≤1.15	60 X60	FDP/FDM	Al
WR159	4.64-7.05	Full band	≤1.15	40 X40	FDP/FDM	Al
WR159	4.64-7.05	≤15%	≤1.15	50 X50	FDP/FDM	Al
WR137	5.38-8.17	Full band	≤1.15	35 X35	FDP/FDM	Cu
WR137	5.38-8.17	≤15%	≤1.15	45 X45	FDP/FDM	Cu
WR112	6.57-9.99	Full band	≤1.15	30 X30	FBP/FBM	Cu
WR112	6.57-9.99	≤15%	≤1.15	40 X40	FBP/FBM	Cu
WR90	8.20-12.40	Full band	≤1.15	25 X25	FBP/FBM	Cu
WR90	8.20-12.4	≤15%	≤1.15	30 X30	FBP/FBM	Cu
WR75	9.84-15.0	Full band	≤1.15	25 X25	FBP/FBM	Cu
WR75	9.84-15.0	≤15%	≤1.15	30 X30	FBP/FBM	Cu
WR62	11.9-18.0	Full band	≤1.15	20 X20	FBP/FBM	Cu
WR62	11.9-18.0	≤15%	≤1.15	25 X25	FBP/FBM	Cu
WR51	14.5-22.0	Full band	≤1.15	20 X20	FBP/FBM	Cu
WR51	14.5-22.0	≤15%	≤1.15	25 X25	FBP/FBM	Cu
WR42	17.6-26.7	Full band	≤1.15	15 X15	FBP/FBM	Cu
WR42	17.6-26.7	≤10%	≤1.15	20 X20	FBP/FBM	Cu
WR34	21.7-33.0	Full band	≤1.15	15 X15	FBP/FBM	Cu
WR34	21.7-33.0	≤10%	≤1.15	20 X20	FDP/FDM	Cu
WR28	26.5-40.0	Full band	≤1.15	12 X12	FDP/FDM	Cu
WR28	26.5-40.0	≤10%	≤1.15	18 X18	FDP/FDM	Cu

# SYNERGY TELECOM P. LTD.

## Waveguide Bend

### Dual Ridge Waveguide Bend



WG Type EIA	Freq Range (GHz)	VSWR	Dimensions (AXB)mm	Flange	Material
WRD84	0.84-2	≤1.25	150X150	FP/FM	Al
WRD84	0.84-2	≤1.25	200X200	FP/FM	Al
WRD150	1.5-3.6	≤1.25	100X100	FP/FM	Al
WRD150	1.5-3.6	≤1.25	150X150	FP/FM	Al
WRD200	2-4.8	≤1.25	100X100	FP/FM	Al
WRD200	2-4.8	≤1.25	150X150	FP/FM	Al
WRD250	2.6-7.8	≤1.25	100X100	FP/FM	Al
WRD250	2.6-7.8	≤1.25	150X150	FP/FM	Al
WRD350	3.5-8.2	≤1.25	100X100	FP/FM	Al
WRD350	3.5-8.2	≤1.25	100X100	FP/FM	Al
WRD475	4.75-11	≤1.25	100X100	FP/FM	Cu
WRD475	4.75-11	≤1.25	100X100	FP/FM	Cu
WRD500	5-18	≤1.25	80X80	FP/FM	Cu
WRD500	5-18	≤1.25	80X80	FP/FM	Cu
WRD580	5.8-16	≤1.25	80X80	FP/FM	Cu
WRD580	5.8-16	≤1.25	80X80	FP/FM	Cu
WRD650	6.5-18	≤1.25	50X50	FP/FM	Cu
WRD650	6.5-18	≤1.25	50X50	FP/FM	Cu
WRD750	7.5-18	≤1.25	50X50	FP/FM	Cu
WRD750	7.5-18	≤1.25	50X50	FP/FM	Cu
WRD700	7-18.5	≤1.25	50X50	FP/FM	Cu
WRD700	7-18.5	≤1.25	50X50	FP/FM	Cu
WRD110	11-26.5	≤1.25	30X30	FP/FM	Cu
WRD110	11-26.5	≤1.25	30X30	FP/FM	Cu
WRD180	18-40	≤1.3	30X30	FP/FM	Cu
WRD180	18-40	≤1.3	30X30	FP/FM	Cu

### Dual Ridge Twist Waveguide

(Continued)



WG Type IEC	Freq Range (GHz)	VSWR	Standard Length (mm)	Flange	Material
WRD750	7.5-18	≤1.25	200	FP/FM	Cu
WRD700	7-18.5	≤1.25	200	FP/FM	Cu
WRD110	11-26.5	≤1.25	150	FP/FM	Cu
WRD180	18-40	≤1.3	80	FP/FM	Cu



# SYNERGY TELECOM P. LTD.

## Waveguide Twist

### Rectangular Twist Waveguide



WG Type EIA	Freq Range (GHz)	VSWR	Standard Length...(mm)	Shortest length...(mm)	Flange	Material
WR430	1.72-2.61	≤1.10	400	150	FDP/FDM	Al
WR340	2.17-3.30	≤1.10	400	140	FDP/FDM	Al
WR284	2.60-3.95	≤1.10	300	120	FDP/FDM	Al
WR229	3.22-4.90	≤1.10	200	90	FDP/FDM	Al
WR187	3.94-5.99	≤1.10	200	70	FDP/FDM	Al
WR159	4.64-7.05	≤1.10	200	70	FDP/FDM	Al
WR137	5.38-8.17	≤1.10	100	60	FDP/FDM	Cu
WR112	6.57-9.99	≤1.10	100	50	FBP/FBM	Cu
WR90	8.20-12.40	≤1.10	100	45	FBP/FBM	Cu
WR75	9.84-15.0	≤1.10	100	40	FBP/FBM	Cu
WR62	11.9-18.0	≤1.10	100	40	FBP/FBM	Cu
WR51	14.5-22.0	≤1.10	50	35	FBP/FBM	Cu
WR42	17.6-26.7	≤1.10	60	35	FBP/FBM	Cu
WR34	21.7-33.0	≤1.10	60	35	FBP/FBM	Cu
WR28	26.5-40.0	≤1.10	60	30	FBP/FBM	Cu
WR22	32.9-50.1	≤1.15	50	30	FUGP	Cu
WR19	39.2-59.6	≤1.15	50	30	FUGP	Cu
WR15	49.8-75.8	≤1.15	50	25	FUGP	Cu
WR12	60.5-91.9	≤1.15	50	25	FUGP	Cu
WR10	73.8-112	≤1.15	50	25	FUGP	Cu

### Dual Ridge Twist Waveguide



WG Type IEC	Freq Range (GHz)	VSWR	Standard Length (mm)	Flange	Material
WRD84	0.84-2	≤1.25	500	FP/FM	Al
WRD150	1.5-3.6	≤1.25	400	FP/FM	Al
WRD200	2-4.8	≤1.25	400	FP/FM	Al
WRD250	2.6-7.8	≤1.25	300	FP/FM	Al
WRD350	3.5-8.2	≤1.25	300	FP/FM	Al
WRD475	4.75-11	≤1.25	300	FP/FM	Cu
WRD500	5-18	≤1.25	200	FP/FM	Cu
WRD580	5.8-16	≤1.25	200	FP/FM	Cu
WRD650	6.5-18	≤1.25	200	FP/FM	Cu

# SYNERGY TELECOM P. LTD.

## Flexible Waveguide



### Twistable-Flexible Waveguide

WG Type EIA	Freq Range (GHz)	VSWR	IL (dB/m)	Max Twist (deg/m)	Min Radius		Flange
					E-Plane (mm)	H-Plane (mm)	
WR229	3.22-4.90	≤1.10	≤0.15	132	165	330	FDP/FDM
WR187	3.94-5.99	≤1.10	≤0.16	155	136	272	FDP/FDM
WR159	4.64-7.05	≤1.10	≤0.22	170	129	258	FDP/FDM
WR137	5.38-8.17	≤1.15	≤0.25	108	102	204	FDP/FDM
WR112	6.57-9.99	≤1.15	≤0.30	210	76	152	FBP/FBM
WR90	8.20-12.40	≤1.15	≤0.40	240	66	127	FBP/FBM
WR75	9.84-15.0	≤1.15	≤0.50	340	64	120	FBP/FBM
WR62	11.9-18.0	≤1.15	≤0.65	350	54	105	FBP/FBM
WR51	14.5-22.0	≤1.15	≤1.10	445	50	100	FBP/FBM
WR42	17.6-26.5	≤1.25	≤1.30	465	41	82	FBP/FBM
WR34	21.7-33.0	≤1.20	≤1.50	510	35	70	FBP/FBM
WR28	26.5-40.0	≤1.25	≤2.00	465	38	76	FBP/FBM
WR22	32.9-50.1	≤1.45	≤3.00	530	38	76	FUGP



### Flexible Seamless Waveguide

WG Type EIA	Freq Range (GHz)	VSWR	IL (dB/m)	Pressure (Mpa)	Min Radius		Flange
					E-Plane(mm)	H-Plane(mm)	
WR650	1.13-1.73	≤1.10	≤0.12	≤0.20	500	1000	FDP/FDM
WR430	1.72-2.61	≤1.10	≤0.15	≤0.20	312	624	FDP/FDM
WR340	2.17-3.30	≤1.10	≤0.15	≤0.20	260	520	FDP/FDM
WR284	2.60-3.95	≤1.10	≤0.08	≤0.20	74.676	139.7	FDP/FDM
WR229	3.22-4.90	≤1.10	≤0.08	≤0.20	54.102	82.55	FDP/FDM
WR187	3.94-5.99	≤1.10	≤0.12	≤0.20	49.276	76.2	FDP/FDM
WR159	4.64-7.05	≤1.12	≤0.17	≤0.20	40.64	57.15	FDP/FDM
WR137	5.38-8.17	≤1.12	≤0.21	≤0.20	38.1	52.578	FDP/FDM
WR112	6.57-9.99	≤1.12	≤0.25	≤0.20	35.56	46.228	FBP/FBM
WR90	8.20-12.40	≤1.12	≤0.37	≤0.20	31.75	38.1	FBP/FBM
WR75	9.84-15.0	≤1.12	≤0.49	≤0.20	16.002	31.75	FBP/FBM
WR62	11.9-18.0	≤1.15	≤0.65	≤0.20	17.526	31.75	FBP/FBM
WR51	14.5-22.0	≤1.22	≤1.23	≤0.20	14.478	25.4	FBP/FBM
WR42	17.6-26.5	≤1.22	≤1.23	≤0.20	14.478	25.4	FBP/FBM

# SYNERGY TELECOM P. LTD.

## Flexible Waveguide

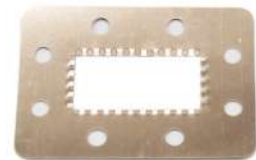
Flexible Seamless Waveguide



WG Type EIA	Freq Range (GHz)	VSWR	Insertion Loss (dB/m)	Pressure (Mpa)	Min Radius E-Plane(mm)	H-Plane(mm)	Flange
WR34	21.7-33.0	≤1.33	≤1.44	≤0.20	11.176	23.876	FBP/FBM
WR28	26.5-40.0	≤1.33	≤2.05	≤0.20	11.176	23.876	FBP/FBM
WR22	32.9-50.1	≤1.40	≤4.10	≤0.20	11.176	23.876	FUGP

## Waveguide Anti-leak Gasket

Waveguide Anti-leak Gasket

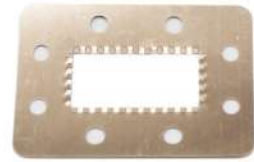


WG Type EIA	Freq Range (GHz)	Flange	Thickness(mm)	Material
WR2300	0.32-0.49	FDP	0.2	Cu
WR2100	0.35-0.53	FDP	0.2	Cu
WR1800	0.41-0.62	FDP	0.2	Cu
WR1500	0.49-0.75	FDP	0.2	Cu
WR1150	0.64-0.98	FDP	0.2	Cu
WR975	0.75-1.15	FDP	0.2	Cu
WR770	0.96-1.46	FDP	0.2	Cu
WR650	1.13-1.73	FDP	0.2	Cu
WR510	1.45-2.20	FDP	0.2	Cu
WR430	1.72-2.61	FDP	0.2	Cu
WR340	2.17-3.30	FDP	0.2	Cu
WR284	2.60-3.95	FDP	0.2	Cu
WR229	3.22-4.90	FDP	0.2	Cu
WR187	3.94-5.99	FDP	0.2	Cu
WR159	4.64-7.05	FDP	0.2	Cu
WR137	5.38-8.17	FDP	0.2	Cu
WR112	6.57-9.99	FBP	0.1	Cu
WR90	8.20-12.40	FBP	0.1	Cu
WR75	9.84-15.0	FBP	0.1	Cu
WR62	11.9-18.0	FBP	0.1	Cu
WR51	14.5-22.0	FBP	0.1	Cu
WR42	17.6-26.7	FBP	0.1	Cu
WR34	21.7-33.0	FBP	0.1	Cu



# SYNERGY TELECOM P. LTD.

## Waveguide Anti-leak Gasket



Waveguide Anti-leak Gasket

WG Type EIA	Freq Range (GHz)	Flange	Thickness(mm)	Material
WR28	26.5-40.0	FBP	0.1	Cu
WR22	32.9-50.1	FUGP	0.1	Cu
WR19	39.2-59.6	FUGP	0.1	Cu
WR15	49.8-75.8	FUGP	0.1	Cu
WR12	60.5-91.9	FUGP	0.1	Cu
WR10	73.8-112	FUGP	0.1	Cu

## Waveguide Transition



Rectangular to Rectangular Adapters in Overlapping Bands

Port1 WG Type EIA	Port2 WG Type EIA	Freq Range (GHz)	Length(mm)	VSWR	Flange	Material
WR975	WR770	0.96-1.15	200	≤1.15	FDP	Al
WR770	WR650	1.13-1.46	200	≤1.15	FDP	Al
WR650	WR510	1.45-1.73	200	≤1.15	FDP	Al
WR510	WR430	1.72-2.20	200	≤1.10	FDP	Al
WR430	WR340	2.17-2.61	200	≤1.10	FDP	Al
WR340	WR284	2.60-3.30	200	≤1.10	FDP	Al
WR284	WR229	3.22-3.95	200	≤1.10	FDP	Al
WR229	WR187	3.94-4.90	200	≤1.10	FDP	Al
WR187	WR159	4.64-5.99	200	≤1.10	FDP	Al
WR159	WR137	5.38-7.05	150	≤1.10	FDP	Al
WR137	WR112	6.57-8.17	100	≤1.10	FDP/FBP	Cu
WR112	WR90	8.20-9.99	60	≤1.10	FBP	Cu
WR90	WR75	9.84-12.4	60	≤1.10	FBP	Cu
WR75	WR62	11.9-15.0	50	≤1.10	FBP	Cu
WR62	WR51	14.5-18.0	50	≤1.10	FBP	Cu
WR51	WR42	17.6-22.0	50	≤1.10	FBP	Cu
WR42	WR34	21.7-26.7	50	≤1.10	FBP	Cu
WR34	WR28	26.5-33.0	50	≤1.10	FBP	Cu
WR28	WR22	32.9-40.0	50	≤1.15	FBP/FUGP	Cu
WR22	WR19	39.2-50.1	50	≤1.15	FUGP	Cu
WR19	WR15	49.8-59.6	50	≤1.15	FUGP	Cu

# SYNERGY TELECOM P. LTD.

## Waveguide Transition



### Rectangular to Rectangular Adapters in Overlapping Bands

Port1 WG Type EIA	Port2 WG Type EIA	Freq Range (GHz)	Length(mm)	VSWR	Flange	Material
WR15	WR12	60.5-75.8	50	≤1.15	FUGP	Cu
WR12	WR10	73.8-91.9	50	≤1.15	FUGP	Cu
WR10	WR8	92.2-112	30	-	FUGP	Cu
WR8	WR7	113-140	30	-	FUGP	Cu
WR7	WR5	145-173	30	-	FUGP	Cu
WR5	WR4	172-220	30	-	FUGP	Cu
WR4	WR3	217-261	30	-	FUGP	Cu



### Rectangular to Rectangular Waveguide Adapter Specials

Freq Range (GHz)	Port 1 WG Type EIA	Port 2 WG Type EIA	Flange	Material
3.22-4.90	WR430	WR229	FDP	Al
4.64-7.05	WR340	WR159	FDP	Al
5.38-8.17	WR284	WR137	FDP	Al
6.57-9.99	WR229	WR112	FDP /FBP	Al
8.20-12.4	WR187	WR90	FDP/ FBP	Al
9.84-15.0	WR159	WR75	FDP/ FBP	Al
11.9-18.0	WR137	WR62	FDP /FBP	Al
14.5-22.0	WR112	WR51	FBP	Cu
17.6-26.7	WR90	WR42	FBP	Cu
21.7-33.0	WR75	WR34	FBP	Cu
26.5-40.0	WR62	WR28	FBP	Cu
32.9-50.1	WR51	WR22	FBP/ FUGP	Cu
39.2-59.6	WR42	WR19	FBP/ FUGP	Cu
49.8-75.8	WR34	WR15	FBP/ FUGP	Cu
60.5-91.9	WR28	WR12	FBP/ FUGP	Cu
73.8-112	WR22	WR10	FUGP	Cu

# SYNERGY TELECOM P. LTD.

## Waveguide Transition



Rectangular to Circular Waveguide Transition (TE10-TE11)

Freq Range (GHz)	Length(mm)	VSWR	WG Type EIA	Inner Diameter of Circular Waveguide (mm)	Material
1.30-1.70	920	≤1.10	WR650	157	Al
1.76-2.20	820	≤1.10	WR510	114.58	Al
2.07-2.61	580	≤1.10	WR430	97.87	Al
2.42-3.30	500	≤1.10	WR340	83.62	Al
2.83-3.88	420	≤1.10	WR284	71.42	Al
3.22-4.90	350	≤1.10	WR229	51.99	Al
3.94-5.33	300	≤1.10	WR187	44.45	Al
5.3-7.05	230	≤1.10	WR159	38.1	Al
6.21-8.17	200	≤1.10	WR137	32.537	Al
7.30-9.97	200	≤1.10	WR112	27.788	Al
8.50-11.6	160	≤1.10	WR90	23.825	Cu
11.6-15.0	130	≤1.10	WR75	17.415	Cu
13.4-18.0	100	≤1.10	WR62	15.088	Cu
15.9-21.8	100	≤1.15	WR51	12.7	Cu
21.2-26.7	60	≤1.15	WR42	9.525	Cu
24.3-33.0	60	≤1.15	WR34	8.331	Cu
31.8-40	50	≤1.15	WR28	7.137	Cu
36.4-49.8	50	≤1.15	WR22	5.563	Cu
46.3-59.6	40	≤1.15	WR19	4.369	Cu
56.6-75.8	30	≤1.15	WR15	3.581	Cu
63.5-87.2	30	≤1.15	WR12	3.175	Cu
84.8-112	20	≤1.15	WR10	2.388	Cu

## Waveguide to Coaxial Adapter



Waveguide to Coaxial Adapter (Right Angle)

WG Type EIA	Freq Range (GHz)	VSWR	IL(dB)	Connector	Avg Power(W)	Length L(mm)	Flange	Material
WR2300	0.32-0.49	≤1.25	≤0.2	N Female	100	500	FDP	Al
WR2100	0.35-0.53	≤1.25	≤0.2	N Female	100	450	FDP	Al
WR1800	0.41-0.62	≤1.25	≤0.2	N Female	100	400	FDP	Al
WR1500	0.49-0.75	≤1.25	≤0.2	N Female	100	350	FDP	Al
WR1150	0.64-0.98	≤1.25	≤0.2	N Female	100	240	FDP	Al



## Waveguide to Coaxial Adapter



### Waveguide to Coaxial Adapter (Right Angle)

WG Type EIA	Freq Range (GHz)	VSWR	IL(dB)	Connector	Avg Power(W)	Length L(mm)	Flange	Material
WR975	0.75-1.15	≤1.25	≤0.2	N Female	100	209	FDP	Al
WR770	0.96-1.46	≤1.25	≤0.2	N Female	100	166	FDP	Al
WR650	1.13-1.73	≤1.25	≤0.2	N Female	100	150	FDP	Al
WR510	1.45-2.20	≤1.25	≤0.2	N Female	100	120	FDP	Al
WR430	1.72-2.61	≤1.25	≤0.2	N Female	100	100	FDP	Al
WR340	2.17-3.30	≤1.25	≤0.2	N Female	100	85	FDP	Al
WR284	2.60-3.95	≤1.25	≤0.2	N Female	100	72	FDP	Al
WR229	3.22-4.90	≤1.25	≤0.2	N Female	100	65	FDP	Al
WR187	3.94-5.99	≤1.25	≤0.2	N Female	100	54	FDP	Al
WR187	3.94-5.99	≤1.25	≤0.2	SMA Female	50	67	FDP	Al
WR159	4.64-7.05	≤1.25	≤0.2	N Female	100	50	FDP	Al
WR159	4.64-7.05	≤1.25	≤0.2	SMA Female	50	52	FDP	Al
WR137	5.38-8.17	≤1.25	≤0.3	N Female	100	48	FDP	Cu
WR137	5.38-8.17	≤1.25	≤0.3	SMA Female	50	45	FDP	Cu
WR112	6.57-9.99	≤1.25	≤0.3	N Female	100	40	FBP	Cu
WR112	6.57-9.99	≤1.25	≤0.3	SMA Female	50	35	FBP	Cu
WR90	8.20-12.4	≤1.25	≤0.3	N Female	100	35	FBP	Cu
WR90	8.20-12.4	≤1.25	≤0.3	SMA Female	50	33	FBP	Cu
WR75	9.84-15.0	≤1.25	≤0.3	N Female	100	33	FBP	Cu
WR75	9.84-15.0	≤1.25	≤0.3	SMA Female	50	30	FBP	Cu
WR62	11.9-18.0	≤1.25	≤0.3	N Female	100	32	FBP	Cu
WR62	11.9-18.0	≤1.25	≤0.3	SMA Female	50	27	FBP	Cu
WR51	14.5-22.0	≤1.25	≤0.3	SMA Female	30	27	FBP	Cu
WR42	17.6-26.7	≤1.25	≤0.3	SMA Female	30	25	FBP	Cu
WR42	17.6-26.7	≤1.25	≤0.3	2.92 Female	50	30	FBP	Cu
WR42	17.6-26.7	≤1.25	≤0.3	2.4 Female	30	30	FBP	Cu
WR34	21.7-33.0	≤1.25	≤0.3	2.92 Female	50	30	FBP	Cu
WR34	21.7-33.0	≤1.25	≤0.3	2.4 Female	30	30	FBP	Cu
WR28	26.5-40.0	≤1.25	≤0.3	2.92 Female	50	26	FBP	Cu
WR28	26.5-40.0	≤1.25	≤0.3	2.4 Female	30	26	FBP	Cu
WR22	33.0-50.0	≤1.80	≤0.5	2.4 Female	30	25	FUGP	Cu
WR19	40.0-60.0	≤1.80	≤0.8	1.85 Female	10	23	FUGP	Cu
WR15	50.0-65.0	≤2.0	≤0.8	1.85 Female	10	18	FUGP	Cu
WR12	60.0-90.0	≤2.0	≤0.8	1.0 Female	10	23	FUGP	Cu
WR10	90.0-100.0	≤2.0	≤0.8	1.0 Female	10	25	FUGP	Cu

## Waveguide to Coaxial Adapter



### Waveguide to Coaxial Adapter (End Launch)

WG Type EIA	Freq Range (GHz)	VSWR	IL(dB)	Connector	Avg Power(W)	Length L(mm)	Flange	Material
WR2300	0.32-0.49	≤1.25	≤0.2	N Female	100	700	FDP	Al
WR2100	0.35-0.53	≤1.25	≤0.2	N Female	100	600	FDP	Al
WR1800	0.41-0.62	≤1.25	≤0.2	N Female	100	550	FDP	Al
WR1500	0.49-0.75	≤1.25	≤0.2	N Female	100	450	FDP	Al
WR1150	0.64-0.98	≤1.25	≤0.2	N Female	100	360	FDP	Al
WR975	0.75-1.15	≤1.25	≤0.2	N Female	100	300	FDP	Al
WR770	0.96-1.46	≤1.25	≤0.2	N Female	100	260	FDP	Al
WR650	1.13-1.73	≤1.25	≤0.2	N Female	100	200	FDP	Al
WR510	1.45-2.20	≤1.25	≤0.2	N Female	100	150	FDP	Al
WR430	1.72-2.61	≤1.25	≤0.2	N Female	100	110	FDP	Al
WR340	2.17-3.30	≤1.25	≤0.2	N Female	100	100	FDP	Al
WR284	2.60-3.95	≤1.25	≤0.2	N Female	100	82	FDP	Al
WR229	3.22-4.90	≤1.25	≤0.2	N Female	100	68	FDP	Al
WR187	3.94-5.99	≤1.25	≤0.2	N Female	100	58	FDP	Al
WR187	3.94-5.99	≤1.25	≤0.2	SMA Female	50	59	FDP	Al
WR159	4.64-7.05	≤1.25	≤0.2	N Female	100	56	FDP	Al
WR159	4.64-7.05	≤1.25	≤0.2	SMA Female	50	54	FDP	Al
WR137	5.38-8.17	≤1.25	≤0.3	N Female	100	50	FDP	Cu
WR137	5.38-8.17	≤1.25	≤0.3	SMA Female	50	50	FDP	Cu
WR112	6.57-9.99	≤1.25	≤0.3	N Female	100	40	FBP	Cu
WR112	6.57-9.99	≤1.25	≤0.3	SMA Female	50	40	FBP	Cu
WR90	8.20-12.4	≤1.25	≤0.3	N Female	100	30.5	FBP	Cu
WR90	8.20-12.4	≤1.25	≤0.3	SMA Female	50	30.5	FBP	Cu
WR75	9.84-15.0	≤1.25	≤0.3	N Female	100	21	FBP	Cu
WR75	9.84-15.0	≤1.25	≤0.3	SMA Female	50	21	FBP	Cu
WR62	11.9-18.0	≤1.25	≤0.3	N Female	100	24	FBP	Cu
WR62	11.9-18.0	≤1.25	≤0.3	SMA Female	50	24	FBP	Cu
WR51	14.5-22.0	≤1.25	≤0.3	SMA Female	50	25	FBP	Cu
WR42	17.6-26	≤1.25	≤0.3	SMA Female	50	17.5	FBP	Cu
WR42	17.6-26.7	≤1.25	≤0.3	2.92 Female	50	18	FBP	Cu
WR42	17.6-26.7	≤1.25	≤0.3	2.4 Female	30	18	FBP	Cu
WR34	21.7-33.0	≤1.25	≤0.3	2.92 Female	50	21	FBP	Cu
WR34	21.7-33.0	≤1.25	≤0.3	2.4 Female	30	21	FBP	Cu
WR28	26.5-40.0	≤1.25	≤0.3	2.92 Female	50	16	FBP	Cu
WR28	26.5-40.0	≤1.25	≤0.3	2.4 Female	30	16.5	FBP	Cu
WR22	33.0-50.0	≤1.50	≤0.3	2.4 Female	30	8.8	FUGP	Cu



