



MMIC SURFACE MOUNT

IQ Mixer

SMIQ-6243H+

50Ω Level 18 (LO Power +18dBm) 6 to 24 GHz

THE BIG DEAL

- Wideband RF & LO, 6 to 24 GHz
- Wideband IF, DC to 6 GHz
- Excellent Image Rejection, Typ. 32dB
- High LO-RF Isolation, Typ. 41 dB
- High Input IP3, Typ. +25 dBm
- Usable as Image Reject Mixer & SSB Converter
- 4x4 mm, 24-Lead QFN- Style Package

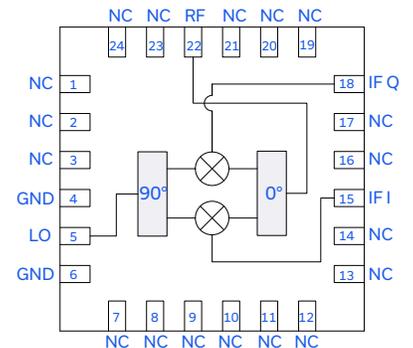


Generic photo used for illustration purposes only

APPLICATIONS

- Test and Measurement Equipment
- 5G mmWave and Back Haul Radio
- Satellite Communications
- Radar, EW and ECM Defense Systems

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

The SMIQ-6243H+ is a passive, wideband in phase/quadrature (I/Q) mixer fabricated using GaAs HBT technology. The SMIQ-6243H+ is usable as a single-sideband upconverter for transmit applications or an image rejection mixer for receiver applications. The SMIQ-6243H+ is ideal for wideband frequency translation applications that require inherent rejection of image signals and spurious mixing products. The mixer covers a wide frequency range with RF and LO frequency range of 6 to 24 GHz and an IF frequency range of DC to 6 GHz. As a passive mixer, the SMIQ-6243H+ offers lower noise figure than active mixers ensuring superior dynamic range for high performance applications. The mixer is housed in a compact 4x4 mm QFN style package and no DC bias is needed for operation.

KEY FEATURES

Feature	Advantages
High Image Rejection, 32 dB typical	Provides inherent rejection of unwanted image signals without the need to external filtering
High LO-RF Isolation, 41 dB typical	Enables excellent carrier rejection in single-sideband operation upconvert transmit applications
High LO-IF Isolation, 43 dB typical	Minimizes filtering requirements needed to ensure signal integrity
Wide Bandwidth, 6 to 24 GHz	Useful in wideband systems or in several narrowband systems requiring fewer components
Wide IF Bandwidth, DC to 6 GHz	Useable for first and second down converter applications. IF as low as DC enables use in phase detector applications.
Small size, 4x4 MCLP package.	Tiny footprint saves space in dense layouts while providing low inductance, repeatable transitions, and excellent thermal contact to the PCB.

**ELECTRICAL SPECIFICATIONS¹ AT 25°C, Zo=50Ω, LO POWER = +18 dBm, UNLESS OTHERWISE NOTED.**

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Unit
RF Frequency Range		6		24	GHz
LO Frequency Range		6		24	GHz
IF Frequency Range		DC		6	GHz
LO Power		+17	+18	+20	dBm
Conversion Loss ²	6 - 20		8.3	10.7	dB
	20 - 24		9.8	11.6	
Amplitude Unbalance	6 - 20		±0.1	±1.6	dB
	20 - 24		±0.1	±0.7	
Phase Unbalance (Relative to 90°)	6 - 20		4	13	deg
	20 - 24		2	6	
Image Rejection ³ (Tested as a Downconverter)	6 - 20		30		dBc
	20 - 24		37		
Single Sideband Rejection ⁴ (Tested as an Upconverter)	6 - 20		31		dBc
	20 - 24		29		
LO-RF Isolation	6 - 20	34	42		dB
	20 - 24	30	37		
LO-I Isolation	6 - 20	30	47		dB
	20 - 24	22	31		
LO-Q Isolation	6 - 20	32	45		dB
	20 - 24	24	33		
RF-I Isolation	6 - 20	17	37		dB
	20 - 24	23	40		
RF-Q Isolation	6 - 20	18	41		dB
	20 - 24	24	43		
Input Power at 1dB Compression	6 - 24		+10		dBm
Input IP3 (I) Lower Side Band	6 - 20		+20		dBm
	20 - 24		+25		
Input IP3 (Q) Lower Side Band	6 - 20		+20		dBm
	20 - 24		+25		
Input IP3 (I) Upper Side Band	6 - 20		+20		dBm
	20 - 24		+25		
Input IP3 (Q) Upper Side Band	6 - 20		+20		dBm
	20 - 24		+25		

1. Measured on Mini-Circuits Characterization/Evaluation Test Board TB-SMIQ-6243HC+. See Figures 2, 3, & 4. Board loss de-embedded to the device. Unless otherwise specified, IF = 200 MHz

2. Conversion loss (dB) = RF Power (dBm) minus worse of I/Q Port Power (dBm) minus 3dB theoretical loss of an Ideal External Hybrid, measured as a Down Converter. See measurement block diagram Figure 2.

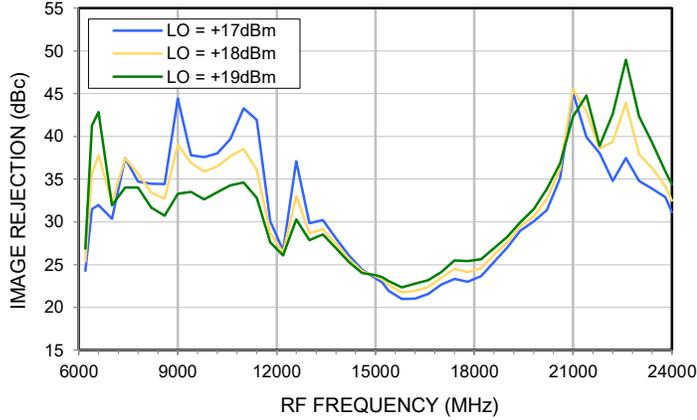
3. Level of undesired image signal below desired RF signal. See measurement block diagram Figure 3.

4. Level of undesired sideband below desired sideband. See measurement Block Diagram Figure 3.

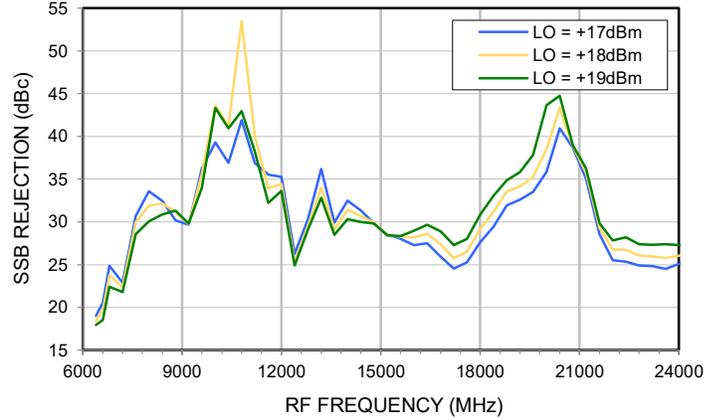


TYPICAL PERFORMANCE GRAPHS

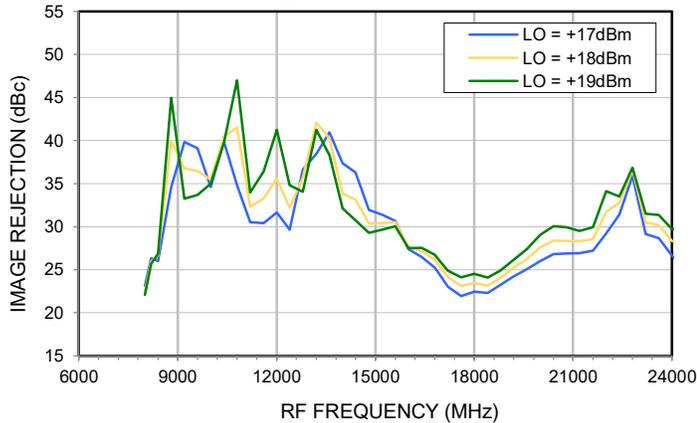
**IMAGE REJECTION (DOWNCONVERTER)
@ IF = 200 MHz**



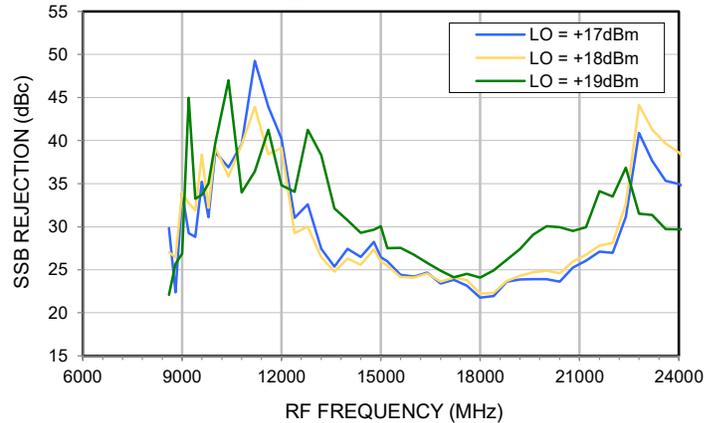
**SSB REJECTION (UPCONVERTER)
@ IF = 200 MHz**



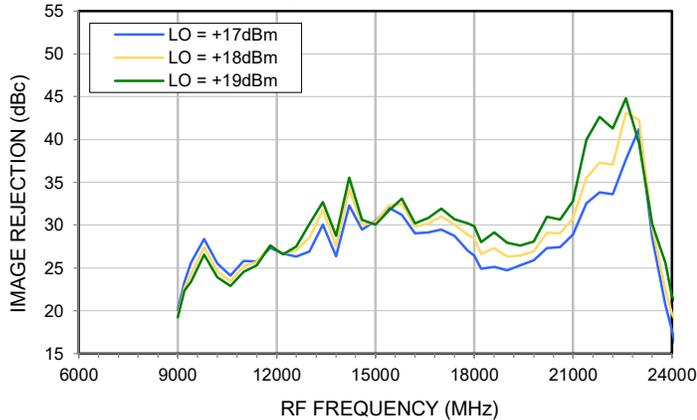
**IMAGE REJECTION (DOWNCONVERTER)
@ IF = 2000 MHz**



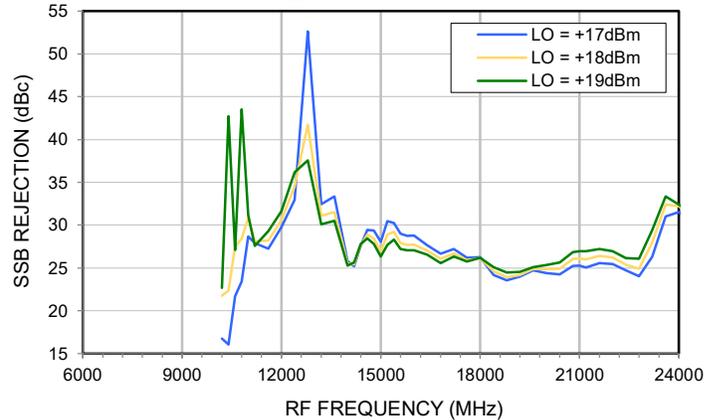
**SSB REJECTION (UPCONVERTER)
@ IF = 2000 MHz**



**IMAGE REJECTION (DOWNCONVERTER)
@ IF = 3000 MHz**

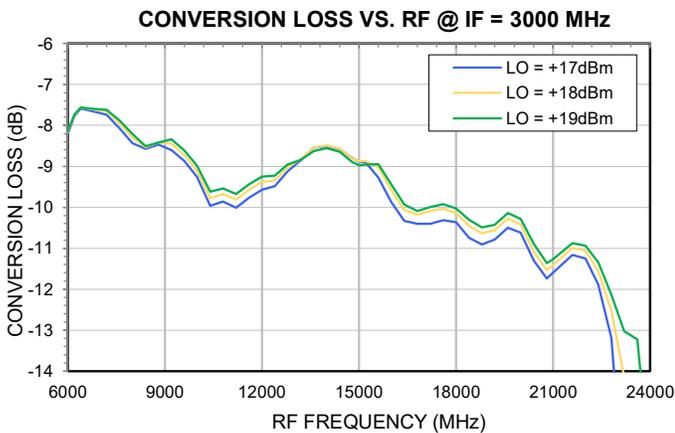
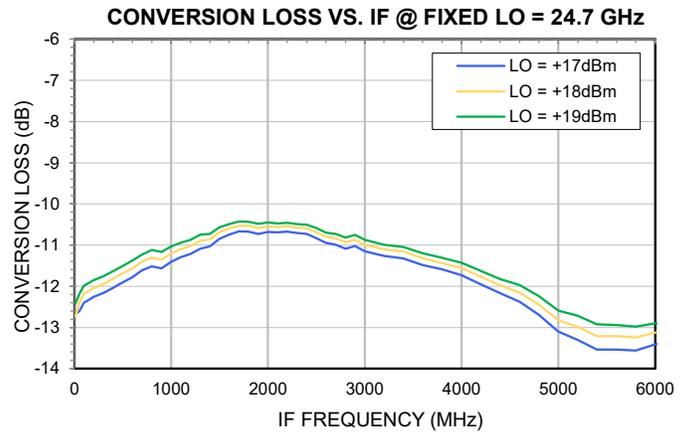
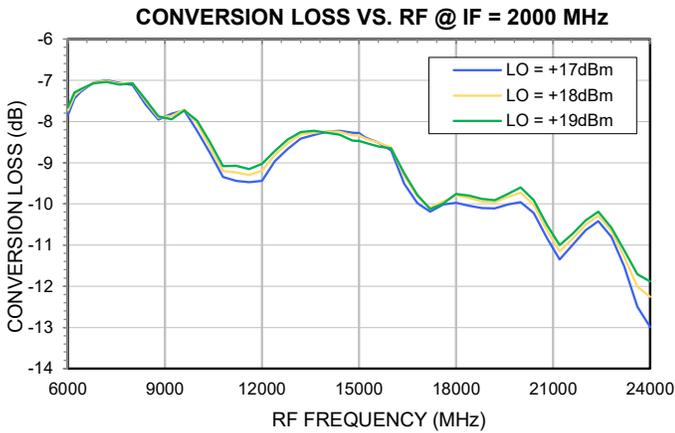
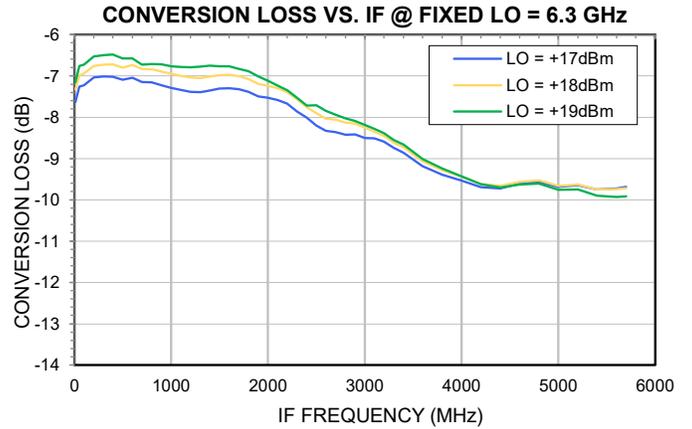
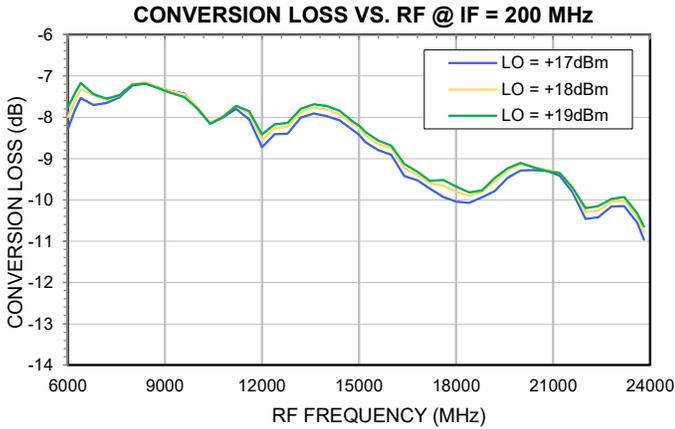


**SSB REJECTION (UPCONVERTER)
@ IF = 3000 MHz**





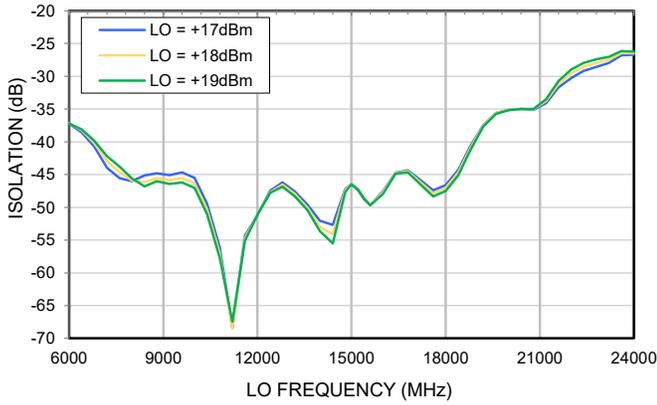
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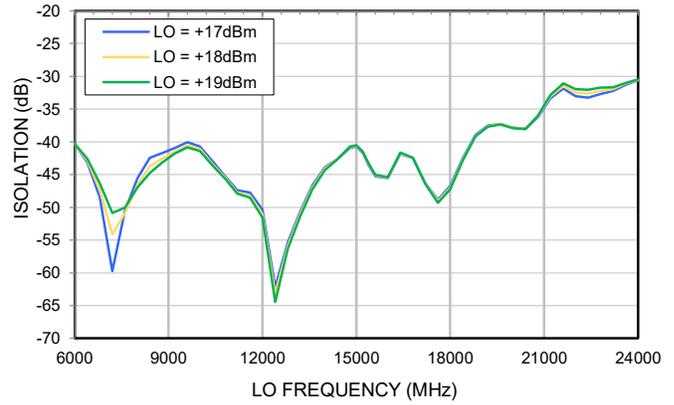


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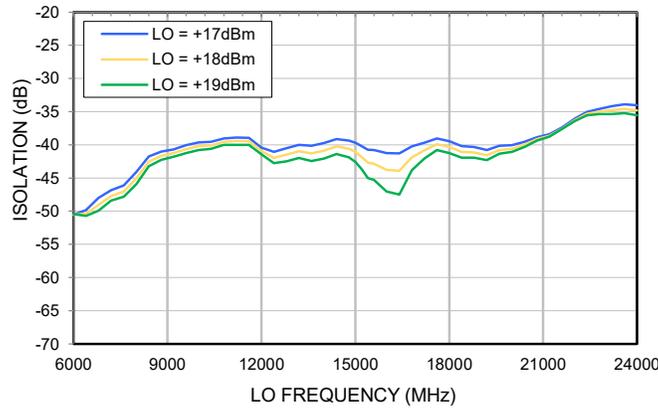
LO-I ISOLATION



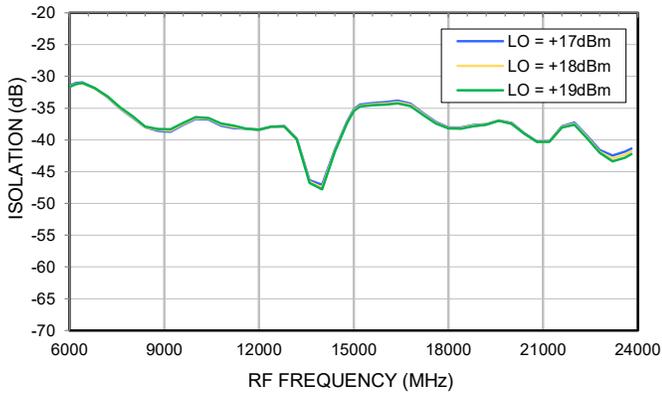
LO-Q ISOLATION



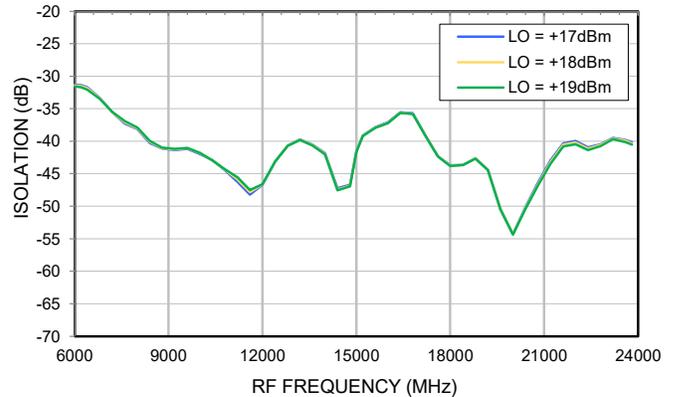
LO-RF ISOLATION



RF-I ISOLATION

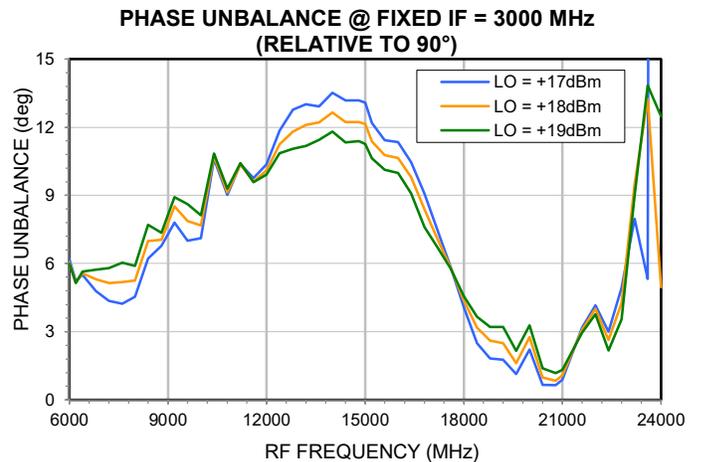
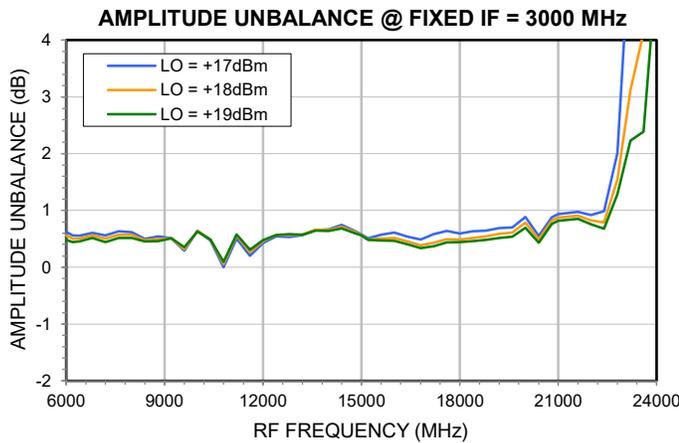
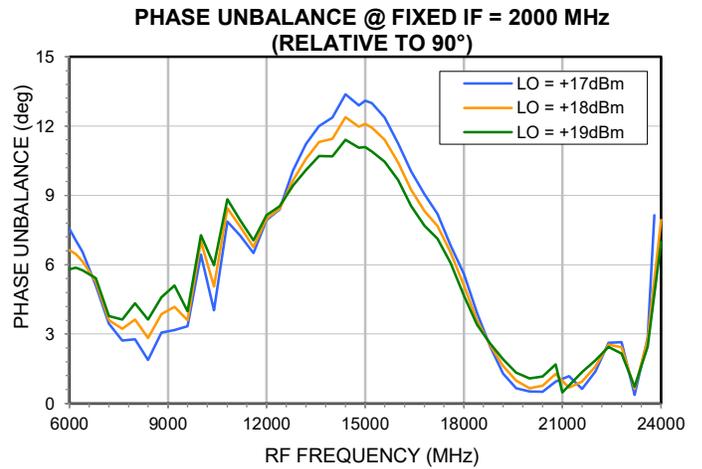
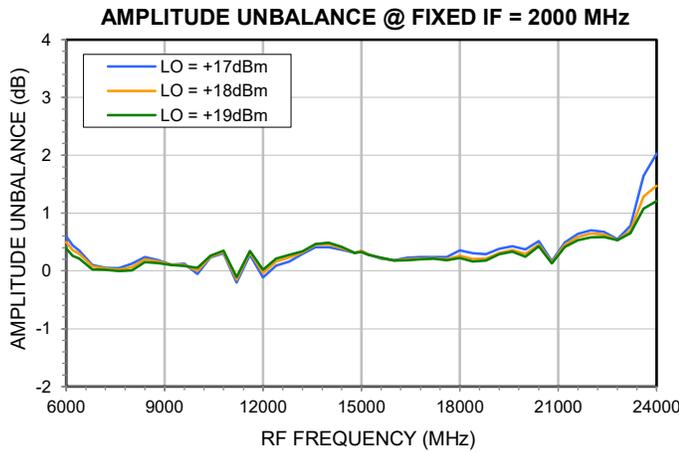
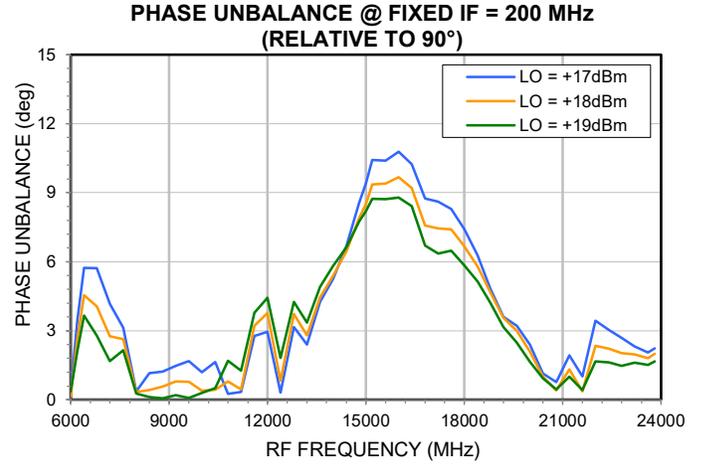
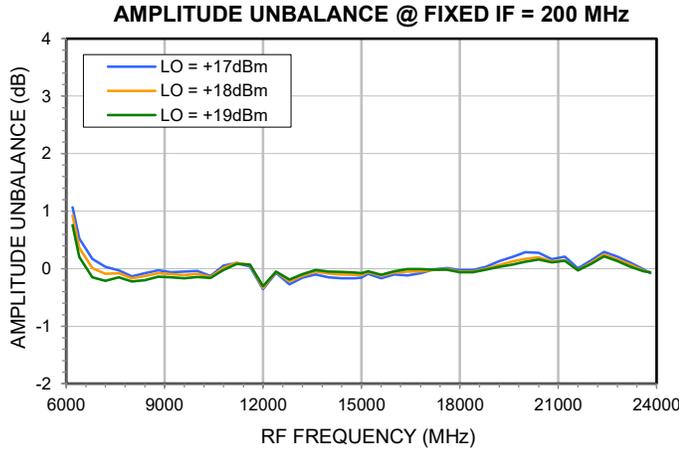


