

# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (GHz)	LO (GHz)	CONVERSION LOSS (I) VS. RF FREQUENCY @IF = 200 MHz			CONVERSION LOSS (Q) VS. RF FREQUENCY @IF = 200 MHz			RF (GHz)	LO (GHz)	CONVERSION LOSS (I) VS. RF FREQUENCY @IF = 1 GHz			CONVERSION LOSS (Q) VS. RF FREQUENCY @IF = 1 GHz		
		@LO (dBm)			@LO (dBm)					@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19			+17	+18	+19	+17	+18	+19
4.0	4.2	17.43	17.24	17.10	18.69	18.32	17.99	4.0	5.0	19.31	19.07	18.86	19.28	19.11	18.95
4.2	4.4	16.73	16.46	16.26	17.32	16.95	16.62	4.2	5.2	18.23	17.94	17.68	18.29	18.09	17.89
4.4	4.6	13.92	13.67	13.48	13.99	13.68	13.42	4.4	5.4	16.15	15.84	15.57	15.88	15.63	15.42
4.6	4.8	11.67	11.46	11.30	11.48	11.26	11.10	4.6	5.6	14.11	13.82	13.58	14.19	13.88	13.61
4.8	5.0	8.39	8.28	8.20	8.50	8.38	8.31	4.8	5.8	11.07	10.86	10.69	11.53	11.27	11.04
5.0	5.2	6.78	6.73	6.72	6.98	6.96	6.97	5.0	6.0	9.15	9.04	8.94	9.54	9.33	9.16
5.2	5.4	5.83	5.80	5.80	6.05	6.07	6.11	5.2	6.2	7.91	7.81	7.73	8.10	7.95	7.83
5.4	5.6	5.87	5.84	5.82	6.11	6.12	6.14	5.4	6.4	7.53	7.42	7.33	7.61	7.49	7.39
5.6	5.8	6.48	6.43	6.39	6.81	6.76	6.73	5.6	6.6	7.54	7.46	7.39	7.60	7.53	7.46
5.8	6.0	7.11	6.99	6.89	7.51	7.40	7.30	5.8	6.8	7.56	7.55	7.54	7.60	7.60	7.60
6.0	6.2	7.05	6.91	6.79	7.35	7.20	7.07	6.0	7.0	6.99	6.98	6.98	6.99	7.01	7.03
6.2	6.4	7.67	7.52	7.40	7.83	7.68	7.56	6.2	7.2	7.33	7.31	7.31	7.33	7.35	7.38
6.4	6.6	7.51	7.37	7.26	7.61	7.47	7.35	6.4	7.4	7.39	7.35	7.33	7.37	7.36	7.38
6.6	6.8	7.26	7.10	6.96	7.35	7.21	7.09	6.6	7.6	7.32	7.27	7.24	7.29	7.27	7.25
6.8	7.0	7.20	7.04	6.91	7.19	7.08	6.97	6.8	7.8	7.37	7.33	7.30	7.34	7.32	7.30
7.0	7.2	7.31	7.17	7.06	7.28	7.19	7.11	7.0	8.0	7.55	7.50	7.47	7.50	7.48	7.47
7.2	7.4	7.16	7.02	6.90	7.03	6.94	6.87	7.2	8.2	7.47	7.42	7.41	7.37	7.37	7.38
7.4	7.6	7.07	6.96	6.87	6.92	6.84	6.78	7.4	8.4	7.42	7.36	7.36	7.25	7.27	7.30
7.6	7.8	6.98	6.87	6.80	6.82	6.76	6.72	7.6	8.6	7.37	7.30	7.28	7.17	7.19	7.23
7.8	8.0	6.67	6.58	6.52	6.48	6.44	6.42	7.8	8.8	7.15	7.08	7.06	6.84	6.88	6.95
8.0	8.2	6.86	6.78	6.73	6.64	6.63	6.62	8.0	9.0	7.36	7.33	7.33	7.06	7.11	7.20
8.2	8.4	6.76	6.69	6.66	6.50	6.51	6.53	8.2	9.2	7.25	7.25	7.27	6.96	7.02	7.12
8.4	8.6	6.60	6.53	6.51	6.31	6.33	6.37	8.4	9.4	6.98	7.00	7.05	6.78	6.83	6.94
8.5	8.7	6.70	6.64	6.62	6.39	6.42	6.48	8.5	9.5	7.02	7.03	7.09	6.89	6.94	7.04
8.6	8.8	6.77	6.72	6.71	6.41	6.47	6.55	8.6	9.6	7.06	7.06	7.10	6.96	7.00	7.09
8.8	9.0	6.75	6.71	6.71	6.36	6.44	6.55	8.8	9.8	7.06	7.00	6.97	7.01	7.01	7.06
9.0	9.2	6.78	6.83	6.90	6.46	6.60	6.78	9.0	10.0	7.27	7.16	7.07	7.13	7.10	7.11
9.2	9.4	6.91	7.00	7.13	6.65	6.79	7.01	9.2	10.2	7.71	7.51	7.35	7.42	7.32	7.25
9.4	9.6	6.70	6.80	6.95	6.51	6.62	6.82	9.4	10.4	7.90	7.65	7.43	7.65	7.48	7.34
9.6	9.8	6.72	6.76	6.87	6.54	6.60	6.73	9.6	10.6	8.14	7.89	7.68	8.02	7.84	7.67
9.8	10.0	6.90	6.89	6.95	6.72	6.74	6.81	9.8	10.8	8.22	8.03	7.86	8.22	8.08	7.96
10.0	10.2	7.03	6.97	6.96	6.97	6.96	6.97	10.0	11.0	8.11	7.92	7.79	8.17	8.04	7.94
10.2	10.4	7.67	7.60	7.55	7.72	7.71	7.71	10.2	11.2	8.38	8.20	8.08	8.49	8.35	8.25
10.4	10.6	8.28	8.20	8.14	8.30	8.29	8.29	10.4	11.4	8.69	8.54	8.43	8.67	8.53	8.42
10.6	10.8	8.09	7.97	7.88	8.08	8.03	8.00	10.6	11.6	8.37	8.20	8.09	8.44	8.28	8.16
10.8	11.0	8.32	8.11	7.96	8.15	8.02	7.92	10.8	11.8	8.57	8.36	8.21	8.74	8.53	8.36
11.0	11.2	8.65	8.39	8.21	8.57	8.38	8.24	11.0	12.0	8.61	8.42	8.28	9.04	8.81	8.62
11.2	11.4	8.97	8.69	8.47	9.08	8.83	8.64	11.2	12.2	8.78	8.62	8.50	9.12	8.89	8.72
11.4	11.6	9.27	8.97	8.74	9.56	9.26	9.02	11.4	12.4	9.15	9.01	8.90	9.31	9.07	8.89
11.6	11.8	9.69	9.38	9.13	9.81	9.48	9.21	11.6	12.6	9.62	9.48	9.36	9.57	9.32	9.14
11.8	12.0	9.19	8.90	8.66	9.16	8.84	8.58	11.8	12.8	9.23	9.11	9.00	9.05	8.83	8.66
12.0	12.2	9.01	8.75	8.55	8.84	8.56	8.34	12.0	13.0	9.23	9.13	9.05	8.94	8.76	8.61
12.2	12.4	9.01	8.79	8.61	8.78	8.52	8.33	12.2	13.2	9.30	9.21	9.16	9.02	8.86	8.74
12.4	12.6	8.89	8.70	8.55	8.70	8.44	8.25	12.4	13.4	9.13	9.06	9.02	8.94	8.78	8.69
12.6	12.8	8.87	8.70	8.56	8.83	8.57	8.37	12.6	13.6	9.14	9.05	9.01	9.07	8.86	8.75
12.8	13.0	8.89	8.76	8.65	8.94	8.71	8.53	12.8	13.8	9.18	9.10	9.06	9.31	9.05	8.92
13.0	13.2	8.50	8.40	8.33	8.68	8.48	8.33	13.0	14.0	8.82	8.77	8.75	9.19	8.88	8.75
13.2	13.4	8.52	8.42	8.36	8.82	8.60	8.46	13.2	14.2	8.87	8.82	8.81	9.58	9.07	8.90
13.4	13.6	8.36	8.28	8.24	8.83	8.57	8.42	13.4	14.4	8.75	8.72	8.71	10.40	9.19	8.92
13.6	13.8	8.20	8.14	8.12	8.84	8.55	8.39	13.6	14.6	8.56	8.57	8.59	11.86	9.42	8.96
13.8	14.0	7.90	7.87	7.86	8.77	8.41	8.24	13.8	14.8	8.27	8.32	8.36	14.09	9.92	8.98
14.0	14.2	8.21	8.20	8.20	9.45	8.90	8.69	14.0	15.0	8.62	8.66	8.71	20.19	12.06	9.83



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IF/RF MICROWAVE COMPONENTS

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# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (GHz)	LO (GHz)	CONVERSION LOSS (I) VS. RF FREQUENCY @IF = 2 GHz			CONVERSION LOSS (Q) VS. RF FREQUENCY @IF = 2 GHz			RF (GHz)	LO (GHz)	CONVERSION LOSS (I) VS. RF FREQUENCY @IF = 3 GHz			CONVERSION LOSS (Q) VS. RF FREQUENCY @IF = 3 GHz		
		@LO (dBm)			@LO (dBm)					@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19			+17	+18	+19	+17	+18	+19
4.0	6.0	17.90	17.67	17.46	18.48	18.13	17.83	4.0	7.0	16.02	15.91	15.82	16.57	16.42	16.30
4.2	6.2	16.21	16.03	15.87	16.53	16.29	16.09	4.2	7.2	14.56	14.49	14.43	15.15	15.03	14.95
4.4	6.4	13.68	13.55	13.43	14.00	13.83	13.68	4.4	7.4	12.44	12.38	12.35	13.13	13.06	13.02
4.6	6.6	11.87	11.78	11.70	12.22	12.11	12.02	4.6	7.6	11.20	11.14	11.12	11.92	11.89	11.87
4.8	6.8	9.57	9.51	9.46	9.98	9.92	9.87	4.8	7.8	9.51	9.47	9.46	10.24	10.22	10.23
5.0	7.0	8.61	8.58	8.57	9.13	9.11	9.10	5.0	8.0	8.96	8.93	8.92	9.75	9.75	9.76
5.2	7.2	7.74	7.75	7.76	8.35	8.38	8.41	5.2	8.2	8.39	8.34	8.31	9.28	9.26	9.26
5.4	7.4	7.14	7.14	7.21	7.80	7.87	7.94	5.4	8.4	8.23	8.13	8.07	9.26	9.19	9.14
5.6	7.6	6.76	6.80	6.84	7.53	7.60	7.68	5.6	8.6	8.32	8.16	8.05	9.50	9.36	9.26
5.8	7.8	6.76	6.78	6.82	7.64	7.69	7.75	5.8	8.8	8.65	8.46	8.32	10.00	9.82	9.67
6.0	8.0	6.36	6.38	6.42	7.32	7.34	7.38	6.0	9.0	8.34	8.13	7.98	9.83	9.63	9.44
6.2	8.2	6.85	6.85	6.87	7.86	7.85	7.86	6.2	9.2	8.80	8.59	8.43	10.37	10.17	9.96
6.4	8.4	7.00	6.97	6.99	7.98	7.95	7.95	6.4	9.4	8.84	8.64	8.49	10.33	10.17	10.01
6.6	8.6	7.03	6.98	6.97	7.91	7.85	7.83	6.6	9.6	8.72	8.51	8.34	10.01	9.84	9.72
6.8	8.8	7.18	7.07	7.02	7.95	7.85	7.79	6.8	9.8	8.66	8.46	8.27	9.85	9.64	9.47
7.0	9.0	7.57	7.40	7.28	8.19	8.04	7.93	7.0	10.0	8.70	8.53	8.36	9.86	9.66	9.48
7.2	9.2	7.71	7.48	7.31	8.23	8.03	7.88	7.2	10.2	8.51	8.38	8.26	9.61	9.45	9.29
7.4	9.4	8.01	7.72	7.47	8.43	8.18	7.97	7.4	10.4	8.30	8.20	8.11	9.37	9.23	9.10
7.6	9.6	8.25	7.97	7.70	8.62	8.37	8.15	7.6	10.6	8.03	7.93	7.85	9.11	8.99	8.88
7.8	9.8	8.08	7.84	7.61	8.36	8.15	7.97	7.8	10.8	7.79	7.67	7.58	8.67	8.56	8.47
8.0	10.0	8.19	7.96	7.77	8.46	8.25	8.08	8.0	11.0	8.15	8.00	7.89	8.90	8.76	8.64
8.2	10.2	7.95	7.75	7.57	8.27	8.07	7.91	8.2	11.2	8.08	7.95	7.86	8.90	8.77	8.66
8.4	10.4	7.59	7.39	7.22	7.95	7.77	7.61	8.4	11.4	7.81	7.74	7.68	8.65	8.56	8.49
8.5	10.5	7.69	7.49	7.32	8.01	7.84	7.69	8.5	11.5	7.89	7.84	7.81	8.74	8.67	8.62
8.6	10.6	7.78	7.59	7.42	8.10	7.94	7.79	8.6	11.6	7.95	7.91	7.91	8.78	8.72	8.69
8.8	10.8	7.76	7.60	7.45	8.18	8.03	7.89	8.8	11.8	7.84	7.79	7.79	8.71	8.62	8.58
9.0	11.0	7.72	7.62	7.54	8.25	8.17	8.10	9.0	12.0	7.92	7.91	7.93	8.74	8.65	8.62
9.2	11.2	7.74	7.70	7.68	8.31	8.29	8.28	9.2	12.2	8.02	8.03	8.08	8.89	8.81	8.78
9.4	11.4	7.55	7.52	7.53	8.22	8.19	8.19	9.4	12.4	7.97	8.00	8.06	8.86	8.74	8.69
9.6	11.6	7.56	7.53	7.54	8.18	8.13	8.11	9.6	12.6	7.95	7.92	7.95	9.14	8.94	8.81
9.8	11.8	7.65	7.62	7.63	8.24	8.16	8.14	9.8	12.8	8.24	8.18	8.16	9.58	9.33	9.16
10.0	12.0	7.73	7.67	7.64	8.25	8.13	8.06	10.0	13.0	8.22	8.14	8.09	10.00	9.73	9.54
10.2	12.2	8.18	8.10	8.06	8.80	8.65	8.56	10.2	13.2	8.63	8.56	8.52	10.56	10.29	10.11
10.4	12.4	8.50	8.42	8.37	9.67	9.47	9.32	10.4	13.4	9.04	8.99	8.96	11.08	10.76	10.57
10.6	12.6	8.35	8.26	8.21	9.82	9.59	9.41	10.6	13.6	8.76	8.73	8.71	10.86	10.50	10.29
10.8	12.8	8.44	8.35	8.29	10.03	9.78	9.58	10.8	13.8	8.77	8.72	8.70	10.92	10.48	10.24
11.0	13.0	8.52	8.47	8.44	9.93	9.72	9.56	11.0	14.0	8.84	8.79	8.79	10.93	10.41	10.17
11.2	13.2	8.68	8.65	8.65	9.88	9.68	9.54	11.2	14.2	9.13	9.03	9.01	11.16	10.43	10.14
11.4	13.4	9.06	9.02	9.01	10.02	9.81	9.67	11.4	14.4	9.76	9.44	9.35	12.16	10.67	10.27
11.6	13.6	9.49	9.42	9.41	10.19	9.98	9.86	11.6	14.6	10.63	10.01	9.82	13.89	11.12	10.50
11.8	13.8	9.12	9.02	8.99	9.61	9.35	9.24	11.8	14.8	10.66	9.86	9.56	15.68	11.17	10.05
12.0	14.0	9.25	9.12	9.07	9.60	9.28	9.15	12.0	15.0	11.09	10.26	9.83	21.14	13.00	10.50
12.2	14.2	9.45	9.29	9.22	9.91	9.38	9.24	12.2	15.2	11.25	10.70	10.20	27.26	17.44	12.02
12.4	14.4	9.45	9.26	9.18	10.73	9.42	9.17	12.4	15.4	10.88	10.65	10.26	28.04	24.87	14.87
12.6	14.6	9.50	9.32	9.22	12.48	9.75	9.25	12.6	15.6	10.65	10.53	10.32	28.23	28.04	21.48
12.8	14.8	9.57	9.44	9.36	15.31	10.63	9.58	12.8	15.8	10.60	10.54	10.44	28.84	28.12	28.18
13.0	15.0	9.16	9.12	9.09	21.18	12.30	9.86	13.0	16.0	10.05	10.03	9.99	28.71	28.06	27.59
13.2	15.2	9.18	9.18	9.19	30.77	16.89	11.37	13.2	16.2	10.00	9.99	9.98	28.72	28.22	27.68
13.4	15.4	9.06	9.05	9.09	33.60	25.76	14.14	13.4	16.4	9.71	9.72	9.72	28.26	27.88	27.45
13.6	15.6	9.00	9.01	9.05	33.32	33.19	20.82	13.6	16.6	9.39	9.41	9.44	27.68	27.38	27.06
13.8	15.8	8.76	8.79	8.83	33.22	32.69	32.26	13.8	16.8	8.94	8.94	8.96	26.96	26.67	26.37
14.0	16.0	9.19	9.24	9.30	33.60	33.01	32.87	14.0	17.0	9.24	9.23	9.24	26.94	26.61	26.31



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IF/RF MICROWAVE COMPONENTS

REV. OR  
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# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (GHz)	LO (GHz)	CONVERSION LOSS (I) VS. RF FREQUENCY @IF = 4 GHz			CONVERSION LOSS (Q) VS. RF FREQUENCY @IF = 4 GHz			RF (GHz)	LO (GHz)	CONVERSION LOSS (I) VS. RF FREQUENCY @IF = 5 GHz			CONVERSION LOSS (Q) VS. RF FREQUENCY @IF = 5 GHz		
		@LO (dBm)			@LO (dBm)					@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19			+17	+18	+19	+17	+18	+19
4.1	8.1	16.32	15.93	15.63	16.63	16.27	15.98	4.0	9.0	16.60	16.15	15.82	16.43	16.16	15.97
4.3	8.3	15.05	14.68	14.39	15.30	14.98	14.71	4.2	9.2	15.43	14.99	14.64	15.09	14.82	14.66
4.5	8.5	13.79	13.47	13.23	14.03	13.78	13.57	4.4	9.4	13.63	13.29	12.99	13.28	13.00	12.84
4.7	8.7	12.63	12.41	12.25	12.88	12.76	12.67	4.6	9.6	12.50	12.28	12.10	12.29	12.07	11.92
4.8	8.8	11.53	11.35	11.23	11.82	11.74	11.69	4.7	9.7	11.72	11.56	11.44	11.60	11.43	11.31
5.0	9.0	10.72	10.62	10.57	11.06	11.06	11.09	4.9	9.9	10.21	10.10	10.04	10.20	10.10	10.05
5.2	9.2	9.77	9.69	9.68	10.25	10.27	10.34	5.2	10.2	9.42	9.35	9.31	9.56	9.53	9.52
5.4	9.4	9.19	9.07	9.03	9.85	9.83	9.87	5.4	10.4	9.09	9.02	8.99	9.37	9.34	9.33
5.6	9.6	8.99	8.83	8.71	9.84	9.75	9.69	5.6	10.6	8.90	8.83	8.80	9.32	9.28	9.26
5.8	9.8	8.97	8.85	8.73	9.99	9.91	9.84	5.8	10.8	8.93	8.88	8.85	9.50	9.45	9.43
6.0	10.0	8.49	8.37	8.25	9.65	9.55	9.46	6.0	11.0	8.40	8.35	8.32	9.06	9.00	8.95
6.2	10.2	8.82	8.71	8.61	10.05	9.95	9.86	6.2	11.2	8.62	8.58	8.56	9.40	9.33	9.28
6.4	10.4	8.77	8.68	8.61	10.04	9.94	9.85	6.4	11.4	8.44	8.39	8.36	9.29	9.21	9.16
6.6	10.6	8.56	8.50	8.44	9.83	9.72	9.64	6.6	11.6	8.27	8.17	8.09	9.12	9.00	8.91
6.8	10.8	8.35	8.30	8.26	9.65	9.53	9.45	6.8	11.8	8.29	8.14	8.03	9.12	8.96	8.85
7.0	11.0	8.26	8.17	8.12	9.62	9.50	9.41	7.0	12.0	8.47	8.32	8.22	9.32	9.16	9.06
7.2	11.2	8.20	8.05	7.94	9.43	9.27	9.15	7.2	12.2	8.28	8.15	8.08	9.13	8.98	8.90
7.4	11.4	8.23	8.06	7.93	9.34	9.17	9.03	7.4	12.4	8.15	8.02	7.95	9.01	8.84	8.76
7.6	11.6	8.13	7.99	7.87	9.26	9.10	8.98	7.6	12.6	8.05	7.91	7.85	9.05	8.83	8.71
7.8	11.8	7.92	7.82	7.76	9.06	8.94	8.85	7.8	12.8	7.88	7.76	7.70	9.02	8.77	8.64
8.0	12.0	8.03	7.92	7.86	9.17	9.03	8.95	8.0	13.0	8.06	7.92	7.85	9.26	8.97	8.81
8.2	12.2	7.88	7.79	7.76	9.06	8.92	8.84	8.2	13.2	8.08	7.94	7.86	9.47	9.14	8.95
8.4	12.4	7.58	7.52	7.52	8.87	8.73	8.65	8.4	13.4	8.10	7.96	7.86	9.62	9.21	8.97
8.6	12.6	7.82	7.79	7.81	9.25	9.08	8.99	8.6	13.6	8.66	8.53	8.44	10.36	9.89	9.63
8.8	12.8	7.80	7.74	7.73	9.27	9.03	8.89	8.8	13.8	8.94	8.81	8.70	10.94	10.35	10.03
9.0	13.0	8.01	7.95	7.93	9.50	9.21	9.05	9.0	14.0	9.08	9.00	8.92	11.74	11.04	10.66
9.2	13.2	8.36	8.29	8.25	9.88	9.55	9.35	9.2	14.2	9.36	9.34	9.28	12.79	11.83	11.36
9.4	13.4	8.30	8.21	8.15	10.36	9.95	9.70	9.4	14.4	9.24	9.29	9.26	14.18	12.49	11.84
9.6	13.6	8.43	8.33	8.26	10.81	10.31	10.01	9.6	14.6	9.29	9.41	9.41	16.24	13.31	12.37
9.8	13.8	8.50	8.43	8.38	11.36	10.77	10.43	9.8	14.8	9.25	9.43	9.50	19.04	14.49	13.03
10.0	14.0	8.50	8.44	8.39	11.53	10.85	10.48	10.0	15.0	9.02	9.21	9.30	23.34	16.78	13.89
10.2	14.2	8.90	8.89	8.87	12.43	11.45	11.02	10.2	15.2	9.32	9.47	9.57	25.72	21.51	16.16
10.4	14.4	9.35	9.40	9.41	13.99	12.20	11.56	10.4	15.4	9.70	9.76	9.96	25.97	26.21	19.64
10.6	14.6	9.09	9.16	9.19	15.35	12.27	11.36	10.6	15.6	9.41	9.40	9.57	25.83	25.89	24.02
10.8	14.8	9.30	9.30	9.29	17.69	12.95	11.52	10.8	15.8	9.67	9.64	9.69	26.20	25.50	25.69
11.0	15.0	9.77	9.80	9.74	22.52	14.79	12.12	11.0	16.0	10.09	10.09	10.16	26.23	25.46	24.84
11.2	15.2	10.64	10.60	10.42	26.90	18.48	13.57	11.2	16.2	10.95	10.98	11.07	26.04	25.33	24.54
11.4	15.4	12.03	11.84	11.38	27.00	24.30	16.31	11.4	16.4	12.35	12.40	12.49	25.86	25.22	24.47
11.6	15.6	13.38	13.26	12.68	26.99	26.54	21.57	11.6	16.6	13.75	13.80	13.88	25.63	25.05	24.41
11.8	15.8	13.30	13.24	13.00	26.66	25.67	25.41	11.8	16.8	13.70	13.74	13.78	24.51	23.96	23.36
12.0	16.0	13.16	13.09	12.98	26.73	25.79	25.11	12.0	17.0	13.42	13.46	13.47	23.86	23.29	22.69
12.2	16.2	12.86	12.82	12.76	26.81	26.02	25.24	12.2	17.2	12.94	12.98	12.99	23.59	22.98	22.31
12.4	16.4	12.15	12.12	12.09	26.46	25.84	25.17	12.4	17.4	12.12	12.17	12.20	23.24	22.59	21.77
12.6	16.6	11.61	11.59	11.56	26.13	25.62	25.05	12.6	17.6	11.52	11.56	11.60	22.96	22.18	20.92
12.8	16.8	11.28	11.27	11.26	25.85	25.39	24.89	12.8	17.8	11.22	11.28	11.35	22.95	21.98	19.87
13.0	17.0	10.53	10.52	10.52	25.04	24.57	24.07	13.0	18.0	10.52	10.60	10.73	22.70	21.60	18.89
13.2	17.2	10.27	10.26	10.26	24.69	24.19	23.60	13.2	18.2	10.24	10.32	10.46	23.05	21.99	19.34
13.4	17.4	9.97	9.95	9.96	24.30	23.75	23.01	13.4	18.4	9.85	9.92	10.07	23.23	22.19	19.64
13.6	17.6	9.71	9.73	9.77	23.91	23.26	22.11	13.6	18.6	9.52	9.58	9.73	23.60	22.62	20.43
13.8	17.8	9.28	9.32	9.40	23.46	22.62	20.67	13.8	18.8	8.98	8.99	9.09	23.92	23.02	21.49
14.0	18.0	9.63	9.68	9.80	23.99	23.06	20.53	14.0	19.0	9.19	9.16	9.20	24.77	23.88	22.53