## Waveguide to Coaxial Adapter



### Waveguide to Coaxial Adapter (End Launch)

WG Type EIA	Freq Range (GHz)	VSWR	IL(dB)	Connector	Avg Power(W)	Length L(mm)	Flange	Material
WR19	40.0-50.0	≤2.0	≤0.4	2.4 Female	30	7	FUGP	Cu
WR19	40.0-60.0	≤1.80	≤0.6	1.85 Female	10	7	FUGP	Cu
WR15	50.0-65.0	≤1.80	≤0.8	1.85 Female	10	7	FUGP	Cu
WR12	60.0-90.0	≤1.80	≤0.8	1.0 Female	10	6	FUGP	Cu
WR10	90.0-100.0	≤2.0	≤0.8	1.0 Female	10	6	FUGP	Cu



### High Power Waveguide to Coaxial Adapter

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL(dB)	Connector	Avg Power(W)	Flange	Material
WR650	1.13-1.73	≤15%	≤1.15	≤0.2	1'5/8 Female	≤5000	FDP	Al
WR650	1.13-1.73	≤15%	≤1.15	≤0.2	5339 Female	≤5000	FDP	Al
WR650	1.13-1.73	≤15%	≤1.15	≤0.2	L29 Female	≤2000	FDP	Al
WR650	1.13-1.73	≤15%	≤1.15	≤0.2	L27 Female	≤2000	FDP	Al
WR510	1.45-2.2	≤15%	≤1.15	≤0.2	1'5/8 Female	≤4000	FDP	Al
WR510	1.45-2.2	≤15%	≤1.15	≤0.2	5339 Female	≤4000	FDP	Al
WR510	1.45-2.20	≤15%	≤1.15	≤0.2	L29 Female	≤2000	FDP	Al
WR510	1.45-2.20	≤15%	≤1.15	≤0.2	L27 Female	≤2000	FDP	Al
WR430	1.72-2.61	≤15%	≤1.15	≤0.2	1'5/8 Female	≤3000	FDP	Al
WR430	1.76-2.61	≤15%	≤1.15	≤0.2	5339 Female	≤3000	FDP	Al
WR430	1.72-2.61	≤15%	≤1.15	≤0.2	L29 Female	≤2000	FDP	Al
WR430	1.72-2.61	≤15%	≤1.15	≤0.2	L27 Female	≤2000	FDP	Al
WR340	2.17-3.30	≤15%	≤1.15	≤0.2	L29 Female	≤2000	FDP	Al
WR340	2.17-3.3	≤15%	≤1.15	≤0.2	L27 Female	≤2000	FDP	Al
WR284	2.60-3.95	≤15%	≤1.15	≤0.2	L29 Female	≤1000	FDP	Al
WR284	2.60-3.95	≤15%	≤1.15	≤0.2	L27 Female	≤1000	FDP	Al
WR229	3.22-4.90	≤15%	≤1.15	≤0.2	L29 Female	≤1000	FDP	Al
WR229	3.22-4.90	≤15%	≤1.15	≤0.2	L27 Female	≤1000	FDP	Al
WR229	3.22-4.90	≤15%	≤1.25	≤0.2	N Female	≤200	FDP	Al
WR187	3.94-5.99	≤15%	≤1.15	≤0.2	L29 Female	≤1000	FDP	Al
WR187	3.94-5.99	≤15%	≤1.15	≤0.2	L27 Female	≤1000	FDP	Al
WR187	3.94-5.99	≤15%	≤1.25	≤0.2	N Female	≤200	FDP	Al



## Waveguide to Coaxial Adapter



### High Power Waveguide to Coaxial Adapter

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL(dB)	Connector	Avg Power(W)	Flange	Material
WR159	4.64-7.05	≤15%	≤1.25	≤0.2	N Female	≤200	FDP	Al
WR137	5.38-8.17	≤15%	≤1.25	≤0.3	N Female	≤200	FDP	Cu
WR112	6.57-9.99	≤15%	≤1.25	≤0.3	N Female	≤200	FBP	Cu
WR90	8.20-12.4	≤15%	≤1.25	≤0.3	N Female	≤200	FBP	Cu
WR75	9.84-15.0	≤15%	≤1.25	≤0.3	N Female	≤200	FBP	Cu
WR62	11.9-18.0	≤15%	≤1.15	≤0.3	N Female	≤200	FBP	Cu



### Double-Ridged Waveguide to Coaxial Adapter (Right Angle)

WG Type EIA	Freq Range (GHz)	VSWR	IL(dB)	Connector	Avg Power(W)	Length L(mm)	Flange	Material
WRD84	0.84-2	≤1.50	≤0.5	N Female	800	175	FP	Al
WRD150	1.5-3.6	≤1.50	≤0.5	N Female	800	150	FP	Al
WRD200	2-4.8	≤1.50	≤0.5	N Female	500	101	FP	Al
WRD250	2.6-7.8	≤1.50	≤0.5	N Female	500	70	FP	Al
WRD350	3.5-8.2	≤1.50	≤0.5	N Female	500	60	FP	Al
WRD475	4.75-11	≤1.50	≤0.5	N Female	300	50	FP	Al
WRD500	5-18	≤1.50	≤0.5	SMA Female	300	45	FP	Al
WRD580	5.8-16	≤1.50	≤0.5	SMA Female	300	45	FP	Al
WRD650	6.5-18	≤1.50	≤0.5	SMA Female	100	45	FP	Cu
WRD750	7.5-18	≤1.50	≤0.5	SMA Female	100	40	FP	Cu
WRD700	7-18.5	≤1.50	≤0.5	SMA Female	100	40	FP	Cu
WRD110	11-26.5	≤1.50	≤0.5	2.92 Female	50	35	FP	Cu
WRD180	18-40	≤2.00	≤0.5	2.92 Female	50	27	FP	Cu

## Waveguide to Coaxial Adapter



### Double-Ridged Waveguide to Coaxial Adapter (End Launch)

WG Type EIA	Freq Range (GHz)	VSWR	IL(dB)	Connector	Avg Power(W)	Length L(mm)	Flange	Material
WRD84	0.84-2	≤1.50	≤0.5	N Female	800	300	FP	Al
WRD150	1.5-3.6	≤1.50	≤0.5	N Female	800	160	FP	Al
WRD200	2-4.8	≤1.50	≤0.5	N Female	500	120	FP	Al
WRD250	2.6-7.8	≤1.50	≤0.5	N Female	500	85	FP	Al
WRD350	3.5-8.2	≤1.50	≤0.5	N Female	500	80	FP	Al
WRD475	4.75-11	≤1.50	≤0.5	N Female	300	50	FP	Al
WRD500	5-18	≤1.50	≤0.5	SMA Female	300	45	FP	Al
WRD580	5.8-16	≤1.50	≤0.5	SMA Female	300	40	FP	Al
WRD650	6.5-18	≤1.50	≤0.5	SMA Female	100	33.7	FP	Cu
WRD750	7.5-18	≤1.50	≤0.5	SMA Female	100	33.7	FP	Cu
WRD700	7-18.5	≤1.50	≤0.5	SMA Female	50	33	FP	Cu
WRD110	11-26.5	≤1.50	≤0.5	2.92 Female	30	30	FP	Cu
WRD180	18-40	≤2.00	≤0.8	2.92 Female	30	36.8	FP	Cu



### High Power Double-Ridged Waveguide to Coaxial Adapter

WG Type EIA	Freq Range (GHz)	VSWR	IL(dB)	Connector	Avg Power(W)	Flange	Material
WRD84	0.84-2	≤1.50	≤0.5	5339 Female	1000	FP	Al
WRD84	0.84-2	≤1.50	≤0.5	L29 Female	500	FP	Al
WRD84	0.84-2	≤1.50	≤0.5	L27 Female	500	FP	Al
WRD84	0.84-2	≤1.50	≤0.5	N Female	300	FP	Al
WRD150	1.5-3.6	≤1.50	≤0.5	N Female	300	FP	Al
WRD200	2-4.8	≤1.50	≤0.5	N Female	300	FP	Al
WRD250	2.6-7.8	≤1.50	≤0.5	N Female	300	FP	Al
WRD350	3.5-8.2	≤1.50	≤0.5	N Female	200	FP	Al
WRD475	4.75-11	≤1.50	≤0.5	N Female	200	FP	Al
WRD500	5-18	≤1.50	≤0.5	N Female	200	FP	Al
WRD580	5.8-16	≤1.50	≤0.5	N Female	200	FP	Al
WRD650	6.5-18	≤1.50	≤0.5	N Female	200	FP	Cu
WRD750	7.5-18	≤1.50	≤0.5	N Female	200	FP	Cu

## Waveguide to Coaxial Adapter



### Circular Waveguide to Coaxial Adapter

Freq Range (GHz)	Working Bandwidth	Inner DiameterΦ(mm)	VSWR	Connector
1.76-2.42	≤20%	114.58	≤1.25	N Female
2.1-2.8	≤20%	97.87	≤1.25	N Female
2.45-3.3	≤20%	83.62	≤1.25	N Female
2.83-3.88	≤20%	71.42	≤1.25	N Female
3.9-5.3	≤20%	51.99	≤1.25	N Female
4.55-6.23	≤20%	44.45	≤1.25	N Female
5.3-7.3	≤20%	38.1	≤1.25	N Female
6.3-8.5	≤20%	32.537	≤1.25	N Female
7.3-9.5	≤20%	27.788	≤1.25	N Female
8.5-11.5	≤20%	23.825	≤1.25	N Female
11.6-15.9	≤20%	17.415	≤1.25	SMA Female
13.4-18.4	≤20%	15.088	≤1.25	SMA Female
15.9-21.8	≤20%	12.7	≤1.25	SMA Female
21.2-29.1	≤20%	9.525	≤1.25	2.92 Female
24.3-33.2	≤15%	8.331	≤1.30	2.92 Female
28.3-38.8	≤15%	7.137	≤1.30	2.92 Female

## Waveguide to Microstrip Adapter



### Waveguide to Microstrip Adapter (Right Angle)

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL(dB)	Avg Power(W)	Length L(mm)	Flange	Material
WR284	2.60-3.95	≤15%	≤1.25	≤0.2	100	80	FDP	Al
WR229	3.22-4.90	≤15%	≤1.25	≤0.2	100	70	FDP	Al
WR187	3.94-5.99	≤15%	≤1.25	≤0.2	100	70	FDP	Al
WR159	4.64-7.05	≤15%	≤1.25	≤0.2	100	60	FDP	Al
WR137	5.38-8.17	≤15%	≤1.25	≤0.2	100	50	FDP	Cu
WR112	6.57-9.99	≤15%	≤1.25	≤0.2	50	45	FBP	Cu
WR90	8.20-12.40	≤15%	≤1.25	≤0.2	50	50	FBP	Cu
WR75	9.84-15.0	≤15%	≤1.25	≤0.2	50	40	FBP	Cu
WR62	11.9-18.0	≤15%	≤1.25	≤0.2	50	40	FBP	Cu
WR51	14.5-22.0	≤15%	≤1.25	≤0.2	50	35	FBP	Cu



## Waveguide to Microstrip Adapter



### Waveguide to Microstrip Adapter (Right Angle)

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL(dB)	Avg Power(W)	Length L(mm)	Flange	Material
WR42	17.6-26.7	≤15%	≤1.50	≤0.3	30	30	FBP	Cu
WR34	21.7-33.0	≤15%	≤1.50	≤0.5	30	26	FBP	Cu
WR28	26.5-40.0	≤15%	≤1.50	≤0.5	30	26	FBP	Cu



### Waveguide to Microstrip Adapter (End Launch)

WG Type EIA	Freq Range (GHz)	VSWR	IL(dB)	Avg Power(W)	Length L (mm)	Flange	Material
WR284	2.60-3.95	≤1.25	≤0.2	100	82	FDP	Al
WR229	3.22-4.90	≤1.25	≤0.2	100	68	FDP	Al
WR187	3.94-5.99	≤1.25	≤0.2	100	58	FDP	Al
WR159	4.64-7.05	≤1.25	≤0.2	100	56	FDP	Al
WR137	5.38-8.17	≤1.25	≤0.2	100	50	FDP	Cu
WR112	6.57-9.99	≤1.25	≤0.2	50	40	FBP	Cu
WR90	8.20-12.40	≤1.25	≤0.2	50	30.5	FBP	Cu
WR75	9.84-15.0	≤1.25	≤0.2	50	21	FBP	Cu
WR62	11.9-18.0	≤1.25	≤0.2	50	24	FBP	Cu
WR51	14.5-22.0	≤1.25	≤0.2	50	25	FBP	Cu
WR42	17.6-26.7	≤1.50	≤0.3	30	18	FBP	Cu
WR34	21.7-33.0	≤1.50	≤0.5	30	21	FBP	Cu
WR28	26.5-40.0	≤1.50	≤0.5	30	16	FBP	Cu

## Waveguide Termination



### Waveguide Termination

WG Type EIA	Freq Range (GHz)	VSWR	Length L (mm)	Avg Power(W)	Flange	Material
WR2300	0.32-0.49	≤1.05	2200	20W	FDP	Al
WR2100	0.35-0.53	≤1.05	1900	20W	FDP	Al
WR1800	0.41-0.62	≤1.05	1300	15W	FDP	Al

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## Waveguide Termination



### Waveguide Termination

WG Type EIA	Freq Range (GHz)	VSWR	Length L (mm)	Avg Power(W)	Flange	Material
WR1500	0.49-0.75	≤1.05	1300	15W	FDP	Al
WR1150	0.64-0.98	≤1.05	1100	15W	FDP	Al
WR975	0.75-1.15	≤1.05	900	15W	FDP	Al
WR770	0.96-1.46	≤1.03	680	10W	FDP	Al
WR650	1.13-1.73	≤1.03	570	10W	FDP	Al
WR510	1.45-2.20	≤1.03	540	10W	FDP	Al
WR430	1.72-2.61	≤1.03	450	10W	FDP	Al
WR340	2.17-3.30	≤1.03	350	5W	FDP	Al
WR284	2.60-3.95	≤1.03	300	5W	FDP	Al
WR229	3.22-4.90	≤1.03	250	5W	FDP	Al
WR187	3.94-5.99	≤1.03	220	5W	FDP	Al
WR159	4.64-7.05	≤1.03	200	5W	FDP	Al
WR137	5.38-8.17	≤1.03	180	5W	FDP	Cu
WR112	6.57-9.99	≤1.03	150	5W	FBP	Cu
WR90	8.20-12.40	≤1.03	130	2W	FBP	Cu
WR75	9.84-15.0	≤1.03	110	2W	FBP	Cu
WR62	11.9-18.0	≤1.03	90	2W	FBP	Cu
WR51	14.5-22.0	≤1.03	75	2W	FBP	Cu
WR42	17.6-26.7	≤1.03	65	1W	FBP	Cu
WR34	21.7-33.0	≤1.03	55	1W	FBP	Cu
WR28	26.5-40.0	≤1.03	50	1W	FBP	Cu
WR22	32.9-50.1	≤1.15	40	0.5W	FUGP	Cu
WR19	39.2-59.6	≤1.15	40	0.5W	FUGP	Cu
WR15	49.8-75.8	≤1.15	38	0.5W	FUGP	Cu
WR12	60.5-91.9	≤1.15	30	0.5W	FUGP	Cu
WR10	73.8-112	≤1.15	30	0.5W	FUGP	Cu
WR8	92.2-140	≤1.20	25	0.3W	FUGP	Cu
WR7	113-173	≤1.20	22	0.3W	FUGP	Cu
WR5	145-220	≤1.25	20	0.3W	FUGP	Cu
WR4	172-261	≤1.25	20	0.3W	FUGP	Cu
WR3	217-330	≤1.25	20	0.3W	FUGP	Cu

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## Waveguide Termination



### Small Size Waveguide Termination

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	Length L (mm)	Flange	Material
WR2300	0.32-0.49	10%	≤1.07	300-600	FDP	Al
WR2100	0.35-0.53	10%	≤1.07	250-550	FDP	Al
WR1800	0.41-0.62	10%	≤1.07	250-500	FDP	Al
WR1500	0.49-0.75	10%	≤1.07	200-400	FDP	Al
WR1150	0.64-0.98	10%	≤1.07	170-350	FDP	Al
WR975	0.75-1.15	10%	≤1.07	150-300	FDP	Al
WR770	0.96-1.46	10%	≤1.05	120-250	FDP	Al
WR650	1.13-1.73	10%	≤1.05	100-200	FDP	Al
WR510	1.45-2.20	10%	≤1.05	70-150	FDP	Al
WR430	1.72-2.61	10%	≤1.05	60-130	FDP	Al
WR340	2.17-3.30	10%	≤1.05	50-100	FDP	Al
WR284	2.60-3.95	10%	≤1.05	40-90	FDP	Al
WR229	3.22-4.90	10%	≤1.05	40-80	FDP	Al
WR187	3.94-5.99	10%	≤1.05	40-70	FDP	Al
WR159	4.64-7.05	10%	≤1.05	30-60	FDP	Al
WR137	5.38-8.17	10%	≤1.05	25-50	FDP	Cu
WR112	6.57-9.99	10%	≤1.05	20-40	FBP	Cu
WR90	8.20-12.40	10%	≤1.05	15-30	FBP	Cu
WR75	9.84-15.0	10%	≤1.05	15-30	FBP	Cu
WR62	11.9-18.0	10%	≤1.05	10-20	FBP	Cu
WR51	14.5-22.0	10%	≤1.05	10-20	FBP	Cu
WR42	17.6-26.7	10%	≤1.05	10-18	FBP	Cu
WR34	21.7-33.0	10%	≤1.07	10-18	FBP	Cu
WR28	26.5-40.0	10%	≤1.07	8-15	FBP	Cu
WR22	32.9-50.1	10%	≤1.10	7-15	FUGP	Cu
WR19	39.2-59.6	10%	≤1.10	6-12	FUGP	Cu
WR15	49.8-75.8	10%	≤1.10	6-12	FUGP	Cu
WR12	60.5-91.9	10%	≤1.15	5-10	FUGP	Cu
WR10	73.8-112	10%	≤1.15	5-10	FUGP	Cu

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## Waveguide Termination



### Waveguide Sliding Termination

WG Type EIA	Freq Range (GHz)	VSWR	Sliding Distance(mm)	Flange	Material
WR650	1.13-1.73	$\leq 1.05$	$\geq 70$	FDP	Cu
WR510	1.45-2.20	$\leq 1.05$	$\geq 55$	FDP	Cu
WR430	1.72-2.61	$\leq 1.05$	$\geq 45$	FDP	Cu
WR340	2.17-3.30	$\leq 1.05$	$\geq 36$	FDP	Cu
WR284	2.60-3.95	$\leq 1.05$	$\geq 30$	FDP	Cu
WR229	3.22-4.90	$\leq 1.05$	$\geq 25$	FDP	Cu
WR187	3.94-5.99	$\leq 1.05$	$\geq 20$	FDP	Cu
WR159	4.64-7.05	$\leq 1.05$	$\geq 17$	FDP	Cu
WR137	5.38-8.17	$\leq 1.05$	$\geq 15$	FDP	Cu
WR112	6.57-9.99	$\leq 1.05$	$\geq 24$	FBP	Cu
WR90	8.20-12.40	$\leq 1.05$	$\geq 20$	FBP	Cu
WR75	9.84-15.0	$\leq 1.05$	$\geq 16$	FBP	Cu
WR62	11.9-18.0	$\leq 1.05$	$\geq 13$	FBP	Cu
WR51	14.5-22.0	$\leq 1.05$	$\geq 11$	FBP	Cu
WR42	17.6-26.7	$\leq 1.05$	$\geq 9$	FBP	Cu
WR34	21.7-33.0	$\leq 1.05$	$\geq 7.2$	FBP	Cu
WR28	26.5-40.0	$\leq 1.05$	$\geq 9$	FBP	Cu
WR22	32.9-50.1	$\leq 1.15$	$\geq 2$	FUGP	Cu
WR19	39.2-59.6	$\leq 1.15$	$\geq 4$	FUGP	Cu
WR15	49.8-75.8	$\leq 1.15$	$\geq 3.3$	FUGP	Cu
WR12	60.5-91.9	$\leq 1.15$	$\geq 2.6$	FUGP	Cu
WR10	73.8-112	$\leq 1.15$	$\geq 2.1$	FUGP	Cu

### Waveguide Unmatched Termination



WG Type EIA	Freq Range (GHz)	VSWR(...)	Length (mm)	Flange	Material
WR1800	0.41-0.62	1.2/1.5/2.0	1600	FDP	Al
WR1500	0.49-0.75	1.2/1.5/2.0	1300	FDP	Al
WR1150	0.64-0.98	1.2/1.5/2.0	1100	FDP	Al
WR975	0.75-1.15	1.2/1.5/2.0	660	FDP	Al
WR770	0.96-1.46	1.2/1.5/2.0	680	FDP	Al

# SYNERGY TELECOM P. LTD.

## Waveguide Termination



### Waveguide Unmatched Termination

WG Type EIA	Freq Range (GHz)	VSWR(...)	Length (mm)	Flange	Material
WR650	1.13-1.73	1.2/1.5/2.0	570	FDP	Al
WR510	1.45-2.20	1.2/1.5/2.0	550	FDP	Al
WR430	1.72-2.61	1.2/1.5/2.0	470	FDP	Al
WR340	2.17-3.30	1.2/1.5/2.0	350	FDP	Al
WR284	2.60-3.95	1.2/1.5/2.0	278	FDP	Al
WR229	3.22-4.90	1.2/1.5/2.0	275	FDP	Al
WR187	3.94-5.99	1.2/1.5/2.0	170	FDP	Al
WR159	4.64-7.05	1.2/1.5/2.0	135	FDP	Al
WR137	5.38-8.17	1.2/1.5/2.0	180	FDP	Cu
WR112	6.57-9.99	1.2/1.5/2.0	100	FBP	Cu
WR90	8.20-12.40	1.2/1.5/2.0	100	FBP	Cu
WR75	9.84-15.0	1.2/1.5/2.0	90	FBP	Cu
WR62	11.9-18.0	1.2/1.5/2.0	90	FBP	Cu
WR51	14.5-22.0	1.2/1.5/2.0	75	FBP	Cu
WR42	17.6-26.7	1.2/1.5/2.0	60	FBP	Cu
WR34	21.7-33.0	1.2/1.5/2.0	55	FBP	Cu
WR28	26.5-40.0	1.2/1.5/2.0	40	FBP	Cu
WR22	32.9-50.1	1.2/1.5/2.0	40	FUGP	Cu
WR19	39.2-59.6	1.2/1.5/2.0	40	FUGP	Cu
WR15	49.8-75.8	1.2/1.5/2.0	40	FUGP	Cu
WR12	60.5-91.9	1.2/1.5/2.0	38	FUGP	Cu
WR10	73.8-112	1.2/1.5/2.0	35	FUGP	Cu

### Double-Ridged Waveguide Termination



WG Type EIA	Freq Range (GHz)	VSWR	Length(mm)	Avg Power(W)	Flange	Material
WRD84	0.84-2	≤1.15	720	5	FP	Al
WRD150	1.5-3.6	≤1.15	650	5	FP	Al
WRD200	2-4.8	≤1.15	340	5	FP	Al
WRD250	2.6-7.8	≤1.15	300	5	FP	Al
WRD350	3.5-8.2	≤1.15	260	5	FP	Al

# SYNERGY TELECOM P. LTD.

## Waveguide Termination



### Double-Ridged Waveguide Termination

WG Type EIA	Freq Range (GHz)	VSWR	Length(mm)	Avg Power(W)	Flange	Material
WRD475	4.75-11	≤1.15	200	2	FP	Al
WRD500	5-18	≤1.15	210	2	FP	Al
WRD580	5.8-16	≤1.15	210	2	FP	Al
WRD650	6.5-18	≤1.15	102	1	FP	Cu
WRD750	7.5-18	≤1.15	140	1	FP	Cu
WRD700	7-18.5	≤1.15	200	1	FP	Cu
WRD110	11-26.5	≤1.15	150	0.5	FP	Cu
WRD180	18-40	≤1.15	109	0.5	FP	Cu

### Circular Waveguide Termination



Freq Range (GHz)	Inner Diameter Φ(mm)	Length (mm)	VSWR
1.76 ~ 2.42	114.58	580	≤1.15
2.1 ~ 2.8	97.87	470	≤1.15
2.45 ~ 3.3	83.62	400	≤1.15
2.83 ~ 3.88	71.42	360	≤1.15
3.9 ~ 5.3	51.99	300	≤1.15
4.55 ~ 6.23	44.45	250	≤1.15
5.3 ~ 7.3	38.1	190	≤1.15
6.3 ~ 8.5	32.537	170	≤1.15
7.3 ~ 9.5	27.788	160	≤1.15
8.5 ~ 11.5	23.825	150	≤1.15
11.6 ~ 15.9	17.415	140	≤1.15
13.4 ~ 18.4	15.088	130	≤1.15
15.9 ~ 21.8	12.7	120	≤1.15
21.2 ~ 29.1	9.525	100	≤1.15
24.3 ~ 33.2	8.331	80	≤1.15
28.3 ~ 38.8	7.137	70	≤1.15
36.4 ~ 49.8	5.563	65	≤1.15
46.3 ~ 63.5	4.369	50	≤1.15
56.6 ~ 77.5	3.581	45	≤1.15
63.5 ~ 87.2	3.175	45	≤1.15
84.8 ~ 116.0	2.388	45	≤1.15



# SYNERGY TELECOM P. LTD.

## Waveguide Termination



### Rectangular High Power Waveguide Termination

WG Type EIA	Freq Range (GHz)	VSWR	Avg Power...(W)	Flange	Material
WR2300	0.32-0.49	≤1.25	10-4000	FDP	Al
WR2100	0.35-0.53	≤1.25	10-4000	FDP	Al
WR1800	0.41-0.62	≤1.25	10-4000	FDP	Al
WR1500	0.49-0.75	≤1.25	10-4000	FDP	Al
WR1150	0.64-0.98	≤1.25	10-4000	FDP	Al
WR975	0.75-1.15	≤1.25	10-4000	FDP	Al
WR770	0.96-1.46	≤1.25	10-4000	FDP	Al
WR650	1.13-1.73	≤1.25	10-4000	FDP	Al
WR510	1.45-2.20	≤1.25	10-4000	FDP	Al
WR430	1.72-2.61	≤1.25	10-4000	FDP	Al
WR340	2.17-3.30	≤1.25	10-4000	FDP	Al
WR284	2.60-3.95	≤1.25	10-4000	FDP	Al
WR229	3.22-4.90	≤1.25	10-4000	FDP	Al
WR187	3.94-5.99	≤1.25	10-4000	FDP	Al
WR159	4.64-7.05	≤1.25	10-4000	FDP	Al
WR137	5.38-8.17	≤1.25	10-3000	FDP	Cu
WR112	6.57-9.99	≤1.25	10-3000	FBP	Cu
WR90	8.20-12.40	≤1.25	10-3000	FBP	Cu
WR75	9.84-15.0	≤1.25	10-3000	FBP	Cu
WR62	11.9-18.0	≤1.25	10-1000	FBP	Cu
WR51	14.5-22.0	≤1.25	10-1000	FBP	Cu
WR42	17.6-26.7	≤1.25	10-600	FBP	Cu
WR34	21.7-33.0	≤1.25	10-600	FBP	Cu
WR28	26.5-40.0	≤1.25	10-600	FBP	Cu
WR22	32.9-50.1	≤1.25	10-600	FUGP	Cu
WR19	39.2-59.6	≤1.25	10-300	FUGP	Cu
WR15	49.8-75.8	≤1.25	10-300	FUGP	Cu
WR12	60.5-91.9	≤1.25	10-200	FUGP	Cu
WR10	73.8-112	≤1.25	10-200	FUGP	Cu