RF-Q ISOLATION





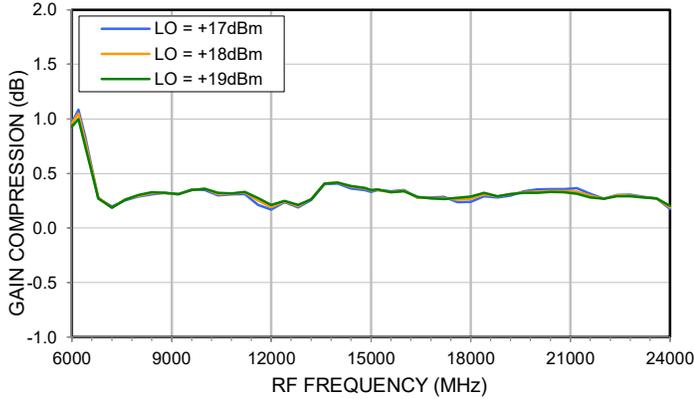
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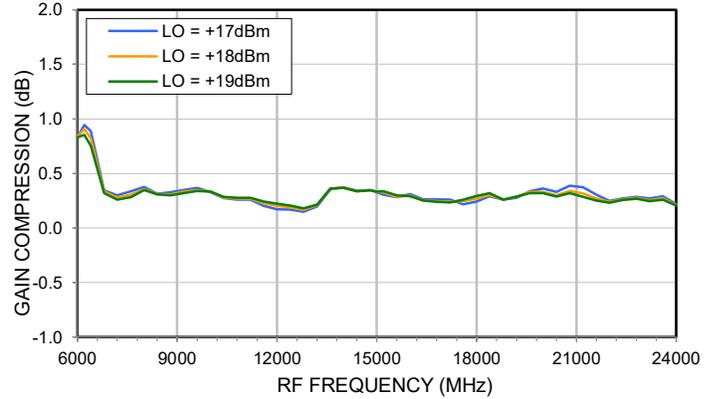


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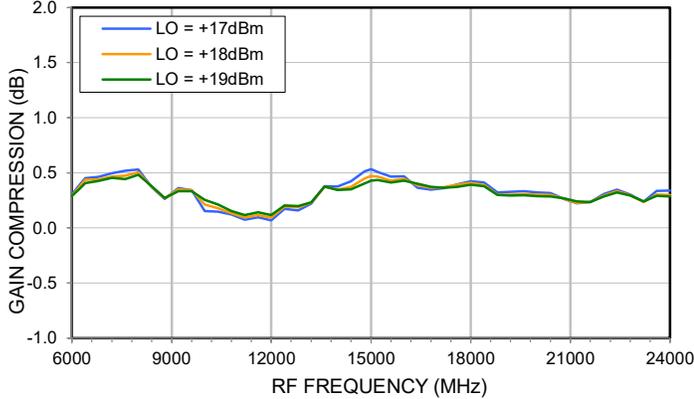
GAIN COMPRESSION (I) @ FIXED IF = 200 MHz
RF INPUT POWER = +10dBm



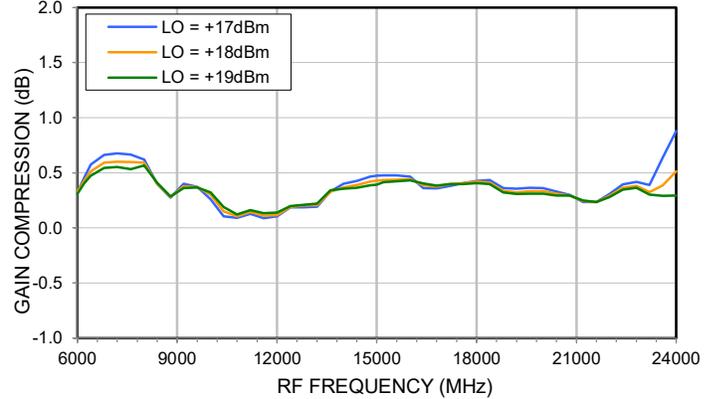
GAIN COMPRESSION (Q) @ FIXED IF = 200 MHz
RF INPUT POWER = +10dBm



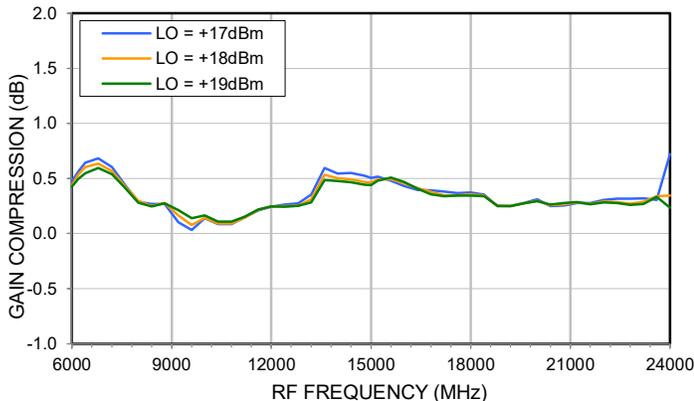
GAIN COMPRESSION (I) @ FIXED IF = 2000 MHz
RF INPUT POWER = +10dBm



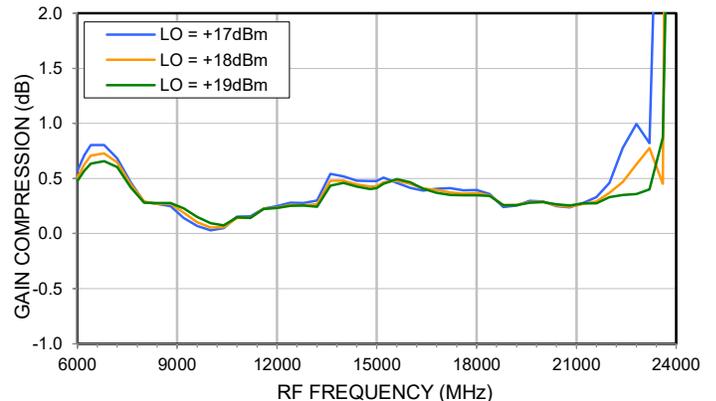
GAIN COMPRESSION (Q) @ FIXED IF = 2000 MHz
RF INPUT POWER = +10dBm



GAIN COMPRESSION (I) @ FIXED IF = 3000 MHz
RF INPUT POWER = +10dBm



GAIN COMPRESSION (Q) @ FIXED IF = 3000 MHz
RF INPUT POWER = +10dBm

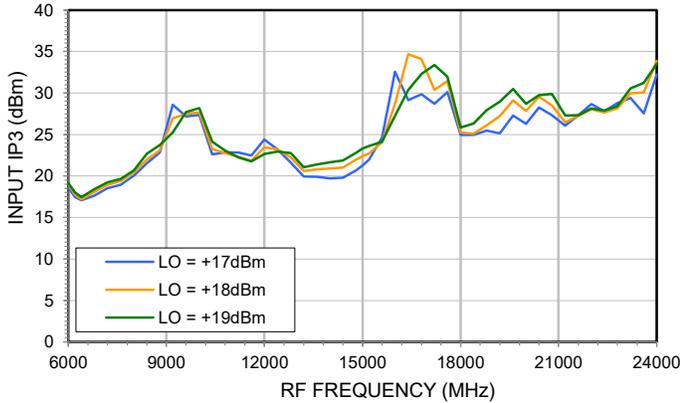




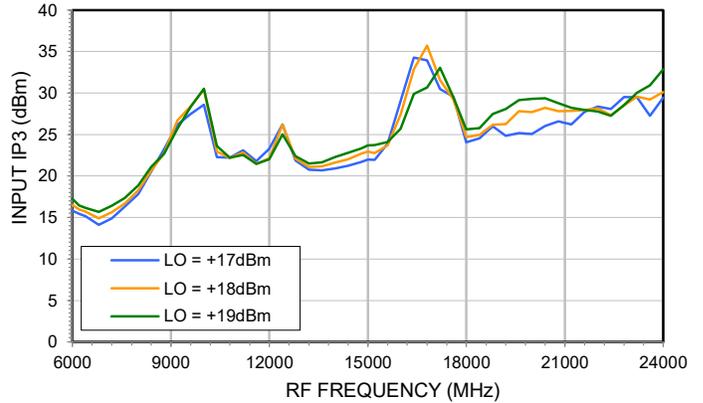
TYPICAL PERFORMANCE GRAPHS

$P_{IN} = -10$ dBm/Tone with 1 MHz spacing (RF2 = RF1 + 1 MHz)

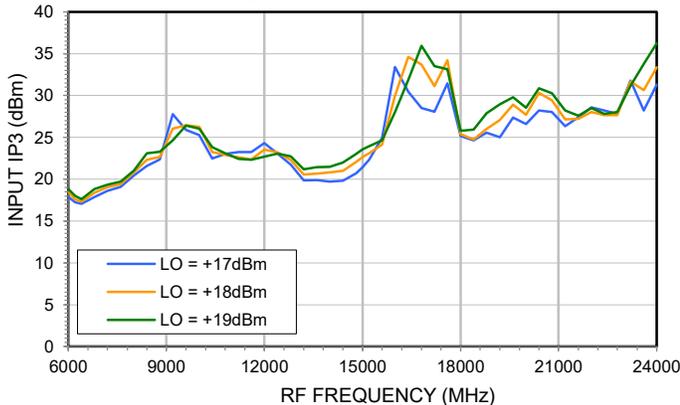
INPUT IP3 LOWER SIDE BAND (I)
@ FIXED IF = 200 MHz



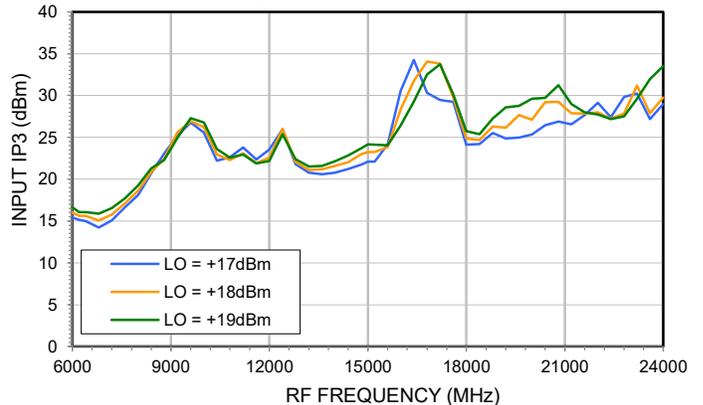
INPUT IP3 LOWER SIDE BAND (Q)
@ FIXED IF = 200 MHz



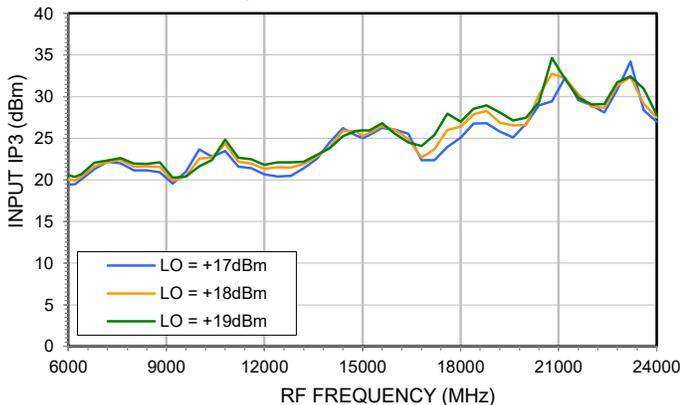
INPUT IP3 UPPER SIDE BAND (I)
@ FIXED IF = 200 MHz



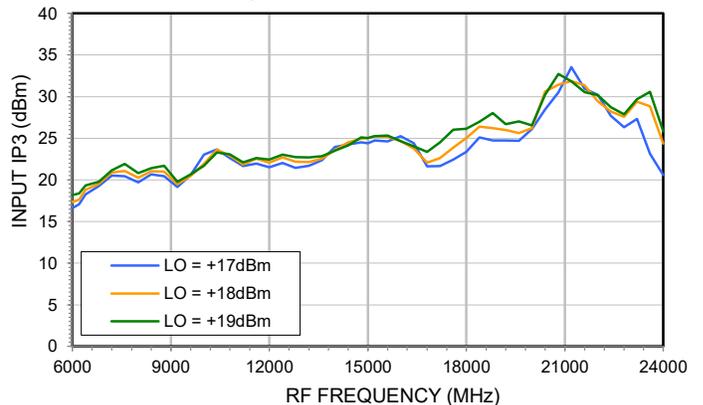
Input IP3 UPPER SIDE BAND (Q)
@ FIXED IF = 200 MHz



INPUT IP3 LOWER SIDE BAND (I)
@ FIXED IF = 2000 MHz



INPUT IP3 LOWER SIDE BAND (Q)
@ FIXED IF = 2000 MHz

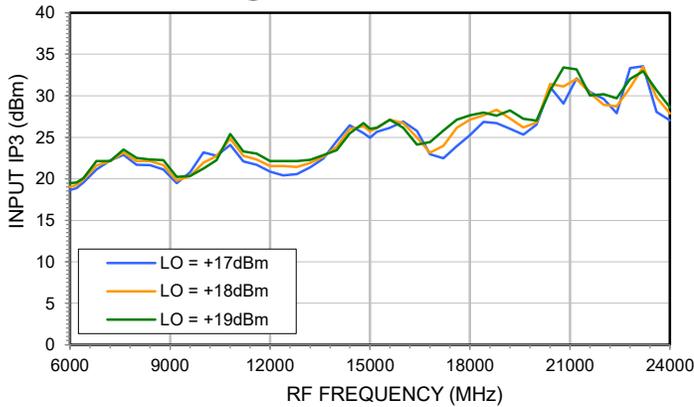




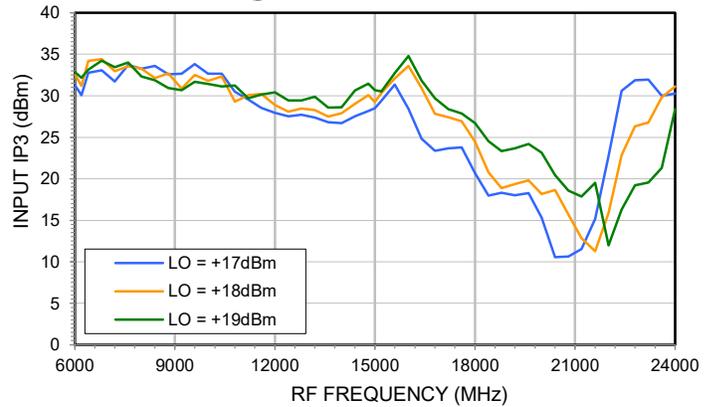
TYPICAL PERFORMANCE GRAPHS

$P_{IN} = -10$ dBm/Tone with 1 MHz spacing (RF2 = RF1 + 1 MHz)

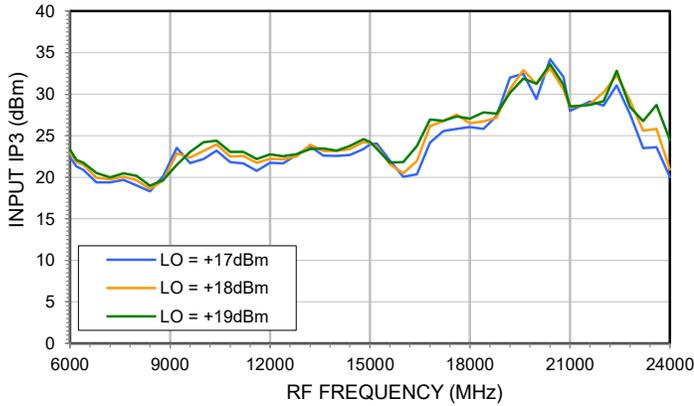
**INPUT IP3 UPPER SIDE BAND (I)
@ FIXED IF = 2000 MHz**



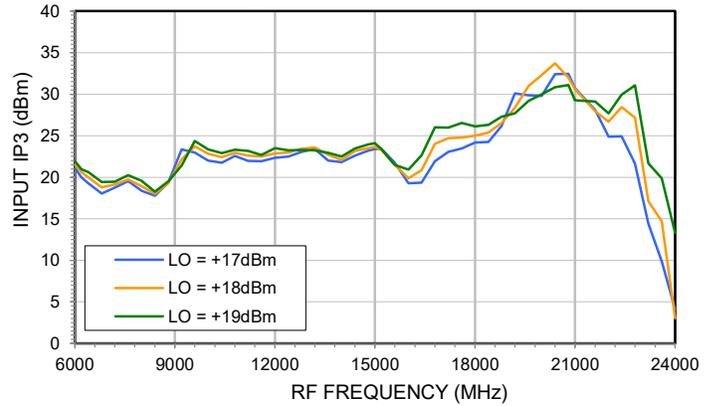
**INPUT IP3 UPPER SIDE BAND (Q)
@ FIXED IF = 2000 MHz**



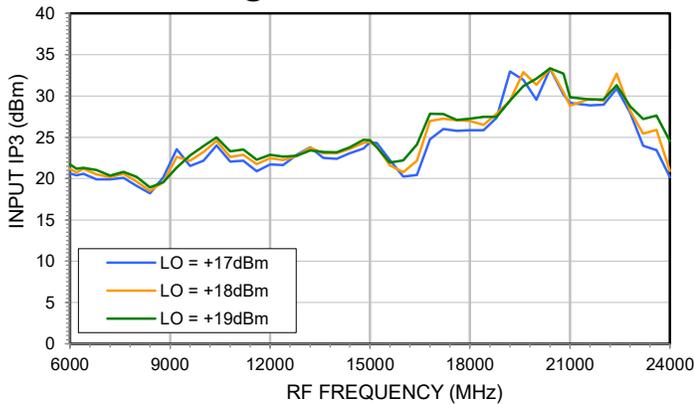
**INPUT IP3 LOWER SIDE BAND (I)
@ FIXED IF = 3000 MHz**



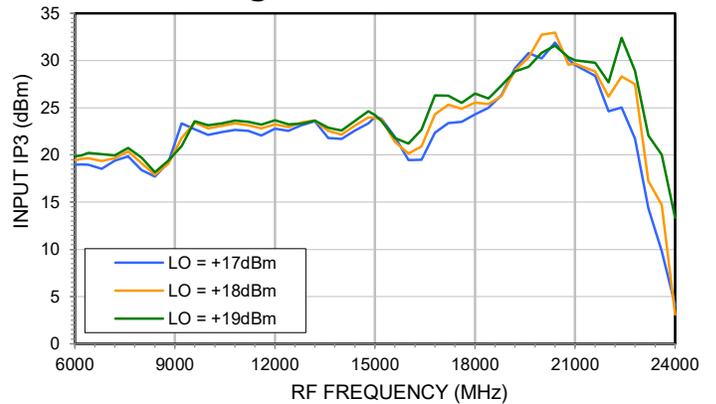
**INPUT IP3 LOWER SIDE BAND (Q)
@ FIXED IF = 3000 MHz**



**INPUT IP3 UPPER SIDE BAND (I)
@ FIXED IF = 3000 MHz**



**INPUT IP3 LOWER SIDE BAND (Q)
@ FIXED IF = 3000 MHz**





ABSOLUTE MAXIMUM RATINGS⁵

Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-65°C to 150°C
Maximum Junction Temperature	175 °C
RF Power	+25 dBm
LO Power	+25 dBm
IF Current	16 mA

5. Permanent damage may occur if any of these limits are exceeded. Electrical maximum ratings are not intended for continuous normal

ESD RATING

	Class	Voltage Range	Reference Standard
HBM	1A	250 to <500V	ANSI/ESDA/JEDEC JS-001-2017
CDM	C4	500 to <1000V	JESD22-C101F



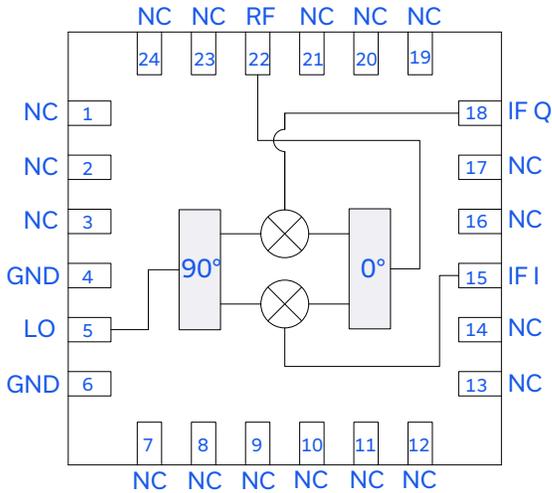
ESD HANDLING PRECAUTION: This device is designed to be Class 1A for HBM. Static charges may easily produce potentials higher than this with improper handling and can discharge into DUT and damage it. As a preventive measure Industry standard ESD handling precautions should be used at all times to protect the device from ESD damage.

MSL RATING

Moisture Sensitivity: MSL1 in accordance with IPC/JEDEC J-STD-020E /JEDEC J-STD-033C.