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# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (GHz)	LO (GHz)	CONVERSION LOSS (I) VS. RF FREQUENCY @IF = 6 GHz			CONVERSION LOSS (Q) VS. RF FREQUENCY @IF = 6 GHz			RF (GHz)	LO (GHz)	CONVERSION LOSS (I) VS. RF FREQUENCY @IF = 7 GHz			CONVERSION LOSS (Q) VS. RF FREQUENCY @IF = 7 GHz		
		@LO (dBm)			@LO (dBm)					@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19			+17	+18	+19	+17	+18	+19
4.0	10.0	15.13	14.81	14.53	15.42	15.11	14.82	4.0	11.0	15.71	15.46	15.28	16.10	15.92	15.78
4.2	10.2	13.80	13.53	13.31	14.16	13.90	13.67	4.2	11.2	14.27	14.04	13.87	14.99	14.83	14.72
4.4	10.4	12.00	11.78	11.62	12.35	12.15	11.99	4.4	11.4	12.26	12.11	12.03	13.15	13.06	13.03
4.6	10.6	10.97	10.81	10.71	11.33	11.19	11.08	4.6	11.6	11.19	11.13	11.14	12.14	12.14	12.19
4.8	10.8	9.53	9.44	9.41	9.89	9.81	9.77	4.8	11.8	9.88	9.93	10.02	10.78	10.89	11.02
5.0	11.0	9.27	9.24	9.25	9.68	9.64	9.64	5.0	12.0	9.67	9.79	9.94	10.51	10.68	10.86
5.2	11.2	8.88	8.89	8.92	9.33	9.32	9.33	5.2	12.2	9.30	9.44	9.60	10.12	10.27	10.44
5.4	11.4	8.73	8.77	8.83	9.27	9.28	9.30	5.4	12.4	9.29	9.44	9.58	10.01	10.09	10.22
5.6	11.6	8.63	8.71	8.79	9.27	9.31	9.36	5.6	12.6	9.51	9.66	9.80	10.10	10.10	10.18
5.8	11.8	8.66	8.72	8.80	9.40	9.43	9.48	5.8	12.8	9.84	9.98	10.10	10.26	10.22	10.27
6.1	12.1	8.50	8.45	8.44	9.30	9.24	9.23	6.0	13.0	9.59	9.63	9.67	9.72	9.63	9.63
6.3	12.3	8.96	8.89	8.85	9.72	9.66	9.66	6.2	13.2	10.20	10.17	10.17	10.20	10.08	10.04
6.5	12.5	9.07	9.00	8.96	9.84	9.75	9.75	6.4	13.4	10.16	10.08	10.05	10.15	10.05	10.00
6.7	12.7	8.88	8.76	8.70	9.82	9.65	9.59	6.6	13.6	9.82	9.70	9.64	9.91	9.81	9.76
6.9	12.9	9.03	8.86	8.76	10.20	9.98	9.86	6.8	13.8	9.51	9.35	9.26	9.78	9.64	9.57
7.1	13.1	9.02	8.85	8.74	10.36	10.12	9.98	7.1	14.1	9.15	8.98	8.88	9.86	9.62	9.52
7.2	13.2	9.11	8.92	8.80	10.54	10.28	10.12	7.2	14.2	9.16	8.97	8.86	10.04	9.74	9.61
7.4	13.4	9.14	8.92	8.78	10.84	10.53	10.33	7.4	14.4	9.05	8.86	8.75	10.42	9.83	9.66
7.6	13.6	9.21	8.99	8.82	11.18	10.80	10.56	7.6	14.6	9.04	8.90	8.81	11.29	10.14	9.83
7.8	13.8	9.02	8.82	8.67	11.33	10.90	10.62	7.8	14.8	8.74	8.71	8.68	12.40	10.48	9.93
8.0	14.0	9.28	9.10	8.94	11.88	11.38	11.06	8.0	15.0	8.82	8.84	8.85	15.13	11.97	10.72
8.2	14.2	9.34	9.19	9.06	12.25	11.62	11.24	8.2	15.2	8.62	8.60	8.68	17.39	14.20	11.72
8.4	14.4	9.04	8.95	8.86	12.96	11.94	11.45	8.4	15.4	8.33	8.26	8.32	18.42	16.90	13.41
8.5	14.5	9.02	8.97	8.90	13.56	12.22	11.68	8.5	15.5	8.24	8.17	8.21	18.83	17.88	14.77
8.6	14.6	8.93	8.92	8.88	14.16	12.44	11.84	8.6	15.6	8.13	8.09	8.09	19.30	18.44	16.44
8.8	14.8	8.58	8.61	8.60	15.97	13.05	12.12	8.8	15.8	8.07	8.04	8.02	20.58	19.35	18.71
9.0	15.0	8.32	8.45	8.55	19.10	14.44	12.56	9.0	16.0	7.94	7.95	7.98	21.62	20.38	19.34
9.2	15.2	8.20	8.35	8.54	21.71	17.69	13.94	9.2	16.2	8.15	8.18	8.22	22.66	21.54	20.41
9.4	15.4	7.92	8.02	8.22	21.92	21.19	16.35	9.4	16.4	8.14	8.18	8.23	23.01	22.08	21.07
9.6	15.6	7.96	7.99	8.16	22.50	22.42	20.37	9.6	16.6	8.43	8.48	8.54	23.23	22.47	21.64
9.8	15.8	7.92	7.92	8.00	23.38	22.64	22.80	9.8	16.8	8.59	8.65	8.73	22.92	22.27	21.56
10.0	16.0	7.83	7.81	7.83	24.03	23.23	22.72	10.0	17.0	8.69	8.77	8.86	22.27	21.63	20.92
10.2	16.2	8.26	8.24	8.25	24.82	24.13	23.44	10.2	17.2	9.24	9.35	9.47	21.98	21.29	20.55
10.4	16.4	8.72	8.71	8.73	25.27	24.71	24.10	10.4	17.4	9.77	9.92	10.07	21.72	20.97	20.17
10.6	16.6	8.49	8.49	8.52	24.63	24.16	23.63	10.6	17.6	9.53	9.72	9.89	20.53	19.69	18.68
10.8	16.8	8.83	8.84	8.88	24.02	23.55	23.04	10.8	17.8	9.74	9.95	10.10	19.79	18.81	17.20
11.0	17.0	9.35	9.41	9.49	23.00	22.48	21.92	11.0	18.0	9.93	10.15	10.26	19.15	18.02	15.95
11.2	17.2	10.42	10.53	10.66	22.18	21.55	20.89	11.2	18.2	10.61	10.80	10.79	18.95	17.74	15.55
11.4	17.4	11.98	12.13	12.20	21.87	21.15	20.32	11.4	18.4	11.95	12.07	11.80	19.18	17.87	15.53
11.6	17.6	13.33	13.42	13.24	21.73	20.86	19.50	11.6	18.6	13.24	13.35	12.94	19.96	18.49	16.09
11.8	17.8	12.98	12.93	12.51	20.91	19.74	17.34	11.8	18.8	13.03	13.15	12.94	20.33	18.78	16.67
12.0	18.0	12.58	12.51	12.11	21.01	19.63	16.42	12.0	19.0	12.83	12.92	12.84	21.15	19.53	17.41
12.2	18.2	12.09	12.08	11.84	21.52	20.09	16.85	12.2	19.2	12.51	12.56	12.52	21.62	19.87	17.38
12.4	18.4	11.36	11.39	11.30	21.92	20.45	17.12	12.4	19.4	11.95	11.99	11.96	21.75	19.82	16.79
12.6	18.6	10.74	10.76	10.76	22.63	21.18	18.04	12.6	19.6	11.63	11.66	11.70	22.55	20.67	17.87
12.8	18.8	10.46	10.47	10.51	23.80	22.50	20.11	12.8	19.8	11.65	11.65	11.71	23.95	22.28	20.32
13.0	19.0	9.85	9.84	9.89	24.20	22.93	20.76	13.0	20.0	11.24	11.25	11.31	23.88	22.29	20.50
13.2	19.2	9.74	9.72	9.76	24.61	23.18	20.56	13.2	20.2	11.34	11.35	11.47	23.65	21.91	19.26
13.4	19.4	9.50	9.48	9.53	24.73	23.03	19.79	13.4	20.4	11.29	11.33	11.48	23.45	21.54	18.23
13.6	19.6	9.37	9.34	9.39	25.36	23.73	20.66	13.6	20.6	11.29	11.37	11.54	23.18	20.95	17.24
13.8	19.8	9.16	9.10	9.10	26.13	24.79	22.70	13.8	20.8	11.13	11.25	11.42	22.52	19.48	15.82
14.0	20.0	9.69	9.61	9.59	26.98	25.63	23.60	14.0	21.0	11.73	11.85	11.99	22.61	19.61	15.99



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# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

RF (GHz)	LO (GHz)	CONVERSION LOSS (I) VS. RF FREQUENCY @IF = 200 MHz @LO = +18 dBm			CONVERSION LOSS (Q) VS. RF FREQUENCY @IF = 200 MHz @LO = +18 dBm		
		@ TEMPERATURE			@ TEMPERATURE		
		-55°C	+25°C	+100°C	-55°C	+25°C	+100°C
4.0	4.2	17.02	17.16	17.24	18.53	18.24	17.97
4.2	4.4	16.69	16.34	16.09	17.52	16.84	16.38
4.4	4.6	14.01	13.57	13.32	14.08	13.53	13.19
4.6	4.8	11.81	11.37	11.15	11.47	11.16	11.04
4.8	5.0	8.27	8.20	8.24	8.32	8.31	8.40
5.0	5.2	6.43	6.68	6.96	6.59	6.91	7.22
5.2	5.4	5.21	5.77	6.26	5.41	6.04	6.56
5.4	5.6	5.02	5.82	6.41	5.30	6.10	6.70
5.6	5.8	5.68	6.41	6.92	5.95	6.74	7.25
5.8	6.0	6.47	6.98	7.35	6.94	7.40	7.69
6.0	6.2	6.54	6.90	7.16	6.97	7.19	7.37
6.2	6.4	7.30	7.52	7.69	7.56	7.68	7.80
6.4	6.6	7.20	7.39	7.59	7.34	7.49	7.67
6.6	6.8	6.83	7.11	7.36	7.00	7.23	7.45
6.8	7.0	6.75	7.05	7.32	6.85	7.09	7.32
7.0	7.2	6.91	7.19	7.46	6.96	7.21	7.46
7.2	7.4	6.69	7.03	7.33	6.61	6.95	7.26
7.4	7.6	6.63	6.97	7.28	6.47	6.85	7.18
7.6	7.8	6.50	6.87	7.21	6.37	6.75	7.11
7.8	8.0	6.09	6.56	6.96	5.93	6.43	6.84
8.0	8.2	6.30	6.77	7.17	6.11	6.61	7.04
8.2	8.4	6.15	6.67	7.10	5.93	6.48	6.94
8.4	8.6	5.94	6.51	6.97	5.68	6.30	6.80
8.6	8.8	6.08	6.71	7.22	5.74	6.46	7.03
8.8	9.0	6.11	6.69	7.19	5.70	6.43	7.01
9.0	9.2	6.16	6.82	7.36	5.77	6.60	7.23
9.2	9.4	6.27	7.01	7.57	5.90	6.80	7.47
9.4	9.6	6.03	6.79	7.37	5.78	6.62	7.27
9.6	9.8	5.93	6.75	7.36	5.78	6.60	7.27
9.8	10.0	6.02	6.88	7.52	5.76	6.73	7.48
10.0	10.2	6.09	6.95	7.57	5.94	6.94	7.66
10.2	10.4	6.74	7.56	8.16	6.77	7.67	8.31
10.4	10.6	7.43	8.15	8.70	7.51	8.24	8.79
10.6	10.8	7.26	7.92	8.41	7.31	7.98	8.47
10.8	11.0	7.44	8.06	8.47	7.30	7.96	8.44
11.0	11.2	7.76	8.34	8.76	7.54	8.34	8.89
11.2	11.4	8.24	8.65	9.00	8.15	8.80	9.17
11.4	11.6	8.61	8.93	9.21	9.05	9.22	9.36
11.6	11.8	9.12	9.35	9.57	9.43	9.44	9.55
11.8	12.0	8.63	8.87	9.10	8.72	8.79	8.96
12.0	12.2	8.46	8.74	9.02	8.32	8.53	8.80
12.2	12.4	8.43	8.78	9.13	8.15	8.50	8.88
12.4	12.6	8.27	8.69	9.10	7.91	8.42	8.89
12.6	12.8	8.26	8.68	9.04	8.04	8.54	8.95
12.8	13.0	8.31	8.75	9.14	8.19	8.68	9.13
13.0	13.2	7.87	8.38	8.86	7.88	8.45	8.96
13.2	13.4	7.88	8.40	8.85	8.00	8.55	9.04
13.4	13.6	7.70	8.25	8.72	7.95	8.53	9.03
13.6	13.8	7.53	8.12	8.61	7.88	8.50	9.03
13.8	14.0	7.18	7.84	8.36	7.67	8.36	8.92
14.0	14.2	7.51	8.16	8.68	8.15	8.84	9.40

# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

IF (GHz)	RF (IN) (GHz)	CONVERSION LOSS (l) VS. IF FREQUENCY @ Fixed LO = 4 GHz			IF (MHz)	RF (IN) (MHz)	CONVERSION LOSS (l) VS. IF FREQUENCY @ Fixed LO = 9 GHz			IF (MHz)	RF (IN) (MHz)	CONVERSION LOSS (l) VS. IF FREQUENCY @ Fixed LO = 14 GHz		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+17	+18	+19			+17	+18	+19			+17	+18	+19
0.01	4.01	17.04	16.76	16.59	0.01	9.01	6.63	6.66	6.72	0.01	13.99	8.14	8.12	8.12
0.02	4.02	17.43	17.17	16.98	0.02	9.02	6.59	6.62	6.68	0.02	13.98	7.99	7.98	7.98
0.03	4.03	17.88	17.63	17.41	0.03	9.03	6.51	6.52	6.57	0.03	13.97	8.05	8.04	8.03
0.04	4.04	17.86	17.57	17.34	0.04	9.04	6.48	6.47	6.49	0.04	13.96	8.14	8.11	8.09
0.05	4.05	17.47	17.18	16.95	0.05	9.05	6.57	6.57	6.60	0.05	13.95	8.11	8.08	8.08
0.06	4.06	17.30	17.02	16.82	0.06	9.06	6.62	6.63	6.68	0.06	13.94	7.99	7.98	7.98
0.07	4.07	17.31	17.05	16.84	0.07	9.07	6.61	6.62	6.66	0.07	13.93	7.99	7.98	7.97
0.08	4.08	16.98	16.72	16.51	0.08	9.08	6.54	6.54	6.57	0.08	13.92	8.00	7.98	7.97
0.09	4.09	16.46	16.21	16.00	0.09	9.09	6.55	6.56	6.61	0.09	13.91	8.01	7.99	7.98
0.1	4.1	16.64	16.38	16.17	0.1	9.1	6.60	6.62	6.67	0.1	13.9	7.93	7.91	7.90
0.2	4.2	16.84	16.60	16.39	0.2	9.2	6.76	6.77	6.81	0.2	13.8	7.90	7.87	7.87
0.4	4.4	15.09	14.92	14.78	0.4	9.4	6.81	6.81	6.84	0.4	13.6	8.19	8.17	8.17
0.6	4.6	13.57	13.45	13.37	0.6	9.6	7.10	7.08	7.10	0.6	13.4	8.38	8.38	8.39
0.8	4.8	10.41	10.32	10.26	0.8	9.8	7.36	7.32	7.32	0.8	13.2	8.58	8.57	8.58
1.0	5.0	8.49	8.40	8.37	1.0	10.0	7.45	7.36	7.31	1.0	13.0	8.64	8.63	8.64
1.2	5.2	6.65	6.57	6.54	1.2	10.2	7.97	7.84	7.78	1.2	12.8	9.06	9.03	9.03
1.4	5.4	5.76	5.67	5.64	1.4	10.4	8.60	8.43	8.32	1.4	12.6	9.09	9.04	9.02
1.6	5.6	5.92	5.82	5.79	1.6	10.6	8.58	8.35	8.19	1.6	12.4	9.20	9.15	9.14
1.8	5.8	6.30	6.20	6.15	1.8	10.8	8.78	8.47	8.25	1.8	12.2	9.41	9.36	9.35
2.0	6.0	6.54	6.39	6.32	2.0	11.0	9.17	8.81	8.56	2.0	12.0	9.14	9.09	9.08
2.2	6.2	7.90	7.74	7.63	2.2	11.2	10.09	9.61	9.28	2.2	11.8	9.29	9.23	9.21
2.4	6.4	8.48	8.31	8.18	2.4	11.4	11.24	10.61	10.15	2.4	11.6	9.76	9.70	9.69
2.6	6.6	8.55	8.38	8.26	2.6	11.6	12.22	11.48	10.94	2.6	11.4	9.30	9.27	9.28
2.8	6.8	8.55	8.37	8.23	2.8	11.8	12.52	11.76	11.17	2.8	11.2	8.85	8.84	8.86
3.0	7.0	8.67	8.50	8.37	3.0	12.0	12.80	12.14	11.59	3.0	11.0	8.71	8.71	8.74
3.2	7.2	8.50	8.32	8.17	3.2	12.2	13.15	12.63	12.17	3.2	10.8	8.61	8.59	8.60
3.4	7.4	8.15	7.99	7.85	3.4	12.4	12.46	12.13	11.82	3.4	10.6	8.51	8.51	8.53
3.6	7.6	8.28	8.11	7.97	3.6	12.6	12.29	12.06	11.87	3.6	10.4	9.03	9.04	9.06
3.8	7.8	7.95	7.79	7.66	3.8	12.8	12.21	12.04	11.92	3.8	10.2	8.74	8.73	8.74
4.1	8.1	7.87	7.69	7.53	4.0	13.0	11.43	11.27	11.17	4.0	10.0	8.48	8.45	8.42
4.2	8.2	7.64	7.45	7.29	4.2	13.2	10.97	10.75	10.61	4.2	9.8	8.48	8.44	8.40
4.4	8.4	7.64	7.46	7.30	4.4	13.4	10.75	10.46	10.28	4.4	9.6	8.38	8.34	8.30
4.6	8.6	7.76	7.59	7.43	4.6	13.6	10.71	10.33	10.07	4.6	9.4	8.63	8.59	8.54
4.8	8.8	7.82	7.65	7.52	4.8	13.8	10.63	10.21	9.91	4.8	9.2	8.83	8.79	8.75
5.0	9.0	8.13	7.97	7.84	5.0	14.0	11.91	11.42	11.05	5.0	9.0	8.95	8.89	8.83
5.2	9.2	8.54	8.40	8.29	5.2	14.2	12.21	11.79	11.47	5.2	8.8	9.18	9.09	8.99
5.4	9.4	8.83	8.71	8.60	5.4	14.4	11.37	10.99	10.73	5.4	8.6	9.78	9.67	9.56
5.6	9.6	9.14	9.06	9.01	5.6	14.6	10.71	10.31	10.02	5.6	8.4	9.48	9.36	9.24
5.8	9.8	9.71	9.65	9.61	5.8	14.8	11.14	10.70	10.36	5.8	8.2	9.83	9.69	9.56
6.0	10.0	9.63	9.54	9.64	6.0	15.0	10.99	10.64	10.36	6.0	8.0	9.27	9.12	8.98
6.2	10.2	10.26	10.31	10.36	6.2	15.2	11.44	11.11	10.84	6.2	7.8	8.82	8.68	8.56
6.4	10.4	11.08	11.18	11.29	6.4	15.4	11.98	11.69	11.46	6.4	7.6	9.17	9.00	8.88
6.6	10.6	10.92	11.02	11.14	6.6	15.6	12.57	12.28	12.04	6.6	7.4	9.36	9.19	9.06
6.8	10.8	10.88	10.98	11.11	6.8	15.8	12.33	12.10	11.92	6.8	7.2	9.16	9.00	8.89
7.0	11.0	11.17	11.29	11.44	7.0	16.0	13.45	13.27	13.14	7.0	7.0	9.49	9.52	8.89
7.2	11.2	11.80	11.92	12.07	7.2	16.2	13.90	13.74	13.64	7.2	6.8	9.77	9.66	9.60
7.4	11.4	12.31	12.41	12.54	7.4	16.4	14.66	14.56	14.52	7.4	6.6	9.75	9.69	9.68
7.6	11.6	12.97	13.03	13.13	7.6	16.6	15.38	15.31	15.30	7.6	6.4	10.09	10.10	10.13
7.8	11.8	12.73	12.74	12.79	7.8	16.8	15.68	15.65	15.69	7.8	6.2	10.30	10.40	10.50
					8.0	17.0	15.58	15.57	15.64	8.0	6.0	9.17	9.41	9.63

# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

IF (GHz)	RF (IN) (GHz)	CONVERSION LOSS (Q) VS. IF FREQUENCY @ Fixed LO = 4 GHz			IF (MHz)	RF (IN) (MHz)	CONVERSION LOSS (Q) VS. IF FREQUENCY @ Fixed LO = 9 GHz			IF (MHz)	RF (IN) (MHz)	CONVERSION LOSS (Q) VS. IF FREQUENCY @ Fixed LO = 14 GHz		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+17	+18	+19			+17	+18	+19			+17	+18	+19
0.01	4.01	17.88	17.55	17.29	0.01	9.01	6.36	6.49	6.63	0.01	13.99	8.73	8.50	8.37
0.02	4.02	18.50	18.14	17.84	0.02	9.02	6.30	6.42	6.54	0.02	13.98	8.62	8.37	8.23
0.03	4.03	18.97	18.58	18.27	0.03	9.03	6.14	6.26	6.38	0.03	13.97	8.74	8.49	8.35
0.04	4.04	18.83	18.45	18.14	0.04	9.04	6.11	6.23	6.34	0.04	13.96	8.84	8.58	8.44
0.05	4.05	18.40	18.02	17.72	0.05	9.05	6.24	6.35	6.48	0.05	13.95	8.76	8.50	8.36
0.06	4.06	18.33	17.96	17.65	0.06	9.06	6.24	6.36	6.48	0.06	13.94	8.62	8.38	8.24
0.07	4.07	18.53	18.15	17.84	0.07	9.07	6.22	6.33	6.46	0.07	13.93	8.63	8.38	8.25
0.08	4.08	18.25	17.86	17.55	0.08	9.08	6.21	6.33	6.45	0.08	13.92	8.62	8.38	8.24
0.09	4.09	17.63	17.24	16.92	0.09	9.09	6.26	6.38	6.50	0.09	13.91	8.61	8.37	8.23
0.1	4.1	17.71	17.31	16.99	0.1	9.1	6.27	6.39	6.51	0.1	13.9	8.54	8.30	8.16
0.2	4.2	18.32	17.89	17.54	0.2	9.2	6.52	6.65	6.77	0.2	13.8	8.45	8.21	8.08
0.4	4.4	16.62	16.12	15.72	0.4	9.4	6.51	6.62	6.74	0.4	13.6	8.69	8.47	8.35
0.6	4.6	15.02	14.45	13.98	0.6	9.6	6.63	6.70	6.79	0.6	13.4	8.82	8.61	8.50
0.8	4.8	11.94	11.38	10.94	0.8	9.8	6.92	6.98	7.05	0.8	13.2	8.91	8.72	8.63
1.0	5.0	10.00	9.49	9.08	1.0	10.0	7.02	7.04	7.08	1.0	13.0	8.83	8.66	8.59
1.2	5.2	8.27	7.86	7.52	1.2	10.2	7.64	7.65	7.68	1.2	12.8	9.04	8.88	8.81
1.4	5.4	7.42	7.08	6.79	1.4	10.4	8.30	8.27	8.26	1.4	12.6	8.88	8.74	8.68
1.6	5.6	7.52	7.19	6.91	1.6	10.6	8.22	8.10	8.03	1.6	12.4	9.08	8.93	8.88
1.8	5.8	7.61	7.33	7.09	1.8	10.8	8.40	8.20	8.06	1.8	12.2	9.15	9.01	8.95
2.0	6.0	7.44	7.03	6.77	2.0	11.0	8.79	8.51	8.31	2.0	12.0	9.25	9.10	9.03
2.2	6.2	8.34	8.06	7.82	2.2	11.2	9.64	9.25	8.96	2.2	11.8	9.37	9.19	9.12
2.4	6.4	8.15	7.89	7.69	2.4	11.4	10.49	9.97	9.58	2.4	11.6	9.97	9.78	9.69
2.6	6.6	7.94	7.69	7.50	2.6	11.6	11.19	10.62	10.17	2.6	11.4	9.97	9.75	9.65
2.8	6.8	8.15	7.88	7.67	2.8	11.8	11.12	10.60	10.16	2.8	11.2	10.17	9.93	9.81
3.0	7.0	8.58	8.28	8.06	3.0	12.0	11.34	10.96	10.61	3.0	11.0	10.49	10.18	10.02
3.2	7.2	8.28	7.99	7.78	3.2	12.2	11.00	10.79	10.59	3.2	10.8	10.56	10.21	10.02
3.4	7.4	8.29	7.99	7.76	3.4	12.4	10.59	10.51	10.43	3.4	10.6	11.00	10.61	10.39
3.6	7.6	8.43	8.12	7.88	3.6	12.6	10.40	10.37	10.35	3.6	10.4	11.49	11.07	10.83
3.8	7.8	8.09	7.81	7.60	3.8	12.8	10.24	10.19	10.18	3.8	10.2	11.30	10.87	10.61
4.1	8.1	8.29	8.03	7.83	4.0	13.0	9.78	9.70	9.68	4.0	10.0	11.08	10.60	10.31
4.2	8.2	8.59	8.32	8.11	4.2	13.2	9.91	9.80	9.76	4.2	9.8	11.16	10.70	10.42
4.4	8.4	8.31	8.07	7.88	4.4	13.4	9.53	9.40	9.32	4.4	9.6	11.01	10.53	10.24
4.6	8.6	8.73	8.49	8.30	4.6	13.6	9.83	9.64	9.51	4.6	9.4	11.18	10.67	10.37
4.8	8.8	8.71	8.48	8.29	4.8	13.8	9.75	9.52	9.36	4.8	9.2	11.39	10.88	10.57
5.0	9.0	8.85	8.66	8.50	5.0	14.0	10.71	10.43	10.21	5.0	9.0	11.28	10.78	10.48
5.2	9.2	9.22	9.05	8.90	5.2	14.2	10.94	10.73	10.56	5.2	8.8	11.36	10.87	10.57
5.4	9.4	9.60	9.41	9.25	5.4	14.4	10.15	9.98	9.88	5.4	8.6	11.68	11.22	10.94
5.6	9.6	9.58	9.39	9.23	5.6	14.6	9.80	9.61	9.50	5.6	8.4	11.19	10.75	10.48
5.8	9.8	9.78	9.62	9.48	5.8	14.8	10.07	9.87	9.73	5.8	8.2	11.16	10.76	10.50
6.0	10.0	9.90	9.78	9.58	6.0	15.0	10.12	9.88	9.70	6.0	8.0	11.66	11.23	10.95
6.2	10.2	10.16	9.97	9.83	6.2	15.2	10.53	10.30	10.12	6.2	7.8	10.94	10.58	10.35
6.4	10.4	10.79	10.62	10.50	6.4	15.4	11.13	10.89	10.69	6.4	7.6	10.93	10.58	10.35
6.6	10.6	10.42	10.27	10.17	6.6	15.6	11.67	11.44	11.26	6.6	7.4	10.51	10.22	10.03
6.8	10.8	10.50	10.36	10.27	6.8	15.8	11.37	11.16	10.99	6.8	7.2	10.37	10.13	9.99
7.0	11.0	10.60	10.52	10.49	7.0	16.0	12.57	12.43	12.32	7.0	7.0	9.19	9.76	10.63
7.2	11.2	10.86	10.79	10.77	7.2	16.2	12.91	12.82	12.76	7.2	6.8	9.35	9.27	9.26
7.4	11.4	11.50	11.41	11.38	7.4	16.4	13.52	13.46	13.43	7.4	6.6	9.28	9.28	9.33
7.6	11.6	11.94	11.83	11.75	7.6	16.6	14.34	14.33	14.35	7.6	6.4	8.99	9.07	9.18
7.8	11.8	12.16	11.99	11.87	7.8	16.8	14.95	14.98	15.05	7.8	6.2	9.22	9.33	9.47
					8.0	17.0	14.56	14.61	14.68	8.0	6.0	8.87	8.99	9.14



# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

IF (GHz)	RF (IN) (GHz)	CONVERSION LOSS (I) VS. IF FREQUENCY @ Fixed LO = 4 GHz			IF (MHz)	RF (IN) (MHz)	CONVERSION LOSS (I) VS. IF FREQUENCY @ Fixed LO = 9 GHz			IF (MHz)	RF (IN) (MHz)	CONVERSION LOSS (I) VS. IF FREQUENCY @ Fixed LO = 14 GHz		
		@TEMPERATURE (°C)					@TEMPERATURE (°C)					@TEMPERATURE (°C)		
		-55	+25	+100			-55	+25	+100			-55	+25	+100
0.01	4.01	17.00	16.68	16.63	0.01	9.01	5.90	6.66	7.28	0.01	13.99	7.39	8.09	8.67
0.02	4.02	17.41	17.08	17.04	0.02	9.02	5.88	6.62	7.22	0.02	13.98	7.24	7.94	8.52
0.03	4.03	17.89	17.54	17.43	0.03	9.03	5.81	6.51	7.10	0.03	13.97	7.34	8.00	8.54
0.04	4.04	17.84	17.49	17.30	0.04	9.04	5.76	6.46	7.05	0.04	13.96	7.44	8.07	8.59
0.05	4.05	17.44	17.10	16.91	0.05	9.05	5.83	6.55	7.17	0.05	13.95	7.38	8.05	8.62
0.06	4.06	17.23	16.94	16.78	0.06	9.06	5.89	6.62	7.24	0.06	13.94	7.24	7.94	8.55
0.07	4.07	17.26	16.97	16.80	0.07	9.07	5.89	6.61	7.22	0.07	13.93	7.25	7.94	8.51
0.08	4.08	16.90	16.63	16.48	0.08	9.08	5.81	6.53	7.15	0.08	13.92	7.28	7.94	8.49
0.09	4.09	16.35	16.13	16.00	0.09	9.09	5.80	6.56	7.19	0.09	13.91	7.28	7.95	8.52
0.1	4.1	16.53	16.30	16.19	0.1	9.1	5.85	6.62	7.26	0.1	13.9	7.17	7.88	8.46
0.2	4.2	16.56	16.52	16.35	0.2	9.2	5.97	6.77	7.41	0.2	13.8	7.16	7.84	8.40
0.4	4.4	14.77	14.82	14.55	0.4	9.4	6.05	6.81	7.43	0.4	13.6	7.50	8.14	8.70
0.6	4.6	13.44	13.35	13.03	0.6	9.6	6.35	7.08	7.64	0.6	13.4	7.70	8.35	8.91
0.8	4.8	10.32	10.22	10.04	0.8	9.8	6.60	7.29	7.85	0.8	13.2	7.92	8.55	9.10
1.0	5.0	8.40	8.33	8.30	1.0	10.0	6.67	7.32	7.84	1.0	13.0	7.97	8.61	9.19
1.2	5.2	6.36	6.52	6.73	1.2	10.2	7.18	7.79	8.30	1.2	12.8	8.43	9.03	9.54
1.4	5.4	5.15	5.63	6.09	1.4	10.4	7.81	8.35	8.84	1.4	12.6	8.44	9.04	9.51
1.6	5.6	5.12	5.79	6.38	1.6	10.6	7.77	8.28	8.74	1.6	12.4	8.52	9.16	9.70
1.8	5.8	5.48	6.18	6.81	1.8	10.8	7.92	8.41	8.78	1.8	12.2	8.73	9.37	9.87
2.0	6.0	5.84	6.39	7.00	2.0	11.0	8.30	8.77	9.18	2.0	12.0	8.38	9.08	9.60
2.2	6.2	7.17	7.75	8.19	2.2	11.2	9.17	9.60	9.99	2.2	11.8	8.50	9.22	9.72
2.4	6.4	7.85	8.33	8.70	2.4	11.4	10.24	10.60	10.86	2.4	11.6	8.95	9.68	10.19
2.6	6.6	8.01	8.39	8.71	2.6	11.6	11.18	11.48	11.64	2.6	11.4	8.44	9.24	9.81
2.8	6.8	8.04	8.37	8.65	2.8	11.8	11.47	11.75	11.88	2.8	11.2	7.95	8.80	9.47
3.0	7.0	8.17	8.50	8.81	3.0	12.0	11.73	12.13	12.33	3.0	11.0	7.84	8.66	9.31
3.2	7.2	7.95	8.31	8.63	3.2	12.2	12.07	12.63	12.96	3.2	10.8	7.74	8.52	9.10
3.4	7.4	7.56	7.97	8.34	3.4	12.4	11.29	12.13	12.71	3.4	10.6	7.66	8.45	9.09
3.6	7.6	7.67	8.08	8.47	3.6	12.6	11.10	12.06	12.74	3.6	10.4	8.21	8.97	9.62
3.8	7.8	7.25	7.75	8.20	3.8	12.8	11.05	12.04	12.81	3.8	10.2	7.88	8.68	9.33
4.1	8.1	7.05	7.65	8.14	4.0	13.0	10.13	11.26	12.16	4.0	10.0	7.62	8.40	9.04
4.2	8.2	6.78	7.40	7.91	4.2	13.2	9.60	10.73	11.57	4.2	9.8	7.55	8.40	9.09
4.4	8.4	6.74	7.41	7.95	4.4	13.4	9.37	10.43	11.23	4.4	9.6	7.41	8.32	9.03
4.6	8.6	6.76	7.55	8.19	4.6	13.6	9.35	10.30	11.04	4.6	9.4	7.64	8.57	9.31
4.8	8.8	6.84	7.61	8.26	4.8	13.8	9.39	10.17	10.83	4.8	9.2	7.82	8.79	9.51
5.0	9.0	7.07	7.95	8.67	5.0	14.0	11.03	11.38	11.79	5.0	9.0	7.97	8.88	9.55
5.2	9.2	7.41	8.39	9.15	5.2	14.2	11.07	11.77	12.27	5.2	8.8	8.26	9.06	9.62
5.4	9.4	7.71	8.69	9.46	5.4	14.4	9.98	10.97	11.72	5.4	8.6	8.87	9.66	10.14
5.6	9.6	8.01	9.04	9.80	5.6	14.6	9.36	10.27	10.96	5.6	8.4	8.65	9.33	9.70
5.8	9.8	8.61	9.61	10.37	5.8	14.8	9.76	10.68	11.41	5.8	8.2	9.13	9.66	10.00
6.0	10.0	8.46	9.47	10.34	6.0	15.0	9.64	10.64	11.53	6.0	8.0	8.65	9.09	9.48
6.2	10.2	9.29	10.25	10.97	6.2	15.2	10.16	11.10	11.86	6.2	7.8	8.28	8.65	9.05
6.4	10.4	10.20	11.12	11.82	6.4	15.4	10.73	11.69	12.46	6.4	7.6	8.71	8.98	9.32
6.6	10.6	10.05	10.97	11.70	6.6	15.6	11.34	12.30	13.13	6.6	7.4	8.91	9.18	9.56
6.8	10.8	10.02	10.94	11.60	6.8	15.8	11.13	12.13	13.00	6.8	7.2	8.65	9.01	9.44
7.0	11.0	10.25	11.26	12.02	7.0	16.0	12.28	13.32	14.23	7.0	7.0	9.16	9.23	9.38
7.2	11.2	10.87	11.91	12.72	7.2	16.2	12.78	13.83	14.83	7.2	6.8	9.12	9.68	10.19
7.4	11.4	11.33	12.39	13.10	7.4	16.4	13.48	14.65	15.56	7.4	6.6	9.01	9.72	10.32
7.6	11.6	12.05	13.03	13.68	7.6	16.6	14.20	15.40	16.25	7.6	6.4	9.33	10.13	10.79
7.8	11.8	11.92	12.74	13.35	7.8	16.8	14.56	15.76	16.71	7.8	6.2	9.42	10.43	11.20
					8.0	17.0	14.43	15.67	16.61	8.0	6.0	8.13	9.45	10.44



# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

IF (GHz)	RF (IN) (GHz)	CONVERSION LOSS (Q) VS. IF FREQUENCY @ Fixed LO = 4 GHz			IF (MHz)	RF (IN) (MHz)	CONVERSION LOSS (Q) VS. IF FREQUENCY @ Fixed LO = 9 GHz			IF (MHz)	RF (IN) (MHz)	CONVERSION LOSS (Q) VS. IF FREQUENCY @ Fixed LO = 14 GHz		
		@TEMPERATURE (°C)					@TEMPERATURE (°C)					@TEMPERATURE (°C)		
		-55	+25	+100			-55	+25	+100			-55	+25	+100
0.01	4.01	17.42	17.46	17.41	0.01	9.01	5.65	6.48	7.17	0.01	13.99	7.73	8.44	9.04
0.02	4.02	18.04	18.04	17.95	0.02	9.02	5.60	6.41	7.07	0.02	13.98	7.61	8.32	8.91
0.03	4.03	18.54	18.48	18.34	0.03	9.03	5.44	6.24	6.91	0.03	13.97	7.77	8.43	8.99
0.04	4.04	18.42	18.35	18.16	0.04	9.04	5.40	6.21	6.88	0.04	13.96	7.87	8.52	9.07
0.05	4.05	17.98	17.93	17.74	0.05	9.05	5.53	6.34	7.02	0.05	13.95	7.76	8.45	9.03
0.06	4.06	17.91	17.87	17.67	0.06	9.06	5.53	6.35	7.03	0.06	13.94	7.60	8.33	8.93
0.07	4.07	18.12	18.06	17.85	0.07	9.07	5.50	6.32	7.00	0.07	13.93	7.63	8.34	8.93
0.08	4.08	17.84	17.77	17.53	0.08	9.08	5.51	6.32	7.00	0.08	13.92	7.64	8.33	8.89
0.09	4.09	17.22	17.16	16.93	0.09	9.09	5.55	6.37	7.05	0.09	13.91	7.62	8.32	8.89
0.1	4.1	17.30	17.23	17.03	0.1	9.1	5.54	6.38	7.08	0.1	13.9	7.53	8.25	8.84
0.2	4.2	17.99	17.81	17.43	0.2	9.2	5.79	6.64	7.33	0.2	13.8	7.45	8.17	8.74
0.4	4.4	16.53	16.02	15.44	0.4	9.4	5.78	6.62	7.29	0.4	13.6	7.75	8.43	9.01
0.6	4.6	15.24	14.31	13.54	0.6	9.6	5.88	6.69	7.32	0.6	13.4	7.90	8.56	9.14
0.8	4.8	12.20	11.23	10.52	0.8	9.8	6.18	6.96	7.57	0.8	13.2	8.02	8.68	9.26
1.0	5.0	10.23	9.35	8.77	1.0	10.0	6.29	7.00	7.57	1.0	13.0	7.93	8.64	9.25
1.2	5.2	8.28	7.75	7.45	1.2	10.2	6.97	7.60	8.13	1.2	12.8	8.17	8.86	9.44
1.4	5.4	7.09	7.00	6.99	1.4	10.4	7.67	8.21	8.68	1.4	12.6	8.00	8.72	9.28
1.6	5.6	6.97	7.15	7.28	1.6	10.6	7.54	8.05	8.50	1.6	12.4	8.23	8.93	9.52
1.8	5.8	7.03	7.32	7.54	1.8	10.8	7.69	8.16	8.50	1.8	12.2	8.31	9.00	9.54
2.0	6.0	6.82	7.11	7.69	2.0	11.0	8.01	8.49	8.88	2.0	12.0	8.44	9.08	9.56
2.2	6.2	7.84	8.06	8.23	2.2	11.2	8.87	9.24	9.55	2.2	11.8	8.57	9.16	9.62
2.4	6.4	7.59	7.91	8.18	2.4	11.4	9.72	9.96	10.10	2.4	11.6	9.21	9.74	10.15
2.6	6.6	7.33	7.70	8.02	2.6	11.6	10.44	10.60	10.68	2.6	11.4	9.19	9.70	10.11
2.8	6.8	7.52	7.87	8.17	2.8	11.8	10.32	10.56	10.71	2.8	11.2	9.37	9.87	10.32
3.0	7.0	8.01	8.28	8.53	3.0	12.0	10.49	10.93	11.18	3.0	11.0	9.57	10.11	10.55
3.2	7.2	7.67	7.97	8.25	3.2	12.2	10.02	10.75	11.24	3.2	10.8	9.59	10.12	10.51
3.4	7.4	7.67	7.96	8.23	3.4	12.4	9.51	10.47	11.19	3.4	10.6	9.92	10.52	11.00
3.6	7.6	7.78	8.07	8.36	3.6	12.6	9.26	10.34	11.12	3.6	10.4	10.33	10.97	11.51
3.8	7.8	7.33	7.77	8.14	3.8	12.8	9.12	10.17	10.99	3.8	10.2	10.12	10.78	11.31
4.1	8.1	7.59	7.99	8.36	4.0	13.0	8.69	9.68	10.55	4.0	10.0	9.93	10.53	11.05
4.2	8.2	7.89	8.29	8.65	4.2	13.2	8.79	9.79	10.67	4.2	9.8	9.89	10.64	11.28
4.4	8.4	7.55	8.03	8.45	4.4	13.4	8.38	9.39	10.23	4.4	9.6	9.65	10.49	11.17
4.6	8.6	7.91	8.48	8.96	4.6	13.6	8.68	9.64	10.43	4.6	9.4	9.67	10.65	11.42
4.8	8.8	7.91	8.47	8.92	4.8	13.8	8.63	9.52	10.25	4.8	9.2	9.75	10.86	11.68
5.0	9.0	7.98	8.67	9.21	5.0	14.0	9.88	10.41	10.95	5.0	9.0	9.62	10.76	11.56
5.2	9.2	8.33	9.06	9.60	5.2	14.2	9.76	10.72	11.38	5.2	8.8	9.75	10.84	11.56
5.4	9.4	8.75	9.41	9.92	5.4	14.4	8.74	9.97	10.90	5.4	8.6	10.14	11.21	11.86
5.6	9.6	8.73	9.38	9.86	5.6	14.6	8.48	9.57	10.40	5.6	8.4	9.87	10.72	11.25
5.8	9.8	8.97	9.61	10.09	5.8	14.8	8.72	9.86	10.77	5.8	8.2	10.10	10.72	11.13
6.0	10.0	9.16	9.76	10.05	6.0	15.0	8.72	9.89	10.89	6.0	8.0	10.74	11.18	11.51
6.2	10.2	9.27	9.91	10.43	6.2	15.2	9.19	10.31	11.16	6.2	7.8	10.22	10.53	10.80
6.4	10.4	9.87	10.54	11.09	6.4	15.4	9.77	10.90	11.75	6.4	7.6	10.33	10.52	10.78
6.6	10.6	9.50	10.19	10.72	6.6	15.6	10.34	11.47	12.37	6.6	7.4	9.92	10.18	10.47
6.8	10.8	9.56	10.26	10.76	6.8	15.8	10.06	11.18	12.08	6.8	7.2	9.79	10.09	10.43
7.0	11.0	9.69	10.44	11.03	7.0	16.0	11.39	12.48	13.38	7.0	7.0	9.33	9.10	11.43
7.2	11.2	9.95	10.73	11.38	7.2	16.2	11.85	12.88	13.84	7.2	6.8	8.76	9.28	9.80
7.4	11.4	10.56	11.37	12.02	7.4	16.4	12.46	13.52	14.40	7.4	6.6	8.76	9.32	9.89
7.6	11.6	10.98	11.81	12.42	7.6	16.6	13.33	14.40	15.19	7.6	6.4	8.40	9.12	9.76
7.8	11.8	11.24	11.99	12.53	7.8	16.8	14.02	15.10	16.02	7.8	6.2	8.54	9.37	10.06
					8.0	17.0	13.56	14.73	15.68	8.0	6.0	8.15	9.00	9.73



# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (IN) (GHz)	LO (GHz)	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
4.0	4.2	-1.15	-0.99	-0.78	14.17	14.17	14.17
4.2	4.4	-0.50	-0.40	-0.26	10.98	10.98	10.98
4.4	4.6	0.02	0.09	0.17	7.98	7.98	7.98
4.6	4.8	0.29	0.29	0.30	6.20	6.20	6.20
4.8	5.0	-0.02	-0.01	0.00	3.37	3.37	3.37
5.0	5.2	-0.10	-0.13	-0.15	3.36	3.36	3.36
5.2	5.4	-0.13	-0.17	-0.21	1.59	1.59	1.59
5.4	5.6	-0.14	-0.18	-0.22	-1.82	-1.82	-1.82
5.6	5.8	-0.22	-0.23	-0.24	-3.49	-3.49	-3.49
5.8	6.0	-0.30	-0.31	-0.31	-2.72	-2.72	-2.72
6.0	6.2	-0.20	-0.19	-0.19	0.72	0.72	0.72
6.2	6.4	-0.06	-0.06	-0.06	0.85	0.85	0.85
6.4	6.6	0.01	0.00	0.00	0.99	0.99	0.99
6.6	6.8	0.01	-0.01	-0.02	1.25	1.25	1.25
6.8	7.0	0.10	0.06	0.03	1.40	1.40	1.40
7.0	7.2	0.13	0.08	0.05	2.07	2.07	2.07
7.2	7.4	0.23	0.18	0.13	2.63	2.63	2.63
7.4	7.6	0.26	0.22	0.19	2.28	2.28	2.28
7.6	7.8	0.26	0.21	0.18	2.31	2.31	2.31
7.8	8.0	0.29	0.23	0.19	2.09	2.09	2.09
8.0	8.2	0.31	0.25	0.21	1.49	1.49	1.49
8.2	8.4	0.36	0.28	0.23	1.32	1.32	1.32
8.4	8.6	0.40	0.30	0.24	1.02	1.02	1.02
8.6	8.8	0.45	0.34	0.26	0.05	0.05	0.05
8.8	9.0	0.48	0.37	0.26	-1.57	-1.57	-1.57
9.0	9.2	0.42	0.33	0.22	-2.70	-2.70	-2.70
9.2	9.4	0.35	0.31	0.22	-3.32	-3.32	-3.32
9.4	9.6	0.29	0.27	0.24	-3.45	-3.45	-3.45
9.6	9.8	0.27	0.25	0.23	-3.38	-3.38	-3.38
9.8	10.0	0.28	0.25	0.24	-2.60	-2.60	-2.60
10.0	10.2	0.15	0.11	0.08	-2.14	-2.14	-2.14
10.2	10.4	0.05	-0.01	-0.06	-3.09	-3.09	-3.09
10.4	10.6	0.08	0.01	-0.05	-4.27	-4.27	-4.27
10.6	10.8	0.11	0.03	-0.02	-5.90	-5.90	-5.90
10.8	11.0	0.26	0.19	0.14	-6.18	-6.18	-6.18
11.0	11.2	0.17	0.11	0.06	-6.45	-6.45	-6.45
11.2	11.4	0.00	-0.05	-0.08	-7.29	-7.29	-7.29
11.4	11.6	-0.20	-0.19	-0.18	-8.68	-8.68	-8.68
11.6	11.8	-0.02	0.00	0.02	-9.62	-9.62	-9.62
11.8	12.0	0.13	0.16	0.18	-9.71	-9.71	-9.71
12.0	12.2	0.27	0.29	0.31	-8.14	-8.14	-8.14
12.2	12.4	0.33	0.36	0.38	-6.06	-6.06	-6.06
12.4	12.6	0.29	0.36	0.39	-3.87	-3.87	-3.87
12.6	12.8	0.14	0.23	0.29	-3.15	-3.15	-3.15
12.8	13.0	0.05	0.15	0.22	-1.97	-1.97	-1.97
13.0	13.2	-0.08	0.02	0.10	-0.82	-0.82	-0.82
13.2	13.4	-0.20	-0.07	0.00	0.11	0.11	0.11
13.4	13.6	-0.38	-0.19	-0.09	1.26	1.26	1.26
13.6	13.8	-0.55	-0.30	-0.17	2.79	2.79	2.79
13.8	14.0	-0.77	-0.44	-0.29	4.44	4.44	4.44
14.0	14.2	-1.13	-0.60	-0.39	6.61	6.61	6.61

