Power Dividers/Combiners,

SMA Models

S ee Also: Coax Type-N Power Dividers Waveguide Combiners & Dividers

ATM manufactures a wide variety of 2 Way, 4 Way, and 8 Way Power Dividers/Combiners to meet or exceed your design specifications. Please call us with your requirements and discuss your needs with one of our design engineers.

2-Way SMA Models

• Octave Band • Special Band • Multi Band • 10-40GHz Multi Band • Ultra-Wide Band

- Stripline Construction
- Compact & Lightweight
- Most popular models in stock for fast delivery
- Octave Band, Special Band, Multi Band and Ultra Wide-Band models available

Electrical

RF Connectors: SMA(F)

RF Power: 30 Watt with all ports matched

Mechanical

Construction: Stripline design

Connectors: Stainless Steel

Operating Temp: -55°C to +110°C

Finish: Unique corrosion resistant 316 stainless steel epoxy coating IAW MIL-F-14072

Applicable Mil-Specs

General: see ATM Mil-Spec reference

Product Specific: see ATM Mil-Spec reference

SMA Octave Band

2-Way Models

Freq GHz	Iso. dB	VSWR max.		IL dB	Amp Bal (+/- dB)	Phase Bal (+/- Deg)	Model No.	Outline Drawing
		In	Out					
0.5 - 1.0	22	1.25	1.15	0.40	0.2	2.0	P212	Fig 1
1.0 - 2.0	20	1.25	1.15	0.35	0.2	2.0	P213	Fig 2
2.0 - 4.0	20	1.30	1.20	0.40	0.2	2.0	P214	Fig 3
4.0 - 8.0	20	1.35	1.25	0.50	0.2	2.0	P215	Fig 3
8.0 - 12.4	20	1.35	1.30	0.50	0.2	2.0	P216	Fig 4
12.0 - 18.0	19	1.40	1.35	0.60	0.3	6.0	P217	Fig 4
14.0 - 21.0	15	1.70	1.70	0.60	0.2	8.0	P218	Dwg

SMA Special Band

2-Way Models

Freq (GHz)	Iso. (dB)	VSWR max.		IL (dB)	Amp Bal (+/- dB)	Phase Bal (+/- Deg)	Model No.	Outline Drawing
		In	Out					
0.85 - 1.65	22	1.25	1.20	0.40	0.2	2.0	P213L	Fig 2
3.4 - 4.2	20	1.35	1.25	0.50	0.2	2.0	P215C3	Fig 3
3.65 - 6.5	20	1.35	1.25	0.40	0.2	2.0	P215C	Fig 3
3.65 - 4.3	22	1.25	1.20	0.40	0.2	2.0	P215C1	Fig 3
5.85 - 6.5	22	1.25	1.20	0.40	0.2	2.0	P215C2	Fig 3
5.8 - 6.8	22	1.25	1.20	0.40	0.2	2.0	P215C4	Fig 3
7.2 - 8.4	20	1.35	1.30	0.50	0.2	2.0	P215X	Fig 3
7.2 - 8.4	20	1.35	1.30	0.50	0.2	2.0	P215X-1	Fig 6
7.2 - 7.75	20	1.30	1.30	0.50	0.2	2.0	P215X1	Fig 3
7.2 - 7.75	20	1.30	1.30	0.50	0.2	2.0	P215X1-1	Fig 6
7.9 - 8.4	20	1.30	1.30	0.50	0.2	2.0	P215X2	Fig 3
7.9 - 8.4	20	1.30	1.30	0.50	0.2	2.0	P215X2-1	Fig 6
10.7 - 12.7	18	1.45	1.40	0.60	0.2	2.0	P216X	Fig 4
10.7 - 12.7	20	1.40	1.35	0.60	0.2	2.0	P216X-1	Fig 7
10.7 - 14.5	19	1.40	1.35	0.70	0.2	2.0	P216K	Fig 4
10.7 - 14.5	19	1.40	1.35	0.70	0.2	2.0	P216K-1	Fig 7
12.7 - 14.5	19	1.40	1.35	0.70	0.3	6.0	P217K	Fig 4
13.7 - 14.5	20	1.40	1.35	0.60	0.3	6.0	P217K-1	Fig 7