FUNCTIONAL DIAGRAM

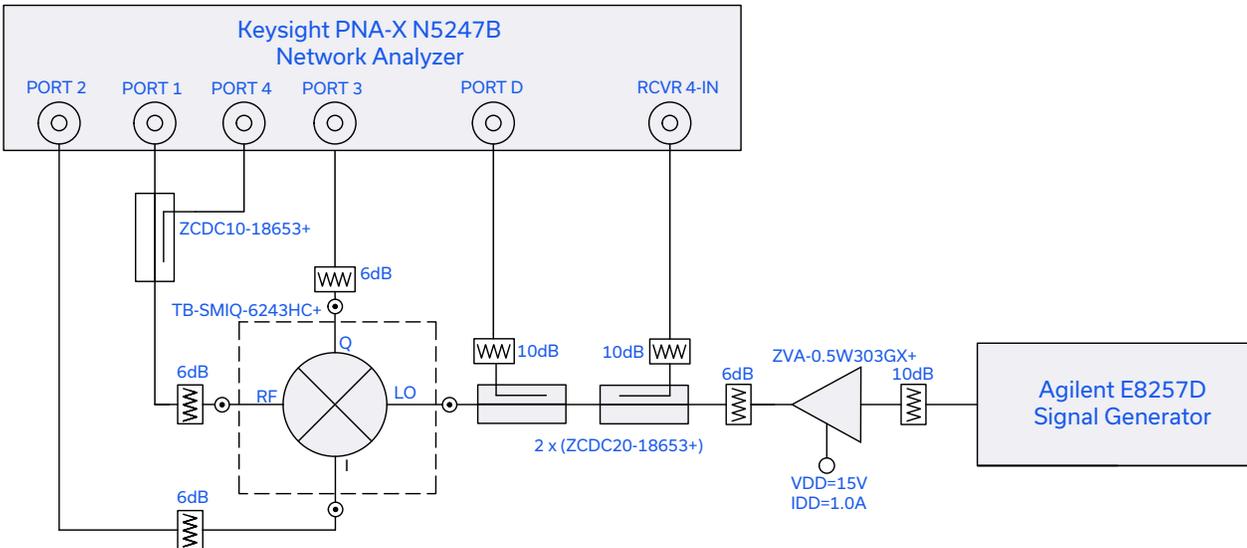


PAD CONNECTIONS

Function	Pad #	Description
RF	22	RF Port. Connects to RF Output for Up converters or RF Input for Down converters.
LO	5	LO Port. Connects to LO Input.
IF I	15	IF I Port. Connects to the IF I Input for Up converters or IF I Output for Down converters.
IF Q	18	IF Q Port. Connects to the IF Q Input for Up converters or IF Q Output for Down converters.
GND	4, 6, Paddle	Connects to bottom ground.
NC	1-3, 7-14, 16-17, 19-21, 23-24	No connection

Figure 1. SMIQ-6243H+ Functional Diagram

CHARACTERIZATION TEST CIRCUITS



10 dB attenuators P/N BW-E10-1W653+
 6 dB attenuators P/N BW-E6-1W653+

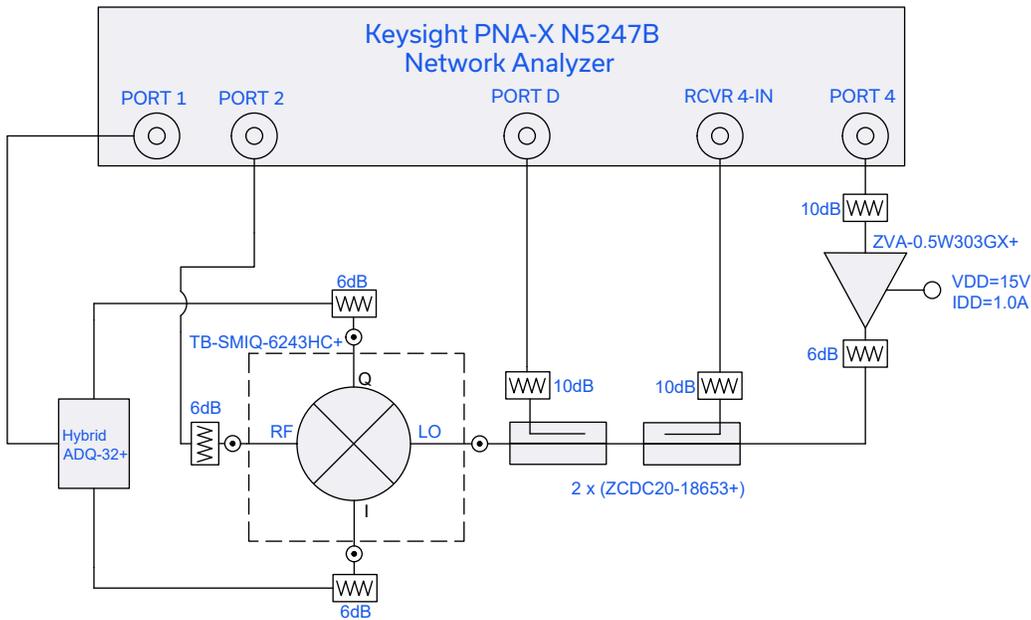
Figure 2. Block diagram of test circuit used to characterize: Conversion Loss, Amplitude Unbalance, Phase Unbalance, Isolation, Return Loss, and Input IP3

Test conditions:

For Conversion Loss, Return Loss and Isolation

RF Input Power = -10 dBm, LO Input Power = +17 to +19 dBm, IF = 200 MHz, 2 GHz, and 3 GHz

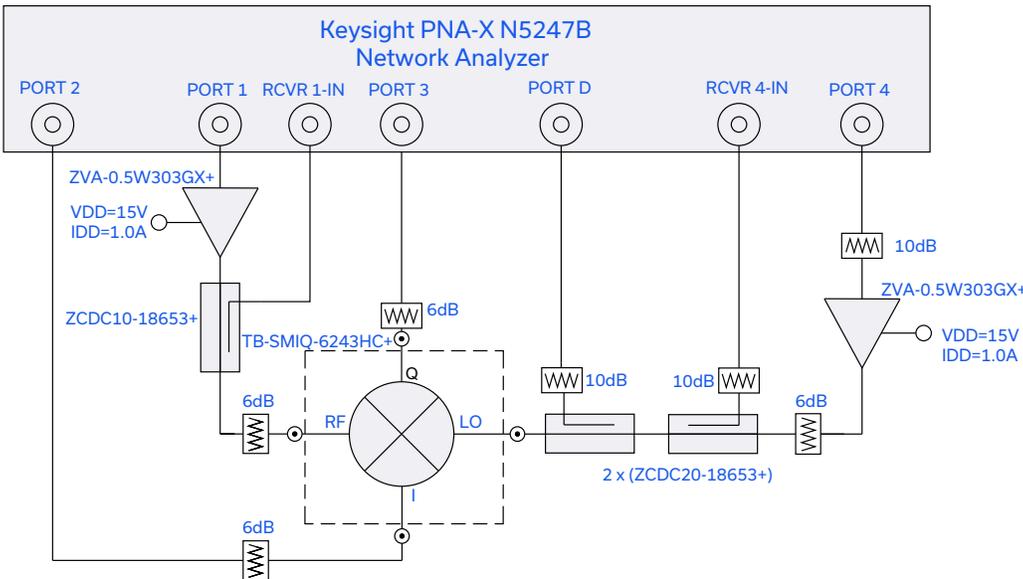
For Input IP3: RF Input Power = -10 dBm/Tone, LO Input Power = +17 to +19 dBm. Two tones, spaced 1 MHz apart



10 dB attenuators P/N BW-E10-1W653+
 6 dB attenuators P/N BW-E6-1W653+

Figure 3. Block diagram of Test Circuit used for characterization of Image Rejection and Single Side Band Rejection

Test conditions:
 RF Input Power = -10 dBm, LO Input Power = +17 to +19 dBm, IF = 200 MHz, 2 GHz, and 3 GHz



10 dB attenuators P/N BW-E10-1W653+
 6 dB attenuators P/N BW-E6-1W653+

Figure 4. Block diagram of test circuit used to characterize: Compression

Test conditions:
 RF Input Power = -10 dBm and +10 dBm, LO Input Power = +17 to +19 dBm, IF = 200 MHz, 2 GHz, and 3 GHz
 Compression = (Conversion Loss @ RF Power = +10 dBm) - (Conversion Loss @ RF Power = -10 dBm)



APPLICATION CONFIGURATION FOR IMAGE REJECT AND SINGLE SIDE BAND MIXER

In Image Reject or Single Sideband Upconverter applications an external 90° Hybrid is needed. Refer to Mini-Circuits extensive portofolio of 90° Hybrids.

IMAGE REJECT MIXER APPLICATION

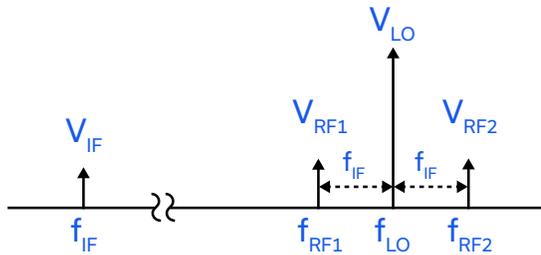


Figure 5. Spectral representation of Signals

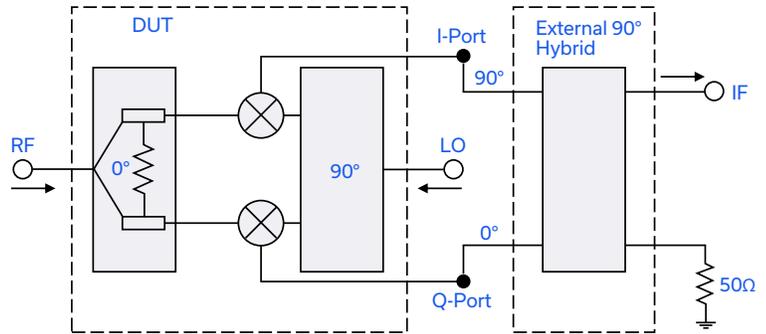


Figure 6. Block Diagram of Image Reject Mixer

If f_{RF1} is the desired signal and f_{RF2} is the image, connect the I port of DUT to the 90° port of the external hybrid and the Q port to the 0° port of the hybrid. This will send the $f_{RF2}-f_{LO}$ IF signal to the terminated output of the external 90° hybrid and desired IF signal $f_{LO}-f_{RF1}$ to IF port.

If f_{RF2} is the desired signal and f_{RF1} is the image signal, connect the I port of DUT to the 0 deg port of the external 90° hybrid and the Q port to the 90° port of the external hybrid. This will send $f_{LO}-f_{RF1}$ IF signal to the terminated output of the external 90° hybrid and desired IF signal $f_{RF2}-f_{LO}$ to IF port.

SINGLE SIDE BAND (SSB) UPCONVERTER APPLICATION

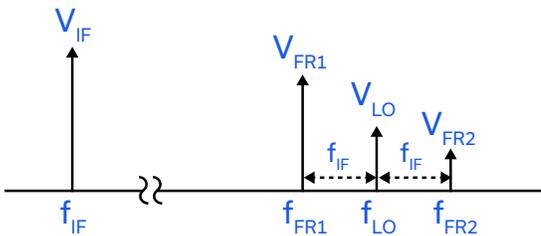


Figure 7. Spectral representation of Signals

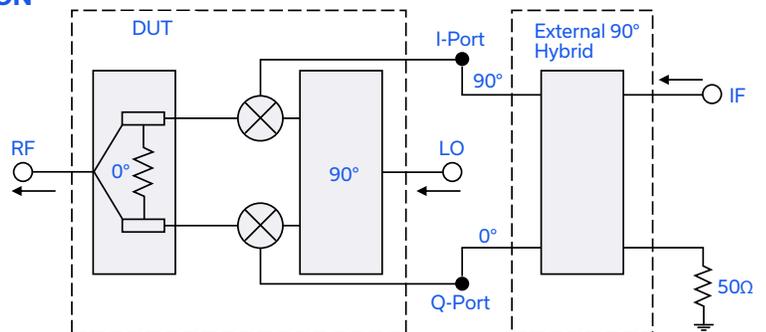


Figure 8. Block Diagram of Single Side Band Mixer

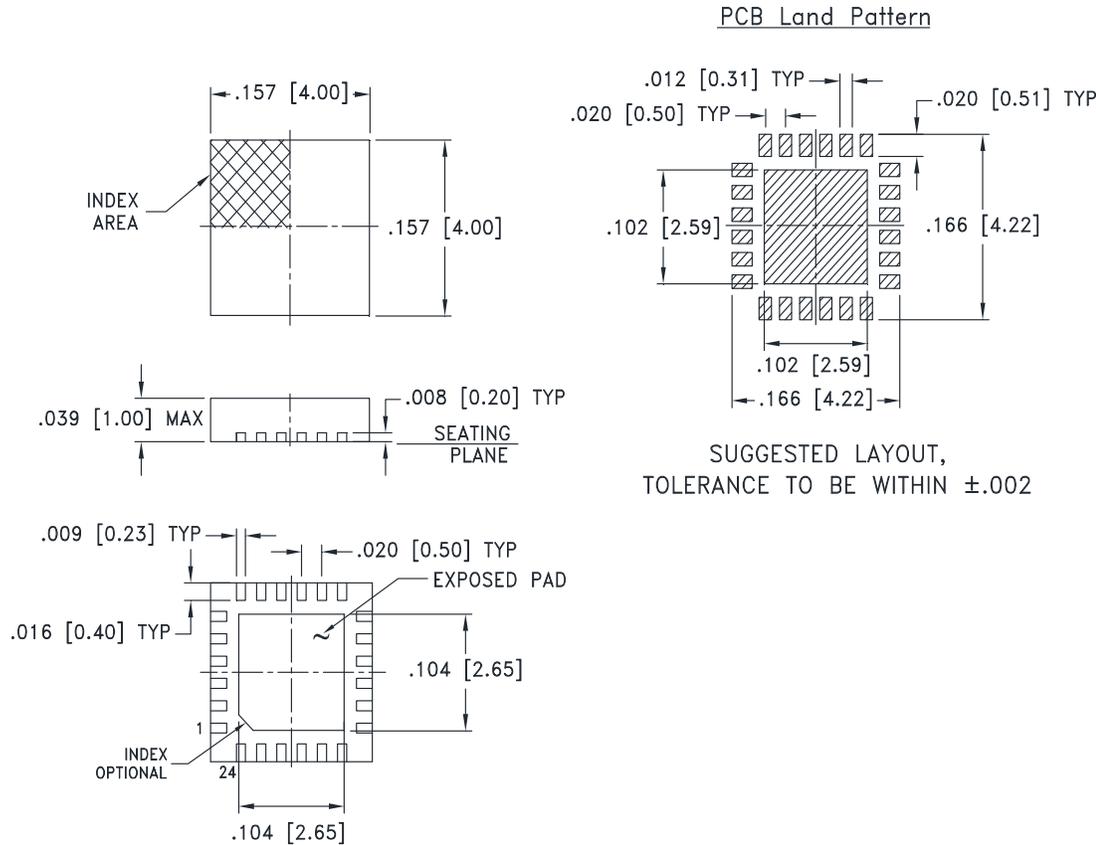
For upper side band selection connect the I port to the 90° port of the external 90° hybrid and the Q port to the 0° port of the external hybrid. This will send the lower sideband band signal to the isolation resistor of the 0° RF splitter in DUT and upper sideband at RF port.

For lower side band selection connect the I port to the 0° port of the external 90° hybrid and the Q port to the 90° port of the hybrid. This will send the upper sideband band signal to the isolation resistor of the 0° RF splitter in DUT and lower sideband out of RF port.

Refer to Mini-Circuits blog, [I&Q Mixers, Image Reject Down-Conversion & Single Sideband \(SSB\) Up-Conversion](#) for a detailed explanation.



CASE STYLE DRAWING

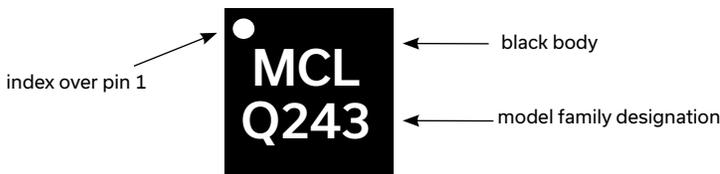


SUGGESTED LAYOUT,
TOLERANCE TO BE WITHIN ±.002

Weight: .04 Grams
Dimensions are in inches [mm]. Tolerances: 2 Pl. + .01; 3 Pl. + .005

Figure 9. DG1847 Case Style Drawing

PRODUCT MARKING



Marking may contain other features or characters for internal lot control

Figure 10. SMIQ-6243H+ Product Marking



MMIC SURFACE MOUNT

IQ Mixer

SMIQ-6243H+

50Ω Level 18 (LO Power +18dBm) 6 to 24 GHz

ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASH BOARD [CLICK HERE](#)

Performance Data	Data Graphs S-Parameter (S1P Files) Data Set (.zip file)
Case Style	DG1847 Plastic package, exposed paddle, lead finish: Matte-Tin
RoHs Status	Compliant
Tape & Reel Standard quantities available on reel	F68 7" reels with 20, 50, 100, 200, 500 or 1K devices
Suggested Layout for PCB Design	PL-746
Evaluation Board	TB-SMIQ-6243HC+
Environmental Ratings	ENV08T1

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.
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Frequency Mixer

SMIQ-6243H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	Image Rejection (UP Conv. Mode) IF Fixed @IF(OUT)=200MHz (dB)			RF (IN) (MHz)	LO (MHz)	Image Rejection (UP Conv. Mode) IF Fixed @IF(OUT)=2000MHz (dB)			RF (IN) (MHz)	LO (MHz)	Image Rejection (UP Conv. Mode) IF Fixed @IF(OUT)=3000MHz (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+17	+18	+19			+17	+18	+19			+17	+18	+19
6400.1	6200.1	19.01	18.42	17.95	8600.1	6600.1	29.82	27.01	20.17	10200.1	7200.1	16.75	21.74	22.68
6600.1	6400.1	20.57	19.58	18.51	8800.1	6800.1	22.37	26.47	25.86	10400.1	7400.1	16.04	22.37	42.73
6800.1	6600.1	24.88	23.75	22.41	9000.1	7000.1	33.91	33.97	25.06	10600.1	7600.1	21.69	27.44	27.10
7200.1	7000.1	22.89	22.40	21.78	9200.1	7200.1	29.25	32.76	31.41	10800.1	7800.1	23.40	28.39	43.53
7600.1	7400.1	30.70	29.95	28.56	9400.1	7400.1	28.80	31.92	31.98	11000.1	8000.1	28.67	30.86	31.17
8000.1	7800.1	33.57	31.92	30.04	9600.1	7600.1	35.22	38.38	35.55	11200.1	8200.1	27.92	28.13	27.61
8400.1	8200.1	32.46	32.18	30.88	9800.1	7800.1	31.10	32.19	33.42	11600.1	8600.1	27.24	28.18	29.30
8800.1	8600.1	30.19	31.18	31.31	10000.1	8000.1	38.63	39.22	39.39	12000.1	9000.1	29.78	30.58	31.62
9200.1	9000.1	29.66	29.73	29.81	10400.1	8400.1	36.88	35.83	35.25	12400.1	9400.1	32.96	34.50	36.15
9600.1	9400.1	36.26	35.60	33.98	10800.1	8800.1	39.58	39.56	39.17	12800.1	9800.1	52.65	41.74	37.57
10000.1	9800.1	39.29	43.62	43.32	11200.1	9200.1	49.23	43.92	40.00	13200.1	10200.1	32.44	31.10	30.08
10400.1	10200.1	36.91	41.20	40.97	11600.1	9600.1	43.96	38.40	35.96	13600.1	10600.1	33.37	31.53	30.52
10800.1	10600.1	41.89	53.51	42.96	12000.1	10000.1	40.21	39.13	36.14	14000.1	11000.1	25.76	25.52	25.27
11200.1	11000.1	36.89	40.04	38.26	12400.1	10400.1	31.03	29.26	27.94	14200.1	11200.1	25.20	25.41	25.63
11600.1	11400.1	35.56	33.97	32.24	12800.1	10800.1	32.61	30.03	28.25	14400.1	11400.1	27.59	27.67	27.80
12000.1	11800.1	35.25	34.41	33.62	13200.1	11200.1	27.46	26.48	25.58	14600.1	11600.1	29.47	28.89	28.47
12400.1	12200.1	26.27	25.31	24.92	13600.1	11600.1	25.36	24.80	24.38	14800.1	11800.1	29.39	28.43	27.79
12800.1	12600.1	30.25	29.40	29.04	14000.1	12000.1	27.43	26.29	25.76	15000.1	12000.1	28.04	26.91	26.33
13200.1	13000.1	36.16	34.02	32.84	14400.1	12400.1	26.52	25.59	24.98	15200.1	12200.1	30.47	28.89	27.69
13600.1	13400.1	29.92	29.10	28.51	14800.1	12800.1	28.25	27.36	26.83	15400.1	12400.1	30.27	29.20	28.30
14000.1	13800.1	32.49	31.42	30.35	15000.1	13000.1	26.48	25.98	25.64	15600.1	12600.1	29.01	27.92	27.22
14400.1	14200.1	31.35	30.70	29.98	15200.1	13200.1	25.98	25.45	25.11	15800.1	12800.1	28.76	27.71	27.05
14800.1	14600.1	29.85	29.90	29.81	15600.1	13600.1	24.42	24.16	23.90	16000.1	13000.1	28.78	27.74	27.07
15200.1	15000.1	28.36	28.43	28.48	16000.1	14000.1	24.19	24.10	23.97	16400.1	13400.1	27.66	27.02	26.52
15400.1	15200.1	28.31	28.41	28.40	16400.1	14400.1	24.64	24.56	24.43	16800.1	13800.1	26.70	26.07	25.55
15600.1	15400.1	28.03	28.25	28.34	16800.1	14800.1	23.39	23.61	23.79	17200.1	14200.1	27.19	26.71	26.33
16000.1	15800.1	27.29	28.18	28.95	17200.1	15200.1	23.81	24.08	24.32	17600.1	14600.1	26.20	25.90	25.73
16400.1	16200.1	27.54	28.60	29.67	17600.1	15600.1	23.17	23.78	24.38	18000.1	15000.1	26.26	26.16	26.18
16800.1	16600.1	25.94	27.40	28.90	18000.1	16000.1	21.75	22.22	22.87	18400.1	15400.1	24.19	24.61	25.10
17200.1	17000.1	24.54	25.78	27.29	18400.1	16400.1	21.93	22.31	22.77	18800.1	15800.1	23.55	23.91	24.47
17600.1	17400.1	25.28	26.52	28.03	18800.1	16800.1	23.60	23.69	23.88	19200.1	16200.1	23.98	24.18	24.54
18000.1	17800.1	27.62	29.13	30.83	19200.1	17200.1	23.87	24.29	24.70	19600.1	16600.1	24.72	24.87	25.09
18400.1	18200.1	29.45	31.21	33.07	19600.1	17600.1	23.93	24.71	25.45	20000.1	17000.1	24.39	24.86	25.35
18800.1	18600.1	31.94	33.54	34.87	20000.1	18000.1	23.93	24.91	25.81	20400.1	17400.1	24.27	24.92	25.63
19200.1	19000.1	32.58	34.18	35.83	20400.1	18400.1	23.62	24.60	25.61	20800.1	17800.1	25.23	26.05	26.84
19600.1	19400.1	33.50	35.26	37.82	20800.1	18800.1	25.25	25.96	26.73	21000.1	18000.1	25.27	26.11	26.98
20000.1	19800.1	35.86	38.51	43.66	21200.1	19200.1	26.06	26.73	27.52	21200.1	18200.1	25.06	26.00	26.96
20400.1	20200.1	40.94	43.30	44.75	21600.1	19600.1	27.09	27.79	28.78	21600.1	18600.1	25.57	26.40	27.21
20800.1	20600.1	38.66	38.83	38.99	22000.1	20000.1	26.97	28.11	29.48	22000.1	19000.1	25.45	26.22	26.95
21200.1	21000.1	35.03	35.74	36.24	22400.1	20400.1	31.13	32.66	34.08	22400.1	19400.1	24.71	25.40	26.16
21600.1	21400.1	28.58	29.30	29.83	22800.1	20800.1	40.89	44.12	46.85	22800.1	19800.1	24.03	24.94	26.08
22000.1	21800.1	25.51	26.77	27.83	23200.1	21200.1	37.64	41.30	44.79	23200.1	20200.1	26.29	27.96	29.42
22400.1	22200.1	25.33	26.77	28.19	23600.1	21600.1	35.33	39.67	44.88	23600.1	20600.1	31.02	32.41	33.35
22800.1	22600.1	24.94	26.09	27.39	24000.1	22000.1	34.93	38.60	41.98	24000.1	21000.1	31.54	32.23	32.40
23200.1	23000.1	24.83	25.99	27.32	25000.1	23000.1	33.06	34.24	35.34	25000.1	22000.1	28.00	29.00	29.75
23600.1	23400.1	24.50	25.79	27.39	26000.1	24000.1	38.29	38.73	38.79	26000.1	23000.1	29.49	29.99	30.56
24000.1	23800.1	25.10	26.04	27.28	27000.1	25000.1	33.03	33.55	34.12	27000.1	24000.1	31.72	32.14	32.55
24200.1	24000.1	25.47	26.25	27.31	28000.1	26000.1	27.58	29.33	30.93	28000.1	25000.1	31.97	32.27	32.58