## Waveguide Termination

### Double-Ridged High Power Waveguide Termination



WG Type EIA	Freq Range (GHz)	VSWR	Avg Power...(W)	Flange	Material
WRD84	0.84-2	≤1.25	10-2000W	FP	Al
WRD150	1.5-3.6	≤1.25	10-2000W	FP	Al
WRD200	2-4.8	≤1.25	10-2000W	FP	Al
WRD250	2.6-7.8	≤1.25	10-2000W	FP	Al
WRD350	3.5-8.2	≤1.25	10-2000W	FP	Al
WRD475	4.75-11	≤1.25	10-1000W	FP	Al
WRD500	5-18	≤1.25	10-1000W	FP	Al
WRD580	5.8-16	≤1.25	10-1000W	FP	Al
WRD650	6.5-18	≤1.25	10-1000W	FP	Cu
WRD750	7.5-18	≤1.25	10-1000W	FP	Cu
WRD700	7-18.5	≤1.25	10-1000W	FP	Cu
WRD110	11-26.5	≤1.25	10-600W	FP	Cu
WRD180	18-40	≤1.25	10-600W	FP	Cu

## Waveguide Short Plate

### Waveguide Short Plate



WG Type EIA	Freq Range (GHz)	VSWR	Standard Thickness(mm)	Flange	Material
WR2300	0.32-0.49	≥60	23	FDP	Al
WR2100	0.35-0.53	≥60	23	FDP	Al
WR1800	0.41-0.62	≥60	18	FDP	Al
WR1500	0.49-0.75	≥60	18	FDP	Al
WR1150	0.64-0.98	≥60	14	FDP	Al
WR975	0.75-1.15	≥60	14	FDP	Al
WR770	0.96-1.46	≥60	12	FDP	Al
WR650	1.13-1.73	≥60	12	FDP	Al
WR510	1.45-2.20	≥60	12	FDP	Al
WR430	1.72-2.61	≥60	10	FDP	Al
WR340	2.17-3.30	≥60	10	FDP	Al
WR284	2.60-3.95	≥60	8	FDP	Al
WR229	3.22-4.90	≥60	8	FDP	Al
WR187	3.94-5.99	≥60	7	FDP	Al

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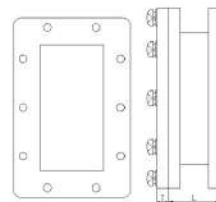
## Waveguide Short Plate



### Waveguide Short Plate

WG Type EIA	Freq Range (GHz)	VSWR	Standard Thickness(mm)	Flange	Material
WR159	4.64-7.05	≥60	7	FDP	Al
WR137	5.38-8.17	≥60	7	FDP	Cu
WR112	6.57-9.99	≥60	5	FBP	Cu
WR90	8.20-12.40	≥60	5	FBP	Cu
WR75	9.84-15.0	≥60	5	FBP	Cu
WR62	11.9-18.0	≥60	5	FBP	Cu
WR51	14.5-22.0	≥60	5	FBP	Cu
WR42	17.6-26.7	≥60	4	FBP	Cu
WR34	21.7-33.0	≥60	4	FBP	Cu
WR28	26.5-40.0	≥60	4	FBP	Cu
WR22	32.9-50.1	≥60	4	FUGP	Cu
WR19	39.2-59.6	≥60	4	FUGP	Cu
WR15	49.8-75.8	≥60	4	FUGP	Cu
WR12	60.5-91.9	≥60	4	FUGP	Cu
WR10	73.8-112	≥60	4	FUGP	Cu

### Waveguide Offset Short



WG Type EIA	Freq Range (GHz)	VSWR	Dimension (mm)		Flange	Material
			T	L		
WR2300	0.32-0.49	≥50	23	239.5	FDP	Al
WR2100	0.35-0.53	≥50	23	221.6	FDP	Al
WR1800	0.41-0.62	≥50	18	188.9	FDP	Al
WR1500	0.49-0.75	≥50	18	156.6	FDP	Al
WR1150	0.64-0.98	≥50	14	122.3	FDP	Al
WR975	0.75-1.15	≥50	14	101.6	FDP	Al
WR770	0.96-1.46	≥50	12	81.1	FDP	Al
WR650	1.13-1.73	≥50	12	67.9	FDP	Al
WR510	1.45-2.20	≥50	12	53.2	FDP	Al
WR430	1.72-2.61	≥50	10	44.8	FDP	Al
WR340	2.17-3.30	≥50	10	35.5	FDP	Al



## Waveguide Short Plate



### Waveguide Offset Short

WG Type EIA	Freq Range (GHz)	VSWR	Dimension (mm)		Flange	Material
			T	L		
WR284	2.60-3.95	≥50	8	29.6	FDP	Al
WR229	3.22-4.90	≥50	8	23.9	FDP	Al
WR187	3.94-5.99	≥50	7	19.6	FDP	Al
WR159	4.64-7.05	≥50	7	16.6	FDP	Al
WR137	5.38-8.17	≥50	7	14.3	FDP	Cu
WR112	6.57-9.99	≥50	5	11.7	FBP	Cu
WR90	8.20-12.40	≥50	5	9.5	FBP	Cu
WR75	9.84-15.0	≥50	5	7.8	FBP	Cu
WR62	11.9-18.0	≥50	5	6.5	FBP	Cu
WR51	14.5-22.0	≥50	5	5.3	FBP	Cu
WR42	17.6-26.7	≥50	4	4.4	FBP	Cu
WR34	21.7-33.0	≥50	4	3.55	FBP	Cu
WR28	26.5-40.0	≥50	4	2.9	FBP	Cu
WR22	32.9-50.1	≥50	4	2.3	FUGP	Cu
WR19	39.2-59.6	≥50	4	1.97	FUGP	Cu
WR15	49.8-75.8	≥50	4	1.55	FUGP	Cu
WR12	60.5-91.9	≥50	4	1.3	FUGP	Cu
WR10	73.8-112	≥50	4	1.05	FUGP	Cu



### Waveguide Sliding Short

WG Type EIA	Freq Range (GHz)	VSWR	Sliding Distance(mm)	Flange	Material
WR2300	0.32-0.49	≥50	300	FDP	Al
WR2100	0.35-0.53	≥50	240	FDP	Al
WR1800	0.41-0.62	≥50	220	FDP	Al
WR1500	0.49-0.75	≥50	180	FDP	Al
WR1150	0.64-0.98	≥50	150	FDP	Al
WR975	0.75-1.15	≥50	130	FDP	Al
WR770	0.96-1.46	≥50	100	FDP	Al
WR650	1.13-1.73	≥50	90	FDP	Al
WR510	1.45-2.20	≥50	80	FDP	Al

## Waveguide Short Plate





### Waveguide Sliding Short

WG Type EIA	Freq Range (GHz)	VSWR	Sliding Distance(mm)	Flange	Material
WR430	1.72-2.61	≥50	70	FDP	Al
WR340	2.17-3.30	≥50	60	FDP	Al
WR284	2.60-3.95	≥50	60	FDP	Al
WR229	3.22-4.90	≥50	50	FDP	Al
WR187	3.94-5.99	≥50	50	FDP	Al
WR159	4.64-7.05	≥50	50	FDP	Al
WR137	5.38-8.17	≥50	40	FDP	Cu
WR112	6.57-9.99	≥50	40	FBP	Cu
WR90	8.20-12.40	≥50	30	FBP	Cu
WR75	9.84-15.0	≥50	30	FBP	Cu
WR62	11.9-18.0	≥50	25	FBP	Cu
WR51	14.5-22.0	≥50	20	FBP	Cu
WR42	17.6-26.7	≥50	20	FBP	Cu
WR34	21.7-33.0	≥50	10	FBP	Cu
WR28	26.5-40.0	≥50	10	FBP	Cu
WR22	32.9-50.1	≥50	10	FUGP	Cu
WR19	39.2-59.6	≥50	10	FUGP	Cu
WR15	49.8-75.8	≥50	10	FUGP	Cu
WR12	60.5-91.9	≥50	10	FUGP	Cu
WR10	73.8-112	≥50	10	FUGP	Cu

## Waveguide Coupler




### Structural Category

Type	Feature	Application	Image
Broadwall Directional Coupler	Full waveguide bandwidth, coupling selection is 2~60dB, the directivity is 40-20dB, coupling flatness is best.	High precision measurement, monitoring and measuring system.	
Crossguide Directional Coupler	20%~100% of waveguide bandwidth, coupling selection is 20-60dB, coupling flatness is better than loop coupler, the directivity is 23-15dB.	System monitoring and measurement.	

## Waveguide Coupler

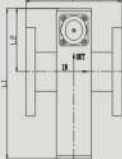
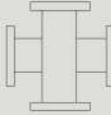
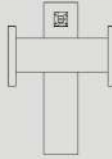
### Structural Category

(Continued)

Type	Feature	Application	Image
Waveguide Loop Coupler	20% of waveguide bandwidth, coupling selection is 20-60dB, the directivity is 20-15dB, small size.	Used under 10GHz of waveguide system monitoring and measurement.	
3dB Waveguide Coupler	20% of waveguide bandwidth, coupling selection is 3dB, the output phase difference of two lines is 90 degree.	Power combiner or divider.	
Waveguide Probe Coupler	20% of waveguide bandwidth, coupling selection is 10-60dB, no directivity, smallest size.	Simple system testing.	



### Crossguide Directional Coupler

Product Type	WL+C...c	WL+C...	W+C...	WL+CB...c
Schematic				
WG Type	WR975-WR28	WR975-WR10	WR975-WR10	WR975-WR28
Working Bandwidth	F0±10%	F0±10%	F0±10%	F0±10%
Optional Coupling...(dB)	20-60	20-60	20-60	20-60
Coupling Accuracy (dB)	±0.5~±1.0	±0.5~±1.0	±0.5~±1.0	±0.5~±1.0
Directivity (dB)	15-20	15-20	15-20	15-20
VSWR (Main Line)	1.10	1.10	1.10	1.10
Coupling Output	N, SMA, 2.92	Waveguide	Waveguide	N, SMA, 2.92

#### 【WL+C...c Specifications】

WG Type EIA	Freq Range (GHz)	Working Band width	VSWR (Main Line)	VSWR (Secondary line)	Optional Coupling...(dB)	Directivity (dB)	Flange	Coupling Output Connector	Dimensions (mm) L*L1*L2	Material
WR770	0.96-1.46	≤20%	≤1.10	≤1.25	20~60	≥15	FDP	N Female	400*760*250	Al
WR650	1.13-1.73	≤20%	≤1.10	≤1.25	20~60	≥15	FDP	N Female	320*460*160	Al



## Waveguide Coupler



【WL+C...c Specifications】

WG Type EIA	Freq Range (GHz)	Working Band width	VSWR (Main Line)	VSWR (Secondary line)	Optional Coupling ...(dB)	Directivity (dB)	Flange	Coupling Output Connector	Dimensions (mm) L*L1*L2	Material
WR510	1.45-2.20	≤20%	≤1.10	≤1.25	20~60	≥15	FDP	N Female	285*510*180	Al
WR430	1.72-2.61	≤20%	≤1.10	≤1.25	20~60	≥15	FDP	N Female	240*390*140	Al
WR340	2.17-3.30	≤20%	≤1.10	≤1.25	20~60	≥15	FDP	N Female	190*280*110	Al
WR284	2.60-3.95	≤20%	≤1.10	≤1.25	20~60	≥15	FDP	N Female	180*275*88	Al
WR229	3.22-4.90	≤20%	≤1.10	≤1.25	20~60	≥15	FDP	N Female	170*240*90	Al
WR187	3.94-5.99	≤20%	≤1.10	≤1.25	20~60	≥15	FDP	N Female	137*200*83	Al
WR159	4.64-7.05	≤20%	≤1.10	≤1.25	20~60	≥15	FDP	N Female	120*170*65	Al
WR137	5.38-8.17	≤20%	≤1.10	≤1.25	20~60	≥15	FDP	N Female	90*150*60	Al
WR112	6.57-9.99	≤20%	≤1.10	≤1.25	20~60	≥15	FBP	N Female	82*120*50	Cu
WR90	8.2-12.40	≤20%	≤1.10	≤1.25	20~60	≥15	FBP	N Female	70*85*40	Cu
WR75	9.84-15.0	≤20%	≤1.10	≤1.25	20~60	≥15	FBP	N Female	60*83*35	Cu
WR62	11.9-18.0	≤20%	≤1.10	≤1.25	20~60	≥15	FBP	SMA Female	60*65*30	Cu
WR51	14.5-22.0	≤20%	≤1.10	≤1.25	20~60	≥15	FBP	SMA Female	60*70*30	Cu
WR42	17.6-26.7	≤20%	≤1.10	≤1.5	20~60	≥15	FBP	2.92 Female	65*54*30	Cu
WR34	21.7-33.0	≤20%	≤1.10	≤1.5	20~60	≥15	FBP	2.92 Female	60*50*25	Cu
WR28	26.5-40.0	≤20%	≤1.10	≤1.5	20~60	≥15	FBP	2.92 Female	42*50*20	Cu



## Waveguide Loop Coupler

Description	Loop Coupler	Dual Directional Loop Coupler	Four Directional Loop Coupler
Outline Drawings			
WG Type	WR975- WR90	WR975- WR90	WR975- WR90
Working Bandwidth	F0±10%	F0±10%	F0±10%
Optional Coupling...(dB)	20-60	20-60	20-60
Directivity (dB)	15	15	15
VSWR (Main Line)	1.10	1.10	1.10
VSWR (Secondary Line )	1.25	1.25	1.25
Connector	N or SMA	N or SMA	N or SMA

## Waveguide Coupler



### Waveguide Loop Coupler

WG Type EIA	Freq Range (GHz)	Working Band width	Optional Coupling ...(dB)	Directivity (dB)	VSWR (Main Line)	VSWR (Secondary line)	Flange	Connector	Length (mm)	Material
WR975	0.75-1.15	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	300	Al
WR770	0.96-1.46	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	200	Al
WR650	1.13-1.73	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	220	Al
WR510	1.45-2.20	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	210	Al
WR430	1.72-2.61	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	160	Al
WR340	2.17-3.30	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	160	Al
WR284	2.60-3.95	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	150	Al
WR229	3.22-4.90	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	130	Al
WR187	3.94-5.99	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	130	Al
WR159	4.64-7.05	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	130	Al
WR137	5.38-8.17	≤20%	20~60	≥15	≤1.10	≤1.25	FDP	N Female	130	Al
WR112	6.57-9.99	≤20%	20~60	≥15	≤1.10	≤1.25	FBP	N Female	130	Cu
WR90	8.2-12.4	≤20%	20~60	≥15	≤1.10	≤1.25	FBP	N Female	100	Cu



### Double-Ridged Waveguide Loop Coupler

WG Type EIA	Freq Range (GHz)	Optional Coupling ...(dB)	Directivity (dB)	Man line VSWR	Secondary line VSWR	Flange	Connector	Length (mm)	Material
WRD84	0.84-2	20~60	≥15	≤1.15	≤1.60	FP	N Female	300	Al
WRD150	1.5-3.6	20~60	≥15	≤1.15	≤1.60	FP	N Female	200	Al
WRD200	2-4.8	20~60	≥15	≤1.15	≤1.60	FP	N Female	180	Al
WRD250	2.6-7.8	20~60	≥15	≤1.15	≤1.60	FP	N Female	150	Al
WRD350	3.5-8.2	20~60	≥15	≤1.15	≤1.60	FP	N Female	120	Al
WRD475	4.75-11	20~60	≥10	≤1.15	≤1.80	FP	N Female	100	Al
WRD500	5-18	20~60	≥10	≤1.15	≤1.80	FP	N Female	100	Al
WRD580	5.8-16	20~60	≥10	≤1.15	≤1.80	FP	N Female	100	Al
WRD650	6.5-18	20~60	≥10	≤1.15	≤1.80	FP	N Female	100	Al
WRD750	7.5-18	20~60	≥10	≤1.15	≤1.80	FP	N Female	100	Al
WRD700	7-18.5	20~60	≥10	≤1.15	≤1.80	FP	N Female	100	Al
WRD110	11-26.5	20~60	≥10	≤1.20	≤2.0	FP	SMA Female	80	Cu
WRD180	18-40	20~60	≥10	≤1.20	≤2.0	FP	SMA Female	80	Cu

## Waveguide Coupler

### Broadwall Directional Coupler



Product Type	Outline Drawings	WG Type	Working Bandwidth	Optional Coupling dB	Avg Coupling Accuracy (dB)	Coupling Flatness (dB)	Directivity (dB)
Single Directional		WR975-WR10	Full Band	3-60	$\pm 0.7 \sim \pm 1.5$	$\pm 0.7 \sim \pm 1.5$	30-40
		WR975-WR10	Full Band	3-60	$\pm 0.7 \sim \pm 1.5$	$\pm 0.7 \sim \pm 1.5$	30-40
Dual Directional		WR975-WR10	Full Band	3-60	$\pm 0.7 \sim \pm 1.5$	$\pm 0.7 \sim \pm 1.5$	30-40
		WR975-WR10	Full Band	3-60	$\pm 0.7 \sim \pm 1.5$	$\pm 0.7 \sim \pm 1.5$	30-40
Dual Directional		WR975-WR10	Full Band	3-60	$\pm 0.7 \sim \pm 1.3$	$\pm 0.5 \sim \pm 1.8$	30-40
		WR975-WR10	Full Band	3-60	$\pm 0.7 \sim \pm 1.3$	$\pm 0.5 \sim \pm 1.8$	30-40
Other							



## Waveguide Coupler

### HD-WC Series Broadwall Directional Coupler



WG Type EIA	Freq Range (GHz)	Optional Coupling ... (dB)	Directivity (dB)	Main line VSWR	Secondary line VSWR	Flange	Connector	Material
WR975	0.75-1.15	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR770	0.96-1.46	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR650	1.13-1.73	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR510	1.45-2.20	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR430	1.72-2.61	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR340	2.17-3.30	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR284	2.60-3.95	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR229	3.22-4.90	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR187	3.94-5.99	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR159	4.64-7.05	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR137	5.38-8.17	3~60	30~40	≤1.10	≤1.25	FDP	N Female	Al
WR112	6.57-9.99	3~60	30~40	≤1.10	≤1.25	FBP	N Female	Cu
WR90	8.20-12.40	3~60	30~40	≤1.10	≤1.25	FBP	N Female	Cu
WR75	9.84-15.0	3~60	30~40	≤1.10	≤1.25	FBP	N Female	Cu
WR62	11.9-18.0	3~60	30~40	≤1.10	≤1.25	FBP	SMA Female	Cu
WR51	14.5-22.0	3~60	30~40	≤1.10	≤1.25	FBP	SMA Female	Cu
WR42	17.6-26.7	3~60	30~40	≤1.10	≤1.50	FBP	2.92 Female	Cu
WR34	21.7-33.0	3~60	30~40	≤1.10	≤1.50	FBP	2.92 Female	Cu
WR28	26.5-40.0	3~60	30~40	≤1.10	≤1.50	FBP	2.92 Female	Cu
WR22	32.9-50.1	3~60	30~40	≤1.10	≤1.25	FUGP	WR22	Cu
WR19	39.2-59.6	3~60	30~40	≤1.10	≤1.25	FUGP	WR19	Cu
WR15	49.8-75.8	3~60	30~40	≤1.10	≤1.25	FUGP	WR15	Cu
WR12	60.5-91.9	3~60	30~40	≤1.10	≤1.25	FUGP	WR12	Cu
WR10	73.8-112	3~60	30~40	≤1.10	≤1.25	FUGP	WR10	Cu



### Double-Ridged Waveguide Broadwall Directional Coupler

WG Type EIA	Freq Range (GHz)	Optional Coupling ... (dB)	Coupling Flatness (dB)	Directivity (dB)	Main line VSWR	Secondary line VSWR	Flange	Connector	Material
WRD84	0.84-2	20~60	±1.5	≥25	≤1.10	≤1.5	FP	N Female	Al
WRD150	1.5-3.6	20~60	±1.5	≥25	≤1.10	≤1.5	FP	N Female	Al
WRD200	2-4.8	20~60	±1.5	≥25	≤1.10	≤1.5	FP	N Female	Al

## Waveguide Coupler



### Double-Ridged Waveguide Broadwall Directional Coupler

WG Type EIA	Freq Range (GHz)	Optional Coupling ...(dB)	Coupling Flatness (dB)	Directivity (dB)	Main line VSWR	Secondary line VSWR	Flange	Connector	Material
WRD250	2.6-7.8	20~60	±1.5	≥25	≤1.10	≤1.5	FP	N Female	Al
WRD350	3.5-8.2	20~60	±1.5	≥25	≤1.10	≤1.5	FP	N Female	Al
WRD475	4.75-11	20~60	±1.5	≥25	≤1.10	≤1.5	FP	N Female	Al
WRD500	5-18	20~60	±1.5	≥25	≤1.10	≤1.5	FP	N Female	Al
WRD580	5.8-16	20~60	±1.5	≥25	≤1.10	≤1.5	FP	N Female	Al
WRD650	6.5-18	20~60	±1.5	≥25	≤1.10	≤1.5	FP	N Female	Al
WRD750	7.5-18	20~60	±1.5	≥25	≤1.10	≤1.25	FP	N Female	Al
WRD700	7-18.5	20~60	±1.5	≥25	≤1.10	≤1.25	FP	N Female	Al
WRD110	11-26.5	20~60	±1.5	≥25	≤1.10	≤1.25	FP	SMA Female	Cu
WRD180	18-40	20~60	±1.5	≥25	≤1.10	≤1.25	FP	SMA Female	Cu



### Waveguide Probe Coupler

WG Type EIA	Freq Range (GHz)	Optional Coupling ...(dB)	Connector	Main line VSWR	Flange	Material
WR229	3.22-4.90	30~60	N Female	≤1.05	FDP	Al
WR187	3.94-5.99	30~60	N Female	≤1.05	FDP	Al
WR159	4.64-7.05	30~60	N Female	≤1.05	FDP	Al
WR137	5.38-8.17	30~60	N Female	≤1.05	FDP	Al
WR112	6.57-9.99	30~60	N Female	≤1.05	FBP	Cu
WR90	8.20-12.40	30~60	N Female	≤1.05	FBP	Cu
WR75	9.84-15.0	30~60	N Female	≤1.05	FBP	Cu
WR62	11.9-18.0	30~60	SMA Female	≤1.05	FBP	Cu
WR51	14.5-22.0	30~60	SMA Female	≤1.05	FBP	Cu
WR42	17.6-26.7	30~60	2.92 Female	≤1.10	FBP	Cu
WR34	21.7-33.0	30~60	2.92 Female	≤1.10	FBP	Cu
WR28	26.5-40.0	30~60	2.92 Female	≤1.10	FBP	Cu

## Waveguide Coupler




### Circular Waveguide Probe Coupler

Freq Range (GHz)	VSWR	Coupling(dB)	Inner Diameter (mm)	Connector	Material	Finish
2.0~4.0	≤1.1	30	100	N Female	Al	Chromate Conversion
3.3~3.8	≤1.1	30	61.04	N Female	Al	Chromate Conversion
3.89~5.33	≤1.1	30	51.99	N Female	Al	Chromate Conversion
4.5~6.5	≤1.1	30	37	N Female	Al	Chromate Conversion
7.4~9.0	≤1.1	30	27.78	SMA Female	Al	Chromate Conversion
9.1~10.0	≤1.1	30	23.825	SMA Female	Al	Chromate Conversion
8.5~10.5	≤1.1	30	20.244	SMA Female	Al	Chromate Conversion
15.0~17.0	≤1.1	30	14	SMA Female	Cu	Silver Plating
18.2~24.9	≤1.1	30	11.25	SMA Female	Cu	Silver Plating
17.7~21.2	≤1.1	30	11	SMA Female	Cu	Silver Plating
27.5~31	≤1.1	30	7.137	SMA Female	Cu	Silver Plating

## Waveguide Rotary Joint

### Waveguide Single Channel Rotary Joint

Model	Type	Product Image	VSWR WOW	IL WOW (dB)	Life Time (20 RPM)
I	I Type		≤0.05	≤0.05	3×10 <sup>6</sup> Revolutions
L	L Type		≤0.05	≤0.05	3×10 <sup>6</sup> Revolutions
U	U Type		≤0.05	≤0.05	3×10 <sup>6</sup> Revolutions



# SYNERGY TELECOM P. LTD.

## Waveguide Rotary Joint



### I Type Waveguide Rotary Joint

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL(dB)	Avg Power(W)	Peak Power (KW)	Flange	Material
WR284	2.60-3.95	≤15%	≤1.20	≤0.25	600	600	FDP	Al
WR229	3.22-4.90	≤15%	≤1.20	≤0.25	600	600	FDP	Al
WR187	3.94-5.99	≤15%	≤1.20	≤0.25	600	600	FDP	Al
WR159	4.64-7.05	≤15%	≤1.20	≤0.25	500	150	FDP	Al
WR137	5.38-8.17	≤15%	≤1.20	≤0.25	500	150	FDP	Al
WR112	6.57-9.99	≤15%	≤1.20	≤0.3	400	150	FBP	Cu
WR90	8.20-12.5	≤15%	≤1.20	≤0.3	400	150	FBP	Cu
WR75	9.84-15.0	≤15%	≤1.20	≤0.3	200	10	FBP	Cu
WR62	11.9-18.0	≤15%	≤1.20	≤0.3	100	4	FBP	Cu
WR51	14.5-22.0	≤15%	≤1.20	≤0.3	100	3	FBP	Cu
WR42	17.6-26.7	≤15%	≤1.25	≤0.5	50	0.5	FBP	Cu
WR34	21.7-33.0	≤15%	≤1.25	≤0.5	30	0.3	FBP	Cu
WR28	26.5-40.0	≤15%	≤1.25	≤0.5	30	0.3	FBP	Cu