SMA Multi Band

2-Way Models

Freq (GHz)	Iso. (dB)	VSWR max.		IL (dB)	Amp Bal (+/- dB)	Phase Bal (+/- Deg)	Model No.	Outline Drawing
		In	Out					
0.5 - 4.0	20	1.30	1.20	0.50	0.2	4.0	P212E	Fig 9
0.8 - 2.4	20	1.35	1.25	0.35	0.2	2.0	P212D	Fig 2
1.0 - 18.0	18	1.40	1.40	1.00	0.2	5.0	P213H	Fig 8
2.0 - 8.0	20	1.35	1.35	0.40	0.2	4.0	P214F	Fig 5
2.0 - 18.0	18	1.40	1.40	1.00	0.2	5.0	P214H	Fig 8
5.0 - 18.0	19	1.40	1.35	0.50	0.3	6.0	P215CK	Fig 7
6.0 - 18.0	19	1.40	1.35	0.60	0.2	5.0	P215H	Fig 10
8.0 - 18.0	20	1.35	1.40	0.60	0.2	5.0	P216H	Fig 10
2.0 - 26.5	19	1.40	1.35	1.10	0.3	6.0	P2K8*	Fig 11

*Specs for this model run from 2.0-18.0 GHz From 18.0-26.5 GHz unit runs ISO 12dB, VSWR 1.7 in/1.6 out, and IL 1.8 dB max. See also P214JT for another model in this band.

Special 10.0 - 40.0 GHz Multi-Band Unit

2-Way Models

Model No.	Freq (GHz)	Iso. (dB)	VSWR max		IL (dB)	Amp Bal (+/- dB)	Phase Bal (+/- Deg)	Outline Drawing
			In	Out				
P2K9	**10.0 - 18.0**	20	1.5	1.5	0.6	0.3	2.5	Dwg
	18.0 - 26.5	17	1.7	1.7	0.9	0.5	3.0	
	26.5 - 40.0	14	1.9	1.9	1.6	0.8	6.0	
NEW! P2K9A	**10.0 - 18.0**	18	1.6	1.5	1.5	0.6	6.0	Dwg
	18.0 - 40.0	18	1.6	1.5	2.1	0.6	6.0	

SMA Ultra Wide Band

2-Way Models

Model No.	Freq (GHz)	Iso. (dB)	VSWR max		IL (dB)	Phase Balance (deg max.)	Amplitude Balance (dB max)	Input Power (W max)	Outline Drawing
			In	Out					
P213HT	0.5 - 1.0	6	2.00	2.00	0.70	1.0	0.20	10	Fig 1
	1.0 - 1.5	10	1.70	1.50	0.50	1.0	0.20	10	
	1.5 - 2.0	15	1.60	1.40	0.50	1.0	0.20	10	
	2.0 - 4.0	20	1.50	1.30	0.40	1.0	0.20	10	
	4.0 - 8.0	17	1.50	1.40	0.50	1.5	0.20	10	
	8.0 - 15.0	15	1.70	1.50	0.80	2.0	0.30	10	
	15.0 - 16.0	15	1.70	1.60	0.80	3.0	0.30	10	
	16.0 - 18.0	14	1.80	1.90	0.90	4.0	0.40	10	
	18.0 - 20.0	7	2.00	2.00	1.10	4.0	0.40	10	
P214JT	2.0 - 2.5	15	1.50	1.20	0.30	2.0	0.30	10	Fig 2
	2.5 - 20.0	20	1.30	1.30	1.00	4.0	0.40	10	
	20.0 - 26.5	15	1.50	1.50	1.50	6.0	0.40	10	

