Typical Performance Data

Note: The following data was taken on the Mini-Circuits Characterization Test Board TB-PMA-163PLNC+ (Figure 2 on datasheet).

Definitions:
Input Return Loss = S11 (dB)
Gain = S21 (dB)
Isolation = S12 (dB)
Output Return Loss = S22 (dB)

TEST CONDITIONS: V_{DD} = V_{EN} = +2 V, I_{DD} = 47 mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	P_{SAT}	Noise Figure	IP-3 Output P_{OUT} = 0 dBm/Tone	IP-2 Output P_{OUT} = 0 dBm/Tone
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
4.0	24.12	-69.32	-15.29	-12.31	88.97	0.97	8.53	9.49	1.28	17.17	13.80
4.2	24.05	-65.59	-14.97	-12.65	58.66	0.98	8.77	9.70	1.19	17.06	14.48
4.4	24.03	-65.72	-14.77	-13.11	60.16	0.98	9.09	9.92	1.10	18.85	15.72
4.6	24.01	-67.99	-14.76	-13.77	79.08	0.99	9.17	10.05	1.03	19.12	16.18
4.8	24.00	-64.56	-14.87	-14.58	53.92	1.00	9.36	10.24	1.07	20.14	16.92
5.0	24.03	-66.48	-15.11	-15.54	68.01	1.00	9.52	10.42	1.01	20.18	17.29
5.2	24.03	-62.54	-15.44	-16.73	43.72	1.01	9.78	10.56	0.98	20.99	17.39
5.4	24.06	-65.19	-15.67	-18.11	59.79	1.01	9.80	10.61	0.96	21.14	17.73
5.6	24.07	-65.54	-15.80	-19.64	62.79	1.01	9.89	10.64	0.96	21.13	18.20
5.8	24.10	-65.52	-15.95	-21.20	62.78	1.02	9.98	10.60	0.97	21.00	18.43
6.0	24.14	-68.74	-16.32	-22.63	91.30	1.02	9.97	10.64	0.99	20.94	17.90
6.2	24.17	-63.11	-16.93	-23.28	47.92	1.02	9.76	10.55	1.02	20.98	18.32
6.4	24.18	-64.06	-17.71	-22.96	53.60	1.01	9.70	10.34	1.00	21.45	19.35
6.6	24.18	-66.39	-18.63	-21.88	70.36	1.01	9.56	10.36	1.06	21.41	18.91
6.8	24.17	-64.89	-19.89	-20.74	59.38	1.00	9.53	10.33	1.08	21.19	19.97
7.0	24.15	-61.91	-21.57	-19.68	42.29	1.00	9.54	10.35	1.09	21.69	19.98
7.2	24.12	-62.63	-23.82	-18.84	46.18	0.99	9.65	10.47	1.04	20.68	19.55
7.4	24.11	-61.42	-26.66	-18.16	40.33	0.99	9.83	10.66	1.01	21.22	18.85
7.6	24.08	-61.65	-28.73	-17.64	41.57	0.98	9.82	10.66	1.02	21.33	19.65
7.8	24.05	-58.96	-27.00	-17.38	30.67	0.98	9.86	10.62	0.98	20.76	19.58
8.0	24.03	-58.32	-23.56	-17.11	28.62	0.98	9.95	10.69	0.90	20.88	19.56
8.2	23.98	-62.17	-20.67	-16.97	44.79	0.99	9.87	10.65	0.89	21.10	20.28
8.4	23.94	-60.11	-18.45	-16.96	35.51	0.99	9.71	10.56	0.92	20.75	20.71
8.6	23.88	-60.43	-16.79	-17.01	37.00	1.00	9.72	10.63	0.96	21.00	20.24
8.8	23.81	-58.80	-15.48	-17.18	30.80	1.01	9.60	10.60	0.90	19.52	20.96
9.0	23.73	-58.34	-14.52	-17.44	29.33	1.02	9.57	10.60	0.94	19.62	20.66
9.2	23.65	-58.04	-13.81	-17.68	28.50	1.02	9.56	10.63	0.97	18.85	20.79
9.4	23.57	-58.70	-13.32	-18.02	30.92	1.03	9.55	10.71	0.96	18.79	21.79
9.6	23.50	-59.66	-12.99	-18.41	34.76	1.04	9.40	10.77	1.03	18.49	21.92
9.8	23.43	-58.94	-12.87	-18.93	32.24	1.04	8.99	10.77	1.09	18.12	23.40
10.0	23.38	-58.23	-12.86	-19.33	29.91	1.04	8.63	10.87	1.11	17.10	24.28
10.2	23.32	-57.11	-13.04	-19.88	26.61	1.04	8.54	11.08	1.12	17.92	25.83
10.4	23.24	-59.02	-13.27	-20.05	33.58	1.04	8.24	11.15	1.20	17.83	27.70
10.6	23.21	-58.80	-13.70	-20.19	33.12	1.03	8.21	11.22	1.19	16.86	28.53
10.8	23.20	-57.21	-14.30	-20.40	27.88	1.03	8.25	11.19	1.25	17.39	28.64
11.0	23.20	-57.93	-15.07	-20.49	30.57	1.02	8.23	11.13	1.20	16.89	28.21
11.2	23.22	-56.99	-16.09	-20.73	27.67	1.02	7.91	11.27	1.22	16.38	30.56
11.4	23.26	-55.52	-17.44	-20.95	23.51	1.01	7.80	11.10	1.21	16.60	30.26
11.6	23.30	-55.61	-19.18	-21.26	23.91	1.00	7.80	11.10	1.21	16.22	30.65
11.8	23.33	-57.26	-21.42	-21.47	29.06	1.00	7.59	11.20	1.16	16.18	31.09
12.0	23.36	-56.17	-24.65	-21.60	25.70	1.00	7.73	11.14	1.17	16.38	31.35
12.2	23.39	-56.27	-29.45	-21.55	26.05	0.99	7.95	11.18	1.12	16.71	32.40
12.4	23.40	-56.83	-38.78	-21.49	27.83	0.99	8.10	11.16	1.13	16.38	33.46
12.6	23.39	-56.02	-35.81	-21.21	25.41	0.99	8.04	11.08	1.10	16.65	33.01
12.8	23.37	-55.61	-28.55	-20.81	24.27	0.99	7.73	11.19	1.10	16.72	34.37
13.0	23.35	-55.40	-24.92	-20.46	23.72	0.99	7.85	10.96	1.10	16.27	31.14
13.2	23.32	-55.63	-22.60	-20.00	24.35	0.99	7.85	11.04	1.13	17.37	31.80
13.4	23.32	-55.66	-20.86	-19.64	24.40	1.00	7.88	10.98	1.06	16.93	31.64
13.6	23.30	-56.23	-19.47	-19.29	25.98	1.00	7.87	10.88	1.09	17.28	30.05
13.8	23.32	-55.19	-18.43	-19.16	22.96	1.00	8.04	10.93	1.10	16.24	31.22
14.0	23.35	-55.03	-17.58	-19.02	22.40	1.00	8.18	10.86	1.12	16.57	30.07
14.2	23.39	-54.10	-16.89	-19.00	20.00	1.01	8.14	10.81	1.10	17.04	29.20
14.4	23.44	-55.47	-16.41	-19.15	23.28	1.01	8.21	10.80	1.09	16.72	28.04
14.6	23.52	-55.96	-16.04	-19.28	24.43	1.01	8.36	10.74	1.07	17.50	27.83
14.8	23.61	-57.25	-15.76	-19.41	28.15	1.02	8.37	10.78	1.11	17.62	28.24
15.0	23.72	-54.70	-15.58	-19.72	20.78	1.02	8.42	10.90	1.12	16.93	28.09
15.2	23.84	-54.99	-15.51	-19.76	21.28	1.02	8.47	10.98	1.07	17.76	27.21
15.4	23.97	-53.78	-15.53	-19.72	18.31	1.02	8.72	11.16	1.08	18.13	28.56
15.6	24.11	-54.90	-15.62	-19.74	20.59	1.02	8.88	11.03	1.11	17.14	28.57
15.8	24.25	-53.88	-15.91	-19.71	18.10	1.01	8.84	11.00	1.09	17.80	27.42
16.0	24.40	-55.51	-16.43	-19.77	21.55	1.01	9.10	11.02	1.13	18.07	28.33
16.2	24.55	-54.47	-17.15	-19.91	18.88	1.01	9.15	10.94	1.12	18.02	28.88
16.4	24.71	-55.44	-18.28	-20.31	20.80	1.00	9.45	11.21	1.18	18.82	28.98
16.6	24.90	-57.34	-19.89	-20.84	25.46	1.00	9.53	11.21	1.15	18.34	28.12
16.8	25.11	-54.85	-21.71	-21.76	18.76	1.00	9.73	11.39	1.14	18.54	28.63
17.0	25.34	-54.74	-22.75	-22.83	18.13	1.00	9.85	11.43	1.12	19.05	29.61

