

# Power Splitter/Combiner

## ZX10-2-42-S+

2 Way-0° 50Ω 1900 to 4200 MHz

### Maximum Ratings

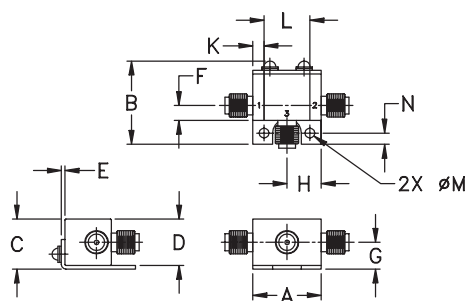
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1.0W max.
Internal Dissipation (as a combiner)	0.1W max.
DC Current	800 mA (400mA for each port)

Permanent damage may occur if any of these limits are exceeded.

### Coaxial Connections

SUM PORT	3
PORT 1	1
PORT 2	2

### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.74	.90	.54	.50	.04	.16	.29
18.80	22.86	13.72	12.70	1.02	4.06	7.37

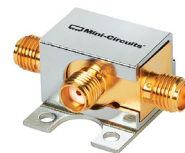
H	J	K	L	M	N	wt
.37	--	.122	.496	.106	.122	grams
9.40	--	3.10	12.60	2.69	3.10	20.0

### Features

- low insertion loss, 0.2 dB typ.
- excellent amplitude unbalance
- very good phase unbalance
- small size
- low cost
- protected under U.S. Patent 6,790,049 & 6,963,255

### Applications

- communications
- defense
- PCS/DCS
- DECT



Generic photo used for illustration purposes only

CASE STYLE: FL905

Connectors	Model
SMA	ZX10-2-42-S+

### +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

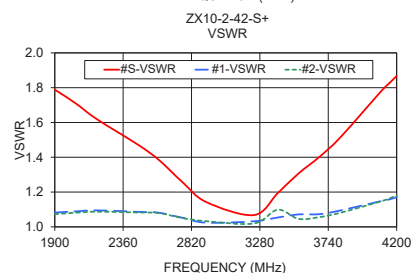
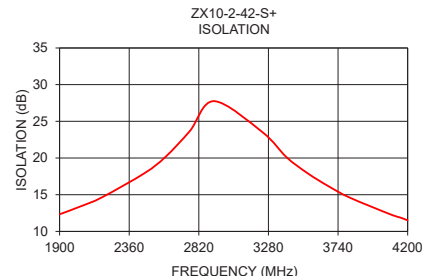
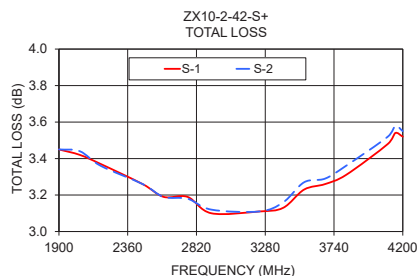
### Electrical Specifications (T<sub>AMB</sub>=25°C)

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 3.0 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)
	Typ.	Min.	Typ.	Max.	Max.	Max.
f <sub>L</sub> -f <sub>H</sub>						
1900-4200	23	10	0.2	1.2	5.0	0.3
2600-3400	23	17	0.2	0.6	4.0	0.3

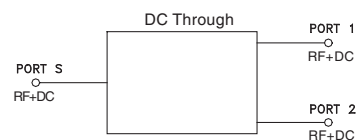
### Typical Performance Data

Frequency (MHz)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
1900.00	3.45	3.45	0.00	12.33	0.70	1.79	1.08	1.07
2040.00	3.42	3.44	0.02	13.42	0.71	1.71	1.09	1.08
2180.00	3.37	3.36	0.01	14.64	0.74	1.62	1.10	1.09
2460.00	3.26	3.26	0.01	17.92	0.91	1.47	1.09	1.08
2600.00	3.19	3.19	0.00	20.16	1.05	1.39	1.08	1.08
2760.00	3.19	3.18	0.01	23.66	1.02	1.26	1.05	1.05
2920.00	3.10	3.12	0.02	27.75	1.18	1.14	1.02	1.03
3240.00	3.11	3.11	0.00	23.53	1.50	1.07	1.03	1.02
3400.00	3.13	3.16	0.03	20.10	1.54	1.19	1.05	1.10
3540.00	3.23	3.27	0.04	17.91	1.30	1.31	1.07	1.05
3680.00	3.26	3.29	0.03	16.12	1.55	1.40	1.07	1.06
3820.00	3.31	3.36	0.05	14.58	1.52	1.51	1.09	1.08
4100.00	3.48	3.52	0.03	12.21	1.48	1.78	1.15	1.15
4150.00	3.54	3.58	0.04	11.90	1.37	1.83	1.16	1.16
4200.00	3.52	3.55	0.03	11.51	1.50	1.87	1.17	1.18