### L Type Waveguide Rotary Joint



WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL(dB)	Avg Power(W)	Peak Power (KW)	Flange	Material
WR284	2.60-3.95	≤15%	≤1.20	≤0.25	600	600	FDP	Al
WR229	3.22-4.90	≤15%	≤1.20	≤0.25	600	600	FDP	Al
WR187	3.94-5.99	≤15%	≤1.20	≤0.25	600	600	FDP	Al
WR159	4.64-7.05	≤15%	≤1.20	≤0.25	500	150	FDP	Al
WR137	5.38-8.17	≤15%	≤1.20	≤0.25	500	150	FDP	Al
WR112	6.57-9.99	≤15%	≤1.20	≤0.3	400	150	FBP	Cu
WR90	8.20-12.5	≤15%	≤1.20	≤0.3	400	150	FBP	Cu
WR75	9.84-15.0	≤15%	≤1.20	≤0.3	200	10	FBP	Cu
WR62	11.9-18.0	≤15%	≤1.20	≤0.3	100	4	FBP	Cu
WR51	14.5-22.0	≤15%	≤1.25	≤0.3	100	3	FBP	Cu
WR42	17.6-26.7	≤15%	≤1.25	≤0.5	50	0.5	FBP	Cu
WR34	21.7-33.0	≤15%	≤1.25	≤0.5	30	0.3	FBP	Cu
WR28	26.5-40.0	≤15%	≤1.25	≤0.5	30	0.3	FBP	Cu

## Waveguide Rotary Joint



### U Type Waveguide Rotary Joint

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Avg Power (W)	Peak Power (KW)	Flange	Material
WR284	2.60-3.95	≤15%	≤1.20	≤0.25	600	600	FDP	Al
WR229	3.22-4.90	≤15%	≤1.20	≤0.25	600	600	FDP	Al
WR187	3.94-5.99	≤15%	≤1.20	≤0.25	600	600	FDP	Al
WR159	4.64-7.05	≤15%	≤1.20	≤0.25	500	150	FDP	Al
WR137	5.38-8.17	≤15%	≤1.20	≤0.25	500	150	FDP	Al
WR112	6.57-9.99	≤15%	≤1.20	≤0.3	400	150	FBP	Cu
WR90	8.20-12.5	≤15%	≤1.20	≤0.3	400	150	FBP	Cu
WR75	9.84-15.0	≤15%	≤1.20	≤0.3	200	10	FBP	Cu
WR62	11.9-18.0	≤15%	≤1.20	≤0.3	100	4	FBP	Cu
WR51	14.5-22.0	≤15%	≤1.25	≤0.3	100	3	FBP	Cu
WR42	17.6-26.7	≤15%	≤1.25	≤0.5	50	0.5	FBP	Cu
WR34	21.7-33.0	≤15%	≤1.25	≤0.5	30	0.3	FBP	Cu
WR28	26.5-40.0	≤15%	≤1.25	≤0.5	30	0.3	FBP	Cu



### High Power Waveguide Rotary Joint

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Avg Power (W)	Flange	Material
WR284	2.60-3.95	≤5%	≤1.15	≤0.20	3000	FDP	Al
WR229	3.22-4.90	≤5%	≤1.15	≤0.20	3000	FDP	Al
WR187	3.94-5.99	≤5%	≤1.15	≤0.20	3000	FDP	Al
WR159	4.64-7.05	≤5%	≤1.15	≤0.20	3000	FDP	Al
WR137	5.38-8.17	≤5%	≤1.15	≤0.20	2000	FDP	Al
WR112	6.57-9.99	≤5%	≤1.20	≤0.20	2000	FBP	Cu
WR90	8.20-12.5	≤5%	≤1.20	≤0.20	2000	FBP	Cu
WR75	9.84-15.0	≤5%	≤1.20	≤0.20	1000	FBP	Cu
WR62	11.9-18.0	≤5%	≤1.25	≤0.20	2000	FBP	Cu
WR51	14.5-22.0	≤5%	≤1.25	≤0.25	500	FBP	Cu
WR42	17.6-26.7	≤5%	≤1.25	≤0.25	500	FBP	Cu
WR34	21.7-33.0	≤5%	≤1.25	≤0.25	300	FBP	Cu
WR28	26.5-40.0	≤5%	≤1.25	≤0.25	300	FBP	Cu

## Waveguide Rotary Joint



### 90° Polarized Rotary Joint

WG Type EIA	Freq Range (GHz)	VSWR	IL(dB)	Avg Power (W)	Flange	Material
WR137	5.38-8.17	≤1.25	≤0.3	200	FDP	Cu
WR112	6.57-9.99	≤1.25	≤0.3	100	FBP	Cu
WR90	8.20-12.5	≤1.25	≤0.3	100	FBP	Cu
WR75	9.84-15.0	≤1.25	≤0.3	100	FBP	Cu
WR62	11.9-18.0	≤1.25	≤0.3	100	FBP	Cu
WR51	14.5-22.0	≤1.25	≤0.3	50	FBP	Cu
WR42	17.6-26.7	≤1.4	≤0.3	50	FBP	Cu
WR34	21.7-33.0	≤1.5	≤0.3	50	FBP	Cu
WR28	26.5-40.0	≤1.5	≤0.3	50	FBP	Cu



## Circular Waveguide Rotary Joint

Freq Range (GHz)	VSWR	IL (dB)	Avg Power (W)	Circular Waveguide Diameter (mm)	Flange	Material	Finish
2.0-4.0	≤1.20	≤0.2	200	100	FAP	Al	Chromate Conversion
3.3-3.8	≤1.20	≤0.2	200	61.04	FAP	Al	Chromate Conversion
3.89-5.33	≤1.20	≤0.2	200	51.99	FAP	Al	Chromate Conversion
4.5-6.5	≤1.20	≤0.2	200	37	FAP	Al	Chromate Conversion
7.4-9.0	≤1.20	≤0.2	200	27.78	FAP	Al	Chromate Conversion
9.1-10.0	≤1.20	≤0.2	100	23.825	FAP	Al	Chromate Conversion
8.5-10.5	≤1.20	≤0.2	100	20.244	FAP	Al	Chromate Conversion
15.0-17.0	≤1.20	≤0.2	100	14	FAP	Cu	Silver Plating
18.2-24.9	≤1.20	≤0.2	100	11.25	FAP	Cu	Silver Plating
17.7-21.2	≤1.20	≤0.2	100	11	FAP	Cu	Silver Plating
27.5-31	≤1.20	≤0.2	100	7.137	FAP	Cu	Silver Plating



## Waveguide Rotary Joint

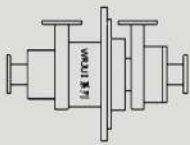
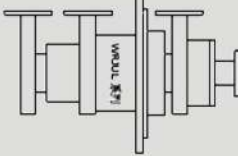
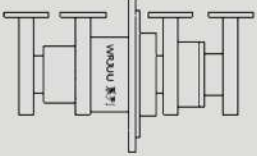


### Double-Ridged Waveguide Rotary Joint

WG Type EIA	Freq Range (GHz)	VSWR	IL(dB)	Avg Power (W)	Flange	Material
WRD84	0.84-2	≤1.5	≤0.5	200	FP	Cu
WRD150	1.5-3.6	≤1.5	≤0.5	200	FP	Cu
WRD200	2-4.8	≤1.5	≤0.5	200	FP	Cu
WRD250	2.6-7.8	≤1.5	≤0.5	200	FP	Cu
WRD350	3.5-8.2	≤1.5	≤0.5	200	FP	Cu
WRD475	4.75-11	≤1.5	≤0.5	100	FP	Cu
WRD500	5-18	≤1.5	≤0.5	100	FP	Cu
WRD580	5.8-16	≤1.5	≤0.5	100	FP	Cu
WRD650	6.5-18	≤1.5	≤0.5	100	FP	Cu
WRD750	7-18.5	≤1.5	≤0.5	100	FP	Cu
WRD700	7.5-18	≤1.5	≤0.5	100	FP	Cu
WRD110	11-26.5	≤1.8	≤0.8	50	FP	Cu
WRD180	18-40	≤2.0	≤0.8	30	FP	Cu

### Waveguide Dual-Channel Rotary Joint



Model	UI	UL	UU
Description	Dual-Channel U+I Type	Dual-Channel U+L Type	Dual-Channel U+U Type
Drawing			
Channel Isolation	≥50dB	≥50dB	≥50dB

## Waveguide Rotary Joint

### Waveguide Dual-Channel Rotary Joint



WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Avg Power(W)	Peak Power(KW)	Flange	Material
WR284	2.60-3.95	≤10%	≤1.25	≤0.3	600	600	FDP	Al
WR229	3.22-4.90	≤10%	≤1.25	≤0.3	600	600	FDP	Al
WR187	3.94-5.99	≤10%	≤1.25	≤0.3	600	600	FDP	Al
WR159	4.64-7.05	≤10%	≤1.25	≤0.3	500	150	FDP	Al
WR137	5.38-8.17	≤10%	≤1.25	≤0.3	500	150	FDP	Cu
WR112	6.57-9.99	≤10%	≤1.25	≤0.3	400	150	FBP	Cu
WR90	8.20-12.5	≤10%	≤1.25	≤0.3	400	150	FBP	Cu
WR75	9.84-15.0	≤10%	≤1.25	≤0.3	100	10	FBP	Cu
WR62	11.9-18.0	≤10%	≤1.25	≤0.3	100	4	FBP	Cu
WR51	14.5-22.0	≤10%	≤1.30	≤0.4	100	3	FBP	Cu
WR42	17.6-26.7	≤10%	≤1.30	≤0.5	50	0.5	FBP	Cu
WR34	21.7-33.0	≤10%	≤1.30	≤0.5	30	0.3	FBP	Cu
WR28	26.5-40.0	≤10%	≤1.50	≤0.7	30	0.3	FBP	Cu

## Power Divider/Combiner

### Waveguide E-Plane Tee



WG Type EIA	Freq Range (GHz)	Working Bandwidth	Unbalance (dB)	VSWR (E-Arm)	IL(dB)	Flange	Material
WR2300	0.32-0.49	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR2100	0.35-0.53	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR1800	0.41-0.62	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR1500	0.49-0.75	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR1150	0.64-0.98	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR975	0.75-1.15	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR770	0.96-1.46	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR650	1.13-1.73	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR510	1.45-2.20	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR430	1.72-2.61	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR340	2.17-3.30	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR284	2.60-3.95	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR229	3.22-4.90	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR187	3.94-5.99	≤15%	±0.35	≤1.20	≤0.2	FDP	Al

## Waveguide Power Divider/Combiner



### Waveguide E-Plane Tee

WG Type EIA	Freq Range (GHz)	Working Bandwidth	Unbalance (dB)	VSWR (E-Arm)	IL(dB)	Flange	Material
WR159	4.64-7.05	≤15%	±0.35	≤1.20	≤0.2	FDP	Al
WR137	5.38-8.17	≤15%	±0.35	≤1.20	≤0.3	FDP	Cu
WR112	6.57-9.99	≤15%	±0.35	≤1.20	≤0.3	FBP	Cu
WR90	8.20-12.40	≤15%	±0.35	≤1.20	≤0.3	FBP	Cu
WR75	9.84-15.0	≤15%	±0.35	≤1.20	≤0.3	FBP	Cu
WR62	11.9-18.0	≤15%	±0.40	≤1.25	≤0.3	FBP	Cu
WR51	14.5-22.0	≤15%	±0.40	≤1.25	≤0.4	FBP	Cu
WR42	17.6-26.7	≤15%	±0.40	≤1.25	≤0.4	FBP	Cu
WR34	21.7-33.0	≤15%	±0.40	≤1.25	≤0.4	FBP	Cu
WR28	26.5-40.0	≤15%	±0.40	≤1.25	≤0.4	FBP	Cu
WR22	32.9-50.1	≤10%	±0.50	≤1.35	≤0.5	FUGP	Cu
WR19	39.2-59.6	≤10%	±0.50	≤1.35	≤0.5	FUGP	Cu
WR15	49.8-75.8	≤10%	±0.50	≤1.35	≤0.5	FUGP	Cu
WR12	60.5-91.9	≤10%	±0.50	≤1.35	≤0.5	FUGP	Cu
WR10	73.8-112	≤10%	±0.50	≤1.35	≤0.5	FUGP	Cu

### Waveguide H-Plane Tee



WG Type EIA	Freq Range (GHz)	Working Bandwidth	Unbalance (dB)	H-Arm	IL(dB)	Flange	Material
WR2300	0.32-0.49	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR2100	0.35-0.53	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR1800	0.41-0.62	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR1500	0.49-0.75	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR1150	0.64-0.98	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR975	0.75-1.15	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR770	0.96-1.46	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR650	1.13-1.73	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR510	1.45-2.20	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR430	1.72-2.61	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR340	2.17-3.30	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
WR284	2.60-3.95	≤15%	±0.25	≤1.15	≤0.2	FDP	Al



## Waveguide Power Divider/Combiner



### Waveguide H-Plane Tee

*	WG Type EIA	Freq Range (GHz)	Working Bandwidth	Unbalance (dB)	H-Arm	IL(dB)	Flange	Material
	WR229	3.22-4.90	≤15%	±0.25	≤1.15	≤0.2	FDP	Al
	WR187	3.94-5.99	≤15%	±0.35	≤1.20	≤0.2	FDP	Al
	WR159	4.64-7.05	≤15%	±0.35	≤1.20	≤0.2	FDP	Al
	WR137	5.38-8.17	≤15%	±0.35	≤1.20	≤0.3	FDP	Cu
	WR112	6.57-9.99	≤15%	±0.35	≤1.20	≤0.3	FBP	Cu
	WR90	8.20-12.40	≤15%	±0.35	≤1.20	≤0.3	FBP	Cu
	WR75	9.84-15.0	≤15%	±0.35	≤1.20	≤0.3	FBP	Cu
	WR62	11.9-18.0	≤15%	±0.40	≤1.20	≤0.3	FBP	Cu
	WR51	14.5-22.0	≤15%	±0.40	≤1.25	≤0.4	FBP	Cu
	WR42	17.6-26.7	≤15%	±0.40	≤1.25	≤0.4	FBP	Cu
	WR34	21.7-33.0	≤15%	±0.40	≤1.25	≤0.4	FBP	Cu
	WR28	26.5-40.0	≤15%	±0.40	≤1.25	≤0.4	FBP	Cu
	WR22	32.9-50.1	≤10%	±0.50	≤1.35	≤0.5	FUGP	Cu
	WR19	39.2-59.6	≤10%	±0.50	≤1.35	≤0.5	FUGP	Cu
	WR15	49.8-75.8	≤10%	±0.50	≤1.35	≤0.5	FUGP	Cu
	WR12	60.5-91.9	≤10%	±0.50	≤1.35	≤0.5	FUGP	Cu
	WR10	73.8-112	≤10%	±0.50	≤1.35	≤0.5	FUGP	Cu

### Waveguide Magic Tee



WG Type EIA	Freq Range (GHz)	VSWR		Isolation (E-H)(dB)	Unbalance (dB)	Flange	Material
		H-Arm	E-Arm				
WR2300	0.32-0.49	≤1.20	≤1.50	≥35	≤0.25	FDP	Al
WR2100	0.35-0.53	≤1.20	≤1.50	≥35	≤0.25	FDP	Al
WR1800	0.41-0.62	≤1.20	≤1.50	≥35	≤0.25	FDP	Al
WR1500	0.49-0.75	≤1.20	≤1.50	≥35	≤0.25	FDP	Al
WR1150	0.64-0.98	≤1.20	≤1.50	≥35	≤0.25	FDP	Al
WR975	0.75-1.15	≤1.20	≤1.50	≥35	≤0.25	FDP	Al
WR770	0.96-1.46	≤1.20	≤1.50	≥35	≤0.25	FDP	Al
WR650	1.13-1.73	≤1.20	≤1.50	≥35	≤0.25	FDP	Al
WR510	1.45-2.20	≤1.20	≤1.50	≥35	≤0.25	FDP	Al
WR430	1.72-2.61	≤1.20	≤1.50	≥35	≤0.4	FDP	Al

## Waveguide Power Divider/Combiner

### Waveguide Magic Tee



WG Type EIA	Freq Range (GHz)	VSWR		Isolation (E-H)(dB)	Unbalance (dB)	Flange	Material
		H-Arm	E-Arm				
WR340	2.17-3.30	≤1.20	≤1.50	≥35	≤0.4	FDP	Al
WR284	2.60-3.95	≤1.20	≤1.50	≥35	≤0.4	FDP	Al
WR229	3.22-4.90	≤1.20	≤1.50	≥35	≤0.4	FDP	Al
WR187	3.94-5.99	≤1.20	≤1.50	≥35	≤0.4	FDP	Al
WR159	4.64-7.05	≤1.20	≤1.50	≥35	≤0.4	FDP	Al
WR137	5.38-8.17	≤1.20	≤1.50	≥35	≤0.4	FDP	Cu
WR112	6.57-9.99	≤1.20	≤1.50	≥35	≤0.4	FBP	Cu
WR90	8.20-12.4	≤1.20	≤1.50	≥35	≤0.4	FBP	Cu
WR75	9.84-15.0	≤1.20	≤1.50	≥35	≤0.4	FBP	Cu
WR62	11.9-18.0	≤1.20	≤1.50	≥35	≤0.4	FBP	Cu
WR51	14.5-22.0	≤1.20	≤1.50	≥35	≤0.4	FBP	Cu
WR42	17.6-26.7	≤1.20	≤1.50	≥30	≤0.4	FBP	Cu
WR34	21.7-33.0	≤1.20	≤1.50	≥30	≤0.4	FBP	Cu
WR28	26.5-40.0	≤1.20	≤1.50	≥30	≤0.4	FBP	Cu
WR22	32.9-50.1	≤1.20	≤1.50	≥30	≤0.5	FUGP	Cu
WR19	39.2-59.6	≤1.20	≤1.50	≥30	≤0.5	FUGP	Cu
WR15	49.8-75.8	≤1.20	≤1.50	≥30	≤0.5	FUGP	Cu
WR12	60.5-91.9	≤1.20	≤1.50	≥30	≤0.5	FUGP	Cu
WR10	73.8-112	≤1.20	≤1.50	≥30	≤0.5	FUGP	Cu

### In-Phase Waveguide Power Divider / Combiner



WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR		Isolation (2 Balance Arms)(dB)	Distribution Ratio(dB)	Flange	Material
			H-Arm	Balance Arm				
WR2300	0.32-0.49	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
WR2100	0.35-0.53	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
WR1800	0.41-0.62	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
WR1500	0.49-0.75	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
WR1150	0.64-0.98	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
WR975	0.75-1.15	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
WR770	0.96-1.46	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
WR650	1.13-1.73	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al
WR510	1.45-2.20	≤20%	≤1.20	≤1.50	≥17	3±0.25	FDP	Al

## Waveguide Power Divider/Combiner



### In-Phase Waveguide Power Divider / Combiner

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR		Isolation (2 Balance Arms)(dB)	Distribution Ratio(dB)	Flange	Material
			H-Arm	Balance Arm				
WR430	1.72-2.61	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
WR340	2.17-3.30	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
WR284	2.60-3.95	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
WR229	3.22-4.90	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
WR187	3.94-5.99	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
WR159	4.64-7.05	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Al
WR137	5.38-8.17	≤20%	≤1.20	≤1.50	≥17	3±0.4	FDP	Cu
WR112	6.57-9.99	≤20%	≤1.20	≤1.50	≥17	3±0.4	FBP	Cu
WR90	8.20-12.4	≤20%	≤1.20	≤1.50	≥17	3±0.4	FBP	Cu
WR75	9.84-15.0	≤20%	≤1.20	≤1.50	≥17	3±0.4	FBP	Cu
WR62	11.9-18.0	≤20%	≤1.20	≤1.50	≥17	3±0.4	FBP	Cu
WR51	14.5-22.0	≤20%	≤1.20	≤1.50	≥17	3±0.4	FBP	Cu
WR42	17.6-26.7	≤20%	≤1.20	≤1.50	≥15	3±0.4	FBP	Cu
WR34	21.7-33.0	≤20%	≤1.20	≤1.50	≥15	3±0.4	FBP	Cu
WR28	26.5-40.0	≤20%	≤1.20	≤1.50	≥15	3±0.4	FBP	Cu
WR22	32.9-50.1	≤20%	≤1.20	≤1.50	≥15	3±0.5	FUGP	Cu
WR19	39.2-59.6	≤20%	≤1.20	≤1.50	≥15	3±0.5	FUGP	Cu
WR15	49.8-75.8	≤20%	≤1.20	≤1.50	≥15	3±0.5	FUGP	Cu
WR12	60.5-91.9	≤20%	≤1.20	≤1.50	≥15	3±0.5	FUGP	Cu
WR10	73.8-112	≤20%	≤1.20	≤1.50	≥15	3±0.5	FUGP	Cu



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

WG Type EIA	Freq Range (GHz)	VSWR		Isolation (E-H)(dB)	Distribution Ratio (dB)	Flange	Material
		H-Arm	E-Arm				
WRD200	2.0-4.8	≤1.50	≤1.50	≥12	3±0.6	FP	Al
WRD250	2.6-7.8	≤1.50	≤1.50	≥12	3±0.6	FP	Al
WRD350	3.5-8.2	≤1.50	≤1.50	≥12	3±0.6	FP	Al
WRD475	4.75-11	≤1.50	≤1.50	≥12	3±0.6	FP	Al
WRD500	5.0-18.0	≤1.50	≤1.50	≥12	3±0.6	FP	Cu
WRD650	6.5-18.0	≤1.50	≤1.50	≥12	3±0.6	FP	Cu
WRD750	7.5-18.0	≤1.50	≤1.50	≥12	3±0.6	FP	Cu
WRD700	7.0-18.0	≤1.50	≤1.50	≥12	3±0.6	FP	Cu



## Waveguide Power Divider/Combiner



### Waveguide 90° Power Divider/Combiner

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										

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	Coupling ... (dB)	Material
WR229	3.22-4.90	≤10%	≤1.25	3 ~7	Al
WR229	3.22-4.90	≤10%	≤1.25	3 ~7	Al
WR187	3.94-5.99	≤10%	≤1.25	3 ~7	Al
WR187	3.94-5.99	≤10%	≤1.25	3 ~7	Al
WR159	4.64-7.05	≤10%	≤1.25	3 ~7	Al
WR159	4.64-7.05	≤10%	≤1.25	3 ~7	Al
WR137	5.38-8.17	≤10%	≤1.25	3 ~7	Cu
WR137	5.38-8.17	≤10%	≤1.25	3 ~7	Cu
WR112	6.57-9.99	≤10%	≤1.25	3 ~7	Cu
WR112	6.57-9.99	≤10%	≤1.25	3 ~7	Cu
WR90	8.20-12.40	≤10%	≤1.25	3 ~7	Cu
WR90	8.20-12.40	≤10%	≤1.25	3 ~7	Cu
WR75	9.84-15.0	≤10%	≤1.25	3 ~7	Cu
WR75	9.84-15.0	≤10%	≤1.25	3 ~7	Cu
WR62	11.9-18.0	≤10%	≤1.25	3 ~7	Cu
WR62	11.9-18.0	≤10%	≤1.25	3 ~7	Cu
WR51	14.5-22.0	≤10%	≤1.25	3 ~7	Cu
WR51	14.5-22.0	≤10%	≤1.25	3 ~7	Cu
WR42	17.6-26.7	≤10%	≤1.30	3 ~7	Cu
WR42	17.6-26.7	≤10%	≤1.30	3 ~7	Cu
WR34	21.7-33.0	≤10%	≤1.30	3 ~7	Cu
WR34	21.7-33.0	≤10%	≤1.30	3 ~7	Cu
WR28	26.5-40.0	≤10%	≤1.30	3 ~7	Cu
WR28	26.5-40.0	≤10%	≤1.30	3 ~7	Cu

## Waveguide Filter



### Waveguide Bandpass Filter

WG Type EIA	Band	Pass Band (GHz)	Rejection Band (GHz)	VSWR	IL (dB)	Material
WR137	C	5.85-6.425	3.4-4.2	≤1.20	≤0.4	Cu
WR112	X	7.9-8.4	7.25-7.75	≤1.20	≤0.6	Cu
WR90	X	8-9	7.125-7.235	≤1.20	≤0.5	Cu
WR75	Ku	11.7-12.75	14-14.5	≤1.20	≤0.3	Cu
WR62	Ku	13.3-13.7	15.3-15.5	≤1.20	≤0.3	Cu
WR42	Ka	20-22	30-31	≤1.25	≤0.5	Cu
WR34	Ka	24.5~27	≤22GHz ≤20GHz	≤1.20	≤0.3	Cu
WR28	Ka	30.5-31.3	26-28.35GHz	≤1.20	≤0.6	Cu

### Waveguide High-pass Filter

WG Type EIA	Band	Pass Band (GHz)	Rejection Band (GHz)	VSWR	IL (dB)	Isolation (dB)	Material
WR34	Ka	25-26	16	≤1.2	≤0.2	≥80	Cu
WR28	Ka	29-31.2	19-21	≤1.2	≤0.2	≥70	Cu

### Waveguide Low-pass Filter

WG Type EIA	Band	Pass Band (GHz)	Rejection Band (GHz)	VSWR	IL (dB)	Isolation (dB)	Material
WR229	C	4.5-4.8	6.725-7.025	≤1.2	≤0.3	≥55	Al
WR75	Ku	11.6-12.8	13.5-15	≤1.2	≤0.25	≥60	Cu
WR42	Ka	20.4-20.9	30-31	≤1.2	≤0.3	≥55	Cu

## Waveguide Isolator



### Waveguide Isolator

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Isolation (dB)	Flange	Material
WR650	1.13-1.73	≤5%	≤1.2	≤0.3	≥20	FDP	Al
WR510	1.45-2.20	≤5%	≤1.2	≤0.3	≥20	FDP	Al
WR430	1.72-2.61	≤5%	≤1.2	≤0.3	≥20	FDP	Al
WR340	2.17-3.30	≤5%	≤1.2	≤0.3	≥20	FDP	Al
WR284	2.60-3.95	≤5%	≤1.2	≤0.3	≥20	FDP	Al
WR229	3.22-4.90	≤10%	≤1.2	≤0.3	≥20	FDP	Al

## Waveguide Isolator

### Waveguide Isolator



WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Isolation (dB)	Flange	Material
WR187	3.94-5.99	≤10%	≤1.2	≤0.3	≥20	FDP	Al
WR159	4.64-7.05	≤10%	≤1.2	≤0.3	≥20	FDP	Al
WR137	5.38-8.17	≤10%	≤1.2	≤0.3	≥20	FDP	Al
WR112	6.57-9.99	≤15%	≤1.2	≤0.3	≥20	FBP	Al
WR90	8.2-12.5	≤15%	≤1.2	≤0.3	≥20	FBP	Al
WR75	9.84-15.0	≤15%	≤1.2	≤0.3	≥20	FBP	Al
WR62	11.9-18.0	≤15%	≤1.2	≤0.3	≥20	FBP	Al
WR51	14.5-22.0	≤15%	≤1.2	≤0.3	≥20	FBP	Al
WR42	17.6-26.7	≤15%	≤1.25	≤0.4	≥20	FBP	Cu
WR34	21.7-33.0	≤15%	≤1.25	≤0.4	≥20	FBP	Cu
WR28	26.5-40.0	≤15%	≤1.25	≤0.4	≥20	FBP	Cu
WR22	32.9-50.1	≤5%	≤1.5	≤0.6	≥17	FUGP	Cu
WR19	39.2-59.6	≤5%	≤1.5	≤0.6	≥15	FUGP	Cu
WR15	49.8-75.8	≤5%	≤1.5	≤0.6	≥15	FUGP	Cu
WR12	60.5-91.9	≤5%	≤1.5	≤0.8	≥15	FUGP	Cu
WR10	73.8-112	≤5%	≤1.5	≤1.0	≥15	FUGP	Cu