4-Way SMA Models

• Octave Band • Special Band • Multi Band

- Stripline Construction
- Compact & Lightweight
- Most popular models in stock for fast delivery
- Octave Band, Special Band, Multi Band and Ultra Wide Band models available

Electrical

RF Connectors: SMA(F)

RF Power: 30 Watt with all ports matched

Mechanical

Construction: Stripline design

Connectors: Stainless Steel

Operating Temp: -55°C to +110°C

Finish: Unique corrosion resistant 316 stainless steel epoxy coating IAW MIL-F-14072

Applicable Mil-Specs

General: see ATM Mil-Spec reference

Product Specific: see ATM Mil-Spec reference

SMA Octave Band

4-Way Models

Freq GHz	Iso. dB	VSWR max.		IL dB	Amp Bal (+/- dB)	Phase Bal (+/- Deg)	Model No.	Outline Drawing
		In	Out					
0.5 - 1.0	22	1.45	1.30	0.90	0.2	4.0	P412	Fig 1
1.0 - 2.0	20	1.40	1.25	0.80	0.3	5.0	P413	Fig 2
2.0 - 4.0	20	1.35	1.35	0.60	0.6	6.0	P414	Fig 2
4.0 - 8.0	20	1.45	1.35	0.60	0.3	4.0	P415	Fig 3
7.0 - 12.4	18	1.45	1.35	0.80	0.6	6.0	P416	Fig 4
12.0 - 18.0	18	1.50	1.40	0.90	0.6	6.0	P417	Fig 3
14.0 - 21.0	16	1.60	1.60	1.50	0.6	6.0	P418	Fig 3

SMA Special Band

4-Way Models

Freq GHz	Iso. dB	VSWR max.		IL dB	Amp Bal (+/- dB)	Phase Bal (+/- Deg)	Model No.	Outline Drawing
		In	Out					
0.85 - 1.65	22	1.25	1.20	0.40	0.3	5.0	P413L	Fig 2
3.4 - 4.2	19	1.30	1.25	0.50	0.3	4.0	P415C3	Fig 2
3.65 - 6.5	20	1.35	1.25	0.40	0.3	4.0	P415C	Fig 3
3.65 - 4.3	22	1.25	1.20	0.40	0.3	4.0	P415C1	Fig 2
5.85 - 6.5	22	1.25	1.20	0.40	0.3	4.0	P415C2	Fig 3
7.2 - 8.4	20	1.35	1.30	0.50	0.3	4.0	P415X	Fig 3
7.2 - 7.75	20	1.30	1.30	0.50	0.3	4.0	P415X1	Fig 3
7.9 - 8.4	20	1.30	1.30	0.50	0.3	4.0	P415X2	Fig 3
10.7 - 12.7	20	1.40	1.35	0.60	0.6	6.0	P416X-1	Fig 5
10.7 - 14.5	18	1.45	1.40	0.60	0.6	6.0	P416K-1	Fig 5
13.7 - 14.5	20	1.40	1.35	0.60	0.6	6.0	P417K-1	Fig 5
5.7 - 18.5	12	1.70	1.60	2.00	0.3	4.0	P415CJ	Dwg

SMA Multi Band

4-Way Models

Freq GHz	Iso. dB	VSWR max.		IL dB	Amp Bal (+/- dB)	Phase Shift (+/- Deg)	Model No.	Outline Drawing
		In	Out					
0.5 - 2.5	15	1.50	1.40	1.00	0.4	6.0	P412D	Fig 6
0.5 - 4.0	15	1.50	1.40	1.00	0.4	7.0	P412E	Fig 6
2.0 - 8.0	15	1.60	1.40	2.00	0.4	7.0	P414F	Fig 7
2.0 - 18.0	15	1.60	1.40	2.00	0.6	6.0	P414H	Dwg
6.0 - 18.0	18	1.60	1.40	1.30	0.6	6.0	P415H	Fig 8
8.0 - 18.0	18	1.40	1.50	1.30	0.6	6.0	P416H	Fig 3