1. Total Loss = Insertion Loss + 3dB splitter loss.



### electrical schematic



### Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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# 2 Way-0° Power Splitter/Combiner

# ZX10-2-42+

## Typical Performance Data

FREQ. (MHz)	TOTAL LOSS <sup>1</sup> (dB)		AMP. UNBAL. (dB)	ISOLATION (dB)	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2					S	1	2
1900.0	3.48	3.49	0.00	12.27	0.03	1900.0	1.79	1.10	1.08
1940.0	3.47	3.47	0.00	12.56	0.09	1940.0	1.77	1.10	1.09
1980.0	3.43	3.44	0.01	12.84	0.06	1980.0	1.75	1.11	1.09
2020.0	3.47	3.46	0.01	13.18	0.04	2020.0	1.73	1.12	1.10
2060.0	3.42	3.42	0.00	13.47	0.06	2060.0	1.71	1.12	1.11
2100.0	3.43	3.44	0.00	13.82	0.04	2100.0	1.69	1.13	1.12
2140.0	3.43	3.43	0.00	14.16	0.02	2140.0	1.67	1.13	1.12
2180.0	3.43	3.42	0.00	14.53	0.05	2180.0	1.65	1.14	1.13
2220.0	3.37	3.36	0.00	14.86	0.10	2220.0	1.64	1.14	1.14
2260.0	3.43	3.43	0.01	15.33	0.00	2260.0	1.62	1.14	1.14
2300.0	3.35	3.33	0.01	15.65	0.12	2300.0	1.60	1.15	1.15
2360.0	3.40	3.40	0.01	16.41	0.08	2360.0	1.57	1.15	1.15
2420.0	3.27	3.26	0.01	17.00	0.16	2420.0	1.54	1.15	1.15
2480.0	3.35	3.35	0.00	17.88	0.12	2480.0	1.50	1.15	1.15
2540.0	3.21	3.22	0.01	18.63	0.25	2540.0	1.46	1.15	1.15
2600.0	3.31	3.30	0.01	19.70	0.18	2600.0	1.42	1.15	1.14
2680.0	3.29	3.30	0.02	21.15	0.14	2680.0	1.37	1.14	1.14
2760.0	3.21	3.23	0.03	22.73	0.23	2760.0	1.31	1.13	1.13
2840.0	3.17	3.18	0.00	24.48	0.31	2840.0	1.25	1.12	1.13
2920.0	3.18	3.19	0.02	26.24	0.22	2920.0	1.20	1.11	1.12
3000.0	3.19	3.21	0.02	27.19	0.05	3000.0	1.14	1.10	1.10
3040.0	3.17	3.18	0.01	27.17	0.09	3040.0	1.12	1.10	1.09
3080.0	3.18	3.19	0.01	26.80	0.04	3080.0	1.09	1.09	1.09
3120.0	3.18	3.17	0.01	26.10	0.10	3120.0	1.07	1.08	1.08
3160.0	3.13	3.14	0.00	25.20	0.14	3160.0	1.06	1.08	1.07
3200.0	3.19	3.18	0.01	24.27	0.16	3200.0	1.07	1.07	1.07
3240.0	3.14	3.14	0.00	23.29	0.23	3240.0	1.08	1.07	1.06
3280.0	3.17	3.18	0.01	22.40	0.23	3280.0	1.09	1.07	1.06
3320.0	3.19	3.18	0.01	21.53	0.24	3320.0	1.12	1.07	1.06
3360.0	3.15	3.17	0.02	20.67	0.30	3360.0	1.14	1.07	1.06
3400.0	3.19	3.19	0.00	19.94	0.28	3400.0	1.17	1.07	1.06
3480.0	3.20	3.20	0.00	18.55	0.27	3480.0	1.24	1.07	1.06
3560.0	3.25	3.26	0.01	17.36	0.27	3560.0	1.30	1.09	1.08
3640.0	3.28	3.30	0.02	16.28	0.33	3640.0	1.37	1.10	1.09
3720.0	3.28	3.31	0.03	15.30	0.44	3720.0	1.44	1.12	1.11
3800.0	3.38	3.41	0.03	14.50	0.38	3800.0	1.52	1.14	1.13
3880.0	3.46	3.49	0.03	13.77	0.33	3880.0	1.61	1.16	1.15
3960.0	3.44	3.48	0.05	12.99	0.38	3960.0	1.69	1.17	1.17
4040.0	3.47	3.51	0.04	12.32	0.41	4040.0	1.77	1.19	1.18
4120.0	3.57	3.62	0.05	11.79	0.33	4120.0	1.84	1.20	1.19
4200.0	3.67	3.73	0.06	11.28	0.29	4200.0	1.92	1.21	1.21

