

# Coaxial I&Q Modulator

# NON-CATALOG

## MIQC-88M+

50Ω

52 to 88 MHz

### Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
LO Power	50mW
I&Q Current	40mA

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

### Pin Connections

LO (carrier)	13
RF (signal)	1
I (0°)(ref.)	8
Q (90°)*	5
GROUND	2,3,4,6,7,9,10,11,12,14,15,16
CASE GROUND	2,3,4,6,7,9,10,11,12,14,15,16

\* Q = I + 90° for lower sideband suppression

### Features

- hermetically sealed metal case
- excellent 3rd and 5th order harmonic suppressions
- good carrier and sideband rejection

### Applications

- radar and communication system
- military, hi-rel applications

### Modulator Electrical Specifications

MODEL NO.	FREQUENCY (MHz)				CONVERSION LOSS (dB)			CARRIER REJECTION (-dBc)		SIDE BAND REJECTION (-dBc)		HARMONIC SUPPRESSION (-dBc)			
	RF (SIGNAL/ LO (CARRIER))		I&Q									3XI/Q		5XI/Q	
	fL	fU	Min.	Max.	$\bar{x}$	$\sigma$	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.
MIQC-88M+	52	88	DC	5	5.7	0.10	7.5	41	35	34	30	52	40	66	50

Operating LO power: 10±1dBm  
1dB Compression: 0dBm typical  
Conversion Loss: (I + Q) power, dBm - RF power, dBm  
Carrier and sideband rejections measured at -5dBm I/Q power.

### Typical Performance Data

Carrier Freq. (MHz)	Conversion Loss		Sideband Rejection(x)		Carrier Rejection(x)		3rd. Harmonic Suppression (x)		5th. Harmonic Suppression (x)		DC Offset (x) (mV)
	$\bar{x}$ (dB)	$\sigma$ (dB)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	
52.00	5.69	0.02	42.86	39.69	44.15	44.21	50.41	58.95	77.85	66.29	-0.10
54.70	5.69	0.03	41.30	38.12	43.80	43.74	50.66	59.53	76.40	65.83	-0.10
57.40	5.69	0.03	39.19	36.53	43.49	43.35	50.60	59.64	75.26	65.54	-0.09
59.20	5.69	0.03	37.98	35.67	43.26	43.28	50.57	59.53	74.57	65.23	-0.09
60.10	5.69	0.03	37.56	35.29	43.06	43.04	50.56	59.19	74.22	65.09	-0.09
62.80	5.69	0.03	36.43	34.51	42.85	42.71	50.32	59.20	73.56	64.62	-0.09
65.50	5.70	0.03	35.96	33.92	42.53	42.59	50.00	58.97	72.38	64.13	-0.09
67.30	5.71	0.03	35.66	33.67	42.39	42.38	49.89	58.76	72.39	64.00	-0.08
68.20	5.71	0.03	35.53	33.66	42.24	42.26	49.73	58.45	72.11	63.79	-0.08
70.90	5.72	0.03	35.54	33.66	41.98	42.01	49.49	57.70	71.65	63.68	-0.08
73.60	5.70	0.03	35.91	33.98	41.52	41.53	49.28	56.96	71.88	63.48	-0.07
75.40	5.69	0.03	36.14	34.00	41.37	41.34	49.27	56.68	71.35	63.24	-0.07
76.30	5.69	0.03	36.16	34.06	41.27	41.25	49.32	56.64	71.22	63.20	-0.07
79.00	5.71	0.03	35.95	34.02	41.12	41.10	49.29	56.42	70.83	62.88	-0.08
81.70	5.72	0.03	36.05	34.11	40.95	40.92	49.23	56.37	70.21	62.83	-0.08
83.50	5.72	0.03	36.14	34.25	40.81	40.82	49.00	56.26	70.28	62.68	-0.08
84.40	5.73	0.03	36.34	34.38	40.78	40.77	48.99	56.14	69.77	62.76	-0.08
86.20	5.74	0.03	36.84	34.71	40.75	40.69	48.73	55.97	69.85	62.71	-0.09
87.10	5.74	0.03	36.99	34.87	40.69	40.67	48.44	55.69	69.56	62.69	-0.09
88.00	5.75	0.03	37.34	35.01	40.64	40.65	48.44	55.49	69.84	62.83	-0.08

### Outline Drawing