RF (IN) (MHz)	LO (MHz)	AMP UNBALANCE VS. RF FREQUENCY @IF = 1 GHz			PHASE UNBALANCE VS. RF FREQUENCY @IF = 1 GHz		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
4.0	5.0	0.03	-0.03	-0.10	4.55	5.53	6.23
4.2	5.2	-0.08	-0.16	-0.20	9.28	10.26	11.06
4.4	5.4	0.27	0.22	0.16	6.89	7.76	8.79
4.6	5.6	-0.08	-0.06	-0.04	2.54	3.70	4.84
4.8	5.8	-0.46	-0.39	-0.34	-0.32	0.77	1.85
5.0	6.0	-0.38	-0.29	-0.21	1.46	2.66	3.57
5.2	6.2	-0.18	-0.14	-0.10	4.75	5.54	6.05
5.4	6.4	-0.08	-0.06	-0.05	5.05	5.49	5.82
5.6	6.6	-0.06	-0.07	-0.07	4.65	4.80	4.92
5.8	6.8	-0.04	-0.05	-0.06	4.79	4.72	4.73
6.0	7.0	-0.01	-0.03	-0.05	5.17	4.92	4.69
6.2	7.2	0.00	-0.03	-0.07	5.45	4.96	4.52
6.4	7.4	0.01	-0.02	-0.05	5.42	4.85	4.28
6.6	7.6	0.02	0.01	-0.02	5.12	4.46	3.76
6.8	7.8	0.03	0.01	0.01	5.01	4.39	3.59
7.0	8.0	0.05	0.02	0.01	4.45	3.85	3.30
7.2	8.2	0.11	0.05	0.03	3.80	3.21	2.68
7.4	8.4	0.16	0.10	0.06	3.15	2.64	2.13
7.6	8.6	0.19	0.11	0.04	2.09	1.85	1.43
7.8	8.8	0.31	0.21	0.12	0.99	1.04	0.93
8.0	9.0	0.30	0.22	0.13	-0.23	-0.06	0.02
8.2	9.2	0.29	0.23	0.15	-0.97	-1.16	-0.78
8.4	9.4	0.21	0.17	0.10	-1.48	-2.41	-2.41
8.6	9.6	0.10	0.07	0.00	-0.66	-2.04	-3.23
8.8	9.8	0.05	-0.01	-0.09	-0.66	-1.79	-3.07
9.0	10.0	0.15	0.06	-0.04	-0.96	-2.03	-3.20
9.2	10.2	0.28	0.19	0.09	-1.06	-1.79	-2.74
9.4	10.4	0.25	0.16	0.10	-1.00	-1.40	-2.03
9.6	10.6	0.12	0.06	0.01	-1.72	-1.83	-2.07
9.8	10.8	0.00	-0.07	-0.10	-3.65	-3.52	-3.56
10.0	11.0	-0.07	-0.12	-0.15	-4.37	-4.21	-4.07
10.2	11.2	-0.11	-0.15	-0.17	-4.74	-4.51	-4.35
10.4	11.4	0.03	0.01	0.01	-4.51	-4.16	-3.81
10.6	11.6	-0.07	-0.07	-0.07	-3.44	-2.75	-2.20
10.8	11.8	-0.17	-0.17	-0.16	-3.47	-2.67	-1.88
11.0	12.0	-0.43	-0.39	-0.35	-4.78	-4.01	-3.28
11.2	12.2	-0.35	-0.28	-0.22	-6.69	-5.82	-5.05
11.4	12.4	-0.15	-0.07	0.00	-7.48	-6.68	-5.87
11.6	12.6	0.05	0.15	0.23	-6.79	-5.51	-4.38
11.8	12.8	0.18	0.28	0.34	-6.07	-4.30	-2.81
12.0	13.0	0.28	0.38	0.43	-3.91	-2.36	-0.85
12.2	13.2	0.28	0.36	0.41	-1.95	-0.45	1.08
12.4	13.4	0.18	0.28	0.33	-0.34	0.70	2.30
12.6	13.6	0.07	0.18	0.25	1.50	1.95	3.13
12.8	13.8	-0.14	0.05	0.14	3.54	3.15	3.99
13.0	14.0	-0.38	-0.12	0.00	5.38	4.44	4.82
13.2	14.2	-0.72	-0.25	-0.10	7.59	5.69	5.56
13.4	14.4	-1.68	-0.48	-0.21	11.05	7.77	6.74
13.6	14.6	-3.31	-0.85	-0.38	14.32	10.42	8.38
13.8	14.8	-5.87	-1.62	-0.63	17.86	13.27	10.44
14.0	15.0	-11.63	-3.43	-1.13	24.25	17.46	14.19



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# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (IN) (GHz)	LO (GHz)	AMP UNBALANCE VS. RF FREQUENCY @IF = 2 GHz			PHASE UNBALANCE VS. RF FREQUENCY @IF = 2 GHz		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
4.0	6.0	-0.48	-0.37	-0.28	4.61	5.62	6.45
4.2	6.2	-0.22	-0.16	-0.12	9.06	9.72	10.27
4.4	6.4	-0.21	-0.18	-0.15	9.92	10.37	10.79
4.6	6.6	-0.25	-0.23	-0.22	9.64	9.96	10.26
4.8	6.8	-0.32	-0.31	-0.31	10.19	10.36	10.52
5.0	7.0	-0.42	-0.42	-0.43	10.24	10.21	10.21
5.2	7.2	-0.51	-0.53	-0.55	10.47	10.20	9.93
5.4	7.4	-0.56	-0.60	-0.63	10.64	10.12	9.58
5.6	7.6	-0.67	-0.71	-0.74	10.25	9.60	8.94
5.8	7.8	-0.78	-0.80	-0.82	9.74	8.96	8.15
6.0	8.0	-0.86	-0.86	-0.86	8.97	8.14	7.28
6.2	8.2	-0.91	-0.91	-0.89	7.43	6.70	5.93
6.4	8.4	-0.89	-0.89	-0.87	5.68	5.17	4.56
6.6	8.6	-0.78	-0.77	-0.76	4.06	3.89	3.60
6.8	8.8	-0.68	-0.68	-0.67	2.29	2.48	2.60
7.0	9.0	-0.53	-0.54	-0.56	0.36	0.70	1.18
7.2	9.2	-0.42	-0.45	-0.48	-0.59	-0.58	0.05
7.4	9.4	-0.32	-0.36	-0.40	-0.03	-0.85	-0.65
7.6	9.6	-0.27	-0.30	-0.35	1.12	-0.12	-0.90
7.8	9.8	-0.19	-0.21	-0.26	2.01	1.12	0.16
8.0	10.0	-0.18	-0.19	-0.22	1.46	1.00	0.40
8.2	10.2	-0.23	-0.23	-0.24	0.49	0.34	0.04
8.4	10.4	-0.26	-0.28	-0.29	-0.15	-0.21	-0.40
8.6	10.6	-0.22	-0.25	-0.27	0.44	0.48	0.36
8.8	10.8	-0.32	-0.34	-0.34	1.14	1.33	1.36
9.0	11.0	-0.44	-0.46	-0.46	0.96	1.35	1.58
9.2	11.2	-0.47	-0.49	-0.50	0.48	0.95	1.31
9.4	11.4	-0.57	-0.57	-0.56	0.38	0.91	1.32
9.6	11.6	-0.52	-0.50	-0.47	0.02	0.77	1.40
9.8	11.8	-0.49	-0.45	-0.41	-0.33	0.70	1.63
10.0	12.0	-0.42	-0.36	-0.32	-0.30	0.81	1.86
10.2	12.2	-0.52	-0.45	-0.40	1.51	2.45	3.34
10.4	12.4	-1.07	-0.95	-0.85	1.43	2.20	2.89
10.6	12.6	-1.37	-1.23	-1.10	0.14	1.40	2.36
10.8	12.8	-1.49	-1.33	-1.20	-2.42	-0.67	0.78
11.0	13.0	-1.31	-1.15	-1.01	-3.64	-1.83	-0.21
11.2	13.2	-1.10	-0.93	-0.79	-4.51	-2.52	-0.60
11.4	13.4	-0.86	-0.69	-0.56	-4.78	-2.73	-0.61
11.6	13.6	-0.60	-0.46	-0.35	-4.11	-2.33	-0.25
11.8	13.8	-0.39	-0.23	-0.15	-2.65	-1.47	0.34
12.0	14.0	-0.24	-0.06	0.01	0.07	0.53	2.00
12.2	14.2	-0.36	0.00	0.09	3.32	2.61	3.56
12.4	14.4	-1.18	-0.06	0.11	8.00	5.21	5.30
12.6	14.6	-2.88	-0.33	0.07	13.68	8.45	7.41
12.8	14.8	-5.65	-1.09	-0.13	20.36	12.58	10.13
13.0	15.0	-11.93	-3.09	-0.67	33.88	17.75	13.54
13.2	15.2	-21.49	-7.62	-2.08	75.95	26.20	17.97
13.4	15.4	-24.44	-16.62	-4.95	44.76	49.64	23.65
13.6	15.6	-24.21	-24.08	-11.67	20.59	59.98	37.69
13.8	15.8	-24.35	-23.80	-23.32	6.06	18.32	65.00
14.0	16.0	-24.32	-23.67	-23.47	-4.84	3.42	19.02

RF (IN) (MHz)	LO (MHz)	AMP UNBALANCE VS. RF FREQUENCY @IF = 3 GHz			PHASE UNBALANCE VS. RF FREQUENCY @IF = 3 GHz		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
4.0	7.0	-0.56	-0.51	-0.47	11.10	11.25	11.13
4.2	7.2	-0.60	-0.55	-0.51	13.35	13.26	13.29
4.4	7.4	-0.69	-0.68	-0.67	14.43	14.24	14.20
4.6	7.6	-0.72	-0.75	-0.75	14.86	14.64	14.30
4.8	7.8	-0.73	-0.75	-0.76	15.51	14.94	14.41
5.0	8.0	-0.80	-0.82	-0.84	15.83	15.17	14.53
5.2	8.2	-0.88	-0.92	-0.94	15.97	15.10	14.29
5.4	8.4	-1.03	-1.06	-1.07	15.95	14.98	14.01
5.6	8.6	-1.18	-1.20	-1.21	14.97	13.92	13.01
5.8	8.8	-1.35	-1.36	-1.35	13.66	12.69	11.82
6.0	9.0	-1.47	-1.49	-1.44	11.63	10.69	9.99
6.2	9.2	-1.57	-1.58	-1.53	9.17	8.26	7.84
6.4	9.4	-1.49	-1.53	-1.52	7.18	6.04	5.49
6.6	9.6	-1.29	-1.32	-1.39	5.92	4.74	3.87
6.8	9.8	-1.20	-1.17	-1.19	4.37	3.27	2.40
7.0	10.0	-1.16	-1.14	-1.12	4.01	3.04	2.13
7.2	10.2	-1.11	-1.07	-1.03	4.44	3.75	2.98
7.4	10.4	-1.08	-1.03	-0.99	4.18	3.82	3.36
7.6	10.6	-1.08	-1.06	-1.03	3.14	3.29	3.32
7.8	10.8	-0.88	-0.90	-0.89	2.12	2.46	2.61
8.0	11.0	-0.75	-0.75	-0.76	2.86	3.09	3.28
8.2	11.2	-0.82	-0.81	-0.80	3.35	3.70	3.97
8.4	11.4	-0.84	-0.83	-0.81	3.29	3.82	4.31
8.6	11.6	-0.81	-0.80	-0.77	3.35	4.11	4.70
8.8	11.8	-0.87	-0.83	-0.80	2.68	3.67	4.51
9.0	12.0	-0.82	-0.75	-0.70	2.18	3.06	3.94
9.2	12.2	-0.89	-0.78	-0.70	2.43	3.20	3.92
9.4	12.4	-0.88	-0.74	-0.62	3.82	4.35	4.84
9.6	12.6	-1.19	-1.02	-0.87	6.14	7.41	8.16
9.8	12.8	-1.34	-1.15	-1.00	5.84	7.73	9.13
10.0	13.0	-1.78	-1.59	-1.44	6.14	8.11	9.71
10.2	13.2	-1.93	-1.73	-1.59	4.62	6.65	8.48
10.4	13.4	-2.04	-1.78	-1.61	2.60	4.70	6.74
10.6	13.6	-2.10	-1.77	-1.59	0.97	3.09	5.14
10.8	13.8	-2.16	-1.76	-1.54	-0.63	1.37	3.42
11.0	14.0	-2.08	-1.61	-1.38	-1.93	-0.05	2.14
11.2	14.2	-2.03	-1.39	-1.15	-3.19	-1.25	1.03
11.4	14.4	-2.41	-1.24	-0.92	-2.67	-1.48	0.77
11.6	14.6	-3.29	-1.11	-0.68	1.82	0.03	1.54
11.8	14.8	-5.07	-1.31	-0.49	12.09	3.99	3.63
12.0	15.0	-10.10	-2.76	-0.69	37.21	11.55	7.51
12.2	15.2	-16.06	-6.80	-1.83	77.12	27.10	13.03
12.4	15.4	-17.12	-14.30	-4.65	43.07	69.03	22.86
12.6	15.6	-17.59	-17.53	-11.24	25.18	49.99	49.39
12.8	15.8	-18.27	-17.60	-17.71	13.13	21.36	52.79
13.0	16.0	-18.70	-18.01	-17.59	3.04	8.87	19.36
13.2	16.2	-18.78	-18.20	-17.71	-5.71	-0.26	6.03
13.4	16.4	-18.63	-18.18	-17.70	-12.86	-8.76	-3.73
13.6	16.6	-18.30	-17.95	-17.59	-17.88	-15.02	-11.64
13.8	16.8	-18.05	-17.73	-17.42	-20.99	-18.87	-16.21
14.0	17.0	-17.74	-17.42	-17.08	-22.18	-20.61	-18.03



# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (IN) (GHz)	LO (GHz)	AMP UNBALANCE VS. RF FREQUENCY @IF = 4 GHz			PHASE UNBALANCE VS. RF FREQUENCY @IF = 4 GHz		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
4.1	8.1	-0.21	-0.24	-0.24	19.63	18.70	17.77
4.3	8.3	-0.15	-0.20	-0.22	19.47	18.59	17.70
4.5	8.5	-0.14	-0.21	-0.24	19.69	18.74	17.83
4.7	8.7	-0.15	-0.25	-0.32	19.94	18.97	18.04
4.8	8.8	-0.19	-0.29	-0.36	19.88	18.98	18.11
5.0	9.0	-0.24	-0.34	-0.42	19.46	18.68	17.91
5.2	9.2	-0.39	-0.48	-0.56	18.94	18.17	17.47
5.4	9.4	-0.56	-0.65	-0.74	18.73	17.82	17.14
5.6	9.6	-0.75	-0.81	-0.88	18.32	17.21	16.39
5.8	9.8	-0.92	-0.97	-1.01	17.67	16.46	15.42
6.0	10.0	-1.06	-1.08	-1.11	16.76	15.55	14.40
6.2	10.2	-1.14	-1.14	-1.15	15.88	14.81	13.74
6.4	10.4	-1.17	-1.15	-1.14	14.83	13.97	13.15
6.6	10.6	-1.17	-1.13	-1.09	13.69	13.17	12.61
6.8	10.8	-1.20	-1.13	-1.09	12.88	12.73	12.48
7.0	11.0	-1.26	-1.22	-1.19	11.64	11.90	12.00
7.2	11.2	-1.13	-1.13	-1.12	10.40	10.84	11.11
7.4	11.4	-1.01	-1.01	-1.00	10.43	10.87	11.18
7.6	11.6	-1.03	-1.02	-1.00	10.28	10.93	11.46
7.8	11.8	-1.04	-1.02	-0.99	9.52	10.35	11.09
8.0	12.0	-1.05	-1.01	-0.99	8.69	9.55	10.25
8.2	12.2	-1.08	-1.03	-0.99	8.88	9.43	9.98
8.4	12.4	-1.20	-1.11	-1.04	9.94	10.27	10.49
8.6	12.6	-1.33	-1.20	-1.09	10.57	11.41	11.82
8.8	12.8	-1.37	-1.19	-1.06	10.24	11.60	12.56
9.0	13.0	-1.39	-1.17	-1.01	10.66	12.10	13.31
9.2	13.2	-1.41	-1.16	-1.00	11.89	13.52	15.06
9.4	13.4	-1.96	-1.64	-1.45	12.38	13.98	15.64
9.6	13.6	-2.29	-1.88	-1.65	11.42	12.68	14.23
9.8	13.8	-2.76	-2.24	-1.95	9.50	10.55	12.07
10.0	14.0	-2.93	-2.31	-1.99	8.22	8.97	10.43
10.2	14.2	-3.42	-2.46	-2.05	6.95	7.46	8.96
10.4	14.4	-4.54	-2.69	-2.04	5.26	5.38	6.94
10.6	14.6	-6.16	-3.01	-2.08	3.84	3.46	4.97
10.8	14.8	-8.29	-3.55	-2.13	3.89	1.67	3.03
11.0	15.0	-12.65	-4.89	-2.29	16.07	0.15	1.42
11.2	15.2	-16.16	-7.79	-3.05	59.16	4.37	1.51
11.4	15.4	-14.87	-12.36	-4.82	80.60	36.60	5.66
11.6	15.6	-13.52	-13.18	-8.79	60.27	79.73	29.17
11.8	15.8	-13.25	-12.33	-12.32	40.83	48.15	74.76
12.0	16.0	-13.47	-12.59	-12.02	23.77	28.40	37.71
12.2	16.2	-13.84	-13.11	-12.39	9.90	13.61	18.58
12.4	16.4	-14.21	-13.61	-12.98	-0.78	2.04	5.51
12.6	16.6	-14.43	-13.93	-13.40	-8.77	-6.72	-4.31
12.8	16.8	-14.48	-14.02	-13.53	-14.33	-13.01	-11.13
13.0	17.0	-14.41	-13.95	-13.45	-17.84	-16.99	-15.12
13.2	17.2	-14.31	-13.82	-13.24	-19.81	-19.11	-16.13
13.4	17.4	-14.24	-13.69	-12.96	-20.41	-19.49	-14.27
13.6	17.6	-14.10	-13.43	-12.25	-19.40	-17.00	-6.15
13.8	17.8	-14.07	-13.20	-11.17	-17.40	-12.15	6.06
14.0	18.0	-14.26	-13.28	-10.63	-15.68	-8.88	13.55

RF (IN) (MHz)	LO (MHz)	AMP UNBALANCE VS. RF FREQUENCY @IF = 5 GHz			PHASE UNBALANCE VS. RF FREQUENCY @IF = 5 GHz		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
4.0	9.0	0.18	-0.01	-0.17	17.52	17.04	16.53
4.2	9.2	0.34	0.16	-0.01	17.49	17.17	16.76
4.4	9.4	0.36	0.28	0.15	17.66	17.04	16.87
4.6	9.6	0.21	0.21	0.18	18.38	17.28	16.61
4.7	9.7	0.12	0.13	0.13	18.83	17.80	16.95
4.9	9.9	0.01	0.00	-0.02	19.32	18.32	17.57
5.2	10.2	-0.15	-0.18	-0.21	19.80	18.92	18.08
5.4	10.4	-0.27	-0.31	-0.33	19.79	19.01	18.23
5.6	10.6	-0.43	-0.44	-0.46	19.38	18.75	18.21
5.8	10.8	-0.57	-0.57	-0.58	18.81	18.29	17.85
6.0	11.0	-0.67	-0.65	-0.63	17.94	17.65	17.34
6.2	11.2	-0.78	-0.74	-0.71	17.05	17.02	16.99
6.4	11.4	-0.85	-0.82	-0.79	15.93	16.26	16.54
6.6	11.6	-0.84	-0.83	-0.82	14.89	15.43	16.06
6.8	11.8	-0.83	-0.82	-0.83	14.05	14.84	15.52
7.0	12.0	-0.85	-0.84	-0.84	13.50	14.15	14.83
7.2	12.2	-0.86	-0.84	-0.82	13.59	14.14	14.61
7.4	12.4	-0.87	-0.82	-0.81	14.45	14.70	14.84
7.6	12.6	-0.99	-0.91	-0.87	15.41	16.21	16.56
7.8	12.8	-1.14	-1.02	-0.94	14.84	16.00	16.96
8.0	13.0	-1.21	-1.05	-0.97	14.82	15.84	16.92
8.2	13.2	-1.40	-1.20	-1.09	15.39	16.39	17.69
8.4	13.4	-1.52	-1.25	-1.11	15.49	16.16	17.37
8.6	13.6	-1.70	-1.36	-1.20	16.74	16.98	17.96
8.8	13.8	-1.99	-1.53	-1.33	17.79	17.52	18.24
9.0	14.0	-2.67	-2.04	-1.75	19.47	18.66	19.35
9.2	14.2	-3.43	-2.50	-2.09	19.27	17.28	17.76
9.4	14.4	-4.96	-3.19	-2.58	21.44	16.26	15.87
9.6	14.6	-7.00	-3.90	-2.96	26.08	16.46	14.87
9.8	14.8	-9.82	-5.07	-3.54	34.02	18.14	14.70
10.0	15.0	-14.40	-7.67	-4.56	60.45	22.33	15.95
10.2	15.2	-16.38	-12.09	-6.61	74.22	32.82	17.12
10.4	15.4	-16.31	-16.47	-9.70	57.43	72.29	19.74
10.6	15.6	-16.45	-16.50	-14.51	50.87	69.84	41.84
10.8	15.8	-16.56	-15.87	-15.99	46.76	55.59	77.19
11.0	16.0	-16.13	-15.37	-14.67	43.39	50.27	61.42
11.2	16.2	-15.13	-14.35	-13.46	38.33	44.12	51.99
11.4	16.4	-13.49	-12.80	-11.96	29.67	34.70	39.99
11.6	16.6	-11.90	-11.27	-10.53	16.94	20.42	24.03
11.8	16.8	-10.82	-10.23	-9.58	1.95	4.07	6.80
12.0	17.0	-10.44	-9.82	-9.24	-10.95	-9.57	-7.28
12.2	17.2	-10.64	-10.01	-9.34	-19.63	-18.63	-15.10
12.4	17.4	-11.14	-10.41	-9.59	-24.04	-23.08	-16.82
12.6	17.6	-11.46	-10.66	-9.34	-25.02	-22.29	-9.96
12.8	17.8	-11.72	-10.71	-8.54	-24.05	-18.46	1.40
13.0	18.0	-12.18	-11.01	-8.20	-22.70	-15.75	7.81
13.2	18.2	-12.80	-11.69	-8.92	-22.33	-16.40	6.02
13.4	18.4	-13.38	-12.29	-9.59	-21.91	-17.33	4.74
13.6	18.6	-14.10	-13.04	-10.74	-21.37	-19.40	-0.71
13.8	18.8	-14.96	-14.02	-12.45	-21.59	-22.11	-12.00
14.0	19.0	-15.62	-14.74	-13.33	-22.18	-23.58	-17.05



# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (IN) (GHz)	LO (GHz)	AMP UNBALANCE VS. RF FREQUENCY @IF = 6 GHz			PHASE UNBALANCE VS. RF FREQUENCY @IF = 6 GHz		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
4.0	10.0	-0.19	-0.19	-0.19	19.61	18.46	17.24
4.2	10.2	-0.26	-0.27	-0.26	19.70	18.72	17.71
4.4	10.4	-0.25	-0.27	-0.27	19.53	18.65	17.81
4.6	10.6	-0.26	-0.27	-0.27	19.30	18.63	17.96
4.8	10.8	-0.27	-0.27	-0.26	19.21	18.72	18.23
5.0	11.0	-0.31	-0.30	-0.29	19.14	18.80	18.46
5.2	11.2	-0.35	-0.33	-0.30	19.22	19.03	18.85
5.4	11.4	-0.44	-0.40	-0.37	19.30	19.33	19.37
5.6	11.6	-0.54	-0.50	-0.47	19.28	19.63	20.01
5.8	11.8	-0.64	-0.61	-0.58	19.00	19.71	20.39
5.9	11.9	-0.68	-0.65	-0.64	18.81	19.68	20.47
6.2	12.2	-0.70	-0.70	-0.72	18.46	19.18	19.80
6.4	12.4	-0.65	-0.66	-0.70	18.97	19.43	19.72
6.6	12.6	-0.71	-0.67	-0.69	20.15	21.08	21.47
6.8	12.8	-0.95	-0.91	-0.90	19.91	21.26	22.17
7.0	13.0	-1.15	-1.10	-1.07	20.19	21.49	22.52
7.2	13.2	-1.33	-1.27	-1.22	20.85	22.21	23.53
7.4	13.4	-1.60	-1.51	-1.45	21.27	22.32	23.74
7.6	13.6	-1.87	-1.72	-1.64	21.45	21.91	23.19
7.8	13.8	-2.21	-1.98	-1.86	22.24	22.06	23.13
8.0	14.0	-2.50	-2.18	-2.02	22.96	22.01	22.74
8.2	14.2	-2.81	-2.33	-2.08	26.00	23.67	23.71
8.4	14.4	-3.83	-2.89	-2.49	32.41	27.65	26.79
8.6	14.6	-5.13	-3.42	-2.86	38.40	30.33	28.45
8.8	14.8	-7.29	-4.33	-3.43	46.52	33.77	30.38
9.0	15.0	-10.69	-5.90	-3.91	65.00	39.54	32.45
9.2	15.2	-13.42	-9.24	-5.30	77.71	51.49	37.55
9.4	15.4	-13.90	-13.07	-8.04	53.54	79.26	45.78
9.6	15.6	-14.44	-14.33	-12.11	41.03	62.06	64.18
9.8	15.8	-15.36	-14.62	-14.70	33.89	40.62	68.20
10.0	16.0	-16.09	-15.32	-14.79	28.39	32.74	42.56
10.2	16.2	-16.46	-15.79	-15.09	23.44	27.35	32.94
10.4	16.4	-16.45	-15.91	-15.28	19.02	22.63	27.07
10.6	16.6	-16.04	-15.56	-15.01	15.56	18.70	22.40
10.8	16.8	-15.10	-14.61	-14.07	13.72	16.42	19.74
11.0	17.0	-13.55	-12.97	-12.32	12.86	15.21	18.76
11.2	17.2	-11.67	-10.92	-10.14	10.70	13.04	18.23
11.4	17.4	-9.79	-8.92	-8.02	5.17	7.81	16.01
11.6	17.6	-8.29	-7.34	-6.15	-3.67	1.22	16.66
11.8	17.8	-7.82	-6.71	-4.72	-12.05	-1.77	22.49
12.0	18.0	-8.33	-6.93	-4.29	-19.31	-5.33	23.30
12.2	18.2	-9.33	-7.91	-4.90	-24.77	-12.46	17.79
12.4	18.4	-10.45	-8.96	-5.72	-29.44	-18.59	12.08
12.6	18.6	-11.78	-10.32	-7.19	-32.85	-26.56	0.94
12.8	18.8	-13.24	-11.93	-9.50	-34.98	-34.29	-16.42
13.0	19.0	-14.25	-12.99	-10.78	-36.92	-37.77	-24.72
13.2	19.2	-14.77	-13.37	-10.70	-40.38	-40.07	-23.24
13.4	19.4	-15.14	-13.45	-10.16	-43.92	-40.76	-19.07
13.6	19.6	-15.89	-14.29	-11.16	-47.01	-45.17	-26.30
13.8	19.8	-16.87	-15.60	-13.50	-49.56	-50.42	-41.59
14.0	20.0	-17.19	-15.92	-13.91	-53.62	-53.77	-44.62