Frequency Mixer

SMIQ-6243H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	Image Rejection (DOWN Conv. Mode) IF Fixed @IF(OUT)=200MHz (dB)			RF (IN) (MHz)	LO (MHz)	Image Rejection (DOWN Conv. Mode) IF Fixed @IF(OUT)=2000MHz (dB)			RF (IN) (MHz)	LO (MHz)	Image Rejection (DOWN Conv. Mode) IF Fixed @IF(OUT)=3000MHz (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+17	+18	+19			+17	+18	+19			+17	+18	+19
6200.1	6000.1	24.28	25.37	26.89	8000.1	6000.1	23.14	22.44	22.11	9000.1	6000.1	20.08	19.44	19.25
6400.1	6200.1	31.51	35.68	41.27	8200.1	6200.1	26.34	25.96	25.72	9200.1	6200.1	23.36	22.67	22.37
6600.1	6400.1	31.98	37.78	42.84	8400.1	6400.1	26.00	26.66	26.83	9400.1	6400.1	25.59	24.24	23.37
7000.1	6800.1	30.37	32.25	31.96	8800.1	6800.1	34.58	39.97	44.97	9800.1	6800.1	28.35	27.41	26.55
7400.1	7200.1	37.46	37.48	34.02	9200.1	7200.1	39.83	36.76	33.25	10200.1	7200.1	25.51	24.60	23.90
7800.1	7600.1	34.72	35.68	34.01	9600.1	7600.1	39.09	36.44	33.68	10600.1	7600.1	24.13	23.45	22.90
8200.1	8000.1	34.45	33.44	31.67	10000.1	8000.1	34.58	35.46	35.00	11000.1	8000.1	25.82	25.22	24.52
8600.1	8400.1	34.40	32.70	30.71	10400.1	8400.1	39.90	40.46	39.72	11400.1	8400.1	25.74	25.70	25.32
9000.1	8800.1	44.43	39.10	33.30	10800.1	8800.1	34.80	41.50	46.98	11800.1	8800.1	27.34	27.66	27.63
9400.1	9200.1	37.80	36.92	33.49	11200.1	9200.1	30.50	32.31	33.98	12200.1	9200.1	26.65	26.67	26.58
9800.1	9600.1	37.60	35.89	32.62	11600.1	9600.1	30.42	33.26	36.41	12600.1	9600.1	26.33	27.08	27.49
10200.1	10000.1	38.01	36.50	33.47	12000.1	10000.1	31.64	35.56	41.21	13000.1	10000.1	26.94	28.56	30.11
10600.1	10400.1	39.68	37.69	34.29	12400.1	10400.1	29.64	32.19	34.79	13400.1	10400.1	30.04	31.77	32.69
11000.1	10800.1	43.28	38.53	34.64	12800.1	10800.1	36.63	35.68	34.04	13800.1	10800.1	26.38	27.57	28.74
11400.1	11200.1	41.93	36.09	32.82	13200.1	11200.1	38.45	42.13	41.22	14200.1	11200.1	32.29	34.18	35.58
11800.1	11600.1	30.05	28.70	27.64	13600.1	11600.1	40.95	40.23	38.31	14600.1	11600.1	29.50	30.00	30.61
12200.1	12000.1	26.70	26.39	26.09	14000.1	12000.1	37.37	33.82	32.12	15000.1	12000.1	30.51	30.35	30.05
12600.1	12400.1	37.10	33.06	30.30	14400.1	12400.1	36.32	33.13	30.71	15400.1	12400.1	32.06	32.31	31.66
13000.1	12800.1	29.85	28.68	27.86	14800.1	12800.1	31.96	30.38	29.29	15800.1	12800.1	31.22	32.48	33.11
13400.1	13200.1	30.23	29.16	28.54	15200.1	13200.1	31.38	30.43	29.65	16200.1	13200.1	29.03	29.84	30.22
13800.1	13600.1	28.06	27.43	26.91	15600.1	13600.1	30.66	30.50	30.07	16600.1	13600.1	29.16	30.18	30.81
14200.1	14000.1	26.06	25.63	25.27	16000.1	14000.1	27.41	27.60	27.52	17000.1	14000.1	29.50	31.01	31.92
14600.1	14400.1	24.44	24.24	24.04	16400.1	14400.1	26.49	27.15	27.54	17400.1	14400.1	28.75	30.07	30.68
15000.1	14800.1	23.41	23.61	23.76	16800.1	14800.1	25.25	26.15	26.75	17800.1	14800.1	27.05	28.89	30.22
15200.1	15000.1	22.91	23.29	23.55	17000.1	15000.1	24.18	25.16	25.82	18000.1	15000.1	26.43	28.46	29.87
15400.1	15200.1	21.95	22.60	23.07	17200.1	15200.1	23.06	24.16	24.90	18200.1	15200.1	24.94	26.67	28.01
15800.1	15600.1	20.99	21.75	22.36	17600.1	15600.1	21.94	23.13	24.14	18600.1	15600.1	25.15	27.33	29.15
16200.1	16000.1	21.02	21.93	22.77	18000.1	16000.1	22.45	23.47	24.52	19000.1	16000.1	24.70	26.33	27.94
16600.1	16400.1	21.57	22.37	23.21	18400.1	16400.1	22.33	23.14	24.08	19400.1	16400.1	25.30	26.43	27.63
17000.1	16800.1	22.66	23.47	24.15	18800.1	16800.1	23.25	24.10	24.95	19800.1	16800.1	25.90	26.95	28.10
17400.1	17200.1	23.33	24.49	25.50	19200.1	17200.1	24.25	25.23	26.16	20200.1	17200.1	27.33	29.09	30.95
17800.1	17600.1	22.99	24.15	25.41	19600.1	17600.1	25.07	26.26	27.41	20600.1	17600.1	27.43	29.03	30.64
18200.1	18000.1	23.64	24.57	25.64	20000.1	18000.1	26.01	27.61	29.07	21000.1	18000.1	28.89	30.79	32.80
18600.1	18400.1	25.35	26.19	26.96	20400.1	18400.1	26.80	28.39	30.05	21400.1	18400.1	32.55	35.53	39.99
19000.1	18800.1	26.99	27.61	28.24	20800.1	18800.1	26.87	28.35	29.95	21800.1	18800.1	33.84	37.32	42.66
19400.1	19200.1	28.97	29.44	29.96	21200.1	19200.1	26.93	28.31	29.49	22200.1	19200.1	33.60	37.05	41.28
19800.1	19600.1	30.04	30.66	31.50	21600.1	19600.1	27.20	28.56	29.95	22600.1	19600.1	37.67	43.11	44.80
20200.1	20000.1	31.39	32.71	33.89	22000.1	20000.1	29.22	31.75	34.11	23000.1	20000.1	41.24	42.28	39.55
20600.1	20400.1	35.10	36.16	36.83	22400.1	20400.1	31.40	32.78	33.51	23400.1	20400.1	28.54	29.82	30.12
21000.1	20800.1	45.17	45.53	42.30	22800.1	20800.1	35.88	36.64	36.85	23800.1	20800.1	20.68	22.43	25.60
21400.1	21200.1	39.92	42.90	44.78	23200.1	21200.1	29.14	30.48	31.50	24000.1	21000.1	17.72	19.61	21.71
21800.1	21600.1	38.07	38.57	38.88	23600.1	21600.1	28.68	30.20	31.35	24600.1	21600.1	7.26	14.71	18.13
22200.1	22000.1	34.79	39.36	42.64	24000.1	22000.1	26.63	28.35	29.72	25000.1	22000.1	5.71	13.55	18.01
22600.1	22400.1	37.48	43.89	48.98	24400.1	22400.1	25.14	27.85	29.67	25400.1	22400.1	0.87	8.95	15.52
23000.1	22800.1	34.82	37.88	42.34	24800.1	22800.1	22.96	25.69	29.83	25800.1	22800.1	9.15	6.87	0.83
23400.1	23200.1	33.90	36.26	39.25	25200.1	23200.1	16.16	20.14	22.84	26200.1	23200.1	11.69	9.97	5.20
23800.1	23600.1	32.89	34.16	35.89	25600.1	23600.1	8.69	16.12	19.51	26600.1	23600.1	10.60	7.87	2.56
24000.1	23800.1	31.15	32.49	34.39	26000.1	24000.1	7.96	15.03	18.31	27000.1	24000.1	11.25	9.55	0.77



Frequency Mixer

SMIQ-6243H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS VS. RF FREQUENCY @IF = 200 MHz			RF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. RF FREQUENCY @IF = 2000 MHz			RF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. RF FREQUENCY @IF = 3000 MHz		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+17	+18	+19			+17	+18	+19			+17	+18	+19
6000.1	6200.1	8.29	8.00	7.76	6000.1	8000.1	7.84	7.73	7.65	6000.1	9000.1	8.20	8.17	8.15
6200.1	6400.1	7.86	7.63	7.44	6200.1	8200.1	7.44	7.36	7.30	6200.1	9200.1	7.77	7.75	7.74
6400.1	6600.1	7.54	7.33	7.18	6400.1	8400.1	7.28	7.24	7.21	6400.1	9400.1	7.59	7.57	7.56
6800.1	7000.1	7.70	7.47	7.44	6800.1	8800.1	7.06	7.06	7.07	6800.1	9800.1	7.67	7.61	7.59
7200.1	7400.1	7.66	7.57	7.55	7200.1	9200.1	7.00	7.02	7.04	7200.1	10200.1	7.74	7.66	7.62
7600.1	7800.1	7.52	7.47	7.47	7600.1	9600.1	7.06	7.07	7.11	7600.1	10600.1	8.07	7.95	7.88
8000.1	8200.1	7.23	7.19	7.21	8000.1	10000.1	7.11	7.06	7.07	8000.1	11000.1	8.44	8.30	8.21
8400.1	8600.1	7.19	7.16	7.19	8400.1	10400.1	7.59	7.51	7.47	8400.1	11400.1	8.57	8.53	8.51
8800.1	9000.1	7.28	7.26	7.30	8800.1	10800.1	7.96	7.91	7.88	8800.1	11800.1	8.47	8.42	8.42
9200.1	9400.1	7.37	7.37	7.41	9200.1	11200.1	7.82	7.87	7.95	9200.1	12200.1	8.60	8.45	8.34
9600.1	9800.1	7.43	7.44	7.51	9600.1	11600.1	7.74	7.71	7.73	9600.1	12600.1	8.87	8.73	8.61
10000.1	10200.1	7.78	7.75	7.78	10000.1	12000.1	8.22	8.05	7.98	10000.1	13000.1	9.26	9.11	8.99
10400.1	10600.1	8.15	8.14	8.16	10400.1	12400.1	8.77	8.63	8.51	10400.1	13400.1	9.97	9.78	9.62
10800.1	11000.1	8.00	7.96	7.99	10800.1	12800.1	9.35	9.20	9.09	10800.1	13800.1	9.86	9.68	9.54
11200.1	11400.1	7.79	7.73	7.73	11200.1	13200.1	9.45	9.24	9.07	11200.1	14200.1	10.01	9.82	9.67
11600.1	11800.1	8.06	7.92	7.85	11600.1	13600.1	9.47	9.30	9.16	11600.1	14600.1	9.77	9.57	9.43
12000.1	12200.1	8.73	8.55	8.41	12000.1	14000.1	9.45	9.20	9.03	12000.1	15000.1	9.57	9.38	9.25
12400.1	12600.1	8.41	8.27	8.17	12400.1	14400.1	8.96	8.81	8.71	12400.1	15400.1	9.48	9.34	9.23
12800.1	13000.1	8.40	8.24	8.14	12800.1	14800.1	8.68	8.53	8.44	12800.1	15800.1	9.12	9.03	8.96
13200.1	13400.1	8.01	7.87	7.79	13200.1	15200.1	8.42	8.32	8.26	13200.1	16200.1	8.85	8.83	8.84
13600.1	13800.1	7.91	7.77	7.69	13600.1	15600.1	8.33	8.27	8.23	13600.1	16600.1	8.54	8.54	8.63
14000.1	14200.1	7.97	7.81	7.72	14000.1	16000.1	8.25	8.25	8.27	14000.1	17000.1	8.51	8.49	8.56
14400.1	14600.1	8.07	7.93	7.85	14400.1	16400.1	8.22	8.25	8.32	14400.1	17400.1	8.58	8.57	8.65
14800.1	15000.1	8.31	8.17	8.10	14800.1	16800.1	8.27	8.34	8.47	14800.1	17800.1	8.81	8.81	8.90
15000.1	15200.1	8.42	8.28	8.20	15000.1	17000.1	8.28	8.34	8.47	15000.1	18000.1	8.88	8.88	8.97
15200.1	15400.1	8.61	8.45	8.36	15200.1	17200.1	8.39	8.42	8.52	15200.1	18200.1	8.90	8.87	8.95
15600.1	15800.1	8.80	8.65	8.57	15600.1	17600.1	8.51	8.52	8.61	15600.1	18600.1	9.27	9.02	8.95
16000.1	16200.1	8.91	8.75	8.69	16000.1	18000.1	8.70	8.63	8.65	16000.1	19000.1	9.87	9.57	9.43
16400.1	16600.1	9.42	9.24	9.13	16400.1	18400.1	9.52	9.32	9.26	16400.1	19400.1	10.33	10.06	9.93
16800.1	17000.1	9.53	9.40	9.32	16800.1	18800.1	9.98	9.82	9.79	16800.1	19800.1	10.40	10.18	10.09
17200.1	17400.1	9.74	9.60	9.55	17200.1	19200.1	10.19	10.10	10.12	17200.1	20200.1	10.40	10.10	10.00
17600.1	17800.1	9.93	9.66	9.52	17600.1	19600.1	10.02	9.94	9.99	17600.1	20600.1	10.32	10.04	9.92
18000.1	18200.1	10.04	9.81	9.68	18000.1	20000.1	9.98	9.79	9.76	18000.1	21000.1	10.36	10.14	10.03
18400.1	18600.1	10.07	9.90	9.82	18400.1	20400.1	10.05	9.86	9.80	18400.1	21400.1	10.75	10.46	10.31
18800.1	19000.1	9.95	9.80	9.77	18800.1	20800.1	10.10	9.94	9.88	18800.1	21800.1	10.90	10.64	10.49
19200.1	19400.1	9.78	9.55	9.47	19200.1	21200.1	10.11	9.96	9.91	19200.1	22200.1	10.79	10.55	10.42
19600.1	19800.1	9.47	9.28	9.24	19600.1	21600.1	10.02	9.83	9.76	19600.1	22600.1	10.50	10.27	10.14
20000.1	20200.1	9.29	9.13	9.11	20000.1	22000.1	9.96	9.73	9.60	20000.1	23000.1	10.62	10.42	10.28
20400.1	20600.1	9.28	9.20	9.22	20400.1	22400.1	10.22	10.03	9.91	20400.1	23400.1	11.30	11.08	10.90
20800.1	21000.1	9.29	9.27	9.31	20800.1	22800.1	10.83	10.64	10.51	20800.1	23800.1	11.73	11.53	11.36
21200.1	21400.1	9.41	9.34	9.35	21200.1	23200.1	11.35	11.15	11.00	21200.1	24000.1	11.59	11.41	11.27
21600.1	21800.1	9.81	9.72	9.70	21600.1	23600.1	11.00	10.85	10.73	21600.1	24600.1	11.16	10.99	10.88
22000.1	22200.1	10.47	10.30	10.20	22000.1	24000.1	10.64	10.50	10.41	22000.1	25000.1	11.26	11.06	10.93
22400.1	22600.1	10.42	10.26	10.16	22400.1	24400.1	10.42	10.28	10.19	22400.1	25400.1	11.90	11.56	11.35
22800.1	23000.1	10.17	10.04	9.98	22800.1	24800.1	10.80	10.67	10.58	22800.1	25800.1	13.20	12.53	12.14
23200.1	23400.1	10.16	10.02	9.93	23200.1	25200.1	11.52	11.29	11.13	23200.1	26200.1	17.35	14.15	13.02
23600.1	23800.1	10.55	10.42	10.33	23600.1	25600.1	12.49	12.01	11.71	23600.1	26600.1	22.54	15.23	13.22
23800.1	24000.1	10.96	10.78	10.64	24000.1	26000.1	12.99	12.26	11.89	24000.1	27000.1	37.85	27.45	16.44



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REV. OR
 SMIQ-6243H+
 3/30/2023
 Page 3 of 13

Frequency Mixer

SMIQ-6243H+

Typical Performance Data

IF (MHz)	RF (IN) (MHz)	CONVERSION LOSS VS. IF FREQUENCY @ Fixed LO = 6.3 GHz			IF (MHz)	RF (IN) (MHz)	CONVERSION LOSS VS. IF FREQUENCY @ Fixed LO = 24.7GHz		
		@LO (dBm)					@LO (dBm)		
		+17	+18	+19			+17	+18	+19
10	6310.1	7.63	7.33	7.15	10	24690.1	12.67	12.72	12.42
50	6350.1	7.26	6.99	6.76	50	24650.1	12.61	12.40	12.19
100	6400.1	7.23	6.95	6.72	100	24600.1	12.40	12.18	11.99
200	6500.1	7.04	6.76	6.53	200	24500.1	12.26	12.04	11.85
300	6600.1	7.02	6.73	6.49	300	24400.1	12.17	11.94	11.76
400	6700.1	7.02	6.72	6.48	400	24300.1	12.04	11.82	11.63
500	6800.1	7.10	6.79	6.58	500	24200.1	11.91	11.69	11.50
600	6900.1	7.05	6.74	6.58	600	24100.1	11.78	11.57	11.38
700	7000.1	7.15	6.83	6.73	700	24000.1	11.61	11.40	11.23
800	7100.1	7.16	6.84	6.71	800	23900.1	11.51	11.30	11.12
900	7200.1	7.23	6.90	6.72	900	23800.1	11.56	11.35	11.17
1000	7300.1	7.29	6.95	6.77	1000	23700.1	11.41	11.21	11.03
1100	7400.1	7.34	7.00	6.79	1100	23600.1	11.30	11.10	10.94
1200	7500.1	7.39	7.04	6.79	1200	23500.1	11.21	11.03	10.87
1300	7600.1	7.40	7.05	6.78	1300	23400.1	11.08	10.90	10.75
1400	7700.1	7.35	7.01	6.75	1400	23300.1	11.04	10.86	10.72
1500	7800.1	7.31	6.98	6.77	1500	23200.1	10.85	10.69	10.57
1600	7900.1	7.30	6.97	6.77	1600	23100.1	10.75	10.60	10.49
1700	8000.1	7.32	7.00	6.83	1700	23000.1	10.67	10.53	10.43
1800	8100.1	7.39	7.08	6.89	1800	22900.1	10.68	10.54	10.43
1900	8200.1	7.50	7.19	7.01	1900	22800.1	10.72	10.58	10.49
2000	8300.1	7.53	7.24	7.12	2000	22700.1	10.69	10.55	10.46
2100	8400.1	7.58	7.30	7.24	2100	22600.1	10.69	10.56	10.47
2200	8500.1	7.68	7.39	7.35	2200	22500.1	10.67	10.54	10.46
2300	8600.1	7.86	7.57	7.53	2300	22400.1	10.71	10.57	10.49
2400	8700.1	8.01	7.76	7.72	2400	22300.1	10.73	10.60	10.51
2500	8800.1	8.20	7.90	7.71	2500	22200.1	10.84	10.69	10.59
2600	8900.1	8.33	8.04	7.85	2600	22100.1	10.94	10.79	10.70
2700	9000.1	8.36	8.06	7.94	2700	22000.1	10.99	10.84	10.74
2800	9100.1	8.42	8.13	8.03	2800	21900.1	11.08	10.93	10.82
2900	9200.1	8.42	8.16	8.09	2900	21800.1	11.02	10.87	10.76
3000	9300.1	8.50	8.26	8.18	3000	21700.1	11.15	10.99	10.88
3100	9400.1	8.52	8.35	8.28	3200	21500.1	11.26	11.10	10.99
3200	9500.1	8.59	8.46	8.39	3400	21300.1	11.33	11.17	11.05
3300	9600.1	8.75	8.62	8.55	3600	21100.1	11.48	11.32	11.20
3400	9700.1	8.86	8.73	8.67	3800	20900.1	11.60	11.43	11.31
3600	9900.1	9.19	9.06	9.01	4000	20700.1	11.73	11.56	11.43
3800	10100.1	9.39	9.28	9.24	4200	20500.1	11.96	11.77	11.63
4000	10300.1	9.53	9.44	9.43	4400	20300.1	12.17	11.98	11.83
4200	10500.1	9.69	9.62	9.62	4600	20100.1	12.37	12.15	11.97
4400	10700.1	9.73	9.67	9.70	4800	19900.1	12.69	12.45	12.25
4600	10900.1	9.61	9.57	9.63	5000	19700.1	13.11	12.82	12.58
4800	11100.1	9.56	9.53	9.60	5200	19500.1	13.30	12.99	12.72
5000	11300.1	9.69	9.66	9.75	5400	19300.1	13.54	13.21	12.92
5200	11500.1	9.64	9.63	9.75	5600	19100.1	13.54	13.21	12.94
5400	11700.1	9.75	9.75	9.90	5800	18900.1	13.56	13.24	12.98
5600	11900.1	9.73	9.75	9.93	6000	18700.1	13.41	13.13	12.90
5700	12000.1	9.69	9.71	9.92	6200	18500.1	13.35	13.10	12.90



Frequency Mixer

SMIQ-6243H+

Typical Performance Data

LO (IN) (MHz)	L-R ISOLATION (dB)			L-I ISOLATION (dB)			L-Q ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)			@LO (dBm)		
	+17	+18	+19	+17	+18	+19	+17	+18	+19
6000.1	50.52	50.53	50.39	37.24	37.17	37.22	40.28	40.32	40.34
6400.1	49.79	50.35	50.71	38.56	38.24	38.08	43.13	42.86	42.58
6800.1	47.97	49.03	49.95	40.72	40.17	39.82	48.50	47.40	46.34
7200.1	46.86	47.70	48.41	43.95	42.95	42.23	59.77	54.13	50.90
7600.1	46.08	47.01	47.80	45.55	44.60	43.80	50.61	50.97	50.06
8000.1	44.07	45.05	45.92	46.02	45.94	45.58	45.60	46.65	46.99
8400.1	41.72	42.49	43.21	45.12	46.18	46.79	42.43	43.74	44.78
8800.1	41.02	41.65	42.24	44.81	45.55	46.03	41.74	42.57	43.15
9200.1	40.65	41.23	41.78	45.05	45.86	46.42	40.92	41.48	41.77
9600.1	40.00	40.63	41.22	44.64	45.52	46.18	40.06	40.56	40.83
10000.1	39.66	40.22	40.78	45.49	46.35	47.00	40.69	41.10	41.39
10400.1	39.52	40.05	40.60	49.43	50.35	51.05	42.95	43.33	43.61
10800.1	39.05	39.51	39.99	56.21	57.10	57.81	45.21	45.43	45.61
11200.1	38.86	39.40	39.97	68.42	68.45	67.46	47.40	47.70	47.91
11600.1	38.93	39.42	40.00	54.35	54.74	55.11	47.70	48.19	48.53
12000.1	40.39	40.92	41.42	51.23	51.16	51.13	50.35	51.05	51.58
12400.1	41.06	41.95	42.77	47.47	47.67	47.81	62.24	63.23	64.43
12800.1	40.49	41.48	42.47	46.18	46.55	46.86	55.39	55.89	56.33
13200.1	39.97	40.95	41.95	47.59	47.99	48.36	50.73	51.11	51.47
13600.1	40.12	41.25	42.43	49.57	50.06	50.44	46.65	46.95	47.22
14000.1	39.73	40.88	42.10	52.07	52.98	53.65	43.85	44.06	44.27
14400.1	39.12	40.24	41.39	52.64	54.11	55.51	42.59	42.60	42.64
14800.1	39.34	40.59	41.88	47.19	47.34	47.62	40.92	40.79	40.70
15000.1	39.66	41.06	42.54	46.49	46.44	46.52	40.72	40.60	40.52
15200.1	40.22	41.83	43.62	47.38	47.24	47.23	41.68	41.56	41.49
15400.1	40.70	42.66	44.98	48.75	48.64	48.63	43.64	43.51	43.44
15600.1	40.80	42.85	45.28	49.66	49.64	49.70	45.28	45.13	45.04
16000.1	41.22	43.73	47.02	47.48	47.63	47.93	45.57	45.50	45.43
16400.1	41.27	43.93	47.47	44.74	44.76	44.84	41.86	41.77	41.65
16800.1	40.22	41.85	43.85	44.32	44.48	44.69	42.48	42.47	42.44
17200.1	39.70	40.82	42.09	45.82	46.15	46.51	46.34	46.39	46.42
17600.1	39.06	39.88	40.75	47.42	47.86	48.34	48.82	49.08	49.33
18000.1	39.44	40.31	41.20	46.62	47.01	47.50	46.76	47.03	47.28
18400.1	40.21	41.06	41.92	44.30	44.64	45.12	42.42	42.61	42.79
18800.1	40.35	41.14	41.91	40.59	40.81	41.16	38.93	39.05	39.17
19200.1	40.77	41.55	42.30	37.43	37.50	37.69	37.50	37.57	37.65
19600.1	40.16	40.77	41.30	35.60	35.59	35.72	37.26	37.30	37.36
20000.1	40.04	40.56	41.04	35.10	35.09	35.17	37.83	37.86	37.95
20400.1	39.53	39.97	40.33	34.97	34.98	34.99	38.03	38.04	38.06
20800.1	38.83	39.14	39.35	35.13	35.05	34.97	36.23	36.10	35.99
21200.1	38.42	38.62	38.73	34.07	33.79	33.52	33.33	33.07	32.81
21600.1	37.39	37.54	37.60	31.69	31.16	30.69	31.86	31.47	31.10
22000.1	36.06	36.26	36.41	30.25	29.55	28.96	33.05	32.48	31.96
22400.1	35.05	35.33	35.56	29.18	28.48	27.91	33.24	32.62	32.06
22800.1	34.57	34.99	35.37	28.56	27.93	27.39	32.70	32.22	31.76
23200.1	34.18	34.78	35.36	27.91	27.44	27.02	32.23	31.96	31.70
23600.1	33.86	34.56	35.24	26.80	26.47	26.13	31.29	31.15	30.98
24000.1	34.06	34.80	35.55	26.68	26.47	26.22	30.58	30.54	30.47

Frequency Mixer

SMIQ-6243H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	R-I ISOLATION (dB)			R-Q ISOLATION (dB)		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
6000.1	6200.1	31.45	31.61	31.67	31.29	31.41	31.54
6200.1	6400.1	31.05	31.18	31.24	31.36	31.51	31.66
6400.1	6600.1	30.92	31.02	31.06	31.67	31.87	32.05
6800.1	7000.1	31.90	31.91	31.86	33.32	33.36	33.46
7200.1	7400.1	33.29	33.27	33.18	35.57	35.50	35.45
7600.1	7800.1	35.11	35.01	34.87	37.26	37.07	36.90
8000.1	8200.1	36.50	36.42	36.27	38.11	37.98	37.85
8400.1	8600.1	38.01	37.99	37.92	40.25	40.09	39.94
8800.1	9000.1	38.56	38.41	38.29	41.08	41.06	40.97
9200.1	9400.1	38.73	38.53	38.34	41.37	41.28	41.20
9600.1	9800.1	37.65	37.47	37.31	41.12	41.07	41.02
10000.1	10200.1	36.68	36.54	36.42	41.95	41.83	41.73
10400.1	10600.1	36.81	36.66	36.57	42.87	42.91	42.93
10800.1	11000.1	37.75	37.55	37.40	44.47	44.36	44.33
11200.1	11400.1	38.11	37.93	37.78	46.25	45.83	45.55
11600.1	11800.1	38.23	38.20	38.20	48.22	47.84	47.52
12000.1	12200.1	38.44	38.41	38.41	46.68	46.63	46.60
12400.1	12600.1	37.96	37.94	37.92	43.10	43.08	43.08
12800.1	13000.1	37.83	37.86	37.90	40.66	40.66	40.69
13200.1	13400.1	39.76	39.82	39.90	39.69	39.73	39.78
13600.1	13800.1	46.36	46.60	46.78	40.50	40.58	40.64
14000.1	14200.1	47.09	47.49	47.81	41.84	41.92	42.00
14400.1	14600.1	41.50	41.67	41.81	47.21	47.43	47.57
14800.1	15000.1	37.12	37.24	37.33	46.69	46.85	46.94
15000.1	15200.1	35.19	35.33	35.43	41.50	41.56	41.62
15200.1	15400.1	34.45	34.62	34.75	39.07	39.13	39.17
15600.1	15800.1	34.20	34.39	34.55	37.82	37.87	37.92
16000.1	16200.1	34.08	34.30	34.48	37.06	37.15	37.22
16400.1	16600.1	33.85	34.05	34.23	35.50	35.58	35.65
16800.1	17000.1	34.30	34.50	34.67	35.70	35.76	35.81
17200.1	17400.1	35.79	35.95	36.09	39.07	39.09	39.11
17600.1	17800.1	37.21	37.31	37.42	42.28	42.29	42.30
18000.1	18200.1	38.02	38.11	38.18	43.73	43.77	43.80
18400.1	18600.1	38.03	38.12	38.20	43.63	43.67	43.69
18800.1	19000.1	37.68	37.78	37.85	42.61	42.63	42.66
19200.1	19400.1	37.51	37.60	37.65	44.40	44.43	44.45
19600.1	19800.1	36.93	36.99	36.99	50.37	50.42	50.50
20000.1	20200.1	37.33	37.42	37.44	54.29	54.28	54.33
20400.1	20600.1	38.91	38.99	39.00	50.13	50.27	50.39
20800.1	21000.1	40.28	40.31	40.31	46.38	46.58	46.80
21200.1	21400.1	40.22	40.29	40.32	42.92	43.20	43.46
21600.1	21800.1	37.88	37.97	38.02	40.32	40.55	40.78
22000.1	22200.1	37.29	37.48	37.63	39.97	40.19	40.44
22400.1	22600.1	39.39	39.60	39.77	40.91	41.10	41.34
22800.1	23000.1	41.62	41.88	42.06	40.44	40.57	40.76
23200.1	23400.1	42.44	42.92	43.38	39.49	39.55	39.67
23600.1	23800.1	41.82	42.35	42.82	39.79	39.94	40.12
23800.1	24000.1	41.33	41.78	42.25	40.14	40.30	40.50