Typical Performance Data

Note: The following data was taken on the Mini-Circuits Characterization Test Board TB-PMA-163PLNC+ (Figure 2 on datasheet).

Definitions:
Input Return Loss = S11 (dB)
Gain = S21 (dB)
Isolation = S12 (dB)
Output Return Loss = S22 (dB)

TEST CONDITIONS: V_{DD} = V_{EN} = +2.6 V, I_{DD} = 78 mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	P_{SAT}	Noise Figure	IP-3 Output P_{OUT} = 0 dBm/Tone	IP-2 Output P_{OUT} = 0 dBm/Tone
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)	(dBm)	(dBm)
4.0	26.61	-67.41	-14.82	-15.56	55.28	1.00	11.48	11.68	1.12	24.56	21.30
4.2	26.52	-63.67	-15.44	-15.26	36.49	1.00	11.57	11.74	1.09	23.49	21.19
4.4	26.43	-62.85	-15.82	-15.13	33.64	0.99	11.84	11.99	0.99	25.54	22.00
4.6	26.36	-65.84	-15.89	-15.20	48.05	0.99	11.96	12.15	0.96	26.35	22.07
4.8	26.32	-63.15	-16.18	-15.42	35.67	0.99	12.15	12.46	0.94	26.31	22.43
5.0	26.28	-63.96	-16.65	-15.78	39.63	0.99	12.30	12.72	0.88	26.53	23.61
5.2	26.27	-64.68	-17.12	-16.32	43.50	1.00	12.42	12.92	0.89	25.84	23.10
5.4	26.26	-66.37	-17.99	-16.96	53.41	1.00	12.43	12.84	0.87	25.97	23.31
5.6	26.26	-63.72	-18.93	-17.80	39.77	1.00	12.51	12.85	0.82	26.70	23.49
5.8	26.26	-64.76	-19.79	-18.62	45.18	1.00	12.55	12.88	0.79	27.14	23.93
6.0	26.29	-62.73	-20.82	-19.41	35.93	1.00	12.46	12.73	0.85	27.78	24.78
6.2	26.33	-64.99	-21.64	-20.16	46.64	1.00	12.44	12.71	0.76	28.19	25.03
6.4	26.36	-66.15	-22.72	-20.65	53.40	1.00	12.49	12.75	0.79	28.44	24.97
6.6	26.37	-63.14	-23.61	-20.70	37.80	1.00	12.53	12.80	0.80	27.57	25.08
6.8	26.38	-65.84	-23.91	-20.53	51.66	1.00	12.52	12.84	0.79	27.90	25.91
7.0	26.39	-62.16	-24.15	-20.09	33.83	0.99	12.53	12.80	0.79	28.08	25.75
7.2	26.40	-64.12	-23.69	-19.63	42.37	0.99	12.63	12.93	0.79	28.22	24.91
7.4	26.39	-61.22	-23.02	-19.22	30.40	0.99	12.68	12.99	0.76	29.50	25.14
7.6	26.39	-61.41	-22.36	-18.75	31.11	0.99	12.66	12.97	0.75	29.25	26.31
7.8	26.39	-62.15	-21.56	-18.45	33.89	0.99	12.73	13.06	0.77	29.55	25.59
8.0	26.39	-60.38	-20.95	-18.35	27.72	0.99	12.81	13.13	0.77	28.90	25.83
8.2	26.40	-61.53	-20.43	-18.27	31.70	0.99	12.86	13.24	0.73	28.23	27.06
8.4	26.40	-62.05	-19.82	-18.39	33.72	1.00	12.95	13.32	0.75	28.83	27.05
8.6	26.39	-59.21	-19.54	-18.63	24.41	1.00	12.91	13.25	0.74	27.99	26.81
8.8	26.39	-61.98	-19.24	-18.98	33.69	1.00	12.88	13.20	0.73	28.36	27.52
9.0	26.38	-61.03	-19.22	-19.47	30.32	1.00	12.97	13.24	0.77	27.65	28.10
9.2	26.36	-61.46	-19.35	-20.12	32.00	1.00	13.12	13.31	0.77	27.14	28.39
9.4	26.36	-60.07	-19.58	-20.89	27.41	1.00	13.06	13.36	0.79	26.74	29.91
9.6	26.37	-60.30	-20.22	-21.96	28.25	1.00	13.08	13.57	0.80	27.23	29.69
9.8	26.36	-57.92	-20.89	-23.12	21.59	1.00	12.83	13.68	0.81	27.06	28.52