### High Power Waveguide Isolator



WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	Isolation (dB)	Avg Power (W)	Flange	Material
WR650	1.13-1.73	≤5%	≤1.20	≥20	≤2500	FDP	Al
WR510	1.45-2.20	≤5%	≤1.20	≥20	≤2500	FDP	Al
WR430	1.72-2.61	≤5%	≤1.20	≥20	≤2000	FDP	Al
WR284	2.60-3.95	≤5%	≤1.20	≥20	≤2000	FDP	Al
WR229	3.22-4.90	≤10%	≤1.20	≥20	≤1500	FDP	Al
WR187	3.94-5.99	≤10%	≤1.20	≥20	≤1500	FDP	Al
WR159	4.64-7.05	≤10%	≤1.20	≥20	≤1500	FDP	Al
WR137	5.38-8.17	≤10%	≤1.20	≥20	≤500	FDP	Al
WR112	6.57-9.99	≤10%	≤1.25	≥20	≤500	FBP	Al
WR90	8.2-12.5	≤10%	≤1.25	≥20	≤300	FBP	Al
WR75	9.84-15	≤10%	≤1.25	≥20	≤200	FBP	Al
WR62	11.9-18	≤10%	≤1.25	≥20	≤200	FBP	Al
WR51	14.5-22.0	≤10%	≤1.25	≥20	≤100	FBP	Al
WR42	17.6-26.7	≤10%	≤1.25	≥20	≤80	FBP	Cu



## Waveguide Isolator

### High Power Waveguide Isolator



WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	Isolation (dB)	Avg Power (W)	Flange	Material
WR34	21.7-33.0	≤10%	≤1.25	≥20	≤80	FBP	Cu
WR28	26.5-40.0	≤10%	≤1.25	≥20	≤50	FBP	Cu
WR22	32.9-50.1	≤5%	≤1.35	≥17	≤3	FUGP	Cu
WR19	39.2-59.6	≤5%	≤1.50	≥15	≤2	FUGP	Cu
WR15	49.8-75.8	≤5%	≤1.50	≥15	≤1	FUGP	Cu
WR12	60.5-91.9	≤5%	≤1.50	≥15	≤1	FUGP	Cu
WR10	73.8-112	≤5%	≤1.50	≥15	≤1	FUGP	Cu

### High Power Waveguide Differential Phase Shift Isolator



WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Isolation (dB)	Avg Power (W)	Flange Type	Material
WR650	1.13-1.73	≤5%	≤1.2	≤0.3	≥20	40k	FDP	Al
WR510	1.45-2.20	≤5%	≤1.2	≤0.3	≥20	30k	FDP	Al
WR430	1.72-2.61	≤5%	≤1.2	≤0.3	≥20	20k	FDP	Al
WR340	2.17-3.30	≤5%	≤1.2	≤0.3	≥20	20k	FDP	Al
WR284	2.60-3.95	≤5%	≤1.2	≤0.4	≥20	10K	FDP	Al
WR229	3.22-4.90	≤5%	≤1.2	≤0.4	≥20	5K	FDP	Al
WR187	3.94-5.99	≤5%	≤1.2	≤0.4	≥20	8K	FDP	Al
WR112	6.57-9.99	7%	≤1.25	≤0.4	≥20	1.2K	FBP	Cu
WR90	8.2-12.5	7%	≤1.25	≤0.5	≥20	1K	FBP	Cu
WR75	9.84-15.0	7%	≤1.25	≤0.5	≥20	1K	FBP	Cu
WR62	11.9-18.0	7%	≤1.25	≤0.5	≥20	800	FBP	Cu
WR51	14.5-22.0	7%	≤1.25	≤0.5	≥20	800	FBP	Cu

## Waveguide Circulator

### Waveguide Circulator



WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Isolation (dB)	Flange	Material
WR650	1.13-1.73	≤5%	≤1.2	≤0.3	≥20	FDP	Al
WR510	1.45-2.20	≤5%	≤1.2	≤0.3	≥20	FDP	Al
WR430	1.72-2.61	≤5%	≤1.2	≤0.3	≥20	FDP	Al

## Waveguide Circulator



### Waveguide Circulator

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Isolation (dB)	Flange	Material
WR340	2.17-3.30	≤5%	≤1.2	≤0.3	≥20	FDP	Al
WR284	2.60-3.95	≤5%	≤1.2	≤0.3	≥20	FDP	Al
WR229	3.22-4.90	≤10%	≤1.2	≤0.3	≥20	FDP	Al
WR187	3.94-5.99	≤10%	≤1.2	≤0.3	≥20	FDP	Al
WR159	4.64-7.05	≤10%	≤1.2	≤0.3	≥20	FDP	Al
WR137	5.38-8.17	≤10%	≤1.2	≤0.3	≥20	FDP	Al
WR112	6.57-9.99	≤15%	≤1.2	≤0.3	≥20	FBP	Al
WR90	8.20-12.40	≤15%	≤1.2	≤0.3	≥20	FBP	Al
WR75	9.84-15.0	≤15%	≤1.2	≤0.3	≥20	FBP	Al
WR62	11.9-18.0	≤15%	≤1.2	≤0.3	≥20	FBP	Al
WR51	14.5-22.0	≤15%	≤1.25	≤0.3	≥20	FBP	Al
WR42	17.6-26.7	≤15%	≤1.25	≤0.3	≥20	FBP	Cu
WR34	21.7-33.0	≤15%	≤1.25	≤0.3	≥20	FBP	Cu
WR28	26.5-40.0	≤15%	≤1.25	≤0.4	≥20	FBP	Cu
WR22	32.9-50.1	≤5%	≤1.35	≤0.6	≥17	FUGP	Cu
WR19	39.2-59.6	≤5%	≤1.50	≤0.6	≥15	FUGP	Cu
WR15	49.8-75.8	≤5%	≤1.50	≤0.6	≥15	FUGP	Cu
WR12	60.5-91.9	≤5%	≤1.50	≤0.8	≥15	FUGP	Cu
WR10	73.8-112	≤5%	≤1.50	≤1.0	≥15	FUGP	Cu



### High Power Waveguide Circulator

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Isolation (dB)	Avg Power (W)	Flange Type	Material
WR650	1.13-1.73	≤5%	≤1.2	≤0.3	≥20	20K	FDP	Al
WR510	1.45-2.20	≤5%	≤1.2	≤0.3	≥20	1000	FDP	Al
WR430	2.2-2.55	≤5%	≤1.2	≤0.3	≥20	1000	FDP	Al
WR340	2.17-3.3	≤5%	≤1.2	≤0.3	≥20	1000	FDP	Al
WR284	2.60-3.95	≤5%	≤1.2	≤0.3	≥20	1000	FDP	Al
WR187	3.94-5.99	≤10%	≤1.2	≤0.3	≥20	1000	FDP	Al
WR159	4.64-7.05	≤10%	≤1.2	≤0.3	≥20	1000	FDP	Al
WR137	5.38-8.17	≤10%	≤1.2	≤0.3	≥20	400	FDP	Al
WR112	6.57-9.99	≤10%	≤1.2	≤0.3	≥20	400	FBP	Al
WR90	8.2-12.4	≤15%	≤1.2	≤0.3	≥20	300	FBP	Al
WR75	9.84-15.0	≤15%	≤1.2	≤0.3	≥20	100	FBP	Al

# SYNERGY TELECOM P. LTD.

## Waveguide Circulator



### High Power Waveguide Circulator

WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Isolation (dB)	Avg Power (W)	Flange Type	Material
WR62	11.9-18.0	≤15%	≤1.2	≤0.3	≥20	150	FBP	Al
WR51	14.5-22.0	≤15%	≤1.25	≤0.3	≥20	100	FBP	Al
WR42	17.6-26.7	≤15%	≤1.25	≤0.3	≥20	80	FBP	Cu
WR34	21.7-33.0	≤15%	≤1.25	≤0.3	≥20	80	FBP	Cu
WR28	26.5-40	≤15%	≤1.25	≤0.3	≥20	50	FBP	Cu
WR22	32.9-50.1	≤5%	≤1.25	≤0.5	≥20	3	FUGP	Cu

### High Power Waveguide Differential Phase Shift Circulator



WG Type EIA	Freq Range (GHz)	Working Bandwidth	VSWR	IL (dB)	Isolation (dB)	Avg Power (W)	Material
WR650	1.13-1.73	≤5%	≤1.2	≤0.3	≥20	40k	Al
WR510	1.45-2.20	≤5%	≤1.2	≤0.3	≥20	30k	Al
WR430	1.72-2.61	≤5%	≤1.2	≤0.3	≥20	20k	Al
WR340	2.17-3.30	≤5%	≤1.2	≤0.3	≥20	20k	Al
WR284	2.60-3.95	≤5%	≤1.2	≤0.4	≥20	10k	Al
WR229	3.22-4.90	≤5%	≤1.2	≤0.4	≥20	5k	Al
WR187	3.94-5.99	≤5%	≤1.2	≤0.4	≥20	8k	Al
WR112	6.57-9.99	≤7%	≤1.25	≤0.4	≥20	1.2k	Cu
WR90	8.2-12.5	≤7%	≤1.25	≤0.5	≥20	1k	Cu
WR75	9.84-15.0	≤7%	≤1.25	≤0.5	≥20	1k	Cu
WR62	11.9-18.0	≤7%	≤1.25	≤0.5	≥20	800	Cu
WR51	14.5-22.0	≤7%	≤1.25	≤0.5	≥20	800	Cu

## Waveguide Attenuator

Attenuation	VSWR
3dB,6dB	≤1.25~1.35
10-30	≤1.15



### Waveguide Fixed Attenuator

WG Type EIA	Freq Range (GHz)	VSWR	Optional Attenuation ... (dB)	Flange	Material
WR2300	0.32-0.49	≤1.25	3~30	FDP	Al
WR2100	0.35-0.53	≤1.25	3~30	FDP	Al
WR1800	0.41-0.62	≤1.25	3~30	FDP	Al
WR1500	0.49-0.75	≤1.25	3~30	FDP	Al



# SYNERGY TELECOM P. LTD.

## Waveguide Attenuator

### Waveguide Fixed Attenuator

Attenuation	VSWR
3dB,6dB	$\leq 1.25 \sim 1.35$
10-30	$\leq 1.15$



WG Type EIA	Freq Range (GHz)	VSWR	Optional Attenuation ... (dB)	Flange	Material
WR1150	0.64-0.98	$\leq 1.25$	3~30	FDP	Al
WR975	0.75-1.15	$\leq 1.25$	3~30	FDP	Al
WR770	0.96-1.46	$\leq 1.25$	3~30	FDP	Al
WR650	1.13-1.73	$\leq 1.25$	3~30	FDP	Al
WR510	1.45-2.20	$\leq 1.25$	3~30	FDP	Al
WR430	1.72-2.61	$\leq 1.25$	3~30	FDP	Al
WR340	2.17-3.30	$\leq 1.25$	3~30	FDP	Al
WR284	2.60-3.95	$\leq 1.25$	3~30	FDP	Al
WR229	3.22-4.90	$\leq 1.25$	3~30	FDP	Al
WR187	3.94-5.99	$\leq 1.25$	3~30	FDP	Al
WR159	4.64-7.05	$\leq 1.25$	3~30	FDP	Al
WR137	5.38-8.17	$\leq 1.25$	3~30	FDP	Cu
WR112	6.57-9.99	$\leq 1.25$	3~30	FBP	Cu
WR90	8.20-12.40	$\leq 1.25$	3~30	FBP	Cu
WR75	9.84-15.0	$\leq 1.25$	3~30	FBP	Cu
WR62	11.9-18.0	$\leq 1.25$	3~30	FBP	Cu
WR51	14.5-22.0	$\leq 1.25$	3~30	FBP	Cu
WR42	17.6-26.7	$\leq 1.25$	3~30	FBP	Cu
WR34	21.7-33.0	$\leq 1.25$	3~30	FBP	Cu
WR28	26.5-40.0	$\leq 1.25$	3~30	FBP	Cu
WR22	32.9-50.1	$\leq 1.30$	3~30	FUGP	Cu
WR19	39.2-59.6	$\leq 1.30$	3~30	FUGP	Cu
WR15	49.8-75.8	$\leq 1.30$	3~30	FUGP	Cu
WR12	60.5-91.9	$\leq 1.35$	3~30	FUGP	Cu
WR10	73.8-112	$\leq 1.35$	3~30	FUGP	Cu

## Waveguide Attenuator

### Waveguide Coupling Fixed Attenuator

Attenuation	Frequency Response
3dB	$\leq \pm 1.8 \text{ dB}$
6 dB	$\leq \pm 1 \text{ dB}$
10-60 dB	$\leq \pm 0.75 \text{ dB}$



WG Type EIA	Freq Range (GHz)	VSWR	Optional Attenuation ... (dB)	Frequency Response (dB)	Flange	Material
WR770	0.96-1.46	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR770	0.96-1.46	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR650	1.13-1.73	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al

# SYNERGY TELECOM P. LTD.

## Waveguide Attenuator

### Waveguide Coupling Fixed Attenuator

Attenuation	Frequency Response
3dB	$\leq \pm 1.8\text{dB}$
6 dB	$\leq \pm 1\text{ dB}$
10-60 dB	$\leq \pm 0.75\text{ dB}$



WG Type EIA	Freq Range (GHz)	VSWR	Optional Attenuation ...(dB)	Frequency Response(dB)	Flange	Material
WR650	1.13-1.73	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR510	1.45-2.20	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR510	1.45-2.20	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR430	1.72-2.61	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR430	1.72-2.61	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR340	2.17-3.30	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR340	2.17-3.30	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR284	2.60-3.95	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR284	2.60-3.95	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR229	3.22-4.90	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR229	3.22-4.90	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR187	3.94-5.99	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR187	3.94-5.99	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR159	4.64-7.05	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR159	4.64-7.05	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Al
WR137	5.38-8.17	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Cu
WR137	5.38-8.17	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FDP	Cu
WR112	6.57-9.99	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR112	6.57-9.99	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR90	8.20-12.40	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR90	8.20-12.40	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR75	9.84-15.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR75	9.84-15.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR62	11.9-18.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR62	11.9-18.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR51	14.5-22.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR51	14.5-22.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR42	17.6-26.7	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR42	17.6-26.7	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR34	21.7-33.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR34	21.7-33.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR28	26.5-40.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR28	26.5-40.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FBP	Cu
WR22	32.9-50.1	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FUGP	Cu
WR22	32.9-50.1	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	FUGP	Cu
WR19	39.2-59.6	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	FUGP	Cu

# SYNERGY TELECOM P. LTD.

## Waveguide Attenuator

### Waveguide Coupling Fixed Attenuator

Attenuation	Frequency Response
3dB	$\leq \pm 1.8\text{dB}$
6 dB	$\leq \pm 1\text{ dB}$
10-60 dB	$\leq \pm 0.75\text{ dB}$



WG Type EIA	Freq Range (GHz)	VSWR	Optional Attenuation ... (dB)	Frequency Response (dB)	Flange	Material
WR19	39.2-59.6	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	FUGP	Cu
WR15	49.8-75.8	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	FUGP	Cu
WR15	49.8-75.8	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	FUGP	Cu
WR12	60.5-91.9	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	FUGP	Cu
WR12	60.5-91.9	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	FUGP	Cu
WR10	73.8-112	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	FUGP	Cu
WR10	73.8-112	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	FUGP	Cu

### High Power Waveguide Coupling Fixed Attenuator

Attenuation	Frequency Response
3dB	$\leq \pm 1.8\text{dB}$
6 dB	$\leq \pm 1\text{ dB}$
10-60 dB	$\leq \pm 0.75\text{ dB}$



WG Type EIA	Freq Range (GHz)	VSWR	Optional Attenuation ... (dB)	Frequency Response (dB)	Avg Power Range (W)	Flange	Material
WR770	0.96-1.46	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-4000	FDP	Al
WR650	1.13-1.73	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-4000	FDP	Al
WR510	1.45-2.20	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-4000	FDP	Al
WR430	1.72-2.61	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-4000	FDP	Al
WR340	2.17-3.30	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-4000	FDP	Al
WR284	2.60-3.95	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-4000	FDP	Al
WR229	3.22-4.90	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-4000	FDP	Al
WR187	3.94-5.99	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-4000	FDP	Al
WR159	4.64-7.05	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-4000	FDP	Al
WR137	5.38-8.17	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-3000	FDP	Cu
WR112	6.57-9.99	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-3000	FBP	Cu
WR90	8.20-12.40	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-3000	FBP	Cu
WR75	9.84-15.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-3000	FBP	Cu
WR62	11.9-18.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-1000	FBP	Cu
WR51	14.5-22.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-1000	FBP	Cu
WR42	17.6-26.7	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-600	FBP	Cu
WR34	21.7-33.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-600	FBP	Cu
WR28	26.5-40.0	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-600	FBP	Cu
WR22	32.9-50.1	$\leq 1.20$	3-60	$\pm 0.5 \sim 1.8$	10-600	FUGP	Cu
WR19	39.2-59.6	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	10-300	FUGP	Cu
WR15	49.8-75.8	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	10-300	FUGP	Cu
WR12	60.5-91.9	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	10-200	FUGP	Cu
WR10	73.8-112	$\leq 1.25$	3-60	$\pm 0.5 \sim 1.8$	10-200	FUGP	Cu

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# SYNERGY TELECOM P. LTD.

## Waveguide Attenuator

### Waveguide Variable Attenuator



WG Type EIA	Freq Range (GHz)	VSWR	Optional Attenuation ...(dB)	Flange	Material
WR770	0.96-1.46	≤1.25	0~30	FDP	Al
WR650	1.13-1.73	≤1.25	0~30	FDP	Al
WR510	1.45-2.20	≤1.25	0~30	FDP	Al
WR430	1.72-2.61	≤1.25	0~30	FDP	Al
WR340	2.17-3.30	≤1.25	0~30	FDP	Al
WR284	2.60-3.95	≤1.25	0~30	FDP	Al
WR229	3.22-4.90	≤1.25	0~30	FDP	Al
WR187	3.94-5.99	≤1.25	0~30	FDP	Al
WR159	4.64-7.05	≤1.25	0~30	FDP	Al
WR137	5.38-8.17	≤1.25	0~30	FDP	Cu
WR112	6.57-9.99	≤1.25	0~30	FBP	Cu
WR90	8.20-12.40	≤1.25	0~30	FBP	Cu
WR75	9.84-15.0	≤1.25	0~30	FBP	Cu
WR62	11.9-18.0	≤1.25	0~30	FBP	Cu
WR51	14.5-22.0	≤1.25	0~30	FBP	Cu
WR42	17.6-26.7	≤1.30	0~30	FBP	Cu
WR34	21.7-33.0	≤1.30	0~30	FBP	Cu
WR28	26.5-40.0	≤1.30	0~30	FBP	Cu
WR22	32.9-50.1	≤1.30	0~30	FUGP	Cu
WR19	39.2-59.6	≤1.30	0~30	FUGP	Cu
WR15	49.8-75.8	≤1.30	0~30	FUGP	Cu
WR12	60.5-91.9	≤1.30	0~30	FUGP	Cu
WR10	73.8-112	≤1.30	0~30	FUGP	Cu

## Waveguide Pressure Window

### Waveguide Pressure Window



WG Type EIA	Freq Range (GHz)	VSWR	Flange	Material
WR2300	0.32-0.49	≤1.25	FDP/FDM	Al
WR2100	0.35-0.53	≤1.25	FDP/FDM	Al
WR1800	0.41-0.62	≤1.25	FDP/FDM	Al
WR1500	0.49-0.75	≤1.25	FDP/FDM	Al
WR1150	0.64-0.98	≤1.25	FDP/FDM	Al

# SYNERGY TELECOM P. LTD.

## Waveguide Pressure Window



### Waveguide Pressure Window

WG Type EIA	Freq Range (GHz)	VSWR	Flange	Material
WR975	0.75-1.15	$\leq 1.25$	FDP/FDM	Al
WR770	0.96-1.46	$\leq 1.25$	FDP/FDM	Al
WR650	1.13-1.73	$\leq 1.25$	FDP/FDM	Al
WR510	1.45-2.20	$\leq 1.25$	FDP/FDM	Al
WR430	1.72-2.61	$\leq 1.25$	FDP/FDM	Al
WR340	2.17-3.30	$\leq 1.25$	FDP/FDM	Al
WR284	2.60-3.95	$\leq 1.25$	FDP/FDM	Al
WR229	3.22-4.90	$\leq 1.25$	FDP/FDM	Al
WR187	3.94-5.99	$\leq 1.25$	FDP/FDM	Al
WR159	4.64-7.05	$\leq 1.25$	FDP/FDM	Al
WR137	5.38-8.17	$\leq 1.25$	FDP/FDM	Cu
WR112	6.57-9.99	$\leq 1.25$	FBP/FBM	Cu
WR90	8.20-12.40	$\leq 1.25$	FBP/FBM	Cu
WR75	9.84-15.0	$\leq 1.25$	FBP/FBM	Cu
WR62	11.9-18.0	$\leq 1.25$	FBP/FBM	Cu
WR51	14.5-22.0	$\leq 1.25$	FBP/FBM	Cu
WR42	17.6-26.7	$\leq 1.25$	FBP/FBM	Cu
WR34	21.7-33.0	$\leq 1.25$	FBP/FBM	Cu
WR28	26.5-40.0	$\leq 1.25$	FBP/FBM	Cu
WR22	32.9-50.1	$\leq 1.3$	FUGP	Cu
WR19	39.2-59.6	$\leq 1.3$	FUGP	Cu
WR15	49.8-75.8	$\leq 1.4$	FUGP	Cu
WR12	60.5-91.9	$\leq 1.4$	FUGP	Cu
WR10	73.8-112	$\leq 1.4$	FUGP	Cu

## Waveguide Calibration Kits



### Waveguide Calibration Kits

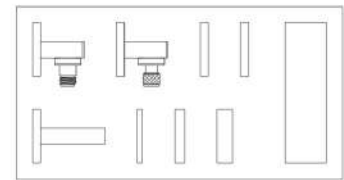
No.	Description	Parameter	Qty
1	Waveguide to Coaxial Adapter	Each of Male and Female Connector	2
2	Waveguide Matched Termination	$VSWR \leq 1.03$	1
3	Waveguide Short Plate	$VSWR \geq 60$	2
4	$1/4\lambda$ Precision Waveguide Section	$L = 1/4\lambda$	1

## Waveguide Calibration Kits



### Waveguide Calibration Kits (Continued)

No.	Description	Parameter	Qty
5	1/8λ Precision Waveguide Section	L=1/8λ	1
6	3/8λ Precision Waveguide Section	L=3/8λ	1
7	Packing Case of Aluminum Alloy	/	1
8	Screws	/	1 Set



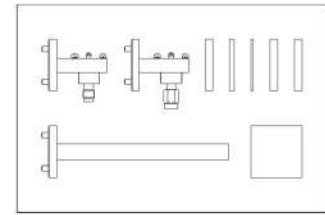
### Waveguide Calibration Kits

WG Type EIA	Freq Range (GHz)	Connector	Flange	Material
WR975	0.75-1.15	N Female	FDP	Al
WR770	0.96-1.46	N Female	FDP	Al
WR650	1.13-1.73	N Female	FDP	Al
WR510	1.45-2.20	N Female	FDP	Al
WR430	1.72-2.61	N Female	FDP	Al
WR340	2.17-3.30	N Female	FDP	Al
WR284	2.60-3.95	N Female	FDP	Al
WR229	3.22-4.90	N Female	FDP	Al
WR187	3.94-5.99	N Female	FDP	Al
WR159	4.64-7.05	N Female	FDP	Al
WR137	5.38-8.17	N Female	FDP	Cu
WR112	6.57-9.99	N Female	FBP	Cu
WR90	8.20-12.4	N Female	FBP	Cu
WR75	9.84-15.0	N Female	FBP	Cu
WR62	11.9-18.0	SMA Female	FBP	Cu
WR51	14.5-22.0	SMA Female	FBP	Cu
WR42	17.6-26.7	2.92 Female	FBP	Cu
WR34	21.7-33.0	2.92 Female	FBP	Cu
WR28	26.5-40.0	2.92 Female	FBP	Cu
WR22	32.9-50.1	2.4 Female	FUGP	Cu
WR19	39.2-59.6	2.4 Female	FUGP	Cu
WR15	49.8-75.8	1.85 Female	FUGP	Cu
WR12	60.5-91.9	1.0 Female	FUGP	Cu
WR10	73.8-112	1.0 Female	FUGP	Cu



## Waveguide Calibration Kits

### Double-Ridged Waveguide Calibration Kits



Freq Range (GHz)	WG type EIA	Connector	Flange	Material	Finish
0.84-2	WRD84	N Female	FP	Al	Chromate Conversion
1.5-3.6	WRD150	N Female	FP	Al	Chromate Conversion
2-4.8	WRD200	N Female	FP	Al	Chromate Conversion
2.6-7.8	WRD250	N Female	FP	Al	Chromate Conversion
3.5-8.2	WRD350	N Female	FP	Al	Chromate Conversion
4.75-11	WRD475	N Female	FP	Cu	Silver Plating
5-18	WRD500	SMA Female	FP	Cu	Silver Plating
5.8-16	WRD580	SMA Female	FP	Cu	Silver Plating
6.5-18	WRD650	SMA Female	FP	Cu	Silver Plating
7.5-18	WRD750	SMA Female	FP	Cu	Silver Plating
7-18.5	WRD700	SMA Female	FP	Cu	Silver Plating
11-26.5	WRD1100	2.92 Female	FP	Cu	Silver Plating
18-40	WRD1800	2.92 Female	FP	Cu	Silver Plating

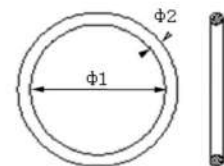
## Accessories

### Sealing Gasket



### O-Ring

#### Standard O-ring



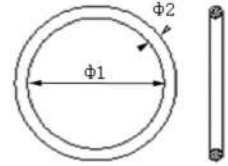
WG Type EIA	Dimensions (φ1Xφ2)	Model No*	WG Type EIA	Dimensions (φ1Xφ2)
WR284	101X5.4	HD-120MFO	WR75	28X2.6
WR229	82X5.4	HD-140MFO	WR62	23.5X2.6
WR187	68.5X3.5	HD-180MFO	WR51	20X2.4
WR137	53X3.5	HD-220MFO	WR42	15.5X1.8
WR112	40X2.6	HD-320MFO	WR28	10.5X1.8
WR90	33X2.6			

#### Special O-ring

Dimensions (φ1Xφ2)	Model No*	Dimensions (φ1Xφ2)
56.82X2.62	HD-MFO199.98	199.98X2.62