RF (IN) (MHz)	LO (MHz)	AMP UNBALANCE VS. RF FREQUENCY @IF = 7 GHz			PHASE UNBALANCE VS. RF FREQUENCY @IF = 7 GHz		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
4.0	11.0	-0.37	-0.44	-0.52	18.57	18.33	18.10
4.2	11.2	-0.72	-0.80	-0.84	18.59	18.42	18.24
4.4	11.4	-0.88	-0.96	-1.00	17.41	17.38	17.15
4.6	11.6	-0.95	-1.00	-1.04	16.24	16.47	16.68
4.8	11.8	-0.91	-0.96	-1.00	15.12	15.64	16.17
5.0	12.0	-0.84	-0.89	-0.92	13.78	14.45	15.24
5.2	12.2	-0.81	-0.83	-0.84	12.07	12.80	13.68
5.4	12.4	-0.73	-0.66	-0.64	10.26	11.30	12.58
5.6	12.6	-0.59	-0.43	-0.39	9.05	10.89	12.71
5.8	12.8	-0.41	-0.24	-0.17	10.32	12.95	15.31
5.9	12.9	-0.27	-0.12	-0.06	11.50	14.30	16.78
6.1	13.1	-0.06	0.06	0.10	14.78	17.65	20.17
6.3	13.3	0.02	0.06	0.09	18.75	21.28	23.68
6.5	13.5	-0.03	-0.03	-0.03	22.75	24.74	26.80
6.7	13.7	-0.17	-0.19	-0.21	26.83	27.89	29.51
6.9	13.9	-0.40	-0.39	-0.40	30.48	30.59	31.73
7.2	14.2	-0.88	-0.77	-0.75	35.60	33.97	34.29
7.4	14.4	-1.38	-0.97	-0.92	40.49	35.78	35.11
7.6	14.6	-2.26	-1.24	-1.01	48.81	39.05	36.84
7.8	14.8	-3.67	-1.77	-1.25	60.97	43.92	39.27
8.0	15.0	-6.32	-3.14	-1.87	85.91	55.44	44.71
8.2	15.2	-8.79	-5.62	-3.06	63.18	73.74	52.05
8.4	15.4	-10.10	-8.66	-5.11	40.58	77.06	66.49
8.6	15.6	-11.18	-10.35	-8.38	28.78	45.68	85.55
8.8	15.8	-12.54	-11.32	-10.71	19.89	25.50	48.18
9.0	16.0	-13.70	-12.44	-11.36	11.44	14.68	23.68
9.2	16.2	-14.52	-13.37	-12.18	2.59	5.41	10.05
9.4	16.4	-14.85	-13.89	-12.84	-7.13	-4.52	-1.12
9.6	16.6	-14.80	-14.01	-13.12	-15.85	-13.49	-10.60
9.8	16.8	-14.34	-13.62	-12.83	-22.12	-20.26	-17.71
10.0	17.0	-13.57	-12.86	-12.06	-25.12	-23.53	-20.73
10.2	17.2	-12.75	-11.96	-11.09	-25.55	-23.91	-19.31
10.4	17.4	-11.95	-11.07	-10.12	-23.42	-20.87	-12.74
10.6	17.6	-11.00	-9.99	-8.78	-18.28	-12.96	2.75
10.8	17.8	-10.05	-8.85	-7.13	-11.80	-2.04	21.89
11.0	18.0	-9.22	-7.88	-5.70	-7.13	5.00	31.89
11.2	18.2	-8.35	-6.96	-4.78	-6.66	4.63	31.32
11.4	18.4	-7.22	-5.81	-3.75	-11.88	-1.53	26.33
11.6	18.6	-6.72	-5.15	-3.15	-22.98	-16.05	12.03
11.8	18.8	-7.32	-5.66	-3.76	-37.06	-34.91	-13.03
12.0	19.0	-8.34	-6.63	-4.61	-50.91	-50.31	-31.81
12.2	19.2	-9.11	-7.34	-4.90	-62.98	-60.22	-35.82
12.4	19.4	-9.83	-7.87	-4.90	-72.17	-64.56	-33.90
12.6	19.6	-10.94	-9.05	-6.26	-79.82	-73.62	-46.04
12.8	19.8	-12.33	-10.66	-8.66	-86.75	-84.50	-69.23
13.0	20.0	-12.65	-11.06	-9.25	-86.98	-89.00	-73.94
13.2	20.2	-12.35	-10.59	-7.86	-82.88	-87.20	-58.23
13.4	20.4	-12.16	-10.26	-6.81	-80.62	-82.47	-48.78
13.6	20.6	-11.92	-9.61	-5.77	-81.79	-73.52	-41.06
13.8	20.8	-11.43	-8.31	-4.43	-87.84	-58.86	-33.22
14.0	21.0	-11.31	-7.24	-4.03	-83.13	-53.27	-31.26



# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

RF (GHz)	LO (GHz)	AMPLITUDE UNBALANCE VS. RF FREQUENCY @IF = 200 MHz @LO = +18 dBm			PHASE UNBALANCE VS. RF FREQUENCY @IF = 200 MHz @LO = +18 dBm		
		@ TEMPERATURE			@ TEMPERATURE		
		-55°C	+25°C	+100°C	-55°C	+25°C	+100°C
4.0	4.2	-1.41	-0.99	-0.64	15.46	13.24	11.37
4.2	4.4	-0.74	-0.40	-0.20	13.08	10.87	9.45
4.4	4.6	0.02	0.13	0.22	9.28	8.26	7.47
4.6	4.8	0.44	0.31	0.21	7.53	6.48	5.60
4.8	5.0	0.04	-0.01	-0.06	4.34	3.82	3.64
5.0	5.2	-0.07	-0.13	-0.16	4.49	3.98	3.70
5.2	5.4	-0.10	-0.18	-0.20	3.09	2.21	1.50
5.4	5.6	-0.17	-0.18	-0.19	-0.18	-1.01	-1.25
5.6	5.8	-0.17	-0.23	-0.24	-2.77	-2.59	-1.85
5.8	6.0	-0.37	-0.31	-0.24	-3.91	-1.45	-0.39
6.0	6.2	-0.33	-0.19	-0.11	1.21	1.55	1.48
6.2	6.4	-0.15	-0.06	-0.01	1.87	1.26	1.02
6.4	6.6	-0.05	0.00	0.02	1.43	1.13	1.04
6.6	6.8	-0.07	-0.02	0.01	1.44	1.15	1.02
6.8	7.0	-0.01	0.06	0.09	1.14	1.00	1.01
7.0	7.2	0.05	0.08	0.10	1.61	1.46	1.35
7.2	7.4	0.18	0.18	0.17	2.29	1.90	1.66
7.4	7.6	0.26	0.22	0.20	2.34	1.73	1.43
7.6	7.8	0.23	0.21	0.20	2.40	1.79	1.45
7.8	8.0	0.25	0.23	0.22	2.08	1.58	1.33
8.0	8.2	0.29	0.25	0.23	1.24	0.95	0.80
8.2	8.4	0.33	0.28	0.26	1.11	0.82	0.68
8.4	8.6	0.35	0.30	0.26	0.91	0.68	0.57
8.5	8.7	0.38	0.31	0.26	0.69	0.48	0.40
8.6	8.8	0.44	0.34	0.28	0.19	0.05	-0.02
8.8	9.0	0.51	0.36	0.28	-1.68	-1.31	-1.18
9.0	9.2	0.48	0.32	0.23	-3.34	-2.65	-2.21
9.2	9.4	0.47	0.30	0.20	-5.08	-4.02	-3.44
9.4	9.6	0.35	0.27	0.20	-4.82	-4.75	-4.30
9.6	9.8	0.25	0.25	0.19	-5.12	-4.78	-4.26
9.8	10.0	0.36	0.25	0.14	-4.34	-3.95	-3.73
10.0	10.2	0.24	0.11	0.01	-2.77	-3.10	-3.35
10.2	10.4	0.08	-0.01	-0.05	-2.90	-3.75	-4.07
10.4	10.6	0.02	0.01	0.00	-4.26	-4.64	-4.65
10.6	10.8	0.04	0.04	0.04	-6.25	-6.13	-5.79
10.8	11.0	0.24	0.20	0.13	-7.00	-6.23	-5.52
11.0	11.2	0.31	0.10	-0.03	-6.92	-6.22	-5.87
11.2	11.4	0.19	-0.05	-0.08	-7.14	-6.84	-6.40
11.4	11.6	-0.35	-0.18	-0.04	-8.62	-7.91	-6.88
11.6	11.8	-0.21	0.02	0.12	-10.52	-8.39	-6.78
11.8	12.0	0.02	0.18	0.24	-11.30	-8.31	-6.42
12.0	12.2	0.24	0.30	0.32	-10.17	-7.03	-5.04
12.2	12.4	0.39	0.38	0.35	-8.23	-5.22	-3.17
12.4	12.6	0.46	0.37	0.31	-4.98	-2.64	-1.19
12.6	12.8	0.32	0.24	0.19	-3.45	-1.58	-0.28
12.8	13.0	0.22	0.16	0.11	-2.68	-0.55	0.76
13.0	13.2	0.09	0.04	0.00	-1.18	0.50	1.69
13.2	13.4	-0.02	-0.06	-0.09	-0.80	1.02	2.32
13.4	13.6	-0.14	-0.18	-0.21	-0.13	1.55	2.87
13.6	13.8	-0.26	-0.29	-0.33	0.85	2.35	3.74
13.8	14.0	-0.39	-0.42	-0.46	1.69	3.25	4.77
14.0	14.2	-0.54	-0.58	-0.62	2.71	4.40	6.09

# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

LO (IN) (MHz)	LO-RF ISOLATION (dB)			LO-IF (I) ISOLATION (dB)			LO-IF (Q) ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)			@LO (dBm)		
	+17	+18	+19	+17	+18	+19	+17	+18	+19
4.0	50.20	50.78	51.36	35.38	35.73	36.01	42.50	43.23	43.83
4.2	47.65	48.23	48.79	35.97	36.22	36.40	45.82	46.67	47.21
4.4	45.14	45.70	46.23	36.04	36.18	36.27	49.12	49.09	48.50
4.6	43.72	44.22	44.66	36.30	36.36	36.40	51.10	49.65	48.10
4.8	40.96	41.36	41.71	36.29	36.26	36.23	53.35	50.22	47.91
5.0	39.68	39.96	40.21	36.72	36.71	36.67	53.33	50.01	47.61
5.2	38.41	38.61	38.79	37.00	37.11	37.19	51.79	49.54	47.56
5.4	38.08	38.22	38.34	38.20	38.55	38.84	49.51	48.94	47.98
5.6	39.09	39.17	39.25	38.86	39.40	39.90	47.18	47.63	47.83
5.8	39.84	39.88	39.93	38.69	39.22	39.75	43.65	44.27	44.75
6.0	40.23	40.11	40.02	37.07	37.61	38.16	41.41	42.08	42.61
6.2	41.38	41.18	41.00	35.64	36.20	36.76	39.32	40.10	40.72
6.4	41.71	41.53	41.35	34.69	35.40	36.08	37.09	37.98	38.78
6.6	41.08	41.10	41.10	33.40	34.18	34.96	36.00	36.99	37.92
6.8	40.35	40.47	40.58	32.77	33.62	34.48	35.11	36.14	37.11
7.0	40.51	40.68	40.83	32.69	33.59	34.50	35.06	36.12	37.14
7.2	40.74	41.09	41.39	32.63	33.53	34.42	35.14	36.18	37.17
7.4	40.97	41.44	41.86	33.63	34.55	35.44	35.44	36.29	37.09
7.6	40.97	41.54	42.10	34.89	35.86	36.79	36.30	37.01	37.64
7.8	40.44	40.98	41.54	36.19	37.26	38.25	37.24	37.95	38.55
8.0	41.16	41.62	42.13	36.66	37.79	38.80	37.40	38.09	38.69
8.2	41.15	41.66	42.23	38.36	39.53	40.55	38.40	39.11	39.72
8.4	40.72	41.23	41.82	39.96	41.15	42.17	39.31	40.05	40.68
8.5	40.78	41.28	41.86	40.53	41.65	42.63	39.86	40.63	41.29
8.6	40.72	41.26	41.87	41.38	42.45	43.35	40.08	40.86	41.54
8.8	40.67	41.22	41.85	42.74	43.82	44.67	40.92	41.67	42.35
9.0	40.43	41.00	41.69	44.31	45.36	46.10	42.42	43.14	43.78
9.2	40.38	41.12	41.93	46.30	47.23	47.79	43.91	44.64	45.27
9.4	39.94	40.82	41.80	47.46	48.27	48.73	45.01	45.83	46.51
9.6	39.64	40.46	41.45	47.81	48.41	48.84	46.91	47.92	48.74
9.8	39.55	40.28	41.15	47.62	47.96	48.22	47.37	48.35	49.22
10.0	39.75	40.46	41.22	49.15	49.22	49.26	47.79	48.48	49.13
10.2	40.28	41.00	41.71	52.76	52.60	52.41	50.07	50.46	50.82
10.4	41.23	42.06	42.77	55.81	55.44	55.08	53.94	54.02	54.12
10.6	41.61	42.63	43.44	57.44	57.14	56.83	57.73	57.12	56.69
10.8	41.82	42.83	43.59	59.99	60.07	60.10	57.60	57.01	56.42
11.0	40.98	41.96	42.73	65.80	66.90	67.97	53.76	53.95	53.96
11.2	40.00	40.92	41.75	71.71	70.56	68.91	51.44	51.92	52.27
11.4	39.86	40.65	41.36	62.66	61.69	60.67	49.47	50.02	50.49
11.6	40.05	40.74	41.33	57.43	56.79	56.11	47.49	48.01	48.47
11.8	39.44	40.14	40.72	54.06	53.55	53.02	46.44	46.90	47.32
12.0	38.90	39.65	40.29	51.41	51.04	50.70	45.34	45.76	46.16
12.2	38.61	39.42	40.14	50.52	50.11	49.77	45.31	45.69	46.06
12.4	38.13	39.01	39.81	48.96	48.52	48.16	45.70	46.03	46.36
12.6	38.13	39.03	39.89	49.23	48.68	48.24	46.51	46.74	46.96
12.8	38.19	39.10	39.97	49.70	49.10	48.60	47.52	47.75	47.96
13.0	37.87	38.82	39.73	50.13	49.52	48.98	48.64	48.87	49.09
13.2	38.19	39.18	40.15	49.65	49.04	48.50	51.08	51.30	51.52
13.4	38.29	39.35	40.41	50.20	49.57	49.03	52.55	52.80	53.04
13.6	38.54	39.65	40.79	50.74	50.16	49.66	54.92	55.31	55.72
13.8	38.67	39.85	41.08	51.14	50.71	50.30	58.43	59.30	60.25
14.0	39.46	40.70	42.02	50.75	50.51	50.23	59.44	60.96	63.05

# Frequency Mixer

# SMIQ-5143H+ Fre

## Typical Performance Data

Temperature = +25°C

RF (IN) (MHz)	LO (MHz)	RF-IF (I) ISOLATION (dB)			RF-IF (Q) ISOLATION (dB)		
		@LO (dBm)			@LO (dBm)		
		+17	+18	+19	+17	+18	+19
4.0	4.2	29.39	29.35	29.32	28.67	28.77	28.89
4.2	4.4	29.29	29.31	29.33	26.93	27.04	27.16
4.4	4.6	28.63	28.76	28.88	25.80	25.98	26.17
4.6	4.8	27.79	27.98	28.17	25.11	25.31	25.53
4.8	5.0	26.43	26.72	26.99	24.47	24.73	25.03
5.0	5.2	25.48	25.76	26.04	24.95	25.25	25.57
5.2	5.4	25.18	25.38	25.54	25.41	25.61	25.84
5.4	5.6	25.27	25.38	25.44	25.55	25.59	25.66
5.6	5.8	26.13	26.25	26.32	25.41	25.44	25.47
5.8	6.0	27.92	27.95	27.93	25.45	25.47	25.49
6.0	6.2	28.63	28.56	28.42	25.80	25.79	25.77
6.2	6.4	29.76	29.73	29.60	26.44	26.45	26.47
6.4	6.6	30.36	30.31	30.19	26.82	26.88	26.95
6.6	6.8	30.98	30.78	30.48	27.12	27.20	27.28
6.8	7.0	31.66	31.47	31.16	27.75	27.84	27.92
7.0	7.2	33.11	32.92	32.63	28.00	28.04	28.06
7.2	7.4	34.38	34.39	34.27	28.39	28.31	28.23
7.4	7.6	35.62	35.80	35.91	28.78	28.63	28.51
7.6	7.8	36.51	36.64	36.72	28.81	28.66	28.54
7.8	8.0	36.57	36.54	36.43	29.14	29.05	28.98
8.0	8.2	35.90	35.79	35.62	29.13	29.07	29.02
8.2	8.4	35.88	35.66	35.46	29.73	29.72	29.72
8.4	8.6	35.69	35.36	35.09	30.10	30.15	30.22
8.5	8.7	35.62	35.20	34.87	30.45	30.50	30.59
8.6	8.8	35.64	35.20	34.83	30.54	30.57	30.64
8.8	9.0	34.87	34.40	34.00	30.80	30.80	30.84
9.0	9.2	34.42	33.94	33.57	31.18	31.17	31.22
9.2	9.4	35.01	34.54	34.13	31.09	30.99	31.00
9.4	9.6	35.07	34.66	34.25	29.50	29.27	29.09
9.6	9.8	34.58	34.29	33.98	29.02	28.80	28.55
9.8	10.0	33.77	33.60	33.45	27.78	27.63	27.41
10.0	10.2	33.41	33.34	33.27	26.10	26.03	25.92
10.2	10.4	33.11	33.06	33.03	25.12	25.11	25.07
10.4	10.6	33.73	33.64	33.61	24.87	24.87	24.85
10.6	10.8	33.59	33.50	33.42	23.31	23.30	23.28
10.8	11.0	33.03	32.95	32.87	22.28	22.26	22.23
11.0	11.2	34.12	34.07	34.02	22.24	22.26	22.26
11.2	11.4	35.46	35.44	35.42	22.11	22.14	22.16
11.4	11.6	34.84	34.85	34.86	21.75	21.77	21.79
11.6	11.8	33.40	33.42	33.44	21.29	21.32	21.34
11.8	12.0	33.38	33.44	33.48	20.84	20.88	20.91
12.0	12.2	31.21	31.26	31.31	20.00	20.03	20.07
12.2	12.4	32.61	32.67	32.73	20.38	20.42	20.45
12.4	12.6	32.0	32.1	32.2	20.7	20.7	20.8
12.6	12.8	32.7	32.8	32.9	21.4	21.4	21.5
12.8	13.0	34.3	34.4	34.5	22.2	22.3	22.3
13.0	13.2	36.4	36.6	36.7	23.5	23.6	23.6
13.2	13.4	37.9	38.1	38.3	25.6	25.7	25.8
13.4	13.6	42.0	42.2	42.4	27.0	27.0	27.1
13.6	13.8	44.2	44.3	44.4	29.0	29.1	29.2
13.8	14.0	42.8	42.7	42.5	31.4	31.5	31.5
14.0	14.2	39.3	39.2	39.1	32.9	33.1	33.1





# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

LO (IN) (MHz)	LO-RF ISOLATION (dB)			LO-IF (I) ISOLATION (dB)			LO-IF (Q) ISOLATION (dB)		
	@TEMPERATURE (°C)			@TEMPERATURE (°C)			@TEMPERATURE (°C)		
	-55	+25	+100	-55	+25	+100	-55	+25	+100
4.0	51.21	50.63	50.42	35.24	35.66	35.95	42.12	43.11	43.63
4.2	48.10	48.09	48.10	35.95	36.15	36.24	46.14	46.50	46.47
4.4	45.65	45.58	45.57	36.05	36.12	36.21	50.76	48.91	47.55
4.6	44.27	44.10	44.01	36.08	36.30	36.45	52.49	49.48	47.76
4.8	41.40	41.25	41.14	35.92	36.19	36.40	53.61	50.05	48.06
5.0	40.04	39.88	39.81	36.20	36.64	37.03	52.69	49.90	48.12
5.2	38.55	38.55	38.69	36.26	37.04	37.72	50.56	49.46	48.59
5.4	37.71	38.15	38.58	37.50	38.47	39.18	48.33	48.97	49.02
5.6	38.53	39.10	39.53	38.72	39.33	39.58	47.91	47.73	47.41
5.8	39.43	39.85	40.24	39.20	39.09	39.07	44.06	44.28	44.50
6.0	39.59	40.06	40.38	37.39	37.47	37.58	41.76	42.07	42.31
6.2	40.70	41.14	41.41	35.79	36.05	36.37	39.68	40.09	40.48
6.4	41.25	41.55	41.76	34.71	35.23	35.77	37.16	37.98	38.73
6.6	40.96	41.16	41.49	33.15	34.01	34.81	35.86	36.99	37.96
6.8	40.01	40.54	41.11	32.44	33.47	34.37	34.89	36.13	37.21
7.0	39.66	40.76	41.65	32.22	33.45	34.48	34.68	36.11	37.27
7.2	40.11	41.16	42.03	31.92	33.40	34.70	34.63	36.14	37.27
7.4	40.45	41.50	42.39	32.64	34.42	35.84	34.81	36.24	37.33
7.6	40.60	41.57	42.54	34.20	35.76	37.00	35.87	36.99	37.86
7.8	39.77	41.01	42.11	35.77	37.17	38.38	36.93	37.95	38.79
8.0	40.42	41.67	42.66	36.23	37.71	38.96	37.10	38.11	38.97
8.2	40.62	41.69	42.65	37.95	39.42	40.67	38.17	39.15	39.99
8.4	40.06	41.24	42.29	39.65	41.03	42.24	39.13	40.12	40.97
8.5	40.15	41.29	42.28	40.10	41.55	42.79	39.71	40.69	41.55
8.6	40.14	41.28	42.27	40.75	42.33	43.63	39.84	40.90	41.79
8.8	40.26	41.27	42.19	42.08	43.62	44.82	40.51	41.63	42.59
9.0	39.85	41.06	42.11	43.54	45.06	46.25	42.03	43.13	44.00
9.2	39.86	41.19	42.29	45.74	46.97	47.87	43.44	44.58	45.51
9.4	39.67	40.89	41.95	47.29	48.07	48.60	44.60	45.71	46.56
9.6	39.19	40.53	41.69	47.56	48.20	48.97	47.23	47.83	48.21
9.8	38.84	40.33	41.60	46.60	47.82	49.43	48.22	48.31	49.04
10.0	38.96	40.51	41.78	46.44	49.07	51.21	47.07	48.42	50.20
10.2	39.42	41.04	42.42	49.11	52.26	54.51	47.68	50.49	53.14
10.4	40.38	42.10	43.50	52.65	55.20	57.20	50.47	54.21	57.97
10.6	41.11	42.64	43.75	54.94	57.19	59.44	53.14	57.13	60.01
10.8	41.79	42.81	43.54	56.77	60.08	63.88	55.07	56.94	56.40
11.0	40.96	41.95	42.72	60.81	66.49	74.63	54.43	53.99	53.29
11.2	40.01	40.93	41.73	69.95	69.86	65.15	52.17	51.88	51.46
11.4	39.76	40.66	41.36	64.00	61.19	59.10	50.40	49.93	49.52
11.6	39.99	40.75	41.40	58.04	56.54	55.20	48.38	47.93	47.72
11.8	39.64	40.17	40.71	54.10	53.33	52.78	46.71	46.79	46.92
12.0	38.98	39.68	40.44	50.73	50.75	50.66	45.08	45.66	46.11
12.2	38.40	39.45	40.47	49.74	49.94	50.03	44.88	45.67	46.29
12.4	37.74	39.05	40.29	47.91	48.45	48.82	45.07	46.08	46.91
12.6	37.58	39.08	40.35	47.80	48.58	49.08	45.62	46.81	47.71
12.8	37.51	39.14	40.58	48.15	48.99	49.37	46.61	47.82	48.89
13.0	37.06	38.86	40.46	48.74	49.42	50.03	47.52	48.91	50.33
13.2	37.44	39.21	40.82	48.03	48.91	49.60	49.75	51.32	52.97
13.4	37.53	39.37	41.05	48.37	49.39	50.10	50.72	52.76	54.97
13.6	37.78	39.67	41.39	48.89	50.07	50.64	52.65	55.38	58.42
13.8	37.85	39.87	41.63	49.47	50.58	51.17	55.35	59.30	65.06
14.0	38.74	40.72	42.44	49.40	50.34	50.57	56.46	61.07	65.42