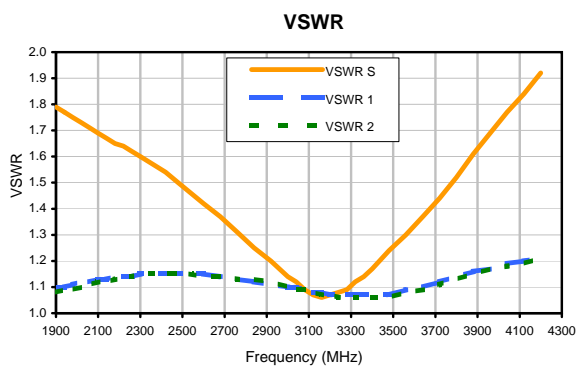
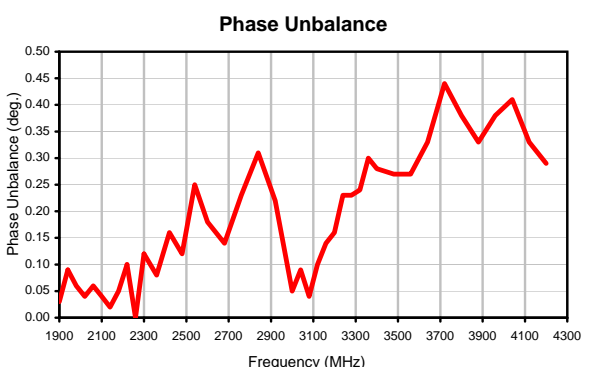
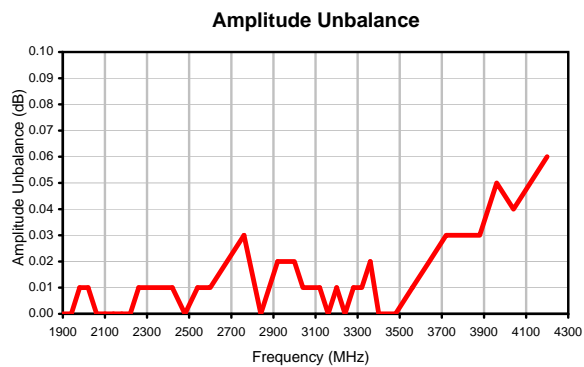
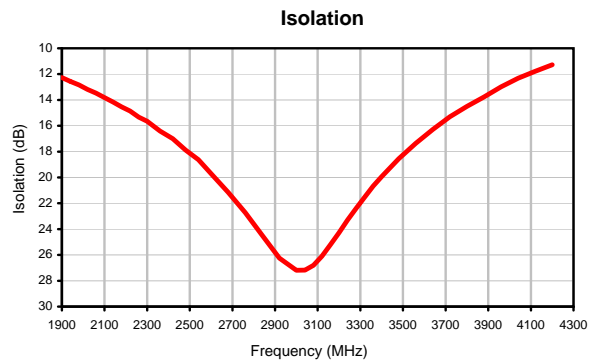
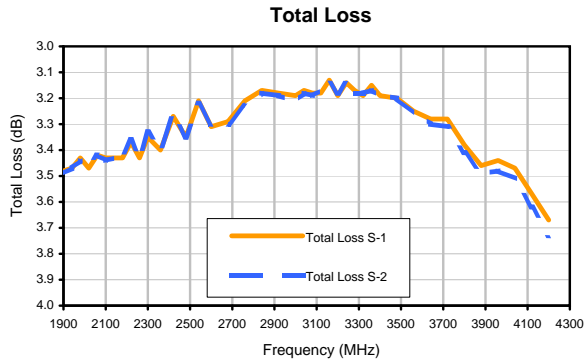
<sup>1</sup> Total Loss = Insertion Loss + 3dB Splitter Loss