## Accessories

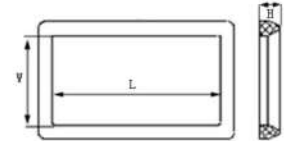
### Special O-ring



Dimensions (φ1Xφ2)	Model No*	Dimensions (φ1Xφ2)
78.38X2.62	HD-MFO284.84	284.84X3
101.3X3.53	HD-MFO321.06	321.06X3
114.4X3.1	HD-MFO321.4	321.4X3
120.94X2.62	HD-MFO331	331X3
124.5X3	HD-MFO422.1	422.1X3
143.8X3	HD-MFO463.4	463.4X3
146.68X2.62	HD-MFO486.2	486.2X3
162.7X3	HD-MFO493.6	493.6X3
164.28X3	HD-MFO499.5	499.5X3.53
194.38X3	HD-MFO539.1	539.1X3.53

### D-Ring

#### Standard D-Ring



WG Type EIA	Dimensions(L*W*H)	Model No*	WG Type EIA	Dimensions(L*W*H)
WR650	174.8X92.2X8.5	HD-58MFDL	WR159	45.5X25.5X3.5
WR510	136X72X5	HD-70MFD	WR137	41.2X22.2X4.9
WR430	117X63X5	HD-70MFDL	WR137	39X20.5X3.5
WR340	94X51.5X5	HD-84MFD	WR112	34.9X19X4.9
WR284	77X75.5X3.5	HD-84MFDL	WR112	34.9X19X3.3
WR284	79.4X41.3X3.5	HD-100MFD	WR90	28.6X15.9X4.9
WR229	63X34.5X3.5	HD-100MFDL	WR90	28X15.5X3.5
WR187	53.9X28.5X3.5	HD-140MFD	WR62	20.6X12.7X4.9
WR159	46.7X26.5X4.9			

### Waveguide Adjustable Support



Dimensions (mm)	Static Bearing
50×40×(37 ~ 93)	40(kg)
70×55×(37 ~ 138)	40(kg)
100×75×(43 ~ 182)	50(kg)
140×100×(55 ~ 255)	60(kg)
160×120×(60 ~ 285)	80(kg)

# SYNERGY TELECOM P. LTD.

## Coaxial Fixed Attenuator (50Ω)



Series of P≤100W

Avg Power Range (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Nominal Attenuation (dB)	Connector
2	0.2	DC-40	≤1.35	1-40	2.4mm
2	0.2	DC-42	≤1.35	3,6,10,20,30	2.4mm
2	0.2	DC-50	≤1.55	1-10,20	2.4mm
5	0.2	DC-40	≤1.35	1-40	2.4mm
10	0.2	DC-40	≤1.40	10-40	2.4mm
20	0.2	DC-40	≤1.40	10-40	2.4mm
2	0.2	DC-26.5	≤1.25	1-40	2.92mm
0.5-2	0.2	DC-40	≤1.35	1-40	2.92mm
5	0.2	DC-26.5	≤1.25	1-40	2.92mm
5	0.2	DC-40	≤1.35	1-40	2.92mm
10	0.2	DC-40	≤1.40	10-40	2.92mm
20	0.2	DC-40	≤1.40	3	2.92mm
20	0.2	DC-40	≤1.40	10-40	2.92mm
30	0.2	DC-40	≤1.40	30	2.92mm
50	0.5	DC-40	≤1.60	30,40	2.92mm
2	0.5	DC-18	≤1.35	1-30	TNC
2	0.5	DC-18	≤1.35	40-90	TNC
5	0.5	DC-18	≤1.35	1-30	TNC
5	0.5	DC-18	≤1.35	40-90	TNC
10	1	DC-18	≤1.35	1-30	TNC
10	1	DC-18	≤1.35	40-90	TNC
25	1	DC-18	≤1.35	10-40	TNC
50	1	DC-18	≤1.40	3-40	TNC
50	1	DC-18	≤1.3	10-40	TNC
100	1	DC-18	≤1.4	10-40	TNC
150	1	DC-18	≤ 1.45	10-40	TNC
200	1	DC-18	≤ 1.5	10-40	TNC
10	1	DC-6	≤1.25	1-40	4.3/10
25	1	DC-6	≤1.25	1-40	4.3/10
50	5	DC-8	≤1.30	10-40	4.3/10
100	5	DC-4	≤1.25	20,30,40	4.3/10
100	5	DC-6	≤1.30	10-40	4.3/10
150	5	DC-6	≤1.30	10-40	4.3/10
200	5	DC-6	≤1.30	10-40	4.3/10
2	0.5	DC-26.5	≤1.25	1-70	3.5mm
5	0.5	DC-26.5	≤1.25	1-70	3.5mm



# SYNERGY TELECOM P. LTD.

## Coaxial Fixed Attenuator (50Ω)



Series of P≤100W

Avg Power Range (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Nominal Attenuation (dB)	Connector
10	0.5	DC-26.5	≤1.25	1-70	3.5mm
25	0.5	DC-26.5	≤1.3	3-70	3.5mm
50	0.5	DC-26.5	≤1.3	3-60	3.5mm
100	0.5	DC-18	≤1.25	3,6,10,20,30,40,50	3.5mm, SMA(M,F),SMK(2.92),N,TNC
100	0.5	DC-26.5	≤1.40	3,6,10,20,30,40,50	3.5mm, SMA(M,F),SMK(2.92)
100	0.5	DC-32	≤1.40	10,20,30,40	SMK(2.92)
2	0.2	DC-12.4	≤1.35	1-30	SSMA(M,F)
2	0.5	DC-6	≤1.20	1-30	SMA(M,F)
10	1	DC-12.4	≤1.40	1-20	BMA
2	0.5	DC-6	≤1.2	1-30	Input: QMA
2	0.5	DC-26.5	≤1.3	1-12	SMA(M,F)
2	0.5	DC-18	≤1.35	1-30	SMA
2	0.5	DC-18	≤1.30	1-50	SMA
2	0.5	DC-30	≤1.30	3-30	SMA(M,F)
2	0.5	DC-26.5	≤1.35	1-40	SMA
2	0.5	DC-26.5	≤1.35	1-30	SMA(F,F)
2	0.5	DC-26.5	≤1.40	30-90	SMA(M,F)
5	0.5	DC-26.5	≤1.35	3-50	SMA(M,F)
10	0.5	DC-26.5	≤1.35	3-40	SMA(M,F)
25	1	DC-26.5	≤1.35	10-40	SMA(M,F)
50	1	DC-18	≤1.25	10-60	
50	1	DC-26.5	≤1.30	10-60	SMA(M,F),3.5(M,F),SMK(2.92)
50	1	DC-32	≤1.35	10,20,30,40	SMK(2.92)
2	0.5	DC-6	≤1.25	1-40	N, SMA, TNC, BNC, CC11
2	0.5	DC-18	≤1.40	1-50	N, TNC
5	0.5	DC-6	≤1.25	1-40	N,SMA,TNC,BNC,CC11,L16
5	0.5	DC-18	≤1.40	1-50	N,TNC
10	1	DC-4	≤1.25	1-40	N, SMA, TNC, BNC,
10	1	DC-18	≤1.40	10-40	N, SMA,TNC
10	1	DC-18	≤1.30	1-40	N,TNC
10	1	DC-12.4	≤1.30	10-60	N, TNC
25	1	DC-4	≤1.25	1-50	N, SMA, TNC, BNC, 7/16
25	1	DC-18	≤1.40	10-40	N,TNC,SMA
25	1	DC-18	≤1.30	10-70	N, TNC
25	1	DC-18	≤1.40	10-60	N, SMA,TNC
30	1	DC-6	≤1.30	1-40	N, SMA, BNC, 7/16

# SYNERGY TELECOM P. LTD.

## Coaxial Fixed Attenuator (50Ω)



Series of P≤100W

Avg Power Range (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Nominal Attenuation (dB)	Connector
30	5	DC-6	≤1.20	3-40	N
30	5	DC-10	≤1.20	3-40	N
50	10	DC-4	≤1.35	1-40	N, SMA, 7/16, TNC, BNC
50	10	DC-4	≤1.35	1-40	N, 7/16
50	5	DC-10	≤1.35	3-40	N, 7/16
50	1	DC-18	≤1.35	3-40	N,SMA
50	1	DC-18	≤1.25	10-60	N
50	1	DC-18	≤1.35	10-40	N,TNC,SMA
50	5	DC-10	≤1.35	3-40	7/16(DC-4), N
60	10	DC-4	≤1.35	1-40	N, SMA, 7/16, TNC, BNC
60	5	DC-10	≤1.35	3-40	N, 7/16
80	10	DC-10	≤1.35	10-40	N, 7/16, TNC, BNC
80	1	DC-18	≤1.40	10-40	N, SMA
80	5	DC-10	≤1.40	3-40	N,7/16(DC-2.5)
100	10	DC-4	≤1.35	10-50	N, 7/16
100	5	DC-4	≤1.25	30	N,7/16
100	5	0.7-3	≤1.20	30,40	N
100	1	DC-18	≤1.45	3-50	N
100	1	DC-18	≤1.40	3-50	N
100	1	DC-18	≤1.40	3-40	N
100	5	DC-10	≤1.50	3-40	7/16(DC-4), N
100	5	DC-10	≤1.50	3-40	7/16(DC-4), N
2/5	0.5	0.1-6	≤1.30	1-9,10,20,30,40	N
10	1	0.1-6	≤1.30	1-9,10,20,30,40	N
25	1	0.1-6	≤1.30	1-9,10,20,30,40	N
50	5	0.1-6	≤1.30	3/6,10,20,30,40	N
100	5	0.1-4	≤1.25	20,30,40	N
10	0.5	DC-6	≤1.20	30	QSMA

# SYNERGY TELECOM P. LTD.

## Coaxial Fixed Attenuator (50Ω)

Series of P ≤ 500W



Avg Power Range (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Nominal Attenuation (dB)	Connector
150	10	DC-4	1.15-1.40	10,20,30,40,50	N,7/16
150	1	DC-18	1.30-1.45	3,6,10,20,30,40,50	N,SMA
150	1	DC-18	1.25-1.35	3,6,10,20,30,40,50	N
150	5	DC-10	1.15-1.50	3,6,10,20,30,40	N,7/16
200	10	DC-4	1.20-1.40	10,20,30,40,50	N,7/16
200	5	DC-10	1.15-1.45	10,20,30,40	N,7/16
200	1	DC-18	1.25-1.50	10,20,30,40,50	N
250	10	DC-4	1.20-1.40	10,20,30,40,50	N,7/16
250	10	DC-5	1.15	40	N,7/16
250	5	DC-10	1.20-1.45	10,20,30,40	N,7/16
250	5	DC-10	1.20-1.45	10,,20,30,40	N,7/16
250	1	DC-18	1.25-1.55	10,20,30,40,50	N
300	10	DC-4	1.20-1.50	10,20,30,40,50	N,7/16
300	1	DC-18	1.20-1.55	10,20,30,40,50	N
300	5	DC-10	1.25-1.45	30,40,50	N,7/16
350	1	DC-13	1.30-1.50	6,10,20,30,40	N(I,K)
350	1	DC-4	1.3	30	N
400	10	DC-4	1.20-1.50	10,20,30,40,50	N,7/16
400	5	DC-10	1.25-1.45	40,50	N,7/16
500	10	DC-4	1.20-1.50	10,20,30,40,50	N,7/16
500	5	DC-10	1.25-1.45	30,40,50	N,7/16

Series of P > 500W



Avg Power (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Nominal Attenuation (dB)	Connector
800	10	DC-4	1.20-1.50	40,50,60	N,7/16
1000	10	DC-6	1.35	50	N, 7/16
1000	10	DC-3	1.40	40,50	N,7/16
1500	10	DC-3	1.40	40,50	N,7/16
2000	10	DC-3	1.40	40,50	N,7/16
1000	50	DC-2	1.20-1.30	30,40,50	N,7/16
1000	50	DC-2	1.20-1.30	30,40,50	N,7/16



# SYNERGY TELECOM P. LTD.

## Coaxial Fixed Attenuator (50Ω)

Series of P > 500W



Avg Power (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Nominal Attenuation (dB)	Connector
1000	50	DC-2	1.20-1.30	30,40,50	N,7/16
2000	50	DC-2	1.20-1.30	30,40,50	N,7/16
2000	50	DC-2	1.20-1.30	30,40,50	N,7/16
3000	50	DC-2	1.30	30,40,50	N,7/16
4000	100	DC-1	1.40	30,40,50	N,7/16
5000	100	DC-1	1.40	30,40,50	7/16,L36,L52
10000	100	DC-1	1.40	30,40,50	7/16,L36,L52

## Coaxial Termination

Series of P ≤ 100W



Avg Power (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Connector
10	1	DC-6	1.20-1.25	4.3/10
25	1	DC-6	1.20-1.25	4.3/10
50	5	DC-8	1.15-1.30	4.3/10
100	5	DC-4	1.20-1.25	4.3/10
100	5	DC-6	1.20-1.30	4.3/10
150	5	DC-6	1.20-1.30	4.3/10
200	5	DC-6	1.20-1.30	4.3/10
2	0.2	DC-50	1.30-1.40	2.4mm
5	0.2	DC-50	1.30-1.40	2.4mm
2	0.2	DC-40	1.20-1.25	2.92
5	0.2	DC-40	1.20-1.35	2.92
10	0.2	DC-40	1.25-1.35	2.92
20	0.2	DC-40	1.25-1.35	2.92
2	0.5	DC-26.5	1.15-1.20	3.5mm
5	0.5	DC-26.5	1.15-1.20	3.5mm
10	0.5	DC-26.5	1.15-1.25	3.5mm
25	0.5	DC-26.5	1.15-1.25	3.5mm
50	0.5	DC-26.5	1.15-1.25	3.5mm
100	0.5	DC-26.5	1.30-1.40	3.5mm,SMA,SMK
2	0.25	DC-18	1.15-1.30	SMA

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EMAIL:- info@rfconnector.in, WEBSITE:- <http://rfconnector.in>

# SYNERGY TELECOM P. LTD.

## Coaxial Termination



Series of  $P \leq 100W$

Avg Power (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Connector
2	0.25	DC-18	1.10-1.35	SMA(M)
2	0.25	DC-18	1.03-1.20	SMA
1	0.25	DC-6	1.15-1.20	QMA
2	0.1	DC-12.4	1.15-1.25	SMA(M) Reverse polarity
1	0.1	DC-18	1.05-1.30	SMA(M)
2	0.25	DC-26.5	1.20-1.25	SMA
5	0.5	DC-26.5	1.10-1.30	SMA, 3.5mm, 2.92mm
10	0.5	DC-26.5	1.10-1.30	SMA, 3.5mm, 2.92mm
25	1	DC-26.5	1.30	SMA
50	1	DC-26.5	1.30	SMA
2	0.5	DC-6	1.15-1.25	N, SMA, BNC, TNC
2	0.5	DC-18	1.10-1.30	N
2	1	DC-3	1.10	7/16(M)
2	0.5	DC-8	1.10-1.25	N(M)
5	0.5	DC-18	1.10-1.30	N
5	0.5	DC-6	1.15-1.25	N, BNC, SMA, TNC, 7/16
5	1	DC-6	1.15-1.25	N(M)
5	0.5	DC-18	1.10-1.30	N
5	0.5	DC-3	1.10	7/16(M)
10	1	DC-6	1.15-1.20	N, BNC, SMA, TNC
10	1	DC-18	1.30-1.40	N, SMA
10	1	DC-4	1.15-1.30	N
25	1	DC-6	1.15-1.25	SMA, N, 7/16, TNC, BNC
25	1	DC-18	1.20-1.40	N, SMA
25	1	DC-4	1.15-1.30	N
30	10	DC-6	1.10-1.30	N, SMA, 7/16, TNC, BNC
30	1	DC-4	1.15-1.30	N
50	10	DC-4	1.05-1.20	N, SMA, 7/16, TNC
50	1	DC-6	1.10-1.25	N, SMA, TNC, BNC
50	1	DC-10	1.10-1.25	N
50	5	DC-10	1.15-1.35	N, 7/16
50	1	DC-18	1.25-1.40	N, SMA, TNC
50	5	DC-18	1.15-1.35	N, SMA, TNC
60	1	DC-4	1.05-1.20	N, SMA, 7/16
60	1	DC-10	1.15-1.40	N
80	10	DC-4	1.10-1.25	N, 7/16, TNC

# SYNERGY TELECOM P. LTD.

## Coaxial Termination



Series of  $P \leq 100W$

Avg Power (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Connector
80	1	DC-18	1.20-1.40	N,SMA,TNC
80	5	DC-18	1.15-1.55	N,SMA
100	10	DC-4	1.10-1.25	N,7/16
100	5	DC-18	1.25-1.40	N,SMA,TNC
100	5	DC-18	1.25-1.30	N,SMA,TNC
100	5	DC-18	1.15-1.55	N,SMA
10	0.5	DC-6	1.20	QSMA

Series of  $P \leq 500W$



Avg Power (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Connector
150	10	DC-4	1.15-1.30	N,7/16
150	1	DC-18	1.35-1.40	N,TNC
150	10	DC-18	1.25-1.35	N
150	5	DC-10	1.15-1.35	N
150	5	DC-18	1.15-1.55	N
200	10	DC-4	1.15-1.30	N,7/16
200	5	DC-18	1.25-1.40	N
200	5	DC-10	1.15-1.35	N,7/16
250	10	DC-4	1.15-1.35	N,7/16
250	5	DC-18	1.25-1.40	N
250	5	DC-10	1.15-1.35	N,7/16
250	5	DC-10	1.15-1.35	N,7/16
300	10	DC-4	1.15-1.40	N,7/16
300	10	DC-18	1.30-1.50	N,TNC
300	5	DC-18	1.15-1.70	N,7/16
400	10	DC-4	1.15-1.45	N,7/16
400	10	DC-10	1.15-1.50	N,7/16
500	10	DC-4	1.15-1.40	N,7/16
500	5	DC-10	1.15-1.55	N,7/16
500	5000	2-20	1.35-1.4	N(J)



# SYNERGY TELECOM P. LTD.

## Coaxial Termination



Series of P > 500W

Avg Power (W)	Peak Power (kW)	Freq Range (GHz)	VSWR	Connector
800	10	DC-4	1.20-1.45	N,7/16
1000	10	DC-8	1.10-1.55	N
1000	10	DC-4	1.40	N,7/16,L27
1500	10	DC-4	1.40	N,7/16,L27
2000	10	DC-4	1.40	N,7/16,L27
1000	50	DC-2	1.30	N,7/16,L27
1000	50	DC-2	1.30	N,7/16,L27
2000	50	DC-2	1.30	N,7/16,L27
2000	50	DC-2	1.30	N,7/16,L27
3000	50	DC-2	1.50	N,7/16,L27
5000	100	DC-1	1.40	L27,7/16,L52
10000	100	DC-1	1.40	L27,7/16,L52

## Coaxial Cable Assembly



Coaxial Cable Assembly

Inner Conductor (mm)	Outer Diameter (mm)	Bending Radius (mm)	Freq(GHz) DC-3	Freq(GHz) DC-6	Freq(GHz) DC-18	Freq(GHz) DC-30	Freq(GHz) DC-40	Connector
0.9	5	30	IL≤3.0dB; VSWR≤1.4					BNC Male, Q9 MaleJ
0.93	4.5	40	IL≤2dB; VSWR≤1.3	IL≤3dB; VSWR≤1.4				N,SMA
1.83	7	45	IL≤0.8dB; VSWR≤1.15	IL≤1dB; VSWR≤1.2	IL≤1.8B; VSWR≤1.4			N Male
1.3	4.2	30	IL≤1.0dB; VSWR≤1.15	IL≤1.5dB; VSWR≤1.2	IL≤2.6dB; VSWR≤1.35			N,SMA
1.3	4.2	30	IL≤1.0dB; VSWR≤1.15	IL≤1.5dB; VSWR≤1.2	IL≤2.6dB; VSWR≤1.35			2.92 MaleJ
0.9	3	20	IL≤1.8dB	IL≤2.2dB; VSWR≤1.2	IL≤3.6dB; VSWR≤1.25	IL≤4.5dB; VSWR≤1.4	IL≤6.5dB; VSWR≤1.5	2.92 MaleJ
0.94	3.5	14	VSWR≤1.15	VSWR≤1.2	VSWR≤1.35			N,SMA
1.45	5.2	20.5	IL≤0.7dB; VSWR≤1.15	IL≤0.9dB; VSWR≤1.2	IL≤1.8dB; VSWR≤1.35			N,SMA
0.72	3.6	18	IL≤1.0dB; VSWR≤1.15	IL≤1.5dB; VSWR≤1.2	IL≤2.5dB; VSWR≤1.3	IL≤3.2dB; VSWR≤1.35	IL≤3.2dB; VSWR≤1.35	2.92,SMA,N, SMPTNC Female
1.02	4.6	23	IL≤0.9dB; VSWR≤1.15	IL≤1.2dB; VSWR≤1.2	IL≤1.9dB; VSWR≤1.3			SMA,N, TNC Female
1.29	3.91	26	IL≤0.7dB; VSWR≤1.15	IL≤1.0dB; VSWR≤1.2	IL≤1.6dB; VSWR≤1.3			SMA,N Male, TNC Male
1.57	6.35	32	IL≤0.6dB; VSWR≤1.15	IL≤0.8dB; VSWR≤1.2	IL≤1.4dB; VSWR≤1.3			SMA Female,N Male,TNC Male

# SYNERGY TELECOM P. LTD.

## Coaxial Cable Assembly



### Coaxial Cable Assembly

Inner Conductor (mm)	Outer Diameter (mm)	Bending Radius (mm)	Freq(GHz) DC-3	Freq(GHz) DC-6	Freq(GHz) DC-18	Freq(GHz) DC-30	Freq(GHz) DC-40	Connector
0.91	3.6	18	IL≤0.8dB; VSWR≤1.15	IL≤1.3dB; VSWR≤1.2	IL≤2.0dB; VSWR≤1.25	IL≤2.5dB; VSWR≤1.3		292,24, SMA,SMP
1.45	5.2	25.5	IL≤0.6dB; VSWR≤1.15	IL≤1.0dB; VSWR≤1.2	IL≤1.3dB; VSWR≤1.3			292,24, SMA,N,TNC
2.3	7.8	39	IL≤0.4dB; VSWR≤1.15	IL≤0.7dB; VSWR≤1.2	IL≤1.0dB; VSWR≤1.3			SMA,N,TNC 292 Male,
0.99	3.58	40	IL≤0.8dB; VSWR≤1.15	IL≤1.0dB; VSWR≤1.5	IL≤1.8dB; VSWR≤1.4			SMA,N Male
0.56	2.18	7	IL≤1.2dB; VSWR≤1.15	IL≤1.6dB; VSWR≤1.2	IL≤2.8dB; VSWR≤1.25	IL≤3.5dB; VSWR≤1.3	IL≤4.0dB; VSWR≤1.35	292,24 Male,SMA

## Coaxial Rotary Joint



### Single Channel Coaxial Rotary Joint

Freq Range (GHz)	VSWR	IL (dB)	IL WOW (dB)	Avg Power(W)	Peak Power(W)	Connector Type Port 1	Connector Type Port 2
DC-3	≤1.2	≤0.5	≤0.05	30	300	N Male	N Female
DC-8	≤1.35	≤0.5	≤0.05	30	300	N Male	N Female
DC-12.4	≤1.5	≤0.5	≤0.05	30	300	N Male	N Female
DC-12.4	≤1.5	≤0.5	≤0.05	30	300	SMA Male	SMA Female
10-15	≤1.5	≤0.5	≤0.1	30	300	SMA Male	SMA Female
DC-18	≤1.8	≤0.8	≤0.1	30	300	N Male	N Female
DC-18	≤1.8	≤0.8	≤0.1	30	300	SMA Male	SMA Female
DC-40	≤1.8	≤0.8	≤0.1	30	300	2.4 Female	2.4 Female



### Dual Channel Coaxial Rotary Joint (II Type)

Freq Range (GHz)	VSWR	VSWR WOW (dB)	IL(dB)	IL WOW (dB)	Peak Power(W)	Channel Isolation (dB)	Connector Type
CH1: 0-3	≤1.25	≤0.10	≤0.3	≤0.05	10	≥60	SMA Female
CH2: 0-3	≤1.35	≤0.10	≤0.3	≤0.1	10		
CH1: 0-5	≤1.20	≤0.05	≤0.3	≤0.05	50W	≥50	SMA Female
CH2: 0-5	≤1.50	≤0.2	≤0.5	≤0.2	10W		

## Coaxial Rotary Joint



Dual Channel Coaxial Rotary Joint (UI Type)

Freq Range (GHz)	VSWR	IL(dB)	Connector Type	Material
CH1: 0-4.5	1.2	0.25	SMA Female	Al
CH2: 0-4.5	1.45	0.3		
CH1: 0.95-1.45	1.25	0.5	SMA Female	Cu
CH2: 0.95-1.45	1.50	0.5		
CH1: 3.6-4.2	1.30	0.3	SMA Female	Cu
CH2: 5.85-6.45	1.30	0.3		
CH1: DC-16	1.5	0.5	SMA Female	Al
CH2: DC-11	2.5	2		
CH1: 9.4±0.25GHz	1.3	0.4	SMA Female	Cu
CH1: 9.4±0.25GHz	1.3	0.4		



Multiple Channels Coaxial Rotary Joint

Channel	Freq Range (GHz)	VSWR	VSWR WOW (dB)	IL(dB)	IL WOW (dB)	Avg Power (KW)	Peak Power (KW)	Connector
CH1	0.13-0.19	≤1.3	≤0.1	≤0.1	≤0.1	3.6	30	1' 5/8 Female
CH2	1-1.1			≤0.2		0.05	5	L27 Female
CH3	1-1.1			≤0.2		0.05	5	L27 Female



## Coaxial Calibration Kits

### HD-VNACK Coaxial Calibration Kits



No.	Description	Parameter	Qty
1	Coaxial Termination	Male	1
2	Coaxial Termination	Female	1
3	Coaxial Short Plate	VSWR $\geq$ 60; Male	1
4	Coaxial Short Plate	VSWR $\geq$ 60; Female	1
5	Coaxial Open	VSWR $\geq$ 60; Male	1
6	Coaxial Open	VSWR $\geq$ 60; Female	1
7	Precision Transmission Line (Coaxial Air Line)	L= JJ ; KK ; JK	3
8	Adaptor	NSJJ;NSKK;NSJK;NSKJ	4
9	Spanner		1
10	Packing Case of Aluminum Alloy		1

Freq Range(GHz)	Connector
0-3	N-75
0-4	N-50
0-8	N-50
0 -12.4	N-50
0 -18	SMA-50

# SYNERGY TELECOM P. LTD.

## Standard Gain Horn Antenna



### Standard Gain Horn Antenna (SGAH)

Type	With Waveguide Input Style	With Built-in Coaxial Input Style	With Coaxial Connector Style
Outline Drawing			
WG Type	WR770-WR3	R2300-R28	R975-WR22
VSWR	≤1.25	≤1.5	≤1.5