10.0	26.38	-57.41	-21.80	-24.12	20.43	1.00	12.73	13.88	0.81	27.57	30.89
10.2	26.39	-59.16	-22.89	-26.08	25.09	1.00	12.60	13.99	0.84	27.02	32.26
10.4	26.38	-59.04	-24.08	-27.99	24.88	1.00	12.46	13.92	0.81	26.65	32.32
10.6	26.34	-57.69	-25.30	-29.89	21.49	1.00	12.35	13.89	0.83	25.63	32.81
10.8	26.33	-58.22	-26.43	-30.70	22.96	1.00	12.24	13.99	0.83	26.03	34.00
11.0	26.33	-58.89	-26.64	-30.24	24.85	1.00	12.25	13.88	0.85	26.32	34.09
11.2	26.33	-57.31	-25.87	-28.92	20.77	1.00	12.16	13.83	0.86	26.09	34.01
11.4	26.34	-57.45	-24.50	-27.43	21.09	1.00	12.06	13.84	0.86	25.15	34.47
11.6	26.35	-57.47	-22.96	-26.02	21.13	1.00	11.99	13.73	0.84	25.73	34.78
11.8	26.36	-55.16	-21.52	-24.61	16.16	1.00	11.97	13.61	0.84	25.02	34.91
12.0	26.37	-57.55	-20.34	-23.71	21.23	1.00	11.93	13.46	0.85	25.24	34.55
12.2	26.37	-57.31	-19.28	-22.76	20.62	1.01	11.99	13.52	0.84	25.44	35.37
12.4	26.37	-55.77	-18.49	-21.95	17.25	1.01	12.05	13.60	0.85	25.36	35.93
12.6	26.37	-55.90	-17.78	-21.25	17.50	1.01	11.89	13.50	0.87	25.82	35.48
12.8	26.35	-56.63	-17.27	-20.60	19.03	1.01	11.86	13.56	0.84	25.22	35.14
13.0	26.34	-57.14	-16.77	-20.11	20.15	1.01	11.83	13.48	0.85	24.72	34.64
13.2	26.33	-55.76	-16.33	-19.64	17.19	1.01	11.82	13.44	0.87	25.12	34.07
13.4	26.35	-55.68	-15.98	-19.27	17.02	1.01	11.84	13.55	0.84	24.68	34.90
13.6	26.35	-55.54	-15.61	-18.87	16.70	1.01	11.71	13.37	0.85	24.19	33.43
13.8	26.38	-54.16	-15.34	-18.45	14.20	1.01	11.86	13.52	0.84	24.59	34.52
14.0	26.42	-55.66	-15.10	-18.32	16.77	1.01	11.83	13.48	0.85	24.82	34.71
14.2	26.48	-56.65	-15.03	-18.29	18.72	1.01	11.87	13.37	0.88	24.37	33.50
14.4	26.54	-55.08	-15.07	-18.29	15.56	1.01	11.90	13.42	0.87	24.83	33.50
14.6	26.62	-55.48	-15.24	-18.51	16.22	1.01	11.90	13.35	0.86	24.06	32.76
14.8	26.70	-53.24	-15.53	-18.85	12.48	1.01	11.96	13.36	0.83	24.48	33.59
15.0	26.80	-54.74	-15.92	-19.30	14.74	1.01	12.06	13.37	0.85	24.20	33.32
15.2	26.91	-54.39	-16.38	-20.03	14.08	1.01	11.96	13.28	0.83	24.27	33.04
15.4	27.01	-54.82	-16.86	-20.92	14.72	1.01	12.11	13.35	0.84	24.28	32.98
15.6	27.11	-54.27	-17.45	-22.05	13.75	1.01	12.20	13.44	0.85	24.33	33.61
15.8	27.23	-55.11	-17.81	-23.50	15.00	1.01	12.18	13.38	0.88	24.13	33.24
16.0	27.32	-54.36	-18.05	-24.89	13.66	1.01	12.35	13.50	0.85	24.09	32.87
16.2	27.43	-54.55	-18.09	-25.98	13.82	1.01	12.18	13.33	0.89	24.72	33.65
16.4	27.55	-54.44	-17.77	-26.51	13.47	1.01	12.16	13.27	0.87	24.30	33.86
16.6	27.66	-54.30	-17.25	-26.09	13.08	1.02	12.34	13.42	0.91	24.39	33.28
16.8	27.79	-54.87	-16.39	-24.38	13.74	1.02	12.11	13.25	0.87	24.85	33.23
17.0	27.93	-55.00	-15.29	-22.74	13.64	1.02	12.25	13.37	0.89	24.24	33.57