# Frequency Mixer

# SMIQ-5143H+ Fre

## Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF-IF (I) ISOLATION (dB)			RF-IF (Q) ISOLATION (dB)		
		@TEMPERATURE (°C)			@TEMPERATURE (°C)		
		-55	+25	+100	-55	+25	+100
4.0	4.2	29.13	29.35	29.59	29.16	28.74	28.54
4.2	4.4	29.07	29.29	29.45	27.12	27.03	27.09
4.4	4.6	28.59	28.70	28.78	25.83	25.97	26.19
4.6	4.8	27.76	27.91	28.07	24.99	25.30	25.63
4.8	5.0	26.47	26.69	26.90	24.19	24.75	25.28
5.0	5.2	25.41	25.77	26.08	24.68	25.26	25.75
5.2	5.4	25.12	25.41	25.75	25.40	25.61	25.84
5.4	5.6	24.75	25.42	26.05	25.33	25.60	25.89
5.6	5.8	25.42	26.30	26.98	25.17	25.44	25.75
5.8	6.0	27.30	28.01	28.51	25.10	25.50	25.89
6.0	6.2	28.10	28.61	29.06	25.24	25.78	26.25
6.2	6.4	29.46	29.78	30.09	25.91	26.45	26.89
6.4	6.6	29.94	30.41	30.86	26.51	26.90	27.25
6.6	6.8	30.51	30.89	31.24	26.75	27.22	27.58
6.8	7.0	31.09	31.55	31.89	27.47	27.86	28.08
7.0	7.2	32.72	33.03	33.42	27.82	28.06	28.26
7.2	7.4	33.86	34.47	34.96	28.04	28.31	28.50
7.4	7.6	35.72	35.90	36.15	28.58	28.64	28.67
7.6	7.8	36.92	36.75	36.81	28.71	28.67	28.70
7.8	8.0	36.43	36.67	36.87	29.00	29.07	29.21
8.0	8.2	35.70	35.93	35.99	28.96	29.11	29.33
8.2	8.4	35.63	35.77	35.80	29.60	29.78	29.97
8.4	8.6	35.29	35.47	35.43	29.99	30.22	30.46
8.5	8.7	35.06	35.31	35.27	30.28	30.57	30.86
8.6	8.8	35.11	35.28	35.25	30.24	30.62	30.93
8.8	9.0	34.40	34.48	34.39	30.58	30.80	30.97
9.0	9.2	33.80	33.99	34.08	31.15	31.15	31.07
9.2	9.4	34.38	34.58	34.70	31.08	30.89	30.71
9.4	9.6	34.57	34.71	34.73	29.69	29.16	28.81
9.6	9.8	34.26	34.35	34.34	29.31	28.68	28.22
9.8	10.0	33.40	33.70	33.94	27.95	27.51	27.16
10.0	10.2	33.02	33.48	33.96	26.36	25.98	25.71
10.2	10.4	32.52	33.20	33.86	25.40	25.09	24.83
10.4	10.6	32.73	33.80	34.58	25.06	24.89	24.80
10.6	10.8	32.36	33.65	34.64	23.34	23.35	23.41
10.8	11.0	31.86	33.04	34.11	22.16	22.31	22.37
11.0	11.2	32.83	34.12	35.15	22.11	22.31	22.39
11.2	11.4	34.03	35.38	36.38	21.98	22.14	22.30
11.4	11.6	33.58	34.68	35.32	21.57	21.72	21.88
11.6	11.8	32.09	33.23	33.77	21.03	21.27	21.40
11.8	12.0	32.23	33.19	33.91	20.41	20.81	21.07
12.0	12.2	29.92	31.05	31.87	19.39	19.99	20.45
12.2	12.4	31.29	32.49	33.36	19.70	20.42	21.01
12.4	12.6	30.6	31.9	33.0	19.9	20.8	21.6
12.6	12.8	31.2	32.7	34.0	20.5	21.5	22.4
12.8	13.0	32.4	34.2	35.7	21.2	22.4	23.4
13.0	13.2	34.4	36.3	38.1	22.3	23.6	24.9
13.2	13.4	35.4	37.7	39.8	24.3	25.7	27.0
13.4	13.6	38.6	41.6	44.0	25.4	27.0	28.4
13.6	13.8	41.6	44.2	44.4	27.2	29.0	30.4
13.8	14.0	45.3	43.1	41.0	29.5	31.3	32.5
14.0	14.2	41.9	39.5	37.9	31.9	33.0	33.1



# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (GHz)	LO (GHz)	Image Rejection (Downconverter Mode) IF Fixed @IF=200 MHz (dB)			RF (GHz)	LO (GHz)	Image Rejection (Downconverter Mode) IF Fixed @IF=2 GHz (dB)			RF (GHz)	LO (GHz)	Image Rejection (Downconverter Mode) IF Fixed @IF=4 GHz (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+17	+18	+19			+17	+18	+19			+17	+18	+19
3.8	4.0	16.50	17.22	18.35	2.0	4.0	34.83	41.36	35.51	0.0	4.0	63.70	57.04	57.86
4.0	4.2	19.18	19.93	21.24	2.2	4.2	38.34	40.31	39.00	0.2	4.2	59.97	56.23	59.91
4.2	4.4	23.94	24.57	25.60	2.4	4.4	39.91	40.14	40.60	0.4	4.4	59.03	55.10	57.13
4.4	4.6	28.99	29.01	29.25	2.6	4.6	40.75	40.84	41.13	0.6	4.6	53.59	55.54	53.53
4.6	4.8	32.24	31.87	31.46	2.8	4.8	42.19	42.34	42.54	0.8	4.8	52.56	50.83	48.61
4.8	5.0	34.00	33.06	32.23	3.0	5.0	45.79	45.74	45.73	1.0	5.0	47.99	45.78	45.34
5.0	5.2	36.00	34.34	33.18	3.2	5.2	50.85	49.59	48.33	1.2	5.2	43.64	42.95	42.99
5.2	5.4	36.09	35.53	35.59	3.4	5.4	52.81	51.55	50.00	1.4	5.4	40.50	39.85	40.00
5.4	5.6	34.44	35.49	36.55	3.6	5.6	48.66	49.20	49.15	1.6	5.6	39.34	39.20	39.34
5.6	5.8	30.81	33.05	36.02	3.8	5.8	45.90	47.12	47.73	1.8	5.8	38.35	38.19	38.81
5.8	6.0	34.42	35.94	37.05	4.0	6.0	42.69	42.91	42.89	2.0	6.0	37.40	37.65	38.28
6.0	6.2	38.36	37.77	37.64	4.2	6.2	38.61	37.82	37.10	2.2	6.2	36.52	36.83	36.48
6.2	6.4	38.73	36.10	34.44	4.4	6.4	34.42	33.84	33.33	2.4	6.4	35.07	35.38	34.65
6.4	6.6	35.70	35.28	35.12	4.6	6.6	31.67	31.34	31.04	2.6	6.6	33.22	33.05	33.25
6.6	6.8	34.54	35.54	36.55	4.8	6.8	29.46	29.33	29.20	2.8	6.8	31.30	31.73	31.45
6.8	7.0	32.88	34.74	36.70	5.0	7.0	27.31	27.41	27.46	3.0	7.0	29.01	29.28	29.08
7.0	7.2	31.17	33.37	36.00	5.2	7.2	25.59	25.90	26.17	3.2	7.2	28.08	28.12	27.96
7.2	7.4	30.36	32.36	35.07	5.4	7.4	24.21	24.69	25.16	3.4	7.4	25.98	25.94	25.65
7.4	7.6	30.72	32.67	35.16	5.6	7.6	23.28	23.90	24.54	3.6	7.6	24.78	24.41	24.41
7.6	7.8	31.63	33.69	36.13	5.8	7.8	22.79	23.56	24.34	3.8	7.8	23.33	23.28	23.32
7.8	8.0	32.00	34.43	37.00	6.0	8.0	22.67	23.57	24.49	4.0	8.0	21.55	21.56	21.73
8.0	8.2	32.44	35.37	38.04	6.2	8.2	23.19	24.13	25.11	4.2	8.2	21.37	21.26	20.93
8.2	8.4	32.58	35.69	38.54	6.4	8.4	24.76	25.61	26.49	4.4	8.4	19.40	19.42	19.42
8.4	8.6	32.43	35.36	38.29	6.6	8.6	27.13	27.81	28.39	4.6	8.6	17.53	17.60	17.77
8.6	8.8	32.18	34.59	37.26	6.8	8.8	30.52	30.93	30.99	4.8	8.8	15.57	15.82	16.15
8.8	9.0	31.76	32.93	35.28	7.0	9.0	34.03	34.68	34.31	5.0	9.0	13.25	13.53	13.76
9.0	9.2	31.68	31.22	32.29	7.2	9.2	35.91	36.90	36.57	5.2	9.2	12.12	12.44	12.69
9.2	9.4	31.92	29.87	29.21	7.4	9.4	36.92	38.92	39.13	5.4	9.4	10.70	10.99	11.27
9.4	9.6	32.26	29.70	27.83	7.6	9.6	36.59	39.73	40.09	5.6	9.6	9.80	10.10	10.39
9.6	9.8	32.27	30.23	27.91	7.8	9.8	36.93	40.11	41.11	5.8	9.8	9.24	9.76	10.21
9.8	10.0	32.88	31.61	29.21	8.0	10.0	38.23	40.43	41.98	6.0	10.0	8.71	9.37	9.85
10.0	10.2	33.77	33.06	30.87	8.2	10.2	38.46	39.45	39.69	6.2	10.2	8.68	9.52	10.19
10.2	10.4	32.82	32.54	30.80	8.4	10.4	41.92	40.84	40.59	6.4	10.4	9.02	9.94	10.77
10.4	10.6	29.71	29.76	28.84	8.6	10.6	41.54	40.24	39.24	6.6	10.6	9.94	10.77	11.62
10.6	10.8	26.92	26.94	26.60	8.8	10.8	39.86	38.09	37.73	6.8	10.8	10.57	11.43	12.23
10.8	11.0	25.47	25.55	25.48	9.0	11.0	37.24	36.50	35.79	7.0	11.0	11.02	11.69	12.19
11.0	11.2	25.12	25.46	25.73	9.2	11.2	35.26	35.05	34.94	7.2	11.2	13.32	13.47	13.64
11.2	11.4	24.44	25.06	25.66	9.4	11.4	33.86	34.22	34.53	7.4	11.4	14.67	14.41	14.63
11.4	11.6	22.73	23.58	24.51	9.6	11.6	32.39	33.59	34.50	7.6	11.6	14.84	14.81	14.78
11.6	11.8	21.15	22.13	23.35	9.8	11.8	31.40	33.63	35.74	7.8	11.8	15.51	15.53	15.47
11.8	12.0	20.88	21.88	23.21	10.0	12.0	31.65	34.61	37.27	8.0	12.0	15.16	15.38	15.25
12.0	12.2	22.04	23.05	24.27	10.2	12.2	30.64	33.27	35.55	8.2	12.2	14.31	14.78	14.81
12.2	12.4	24.64	25.53	26.55	10.4	12.4	27.69	29.68	31.46	8.4	12.4	12.97	13.64	14.12
12.4	12.6	27.49	28.78	30.30	10.6	12.6	24.77	26.35	27.65	8.6	12.6	11.15	12.10	12.38
12.6	12.8	29.88	31.92	34.54	10.8	12.8	23.41	25.29	26.90	8.8	12.8	11.44	12.26	12.22
12.8	13.0	30.29	35.21	41.87	11.0	13.0	22.50	24.89	27.04	9.0	13.0	10.03	11.73	11.84
13.0	13.2	30.13	36.92	44.30	11.2	13.2	22.31	25.16	28.06	9.2	13.2	8.94	11.53	12.02
13.2	13.4	26.34	34.71	42.88	11.4	13.4	22.46	26.04	29.65	9.4	13.4	9.18	10.93	11.30
13.4	13.6	20.53	30.23	36.58	11.6	13.6	21.72	27.96	32.32	9.6	13.6	4.82	9.07	10.29
13.6	13.8	16.29	25.95	31.90	11.8	13.8	21.33	33.16	38.61	9.8	13.8	3.54	8.82	10.66
13.8	14.0	15.78	24.41	29.68	12.0	14.0	21.75	39.16	42.84	10.0	14.0	3.99	9.30	11.22

# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (GHz)	LO (GHz)	Image Rejection (Downconverter Mode) IF Fixed @IF=200 MHz (dB)			RF (GHz)	LO (GHz)	Image Rejection (Downconverter Mode) IF Fixed @IF=2 GHz (dB)			RF (GHz)	LO (GHz)	Image Rejection (Downconverter Mode) IF Fixed @IF=4 GHz (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+17	+18	+19			+17	+18	+19			+17	+18	+19
4.0	3.8	15.51	16.46	17.42	4.0	2.0	41.91	40.73	44.57	8.0	4.0	61.41	59.85	63.33
4.2	4.0	16.14	17.07	18.16	4.2	2.2	42.82	42.75	46.48	8.2	8.0	60.54	58.20	60.66
4.4	4.2	19.12	20.02	21.23	4.4	2.4	41.65	41.31	42.91	8.4	8.2	56.94	56.68	56.91
4.6	4.4	24.00	24.65	25.67	4.6	2.6	40.16	38.03	36.79	8.6	8.4	53.51	52.70	53.55
4.8	4.6	29.12	29.19	29.42	4.8	2.8	36.20	33.27	31.73	8.8	8.6	50.48	50.48	50.11
5.0	4.8	32.40	32.09	31.71	5.0	3.0	31.70	30.05	29.65	9.0	8.8	46.30	46.45	46.28
5.2	5.0	34.21	33.38	32.50	5.2	3.2	28.04	28.15	28.52	9.2	9.0	43.91	42.89	43.09
5.4	5.2	36.08	34.75	33.43	5.4	3.4	27.55	28.55	29.97	9.4	9.2	41.40	41.40	41.52
5.6	5.4	35.89	35.77	35.61	5.6	3.6	28.23	29.75	31.11	9.6	9.4	39.70	39.73	39.65
5.8	5.6	33.90	35.33	36.38	5.8	3.8	29.15	30.31	31.33	9.8	9.6	38.34	38.34	38.91
6.0	5.8	30.21	32.79	35.54	6.0	4.0	29.39	30.10	30.76	10.0	9.8	37.59	37.59	37.76
6.2	6.0	33.55	35.71	37.10	6.2	4.2	29.71	30.14	30.67	10.2	10.0	36.28	36.72	36.48
6.4	6.2	37.64	37.73	37.58	6.4	4.4	29.93	30.14	30.55	10.4	10.2	35.05	35.30	34.80
6.6	6.4	38.43	36.24	34.58	6.6	4.6	30.82	30.90	31.15	10.6	10.4	33.41	33.53	33.24
6.8	6.6	35.97	35.51	35.31	6.8	4.8	32.47	32.58	32.79	10.8	10.6	31.41	31.43	31.32
7.0	6.8	34.73	35.68	36.69	7.0	5.0	35.77	35.81	35.77	11.0	10.8	29.54	29.44	29.36
7.2	7.0	32.98	34.78	36.79	7.2	5.2	40.66	39.83	38.48	11.2	11.0	27.73	27.67	27.61
7.4	7.2	31.22	33.41	36.03	7.4	5.4	42.20	41.49	39.95	11.4	11.2	26.29	26.17	26.03
7.6	7.4	30.36	32.43	35.15	7.6	5.6	38.15	38.86	39.05	11.6	11.4	24.75	24.63	24.46
7.8	7.6	30.74	32.73	35.17	7.8	5.8	35.50	36.78	37.35	11.8	11.6	23.19	23.16	23.11
8.0	7.8	31.67	33.76	36.28	8.0	6.0	32.57	32.85	32.78	12.0	11.8	22.05	22.00	22.03
8.2	8.0	32.01	34.49	37.21	8.2	6.2	28.77	28.03	27.30	12.2	12.0	20.81	20.82	20.78
8.4	8.2	32.40	35.03	38.54	8.4	6.4	24.82	24.24	23.74	12.4	12.2	19.36	19.45	19.40
8.6	8.4	32.54	35.25	38.94	8.6	6.6	21.88	21.58	21.28	12.6	12.4	17.53	17.70	17.76
8.8	8.6	32.35	35.07	38.27	8.8	6.8	19.60	19.50	19.38	12.8	12.6	15.55	15.69	15.93
9.0	8.8	31.98	34.22	37.13	9.0	7.0	17.35	17.45	17.53	13.0	12.8	13.67	13.80	14.16
9.2	9.0	31.59	33.02	35.30	9.2	7.2	15.61	15.91	16.20	13.2	13.0	12.07	12.14	12.64
9.4	9.2	31.53	31.28	32.02	9.4	7.4	14.26	14.71	15.18	13.4	13.2	10.82	10.89	11.45
9.6	9.4	31.84	30.01	29.11	9.6	7.6	13.34	13.93	14.56	13.6	13.4	9.75	9.84	10.47
9.8	9.6	32.19	29.89	27.89	9.8	7.8	12.87	13.60	14.37	13.8	13.6	8.95	9.10	9.88
10.0	9.8	32.21	30.46	28.06	10.0	8.0	12.75	13.60	14.51	14.0	13.8	8.58	8.74	9.71
10.2	10.0	32.81	31.81	29.42	10.2	8.2	13.25	14.14	15.11					
10.4	10.2	33.62	33.11	30.98	10.4	8.4	14.82	15.63	16.48					
10.6	10.4	32.45	32.32	30.79	10.6	8.6	17.16	17.85	18.41					
10.8	10.6	29.39	29.54	28.77	10.8	8.8	20.37	20.85	20.96					
11.0	10.8	26.63	26.79	26.52	11.0	9.0	24.02	24.43	24.14					
11.2	11.0	25.20	25.43	25.42	11.2	9.2	26.14	26.29	26.29					
11.4	11.2	24.89	25.36	25.63	11.4	9.4	27.34	28.15	28.62					
11.6	11.4	24.24	24.97	25.53	11.6	9.6	27.32	29.25	29.58					
11.8	11.6	22.53	23.49	24.35	11.8	9.8	27.99	30.08	30.10					
12.0	11.8	20.89	22.04	23.18	12.0	10.0	29.04	30.19	30.74					
12.2	12.0	20.58	21.79	23.02	12.2	10.2	28.76	28.69	29.35					
12.4	12.2	21.73	22.88	24.09	12.4	10.4	30.99	30.27	29.60					
12.6	12.4	24.31	25.56	26.61	12.6	10.6	30.63	29.38	28.47					
12.8	12.6	27.00	28.72	30.29	12.8	10.8	29.40	28.18	27.40					
13.0	12.8	29.34	31.79	34.93	13.0	11.0	26.69	26.06	25.65					
13.2	13.0	29.54	34.63	42.46	13.2	11.2	24.75	24.64	24.56					
13.4	13.2	29.09	35.38	42.34	13.4	11.4	23.35	23.77	24.10					
13.6	13.4	25.13	33.55	41.04	13.6	11.6	21.86	23.03	24.00					
13.8	13.6	19.00	29.31	35.90	13.8	11.8	20.82	22.88	24.94					
14.0	13.8	14.09	25.57	32.04	14.0	12.0	20.92	23.73	26.89					



## Typical Performance Data

RF (GHz)	LO (GHz)	Image Rejection (dBc) (Downconverter Mode) IF Fixed @IF=200 MHz IF = LO - RF LO Power = +18 dBm			RF (GHz)	LO (GHz)	Image Rejection (dBc) (Downconverter Mode) IF Fixed @IF=200 MHz IF = RF - LO LO Power = +18 dBm		
		@ TEMPERATURE					@ TEMPERATURE		
		-55°C	+25°C	+100°C			-55°C	+25°C	+100°C
3.8	4.0	16.35	17.22	19.53	4.0	3.8	15.4	16.5	17.8
4.0	4.2	18.19	19.93	22.75	4.2	4.0	15.9	17.1	19.2
4.2	4.4	22.57	24.57	27.11	4.4	4.2	18.2	20.0	22.8
4.4	4.6	27.81	29.01	30.45	4.6	4.4	22.5	24.7	27.2
4.6	4.8	31.14	31.87	32.59	4.8	4.6	27.9	29.2	30.6
4.8	5.0	32.48	33.06	33.62	5.0	4.8	31.3	32.1	32.8
5.0	5.2	33.55	34.34	35.63	5.2	5.0	32.7	33.4	33.9
5.2	5.4	36.93	35.53	36.51	5.4	5.2	33.7	34.7	35.8
5.4	5.6	36.66	35.49	36.25	5.6	5.4	36.4	35.8	36.2
5.6	5.8	32.39	33.05	36.96	5.8	5.6	36.0	35.3	35.7
5.8	6.0	31.94	35.94	39.92	6.0	5.8	32.0	32.8	36.4
6.0	6.2	34.04	37.77	39.91	6.2	6.0	31.6	35.7	39.6
6.2	6.4	34.90	36.10	35.93	6.4	6.2	33.6	37.7	39.9
6.4	6.6	33.79	35.28	36.08	6.6	6.4	34.7	36.2	36.3
6.6	6.8	34.26	35.54	36.40	6.8	6.6	34.0	35.5	36.5
6.8	7.0	33.67	34.74	35.85	7.0	6.8	34.5	35.7	36.8
7.0	7.2	32.51	33.37	34.81	7.2	7.0	33.9	34.8	36.1
7.2	7.4	31.08	32.36	34.26	7.4	7.2	32.8	33.4	35.0
7.4	7.6	30.98	32.67	34.56	7.6	7.4	31.4	32.4	34.5
7.6	7.8	31.90	33.69	35.38	7.8	7.6	31.3	32.7	34.9
7.8	8.0	32.82	34.43	35.81	8.0	7.8	32.2	33.8	35.7
8.0	8.2	33.82	35.37	36.40	8.2	8.0	33.2	34.5	36.2
8.2	8.4	33.96	35.69	36.66	8.4	8.2	34.2	35.0	36.5
8.4	8.6	33.21	35.36	36.51	8.6	8.4	34.4	35.2	36.8
8.6	8.8	32.20	34.59	36.41	8.8	8.6	33.7	35.1	36.9
8.8	9.0	30.69	32.93	35.87	9.0	8.8	32.6	34.2	36.8
9.0	9.2	28.62	31.22	33.94	9.2	9.0	30.9	33.0	36.1
9.2	9.4	27.89	29.87	31.72	9.4	9.2	28.7	31.3	34.0
9.4	9.6	28.83	29.70	30.68	9.6	9.4	28.0	30.0	31.8
9.6	9.8	29.51	30.23	31.01	9.8	9.6	28.9	29.9	30.7
9.8	10.0	30.17	31.61	32.13	10.0	9.8	29.6	30.5	31.2
10.0	10.2	31.81	33.06	32.70	10.2	10.0	30.2	31.8	32.3
10.2	10.4	32.37	32.54	31.59	10.4	10.2	31.9	33.1	32.8
10.4	10.6	30.27	29.76	29.37	10.6	10.4	32.4	32.3	31.6
10.6	10.8	27.05	26.94	27.56	10.8	10.6	30.3	29.5	29.4
10.8	11.0	24.98	25.55	26.96	11.0	10.8	27.1	26.8	27.5
11.0	11.2	24.61	25.46	26.84	11.2	11.0	25.0	25.4	26.9
11.2	11.4	24.66	25.06	26.21	11.4	11.2	24.6	25.4	26.7
11.4	11.6	23.68	23.58	25.19	11.6	11.4	24.6	25.0	26.1
11.6	11.8	21.48	22.13	24.86	11.8	11.6	23.7	23.5	25.0
11.8	12.0	20.12	21.88	25.27	12.0	11.8	21.5	22.0	24.7
12.0	12.2	20.38	23.05	26.83	12.2	12.0	20.1	21.8	25.2
12.2	12.4	22.26	25.53	30.15	12.4	12.2	20.3	22.9	26.8
12.4	12.6	25.07	28.78	34.92	12.6	12.4	22.3	25.6	30.1
12.6	12.8	27.45	31.92	44.48	12.8	12.6	25.0	28.7	35.1
12.8	13.0	29.43	35.21	47.50	13.0	12.8	27.4	31.8	43.0
13.0	13.2	31.87	36.92	44.29	13.2	13.0	29.3	34.6	45.5
13.2	13.4	33.59	34.71	34.46	13.4	13.2	31.5	35.4	41.9
13.4	13.6	32.06	30.23	30.08	13.6	13.4	33.0	33.5	34.1
13.6	13.8	28.84	25.95	26.65	13.8	13.6	31.6	29.3	29.8
13.8	14.0	26.96	24.41	24.73	14.0	13.8	29.3	25.6	27.0

# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (GHz)	LO (GHz)	Image Rejection (Upconverter Mode) IF Fixed @IF=200 MHz (dB)			RF (GHz)	LO (GHz)	Image Rejection (Upconverter Mode) IF Fixed @IF=2 GHz (dB)			RF (GHz)	LO (GHz)	Image Rejection (Upconverter Mode) IF Fixed @IF=4 GHz (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+17	+18	+19			+17	+18	+19			+17	+18	+19
3.8	4.0	7.09	8.13	9.18	2.0	4.0	-13.67	-13.06	-16.69	4.0	8.0	-36.48	-40.94	-34.63
4.0	4.2	9.84	10.87	11.78	2.2	4.2	-22.70	-22.12	-25.57	4.2	8.2	-45.32	-45.89	-51.79
4.2	4.4	12.36	13.02	13.65	2.4	4.4	-31.35	-32.11	-35.12	4.4	8.4	-39.15	-38.11	-36.42
4.4	4.6	13.29	13.41	13.64	2.6	4.6	-36.40	-36.41	-37.92	4.6	8.6	-29.43	-28.89	-29.04
4.6	4.8	14.99	14.67	14.50	2.8	4.8	-37.74	-37.83	-36.85	4.8	8.8	-24.14	-23.90	-23.95
4.8	5.0	17.45	16.88	16.43	3.0	5.0	-35.08	-34.06	-32.67	5.0	9.0	-20.47	-20.41	-20.23
5.0	5.2	20.22	19.56	18.99	3.2	5.2	-31.61	-30.39	-28.89	5.2	9.2	-17.78	-17.80	-17.65
5.2	5.4	25.53	24.71	24.06	3.4	5.4	-28.33	-26.78	-25.04	5.4	9.4	-14.15	-14.32	-14.47
5.4	5.6	30.78	29.63	28.77	3.6	5.6	-23.65	-22.08	-20.55	5.6	9.6	-12.07	-12.09	-12.24
5.6	5.8	31.51	30.76	30.10	3.8	5.8	-18.94	-17.91	-16.99	5.8	9.8	-10.86	-10.93	-10.97
5.8	6.0	28.08	27.84	27.59	4.0	6.0	-15.97	-15.38	-14.83	6.0	10.0	-10.18	-10.12	-10.13
6.0	6.2	25.73	25.67	25.65	4.2	6.2	-13.59	-13.17	-12.67	6.2	10.2	-8.20	-8.12	-8.07
6.2	6.4	25.43	25.31	25.32	4.4	6.4	-10.61	-10.26	-9.80	6.4	10.4	-6.29	-6.14	-6.03
6.4	6.6	26.20	26.23	26.33	4.6	6.6	-7.11	-6.92	-6.67	6.6	10.6	-4.70	-4.52	-4.34
6.6	6.8	26.78	27.12	27.44	4.8	6.8	-4.53	-4.55	-4.58	6.8	10.8	-1.82	-1.52	-1.34
6.8	7.0	26.59	27.18	27.64	5.0	7.0	-2.54	-2.65	-2.78	7.0	11.0	-0.47	-0.15	0.18
7.0	7.2	26.10	26.93	27.70	5.2	7.2	-0.55	-0.67	-0.81	7.2	11.2	0.72	1.28	1.68
7.2	7.4	25.70	26.71	27.76	5.4	7.4	2.56	2.38	2.16	7.4	11.4	2.37	2.76	3.15
7.4	7.6	25.66	26.84	28.16	5.6	7.6	6.03	5.78	5.44	7.6	11.6	3.79	4.21	4.75
7.6	7.8	26.09	27.42	28.88	5.8	7.8	8.25	7.88	7.55	7.8	11.8	6.06	6.68	7.18
7.8	8.0	26.90	28.43	30.16	6.0	8.0	9.06	8.78	8.49	8.0	12.0	7.76	8.36	8.94
8.0	8.2	27.98	29.68	31.78	6.2	8.2	10.04	9.87	9.74	8.2	12.2	8.97	9.66	10.32
8.2	8.4	29.10	30.94	33.30	6.4	8.4	12.11	12.09	12.04	8.4	12.4	10.38	11.09	11.74
8.4	8.6	30.71	32.54	35.03	6.6	8.6	14.73	14.86	14.98	8.6	12.6	11.05	11.59	12.24
8.6	8.8	33.05	34.58	36.99	6.8	8.8	16.96	17.23	17.44	8.8	12.8	13.01	13.52	13.83
8.8	9.0	36.57	38.25	40.60	7.0	9.0	18.93	19.30	19.61	9.0	13.0	15.59	15.86	16.19
9.0	9.2	39.97	43.24	48.75	7.2	9.2	20.51	20.94	21.32	9.2	13.2	16.87	17.13	17.23
9.2	9.4	40.54	43.46	47.78	7.4	9.4	21.66	22.03	22.52	9.4	13.4	18.07	18.53	18.79
9.4	9.6	37.93	38.66	39.83	7.6	9.6	22.30	22.63	23.02	9.6	13.6	18.96	19.64	20.15
9.6	9.8	35.33	36.22	35.23	7.8	9.8	22.60	22.95	23.34	9.8	13.8	19.00	19.50	20.15
9.8	10.0	35.37	36.80	34.96	8.0	10.0	22.98	23.34	23.69	10.0	14.0	19.93	20.45	20.94
10.0	10.2	37.96	40.90	39.00	8.2	10.2	23.35	23.67	24.00					
10.2	10.4	40.68	44.67	50.12	8.4	10.4	23.87	24.06	24.34					
10.4	10.6	42.37	45.74	52.54	8.6	10.6	24.54	24.50	24.67					
10.6	10.8	40.31	41.40	43.53	8.8	10.8	25.45	25.18	25.11					
10.8	11.0	36.12	35.65	35.55	9.0	11.0	26.53	25.97	25.56					
11.0	11.2	33.13	32.65	32.48	9.2	11.2	27.45	26.91	26.29					
11.2	11.4	32.84	32.32	31.94	9.4	11.4	27.71	27.66	27.09					
11.4	11.6	34.06	33.58	32.87	9.6	11.6	27.06	27.82	27.74					
11.6	11.8	34.07	34.18	33.67	9.8	11.8	26.06	27.18	27.68					
11.8	12.0	32.87	33.22	33.49	10.0	12.0	25.64	26.93	28.01					
12.0	12.2	30.29	31.64	32.64	10.2	12.2	26.00	27.48	28.85					
12.2	12.4	28.03	29.53	31.01	10.4	12.4	27.13	28.38	29.76					
12.4	12.6	27.15	28.79	30.26	10.6	12.6	28.47	29.26	30.21					
12.6	12.8	27.42	29.63	31.15	10.8	12.8	29.71	30.21	30.68					
12.8	13.0	27.55	30.89	33.00	11.0	13.0	30.29	30.44	30.45					
13.0	13.2	26.83	31.21	34.85	11.2	13.2	30.60	30.32	30.07					
13.2	13.4	25.80	30.83	36.75	11.4	13.4	30.24	29.54	29.11					
13.4	13.6	25.12	30.25	37.72	11.6	13.6	29.77	29.00	28.36					
13.6	13.8	23.56	27.89	35.50	11.8	13.8	29.33	28.65	27.80					
13.8	14.0	22.47	26.15	32.79	12.0	14.0	29.19	28.65	27.76					



# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (GHz)	LO (GHz)	Image Rejection (Upconverter Mode) IF Fixed @IF=200 MHz (dB)			RF (GHz)	LO (GHz)	Image Rejection (Upconverter Mode) IF Fixed @IF=2 GHz (dB)			RF (GHz)	LO (GHz)	Image Rejection (Upconverter Mode) IF Fixed @IF=4 GHz (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+17	+18	+19			+17	+18	+19			+17	+18	+19
4.0	3.8	11.55	12.47	13.42	4.0	2.0	-14.45	-15.72	-15.67	4.0	0.0	-43.48	-40.60	-41.21
4.2	4.0	12.43	12.98	13.66	4.2	2.2	-13.43	-13.50	-13.10	4.2	0.2	-42.43	-42.35	-42.12
4.4	4.2	13.33	13.42	13.66	4.4	2.4	-10.90	-10.51	-10.00	4.4	0.4	-37.64	-38.83	-38.88
4.6	4.4	15.05	14.67	14.52	4.6	2.6	-7.58	-7.37	-7.09	4.6	0.6	-30.31	-30.29	-30.02
4.8	4.6	17.56	16.91	16.47	4.8	2.8	-4.76	-4.79	-4.79	4.8	0.8	-24.70	-24.48	-24.42
5.0	4.8	20.39	19.60	19.03	5.0	3.0	-2.62	-2.83	-2.93	5.0	1.0	-20.58	-20.52	-20.42
5.2	5.0	25.66	24.76	24.12	5.2	3.2	-0.51	-0.85	-0.93	5.2	1.2	-17.23	-17.24	-17.11
5.4	5.2	30.76	29.78	28.86	5.4	3.4	2.60	2.27	2.10	5.4	1.4	-14.33	-14.38	-14.37
5.6	5.4	31.45	30.86	30.16	5.6	3.6	6.09	5.66	5.45	5.6	1.6	-12.17	-12.25	-12.36
5.8	5.6	28.22	27.96	27.70	5.8	3.8	8.39	7.88	7.60	5.8	1.8	-10.97	-11.00	-11.06
6.0	5.8	25.98	25.79	25.70	6.0	4.0	9.24	8.85	8.62	6.0	2.0	-9.82	-9.75	-9.68
6.2	6.0	25.78	25.43	25.37	6.2	4.2	10.10	9.83	9.76	6.2	2.2	-8.23	-8.16	-8.06
6.4	6.2	26.60	26.37	26.36	6.4	4.4	12.17	12.09	12.14	6.4	2.4	-6.30	-6.22	-6.07
6.6	6.4	27.37	27.24	27.49	6.6	4.6	14.75	14.84	15.00	6.6	2.6	-4.15	-4.00	-3.81
6.8	6.6	27.24	27.22	27.70	6.8	4.8	16.96	17.17	17.44	6.8	2.8	-2.29	-2.02	-1.83
7.0	6.8	26.64	26.96	27.72	7.0	5.0	18.93	19.27	19.63	7.0	3.0	-0.40	-0.04	0.22
7.2	7.0	26.12	26.71	27.80	7.2	5.2	20.50	20.92	21.35	7.2	3.2	0.99	1.40	1.81
7.4	7.2	26.06	26.82	28.14	7.4	5.4	21.62	22.03	22.48	7.4	3.4	2.23	2.70	3.16
7.6	7.4	26.51	27.44	28.93	7.6	5.6	22.29	22.53	22.93	7.6	3.6	3.95	4.47	4.97
7.8	7.6	27.42	28.46	30.19	7.8	5.8	22.60	22.90	23.32	7.8	3.8	5.88	6.44	7.02
8.0	7.8	28.58	29.75	31.80	8.0	6.0	22.97	23.30	23.68	8.0	4.0	7.58	8.24	8.88
8.2	8.0	29.85	31.03	33.38	8.2	6.2	23.37	23.65	23.94	8.2	4.2	9.00	9.72	10.31
8.4	8.2	31.68	32.61	35.26	8.4	6.4	23.92	24.12	24.31	8.4	4.4	10.05	10.75	11.36
8.6	8.4	34.12	34.63	37.22	8.6	6.6	24.57	24.60	24.72	8.6	4.6	11.50	12.05	12.62
8.8	8.6	37.72	38.30	40.81	8.8	6.8	25.42	25.19	25.13	8.8	4.8	13.24	13.63	14.10
9.0	8.8	40.79	42.88	48.69	9.0	7.0	26.41	25.88	25.62	9.0	5.0	15.08	15.37	15.72
9.2	9.0	40.65	43.34	47.78	9.2	7.2	27.41	26.80	26.28	9.2	5.2	16.91	17.24	17.48
9.4	9.2	37.81	38.46	39.65	9.4	7.4	27.72	27.68	26.95	9.4	5.4	18.08	18.55	18.87
9.6	9.4	35.64	35.99	35.25	9.6	7.6	27.06	27.86	27.52	9.6	5.6	18.75	19.35	19.84
9.8	9.6	36.29	36.91	35.04	9.8	7.8	26.03	27.22	27.51	9.8	5.8	19.32	19.83	20.39
10.0	9.8	39.35	41.71	38.92	10.0	8.0	25.70	26.93	27.86	10.0	6.0	19.73	20.14	20.60
10.2	10.0	42.18	45.89	48.99	10.2	8.2	26.15	27.41	28.71	10.2	6.2	20.27	20.54	20.90
10.4	10.2	43.57	47.02	50.87	10.4	8.4	27.11	28.36	29.74	10.4	6.4	20.65	20.77	20.98
10.6	10.4	41.18	41.70	43.10	10.6	8.6	28.24	29.28	30.31	10.6	6.6	21.04	21.05	21.12
10.8	10.6	37.07	35.67	35.43	10.8	8.8	29.56	30.16	30.72	10.8	6.8	21.53	21.38	21.36
11.0	10.8	33.92	32.69	32.50	11.0	9.0	30.26	30.36	30.53	11.0	7.0	22.20	21.89	21.69
11.2	11.0	33.35	32.37	31.94	11.2	9.2	30.62	30.27	30.14	11.2	7.2	22.87	22.41	22.05
11.4	11.2	34.22	33.44	32.88	11.4	9.4	30.18	29.60	29.12	11.4	7.4	23.26	22.67	22.18
11.6	11.4	34.11	33.95	33.60	11.6	9.6	29.73	29.01	28.37	11.6	7.6	23.40	22.61	22.04
11.8	11.6	32.35	33.18	33.48	11.8	9.8	29.38	28.62	27.89	11.8	7.8	23.37	22.52	21.82
12.0	11.8	30.03	31.68	32.62	12.0	10.0	28.88	28.39	27.64	12.0	8.0	23.45	22.65	21.95
12.2	12.0	27.99	29.60	30.93	12.2	10.2	28.38	28.30	27.83	12.2	8.2	23.47	22.82	22.23
12.4	12.2	27.28	28.77	30.23	12.4	10.4	27.53	27.85	27.80	12.4	8.4	22.94	22.41	21.96
12.6	12.4	27.50	29.65	31.22	12.6	10.6	26.29	27.12	27.17	12.6	8.6	22.24	21.74	21.37
12.8	12.6	27.56	30.91	33.06	12.8	10.8	25.47	26.51	26.47	12.8	8.8	21.76	21.32	20.93
13.0	12.8	26.83	31.11	34.92	13.0	11.0	24.77	26.20	26.17	13.0	9.0	21.37	21.02	20.64
13.2	13.0	25.82	30.61	36.71	13.2	11.2	24.33	25.94	26.11	13.2	9.2	21.13	20.87	20.56
13.4	13.2	25.07	30.06	37.55	13.4	11.4	24.30	25.84	26.12	13.4	9.4	20.41	20.29	20.05
13.6	13.4	23.51	27.79	35.25	13.6	11.6	23.49	25.35	26.00	13.6	9.6	19.71	19.83	19.68
13.8	13.6	22.26	25.90	32.08	13.8	11.8	22.90	24.91	25.70	13.8	9.8	19.04	19.37	19.30
14.0	13.8	21.70	25.08	30.55	14.0	12.0	22.33	24.39	25.36	14.0	10.0	18.73	19.18	19.16



## Typical Performance Data

RF (GHz)	LO (GHz)	Image Rejection (dBc) (Upconverter Mode) IF Fixed @IF=200 MHz IF = LO - RF LO Power = +18 dBm			RF (GHz)	LO (GHz)	Image Rejection (dBc) (Upconverter Mode) IF Fixed @IF=200 MHz IF = RF - LO LO Power = +18 dBm		
		@ TEMPERATURE					@ TEMPERATURE		
		-55°C	+25°C	+100°C			-55°C	+25°C	+100°C
3.8	4.0	6.12	8.13	10.30	4.0	3.8	11.0	12.5	13.4
4.0	4.2	9.38	10.87	12.16	4.2	4.0	12.3	13.0	13.6
4.2	4.4	12.31	13.02	13.58	4.4	4.2	13.1	13.4	13.9
4.4	4.6	13.12	13.41	13.90	4.6	4.4	14.4	14.7	15.3
4.6	4.8	14.34	14.67	15.26	4.8	4.6	16.5	16.9	17.6
4.8	5.0	16.45	16.88	17.61	5.0	4.8	18.9	19.6	20.5
5.0	5.2	18.81	19.56	20.54	5.2	5.0	23.9	24.8	25.5
5.2	5.4	23.84	24.71	25.51	5.4	5.2	30.0	29.8	29.4
5.4	5.6	29.90	29.63	29.44	5.6	5.4	32.0	30.9	29.8
5.6	5.8	31.83	30.76	29.74	5.8	5.6	28.7	28.0	27.4
5.8	6.0	28.57	27.84	27.32	6.0	5.8	25.3	25.8	26.0
6.0	6.2	25.22	25.67	26.00	6.2	6.0	24.1	25.4	26.1
6.2	6.4	23.99	25.31	26.09	6.4	6.2	25.2	26.4	26.8
6.4	6.6	25.11	26.23	26.83	6.6	6.4	26.6	27.2	27.5
6.6	6.8	26.48	27.12	27.53	6.8	6.6	26.7	27.2	27.6
6.8	7.0	26.58	27.18	27.62	7.0	6.8	26.3	27.0	27.5
7.0	7.2	26.19	26.93	27.50	7.2	7.0	26.0	26.7	27.5
7.2	7.4	25.89	26.71	27.55	7.4	7.2	26.0	26.8	27.9
7.4	7.6	25.91	26.84	27.90	7.6	7.4	26.5	27.4	28.5
7.6	7.8	26.39	27.42	28.52	7.8	7.6	27.5	28.5	29.5
7.8	8.0	27.42	28.43	29.57	8.0	7.8	28.8	29.7	30.8
8.0	8.2	28.75	29.68	30.87	8.2	8.0	30.2	31.0	32.0
8.2	8.4	30.11	30.94	32.06	8.4	8.2	32.0	32.6	33.3
8.4	8.6	31.97	32.54	33.37	8.6	8.4	34.5	34.6	35.0
8.6	8.8	34.42	34.58	34.95	8.8	8.6	38.6	38.3	37.5
8.8	9.0	38.53	38.25	37.53	9.0	8.8	41.5	42.9	43.2
9.0	9.2	41.44	43.24	43.25	9.2	9.0	38.9	43.3	47.9
9.2	9.4	38.85	43.46	47.96	9.4	9.2	32.4	38.5	47.1
9.4	9.6	32.33	38.66	47.20	9.6	9.4	31.0	36.0	42.1
9.6	9.8	30.93	36.22	41.96	9.8	9.6	32.5	36.9	42.7
9.8	10.0	32.47	36.80	42.70	10.0	9.8	35.9	41.7	44.9
10.0	10.2	35.96	40.90	44.70	10.2	10.0	41.9	45.9	44.4
10.2	10.4	42.11	44.67	44.36	10.4	10.2	46.8	47.0	39.4
10.4	10.6	47.05	45.74	39.51	10.6	10.4	44.8	41.7	36.1
10.6	10.8	44.80	41.40	36.12	10.8	10.6	39.0	35.7	32.9
10.8	11.0	38.71	35.65	32.89	11.0	10.8	34.3	32.7	31.5
11.0	11.2	34.17	32.65	31.45	11.2	11.0	32.0	32.4	31.7
11.2	11.4	31.88	32.32	31.71	11.4	11.2	32.8	33.4	32.9
11.4	11.6	32.72	33.58	32.87	11.6	11.4	34.1	34.0	33.5
11.6	11.8	34.03	34.18	33.46	11.8	11.6	33.6	33.2	33.4
11.8	12.0	33.62	33.22	33.40	12.0	11.8	31.4	31.7	32.9
12.0	12.2	31.44	31.64	32.79	12.2	12.0	28.7	29.6	31.8
12.2	12.4	28.69	29.53	31.83	12.4	12.2	26.7	28.8	31.8
12.4	12.6	26.79	28.79	31.82	12.6	12.4	26.6	29.7	33.3
12.6	12.8	26.67	29.63	33.28	12.8	12.6	27.4	30.9	35.1
12.8	13.0	27.47	30.89	35.11	13.0	12.8	27.8	31.1	36.0
13.0	13.2	27.80	31.21	36.04	13.2	13.0	27.5	30.6	36.3
13.2	13.4	27.59	30.83	36.34	13.4	13.2	27.0	30.1	35.9
13.4	13.6	27.06	30.25	35.95	13.6	13.4	25.1	27.8	32.8
13.6	13.8	25.28	27.89	32.82	13.8	13.6	23.7	25.9	30.3
13.8	14.0	24.06	26.15	30.72	14.0	13.8	23.1	25.1	29.0





# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (GHz)	Input IP3 (I)			Input IP3 (Q)			Input IP3 (I)			Input IP3 (Q)			Input IP3 (I)			Input IP3 (Q)											
	IF = LO-RF = 200 MHz									IF = LO-RF = 1 GHz									IF = LO-RF = 2 GHz								
	@LO (dBm)			@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	+17	+18	+19						
4.0	30.59	30.42	30.41	30.61	30.34	30.43	29.38	29.50	29.26	28.28	28.84	28.80	29.41	28.87	30.27	28.95	29.07	29.54									
4.2	30.85	30.55	31.03	30.64	29.97	30.07	26.37	27.78	26.28	26.15	25.60	26.92	30.64	28.82	29.65	28.12	28.09	28.79									
4.4	30.26	30.78	30.67	29.95	31.24	31.45	24.77	24.68	25.66	24.94	25.62	26.20	27.12	28.00	28.55	27.15	27.27	28.27									
4.6	27.51	28.07	28.42	27.89	28.56	29.09	21.50	22.10	22.81	21.95	22.41	23.15	25.79	26.37	26.08	24.96	25.05	26.00									
4.8	25.02	25.11	25.31	25.00	25.22	24.99	20.91	21.42	21.84	19.76	20.43	21.00	24.39	24.81	24.83	23.77	24.00	24.71									
5.0	23.35	23.68	23.85	23.25	23.41	23.35	21.67	21.99	22.37	19.65	20.48	20.96	24.83	25.11	25.73	24.09	24.62	25.06									
5.2	20.17	20.41	20.57	20.27	20.40	20.49	21.14	21.40	21.73	19.30	19.90	20.35	23.15	23.51	23.83	22.80	23.18	23.66									
5.4	19.16	19.45	19.75	19.55	19.80	20.01	21.78	21.93	22.11	20.68	20.98	21.39	23.13	23.68	24.03	22.19	23.67	24.14									
5.6	19.16	19.54	19.89	19.15	19.42	19.71	24.10	23.96	24.13	23.06	23.25	23.64	23.64	24.37	24.89	23.85	24.39	24.90									
5.8	19.66	19.99	20.31	18.48	18.94	19.41	25.65	25.58	25.36	24.40	24.83	25.29	23.28	23.84	24.40	24.09	24.53	24.94									
6.0	21.24	21.47	21.80	20.15	20.58	20.94	26.67	26.45	26.36	25.31	25.55	26.10	23.29	23.80	24.35	24.23	24.74	25.17									
6.2	22.96	23.19	23.38	22.83	22.94	23.32	26.97	27.11	27.45	26.32	26.85	27.46	23.47	23.97	24.41	24.70	25.09	25.51									
6.4	25.11	25.29	25.21	24.95	24.88	24.96	26.48	26.93	27.66	26.36	26.85	27.36	23.87	24.32	24.58	24.82	25.26	25.76									
6.6	26.63	26.67	26.20	25.98	25.69	25.93	26.89	27.59	28.35	26.98	27.77	28.51	23.54	23.83	24.35	24.44	24.93	25.40									
6.8	28.82	29.23	29.44	28.05	28.51	28.80	26.11	27.12	27.70	26.91	27.72	28.36	23.97	24.05	24.61	24.54	24.99	25.66									
7.0	29.10	30.02	30.57	29.06	29.80	29.37	25.50	25.88	26.86	26.54	26.91	27.80	24.51	24.11	24.51	23.72	24.40	25.35									
7.2	27.72	30.20	31.16	29.79	31.48	31.48	25.57	25.74	26.16	26.39	26.43	27.36	24.53	24.20	24.06	23.16	23.49	24.31									
7.4	27.02	28.50	29.80	28.59	29.78	30.79	25.62	25.61	25.93	25.78	26.26	26.78	24.61	25.30	25.47	24.23	24.15	24.32									
7.6	25.45	26.26	27.72	27.12	28.19	29.39	24.74	24.75	25.21	25.21	25.42	26.18	23.81	24.88	26.16	24.94	25.24	24.83									
7.8	24.91	25.31	26.22	25.96	26.95	28.00	24.82	24.67	24.77	24.46	25.11	25.85	24.15	25.08	26.77	25.86	26.59	26.56									
8.0	25.66	25.80	26.13	26.19	26.70	27.86	26.44	25.65	25.37	24.88	25.43	26.18	24.88	25.88	27.40	26.51	27.56	28.23									
8.2	24.47	24.78	24.98	25.07	25.35	26.23	26.11	25.49	25.15	24.17	24.24	25.11	24.89	26.32	27.34	26.26	27.01	27.65									
8.4	24.20	24.63	24.95	24.62	25.26	25.92	25.49	26.40	26.52	25.02	24.26	24.48	26.13	26.85	28.38	26.95	27.93	29.26									
8.6	25.07	24.64	24.84	24.86	25.40	26.20	25.30	25.95	26.78	26.00	25.48	25.03	26.66	27.44	29.08	28.01	28.44	30.01									
8.8	26.93	25.08	24.52	24.62	24.98	25.75	24.84	25.74	26.86	26.01	26.01	25.53	25.12	25.82	26.69	26.12	26.49	27.32									
9.0	28.65	27.23	25.11	24.76	24.55	25.06	23.86	24.75	26.46	25.45	25.82	25.99	24.41	24.91	26.03	25.19	25.64	26.27									
9.2	26.36	28.39	28.88	26.29	25.39	25.31	23.69	24.72	25.86	25.16	25.97	26.68	25.36	25.61	26.31	25.73	25.83	26.44									
9.4	25.65	26.28	28.74	26.05	25.44	24.91	22.54	23.45	24.73	24.11	25.24	26.58	24.94	25.20	25.96	25.16	25.41	25.87									
9.6	25.68	25.64	26.23	25.94	25.35	25.29	23.10	24.13	25.36	24.31	25.30	26.58	27.15	27.02	27.52	26.67	26.78	27.29									
9.8	26.15	26.49	26.66	27.13	26.65	26.12	24.36	25.05	26.15	24.75	25.84	26.60	29.00	28.67	29.28	27.56	28.13	28.67									
10.0	26.86	27.16	27.54	28.12	28.04	27.44	25.47	26.12	27.18	25.85	26.36	27.15	30.61	30.41	31.14	29.03	29.24	29.88									
10.2	26.24	26.89	28.13	27.94	28.42	28.23	27.26	27.64	28.81	27.15	27.46	28.57	30.33	30.94	30.33	30.78	30.55	31.50									
10.4	25.61	26.17	27.00	26.83	27.30	27.78	30.20	30.24	30.76	28.17	27.92	28.81	30.16	30.69	30.64	30.98	30.65	31.57									
10.6	25.16	25.97	26.78	25.97	26.73	27.43	31.83	31.38	31.82	29.48	29.56	29.78	29.99	30.50	30.12	32.57	31.89	31.39									
10.8	25.80	26.78	27.45	26.26	26.48	27.73	31.39	30.74	30.68	31.28	32.11	31.58	30.01	30.45	30.12	29.64	31.24	31.39									
11.0	26.49	26.82	27.73	26.96	27.01	28.20	29.09	29.18	29.85	30.65	30.37	31.15	31.74	30.60	31.68	27.61	29.19	30.25									
11.2	26.07	26.39	27.58	26.92	27.36	28.24	28.80	29.09	29.15	29.52	29.43	29.99	30.87	32.01	32.16	26.35	28.43	29.44									
11.4	26.22	27.27	27.81	26.56	27.25	27.74	31.08	32.59	32.19	29.06	29.02	29.42	30.61	31.20	32.88	24.90	27.46	28.75									
11.6	26.72	27.49	28.93	25.90	26.76	28.15	34.96	34.20	34.65	28.42	29.43	28.84	30.27	31.47	33.24	23.78	25.98	27.32									
11.8	26.81	27.41	28.28	25.31	25.62	26.90	35.13	34.64	32.71	26.44	27.86	28.22	28.49	29.80	32.61	22.01	23.84	25.32									
12.0	27.34	28.07	28.71	26.44	26.82	27.13	35.33	34.73	33.83	26.41	28.78	29.15	29.41	30.17	33.46	20.91	23.47	25.01									
12.2	28.89	30.23	30.33	28.20	28.34	28.85	34.84	33.76	32.81	26.51	28.76	30.15	30.70	33.69	33.13	19.62	23.30	24.93									
12.4	30.08	29.46	31.01	28.80	29.79	29.28	35.25	34.02	33.82	25.51	27.49	29.47	31.84	31.52	32.09	18.34	22.14	23.72									
12.6	33.29	31.04	31.39	29.36	32.24	32.50	34.46	33.98	34.46	25.12	27.34	29.65	31.11	32.56	33.08	21.04	21.84	23.87									
12.8	33.59	34.44	30.98	29.05	33.35	33.34	32.27	33.79	32.21	24.76	26.37	28.72	26.72	33.60	32.20	14.10	20.73	23.52									
13.0	34.96	34.00	31.31	28.03	31.97	32.23	32.44	32.92	33.48	23.45	25.38	27.11	23.32	31.85	32.26	5.81	21.05	22.52									
13.2	35.09	35.05	33.47	27.65	31.20	33.54	32.09	33.77	32.75	22.28	24.83	26.22	25.56	26.74	31.64	2.40	11.12	22.46									
13.4	34.62	34.43	34.58	26.39	29.28	33.79	34.09	34.24	33.26	21.51	24.01	25.25	29.11	25.46	28.68	6.80	2.69	14.82									
13.6	27.77	27.47	27.47	24.86	26.53	27.36	27.53	27.43	27.66	20.61	23.07	24.03	27.36	26.98	25.93	13.48	4.69	4.64									
13.8	29.18	29.09	28.78	25.90	27.86	29.88	28.33	28.85	28.77	15.31	23.74	25.37	28.81	29.48	28.78	19.18	12.35	3.91									
14.0	33.82	33.59	34.38	23.88	26.12	27.81	29.40	34.56	34.29	7.61	23.10	24.77	33.28	32.21	31.82	21.22	17.81	10.14									