Frequency Mixer

SMIQ-6243H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	AMP UNBALANCE VS. RF FREQUENCY @IF = 200 MHz			PHASE UNBALANCE VS. RF FREQUENCY @IF = 200 MHz		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
6000.1	6200.1	1.19	1.03	0.82	0.32	0.16	0.37
6200.1	6400.1	1.07	0.92	0.76	3.46	2.64	2.12
6400.1	6600.1	0.52	0.36	0.20	5.74	4.54	3.65
6800.1	7000.1	0.17	0.01	-0.15	5.71	4.05	2.78
7200.1	7400.1	0.03	-0.09	-0.21	4.17	2.76	1.68
7600.1	7800.1	-0.03	-0.08	-0.15	3.13	2.63	2.15
8000.1	8200.1	-0.13	-0.17	-0.22	0.36	0.34	0.27
8400.1	8600.1	-0.08	-0.13	-0.20	1.16	0.43	0.12
8800.1	9000.1	-0.03	-0.07	-0.14	1.23	0.57	0.06
9200.1	9400.1	-0.06	-0.10	-0.15	1.47	0.80	0.19
9600.1	9800.1	-0.05	-0.11	-0.17	1.68	0.79	0.08
10000.1	10200.1	-0.04	-0.09	-0.14	1.20	0.39	0.30
10400.1	10600.1	-0.13	-0.14	-0.16	1.64	0.44	0.51
10800.1	11000.1	0.05	0.02	-0.02	0.25	0.79	1.70
11200.1	11400.1	0.10	0.10	0.08	0.34	0.46	1.26
11600.1	11800.1	0.04	0.06	0.07	2.77	3.22	3.78
12000.1	12200.1	-0.36	-0.33	-0.30	2.95	3.77	4.43
12400.1	12600.1	-0.07	-0.06	-0.05	0.31	0.82	1.81
12800.1	13000.1	-0.27	-0.22	-0.19	3.16	3.74	4.26
13200.1	13400.1	-0.16	-0.12	-0.10	2.40	2.80	3.36
13600.1	13800.1	-0.10	-0.05	-0.03	4.26	4.46	4.90
14000.1	14200.1	-0.15	-0.08	-0.05	5.24	5.39	5.81
14400.1	14600.1	-0.17	-0.10	-0.05	6.69	6.44	6.62
14800.1	15000.1	-0.17	-0.11	-0.07	8.56	7.90	7.75
15000.1	15200.1	-0.16	-0.11	-0.08	9.40	8.51	8.19
15200.1	15400.1	-0.09	-0.06	-0.04	10.42	9.35	8.73
15600.1	15800.1	-0.17	-0.12	-0.11	10.40	9.41	8.72
16000.1	16200.1	-0.10	-0.06	-0.05	10.78	9.67	8.79
16400.1	16600.1	-0.12	-0.05	-0.01	10.23	9.19	8.41
16800.1	17000.1	-0.08	-0.04	-0.01	8.75	7.56	6.70
17200.1	17400.1	-0.02	-0.02	-0.02	8.60	7.44	6.36
17600.1	17800.1	0.01	-0.01	-0.02	8.29	7.41	6.48
18000.1	18200.1	-0.02	-0.05	-0.06	7.42	6.68	5.84
18400.1	18600.1	-0.02	-0.05	-0.06	6.26	5.79	5.13
18800.1	19000.1	0.03	0.00	-0.02	4.83	4.67	4.21
19200.1	19400.1	0.13	0.06	0.03	3.60	3.57	3.17
19600.1	19800.1	0.20	0.13	0.07	3.21	3.00	2.48
20000.1	20200.1	0.28	0.17	0.12	2.40	2.09	1.65
20400.1	20600.1	0.27	0.20	0.16	1.13	1.00	0.92
20800.1	21000.1	0.17	0.12	0.11	0.77	0.42	0.45
21200.1	21400.1	0.21	0.15	0.13	1.93	1.32	1.01
21600.1	21800.1	0.00	-0.03	-0.03	1.02	0.36	0.42
22000.1	22200.1	0.15	0.10	0.08	3.44	2.35	1.66
22400.1	22600.1	0.29	0.25	0.21	3.04	2.21	1.62
22800.1	23000.1	0.21	0.16	0.13	2.69	2.03	1.47
23200.1	23400.1	0.10	0.07	0.03	2.31	1.97	1.61
23600.1	23800.1	-0.01	-0.03	-0.05	2.06	1.80	1.52
23800.1	24000.1	-0.08	-0.06	-0.06	2.24	2.00	1.66



Frequency Mixer

SMIQ-6243H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	AMP UNBALANCE VS. RF FREQUENCY @IF = 2000 MHz			PHASE UNBALANCE VS. RF FREQUENCY @IF = 2000 MHz		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
6000.1	8000.1	0.59	0.50	0.39	7.55	6.62	5.80
6200.1	8200.1	0.44	0.36	0.26	7.07	6.46	5.88
6400.1	8400.1	0.35	0.29	0.21	6.56	6.15	5.76
6800.1	8800.1	0.10	0.08	0.03	5.11	5.27	5.42
7200.1	9200.1	0.05	0.04	0.02	3.45	3.60	3.78
7600.1	9600.1	0.05	0.02	0.00	2.73	3.24	3.63
8000.1	10000.1	0.13	0.06	0.01	2.77	3.64	4.33
8400.1	10400.1	0.24	0.20	0.15	1.87	2.83	3.63
8800.1	10800.1	0.18	0.17	0.13	3.06	3.86	4.59
9200.1	11200.1	0.11	0.11	0.10	3.17	4.19	5.10
9600.1	11600.1	0.12	0.11	0.08	3.34	3.61	4.00
10000.1	12000.1	-0.05	0.00	0.05	6.44	7.01	7.28
10400.1	12400.1	0.23	0.25	0.26	4.03	5.06	5.99
10800.1	12800.1	0.30	0.33	0.35	7.87	8.44	8.83
11200.1	13200.1	-0.20	-0.15	-0.11	7.26	7.64	7.90
11600.1	13600.1	0.28	0.32	0.34	6.50	6.77	7.05
12000.1	14000.1	-0.11	-0.03	0.02	7.94	8.00	8.14
12400.1	14400.1	0.09	0.16	0.21	8.39	8.41	8.54
12800.1	14800.1	0.16	0.23	0.28	10.07	9.65	9.42
13200.1	15200.1	0.29	0.32	0.34	11.23	10.58	10.09
13600.1	15600.1	0.41	0.46	0.47	12.00	11.31	10.71
14000.1	16000.1	0.41	0.46	0.49	12.37	11.45	10.69
14400.1	16400.1	0.37	0.40	0.42	13.37	12.38	11.41
14800.1	16800.1	0.31	0.31	0.31	12.89	11.96	11.05
15000.1	17000.1	0.35	0.34	0.33	13.11	12.09	11.10
15200.1	17200.1	0.29	0.28	0.28	12.99	11.92	10.89
15600.1	17600.1	0.21	0.22	0.23	12.38	11.40	10.46
16000.1	18000.1	0.19	0.18	0.18	11.25	10.43	9.67
16400.1	18400.1	0.22	0.20	0.19	10.04	9.26	8.55
16800.1	18800.1	0.24	0.21	0.20	9.05	8.32	7.69
17200.1	19200.1	0.24	0.21	0.21	8.20	7.68	7.13
17600.1	19600.1	0.24	0.20	0.18	6.83	6.53	6.08
18000.1	20000.1	0.35	0.26	0.22	5.60	5.11	4.65
18400.1	20400.1	0.30	0.20	0.16	3.91	3.60	3.41
18800.1	20800.1	0.29	0.21	0.18	2.47	2.53	2.60
19200.1	21200.1	0.38	0.31	0.29	1.29	1.62	1.91
19600.1	21600.1	0.43	0.36	0.33	0.65	0.99	1.33
20000.1	22000.1	0.37	0.29	0.25	0.53	0.65	1.09
20400.1	22400.1	0.51	0.46	0.42	0.51	0.77	1.16
20800.1	22800.1	0.17	0.14	0.13	0.95	1.28	1.68
21200.1	23200.1	0.49	0.45	0.42	1.18	0.69	0.48
21600.1	23600.1	0.64	0.58	0.53	0.62	0.94	1.35
22000.1	24000.1	0.70	0.64	0.58	1.39	1.61	1.87
22400.1	24400.1	0.68	0.63	0.59	2.62	2.55	2.44
22800.1	24800.1	0.55	0.53	0.53	2.64	2.43	2.17
23200.1	25200.1	0.78	0.70	0.65	0.37	0.63	0.73
23600.1	25600.1	1.64	1.29	1.08	2.84	2.78	2.46
24000.1	26000.1	2.03	1.47	1.21	8.13	7.93	6.98

Frequency Mixer

SMIQ-6243H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	AMP UNBALANCE VS. RF FREQUENCY @IF = 3000 MHz			PHASE UNBALANCE VS. RF FREQUENCY @IF = 3000 MHz		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
6000.1	9000.1	0.62	0.56	0.48	6.18	6.06	5.99
6200.1	9200.1	0.56	0.51	0.44	5.23	5.16	5.15
6400.1	9400.1	0.56	0.51	0.46	5.51	5.57	5.64
6800.1	9800.1	0.60	0.56	0.52	4.79	5.32	5.73
7200.1	10200.1	0.56	0.50	0.44	4.36	5.14	5.79
7600.1	10600.1	0.63	0.57	0.52	4.23	5.19	6.04
8000.1	11000.1	0.62	0.57	0.52	4.53	5.24	5.90
8400.1	11400.1	0.50	0.48	0.45	6.22	7.00	7.69
8800.1	11800.1	0.54	0.50	0.46	6.77	7.05	7.36
9200.1	12200.1	0.51	0.51	0.51	7.80	8.51	8.93
9600.1	12600.1	0.29	0.32	0.35	7.01	7.87	8.61
10000.1	13000.1	0.65	0.64	0.63	7.11	7.68	8.12
10400.1	13400.1	0.47	0.49	0.49	10.60	10.73	10.84
10800.1	13800.1	0.00	0.06	0.09	9.03	9.13	9.30
11200.1	14200.1	0.50	0.56	0.58	10.38	10.35	10.42
11600.1	14600.1	0.20	0.27	0.31	9.77	9.61	9.58
12000.1	15000.1	0.43	0.46	0.48	10.37	10.10	9.92
12400.1	15400.1	0.54	0.57	0.57	11.86	11.26	10.85
12800.1	15800.1	0.53	0.57	0.58	12.77	11.82	11.04
13200.1	16200.1	0.57	0.58	0.57	13.02	12.11	11.17
13600.1	16600.1	0.66	0.66	0.65	12.92	12.22	11.46
14000.1	17000.1	0.67	0.66	0.64	13.52	12.66	11.81
14400.1	17400.1	0.75	0.72	0.68	13.19	12.23	11.34
14800.1	17800.1	0.64	0.62	0.60	13.19	12.24	11.38
15000.1	18000.1	0.58	0.57	0.56	13.09	12.14	11.27
15200.1	18200.1	0.51	0.49	0.48	12.19	11.37	10.63
15600.1	18600.1	0.58	0.50	0.47	11.44	10.77	10.13
16000.1	19000.1	0.61	0.52	0.47	11.35	10.65	10.00
16400.1	19400.1	0.54	0.45	0.40	10.46	9.81	9.10
16800.1	19800.1	0.48	0.39	0.33	9.08	8.39	7.60
17200.1	20200.1	0.58	0.43	0.37	7.46	7.08	6.71
17600.1	20600.1	0.64	0.50	0.44	5.84	5.82	5.78
18000.1	21000.1	0.59	0.49	0.44	4.07	4.35	4.55
18400.1	21400.1	0.63	0.51	0.46	2.49	3.17	3.66
18800.1	21800.1	0.65	0.54	0.48	1.83	2.60	3.20
19200.1	22200.1	0.69	0.59	0.52	1.77	2.49	3.20
19600.1	22600.1	0.70	0.61	0.54	1.14	1.61	2.17
20000.1	23000.1	0.89	0.79	0.70	2.21	2.76	3.28
20400.1	23400.1	0.55	0.50	0.43	0.66	0.98	1.38
20800.1	23800.1	0.88	0.82	0.76	0.65	0.84	1.17
21000.1	24000.1	0.93	0.88	0.82	0.89	1.08	1.31
21600.1	24600.1	0.98	0.91	0.85	3.18	3.08	2.95
22000.1	25000.1	0.92	0.82	0.76	4.15	4.01	3.77
22400.1	25400.1	0.98	0.80	0.68	3.00	2.63	2.17
22800.1	25800.1	2.01	1.55	1.29	4.93	4.25	3.54
23200.1	26200.1	5.93	3.12	2.23	7.97	9.50	9.02
23600.1	26600.1	11.00	4.14	2.39	5.32	13.25	13.85
24000.1	27000.1	25.70	15.88	5.27	248.06	4.96	12.48



Frequency Mixer

SMIQ-6243H+

Typical Performance Data

RF (IN) (MHz)	GAIN COMPRESSION (I)			GAIN COMPRESSION (Q)			GAIN COMPRESSION (I)			GAIN COMPRESSION (Q)			GAIN COMPRESSION (I)			GAIN COMPRESSION (Q)					
	IF = 200MHz									IF = 2000MHz						IF = 3000MHz					
	@LO (dBm)			@LO (dBm)			@LO (dBm)			@LO (dBm)			@LO (dBm)			@LO (dBm)					
	+17	+18	+19	+17	+18	+19	+17	+18	+19	+17	+18	+19	+17	+18	+19	+17	+18	+19			
6000.1	0.96	0.96	0.93	0.83	0.84	0.83	0.30	0.29	0.29	0.33	0.33	0.31	0.47	0.44	0.43	0.57	0.51	0.47			
6200.1	1.08	1.05	1.00	0.95	0.91	0.85	0.38	0.36	0.34	0.46	0.43	0.41	0.56	0.53	0.50	0.71	0.63	0.57			
6400.1	0.84	0.80	0.75	0.89	0.82	0.75	0.45	0.44	0.41	0.58	0.51	0.47	0.64	0.60	0.55	0.80	0.71	0.63			
6800.1	0.27	0.28	0.27	0.34	0.34	0.32	0.46	0.44	0.42	0.66	0.59	0.54	0.68	0.64	0.59	0.80	0.73	0.66			
7200.1	0.20	0.19	0.19	0.30	0.28	0.26	0.50	0.47	0.45	0.67	0.60	0.55	0.60	0.57	0.54	0.68	0.64	0.60			
7600.1	0.25	0.26	0.26	0.34	0.31	0.28	0.52	0.47	0.44	0.67	0.60	0.53	0.44	0.43	0.41	0.46	0.44	0.42			
8000.1	0.29	0.29	0.30	0.38	0.36	0.35	0.53	0.51	0.48	0.62	0.59	0.57	0.29	0.30	0.28	0.29	0.29	0.28			
8400.1	0.31	0.32	0.33	0.31	0.31	0.31	0.37	0.37	0.38	0.40	0.40	0.41	0.27	0.25	0.25	0.27	0.27	0.28			
8800.1	0.32	0.32	0.32	0.33	0.31	0.30	0.26	0.27	0.27	0.27	0.28	0.28	0.27	0.28	0.27	0.25	0.27	0.28			
9200.1	0.31	0.31	0.31	0.35	0.33	0.32	0.36	0.35	0.33	0.40	0.38	0.36	0.10	0.17	0.21	0.14	0.19	0.23			
9600.1	0.36	0.35	0.35	0.37	0.35	0.34	0.34	0.34	0.33	0.37	0.37	0.37	0.03	0.08	0.14	0.07	0.10	0.15			
10000.1	0.35	0.36	0.36	0.33	0.33	0.33	0.15	0.21	0.25	0.26	0.30	0.32	0.14	0.14	0.16	0.03	0.05	0.09			
10400.1	0.30	0.31	0.32	0.27	0.28	0.29	0.15	0.18	0.21	0.11	0.15	0.19	0.09	0.09	0.11	0.05	0.06	0.07			
10800.1	0.31	0.31	0.32	0.26	0.27	0.28	0.12	0.13	0.15	0.09	0.10	0.12	0.09	0.09	0.11	0.15	0.14	0.15			
11200.1	0.31	0.32	0.33	0.26	0.27	0.28	0.07	0.09	0.12	0.13	0.14	0.16	0.15	0.15	0.15	0.16	0.14	0.14			
11600.1	0.21	0.25	0.27	0.20	0.23	0.24	0.10	0.12	0.14	0.09	0.11	0.13	0.21	0.22	0.22	0.23	0.23	0.22			
12000.1	0.17	0.19	0.21	0.17	0.20	0.22	0.07	0.10	0.12	0.11	0.12	0.14	0.24	0.25	0.24	0.25	0.24	0.23			
12400.1	0.24	0.24	0.25	0.17	0.19	0.21	0.17	0.19	0.20	0.19	0.19	0.20	0.26	0.25	0.24	0.28	0.26	0.25			
12800.1	0.19	0.20	0.21	0.15	0.17	0.18	0.16	0.19	0.20	0.19	0.20	0.21	0.27	0.25	0.25	0.28	0.26	0.25			
13200.1	0.26	0.26	0.26	0.20	0.21	0.22	0.22	0.23	0.23	0.19	0.21	0.22	0.35	0.31	0.28	0.30	0.27	0.24			
13600.1	0.40	0.41	0.41	0.36	0.36	0.36	0.38	0.37	0.38	0.33	0.33	0.34	0.60	0.53	0.49	0.54	0.48	0.44			
14000.1	0.41	0.42	0.42	0.37	0.37	0.37	0.38	0.35	0.34	0.40	0.37	0.35	0.54	0.50	0.48	0.52	0.48	0.46			
14400.1	0.36	0.38	0.39	0.34	0.34	0.34	0.42	0.37	0.35	0.43	0.39	0.37	0.55	0.49	0.46	0.48	0.44	0.43			
14800.1	0.35	0.36	0.37	0.35	0.35	0.34	0.51	0.45	0.40	0.47	0.42	0.39	0.52	0.47	0.44	0.47	0.43	0.40			
15000.1	0.33	0.34	0.35	0.33	0.33	0.33	0.53	0.47	0.43	0.47	0.43	0.39	0.51	0.46	0.44	0.48	0.43	0.41			
15200.1	0.35	0.35	0.36	0.31	0.32	0.34	0.51	0.47	0.44	0.48	0.44	0.41	0.52	0.49	0.48	0.51	0.47	0.45			
15600.1	0.34	0.33	0.33	0.28	0.29	0.30	0.47	0.43	0.41	0.47	0.44	0.42	0.48	0.49	0.51	0.46	0.48	0.49			
16000.1	0.35	0.34	0.33	0.31	0.30	0.29	0.47	0.45	0.43	0.46	0.44	0.43	0.43	0.46	0.47	0.42	0.45	0.46			
16400.1	0.28	0.28	0.29	0.26	0.26	0.25	0.36	0.39	0.40	0.36	0.39	0.40	0.39	0.41	0.41	0.39	0.41	0.41			
16800.1	0.28	0.27	0.27	0.26	0.25	0.24	0.35	0.37	0.37	0.36	0.38	0.38	0.39	0.38	0.36	0.40	0.40	0.37			
17200.1	0.29	0.27	0.26	0.26	0.24	0.24	0.36	0.37	0.37	0.38	0.40	0.40	0.38	0.35	0.34	0.41	0.37	0.35			
17600.1	0.24	0.26	0.27	0.22	0.24	0.26	0.39	0.39	0.37	0.40	0.41	0.40	0.37	0.35	0.34	0.39	0.36	0.35			
18000.1	0.24	0.27	0.29	0.24	0.27	0.30	0.42	0.41	0.39	0.43	0.42	0.41	0.37	0.36	0.35	0.39	0.37	0.35			
18400.1	0.29	0.31	0.32	0.29	0.30	0.32	0.41	0.39	0.38	0.44	0.41	0.40	0.35	0.34	0.34	0.36	0.35	0.34			
18800.1	0.28	0.29	0.29	0.26	0.26	0.26	0.32	0.30	0.30	0.36	0.34	0.32	0.25	0.25	0.25	0.24	0.26	0.26			
19200.1	0.30	0.31	0.31	0.28	0.29	0.29	0.33	0.30	0.29	0.35	0.32	0.31	0.25	0.25	0.25	0.25	0.26	0.26			
19600.1	0.34	0.33	0.32	0.34	0.33	0.32	0.33	0.31	0.30	0.37	0.33	0.31	0.28	0.27	0.27	0.30	0.29	0.28			
20000.1	0.35	0.33	0.32	0.36	0.33	0.32	0.32	0.30	0.29	0.36	0.33	0.31	0.31	0.30	0.29	0.29	0.29	0.29			
20400.1	0.36	0.34	0.33	0.33	0.30	0.29	0.32	0.30	0.28	0.33	0.31	0.29	0.25	0.26	0.26	0.25	0.25	0.26			
20800.1	0.36	0.34	0.33	0.39	0.34	0.32	0.26	0.27	0.27	0.30	0.30	0.29	0.25	0.27	0.27	0.24	0.24	0.25			
21200.1	0.37	0.33	0.31	0.37	0.32	0.29	0.22	0.23	0.24	0.24	0.24	0.25	0.28	0.28	0.29	0.27	0.27	0.27			
21600.1	0.31	0.30	0.28	0.31	0.27	0.25	0.24	0.23	0.24	0.24	0.23	0.23	0.28	0.27	0.27	0.33	0.29	0.27			
22000.1	0.27	0.27	0.27	0.25	0.24	0.23	0.31	0.29	0.28	0.31	0.29	0.28	0.30	0.29	0.28	0.46	0.37	0.33			
22400.1	0.30	0.30	0.29	0.27	0.26	0.26	0.35	0.33	0.32	0.39	0.37	0.35	0.31	0.29	0.28	0.78	0.47	0.35			
22800.1	0.31	0.30	0.29	0.29	0.28	0.27	0.30	0.30	0.29	0.42	0.38	0.36	0.32	0.27	0.26	0.99	0.63	0.36			
23200.1	0.29	0.28	0.28	0.27	0.25	0.24	0.24	0.24	0.24	0.39	0.33	0.30	0.32	0.29	0.27	0.82	0.77	0.40			
23600.1	0.27	0.27	0.27	0.29	0.27	0.26	0.34	0.30	0.29	0.64	0.39	0.29	0.31	0.34	0.33	5.10	0.45	0.87			
24000.1	0.18	0.19	0.20	0.22	0.21	0.20	0.34	0.30	0.28	0.88	0.51	0.30	0.72	0.34	0.23	13.21	17.41	6.80			