8-Way SMA Models

• Octave Band • Special Band • Multi Band

- Stripline Construction
- Compact & Lightweight
- Most popular models in stock for fast delivery
- Octave Band, Special Band, Multi Band and Ultra Wide Band models available

Electrical

RF Connectors: SMA(F)

RF Power: 30 Watt with all ports matched

Mechanical

Construction: Stripline design

Connectors: Stainless Steel

Operating Temp: -55°C to +110°C

Finish: Unique corrosion resistant 316 stainless steel epoxy coating IAW MIL-F-14072

Applicable Mil-Specs

General: see ATM Mil-Spec reference

Product Specific: see ATM Mil-Spec reference

SMA Octave Band

8-Way Models

Freq GHz	Iso. dB	VSWR max.		IL dB	Amp Bal (+/- dB)	Phase Bal (+/- Deg)	Model No.	Outline Drawing
		In	Out					
0.5 - 1.0	18	1.45	1.30	0.90	0.4	5.0	P812	Fig 1
1.0 - 2.0	18	1.45	1.35	0.80	0.3	5.0	P813	Fig 2
2.0 - 4.0	18	1.45	1.35	0.80	0.4	5.0	P814	Fig 3
4.0 - 8.0	17	1.45	1.40	1.00	0.8	6.0	P815	Fig 3
8.0 - 12.4	16	1.60	1.50	1.40	0.5	6.0	P816	Fig 7
12.0 - 18.0	15	1.60	1.50	2.00	0.4	6.0	P817	Fig 3

SMA Special Band

8-Way Models

Freq GHz	Iso. dB	VSWR max.		IL dB	Amp Bal (+/- dB)	Phase Bal (+/- Deg)	Model No.	Outline Drawing
		In	Out					
0.85 - 1.65	18	1.45	1.40	0.80	0.3	5.0	P813L	Fig 2
3.4 - 4.2	18	1.40	1.30	0.70	0.8	6.0	P815C3	Fig 3
3.65 - 6.5	17	1.45	1.45	0.80	0.8	6.0	P815C	Fig 3
3.65 - 4.3	18	1.40	1.40	0.80	0.8	6.0	P815C1	Fig 3
5.85 - 6.5	18	1.45	1.40	0.80	0.8	6.0	P815C2	Fig 3
7.2 - 8.4	16	1.45	1.40	0.90	0.8	6.0	P815X	Fig 7
7.2 - 7.75	16	1.45	1.40	0.90	0.8	6.0	P815X1	Fig 7
7.9 - 8.4	16	1.45	1.40	0.90	0.8	6.0	P815X2	Fig 7
10.7 - 12.7	17	1.45	1.40	1.00	0.5	6.0	P816X-1	Fig 4
10.7 - 14.5	17	1.45	1.40	1.00	0.5	6.0	P816K-1	Fig 4
13.7 - 14.5	17	1.45	1.40	1.00	0.4	6.0	P817K-1	Fig 4

SMA Multi Band

8-Way Models

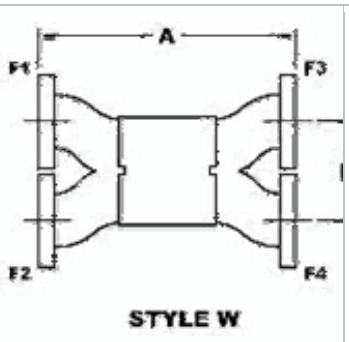
Freq GHz	Iso. dB	VSWR max.		IL dB	Amp Bal (+/- dB)	Phase Bal (+/- Deg)	Model No.	Outline Drawing
		In	Out					
2.0 - 18.0	13	1.70	1.70	3.00	1.4	10.0	P814H	Fig 5
8.0 - 18.0	15	1.60	1.50	2.00	0.6	6.0	P816H	Fig 6