### With Waveguide Input Style Standard Gain Horn Antenna

Nominal Gain Value: 10dB



WG Type EIA	Freq Range (GHz)	Gain (dB)	Dimensions(mm)				Flange	Material
			L	L1	W	H		
WR770	0.96-1.46	10	300	100	400	280	FDP	Al
WR650	1.13-1.73	10	280	80	315	235	FDP	Al
WR510	1.45-2.20	10	245	65	249	184	FDP	Al
WR430	1.72-2.61	10	210	60	209	154	FDP	Al
WR340	2.17-3.30	10	160	50	165	125	FDP	Al
WR284	2.60-3.95	10	150	50	144	114	FDP	Al
WR229	3.22-4.90	10	120	50	113	88	FDP	Al
WR187	3.94-5.99	10	110	40	98	73	FDP	Al
WR159	4.64-7.05	10	100	40	83	63	FDP	Al
WR137	5.38-8.17	10	75	25	67	52	FDP	Al
WR112	6.57-9.99	10	70	25	57	42	FBP	Al
WR90	8.20-12.40	10	50	20	47	37	FBP	Al
WR75	9.84-15.0	10	55	25	40	29	FBP	Al
WR62	11.9-18.0	10	55	25	37	27	FBP	Al
WR51	14.5-22.0	10	50	20	30	20	FBP	Cu
WR42	17.6-26.7	10	45	15	24	17	FBP	Cu
WR34	21.7-33.0	10	35	15	20	14	FBP	Cu
WR28	26.5-40.0	10	30	10	17	12	FBP	Cu
WR22	32.9-50.1	10	36	/	10.8	7.9	FUGP	Cu
WR19	39.2-59.6	10	30	/	9	6.4	FUGP	Cu
WR15	49.8-75.8	10	25	/	7.5	5.3	FUGP	Cu
WR12	60.5-91.9	10	18	/	5.9	4.5	FUGP	Cu

# SYNERGY TELECOM P. LTD.

## Standard Gain Horn Antenna



Nominal Gain Value: 15dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	Dimensions(mm)				Flange	Material
			L	L1	W	H		
WR770	0.96-1.46	15	600	100	700	480	FDP	Al
WR650	1.13-1.73	15	430	80	550	380	FDP	Al
WR510	1.45-2.20	15	365	65	456	316	FDP	Al
WR430	1.72-2.61	15	310	60	380	265	FDP	Al
WR340	2.17-3.30	15	250	50	297	216	FDP	Al
WR284	2.60-3.95	15	230	50	275	190	FDP	Al
WR229	3.22-4.90	15	180	50	205	145	FDP	Al
WR187	3.94-5.99	15	160	40	169	119	FDP	Al
WR159	4.64-7.05	15	130	40	141	9	FDP	Al
WR137	5.38-8.17	15	110	25	122	84	FDP	Al
WR112	6.57-9.99	15	100	25	105	71	FBP	Al
WR90	8.20-12.40	15	80	20	81	56	FBP	Al
WR75	9.84-15.0	15	75	25	68	47	FBP	Al
WR62	11.9-18.0	15	80	25	57	40	FBP	Al
WR51	14.5-22.0	15	55	20	47	33	FBP	Cu
WR42	17.6-26.7	15	45	15	39	27	FBP	Cu
WR34	21.7-33.0	15	40	15	32	22	FBP	Cu
WR28	26.5-40.0	15	35	10	26	19	FBP	Cu
WR22	32.9-50.1	15	30	10	22	15.5	FUGP	Cu
WR19	39.2-59.6	15	25	10	19	13	FUGP	Cu
WR15	49.8-75.8	15	21	8	15	11	FUGP	Cu
WR12	60.5-91.9	15	20	8	13.5	9.5	FUGP	Cu
WR10	73.8-112	15	18	8	11	8	FUGP	Cu

Nominal Gain Value: 20dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	Dimensions(mm)				Flange	Material
			L	L1	W	H		
WR284	2.60-3.95	20	700	50	476	346	FDP	Al
WR229	3.22-4.90	20	520	50	345	264	FDP	Al
WR187	3.94-5.99	20	440	40	280	212	FDP	Al
WR159	4.64-7.05	20	400	40	245	175	FDP	Al
WR137	5.38-8.17	20	290	25	197	153	FDP	Al
WR112	6.57-9.99	20	290	25	180	128	FBP	Al
WR90	8.20-12.40	20	220	20	138	107	FBP	Al
WR75	9.84-15.0	20	200	25	115	83	FBP	Al



# SYNERGY TELECOM P. LTD.

## Standard Gain Horn Antenna



Nominal Gain Value: 20dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	Dimensions(mm)				Flange	Material
			L	L1	W	H		
WR62	11.9-18.0	20	150	25	93	72	FBP	Al
WR51	14.5-22.0	20	140	20	80	56	FBP	Cu
WR42	17.6-26.7	20	125	15	70	49	FBP	Cu
WR34	21.7-33.0	20	110	15	54	42	FBP	Cu
WR28	26.5-40.0	20	90	10	47	33	FBP	Cu
WR22	32.9-50.1	20	70	10	36	27	FUGP	Cu
WR19	39.2-59.6	20	60	10	31.4	23	FUGP	Cu
WR15	49.8-75.8	20	55	8	25	18	FUGP	Cu
WR12	60.5-91.9	20	50	8	22	16	FUGP	Cu
WR10	73.8-112	20	45	8	18	13	FUGP	Cu
WR8	92.2-140	20	40	8	15	11	FUGP	Cu
WR7	113-173	20	32	2	12	8.5	FUGP	Cu
WR5	145-220	20	35	8	9.7	7	FUGP	Cu
WR4	172-261	20	30	6	8.5	5.8	FUGP	Cu
WR3	217-330	20	27	6	7	4.8	FUGP	Cu

Nominal Gain Value: 25dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	Dimensions(mm)				Flange	Material
			L	L1	W	H		
WR90	8.20-12.40	25	740	20	250	180	FBP	Al
WR75	9.84-15.0	25	550	25	200	155	FBP	Al
WR62	11.9-18.0	25	520	25	175	120	FBP	Al
WR51	14.5-22.0	25	400	20	134	104	FBP	Cu
WR42	17.6-26.7	25	350	20	120	85	FBP	Cu
WR34	21.7-33.0	25	300	20	92	70	FBP	Cu
WR28	26.5-40.0	25	240	15	80	56	FBP	Cu
WR22	32.9-50.1	25	205	10	66	46	FUGP	Cu
WR19	39.2-59.6	25	160	10	53	37	FUGP	Cu
WR15	49.8-75.8	25	130	8	43	31	FUGP	Cu
WR12	60.5-91.9	25	120	8	37	26	FUGP	Cu
WR10	73.8-112	25	100	8	30	23	FUGP	Cu
WR8	92.2-140	25	86	4	25	17.7	FUGP	Cu
WR7	113-173	25	70	5.04	20	14	FUGP	Cu
WR5	145-220	25	57	5	16	11.2	FUGP	Cu
WR4	172-261	25	50	6	13	9.5	FUGP	Cu
WR3	217-330	25	40	6	11	7.7	FUGP	Cu

# SYNERGY TELECOM P. LTD.

## Standard Gain Horn Antenna



With Built-in Coaxial Input Style Standard Gain Horn Antenna

Nominal Gain Value: 10dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	Dimensions(mm)				Connector	Material
			L	L1	W	H		
WR2300	0.32-0.49	10	850	300	1150	800	N Female	Al
WR2100	0.35-0.53	10	800	300	1050	720	N Female	Al
WR1800	0.41-0.62	10	800	400	900	660	N Female	Al
WR1500	0.49-0.75	10	700	350	700	500	N Female	Al
WR1150	0.64-0.98	10	590	290	620	440	N Female	Al
WR975	0.75-1.15	10	480	250	480	336	N Female	Al
WR770	0.96-1.46	10	400	200	400	280	N Female	Al
WR650	1.13-1.73	10	370	170	315	235	N Female	Al
WR510	1.45-2.20	10	310	130	249	184	N Female	Al
WR430	1.72-2.61	10	260	110	209	154	N Female	Al
WR340	2.17-3.30	10	200	90	165	125	N Female	Al
WR284	2.60-3.95	10	175	75	144	114	N Female	Al
WR229	3.22-4.90	10	150	80	113	88	N Female	Al
WR187	3.94-5.99	10	145	75	98	73	N Female	Al
WR159	4.64-7.05	10	135	75	83	63	N Female	Al
WR137	5.38-8.17	10	110	60	67	52	N Female	Al
WR112	6.57-9.99	10	95	50	57	42	N Female	Al
WR90	8.20-12.40	10	75	45	47	37	N Female	Al
WR75	9.84-15.0	10	75	45	40	29	N Female	Al
WR62	11.9-18.0	10	75	45	37	27	SMA Female	Al
WR51	14.5-22.0	10	75	45	30	20	SMA Female	Cu
WR42	17.6-26.7	10	75	45	24	17	2.92 Female	Cu
WR34	21.7-33.0	10	53	33	20	14	2.92 Female	Cu
WR28	26.5-40.0	10	54	34	17	12	2.92 Female	Cu

Nominal Gain Value: 15dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	Dimensions(mm)				Connector	Material
			L	L1	W	H		
WR975	0.75-1.15	15	820	250	850	580	N Female	Al
WR770	0.96-1.46	15	700	200	700	480	N Female	Al
WR650	1.13-1.73	15	520	170	550	380	N Female	Al
WR510	1.45-2.20	15	430	130	456	316	N Female	Al
WR430	1.72-2.61	15	360	110	380	265	N Female	Al
WR340	2.17-3.30	15	290	90	297	216	N Female	Al
WR284	2.60-3.95	15	255	75	275	190	N Female	Al
WR229	3.22-4.90	15	210	80	205	145	N Female	Al

# SYNERGY TELECOM P. LTD.

## Standard Gain Horn Antenna



Nominal Gain Value: 15dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	Dimensions(mm)				Connector	Material
			L	L1	W	H		
WR187	3.94-5.99	15	195	75	169	119	N Female	Al
WR159	4.64-7.05	15	165	75	141	97	N Female	Al
WR137	5.38-8.17	15	145	60	122	84	N Female	Al
WR112	6.57-9.99	15	125	50	105	71	N Female	Al
WR90	8.20-12.40	15	105	45	81	56	N Female	Al
WR75	9.84-15.0	15	95	45	68	47	N Female	Al
WR62	11.9-18.0	15	100	45	57	40	SMA Female	Al
WR51	14.5-22.0	15	80	45	47	33	SMA Female	Cu
WR42	17.6-26.7	15	75	45	39	27	2.92 Female	Cu
WR34	21.7-33.0	15	58	33	32	22	2.92 Female	Cu
WR28	26.5-40.0	15	59	34	26	19	2.92 Female	Cu

Nominal Gain Value: 20dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	Dimensions(mm)				Connector	Material
			L	L1	W	H		
WR284	2.60-3.95	20	725	75	476	346	N Female	Al
WR229	3.22-4.90	20	550	80	345	264	N Female	Al
WR187	3.94-5.99	20	475	75	280	212	N Female	Al
WR159	4.64-7.05	20	435	75	245	175	N Female	Al
WR137	5.38-8.17	20	325	60	197	153	N Female	Al
WR112	6.57-9.99	20	315	50	180	128	N Female	Al
WR90	8.20-12.40	20	245	45	138	107	N Female	Al
WR75	9.84-15.0	20	220	45	115	83	N Female	Al
WR62	11.9-18.0	20	170	45	93	72	SMA Female	Al
WR51	14.5-22.0	20	165	45	80	56	SMA Female	Cu
WR42	17.6-26.7	20	155	45	70	49	2.92 Female	Cu
WR34	21.7-33.0	20	128	33	54	42	2.92 Female	Cu
WR28	26.5-40.0	20	114	34	47	33	2.92 Female	Cu



# SYNERGY TELECOM P. LTD.

## Standard Gain Horn Antenna



Nominal Gain Value: 25dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	Dimensions(mm)				Connector	Material
			L	L1	W	H		
WR90	8.20-12.40	25	760	40	250	180	N Female	Al
WR75	9.84-15.0	25	570	45	200	155	N Female	Al
WR62	11.9-18.0	25	540	45	175	120	SMA Female	Al
WR51	14.5-22.0	25	424	44	134	104	SMA Female	Cu
WR42	17.6-26.7	25	375	45	120	85	2.92 Female	Cu
WR34	21.7-33.0	25	313	33	92	70	2.92 Female	Cu
WR28	26.5-40.0	25	259	34	80	56	2.92 Female	Cu



## With Coaxial Connector Style Standard Gain Horn Antenna

Nominal Gain Value: 10dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	L	Dimensions(mm)				Connector	Material
				L1	L2	W	H		
WR770	0.96-1.46	10	466	100	166	400	280	N Female	Al
WR650	1.13-1.73	10	430	80	150	315	235	N Female	Al
WR510	1.45-2.20	10	360	65	120	249	184	N Female	Al
WR430	1.72-2.61	10	310	60	100	209	154	N Female	Al
WR340	2.17-3.30	10	245	50	85	165	125	N Female	Al
WR284	2.60-3.95	10	222	50	72	144	114	N Female	Al
WR229	3.22-4.90	10	185	50	65	113	88	N Female	Al
WR187	3.94-5.99	10	164	40	54	98	73	N Female	Al
WR159	4.64-7.05	10	150	40	50	83	63	N Female	Al
WR137	5.38-8.17	10	123	25	48	67	52	N Female	Al
WR112	6.57-9.99	10	110	25	40	57	42	N Female	Al
WR90	8.20-12.40	10	83	20	33	47	37	N Female	Al
WR75	9.84-15.0	10	83	24.5	30	40	29	N Female	Al
WR62	11.9-18.0	10	82	25	27	37	27	SMA Female	Al
WR51	14.5-22.0	10	77	20	27	30	20	SMA Female	Cu
WR42	17.6-26.7	10	70	15	25	24	17	2.92 Female	Cu
WR34	21.7-33.0	10	62	15	27	20	14	2.92 Female	Cu
WR28	26.5-40.0	10	56	10	26	17	12	2.92 Female	Cu

# SYNERGY TELECOM P. LTD.

## Standard Gain Horn Antenna



Nominal Gain Value: 15dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	L	Dimensions(mm)				Connector	Material
				L1	L2	W	H		
WR770	0.96-1.46	15	766	100	166	700	480	N Female	Al
WR650	1.13-1.73	15	580	80	150	550	380	N Female	Al
WR510	1.45-2.20	15	485	65	120	456	316	N Female	Al
WR430	1.72-2.61	15	410	60	100	380	265	N Female	Al
WR340	2.17-3.30	15	335	50	85	297	216	N Female	Al
WR284	2.60-3.95	15	302	50	72	275	190	N Female	Al
WR229	3.22-4.90	15	245	50	65	205	145	N Female	Al
WR187	3.94-5.99	15	214	40	54	169	119	N Female	Al
WR159	4.64-7.05	15	180	40	50	141	97	N Female	Al
WR137	5.38-8.17	15	158	25	48	122	84	N Female	Al
WR112	6.57-9.99	15	140	25	40	105	71	N Female	Al
WR90	8.20-12.40	15	115	20	35	81	56	N Female	Al
WR75	9.84-15.0	15	105	25	30	68	47	N Female	Al
WR62	11.9-18.0	15	107	25	27	57	40	SMA Female	Al
WR51	14.5-22.0	15	82	20	27	47	33	SMA Female	Cu
WR42	17.6-26.7	15	70	15	25	39	27	2.92 Female	Cu
WR34	21.7-33.0	15	67	15	27	32	22	2.92 Female	Cu
WR28	26.5-40.0	15	61	10	26	26	19	2.92 Female	Cu

Nominal Gain Value: 20dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	L	Dimensions(mm)				Connector	Material
				L1	L2	W	H		
WR284	2.60-3.95	20	772	50	72	476	346	N Female	Al
WR229	3.22-4.90	20	585	50	65	345	264	N Female	Al
WR187	3.94-5.99	20	494	40	54	280	212	N Female	Al
WR159	4.64-7.05	20	450	40	50	245	175	N Female	Al
WR137	5.38-8.17	20	338	25	48	197	153	N Female	Al
WR112	6.57-9.99	20	330	25	40	180	128	N Female	Al
WR90	8.20-12.40	20	255	20	35	138	107	N Female	Al
WR75	9.84-15.0	20	230	25	30	115	83	N Female	Al
WR62	11.9-18.0	20	177	25	27	93	72	SMA Female	Al
WR51	14.5-22.0	20	167	20	27	80	56	SMA Female	Cu
WR42	17.6-26.7	20	150	15	25	70	49	2.92 Female	Cu
WR34	21.7-33.0	20	137	15	27	54	42	2.92 Female	Cu
WR28	26.5-40.0	20	116	10	26	47	33	2.92 Female	Cu
WR22	33-50	20	96	10	31	35	26	2.92 Female	Cu

# SYNERGY TELECOM P. LTD.

## Standard Gain Horn Antenna



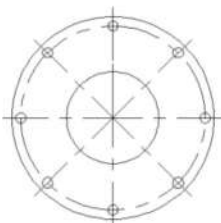
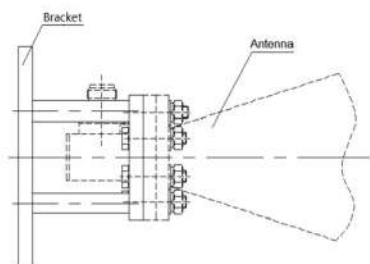
Nominal Gain Value: 25dB

WG Type EIA	Freq Range (GHz)	Gain (dB)	L	Dimensions(mm)				Connector	Material
				L1	L2	W	H		
WR90	8.20-12.40	25	775	40	35	250	180	N Female	Al
WR75	9.84-15.0	25	550	25	30	200	155	N Female	Al
WR62	11.9-18.0	25	547	25	27	175	120	SMA Female	Al
WR51	14.5-22.0	25	427	23	27	134	104	SMA Female	Cu
WR42	17.6-26.7	25	375	20	25	120	85	2.92 Female	Cu
WR34	21.7-33.0	25	327	20	27	92	70	2.92 Female	Cu
WR28	26.5-40.0	25	266	15	26	80	56	2.92 Female	Cu
WR22	33-50	25	236	10	31	66	46	2.92 Female	Cu

## Antenna Bracket for Standard Gain Horn Antenna

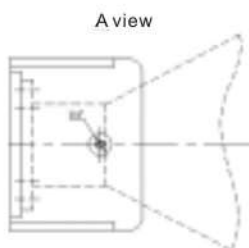
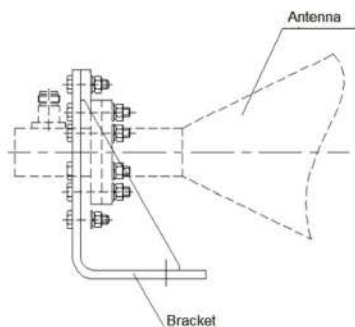
### 1) Type 1

HD-ZJG...



### 2) Type 2

HD-ZJL...



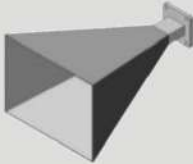
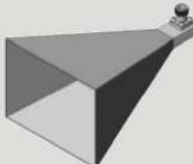
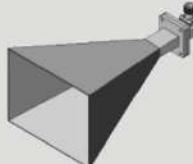


# SYNERGY TELECOM P. LTD.

## Linear Polarization Horn Antenna



### Pyramid Horn Antenna

Type	With Waveguide Input Style	With Built-in Coaxial Input Style	With Coaxial Connector Style
Model No*	HAA°×B°	HAA°×B°N	HAA°×B°+N
Outline Drawing			

WG Type EIA	Freq Range	Optional Beam Width Range(A°XB°)	VSWR	Connector	Material
WR2300	0.32-0.49	30°~ 60°	≤1.5	N Female	Al
WR2100	0.35-0.53	30°~ 60°	≤1.5	N Female	Al
WR1800	0.41-0.62	30°~ 60°	≤1.5	N Female	Al
WR1500	0.49-0.75	30°~60°	≤1.5	N Female	Al
WR1150	0.64-0.98	20°~60°	≤1.5	N Female	Al
WR975	0.75-1.15	20°~60°	≤1.5	N Female	Al
WR770	0.96-1.46	20°~60°	≤1.5	N Female	Al
WR650	1.13-1.73	20°~60°	≤1.5	N Female	Al
WR510	1.45-2.20	20°~60°	≤1.5	N Female	Al
WR430	1.72-2.61	20°~60°	≤1.5	N Female	Al
WR340	2.17-3.30	20°~60°	≤1.5	N Female	Al
WR284	2.60-3.95	20°~60°	≤1.5	N Female	Al
WR229	3.22-4.90	20°~60°	≤1.5	N Female	Al
WR187	3.94-5.99	20°~60°	≤1.5	N Female	Al
WR159	4.64-7.05	20°~60°	≤1.5	N Female	Al
WR137	5.38-8.17	20°~60°	≤1.5	N Female	Al
WR112	6.57-9.99	20°~60°	≤1.5	N Female	Al
WR90	8.20-12.40	20°~60°	≤1.5	N Female	Al
WR75	9.84-15.0	20°~60°	≤1.5	N Female	Al
WR62	11.9-18.0	20°~60°	≤1.5	SMA Female	Al
WR51	14.5-22.0	20°~60°	≤1.5	SMA Female	Cu
WR42	17.6-26.7	20°~60°	≤1.5	2.92 Female	Cu
WR34	21.7-33.0	20°~60°	≤1.5	2.92 Female	Cu
WR28	26.5-40.0	20°~60°	≤1.5	2.92 Female	Cu
WR22	32.9-50.1	20°~60°	≤1.35	FUGP	Cu
WR19	39.2-59.6	20°~60°	≤1.35	FUGP	Cu

# SYNERGY TELECOM P. LTD.

## Linear Polarization Horn Antenna



### Pyramid Horn Antenna

WG Type EIA	Freq Range	Optional Beam Width Range(A°XB°)	VSWR	Connector	Material
WR15	49.8-75.8	20°~60°	≤1.35	FUGP	Cu
WR12	60.5-91.9	20°~60°	≤1.35	FUGP	Cu
WR10	73.8-112	20°~60°	≤1.35	FUGP	Cu
WR8	92.2-140	20°~60°	/	FUGP	Cu
WR7	113-173	20°~60°	/	FUGP	Cu
WR5	145-220	20°~60°	/	FUGP	Cu
WR4	172-261	20°~60°	/	FUGP	Cu
WR3	217-330	20°~60°	/	FUGP	Cu

### Conical Horn Antenna



Freq Range (GHz)	Working Bandwidth(%)	Optional Gain RangeX(dB)	VSWR	Circular Waveguide Inner Diameter (mm)	Material	Finish
1.76-2.42	20~40	≤13	≤1.50	Φ114.58	Al	Chromate Conversion
2.1-2.8	20~40	≤13	≤1.50	Φ97.87	Al	Chromate Conversion
2.45-3.3	20~40	≤13	≤1.50	Φ83.62	Al	Chromate Conversion
2.83-3.88	20~40	≤13	≤1.50	Φ71.42	Al	Chromate Conversion
3.9-5.3	20~40	≤15	≤1.50	Φ51.99	Al	Chromate Conversion
4.55-6.23	20~40	≤15	≤1.50	Φ44.45	Al	Chromate Conversion
5.3-7.3	20~40	≤15	≤1.50	Φ38.1	Al	Chromate Conversion
6.3-8.5	20~40	≤15	≤1.50	Φ32.537	Al	Chromate Conversion
7.3-9.5	20~40	≤18	≤1.50	Φ27.788	Al	Chromate Conversion
8.5-11.5	20~40	≤18	≤1.50	Φ23.825	Al	Chromate Conversion
11.6-15.9	20~40	≤18	≤1.50	Φ17.415	Al	Chromate Conversion
13.4-18.4	20~40	≤18	≤1.50	Φ15.088	Al	Chromate Conversion
15.9-21.8	20~40	≤20	≤1.50	Φ12.7	Cu	Silver Plating
21.2-29.1	20~40	≤20	≤1.50	Φ9.525	Cu	Silver Plating
24.3-33.2	20~40	≤20	≤1.50	Φ8.331	Cu	Silver Plating
28.3-38.8	20~40	≤22	≤1.50	Φ7.137	Cu	Silver Plating
36.4-49.8	20~40	≤22	≤1.50	Φ5.563	Cu	Gold Plating
46.3-63.5	20~40	≤22	≤1.50	Φ4.369	Cu	Gold Plating
56.6-77.5	20~40	≤24	≤1.50	Φ3.581	Cu	Gold Plating
63.5-87.2	20~40	≤24	≤1.50	Φ3.17	Cu	Gold Plating

## Linear Polarization Horn Antenna



### Conical Horn Antenna

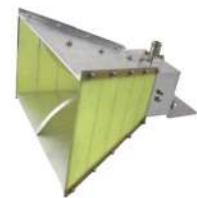
Freq Range (GHz)	Working Bandwidth(%)	Optional Gain RangeX(dB)	VSWR	Circular Waveguide Inner Diameter (mm)	Material	Finish
84.8-116.	20~40	≤24	≤1.50	Φ2.388	Cu	Gold Plating
115-140	20~40	≤24	≤1.50	Φ1.91	Cu	Gold Plating
140-160	20~40	≤24	≤1.50	Φ1.50	Cu	Gold Plating
200-300	20~40	≤24	≤1.50	Φ1.00	Cu	Gold Plating
280-400	20~40	≤24	≤1.50	Φ0.7	Cu	Gold Plating

### Wideband Horn Antenna



Freq Range (GHz)	Gain(dB)	Beam Width	VSWR	Dimensions(mm) W*H*L	Connector	Material	Finish
1-2	10~15	35°~55°	≤1.5	456*386*583	N Female	Al	Chromate Conversion
2-4	10~15	15°~55°	≤1.5	367*267*543	N Female	Al	Chromate Conversion
4-8	10~15	15°~55°	≤1.5	144*104*246	N Female	Al	Chromate Conversion
8-18	15~20	15°~55°	≤1.5	133*103*247	N Female	Al	Chromate Conversion
18-40	15~20	15°~55°	≤1.5	68*51*174	2.92 Female	Cu	Silver Plating

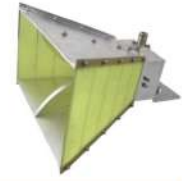
### Octave Double-Ridged Horn Antenna



WG Type EIA	Freq Range (GHz)	Gain (dB)	Beam Width	VSWR	Connector	Material	Finish
WRD84	0.84-2.0	5-12	30°~70°	≤2	N Female	Al	Chromate Conversion
WRD150	1.5-3.6	8-12	30°~60°	≤2	N Female	Al	Chromate Conversion
WRD200	2.0-4.8	8-12	30°~60°	≤2	N Female	Al	Chromate Conversion
WRD250	2.6-7.8	8-12	30°~60°	≤2	N Female	Al	Chromate Conversion
WRD350	3.5-8.2	8-12	30°~60°	≤2	N Female	Al	Chromate Conversion
WRD475	4.75-11.0	8-12	30°~60°	≤2	N Female	Al	Chromate Conversion
WRD500	5.0-18.0	8-12	30°~60°	≤2	SMA Female	Al	Chromate Conversion
WRD580	5.8-16.0	8-12	30°~60°	≤2	SMA Female	Al	Chromate Conversion
WRD650	6.5-18.0	8-12	30°~60°	≤2	SMA Female	Al	Chromate Conversion