Frequency Mixer

SMIQ-6243H+

Typical Performance Data

RF (IN) (MHz)	Input IP3 Lower Side Band (I)			Input IP3 Lower Side Band (Q)			Input IP3 Upper Side Band (I)			Input IP3 Upper Side Band (Q)		
	IF = 200MHz											
	@LO (dBm)			@LO (dBm)			@LO (dBm)			@LO (dBm)		
	+17	+18	+19	+17	+18	+19	+17	+18	+19	+17	+18	+19
6000.1	18.62	19.00	19.15	15.82	16.50	17.24	17.88	18.47	18.79	15.44	16.00	16.65
6200.1	17.43	17.75	18.00	15.44	15.97	16.43	17.24	17.61	18.03	15.11	15.62	16.03
6400.1	17.07	17.20	17.46	15.13	15.72	16.16	17.06	17.30	17.61	15.00	15.63	16.05
6800.1	17.65	18.08	18.42	14.11	14.90	15.68	17.84	18.39	18.80	14.23	15.07	15.89
7200.1	18.53	18.93	19.21	14.90	15.62	16.39	18.59	19.05	19.34	15.06	15.77	16.54
7600.1	18.94	19.38	19.64	16.30	16.69	17.32	19.07	19.41	19.68	16.60	17.10	17.66
8000.1	20.04	20.47	20.69	17.83	18.27	18.85	20.44	20.83	21.04	18.13	18.62	19.25
8400.1	21.53	21.98	22.67	20.52	20.64	21.10	21.58	22.32	23.07	20.70	20.87	21.28
8800.1	22.87	23.10	23.75	23.23	22.73	22.66	22.39	22.65	23.30	23.04	22.43	22.26
9200.1	28.58	26.96	25.24	26.17	26.68	25.70	27.78	26.05	24.65	25.19	25.60	24.91
9600.1	27.18	27.47	27.69	27.50	28.42	28.36	25.85	26.43	26.39	26.78	26.92	27.30
10000.1	27.39	27.65	28.18	28.60	30.41	30.53	25.27	26.27	26.03	25.54	26.23	26.77
10400.1	22.59	23.26	24.12	22.28	22.95	23.59	22.47	23.21	23.83	22.21	22.93	23.62
10800.1	22.85	22.74	23.08	22.20	22.16	22.22	22.99	22.92	23.07	22.62	22.28	22.58
11200.1	22.84	22.31	22.24	23.08	22.84	22.52	23.25	22.61	22.43	23.78	23.09	22.94
11600.1	22.44	21.81	21.75	21.79	21.47	21.45	23.26	22.37	22.29	22.37	21.93	21.89
12000.1	24.37	23.46	22.63	23.27	22.15	22.01	24.32	23.54	22.68	23.52	22.60	22.17
12400.1	23.20	23.22	22.97	26.22	26.18	25.04	23.04	23.17	23.03	25.98	26.04	25.38
12800.1	21.60	22.25	22.76	21.87	22.12	22.38	21.72	22.27	22.72	21.82	22.05	22.41
13200.1	19.94	20.59	21.07	20.76	21.10	21.50	19.85	20.55	21.17	20.79	21.10	21.53
13600.1	19.89	20.79	21.40	20.69	21.19	21.64	19.88	20.68	21.41	20.60	21.18	21.60
14000.1	19.70	20.88	21.63	20.90	21.61	22.28	19.70	20.83	21.47	20.79	21.58	22.11
14400.1	19.80	21.04	21.86	21.23	22.04	22.77	19.82	20.99	21.98	21.21	22.01	22.83
14800.1	20.69	21.99	22.79	21.66	22.69	23.33	20.71	22.04	23.02	21.73	22.98	23.68
15000.1	21.29	22.40	23.31	21.98	22.96	23.71	21.43	22.67	23.56	22.10	23.20	24.18
15200.1	22.01	22.72	23.60	21.96	22.75	23.75	22.31	23.08	23.92	22.09	23.23	24.14
15600.1	24.68	24.05	24.12	23.91	23.66	24.09	24.92	24.15	24.64	24.16	23.81	24.05
16000.1	32.56	28.71	27.29	29.03	27.40	25.72	33.39	29.97	28.01	30.54	28.30	26.39
16400.1	29.16	34.67	30.38	34.25	32.87	29.87	30.47	34.62	31.83	34.23	31.74	29.25
16800.1	29.84	34.09	32.28	33.93	35.71	30.65	28.49	33.69	35.93	30.34	34.07	32.51
17200.1	28.71	30.35	33.35	30.49	31.53	33.05	28.07	31.12	33.49	29.48	33.80	33.72
17600.1	30.13	31.42	31.97	29.53	29.25	29.50	31.45	34.21	33.16	29.24	29.75	30.11
18000.1	24.95	25.24	25.85	24.06	24.71	25.62	25.17	25.39	25.77	24.11	24.85	25.73
18400.1	24.95	25.10	26.31	24.52	24.95	25.76	24.64	24.73	25.94	24.23	24.66	25.39
18800.1	25.47	26.08	27.93	25.97	26.17	27.48	25.56	26.01	27.87	25.52	26.30	27.25
19200.1	25.14	27.19	28.93	24.83	26.22	28.05	24.98	27.06	28.95	24.85	26.17	28.60
19600.1	27.29	29.12	30.49	25.18	27.81	29.15	27.35	28.90	29.80	24.96	27.63	28.77
20000.1	26.27	27.83	28.69	25.06	27.71	29.31	26.58	27.69	28.57	25.33	27.09	29.60
20400.1	28.25	29.54	29.71	26.02	28.23	29.37	28.20	30.29	30.87	26.44	29.18	29.71
20800.1	27.34	28.50	29.86	26.59	27.81	28.78	28.01	29.39	30.25	26.88	29.21	31.23
21200.1	26.06	26.48	27.31	26.21	27.82	28.24	26.33	27.13	28.19	26.55	27.87	28.98
21600.1	27.33	27.28	27.35	27.73	27.93	27.94	27.39	27.21	27.58	27.67	27.85	27.98
22000.1	28.67	28.00	28.11	28.39	28.16	27.77	28.61	28.04	28.48	29.12	27.98	27.73
22400.1	27.82	27.68	27.88	28.05	27.34	27.24	28.19	27.65	27.82	27.40	27.20	27.17
22800.1	28.77	28.12	28.41	29.50	28.53	28.54	27.82	27.67	28.02	29.82	27.85	27.49
23200.1	29.39	29.99	30.54	29.49	29.56	30.04	31.77	31.66	31.14	30.23	31.17	29.62
23600.1	27.57	30.10	31.22	27.22	29.23	30.94	28.19	30.64	33.76	27.18	27.88	31.95
24000.1	32.24	33.85	33.54	29.43	30.11	32.88	31.31	33.35	36.21	28.97	29.77	33.52



Frequency Mixer

SMIQ-6243H+

Typical Performance Data

RF (IN) (MHz)	Input IP3 Lower Side Band (I)			Input IP3 Lower Side Band (Q)			Input IP3 Upper Side Band (I)			Input IP3 Upper Side Band (Q)		
	IF = 2000MHz											
	@LO (dBm)			@LO (dBm)			@LO (dBm)			@LO (dBm)		
	+17	+18	+19	+17	+18	+19	+17	+18	+19	+17	+18	+19
6000.1	19.44	20.04	20.54	16.61	17.33	18.20	18.66	19.01	19.48	31.29	32.57	32.81
6200.1	19.50	19.95	20.37	17.07	17.65	18.38	18.88	19.22	19.55	30.04	31.19	32.18
6400.1	20.09	20.39	20.69	18.26	18.82	19.33	19.55	19.87	20.07	32.77	34.18	33.13
6800.1	21.29	21.62	22.07	19.26	19.52	19.78	21.11	21.60	22.13	33.07	34.40	34.22
7200.1	22.19	22.15	22.33	20.50	20.91	21.15	22.23	22.12	22.13	31.72	32.95	33.43
7600.1	21.99	22.40	22.66	20.44	21.08	21.91	22.86	23.16	23.50	33.68	33.54	34.00
8000.1	21.15	21.58	21.98	19.69	20.24	20.80	21.68	22.11	22.49	33.24	33.26	32.33
8400.1	21.14	21.63	21.93	20.65	21.06	21.39	21.66	22.10	22.33	33.59	32.12	31.83
8800.1	20.94	21.54	22.12	20.45	21.02	21.67	21.10	21.65	22.24	32.57	32.69	30.91
9200.1	19.56	19.89	20.25	19.17	19.47	19.76	19.48	19.78	20.20	32.65	30.83	30.65
9600.1	21.01	20.44	20.40	20.59	20.46	20.66	20.79	20.31	20.30	33.82	32.50	31.67
10000.1	23.68	22.55	21.62	23.02	21.92	21.72	23.18	21.94	21.24	32.64	31.78	31.42
10400.1	22.79	22.72	22.39	23.68	23.65	23.30	22.77	22.73	22.24	32.64	32.33	31.13
10800.1	23.47	24.33	24.83	22.63	22.93	23.07	24.09	24.79	25.38	30.50	29.27	31.23
11200.1	21.59	22.18	22.67	21.65	21.86	22.10	22.07	22.75	23.30	29.56	30.07	29.70
11600.1	21.39	21.96	22.48	21.95	22.54	22.64	21.66	22.32	23.01	28.54	30.21	30.14
12000.1	20.66	21.32	21.82	21.50	22.06	22.43	20.85	21.55	22.11	27.92	28.86	30.42
12400.1	20.40	21.50	22.10	22.05	22.71	23.04	20.42	21.55	22.12	27.55	28.06	29.44
12800.1	20.48	21.48	22.12	21.43	22.17	22.75	20.58	21.44	22.12	27.72	28.47	29.46
13200.1	21.38	21.92	22.17	21.72	22.15	22.72	21.38	21.88	22.29	27.37	28.26	29.88
13600.1	22.51	22.82	23.01	22.35	22.55	22.87	22.42	22.63	22.83	26.83	27.47	28.60
14000.1	24.53	23.93	23.82	23.96	23.60	23.51	24.51	23.82	23.45	26.71	27.89	28.62
14400.1	26.22	25.91	25.22	24.26	24.51	24.14	26.41	26.00	25.44	27.53	29.03	30.62
14800.1	25.33	25.83	25.88	24.51	24.95	25.09	25.49	26.31	26.69	28.15	30.06	31.47
15000.1	25.01	25.24	25.95	24.43	25.02	25.01	24.93	25.70	26.03	28.49	29.23	30.65
15200.1	25.39	25.64	25.90	24.74	25.22	25.24	25.63	26.11	26.12	29.42	30.34	30.51
15600.1	26.27	26.46	26.79	24.62	25.18	25.34	26.12	27.10	27.10	31.33	32.12	32.70
16000.1	26.03	25.97	25.54	25.24	24.68	24.67	26.89	26.72	26.12	28.42	33.59	34.79
16400.1	25.56	24.92	24.54	24.41	23.79	24.04	25.78	24.99	24.13	24.86	30.91	31.80
16800.1	22.34	22.68	24.05	21.62	22.07	23.34	22.92	23.14	24.41	23.36	27.82	29.70
17200.1	22.36	23.71	25.40	21.63	22.65	24.54	22.45	23.97	25.82	23.64	27.40	28.37
17600.1	23.95	26.00	27.96	22.43	23.89	26.01	23.92	26.14	27.09	23.77	26.93	27.88
18000.1	25.06	26.41	26.96	23.34	25.01	26.14	25.23	27.12	27.64	20.68	24.44	26.71
18400.1	26.78	27.85	28.55	25.10	26.40	26.99	26.86	27.64	27.96	17.98	20.78	24.51
18800.1	26.81	28.28	28.98	24.74	26.22	28.06	26.70	28.30	27.62	18.29	18.89	23.31
19200.1	25.79	26.88	28.10	24.75	26.00	26.69	26.04	27.26	28.22	18.00	19.34	23.64
19600.1	25.10	26.54	27.15	24.69	25.62	27.06	25.31	26.16	27.21	18.25	19.82	24.18
20000.1	26.74	26.58	27.46	26.10	26.24	26.54	26.50	26.79	26.99	15.33	18.16	23.16
20400.1	28.96	30.21	29.33	28.47	30.65	30.26	31.01	31.42	30.62	10.55	18.64	20.45
20800.1	29.41	32.76	34.66	30.49	31.42	32.74	29.04	31.11	33.40	10.64	15.68	18.58
21200.1	32.30	32.21	32.08	33.53	31.87	31.85	32.12	32.02	33.18	11.53	12.82	17.85
21600.1	29.57	30.30	29.89	30.94	31.34	30.53	30.46	30.35	30.01	15.15	11.28	19.53
22000.1	29.00	28.82	29.07	30.22	29.43	30.18	29.64	28.89	30.15	22.74	15.90	11.99
22400.1	28.12	28.63	29.09	27.68	28.21	28.72	27.88	28.72	29.69	30.59	22.84	16.27
22800.1	30.84	31.32	31.73	26.35	27.56	27.88	33.34	30.96	32.01	31.84	26.31	19.21
23200.1	34.21	32.38	32.44	27.32	29.39	29.71	33.56	33.49	32.96	31.91	26.77	19.55
23600.1	28.36	29.14	30.95	23.13	28.84	30.56	28.03	29.80	30.66	29.99	29.80	21.30
24000.1	26.97	27.47	27.79	20.59	24.39	25.85	27.05	27.86	28.63	30.27	31.14	28.36



Frequency Mixer

SMIQ-6243H+

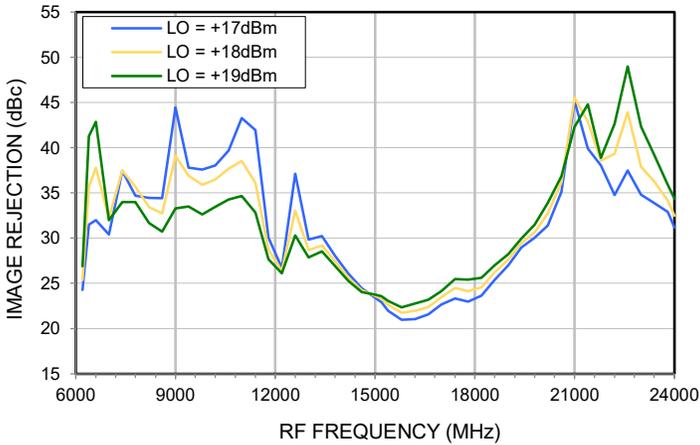
Typical Performance Data

RF (IN) (MHz)	Input IP3 Lower Side Band (I)			Input IP3 Lower Side Band (Q)			Input IP3 Upper Side Band (I)			Input IP3 Upper Side Band (Q)		
	IF = 3000MHz											
	@LO (dBm)			@LO (dBm)			@LO (dBm)			@LO (dBm)		
	+17	+18	+19	+17	+18	+19	+17	+18	+19	+17	+18	+19
6000.1	22.38	22.90	23.29	21.10	21.51	21.96	20.64	21.18	21.70	18.96	19.44	19.84
6200.1	21.28	21.84	22.08	19.99	20.60	20.98	20.42	20.74	21.16	19.00	19.59	19.94
6400.1	20.91	21.49	21.75	19.28	19.99	20.61	20.59	21.19	21.30	18.95	19.65	20.23
6800.1	19.40	19.95	20.49	18.01	18.76	19.41	19.90	20.51	21.03	18.53	19.33	20.06
7200.1	19.41	19.74	19.99	18.74	19.13	19.46	19.89	20.14	20.34	19.40	19.66	19.93
7600.1	19.68	20.09	20.47	19.53	19.73	20.24	20.09	20.60	20.82	19.87	20.37	20.74
8000.1	19.03	19.64	20.17	18.39	18.92	19.56	19.11	19.65	20.18	18.41	19.11	19.73
8400.1	18.30	18.61	18.97	17.77	18.00	18.27	18.21	18.50	18.91	17.69	17.92	18.17
8800.1	20.18	19.60	19.68	19.34	19.29	19.50	20.14	19.58	19.60	19.19	19.07	19.38
9200.1	23.57	22.89	21.48	23.36	22.15	21.39	23.57	22.61	21.35	23.37	21.83	20.94
9600.1	21.72	22.36	23.04	23.00	23.72	24.37	21.51	22.15	22.78	22.72	23.45	23.58
10000.1	22.20	23.15	24.21	22.02	22.84	23.33	22.16	23.24	23.93	22.14	22.81	23.15
10400.1	23.18	23.94	24.42	21.76	22.39	22.90	24.02	24.57	24.99	22.41	23.08	23.33
10800.1	21.82	22.48	23.04	22.56	22.96	23.29	22.05	22.60	23.30	22.67	23.35	23.64
11200.1	21.67	22.54	23.07	21.98	22.62	23.18	22.19	22.88	23.51	22.54	23.15	23.53
11600.1	20.79	21.76	22.19	21.93	22.49	22.68	20.87	21.74	22.30	22.07	22.81	23.19
12000.1	21.75	22.24	22.77	22.35	22.88	23.51	21.72	22.45	22.88	22.78	23.24	23.68
12400.1	21.70	22.15	22.50	22.49	22.99	23.25	21.64	22.26	22.64	22.54	22.94	23.22
12800.1	22.74	22.52	22.79	23.05	23.42	23.27	22.88	22.72	22.75	23.12	23.46	23.28
13200.1	23.72	23.91	23.39	23.39	23.59	23.23	23.79	23.74	23.42	23.58	23.64	23.65
13600.1	22.62	23.18	23.48	22.00	22.72	22.96	22.49	23.05	23.23	21.80	22.53	22.88
14000.1	22.59	23.15	23.19	21.82	22.09	22.47	22.41	23.05	23.20	21.67	22.17	22.61
14400.1	22.68	23.37	23.77	22.62	23.16	23.45	23.05	23.60	23.77	22.61	23.11	23.62
14800.1	23.39	24.23	24.59	23.18	23.52	23.94	23.64	24.31	24.67	23.35	23.96	24.63
15000.1	23.94	24.08	24.25	23.37	23.65	24.09	24.38	24.47	24.63	23.98	23.93	24.24
15200.1	24.07	23.70	23.42	23.42	23.26	23.39	24.30	23.85	23.78	23.84	23.76	23.61
15600.1	22.02	21.54	21.79	21.77	21.48	21.48	22.24	21.61	21.93	21.92	21.39	21.82
16000.1	20.08	20.47	21.84	19.30	19.85	20.93	20.24	20.79	22.22	19.46	20.14	21.22
16400.1	20.37	21.96	23.78	19.36	20.88	22.66	20.45	22.16	24.15	19.49	20.89	22.70
16800.1	24.17	26.13	26.92	21.95	24.03	26.01	24.74	27.00	27.84	22.36	24.31	26.31
17200.1	25.56	26.74	26.79	23.05	24.71	25.98	25.99	27.24	27.82	23.41	25.32	26.27
17600.1	25.83	27.56	27.33	23.50	24.79	26.55	25.78	27.05	27.11	23.51	24.89	25.51
18000.1	26.02	26.50	27.06	24.17	24.99	26.11	25.86	26.98	27.26	24.30	25.54	26.50
18400.1	25.81	26.71	27.81	24.25	25.39	26.31	25.86	26.50	27.47	25.00	25.38	25.99
18800.1	27.40	27.20	27.64	26.16	26.55	27.30	27.35	27.87	27.44	26.33	26.25	27.37
19200.1	32.01	30.58	30.18	30.11	28.38	27.69	32.96	29.44	29.44	29.18	28.95	28.83
19600.1	32.45	32.90	31.91	29.88	30.99	29.20	31.95	32.86	31.17	30.80	30.33	29.34
20000.1	29.43	31.21	31.25	29.82	32.29	29.99	29.54	31.37	32.11	30.22	32.72	30.81
20400.1	34.20	33.12	33.62	32.41	33.71	30.85	33.31	33.32	33.35	31.91	32.95	31.57
20800.1	32.09	30.58	31.15	32.46	32.00	31.10	30.15	30.44	32.71	30.12	29.57	30.35
21000.1	28.02	28.40	28.52	30.74	30.59	29.27	29.16	28.84	29.83	29.52	29.70	30.04
21600.1	29.11	28.78	28.69	28.11	27.94	29.13	28.87	29.68	29.58	28.38	28.84	29.79
22000.1	28.63	30.24	29.16	24.89	26.68	27.69	28.93	29.45	29.57	24.62	26.18	27.70
22400.1	31.06	32.25	32.82	24.93	28.43	29.94	30.88	32.70	31.31	25.02	28.33	32.41
22800.1	27.58	29.22	28.46	21.61	27.21	31.08	28.01	28.22	28.75	21.73	27.51	28.91
23200.1	23.54	25.59	26.77	14.40	17.08	21.66	23.98	25.43	27.21	14.36	17.22	22.08
23600.1	23.64	25.82	28.69	9.85	14.71	19.87	23.46	25.90	27.64	9.81	14.73	20.02
24000.1	20.02	20.94	24.50	4.13	3.05	13.29	20.17	20.92	24.54	4.08	3.10	13.33

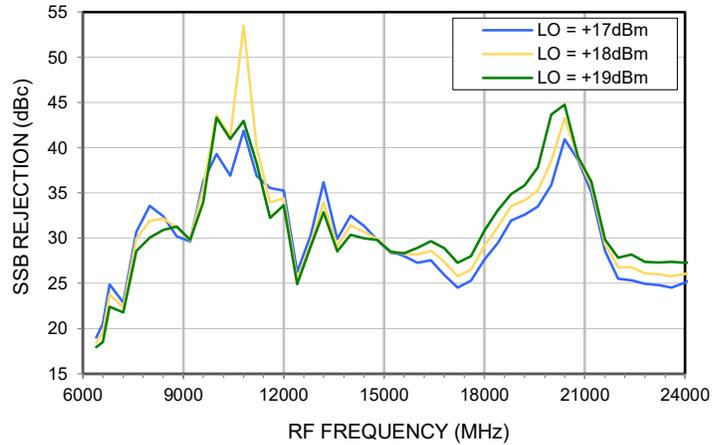


Typical Performance Curves

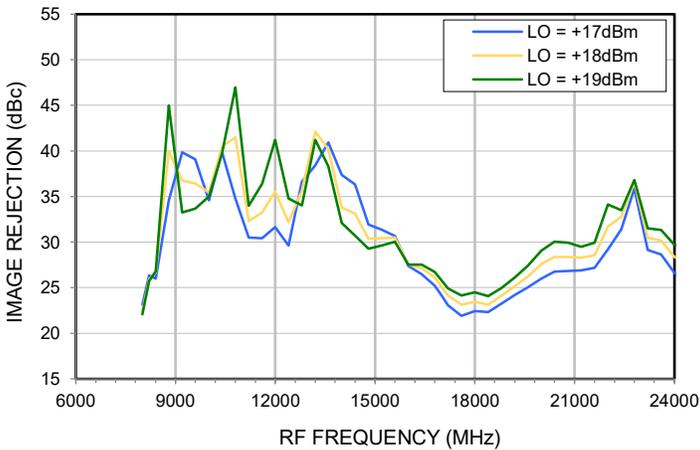
**IMAGE REJECTION (DOWNCONVERTER)
@ IF = 200 MHz**



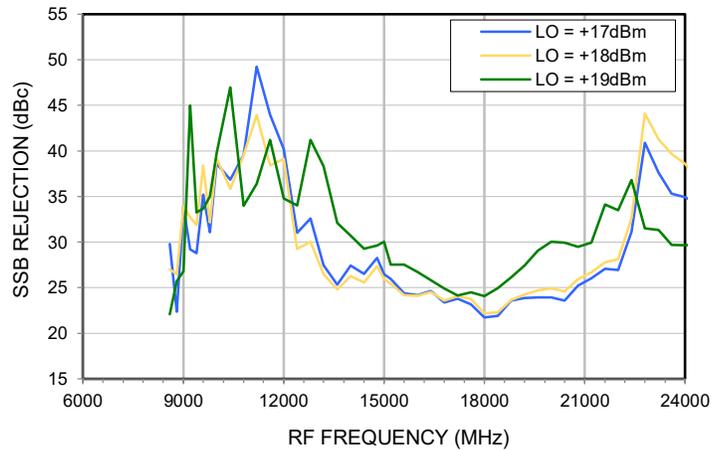
**SSB REJECTION (UPCONVERTER)
@ IF = 200 MHz**



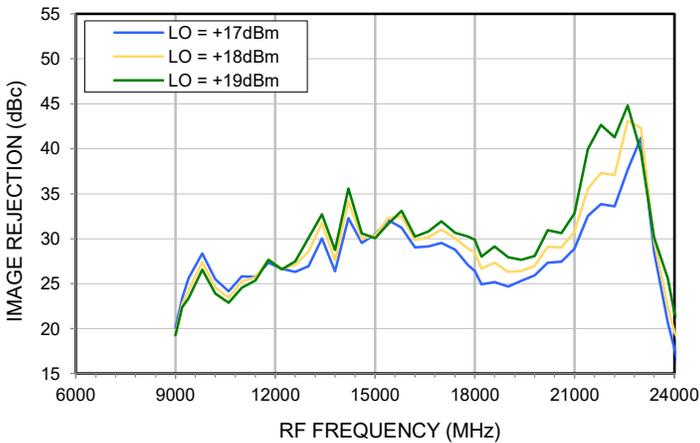
**IMAGE REJECTION (DOWNCONVERTER)
@ IF = 2000 MHz**



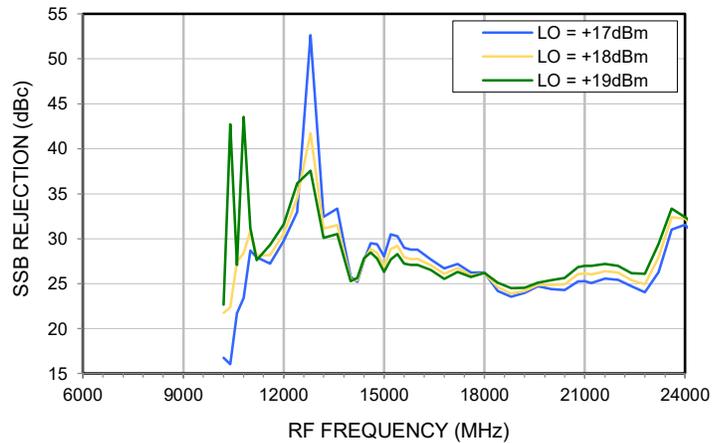
**SSB REJECTION (UPCONVERTER)
@ IF = 2000 MHz**



