

# 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.  
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



DC Pass

# Directional Coupler

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

ZX30-14-972HP+



CASE STYLE: GW1052

Connectors	Model	Price	Qty.
SMA	ZX30-14-972HP+	\$34.95	(1-9)

**+RoHS Compliant**

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

## 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

## 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

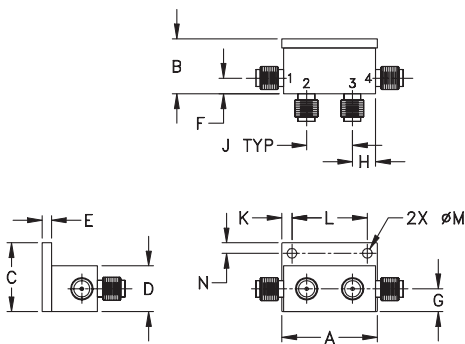
## Applications

- radar
- defense communications
- satellite
- lab test

## 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 9300-9700	—	0.67 0.84	0.9 1.2	dB
<b>Coupling</b>	8300-9300 9300-9700	—	14.0±1.0 14.8±1.0	—	dB
<b>Coupling Flatness (±)</b>	8300-9300 9300-9700	—	0.5 0.5	0.7 0.75	dB
<b>Directivity</b>	8300-9300 9300-9700	5 4	7 7	—	dB
<b>Return Loss (Input)</b>	8300-9300 9300-9700	11 8	14 11	—	dB
<b>Return Loss (Output)</b>	8300-9300 9300-9700	11 8	14 11	—	dB
<b>Return Loss (Coupling)</b>	8300-9300 9300-9700	—	9 7	—	dB
<b>Input Power</b>	8300-9700	—	—	20	W

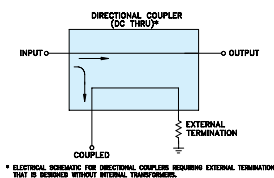
## Outline Drawing



## 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

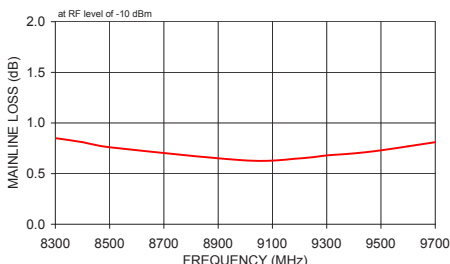
## Electrical Schematic



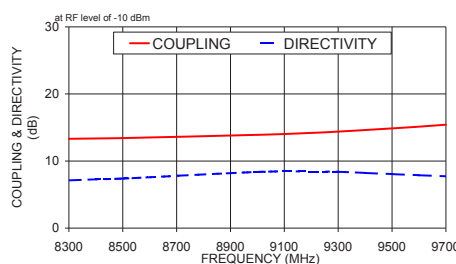
## Typical Performance Data

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

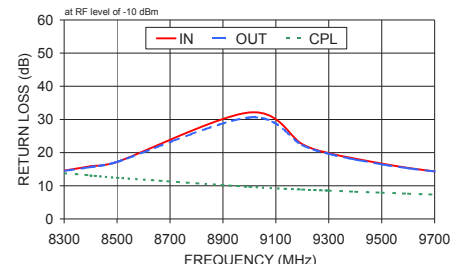
ZX30-14-972HP+  
MAINLINE LOSS



ZX30-14-972HP+  
COUPLING & DIRECTIVITY



ZX30-14-972HP+  
RETURN LOSS



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