Typical Performance Data

Note: The following data was taken on the Mini-Circuits Characterization Test Board TB-PMA-163PLNC+ (Figure 2 on datasheet).

Definitions:
Input Return Loss = S11 (dB)
Gain = S21 (dB)
Isolation = S12 (dB)
Output Return Loss = S22 (dB)

TEST CONDITIONS: V_{DD} = V_{EN} = +3 V, I_{DD} = 92 mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	P_{SAT}	Noise Figure	IP-3 Output P_{OUT} = 0 dBm/Tone	IP-2 Output P_{OUT} = 0 dBm/Tone
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)	(dBm)	(dBm)
4.0	27.11	-63.20	-11.91	-12.04	29.93	1.00	12.90	12.70	1.03	24.79	23.28
4.2	26.99	-63.18	-11.64	-12.23	29.91	1.00	13.08	12.92	0.91	24.38	23.69
4.4	26.94	-62.41	-11.59	-12.57	28.12	1.01	13.33	13.19	0.81	24.55	24.48
4.6	26.92	-64.26	-11.71	-13.05	35.28	1.01	13.42	13.37	0.79	25.01	25.02
4.8	26.92	-64.24	-12.04	-13.72	35.27	1.02	13.59	13.72	0.81	25.12	25.52
5.0	26.95	-63.14	-12.56	-14.48	31.99	1.02	13.73	13.97	0.76	24.77	25.97
5.2	26.99	-64.41	-13.30	-15.48	37.55	1.02	13.87	14.17	0.74	24.76	25.84
5.4	27.05	-65.70	-14.16	-16.62	44.19	1.02	13.92	14.22	0.72	24.94	26.26
5.6	27.09	-66.25	-15.07	-17.91	47.59	1.01	14.02	14.24	0.74	25.02	26.51
5.8	27.15	-67.44	-16.01	-19.21	54.97	1.01	14.04	14.19	0.74	24.58	26.78
6.0	27.22	-65.46	-17.19	-20.44	43.92	1.01	14.13	14.27	0.73	25.21	26.40
6.2	27.29	-63.59	-18.84	-21.37	35.51	1.01	14.01	14.18	0.74	25.55	26.93
6.4	27.34	-64.58	-20.81	-21.56	39.84	1.00	13.90	14.00	0.79	25.30	27.97
6.6	27.36	-62.01	-23.31	-20.92	29.66	1.00	13.92	14.05	0.77	25.74	27.55
6.8	27.39	-62.37	-26.17	-20.08	30.87	0.99	13.91	14.02	0.82	25.49	28.57
7.0	27.39	-61.84	-28.51	-19.09	28.99	0.99	14.00	14.03	0.84	25.58	28.67
7.2	27.38	-61.74	-27.58	-18.17	28.65	0.99	14.06	14.16	0.78	25.30	28.50
7.4	27.39	-63.92	-25.02	-17.44	36.73	0.98	14.21	14.35	0.78	25.09	28.09
7.6	27.38	-62.65	-22.35	-16.84	31.68	0.98	14.22	14.37	0.75	25.12	28.73
7.8	27.37	-63.78	-20.22	-16.42	36.00	0.99	14.21	14.36	0.77	25.07	28.77
8.0	27.37	-60.88	-18.51	-16.04	25.75	0.99	14.31	14.48	0.74	25.00	29.30
8.2	27.36	-60.49	-17.12	-15.79	24.62	0.99	14.28	14.48	0.75	25.71	30.33
8.4	27.35	-59.57	-16.03	-15.62	22.13	1.00	14.23	14.42	0.69	25.92	31.16
8.6	27.34	-60.51	-15.17	-15.62	24.65	1.00	14.31	14.52	0.73	26.33	30.95
8.8	27.31	-62.95	-14.54	-15.68	32.69	1.01	14.33	14.47	0.73	26.39	31.84
9.0	27.29	-60.20	-14.02	-15.91	23.86	1.01	14.41	14.51	0.74	26.77	31.11
9.2	27.27	-59.95	-13.74	-16.14	23.25	1.02	14.54	14.59	0.74	27.08	31.36
9.4	27.25	-60.09	-13.61	-16.54	23.74	1.02	14.57	14.70	0.75	27.30	31.76
9.6	27.24	-59.29	-13.69	-17.03	21.72	1.02	14.50	14.79	0.84	27.51	31.26
9.8	27.23	-58.42	-13.90	-17.69	19.77	1.02	14.33	14.86	0.81	28.21	31.91
10.0	27.24	-57.75	-14.25	-18.47	18.38	1.02	14.15	14.92	0.82	27.98	31.09
10.2	27.23	-61.32	-14.80	-19.49	28.00	1.02	14.09	15.06	0.83	28.04	32.08
10.4	27.19	-60.93	-15.51	-20.24	27.11	1.02	13.99	15.12	0.93	29.34	32.94
10.6	27.19	-56.03	-16.41	-21.01	15.59	1.01	13.96	15.13	0.92	28.95	33.31
10.8	27.20	-58.59	-17.61	-21.82	21.10	1.01	13.83	15.07	0.91	28.87	32.56
11.0	27.23	-58.95	-19.21	-22.53	22.14	1.01	13.75	15.02	0.90	28.56	31.97
11.2	27.26	-58.25	-21.27	-23.26	20.54	1.00	13.75	15.12	0.97	29.26	33.04
11.4	27.30	-60.56	-24.26	-24.01	26.86	1.00	13.65	14.95	0.97	29.26	32.90
11.6	27.33	-57.34	-29.27	-24.63	18.63	1.00	13.67	14.93	0.91	28.56	33.42
11.8	27.36	-57.99	-38.63	-24.55	20.09	1.00	13.67	15.03	0.93	28.30	33.55
12.0	27.38	-57.23	-33.17	-24.01	18.41	1.00	13.67	14.94	0.90	28.12	34.19
12.2	27.38	-55.52	-26.72	-23.04	15.11	1.00	13.79	14.97	0.91	27.61	34.81
12.4	27.36	-56.26	-23.20	-21.88	16.45	1.00	13.73	14.95	0.92	27.36	35.63
12.6	27.34	-57.47	-20.87	-20.72	18.89	1.00	13.64	14.88	0.91	27.76	35.63
12.8	27.29	-56.37	-19.22	-19.66	16.66	1.00	13.66	15.02	0.90	27.76	36.13
13.0	27.25	-56.87	-18.02	-18.81	17.65	1.00	13.55	14.81	0.86	27.03	34.40
13.2	27.20	-55.39	-17.17	-18.05	14.88	1.00	13.58	14.88	0.85	27.53	34.59
13.4	27.18	-57.24	-16.49	-17.41	18.39	1.00	13.51	14.83	0.83	26.62	34.79
13.6	27.15	-56.76	-15.99	-16.96	17.36	1.00	13.43	14.70	0.86	26.67	33.80
13.8	27.15	-56.70	-15.62	-16.74	17.19	1.00	13.43	14.76	0.86	25.79	34.85
14.0	27.17	-55.55	-15.45	-16.62	15.04	1.00	13.43	14.67	0.91	25.53	34.06
14.2	27.20	-55.21	-15.37	-16.68	14.42	1.01	13.38	14.59	0.94	26.19	33.46
14.4	27.25	-55.67	-15.51	-16.94	15.17	1.01	13.35	14.57	0.87	25.45	32.42
14.6	27.33	-54.91	-15.74	-17.32	13.86	1.01	13.29	14.49	0.87	25.88	32.41
14.8	27.41	-55.02	-16.13	-17.86	14.02	1.01	13.39	14.48	0.92	25.72	32.90
15.0	27.51	-53.70	-16.63	-18.62	12.01	1.01	13.46	14.57	0.93	25.36	32.79
15.2	27.62	-54.74	-17.18	-19.33	13.50	1.01	13.58	14.64	0.91	25.90	32.05
15.4	27.72	-55.17	-17.82	-20.09	14.14	1.01	13.74	14.81	0.86	25.50	33.10
15.6	27.83	-54.94	-18.48	-21.03	13.71	1.01	13.68	14.70	0.88	24.72	33.15
15.8	27.92	-54.12	-19.31	-21.93	12.42	1.00	13.59	14.64	0.88	25.06	32.43
16.0	28.01	-54.29	-20.22	-22.91	12.60	1.00	13.65	14.67	0.92	25.22	33.07
16.2	28.10	-56.81	-21.65	-23.80	16.73	1.00	13.62	14.58	0.96	24.47	33.76
16.4	28.19	-55.87	-23.51	-25.02	14.91	1.00	13.84	14.82	0.99	25.05	33.81
16.6	28.30	-54.36	-26.40	-25.95	12.41	1.00	13.85	14.81	0.94	24.29	33.06
16.8	28.42	-54.62	-28.78	-26.08	12.61	1.00	14.01	14.97	0.99	24.40	33.45
17.0	28.56	-55.37	-26.49	-25.20	13.54	1.00	14.02	15.00	0.97	24.37	34.40