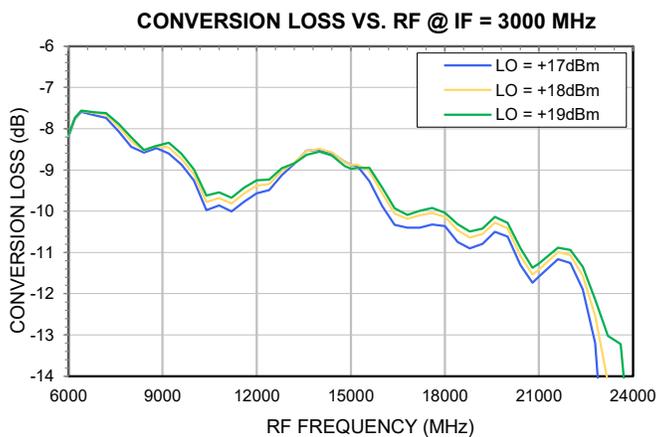
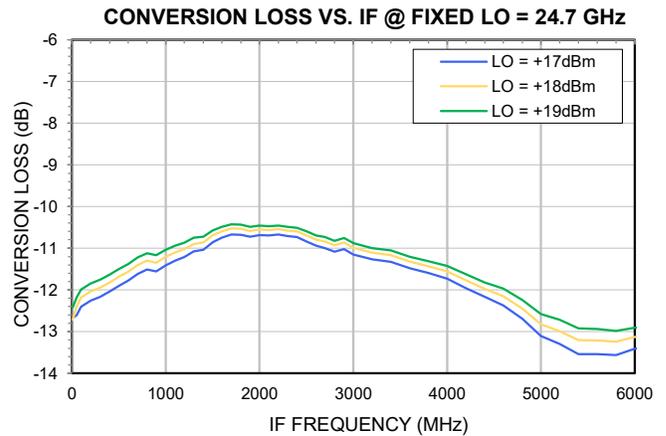
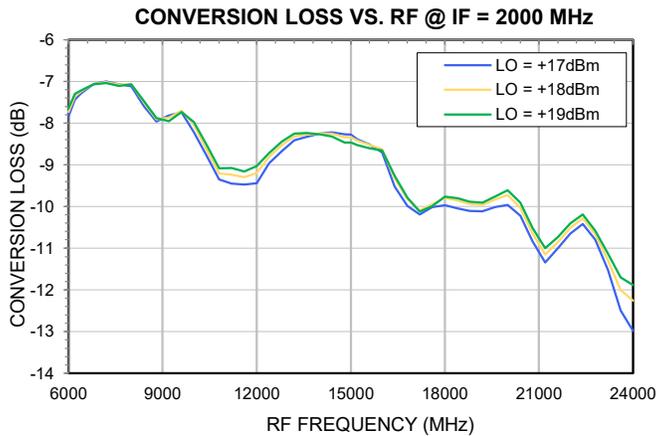
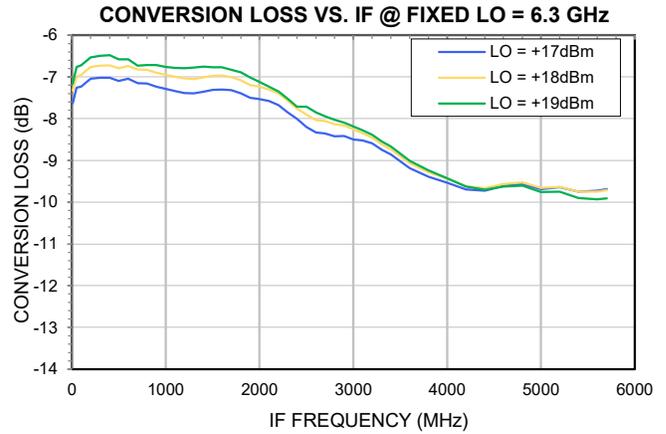
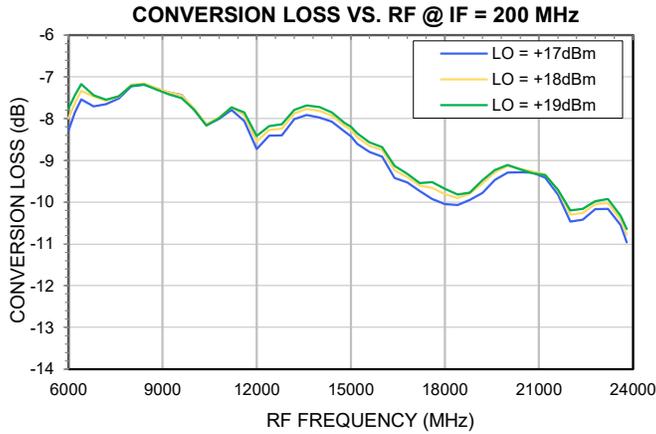
**IMAGE REJECTION (DOWNCONVERTER)
@ IF = 3000 MHz**



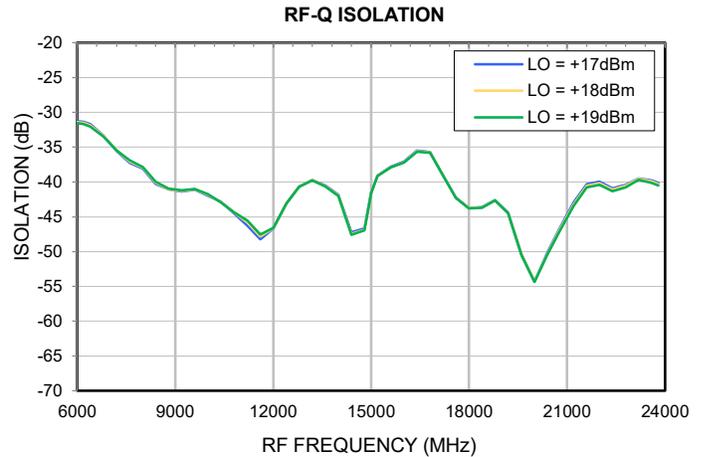
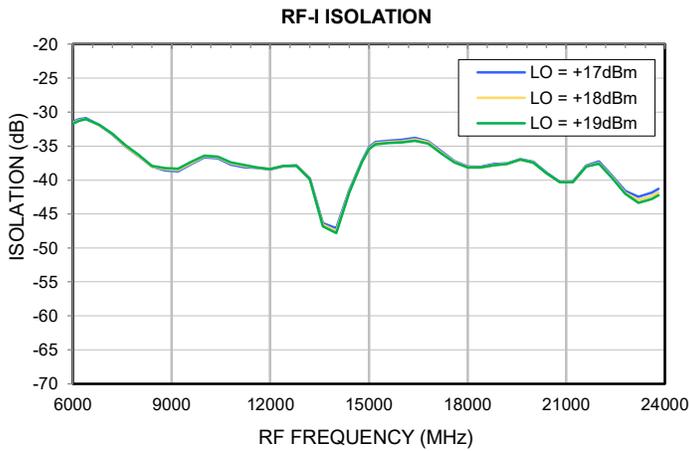
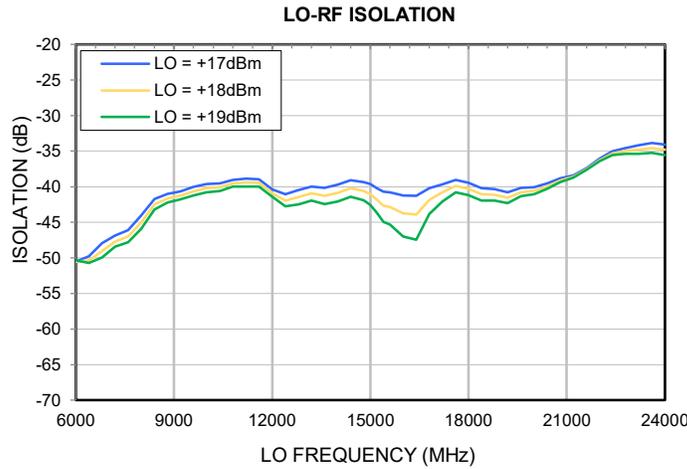
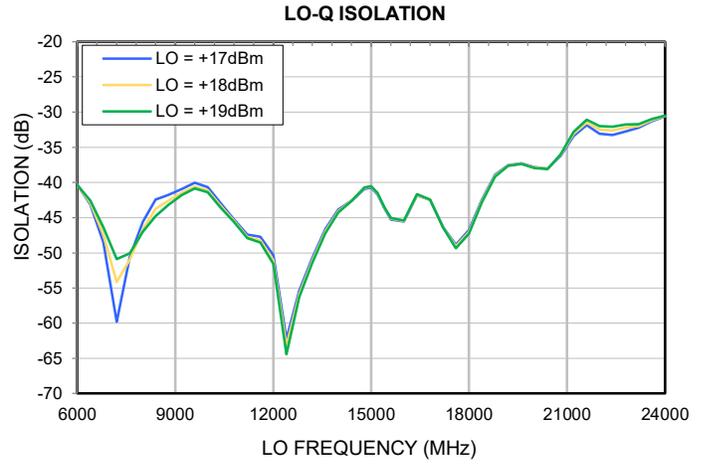
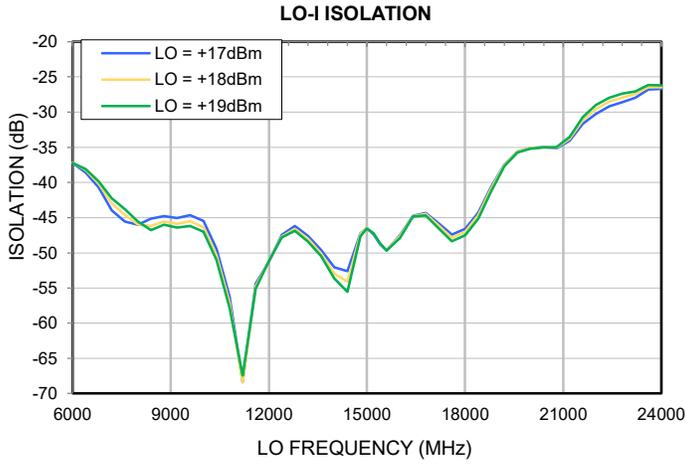
**SSB REJECTION (UPCONVERTER)
@ IF = 3000 MHz**



Typical Performance Curves

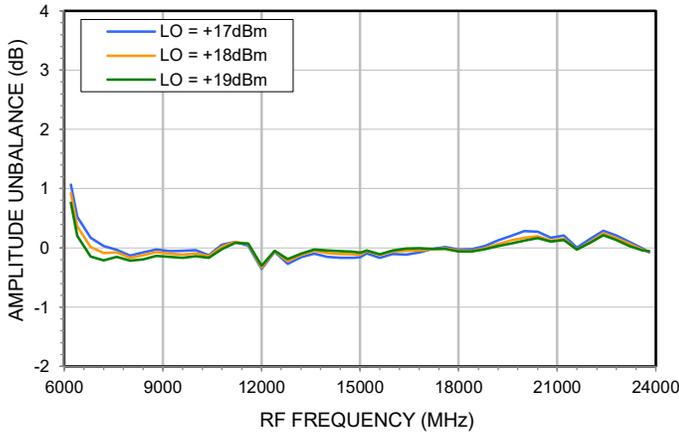


Typical Performance Curves

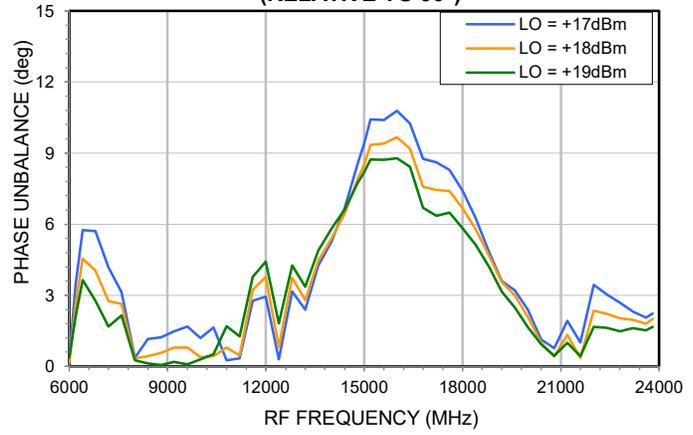


Typical Performance Curves

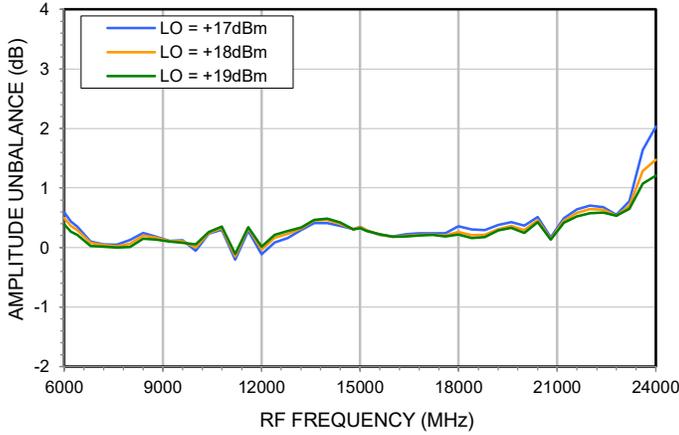
AMPLITUDE UNBALANCE @ FIXED IF = 200 MHz



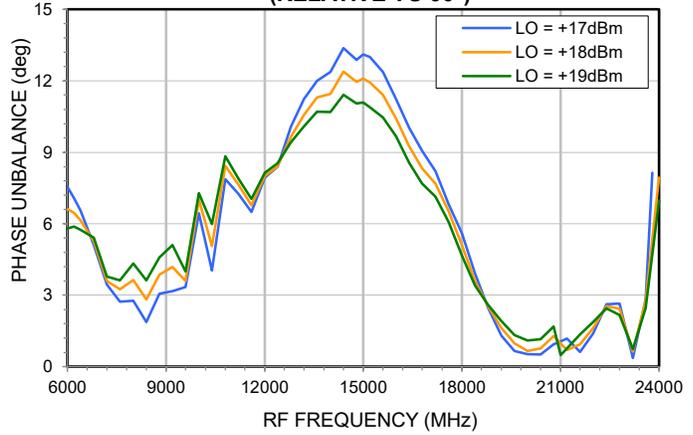
PHASE UNBALANCE @ FIXED IF = 200 MHz (RELATIVE TO 90°)



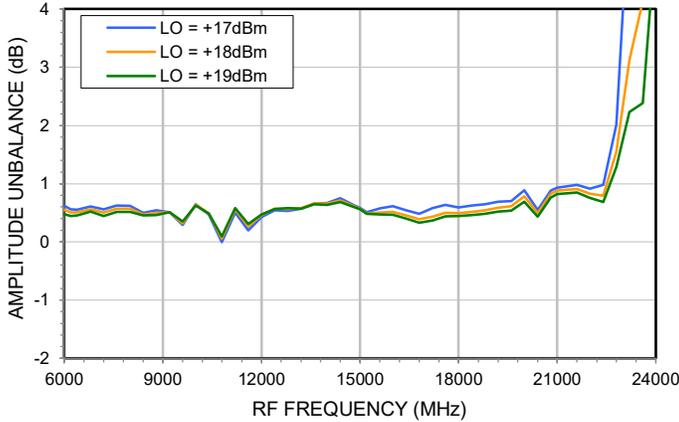
AMPLITUDE UNBALANCE @ FIXED IF = 2000 MHz



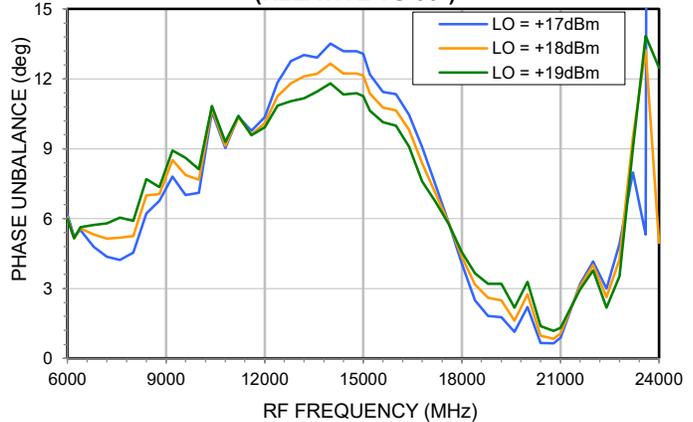
PHASE UNBALANCE @ FIXED IF = 2000 MHz (RELATIVE TO 90°)



AMPLITUDE UNBALANCE @ FIXED IF = 3000 MHz

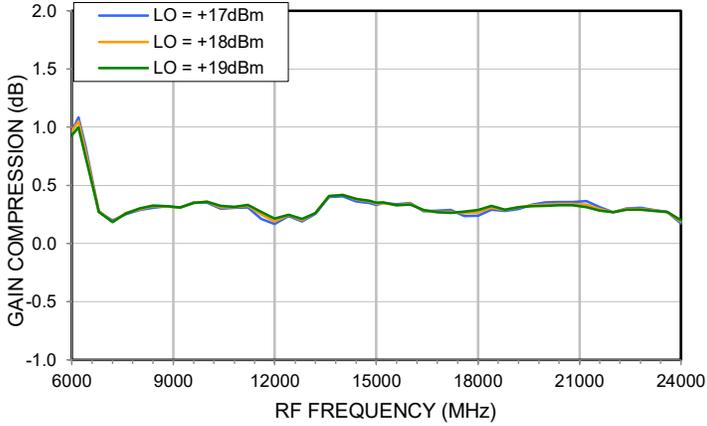


PHASE UNBALANCE @ FIXED IF = 3000 MHz (RELATIVE TO 90°)

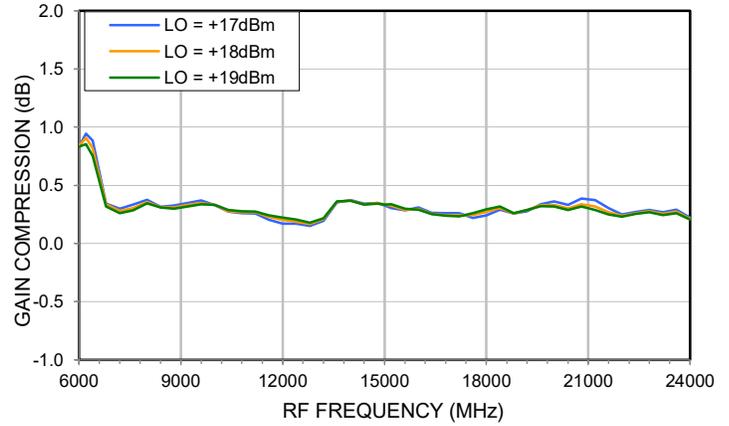


Typical Performance Curves

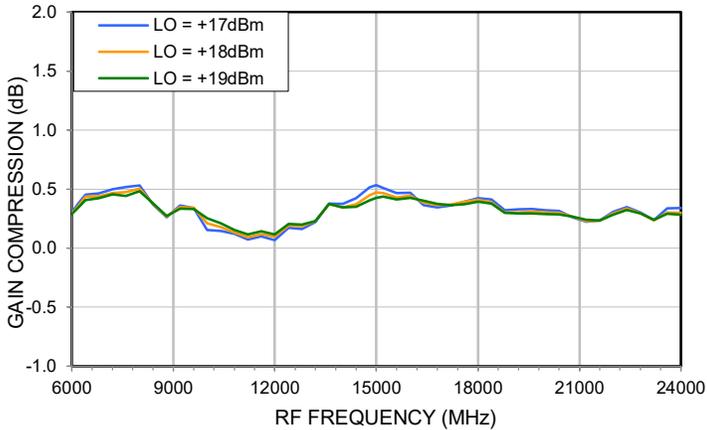
GAIN COMPRESSION (I) @ FIXED IF = 200 MHz
RF INPUT POWER = +10dBm



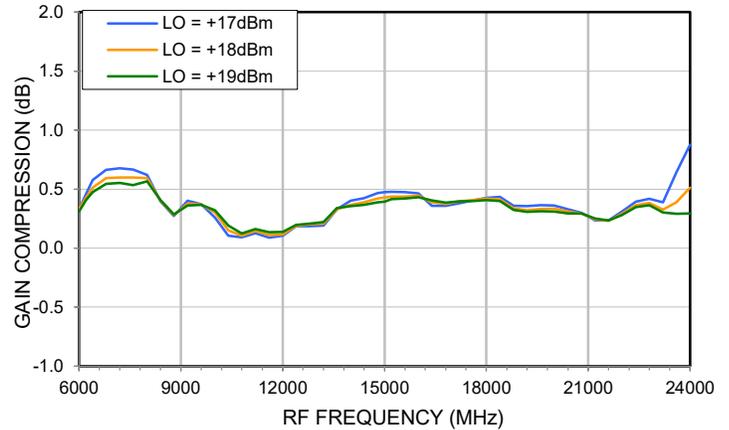
GAIN COMPRESSION (Q) @ FIXED IF = 200 MHz
RF INPUT POWER = +10dBm



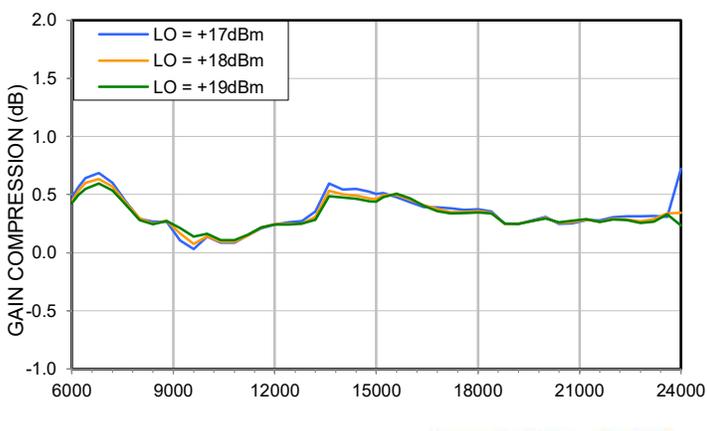
GAIN COMPRESSION (I) @ FIXED IF = 2000 MHz
RF INPUT POWER = +10dBm



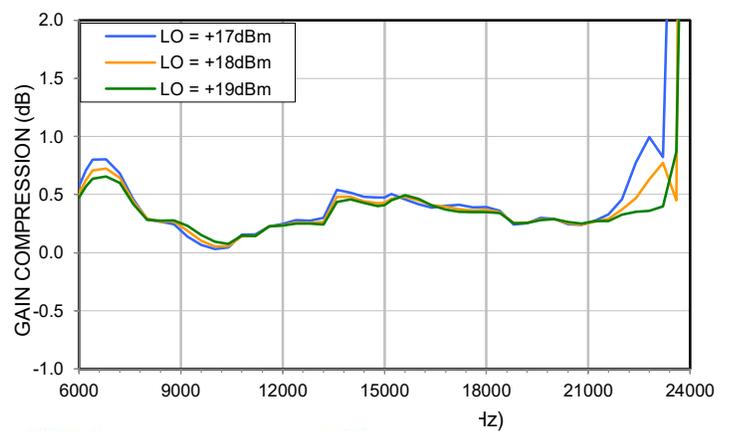
GAIN COMPRESSION (Q) @ FIXED IF = 2000 MHz
RF INPUT POWER = +10dBm



GAIN COMPRESSION (I) @ FIXED IF = 3000 MHz
RF INPUT POWER = +10dBm

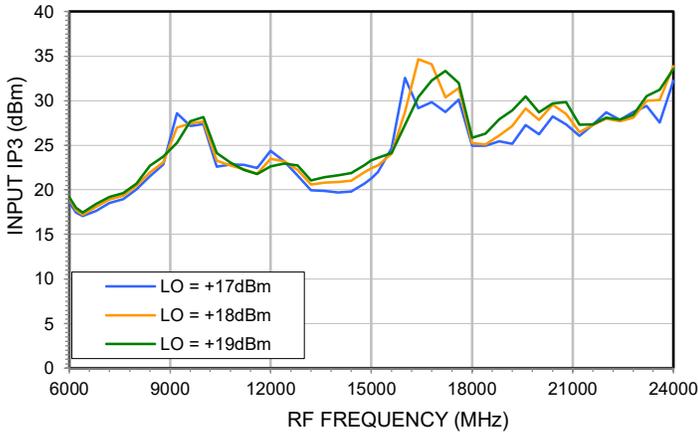


GAIN COMPRESSION (Q) @ FIXED IF = 3000 MHz
RF INPUT POWER = +10dBm

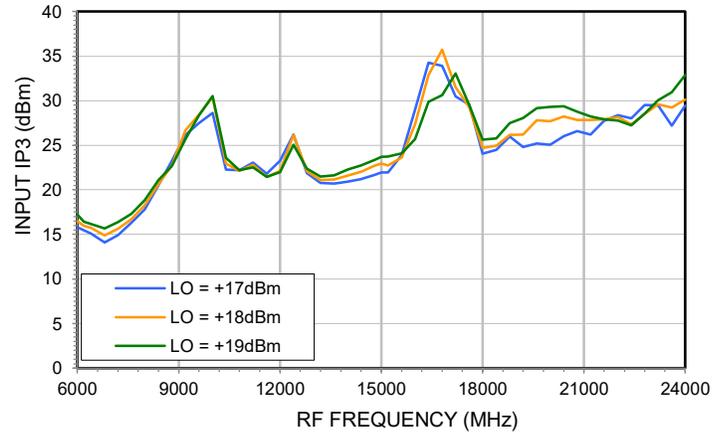


Typical Performance Curves

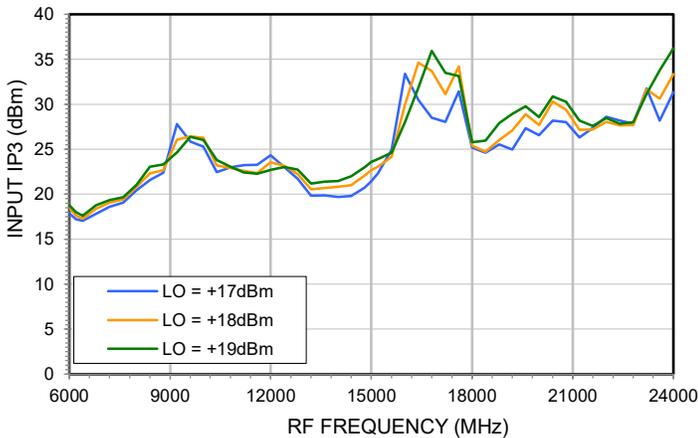
**INPUT IP3 LOWER SIDE BAND (I)
@ FIXED IF = 200 MHz**



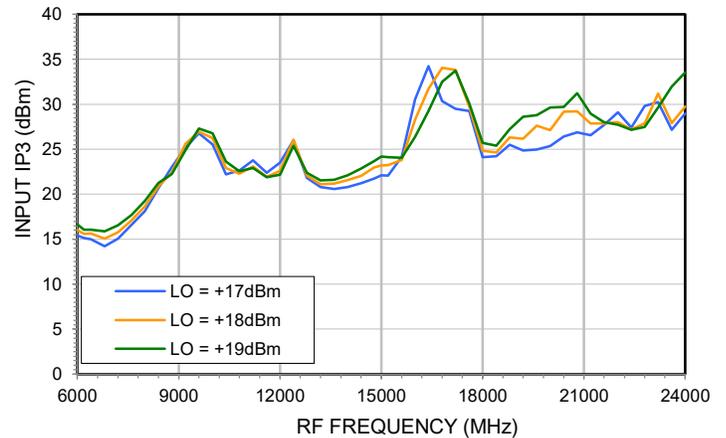
**INPUT IP3 LOWER SIDE BAND (Q)
@ FIXED IF = 200 MHz**



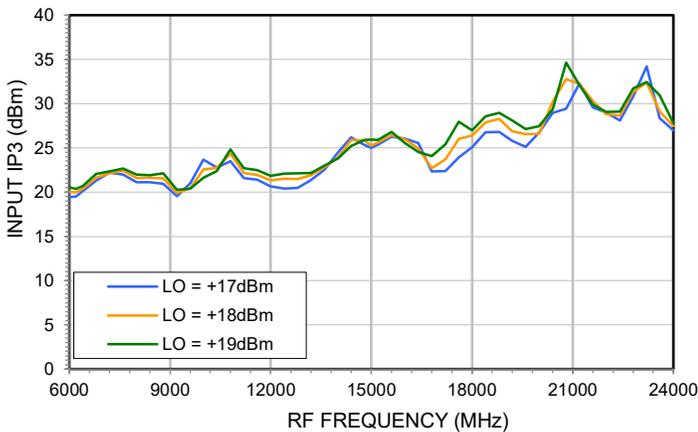
**INPUT IP3 UPPER SIDE BAND (I)
@ FIXED IF = 200 MHz**



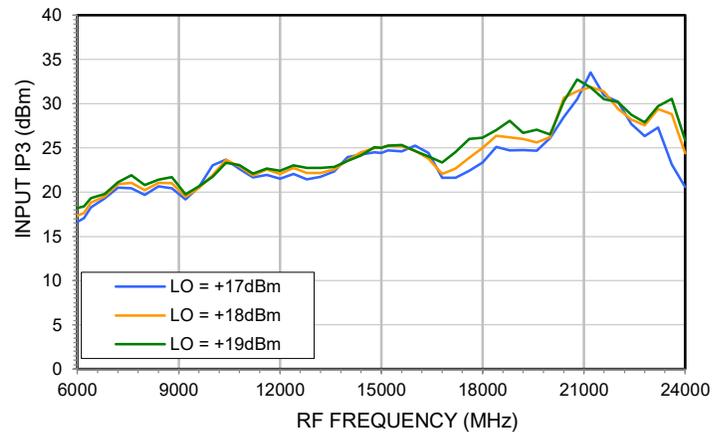
**Input IP3 UPPER SIDE BAND (Q)
@ FIXED IF = 200 MHz**