Waveguide Combiners & Dividers

See Also:W/G Couplers, Broadwall Directional Coax Power Dividers & Combiners

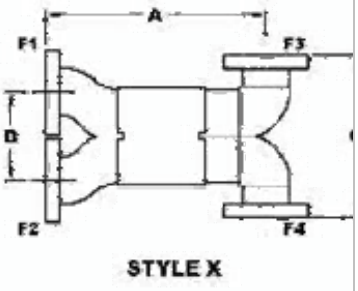
ATM manufactures Waveguide Short Slot Hybrid Combiners/Dividers in a choice of configurations. These units are useful in applications where smaller sizes are required. For applications where full band width is needed or for uneven power distribution of values other than 3dB, ATM manufactures Broadwall Coupler Combiners/Dividers which utilize a multi-hole coupler design resulting in full band width. Feel free to call us and discuss your needs with one of our design engineers.

3 dB Short Slot Hybrid Combiner/Divider



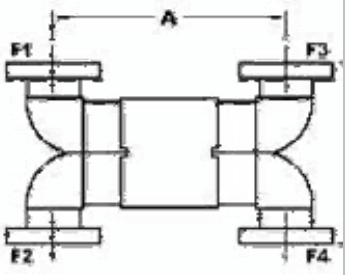
STYLE W

See note 2

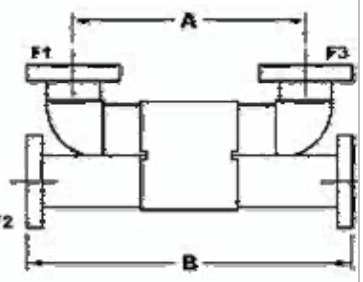


STYLE X

See note 2



STYLE Y



STYLE Z

Note 1: If F1 is input, then F3 and F4 are 3dB nominal and F2 is isolated from F1.

Note 2: The 'A' & 'B' dimensions for Styles W & X Combiners/Dividers may change based on flange type selected.

See ATM Flange page for more information on flanges.