Typical Performance Data

Note: The following data was taken on the Mini-Circuits Characterization Test Board TB-PMA-163PLNC+ (Figure 2 on datasheet).

Definitions:
Input Return Loss = S11 (dB)
Gain = S21 (dB)
Isolation = S12 (dB)
Output Return Loss = S22 (dB)

TEST CONDITIONS: V_{DD} = V_{EN} = +2.6 V, I_{DD} = 78 mA @ Temperature = -55°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	P_{SAT}	Noise Figure	IP-3 Output P_{OUT} = 0 dBm/Tone	IP-2 Output P_{OUT} = 0 dBm/Tone
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)	(dBm)	(dBm)
4.0	28.64	-63.72	-14.01	-15.71	28.06	1.01	11.25	11.49	0.55	22.83	21.34
4.2	28.52	-65.24	-14.70	-15.28	34.06	1.00	11.45	11.60	0.47	21.62	21.04
4.4	28.41	-66.50	-15.08	-15.05	40.03	1.00	11.88	11.79	0.41	23.59	21.80
4.6	28.30	-66.80	-15.12	-15.01	42.01	1.00	12.02	11.91	0.37	24.74	21.97
4.8	28.22	-65.18	-15.33	-15.11	35.36	1.00	12.23	12.24	0.37	24.90	22.28
5.0	28.18	-65.31	-15.75	-15.38	36.37	1.00	12.41	12.44	0.32	25.78	23.28
5.2	28.16	-65.49	-16.14	-15.86	37.53	1.00	12.56	12.66	0.34	25.18	22.94
5.4	28.14	-64.68	-17.04	-16.46	34.65	1.00	12.61	12.57	0.27	26.06	23.25
5.6	28.14	-65.63	-18.15	-17.22	39.11	1.00	12.62	12.56	0.25	26.62	23.53
5.8	28.14	-65.15	-19.39	-18.00	37.34	1.00	12.70	12.60	0.24	26.72	23.91
6.0	28.18	-61.56	-20.72	-18.55	24.80	0.99	12.61	12.43	0.24	27.23	24.56
6.2	28.21	-63.66	-21.89	-19.04	31.64	0.99	12.63	12.43	0.22	28.20	25.08
6.4	28.24	-64.19	-23.07	-19.21	33.61	0.99	12.65	12.48	0.22	29.10	25.25
6.6	28.25	-64.65	-23.48	-19.06	35.44	0.99	12.72	12.49	0.17	28.02	25.44
6.8	28.27	-60.76	-23.26	-18.96	22.61	0.99	12.69	12.54	0.17	28.90	26.23
7.0	28.28	-63.43	-22.69	-18.50	30.68	0.99	12.72	12.49	0.22	29.12	26.21
7.2	28.31	-64.66	-22.15	-18.15	35.26	0.99	12.79	12.56	0.21	27.94	25.46
7.4	28.32	-62.87	-21.57	-17.88	28.68	0.99	12.82	12.59	0.18	29.37	25.73
7.6	28.33	-63.03	-21.35	-17.52	29.23	0.99	12.82	12.62	0.15	30.48	27.09
7.8	28.35	-61.97	-21.02	-17.26	25.83	0.99	12.95	12.68	0.16	28.61	26.24
8.0	28.37	-61.15	-20.78	-17.11	23.48	0.99	12.99	12.78	0.16	28.43	26.58
8.2	28.41	-61.77	-20.74	-17.06	25.25	0.99	13.03	12.91	0.15	29.58	27.77
8.4	28.44	-61.00	-20.40	-17.08	23.11	0.99	13.12	13.04	0.12	27.77	27.54
8.6	28.45	-63.98	-20.17	-17.28	32.59	0.99	13.11	13.01	0.10	27.34	27.33
8.8	28.47	-60.67	-19.79	-17.68	22.31	0.99	13.08	13.02	0.09	27.24	28.09
9.0	28.46	-61.32	-19.48	-18.18	24.09	0.99	13.14	13.12	0.14	26.33	27.88
9.2	28.46	-59.70	-19.41	-18.90	20.05	1.00	13.34	13.18	0.14	25.33	27.45
9.4	28.47	-61.27	-19.41	-19.75	24.05	1.00	13.28	13.22	0.17	24.96	28.79
9.6	28.50	-59.13	-19.90	-20.97	18.84	1.00	13.31	13.41	0.17	25.30	28.52