**INPUT IP3 LOWER SIDE BAND (I)
@ FIXED IF = 2000 MHz**

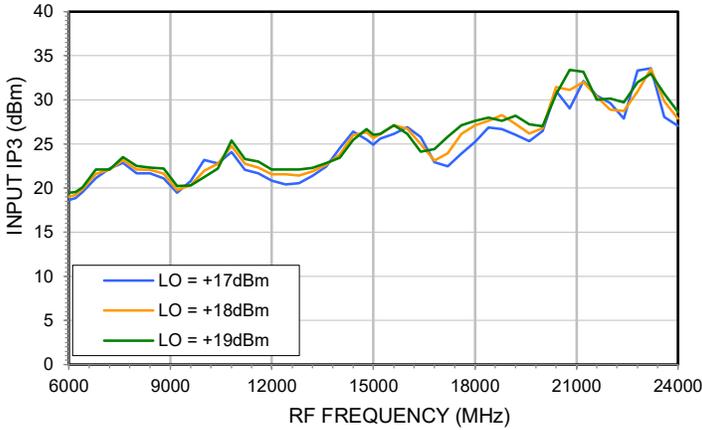


**INPUT IP3 LOWER SIDE BAND (Q)
@ FIXED IF = 2000 MHz**

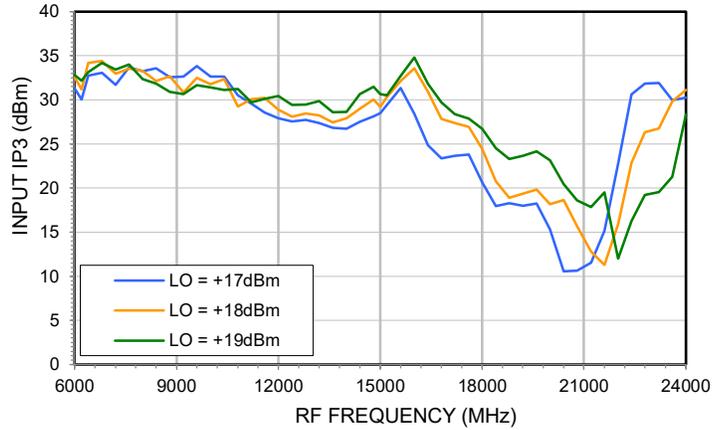


Typical Performance Curves

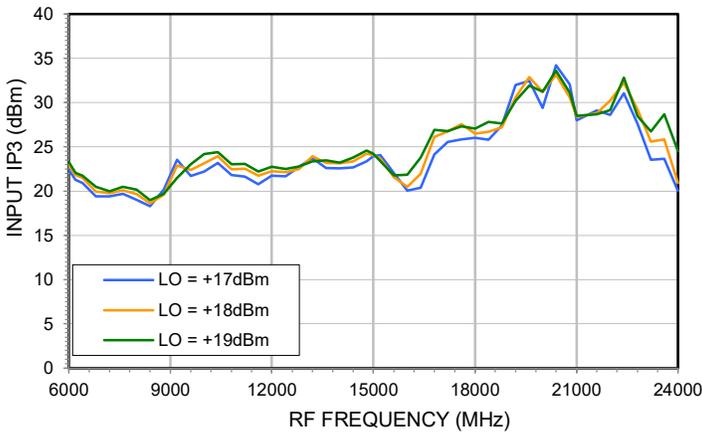
INPUT IP3 UPPER SIDE BAND (I)
@ FIXED IF = 2000 MHz



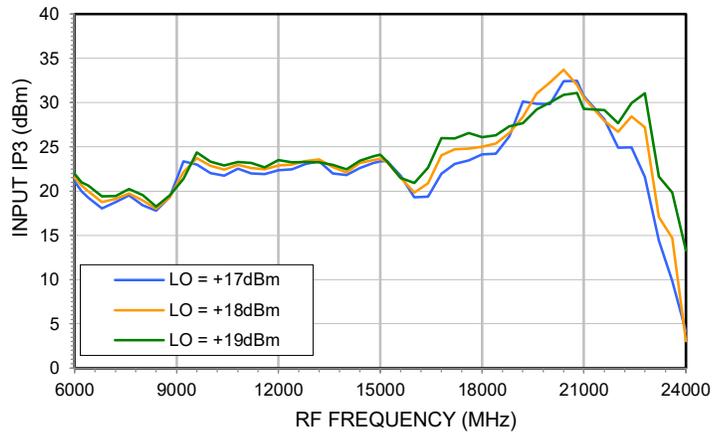
INPUT IP3 UPPER SIDE BAND (Q)
@ FIXED IF = 2000 MHz



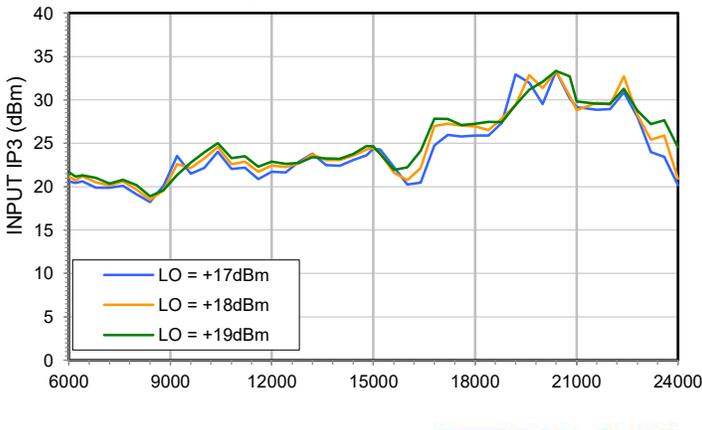
INPUT IP3 LOWER SIDE BAND (I)
@ FIXED IF = 3000 MHz



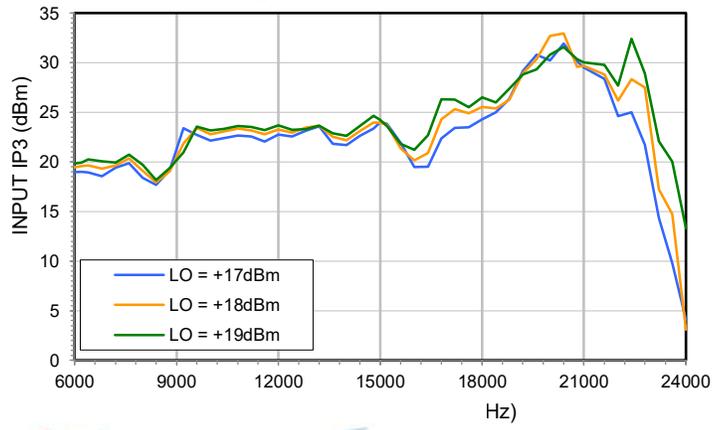
INPUT IP3 LOWER SIDE BAND (Q)
@ FIXED IF = 3000 MHz



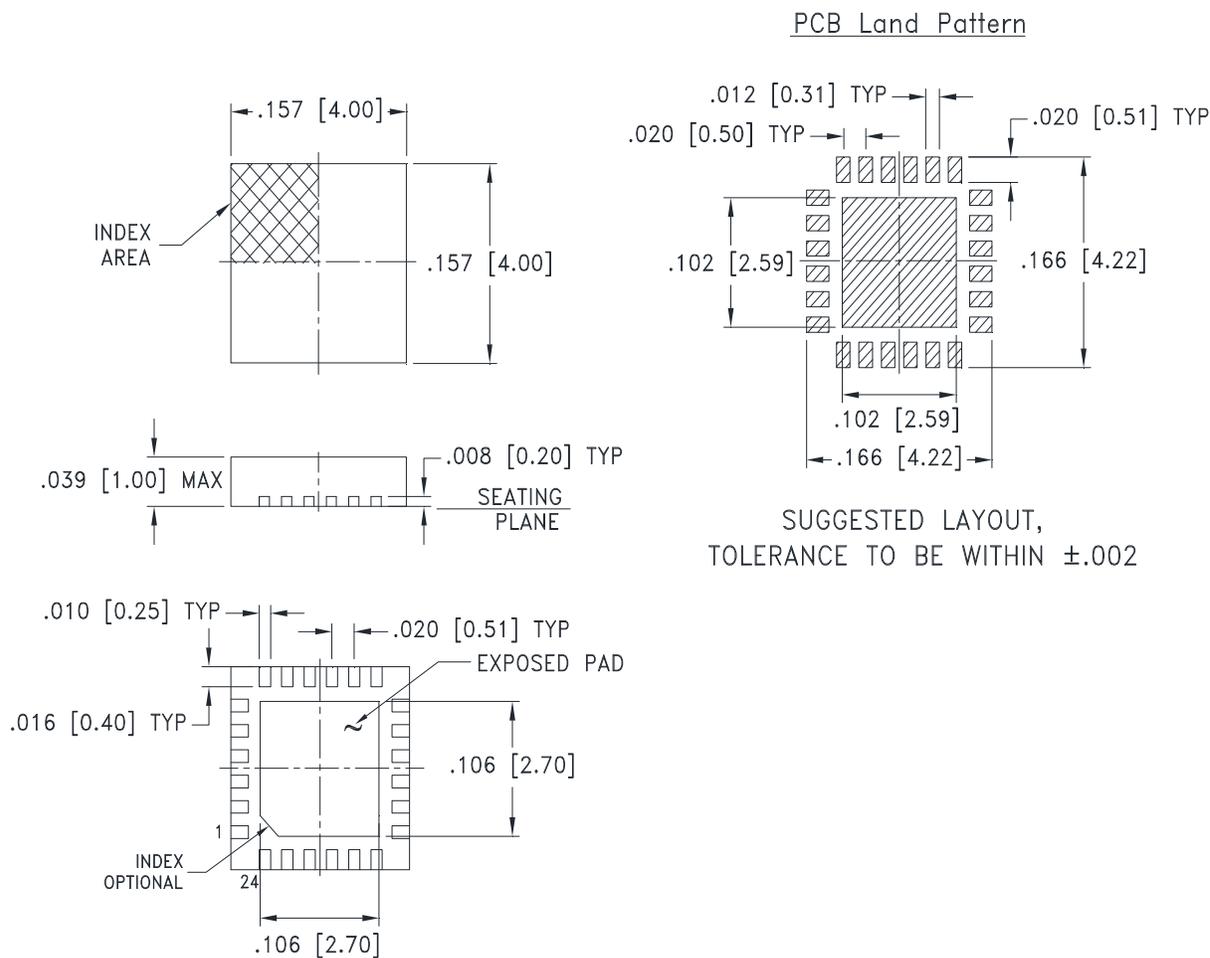
INPUT IP3 UPPER SIDE BAND (I)
@ FIXED IF = 3000 MHz



INPUT IP3 LOWER SIDE BAND (Q)
@ FIXED IF = 3000 MHz



Outline Dimensions



Weight: .04 Grams

Dimensions are in inches (mm). Tolerances: 2 Pl. \pm .01; 3 Pl. \pm .005

Notes:

- Case material: Plastic.
- Termination finish:
 - For RoHS Case Styles: Tin-Silver alloy plate over Nickel barrier or Matte-Tin. All models, (+) suffix. See model Data sheet.
 - For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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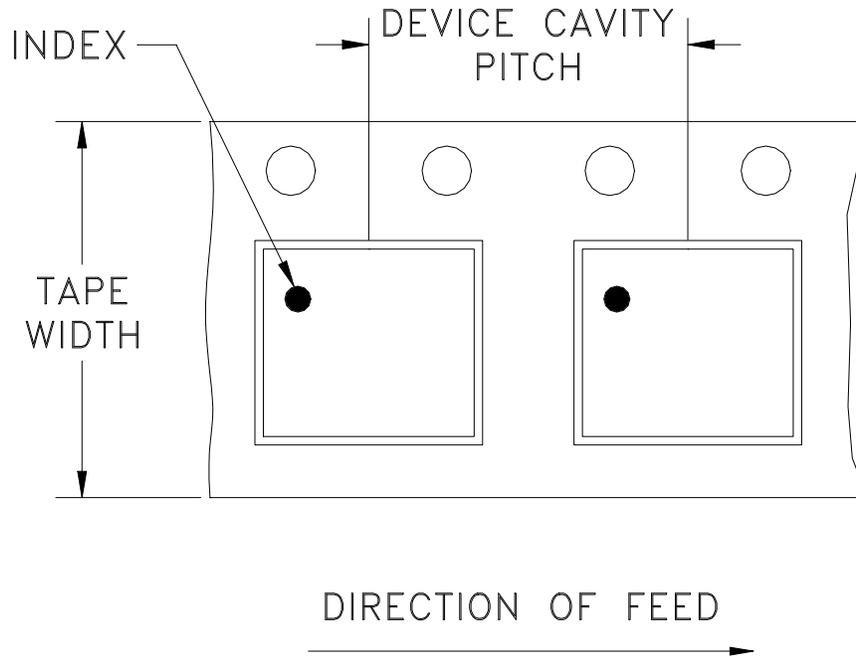
RF/IF MICROWAVE COMPONENTS

DG1847 Rev.: AJ (27 FEB 26) ECO-028636 File: DG1847

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Tape & Reel Packaging TR-F68

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
12	8	7	Small quantity standard	20
				50
				100
				200
				500
		7	Standard	1000
		13	Standard	2000
				3000
				4000

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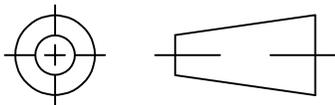
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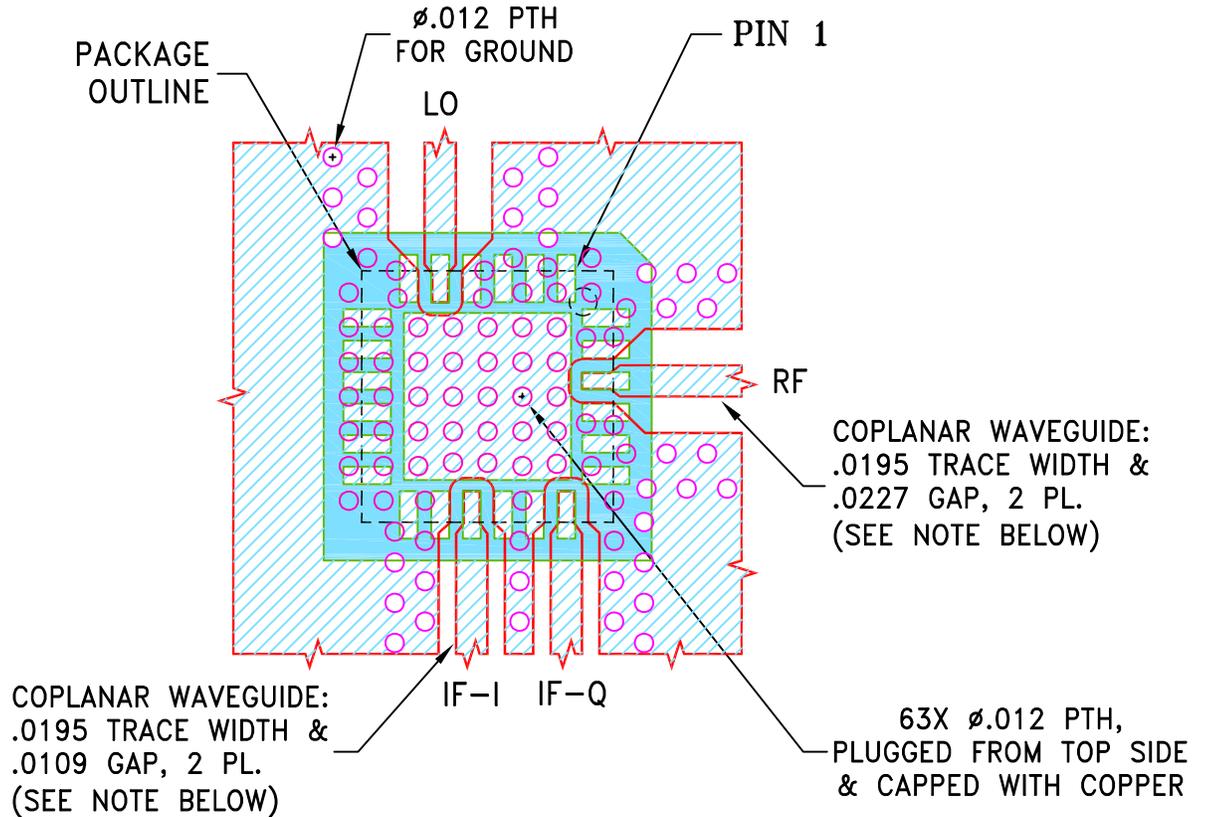
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	ECO-016253	NEW RELEASE	12/23/22	ITG	IL

SUGGESTED MOUNTING CONFIGURATION FOR
DG1847 CASE STYLE



NOTES:

1. TRACE WIDTH AND GAP PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $.010 \pm .001$ "; COPPER: 1 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. UNIT FOOT PRINT IS OPTIMIZED FOR PERFORMANCE AND IS DIFFERENT FROM CASE STYLE DG1847 RECOMMENDATIONS.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.



DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).



DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

UNLESS OTHERWISE SPECIFIED	INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN ITG	12/22/22
TOLERANCES ON:	CHECKED GF	12/22/22
2 PL DECIMALS \pm	APPROVED IL	12/22/22
3 PL DECIMALS \pm .005		
ANGLES \pm		
FRACTIONS \pm		

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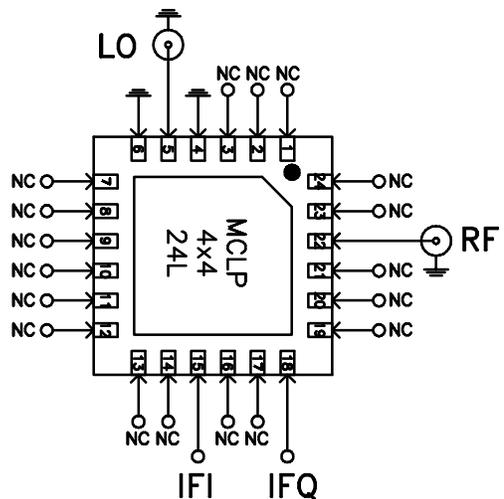
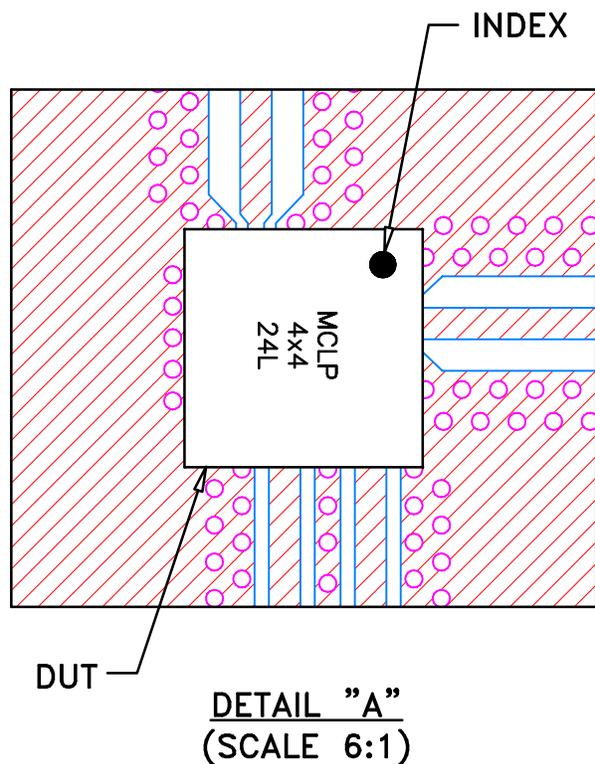
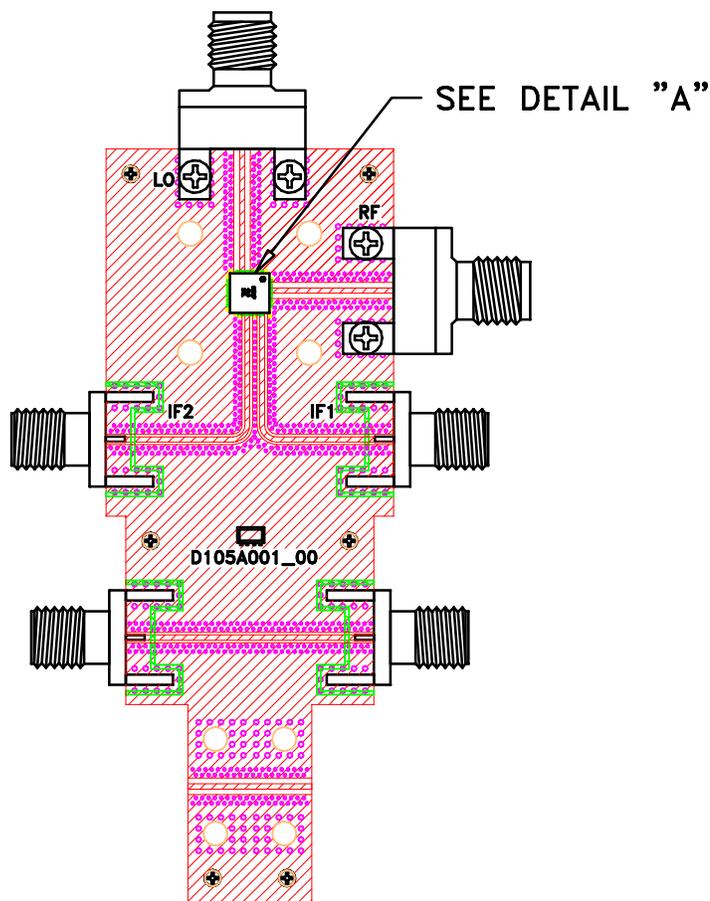
Mini-Circuits®

13 Neptune Avenue
Brooklyn NY 11235

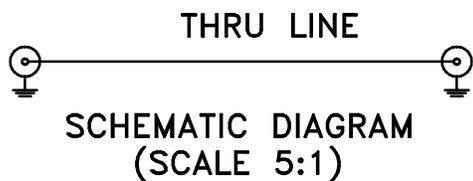
PL, DG1847, TB-SMIQ-6243H(C)+

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-746	OR
FILE:	98PL746	SCALE:	SHEET:
		8:1	1 OF 1

Evaluation Board and Circuit



Function	Pad
RF	22
LO	5
IFQ	18
IFI	15
GND	4,6
NC, GND Externally	1-3,7-14,16-17,19-21,23-24



Notes:

- 2.92mm Female Connectors.
- PCB Material: Roger R04350B or equivalent,
Dielectric constant=3.5, Thickness=0.010 inch

 **Mini-Circuits®**

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85° C or -45° to 85° C or -55° to 105° C or -40° to 105° C or -40° to 95° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C or -65° to 150° Ambient Environment	Individual Model Data Sheet
HTOL	1000 hours at 125°C	MIL-STD-883, Method 1005, Condition B
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Mechanical Shock	1.5Kg, 0.5 ms, 5 shock pulses, Y1 direction only	MIL-STD-883, Method 2002, Condition B, except Y1 direction only
Vibration (Variable Frequency)	50g peak	MIL-STD-883, Method 2007, Condition B
Autoclave	15 psig, 100% RH, 121°C, 96 hours	JESD22-A102, Condition C
HAST	130°C, 85% RH, 96 hours	JESD22-A110
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Solder Reflow Heat	Sn-Pb Eutetic Process: 240°C peak Pb-Free Process: 260°C peak	J-STD-020, Table 4-1, 4-2 and 5-2; Figure 5-1
Moisture Sensitivity: Level 1	Bake at 125°C for 24 hours Soak at 85°C/85% RH for 168 hours, Reflow 3 cycles at 260°C peak	J-STD-020



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Specification	Test/Inspection Condition	Reference/Spec
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215