# Frequency Mixer

# SMIQ-5143H+

## Typical Performance Data

Temperature = +25°C

RF (GHz)	Input IP3 (I)			Input IP3 (Q)			Input IP3 (I)			Input IP3 (Q)			Input IP3 (I)			Input IP3 (Q)					
	IF = LO-RF = 3 GHz									IF = LO-RF = 4 GHz						IF = LO-RF = 5 GHz					
	@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			
4.0	30.55	29.40	30.66	30.75	29.32	30.33	28.09	28.10	28.47	27.57	28.90	27.64	27.89	28.58	29.07	29.14	29.71	29.25			
4.2	30.10	29.63	29.76	29.40	28.80	29.47	25.43	25.53	26.22	25.33	25.89	26.31	26.05	26.15	27.65	26.05	26.60	28.37			
4.4	29.17	30.16	30.58	28.99	29.17	29.83	24.74	25.32	25.79	24.76	25.46	25.79	25.69	26.51	27.33	25.56	26.81	27.97			
4.6	26.02	27.38	28.30	26.08	26.56	27.43	22.55	23.23	23.89	22.73	23.34	23.80	25.29	25.58	26.07	24.85	25.23	26.05			
4.8	23.96	24.51	24.98	23.53	24.04	24.52	21.41	22.06	22.82	21.91	22.50	23.22	25.40	26.11	26.78	25.49	25.70	26.01			
5.0	23.12	23.91	24.31	22.76	23.51	23.99	21.88	22.46	23.17	22.44	23.12	24.17	26.31	27.26	28.06	26.94	28.05	28.23			
5.2	20.82	21.46	22.18	20.36	21.16	21.77	21.05	21.23	21.72	21.53	21.90	22.98	24.82	25.78	26.78	26.43	27.52	28.21			
5.4	20.28	21.06	21.77	19.86	20.57	21.41	22.44	22.25	22.16	23.37	23.22	23.46	24.01	25.29	26.84	26.10	27.78	29.92			
5.6	20.80	21.46	22.35	20.26	20.97	21.80	25.11	24.54	23.84	27.73	26.54	25.39	23.96	25.46	26.99	26.11	27.70	29.96			
5.8	20.69	21.26	22.11	20.15	20.78	21.56	27.30	27.00	26.24	33.51	31.29	28.62	23.44	24.79	26.17	25.28	27.25	29.75			
6.0	21.35	21.44	22.09	20.74	20.88	21.36	27.40	28.46	27.88	34.18	32.83	34.72	23.15	24.22	26.12	25.03	26.44	28.36			
6.2	23.33	22.76	22.79	22.97	22.18	22.11	26.03	27.52	28.74	31.65	32.17	31.56	23.57	24.59	26.22	24.95	25.73	27.55			
6.4	27.29	26.87	24.94	26.81	25.94	24.45	24.70	26.48	27.84	29.21	31.84	32.38	24.11	24.90	26.27	25.23	25.77	27.11			
6.6	28.70	31.37	29.30	27.86	30.70	29.52	23.65	25.43	27.72	27.78	30.88	32.62	24.42	24.66	26.09	24.80	25.34	26.62			
6.8	27.60	29.13	32.82	27.48	28.78	32.40	23.75	25.78	27.94	27.15	29.71	32.67	24.63	24.98	26.03	25.28	25.63	26.91			
7.0	27.52	28.44	30.20	26.57	27.82	29.83	23.70	25.41	27.51	25.84	27.81	30.57	24.95	25.27	26.47	25.58	25.94	27.29			
7.2	26.71	28.00	29.40	26.36	27.45	28.31	23.85	25.24	27.26	24.63	26.05	28.33	24.48	25.03	26.10	26.08	26.23	26.70			
7.4	26.61	27.48	29.15	26.08	28.15	28.60	24.17	25.41	27.24	24.43	25.35	26.88	25.28	25.70	26.88	27.69	27.93	27.02			
7.6	26.09	27.16	28.19	25.62	26.96	28.24	23.79	24.64	26.25	23.49	24.19	25.48	25.49	25.12	26.01	26.64	29.55	27.82			
7.8	26.30	27.13	28.30	25.93	26.81	27.92	24.25	24.93	25.91	23.38	24.15	25.52	27.39	25.79	25.98	23.93	29.20	31.02			
8.0	26.00	27.20	29.11	25.72	26.86	28.44	25.47	25.77	26.83	24.26	24.77	26.06	30.68	28.44	27.81	23.08	28.52	32.09			
8.2	24.05	24.94	26.21	23.85	24.77	25.98	24.96	25.47	26.63	24.17	24.57	25.19	31.79	28.82	27.95	21.30	26.31	31.39			
8.4	24.15	24.92	25.54	23.97	24.37	25.60	25.27	26.13	27.54	25.75	25.89	25.80	33.00	30.65	29.08	20.22	24.81	30.63			
8.6	25.39	25.88	26.61	25.09	25.28	26.14	26.48	26.94	27.53	26.76	27.51	27.40	30.36	30.33	30.08	19.72	23.79	28.48			
8.8	26.04	26.26	26.73	25.74	25.85	26.51	28.66	27.77	27.84	25.67	29.07	29.09	27.59	29.44	29.64	18.49	22.60	26.39			
9.0	26.99	27.23	28.01	26.55	26.81	27.40	31.33	29.12	28.49	24.09	29.58	32.16	25.28	27.39	28.71	15.74	20.57	23.93			
9.2	27.28	28.02	28.96	26.96	27.99	28.44	30.65	29.94	29.53	23.64	28.63	32.54	24.56	26.61	27.26	14.61	19.84	22.91			
9.4	26.47	28.03	28.77	26.56	27.02	28.20	28.23	29.87	30.00	21.81	26.17	29.54	24.21	25.69	26.88	13.00	17.95	21.10			
9.6	27.39	27.69	28.40	26.68	26.89	28.10	27.29	29.38	29.94	20.90	24.81	28.60	27.63	27.10	28.90	13.37	17.23	20.96			
9.8	28.93	28.52	28.79	28.05	27.64	28.45	26.59	28.55	28.85	20.54	24.21	27.01	26.98	28.80	31.06	12.40	17.04	21.46			
10.0	29.59	29.95	29.91	29.00	29.76	29.25	24.90	28.15	29.47	18.24	23.01	25.79	22.12	29.18	32.16	6.68	16.25	20.44			
10.2	29.61	31.00	30.14	29.27	29.75	28.80	23.74	27.62	29.69	16.49	21.88	24.51	22.84	24.52	32.91	7.53	9.72	19.07			
10.4	28.66	30.18	30.18	28.21	29.39	30.34	23.39	26.90	28.90	16.00	20.74	23.81	26.26	22.35	24.04	12.97	6.46	12.40			
10.6	27.55	28.89	30.41	26.19	28.37	29.19	25.52	25.72	28.54	16.99	19.04	22.55	26.18	25.08	21.82	17.52	10.12	6.69			
10.8	26.37	28.48	29.07	25.51	27.44	28.11	24.24	24.77	28.33	11.92	17.68	21.59	26.70	26.56	21.36	19.19	15.38	6.84			
11.0	25.19	28.32	29.64	24.20	27.40	29.04	16.92	25.55	27.47	3.91	16.84	19.64	26.58	26.71	24.96	19.19	17.87	11.48			
11.2	23.88	28.30	29.84	22.65	27.63	29.73	16.12	19.07	28.77	2.57	7.71	18.10	25.54	25.44	24.79	18.89	18.06	15.09			
11.4	24.11	28.95	33.14	22.88	28.07	30.27	19.50	15.31	20.77	7.68	2.15	10.59	24.85	24.37	23.98	18.86	18.09	16.72			
11.6	28.82	27.28	30.49	26.45	27.14	31.26	21.63	18.00	15.83	13.74	5.89	3.24	23.80	23.51	22.85	18.81	18.21	17.26			
11.8	20.90	26.21	30.30	18.23	25.72	29.82	22.17	20.75	16.91	16.25	11.30	3.89	22.98	22.61	22.18	18.01	17.36	15.55			
12.0	16.28	31.44	30.74	11.19	30.61	31.94	24.30	23.59	21.97	18.35	17.23	10.57	24.21	24.11	23.39	18.50	17.38	14.66			
12.2	18.39	20.90	31.98	10.33	17.34	31.10	26.35	25.66	24.99	19.77	19.40	17.02	25.24	24.79	22.95	18.25	16.26	12.08			
12.4	23.23	19.17	24.58	15.04	11.31	21.89	28.30	27.38	26.52	20.25	19.71	19.09	26.32	24.83	20.95	16.97	13.72	9.02			
12.6	28.50	24.48	21.53	19.58	15.82	14.59	29.81	29.08	28.86	22.16	21.72	20.28	27.45	24.96	20.18	16.66	12.84	7.84			
12.8	31.54	29.20	24.78	22.45	19.99	16.03	31.20	31.15	29.95	22.95	22.03	20.18	28.51	24.56	19.54	15.64	11.34	6.85			
13.0	31.45	30.04	27.90	22.32	20.70	19.57	30.20	30.25	29.90	22.39	21.30	18.91	28.76	24.46	19.65	15.19	10.72	6.88			
13.2	30.85	31.35	30.19	22.26	21.12	21.06	30.23	30.26	29.33	22.61	19.78	16.39	30.00	25.64	20.96	16.05	11.33	7.66			
13.4	30.32	30.30	29.64	21.49	21.21	20.74	29.83	28.55	26.95	20.03	16.97	13.10	32.86	26.69	21.60	16.98	12.07	7.84			
13.6	27.46	27.89	27.39	17.82	18.57	18.52	27.31	26.75	24.92	18.72	14.96	10.79	27.33	26.71	22.52	19.12	13.74	8.30			
13.8	29.38	29.85	29.39	20.66	21.12	21.12	29.35	28.37	24.90	17.97	13.81	9.78	28.53	28.70	24.48	21.53	15.76	9.62			
14.0	29.98	31.28	29.58	22.01	21.80	21.48	33.02	29.52	25.13	17.13	12.56	8.92	33.64	31.06	25.48	21.67	16.38	10.43			



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IF/RF MICROWAVE COMPONENTS

REV. OR  
SMIQ-5143H+  
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# Frequency Mixer

**SMIQ-5143H+**

## Typical Performance Data

Temperature = +25°C

RF (GHz)	Input IP3 (I)			Input IP3 (Q)			Input IP3 (I)			Input IP3 (Q)		
	IF = LO-RF = 6 GHz						IF = LO-RF = 7 GHz					
	@LO (dBm)			@LO (dBm)			@LO (dBm)			@LO (dBm)		
	+17	+18	+19	+17	+18	+19	+17	+18	+19	+17	+18	+19
4.0	31.65	30.93	30.62	31.04	31.16	31.47	29.41	32.10	31.58	32.14	30.95	31.82
4.2	29.35	29.35	30.09	29.88	30.47	32.12	28.14	28.34	28.21	28.85	29.21	29.39
4.4	28.31	29.48	30.18	29.80	30.51	31.92	26.87	27.50	28.61	27.47	27.86	28.30
4.6	26.08	27.23	28.89	28.76	29.58	31.84	24.52	25.22	26.78	24.26	25.03	25.82
4.8	24.90	26.02	26.97	26.87	28.42	29.53	23.11	24.06	25.46	22.95	23.76	25.28
5.0	26.06	27.10	28.45	28.18	29.13	30.22	23.93	25.09	26.65	23.45	24.43	25.85
5.2	25.59	26.61	28.23	27.01	27.69	29.24	22.35	23.64	25.42	22.23	23.13	24.37
5.4	26.38	27.48	29.62	27.37	28.06	29.37	23.72	25.79	27.48	22.53	23.15	24.08
5.6	28.15	28.56	29.96	28.22	28.53	30.03	27.03	29.20	30.98	22.81	23.31	24.30
5.8	28.63	28.65	29.24	28.80	29.39	29.77	28.61	33.88	32.50	22.77	23.21	24.15
6.0	28.01	28.36	28.58	27.86	28.74	29.58	26.06	27.39	29.40	23.59	24.87	25.55
6.2	27.18	27.90	28.60	27.61	28.99	29.58	25.13	25.58	27.47	23.85	27.51	28.18
6.4	27.67	27.97	28.26	26.30	27.83	28.35	25.54	26.25	27.71	23.49	27.76	33.79
6.6	27.78	26.81	27.25	26.14	27.66	28.58	26.08	26.31	27.64	22.20	26.19	31.64
6.8	30.47	28.03	27.32	26.06	28.68	29.96	26.39	26.79	28.39	21.73	25.85	30.35
7.0	31.31	29.27	28.01	24.89	29.71	30.95	26.73	27.33	28.38	19.68	24.99	29.26
7.2	30.93	29.42	27.55	23.14	27.34	31.98	26.16	27.75	28.45	18.34	22.93	27.84
7.4	29.79	29.71	28.71	22.66	25.80	30.15	25.38	29.77	30.73	20.56	21.80	26.96
7.6	27.88	28.30	28.30	21.25	23.99	27.18	23.70	29.03	30.17	13.61	20.04	26.28
7.8	26.60	27.56	28.44	19.54	22.33	25.04	22.43	28.18	30.51	7.94	20.80	24.62
8.0	27.36	28.38	29.87	18.15	21.74	24.54	22.16	26.15	29.95	4.64	13.02	21.86
8.2	27.44	28.37	29.72	16.50	20.54	23.34	27.41	20.39	29.06	5.29	5.09	18.43
8.4	28.86	28.16	29.81	15.14	19.51	22.71	26.86	25.72	21.00	10.24	4.71	7.20
8.6	26.45	30.03	30.87	12.34	18.30	22.61	27.96	28.29	21.77	15.26	9.41	4.84
8.8	24.49	29.69	30.08	8.37	16.33	21.37	28.43	27.48	28.31	17.01	14.33	7.32
9.0	22.46	25.59	29.07	4.58	11.51	18.11	28.43	28.12	26.45	17.34	16.33	11.13
9.2	24.41	21.81	29.78	6.21	6.51	15.62	28.35	28.16	27.44	19.02	18.23	16.29
9.4	25.77	22.29	21.30	10.50	5.15	8.20	27.14	27.14	26.70	18.64	18.09	17.22
9.6	28.14	26.48	21.35	16.60	9.84	6.16	27.67	27.58	27.06	19.24	18.83	18.10
9.8	29.43	28.71	25.13	20.59	17.08	9.22	27.49	27.60	27.52	20.30	20.15	19.09
10.0	30.47	31.35	30.00	21.51	20.30	14.86	28.44	28.18	28.36	20.16	19.84	18.25
10.2	30.94	31.11	31.15	22.54	22.10	19.69	27.74	27.77	27.71	19.68	18.62	15.77
10.4	29.63	29.68	30.26	22.80	22.02	21.12	26.91	27.25	28.58	18.89	16.79	12.64
10.6	28.54	28.96	29.16	22.27	21.27	20.23	26.34	27.04	27.23	16.93	13.98	9.20
10.8	27.39	27.68	27.52	21.17	20.70	19.35	26.70	27.46	21.26	15.37	11.59	7.14
11.0	26.34	26.18	26.20	19.71	19.12	17.07	26.49	23.97	17.90	13.84	9.61	6.19
11.2	24.66	24.54	23.10	17.84	16.29	12.43	24.88	20.30	15.56	12.67	8.31	5.58
11.4	23.35	22.29	18.45	15.79	13.08	8.51	23.87	19.09	14.36	12.90	8.33	5.40
11.6	22.24	19.91	15.04	13.94	10.32	5.88	23.70	19.32	13.58	13.93	9.18	5.32
11.8	20.57	16.99	12.88	11.25	7.34	3.95	23.50	18.76	13.04	13.81	8.86	4.96
12.0	21.47	17.25	13.81	11.33	7.18	4.64	25.35	20.24	14.61	15.25	10.03	6.27
12.2	23.04	18.81	15.30	12.20	7.89	5.54	26.89	22.79	16.15	16.61	11.92	6.94
12.4	24.90	20.51	16.27	13.34	8.64	5.52	29.22	26.04	17.25	17.38	13.88	6.80
12.6	27.88	23.70	18.20	16.33	11.33	6.63	32.55	29.80	20.52	18.37	16.33	8.89
12.8	29.34	25.52	19.66	18.29	13.06	7.49	33.09	30.28	23.00	18.74	16.88	10.51
13.0	30.86	26.43	20.95	19.35	14.24	8.58	32.87	30.22	23.06	18.69	16.66	10.28
13.2	31.35	27.89	22.42	20.56	16.19	9.45	31.86	27.82	21.65	18.41	14.99	8.70
13.4	32.97	30.31	23.16	21.11	17.74	9.80	29.64	24.64	20.36	16.08	10.97	7.88
13.6	27.43	27.39	24.76	21.49	19.24	11.37	25.95	22.07	21.30	12.97	8.63	9.51
13.8	28.45	28.61	27.97	22.73	19.97	13.39	25.48	22.75	23.08	11.34	9.05	11.47
14.0	33.23	33.86	29.37	21.91	19.18	12.55	23.60	23.63	23.95	10.16	9.77	12.38



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IF/RF MICROWAVE COMPONENTS

## Typical Performance Data

RF (GHz)	Input IP3 (I)			Input IP3 (Q)		
	IF = LO-RF = 200 MHz					
	@ TEMPERATURE			@ TEMPERATURE		
	-55°C	+25°C	+100°C	-55°C	+25°C	+100°C
4.0	27.42	29.54	32.34	28.72	28.73	30.53
4.2	28.93	33.16	32.38	30.04	31.25	31.87
4.4	32.20	33.11	31.74	31.85	31.30	29.14
4.6	32.22	29.75	28.87	31.01	30.44	30.42
4.8	28.61	27.51	26.25	29.42	26.94	25.39
5.0	26.65	25.57	23.85	26.41	24.99	23.66
5.2	24.60	23.36	22.45	24.96	23.76	22.49
5.4	23.43	22.64	22.07	23.88	22.68	21.90
5.6	22.51	22.11	21.79	22.66	21.87	21.33
5.8	22.70	22.68	22.61	21.80	21.67	22.12
6.0	23.81	24.27	24.66	22.83	23.31	23.82
6.2	25.75	26.04	26.15	25.01	25.38	25.59
6.4	28.16	27.50	28.13	27.06	26.99	27.46
6.6	29.53	29.38	29.88	28.74	28.75	29.10
6.8	32.28	31.29	31.69	30.75	29.47	29.01
7.0	32.42	31.03	32.97	32.32	32.41	32.24
7.2	34.14	31.88	30.90	33.04	33.32	32.05
7.4	31.40	31.37	32.39	32.36	32.15	31.76
7.6	30.07	29.16	29.19	32.24	31.49	28.96
7.8	29.35	28.64	27.94	32.17	29.33	29.61
8.0	28.37	27.56	27.91	29.92	27.95	28.72
8.2	28.61	28.17	28.34	29.28	28.34	27.61
8.4	28.57	27.89	27.44	29.07	28.27	28.17
8.6	27.70	27.19	27.48	28.17	28.04	27.94
8.8	27.17	28.20	28.67	28.35	28.95	29.33
9.0	27.09	30.56	29.25	27.61	28.86	28.97
9.2	33.40	32.45	31.37	27.41	29.02	28.82
9.4	29.67	30.09	29.37	28.06	29.69	28.80
9.6	30.13	29.11	29.93	29.01	29.34	29.14
9.8	28.71	28.89	28.72	28.27	28.36	29.16
10.0	28.34	28.89	29.37	28.86	29.76	28.81
10.2	29.04	29.18	29.76	30.19	29.91	29.54
10.4	29.68	28.40	29.17	33.38	30.25	30.40
10.6	29.18	29.38	29.24	31.02	30.46	31.73
10.8	30.23	30.23	30.60	30.87	30.02	29.93
11.0	29.61	30.34	28.99	30.67	30.16	31.23
11.2	30.64	29.69	29.99	30.93	31.24	32.68
11.4	29.05	30.16	31.15	30.89	29.84	30.50
11.6	28.85	30.43	31.00	29.57	29.77	29.03
11.8	29.37	32.32	33.18	28.95	30.39	31.71
12.0	29.17	30.68	32.92	29.72	30.91	31.51
12.2	31.18	34.15	31.04	30.99	31.23	30.80
12.4	33.51	32.51	32.30	30.86	30.83	31.37
12.6	32.41	31.93	33.35	33.19	31.97	30.87
12.8	31.59	34.72	33.46	36.06	32.92	32.82
13.0	34.46	35.04	34.19	33.99	34.21	33.27
13.2	33.94	34.04	32.96	36.35	31.83	31.72
13.4	33.32	33.79	33.30	33.03	31.62	31.01
13.6	33.24	34.89	32.23	33.97	31.82	29.76
13.8	35.45	34.60	34.75	30.76	31.11	29.93
14.0	34.46	36.10	32.51	31.57	29.66	28.92