9.8	28.51	-60.04	-20.51	-22.19	20.99	1.00	13.06	13.40	0.16	25.36	26.86
10.0	28.55	-57.03	-21.39	-23.65	14.85	1.00	12.90	13.62	0.15	25.31	28.61
10.2	28.58	-58.08	-22.97	-24.96	16.79	1.00	12.82	13.75	0.15	24.99	29.61
10.4	28.60	-58.25	-24.79	-26.76	17.17	1.00	12.62	13.66	0.15	24.50	29.73
10.6	28.57	-59.21	-27.07	-27.85	19.30	1.00	12.46	13.60	0.17	23.49	30.34
10.8	28.56	-58.00	-29.30	-28.59	16.88	1.00	12.45	13.67	0.20	23.88	31.70
11.0	28.56	-57.79	-28.59	-28.36	16.52	1.00	12.37	13.53	0.15	24.06	32.03
11.2	28.57	-57.30	-26.09	-27.59	15.61	1.00	12.30	13.47	0.20	24.18	32.10
11.4	28.58	-58.12	-24.10	-26.21	17.11	1.00	12.24	13.50	0.19	23.34	32.77
11.6	28.60	-59.59	-22.30	-24.44	20.20	1.00	12.16	13.38	0.15	24.02	33.25
11.8	28.62	-56.48	-20.83	-22.73	14.07	1.00	12.07	13.23	0.15	23.30	33.32
12.0	28.66	-56.68	-19.74	-21.31	14.32	1.00	12.09	13.09	0.14	23.43	32.90
12.2	28.67	-57.06	-18.53	-19.91	14.88	1.00	12.17	13.06	0.14	23.34	33.55
12.4	28.68	-57.91	-17.65	-18.82	16.32	1.00	12.22	13.08	0.13	23.57	34.04
12.6	28.68	-57.26	-16.80	-17.87	15.09	1.00	12.15	13.10	0.17	24.41	34.11
12.8	28.65	-55.89	-16.10	-17.27	12.86	1.00	12.14	13.17	0.16	23.49	33.42
13.0	28.63	-55.87	-15.48	-16.77	12.80	1.00	11.99	13.10	0.15	23.17	33.04
13.2	28.61	-55.65	-15.04	-16.53	12.47	1.00	11.92	13.08	0.16	23.75	32.76
13.4	28.61	-55.60	-14.78	-16.47	12.39	1.01	12.07	13.16	0.14	23.00	33.21
13.6	28.62	-57.03	-14.55	-16.34	14.56	1.01	11.95	13.06	0.13	22.92	31.82
13.8	28.66	-56.08	-14.42	-16.44	13.03	1.01	12.02	13.17	0.16	23.30	33.07
14.0	28.70	-56.75	-14.40	-16.54	14.01	1.01	12.09	13.16	0.16	23.41	33.50
14.2	28.75	-54.90	-14.48	-16.59	11.30	1.01	12.00	13.12	0.16	23.00	32.57
14.4	28.82	-55.30	-14.67	-16.77	11.80	1.01	12.10	13.16	0.16	23.57	32.92
14.6	28.89	-55.45	-14.88	-17.06	11.97	1.01	12.09	13.11	0.13	22.73	32.38
14.8	28.99	-55.12	-15.22	-17.53	11.50	1.01	12.05	13.10	0.12	23.32	33.01
15.0	29.09	-54.93	-15.82	-18.16	11.22	1.01	12.22	13.11	0.14	22.94	32.88
15.2	29.20	-53.93	-16.59	-19.15	9.98	1.01	12.09	13.02	0.11	23.09	32.62
15.4	29.29	-55.18	-17.45	-20.43	11.50	1.01	12.30	13.08	0.09	23.24	32.69
15.6	29.39	-54.37	-18.70	-22.39	10.45	1.01	12.44	13.14	0.13	23.51	32.87
15.8	29.47	-55.31	-19.90	-24.87	11.60	1.01	12.44	13.09	0.13	23.30	32.55
16.0	29.53	-54.26	-20.73	-26.29	10.24	1.00	12.56	13.15	0.13	23.55	32.59
16.2	29.60	-55.09	-21.32	-25.56	11.16	1.00	12.49	12.98	0.16	24.19	33.49
16.4	29.69	-54.47	-20.85	-23.71	10.29	1.00	12.46	12.90	0.16	24.00	33.34
16.6	29.77	-54.56	-20.19	-21.52	10.28	1.00	12.58	12.97	0.14	24.36	32.78
16.8	29.86	-55.12	-19.02	-19.70	10.79	1.00	12.38	12.81	0.13	24.49	32.81
17.0	29.98	-53.77	-17.15	-18.19	9.04	1.00	12.52	12.86	0.08	24.18	33.24