Standard Models						
WG Size	Freq (GHz)	VSWR max	Iso. min	Balance dB +/- (max)	Standard Model No.	Outline Dwg.
WR284	2.66 - 2.99	1.15	26	0.25	284-261A-Z-6-6-6-6	Dwg
WR284	2.99 - 3.44	1.15	26	0.25	284-262A-Z-6-6-6-6	Dwg
WR284	3.44 - 3.95	1.15	26	0.25	284-263A-Z-6-6-6-6	Dwg
WR229	3.70 - 4.20	1.15	26	0.25	229-261A-Z-2-2-2-2	Dwg
WR187	3.95 - 4.50	1.15	26	0.25	187-261A-Z-6-6-6-6	Dwg
WR187	4.50 - 5.20	1.15	26	0.25	187-262A-Z-6-6-6-6	Dwg
WR187	5.20 - 5.90	1.15	26	0.25	187-263A-Z-6-6-6-6	Dwg
WR159	5.40 - 5.90	1.15	26	0.15	159-261A-Z-2-2-2-2	Dwg
WR159	5.90 - 6.50	1.15	26	0.15	159-262A-Z-2-2-2-2	Dwg
WR137	5.40 - 6.00	1.15	26	0.20	137-261A-Z-2-2-2-2	Dwg
WR137	5.80 - 6.50	1.15	26	0.20	137-265A-Z-2-2-2-2	Dwg
WR137	6.00 - 7.00	1.15	26	0.20	137-262A-Z-2-2-2-2	Dwg
WR137	6.85 - 7.80	1.15	26	0.20	137-263A-Z-2-2-2-2	Dwg
WR137	7.15 - 8.20	1.15	26	0.20	137-264A-Z-2-2-2-2	Dwg
WR112	6.90 - 8.00	1.15	26	0.15	112-261A-Z-6-6-6-6	Dwg
WR112	7.90 - 9.00	1.15	26	0.15	112-262A-Z-6-6-6-6	Dwg
WR112	8.80 - 10.25	1.15	26	0.15	112-263A-Z-6-6-6-6	Dwg
WR112	7.50 - 8.50	1.15	26	0.15	112-264A-Z-6-6-6-6	Dwg
WR102	9.40 - 10.60	1.15	26	0.25	102-261A-Z-6-6-6-6	Dwg
WR90	8.10 - 9.30	1.15	26	0.25	90-261A-Z-6-6-6-6	Dwg
WR90	9.10 - 10.2	1.15	26	0.25	90-262A-Z-6-6-6-6	Dwg
WR90	9.40 - 10.8	1.15	26	0.25	90-263A-Z-6-6-6-6	Dwg
WR90	10.5 - 11.9	1.15	26	0.25	90-264A-Z-6-6-6-6	Dwg
WR75	10.0 - 11.6	1.15	26	0.25	75-261A-Z-6-6-6-6	Dwg
WR75	11.6 - 13.4	1.15	26	0.25	75-262A-Z-6-6-6-6	Dwg
WR75	13.0 - 15.0	1.15	26	0.25	75-263A-Z-6-6-6-6	Dwg
WR62	12.4 - 14.0	1.15	26	0.25	62-261A-Z-6-6-6-6	Dwg
WR62	13.5 - 15.6	1.15	26	0.25	62-262A-Z-6-6-6-6	Dwg
WR62	15.5 - 18.0	1.15	26	0.25	62-263A-Z-6-6-6-6	Dwg
WR51	15.5 - 17.5	1.15	26	0.25	51-261A-Z-6-6-6-6	Dwg
WR51	17.35 - 19.65	1.15	26	0.25	51-262A-Z-6-6-6-6	Dwg

WR42	**17.6 - 20.0**	1.15	26	0.25	42-261A-Z-6-6-6-6	Dwg
WR42	**19.3 - 22.0**	1.15	26	0.25	42-262A-Z-6-6-6-6	Dwg
WR42	**22.5 - 26.0**	1.15	26	0.25	42-263A-Z-6-6-6-6	Dwg
WR28	**26.0 - 30.0**	1.15	26	0.25	28-261A-Z-6-6-6-6	Dwg
WR28	**27.5 - 31.2**	1.15	26	0.25	28-265A-Z-6-6-6-6	Dwg
WR28	**30.0 - 34.0**	1.15	26	0.25	28-262A-Z-6-6-6-6	Dwg
WR28	**33.5 - 37.0**	1.15	26	0.25	28-263A-Z-6-6-6-6	Dwg
WR28	**36.0 - 40.0**	1.15	26	0.25	28-264A-Z-6-6-6-6	Dwg

Ordering Information	**WR**	**- Mod**	**M**	**- S**	**- F1**	**- F2**	**- F3**	**- F4**
W/G Combiner Divider								
Example part number:	42	-263	A	-Z	-6	-6	-6	-6

Waveguide Size: (WR) WR28 thru WR284 available

Basic Model No.: (-Mod)

Material (M): A=Aluminum, B=Copper/Brass

Style (-S): W, X, Y, or Z config. See illustrations

Flange 1 (-F1): 1=CPRG, 2=CPRF, 6=Cover, 7=Choke

Flange 2 (-F2): 1=CPRG, 2=CPRF, 6=Cover, 7=Choke

Flange 3 (-F3): 1=CPRG, 2=CPRF, 6=Cover, 7=Choke

Flange 4 (-F4): 1=CPRG, 2=CPRF, 6=Cover, 7=Choke

*The Standard Model Numbers above are the most common parts ordered for size, material and flange. However, these models can easily be altered to accommodate your needs by using the Model # code system to the left.

See ATM Standard Flange page for more info.