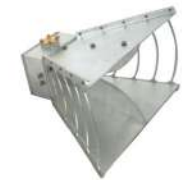


## Linear Polarization Horn Antenna



### Octave Double-Ridged Horn Antenna

WG Type EIA	Freq Range (GHz)	Gain (dB)	Beam Width	VSWR	Connector	Material	Finish
WRD750	7.5-18.0	8-12	30°~60°	≤2	SMA Female	Al	Chromate Conversion
WRD700	7.0-18.5	8-12	30°~60°	≤2	SMA Female	Al	Chromate Conversion
WRD110	11.0-26.5	8-12	30°~60°	≤2	SMA Female	Cu	Silver Plating
WRD180	18.0-40.0	8-12	30°~60°	≤2	2.92 Female	Cu	Silver Plating



### Ultra-Wideband Double-Ridged Horn Antenna

Freq Range (GHz)	Gain (dB)	Beam Width	Dimensions (mm)			VSWR	Connector	Material	Finish
			W	H	L				
0.1-1	3~10	30°~80°	2154	1423	2250	≤2.5	N Female	Al	Chromate Conversion
0.2-2	8~13	10°~65°	933	780	960	≤2.5	N Female	Al	Chromate Conversion
0.6-6	4~15	10°~80°	306	221	415	≤2.5	N Female	Al	Chromate Conversion
0.8-4	6~14	35°~65°	225	155	290	≤2.0	N Female	Al	Chromate Conversion
1-6	6~13	20°~90°	164	114	158	≤2.5	N Female	Al	Chromate Conversion
1-18	7~13	30°~80°	160	284	245	≤2.5	SMA Female	Al	Chromate Conversion
1-20	7~15	11°~80°	163	241	243	≤2	SMA Female	Al	Chromate Conversion
2-18	8~17	20°~50°	179	149	200	≤2.5	SMA Female	Al	Chromate Conversion
6-18	10~14	30°~55°	63	43	140	≤2.5	SMA Female	Al	Chromate Conversion
8-40	7~13	10°~30°	28	23	105	≤3.0	2.92 Female	Al	Chromate Conversion
K 18-40	15~20	10°~20°	50	38	132	≤2.5	2.92 Female	Al	Chromate Conversion



### Mini Ultra-Wideband Double-Ridged Horn Antenna

Freq Range (GHz)	Gain (dB)	Beam Width	Dimensions (mm)			VSWR	Connector	Material	Finish
			W	H	L				
2-18	5~11	40°~80°	119	119	86	≤2.5	SMA Female	Al	Chromate Conversion
2-24.5	5~13	40°~80°	119	119	86	≤2.5	SMA Female	Al	Chromate Conversion
18-40	5~13	40°~80°	90	60	50	≤2.5	2.92 Female	Al	Chromate Conversion

## Linear Polarization Horn Antenna

### Dual Polarization Horn Antenna



WG Type EIA	Freq Range (GHz)	Working Bandwidth	Gain X(dB)	Polarization Isolation (dB)	VSWR	Connector	Material
WR112	7-10	≤5%	10/15	≥20	≤1.5	N Female	Al
		≤40%		≥30			
WR90	8-12.4	≤5%	10/15	≥20	≤1.5	N Female	Al
		≤40%		≥30			
WR75	10-15	≤5%	10/15	≥20	≤1.6	N Female	Al
		≤40%		≥30			
WR62	12-18	≤5%	10/15	≥20	≤1.6	SMA Female	Al
		≤40%		≥30			
WR51	15-22	≤5%	10/15/20	≥20	≤1.6	SMA Female	Cu
		≤40%		≥30			
WR42	17.6-26.7	≤5%	10/15/20	≥20	≤1.6	2.92 Female	Cu
		≤40%		≥30			
WR34	22-33	≤5%	10/15/20	≥20	≤1.6	2.92 Female	Cu
		≤40%		≥30			
WR28	26.5-40	≤5%	10/15/20	≥20	≤1.6	2.92 Female	Cu
		≤40%		≥30			
WR22	33-50	≤5%	10/15/20	≥20	≤1.5	WR22	Cu
		≤40%		≥30			
WR19	40-60	≤5%	10/15/20	≥20	≤1.5	WR19	Cu
		≤40%		≥30			
WR15	50-75	≤5%	10/15/20	≥20	≤1.5	WR15	Cu
		≤40%		≥30			
WR12	60-90	≤5%	10/15/20	≥20	≤1.5	WR12	Cu
		≤40%		≥30			
WR10	75-110	≤5%	10/15/20	≥20	≤1.6	WR10	Cu
		≤40%		≥30			

# SYNERGY TELECOM P. LTD.

## Linear Polarization Horn Antenna

### Ultra-Wideband Dual-Polarization Four-Ridged Horn Antenna



Working Bandwidth (GHz)	Gain(dB)	VSWR	Polarization Isolation (dB)	Dimensions (mm)			Connector
				W	H	L	
0.8-4	6~10	≤2.5	≥20	250	250	400	N Female
1-4	6~10	≤2.5	≥20	280	280	420	N Female
2-18	6~16	≤2.5	≥20	120	120	169	SMA Female
18-40	14~17	≤2.5	≥20	Φ63x146			2.92 Female
26-40	18~20	≤2.5	≥20	Φ46.5x135			2.92 Female

### Open Boundary Dual-Polarization Four-Ridged Horn Antenna



Freq Range	Gain	VSWR	Isolation (dB)	Dimensions (W×H×L)	Connector
0.4 - 6 GHz	4-13dB	≤ 3.0	≥20	500×500×550mm	SMA Female
0.8 - 8 GHz	2-10dB	≤ 3.0	≥20	350×350×400mm	SMA Female
3 - 18 GHz	6-14dB	≤ 3.0	≥20	175×175×200mm	SMA Female

## Lens Antenna

### Conical Horn Lens Antenna



WG Type EIA	Freq Range (GHz)	Gain (dB)	Sidelobe Level (dB) E plane	Sidelobe Level (dB) H plane	Beam Width(°)	VSWR	Interface	Antenna Diameter (Φmm)	Length (mm)
WR90	8.2-12.4	25	≤-15	≤-26	7~10	≤2.5	FBP-100	250	270
WR75	10.0-15.0	26	≤-15	≤-26	7~10	≤2.5	FBP-120	250	270
WR62	12.5-18.0	23	≤-15	≤-26	7~10	≤2.5	FBP-140	150	170
WR62	12.5-18.0	26	≤-15	≤-26	5~8	≤2.5	FBP-140	200	220
WR62	12.4-18.0	28	≤-15	≤-26	3~6	≤2.5	FBP-140	250	270
WR51	14.5-22.0	22	≤-15	≤-26	9~12	≤2.5	FBP-180	100	120
WR51	14.5-22.0	25	≤-15	≤-26	6~9	≤2.5	FBP-180	150	170
WR51	14.5-22.0	28	≤-15	≤-26	4~7	≤2.5	FBP-180	200	220
WR42	18.0-26.5	21	≤-15	≤-26	9~12	≤2.5	FBP-220	80	100



# SYNERGY TELECOM P. LTD.

## Lens Antenna



### Conical Horn Lens Antenna

WG Type EIA	Freq Range (GHz)	Gain (dB)	Sidelobe Level (dB)		Beam Width(°)	VSWR	Interface	Antenna Diameter (Φmm)	Length (mm)
			E plane	H plane					
WR42	18.0-26.5	23	≤-15	≤-26	7~10	≤2.5	FBP-220	100	120
WR42	18.0-26.5	27	≤-15	≤-26	4~7	≤2.5	FBP-220	150	170
WR42	18.0-26.5	29	≤-15	≤-26	3~6	≤2.5	FBP-220	200	220
WR34	22.0-33.0	19	≤-15	≤-26	12~16	≤2.5	FBP-260	50	80
WR34	22.0-33.0	23	≤-15	≤-26	7~10	≤2.5	FBP-260	80	100
WR34	22.0-33.0	25	≤-15	≤-26	6~9	≤2.5	FBP-260	100	120
WR34	22.0-33.0	29	≤-15	≤-26	3~6	≤2.5	FBP-260	150	170
WR34	22.0-33.0	31	≤-15	≤-26	2~4	≤2.5	FBP-260	200	220
WR28	26.5-40.0	21	≤-15	≤-26	10~13	≤2.5	FBP-320	50	80
WR28	26.5-40.0	25	≤-15	≤-26	6~9	≤2.5	FBP-320	80	100
WR28	26.5-40.0	27	≤-15	≤-26	4~7	≤2.5	FBP-320	100	120
WR28	26.5-40.0	31	≤-15	≤-26	3~5	≤2.5	FBP-320	150	170
WR28	26.5-40.0	33	≤-15	≤-26	2~4	≤2.5	FBP-320	200	220



### Pyramid Horn Lens Antenna

WG Type EIA	Freq Range (GHz)	Gain (dB)	Sidelobe Level (dB)		VSWR	Interface	Antenna Diameter (mm)	Length (mm)
			E plane	H plane				
WR62	11.9-18.0	20	≤-15	≤-26	≤2.5	FBP-140	120×90	205
WR34	21.7-33.0	25	≤-15	≤-26	≤2.5	FBP-260	89×89	175



### Point Focusing Horn Lens Antenna

WG Type EIA	Freq Range (GHz)	Antenna Diameter (Φmm)	Focal Length (mm)	Focal Spot Diameter(mm)	VSWR	Interface
WR284	2.6-4	300	500	≤200	≤2.5	FDP-32
WR229	3.3 -4.9	300	500	≤200	≤2.5	FDP-40
WR187	4-6	300	500	≤120	≤2.5	FDP-48
WR159	4.9-7.0	250	500	≤80	≤2.5	FDP-58
WR137	5.38-8.17	250	500	≤80	≤2.5	FDP-70
WR112	6.57-9.99	250	500	≤60	≤2.5	FBP-84

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## Lens Antenna

### Point Focusing Horn Lens Antenna



WG Type EIA	Freq Range (GHz)	Antenna Diameter (Φmm)	Focal Length (mm)	Focal Spot Diameter(mm)	VSWR	Interface
WR90	8.2-12.4	200	300	≤60	≤2.5	FBP-100
WR75	9.84-15.0	200	300	≤60	≤2.5	FBP-120
WR62	11.9-18.0	200	300	≤50	≤2.5	FBP-140
WR51	14.5-22.0	100	200	≤40	≤2.5	FBP-180
WR42	17.6-26.7	100	200	≤35	≤2.5	FBP-220
WR34	21.7-33.0	100	100	≤30	≤2.5	FBP-260
WR28	26.5-40.0	100	100	≤25	≤2.5	FBP-320

## Circular Polarized Horn Antenna

### Circular Polarized Horn Antenna -Conical Horn Type



WG Type EIA	Freq Range (GHz)	Working Bandwidth	Gain Range X(dB)	Axis Ratio (dB)	VSWR	Connector
WR137	5-8	≤5%	10~20	≤0.5	≤1.5	N Female
		≤10%		≤1	≤1.6	
		≤20%		≤2.5	≤1.8	
		≤40%		≤3.5	≤2	
		≤67%		≤4	≤2.5	
WR112	7-10	≤5%	10~20	≤0.5	≤1.5	N Female
		≤15%		≤2	≤1.8	
WR90	8-12.4	≤5%	10~20	≤0.5	≤1.5	N Female
		≤15%		≤2		
WR75	10-15	≤5%	10~20	≤0.5	≤1.6	N Female
		≤15%		≤2		
WR62	12.4-18	≤5%	10~20	≤0.5	≤1.6	SMA Female
		≤15%		≤2		
WR51	15-22	≤5%	10~25	≤0.5	≤1.6	SMA Female
		≤15%		≤2		
WR42	15-22	≤5%	10~25	≤0.5	≤1.6	2.92 Female
		≤15%		≤2		
		≤15%		≤2		
WR34	22-33	≤5%	10~25	≤0.5	≤1.6	2.92 Female
		≤15%		≤2		

## Circular Polarized Horn Antenna

Circular Polarized Horn Antenna -Conical Horn Type



WG Type EIA	Freq Range (GHz)	Working Bandwidth	Gain Range X(dB)	Axis Ratio (dB)	VSWR	Connector
WR28	26.5-40	≤5%	10~25	≤0.5	≤1.6	2.92 Female
		≤15%		≤2		
		≤15%		≤3		
WR22	33-50	≤5%	10~25	≤0.5	≤1.5	FUGP400
		≤15%		≤2		
		≤15%		≤2		
WR19	40-60	≤5%	10~25	≤0.5	≤1.5	FUGP500
		≤15%		≤2		
		≤15%		≤2		
WR15	50-75	≤5%	10~25	≤0.5	≤1.5	FUGP620
		≤15%		≤2		
		≤15%		≤2		
WR12	60-90	≤5%	10~25	≤0.5	≤1.5	FUGP740
		≤15%		≤2		
		≤15%		≤2		
WR10	75-110	≤5%	10~25	≤0.5	≤1.6	FUGP900
		≤15%		≤2		
		≤15%		≤2		



Dual Circular Polarized Horn Antenna-Conical Horn Type

WG Type EIA	Freq Range (GHz)	Working Bandwidth	Gain Range X(dB)	Axis Ratio (dB)	VSWR	Dimensions (mm)	Connector
WR137	5-8	≤5%	≤5%	≤0.5	≤1.5	Φ145x420	N Female
		≤15%	≤15%	≤2			
		≤40%	≤40%	≤3		≤1.8	
WR112	7-10	≤5%	≤5%	≤0.5	≤1.5	Φ125x400	N Female
		≤15%	≤15%	≤2			
		≤40%	≤40%	≤3		≤1.8	
WR90	8-12.4	≤5%	≤5%	≤0.5	≤1.5	Φ95x350	N Female
		≤15%	≤15%	≤2			
		≤40%	≤40%	≤3		≤1.8	
WR75	10-15	≤5%	≤5%	≤0.5	≤1.5	Φ80x280	N Female
		≤15%	≤15%	≤2			
		≤40%	≤40%	≤3		≤1.8	
WR62	12.4-18	≤5%	≤5%	≤0.5	≤1.5	Φ68x250	SMA Female
		≤15%	≤15%	≤2			
		≤40%	≤40%	≤3		≤1.8	



## Circular Polarized Horn Antenna



### Dual Circular Polarized Horn Antenna-Conical Horn Type

WG Type EIA	Freq Range (GHz)	Working Bandwidth	Gain Range X(dB)	Axis Ratio (dB)	VSWR	Dimensions (mm)	Connector
WR51	15-22	≤5%	≤5%	≤0.5	≤1.5	Φ58x220	SMA Female
		≤15%	≤15%	≤2			
		≤40%	≤40%	≤3		Φ58x240	
WR42	18-26	≤5%	≤5%	≤0.5	≤1.5	Φ50x180	2.92 Female
		≤15%	≤15%	≤2			
		≤40%	≤40%	≤3		Φ50x200	
WR34	22-33	≤5%	≤5%	≤0.5	≤1.5	Φ38x150	2.92 Female
		≤15%	≤15%	≤2			
		≤40%	≤40%	≤3		Φ38x180	
WR28	26.5-40	≤5%	≤5%	≤0.5	≤1.5	Φ32x130	2.92 Female
		≤15%	≤15%	≤2			
		≤40%	≤40%	≤3		Φ32x150	
WR22	33-50	≤5%	≤5%	≤1	≤1.5	Φ26x120	FUGP
		≤15%	≤15%	≤2			
		≤40%	≤40%	≤3		Φ26x140	



### Dual Circular Polarized Horn Antenna-Step Diaphragm Square Horn Type

WG Type EIA	Freq Range (GHz)	Working Bandwidth	Gain Range X(dB)	Axis Ratio (dB)	VSWR	Polarization Isolation(dB)	Dimensions(mm)			Connector
							W	H	L	
WR284	2.6-4	≤10%	10~20	≤1.5	≤1.5	28	170	170	400	N Female
		≤20%		≤2.5		25				
WR229	3.5-5	≤10%	10~20	≤1.5	≤1.5	28	140	140	350	N Female
		≤20%		≤2.5		25				
WR187	4.0-6	≤10%	10~20	≤1.5	≤1.5	28	110	110	300	N Female
		≤20%		≤2.5		25				
WR159	4.5-7	≤10%	10~20	≤1.5	≤1.5	28	100	100	280	N Female
		≤20%		≤2.5		25				
WR137	5-8	≤10%	10~20	≤1.5	≤1.5	28	90	90	260	N Female
		≤20%		≤2.5		25				

## Circular Polarized Horn Antenna

Dual Circular Polarized Horn Antenna-Step  
Diaphragm Conical Horn Type



WG Type EIA	Freq Range (GHz)	Working Bandwidth	Gain Range X(dB)	Axis Ratio (dB)	VSWR	Polarization Isolation(dB)	Dimensions (mm)	Connector
WR284	2.6-4	≤10%	10~20	≤1.5	≤1.5	28	Φ170x380	N Female
		≤20%		≤2.5		25		
WR229	3.5-5	≤10%	10~20	≤1.5	≤1.5	28	Φ130x320	N Female
		≤20%		≤2.5		25		
WR187	4-6	≤10%	10~20	≤1.5	≤1.5	28	Φ110x280	N Female
		≤20%		≤2.5		25		
WR159	4.5-7	≤10%	10~20	≤1.5	≤1.5	25	Φ100x260	N Female
		≤20%		≤2.5		25		
WR137	5-8	≤10%	10~20	≤1.5	≤1.5	28	Φ90x240	N Female
		≤20%		≤2.5		25		



Broadband Circular Polarized Horn Antenna-Dual Linear  
Polarization Synthesized

Freq Range (GHz)	Gain (dB)	VSWR	Axis Ratio (dB)	Dimensions (mm)	Connector
0.5-1	7~10	≤2.5	≤3	510X510X550	N Female
1-2	10~15	≤2.5	≤3	250 X250 X460	N Female
1-4	7~15	≤2.5	≤5	280 X280 X430	N Female
2-4	10~15	≤2.0	≤3	250 X250 X430	N Female
4-8	10~15	≤2.0	≤3	Φ140 X470	N Female
8-18	10~18	≤2.5	≤5	Φ78 X165	SMA Female
18-40	10~18	≤3.0	≤5	Φ40X80	2.92 Female



Broadband Dual Circular Polarized Horn Antenna-Dual Linear  
Polarization Synthesized

Freq Range (GHz)	Gain (dB)	VSWR	Axis Ratio (dB)	Polarization Isolation(dB)	Dimensions (mm)	Connector
1-2	10~15	≤2.5	≤3	15	510X510X550	N Female
2-4	10~15	≤2.5	≤3	15	250 X250 X430	N Female
4-8	10~15	≤2.5	≤3	15	Φ140 X620	N Female
8-18	10~18	≤2.5	≤5	15	Φ78 X165	SMA Female
18-40	10~18	≤3.0	≤5	15	Φ40X80	2.92 Female



# SYNERGY TELECOM P. LTD.

## Technical Reference

### Rectangular Waveguide Tubing Information

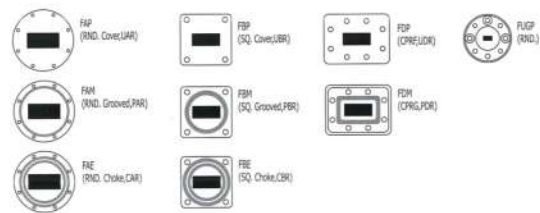
IEC WG Type	EIA WG Type	Freq Range (GHz)	Inside Dimensions (mm)				Outside Dimensions (mm)		Power Handling (MW)	Weight (Kg /m)		Theoretical Attenuation	
			Width	Height	Std	Tol(±)	Width	Height		Cu	Al	Cu	Al
R3	WR2300	0.32 ~ 0.49	584.2	292.1					246-348	28.781		0.013	
R4	WR2100	0.35 ~ 0.53	533.4	266.7					205-290	21.873		0.015	
R5	WR1800	0.41 ~ 0.62	457.2	228.6	0.51				150-213	18.787		0.019	
R6	WR1500	0.49 ~ 0.75	381	190.5	0.38				104-148	9.923		0.025	
R8	WR1150	0.64 ~ 0.98	292.1	146.05	0.38				61.5-87.1	7.633		0.004	
R9	WR975	0.76 ~ 1.15	247.65	123.82					44.2-62.6	6.488		0.005	
R12	WR770	0.96 ~ 1.46	195.58	97.79					27.6-39.1	5.147		0.007	
R14	WR650	1.13 ~ 1.73	165.1	82.55	0.33	169.16	86.61	19.6-27.8	9.1	2.79	0.01	0.009	
R18	WR510	1.45 ~ 2.20	129.54	64.77	0.26	133.6	68.83	12.09-17.1	7.17	2.2	0.015	0.013	
R22	WR430	1.72 ~ 2.61	109.22	54.61	0.22	113.28	58.67	8.6-12.2	6.07	1.86	0.019	0.016	
R26	WR340	2.17 ~ 3.30	86.36	43.18	0.17	90.42	47.24	5.4-7.6	4.83	1.46	0.027	0.023	
R32	WR284	2.60 ~ 3.95	72.14	34.04	0.14	76.2	38.1	3.5-5	3.98	1.22	0.037	0.031	
R40	WR229	3.22 ~ 4.90	58.17	29.08	0.12	61.42	32.33	2.44-3.46	2.62	0.8	0.05	0.042	
R48	WR187	3.94 ~ 5.99	47.549	22.149	0.095	50.8	25.4	1.52-2.15	2.11	0.65	0.07	0.059	
R58	WR159	4.64 ~ 7.05	40.386	20.193	0.081	43.64	23.44	1.17-1.66	1.85	0.57	0.086	0.072	
R70	WR137	5.38 ~ 8.17	34.849	15.799	0.07	38.1	19.05	0.79-1.12	1.56	0.48	0.114	0.095	
R84	WR112	6.57 ~ 9.99	28.499	12.624	0.057	31.75	15.88	0.52-0.73	1.28	0.39	0.156	0.131	
R100	WR90	8.20 ~ 12.5	22.86	10.16	0.046	25.4	12.7	0.33-0.47	0.8	0.25	0.217	0.182	
R120	WR75	9.84 ~ 15.0	19.05	9.525	0.038	21.59	12.06	0.26-0.34	0.7	0.22	0.265	0.222	
R140	WR62	11.9 ~ 18.0	15.799	7.899	0.031	17.83	9.93	0.18-0.25	0.47	0.14	0.351	0.294	
R180	WR51	14.5 ~ 22.0	12.954	6.477	0.026	14.99	8.51	0.12-0.17	0.39	0.12	0.473	0.396	
R220	WR42	17.6 ~ 26.7	10.668	4.318	0.021	12.7	6.35	0.066-0.094	0.31	0.09	0.723	0.607	
R260	WR34	21.7 ~ 33.0	8.636	4.318	0.02	10.67	6.35	0.053-0.076	0.27	0.08	0.868	0.728	
R320	WR28	26.3 ~ 40.0	7.112	3.556	0.02	9.14	5.59	0.036-0.051	0.23	0.07	1.162	0.974	
R400	WR22	32.9 ~ 50.1	5.69	2.845	0.02	7.72	4.88	0.023-0.033	0.2	0.06	1.624	1.362	
R500	WR19	39.2 ~ 59.6	4.775	2.388	0.02	6.81	4.42	0.016-0.023	0.17	0.05	2.112		
R620	WR15	49.8 ~ 75.8	3.759	1.88	0.02	5.79	3.91	0.01-0.144	0.14	0.04	3.023		
R740	WR12	60.5 ~ 91.9	3.0988	1.5494	0.0127	5.13	3.58	0.0069-0.0098	0.12	0.037	4.04		
R900	WR10	73.8 ~ 112	2.54	1.27	0.0127	4.57	3.3	0.0046-0.0066	0.11	0.032	5.444		
R1200	WR8	92.2 ~ 140	2.032	1.016	0.0076	3.556	2.54	0.003-0.0042					
R1400	WR7	113 ~ 173	1.651	0.8255	0.0064	3.175	2.35	0.0019-0.0028					
R1800	WR5	145 ~ 220	1.2954	0.6477	0.0064	2.819	2.172	0.0012-0.0017					
R2200	WR4	172 ~ 261	1.0922	0.5461	0.0051	2.616	2.07	0.00086-0.00122					
R2600	WR3	217 ~ 330	0.8636	0.4318	0.0051	2.388	1.956	0.00054-0.00076					



# SYNERGY TELECOM P. LTD.

## Technical Reference

### Flange Information



WG Type		A Type			B Type			D Type		FUGP
EIA Std	IEC Std	FAP (RND.COVER)	FAM (RND.GROOVED)	FAE (RND.CHOKE)	FBP (SQ.COVER)	FBM (SQ.GROOVED)	FBE (SQ.CHOKE)	FDP (CPRF)	FDM (CPRG)	FUGP (RND.)
WR2300	R3							FDP3	FDM3	
WR2100	R4							FDP4	FDM4	
WR1800	R5							FDP5	FDM5	
WR1500	R6							FDP6	FDM6	
WR1150	R8							FDP8	FDM8	
WR975	R9							FDP9	FDM9	
WR770	R12							FDP12	FDM12	
WR650	R14							FDP14	FDM14	
WR510	R18							FDP18	FDM18	
WR430	R22							FDP22	FDM22	
WR340	R26							FDP26	FDM26	
WR284	R32	FAP32	FAM32	FAM32				FDP32	FDM32	
WR229	R40	FAP40	FAM40	FAM40				FDP40	FDM40	
WR187	R48	FAP48	FAM48	FAM48				FDP48	FDM48	
WR159	R58	FAP58	FAM58	FAM58				FDP58	FDM58	
WR137	R70	FAP70	FAM70	FAM70				FDP70	FDM70	
WR112	R84				FBP84	FBM84	FBE84	FDP84	FDM84	
WR90	R100				FBP100	FBM100	FBE100	FDP100	FDM100	
WR75	R120				FBP120	FBM120	FBE120	FDP120	FDM120	
WR62	R140				FBP140	FBM140	FBE140	FDP140	FDM140	
WR51	R180				FBP180	FBM180	FBE180	FDP180	FDM180	
WR42	R220				FBP220	FBM220	FBE220			
WR34	R260				FBP260	FBM260	FBE260			
WR28	R320				FBP320	FBM320	FBE320			
WR22	R400	FAP400	FAM400							FUGP400
WR19	R500	FAP500	FAM500							FUGP500
WR15	R620	FAP620	FAM620							FUGP620
WR12	R740	FAP740	FAM740							FUGP740
WR10	R900	FAP900	FAM900							FUGP900
WR8	R1200	FAP1200	FAM1200							FUGP1200
WR7	R1400	FAP1400	FAM1400							FUGP1400
WR5	R1800	FAP1800	FAM1800							FUGP1800
WR4	R2200	FAP2200	FAM2200							FUGP2200
WR3	R2600	FAP2600	FAM2600							FUGP2600