Typical Performance Data

Note: The following data was taken on the Mini-Circuits Characterization Test Board TB-PMA-163PLNC+ (Figure 2 on datasheet).

Definitions:
Input Return Loss = S11 (dB)
Gain = S21 (dB)
Isolation = S12 (dB)
Output Return Loss = S22 (dB)

TEST CONDITIONS: V_{DD} = V_{EN} = +2.6 V, I_{DD} = 77 mA @ Temperature = +85°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	P_{SAT}	Noise Figure	IP-3 Output P_{OUT} = 0 dBm/Tone	IP-2 Output P_{OUT} = 0 dBm/Tone
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)	(dBm)	(dBm)
4.0	25.55	-67.62	-15.75	-15.42	64.75	1.00	10.94	11.23	1.61	24.31	20.47
4.2	25.50	-63.67	-16.47	-15.24	41.58	0.99	11.16	11.29	1.49	23.37	20.42
4.4	25.44	-65.53	-16.98	-15.24	52.08	0.99	11.39	11.56	1.46	24.99	21.25
4.6	25.40	-64.50	-17.09	-15.41	46.72	0.99	11.51	11.74	1.38	25.89	21.36
4.8	25.37	-66.66	-17.52	-15.76	60.58	0.99	11.77	12.05	1.36	26.31	21.84
5.0	25.36	-61.75	-18.05	-16.29	34.78	0.99	11.90	12.32	1.34	26.17	23.07
5.2	25.37	-64.68	-18.57	-16.91	49.05	0.99	11.95	12.52	1.31	25.79	22.54
5.4	25.37	-64.69	-19.55	-17.65	49.62	0.99	11.96	12.46	1.28	26.08	22.76
5.6	25.37	-68.12	-20.38	-18.47	74.24	0.99	12.12	12.51	1.27	26.56	23.00
5.8	25.39	-63.17	-21.16	-19.28	42.22	1.00	12.09	12.54	1.24	26.33	23.49
6.0	25.41	-66.03	-22.24	-20.04	58.89	1.00	12.01	12.41	1.25	27.50	24.23
6.2	25.44	-66.01	-22.95	-20.68	58.87	1.00	11.99	12.38	1.22	27.25	24.51
6.4	25.47	-62.45	-24.06	-21.15	39.08	1.00	12.03	12.41	1.22	28.27	24.58
6.6	25.47	-64.20	-25.02	-21.24	47.91	1.00	12.07	12.47	1.24	27.78	24.67
6.8	25.48	-65.60	-25.48	-21.01	56.37	0.99	12.06	12.53	1.25	27.72	25.46
7.0	25.48	-62.70	-26.06	-20.62	40.47	0.99	12.07	12.49	1.24	28.43	25.34
7.2	25.48	-62.25	-25.46	-20.22	38.45	0.99	12.18	12.62	1.24	28.33	24.53
7.4	25.47	-63.02	-24.71	-19.82	42.16	0.99	12.24	12.69	1.19	28.73	24.65
7.6	25.44	-61.20	-23.71	-19.44	34.32	0.99	12.20	12.65	1.20	29.06	25.86
7.8	25.44	-60.39	-22.72	-19.26	31.33	0.99	12.33	12.74	1.22	30.11	25.19
8.0	25.43	-60.12	-21.85	-19.22	30.49	0.99	12.39	12.83	1.24	29.29	25.44
8.2	25.41	-60.78	-21.14	-19.33	33.05	1.00	12.36	12.94	1.23	28.86	26.74
8.4	25.41	-62.15	-20.44	-19.69	38.89	1.00	12.44	12.98	1.20	28.54	26.64
8.6	25.39	-61.64	-20.07	-20.13	36.85	1.00	12.47	12.91	1.17	28.52	26.42
8.8	25.36	-61.67	-19.81	-20.78	37.21	1.00	12.42	12.87	1.19	28.27	27.06
9.0	25.32	-61.90	-19.80	-21.66	38.50	1.00	12.51	12.90	1.28	27.39	27.60
9.2	25.29	-59.76	-19.89	-22.66	30.29	1.00	12.63	12.98	1.24	26.85	28.10
9.4	25.26	-59.34	-20.15	-23.83	29.07	1.01	12.55	13.03	1.28	26.78	29.55
9.6	25.25	-58.58	-20.71	-25.27	26.79	1.01	12.54	13.26	1.29	26.86	28.99
9.8	25.22	-59.73	-21.28	-26.86	30.80	1.01	12.27	13.40	1.31	27.02	28.43
10.0	25.21	-61.03	-22.05	-28.80	35.97	1.00	12.17	13.58	1.31	27.51	30.83
10.2	25.19	-57.81	-23.10	-31.02	24.99	1.00	12.02	13.69	1.31	26.44	32.08
