

# 14 dB Directional Coupler

## ZX30-14-972HP+

50Ω 8300 to 9700 MHz

### The Big Deal

- High Power, 20 Watt
- Low insertion loss 0.6 dB typ.
- Miniature case size 1.0 x 0.8 inch
- Pass DC current



CASE STYLE: GW1052

### Product Overview

The ZX30-14-972HP+ is a 14 dB high power directional coupler that can pass up to 50mA DC from input to output ports.

Internally, low loss dielectric material in a micro strip configuration utilizing ADS design software allow for low insertion loss, 0.6 dB. Packaged in a miniature Unibody case allows for excellent grounding and heat transfer.

### Key Features

Feature	Advantages
High Power Handling, 20W	Useful in applications for low power and high power requirements, including reliability destructive testing
Wide Frequency coverage, 8300 to 9700 MHz	Useful in many applications
Excellent insertion loss and port matching	Provides signal sampling for high power transmitters with a minimum of signal loss and disturbance
Very flat coupling	Allows for accurate monitoring of signal power level
Miniature package	Allows for compact system packaging and provides highest maximum power / volume figure-of-merit

#### Notes

- A. 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.  
B. 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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# Directional Coupler

## ZX30-14-972HP+

50Ω, 14dB Coupling, 20W 8300 to 9700 MHz

### Maximum Ratings

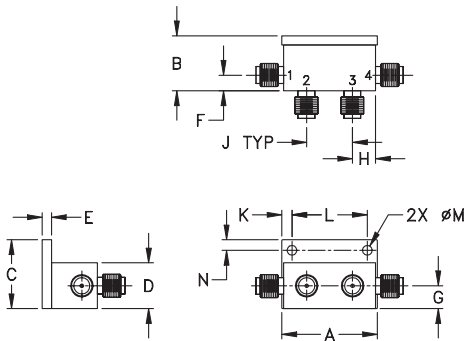
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
DC Current	500mA

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

### Coaxial Connections

INPUT	1
OUTPUT	4
COUPLED (forward)	2
50Ω TERM EXTERNAL	3

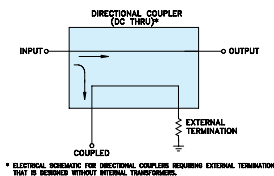
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
1.04	.60	.75	.50	.10	.17	.25
26.42	15.24	19.05	12.70	2.54	4.32	6.35
H	J	K	L	M	N	wt.
.25	.50	.11	.820	.106	.12	grams
6.35	12.70	2.79	20.83	2.69	3.05	21.0

### Electrical Schematic

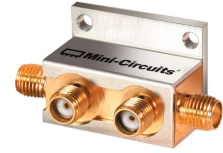


### Features

- wideband, usable from 8.3 to 9.7 GHz
- low mainline loss, 0.6 dB typ.
- high power, 20 watt.
- DC Current through input to output 500mA Max. at 10 Watt RF input power.
- protected by US patent, 6,790,049
- low cost

### Applications

- radar
- defense communications
- satellite
- lab test



CASE STYLE: GW1052

Connectors Model  
SMA ZX30-14-972HP-S+

+RoHS Compliant

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

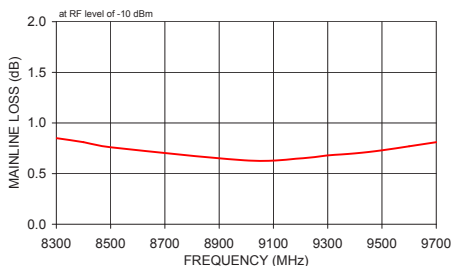
### Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
<b>Frequency Range</b>		8300	—	9700	MHz
<b>Mainline Loss</b> (above theoretical 0.18 dB)	8300-9300	—	0.67	0.9	dB
	9300-9700	—	0.84	1.2	dB
<b>Coupling</b>	8300-9300	—	14.0±1.0	—	dB
	9300-9700	—	14.8±1.0	—	dB
<b>Coupling Flatness (±)</b>	8300-9300	—	0.5	0.7	dB
	9300-9700	—	0.5	0.75	dB
<b>Directivity</b>	8300-9300	5	7	—	dB
	9300-9700	4	7	—	dB
<b>Return Loss (Input)</b>	8300-9300	11	14	—	dB
	9300-9700	8	11	—	dB
<b>Return Loss (Output)</b>	8300-9300	11	14	—	dB
	9300-9700	8	11	—	dB
<b>Return Loss (Coupling)</b>	8300-9300	—	9	—	dB
	9300-9700	—	7	—	dB
<b>Input Power</b>	8300-9700	—	—	20	W

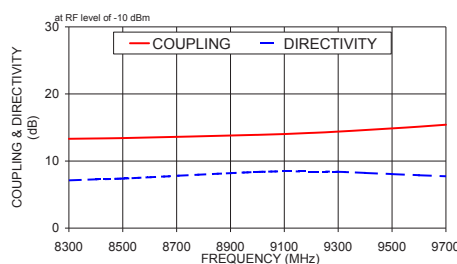
### Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
8300.00	0.85	13.32	7.12	14.56	14.49	13.77
8400.00	0.81	13.37	7.27	15.87	15.64	13.10
8500.00	0.76	13.42	7.38	17.19	17.20	12.40
9000.00	0.63	13.90	8.37	32.10	30.58	9.68
9200.00	0.65	14.20	8.43	22.54	22.26	8.85
9300.00	0.68	14.39	8.40	19.84	19.66	8.53
9400.00	0.70	14.62	8.23	18.17	17.90	8.20
9500.00	0.73	14.86	8.06	16.68	16.43	7.92
9600.00	0.77	15.12	7.88	15.37	15.28	7.61
9700.00	0.81	15.41	7.73	14.32	14.31	7.35

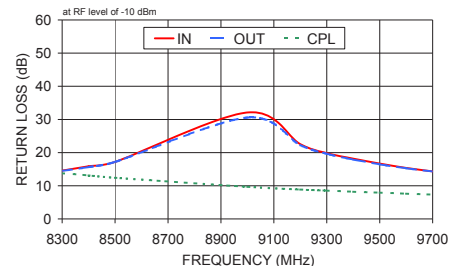
ZX30-14-972HP+ MAINLINE LOSS



ZX30-14-972HP+ COUPLING & DIRECTIVITY



ZX30-14-972HP+ RETURN LOSS



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