# 2 Way-0° Power Splitter/Combiner

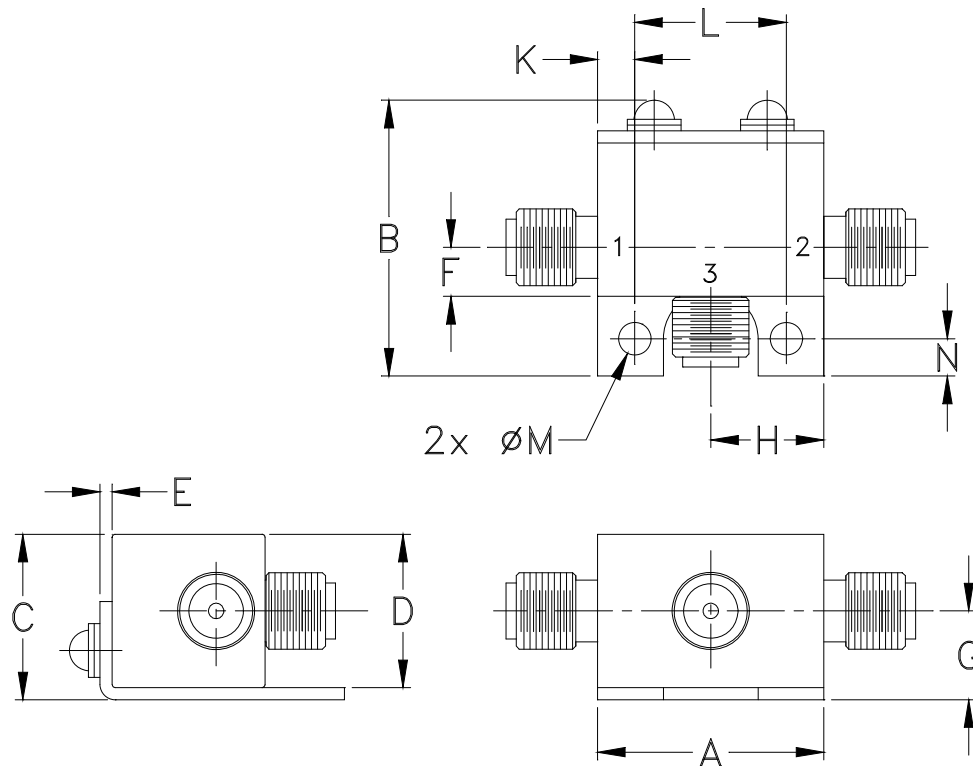
# ZX10-2-42+

## Typical Performance Curves



REV. X2  
ZX10-2-42+  
100627  
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### Outline Dimensions



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N	WT, GRAM
FL905	.74 (18.80)	.90 (22.86)	.54 (13.72)	.50 (12.70)	.04 (1.02)	.16 (4.06)	.29 (7.37)	.37 (9.40)	- -	.122 (3.10)	.496 (12.60)	.106 (2.69)	.122 (3.10)	20.0

**Dimensions are in inches (mm). Tolerances: 2Pl.  $\pm .03$ ; 3Pl.  $\pm .015$ .**

**Tolerance on hole size and interaxes dimensions to be  $\pm .005$ .**

#### Notes:

1. Case material: Brass.
2. Case finish: Nickel plate.

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<b>Specification</b>	<b>Test/Inspection Condition</b>	<b>Reference/Spec</b>
Operating Temperature	-40° to 85°C	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I