10.4	25.16	-58.82	-24.25	-33.43	28.33	1.00	11.75	13.61	1.29	25.86	32.25
10.6	25.11	-57.86	-25.64	-34.49	25.57	1.00	11.61	13.57	1.36	24.84	32.85
10.8	25.09	-58.20	-27.06	-33.77	26.79	1.00	11.59	13.66	1.33	25.18	33.95
11.0	25.08	-56.83	-27.95	-31.77	22.97	1.00	11.48	13.55	1.34	25.59	34.11
11.2	25.06	-57.83	-27.59	-29.92	25.87	1.00	11.36	13.50	1.36	25.33	33.90
11.4	25.05	-56.73	-26.09	-28.25	22.85	1.00	11.36	13.49	1.31	24.49	34.15
11.6	25.05	-58.69	-24.28	-26.95	28.63	1.00	11.30	13.39	1.33	25.09	34.38
11.8	25.05	-57.45	-22.80	-25.95	24.84	1.00	11.20	13.28	1.34	24.47	34.46
12.0	25.06	-57.45	-21.55	-25.17	24.83	1.00	11.26	13.17	1.36	24.63	34.30
12.2	25.05	-58.06	-20.60	-24.45	26.65	1.00	11.22	13.28	1.34	24.68	35.49
12.4	25.04	-57.49	-19.95	-23.95	25.00	1.01	11.25	13.36	1.36	24.98	35.81
12.6	25.02	-57.86	-19.32	-23.51	26.13	1.01	11.16	13.21	1.37	25.29	34.91
12.8	25.01	-56.28	-18.87	-23.02	21.84	1.01	11.11	13.28	1.38	24.53	34.64
13.0	25.00	-56.39	-18.40	-22.53	22.12	1.01	11.09	13.18	1.37	24.08	34.13
13.2	24.99	-56.07	-17.87	-22.05	21.34	1.01	10.97	13.16	1.40	24.67	33.62
13.4	25.00	-55.75	-17.37	-21.66	20.55	1.01	11.12	13.27	1.37	24.03	34.61
13.6	25.00	-56.22	-16.83	-21.19	21.65	1.01	11.07	13.09	1.38	23.72	32.87
13.8	25.03	-55.36	-16.40	-20.79	19.53	1.01	11.09	13.24	1.38	24.61	34.09
14.0	25.07	-55.56	-16.04	-20.63	19.90	1.01	11.18	13.18	1.38	24.37	34.31
14.2	25.12	-56.42	-15.88	-20.47	21.87	1.02	11.10	13.07	1.40	23.93	32.96
14.4	25.18	-54.96	-15.82	-20.53	18.41	1.02	11.24	13.13	1.39	24.56	33.15
14.6	25.26	-54.93	-15.90	-20.78	18.25	1.02	11.25	13.09	1.39	23.57	32.35
14.8	25.35	-55.06	-16.08	-21.20	18.41	1.02	11.30	13.08	1.40	24.34	33.12
15.0	25.45	-55.21	-16.35	-21.77	18.62	1.02	11.41	13.11	1.42	23.75	32.98
15.2	25.55	-55.96	-16.65	-22.59	20.17	1.02	11.31	12.99	1.42	23.85	32.74
15.4	25.65	-55.01	-16.90	-23.54	17.95	1.02	11.48	13.10	1.41	23.96	32.80
15.6	25.75	-54.43	-17.21	-24.65	16.66	1.02	11.57	13.18	1.43	23.92	33.36
15.8	25.87	-56.18	-17.29	-26.10	20.17	1.02	11.55	13.10	1.42	23.58	33.00
16.0	25.97	-55.31	-17.32	-27.31	18.08	1.02	11.73	13.24	1.44	23.90	32.85
16.2	26.08	-55.22	-17.14	-28.31	17.69	1.02	11.64	13.09	1.47	24.40	33.50
16.4	26.21	-54.16	-16.68	-29.00	15.43	1.02	11.53	13.01	1.45	24.09	33.46
16.6	26.33	-55.69	-16.24	-28.59	18.15	1.02	11.70	13.16	1.44	23.91	33.05
16.8	26.47	-55.16	-15.51	-27.28	16.77	1.03	11.48	12.99	1.47	24.60	32.90
17.0	26.61	-56.27	-14.54	-25.62	18.65	1.03	11.72	13.12	1.48	23.70	33.36

Typical Performance Data

Note: The following data was taken on the Mini-Circuits Characterization Test Board TB-PMA-163PLNC+ (Figure 2 on datasheet).

Definitions:
Input Return Loss = S11 (dB)
Gain = S21 (dB)
Isolation = S12 (dB)
Output Return Loss = S22 (dB)

TEST CONDITIONS: V_{DD} = V_{EN} = +2.6 V, I_{DD} = 77 mA @ Temperature = +105°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		1dB Comp. Output	P_{SAT}	Noise Figure	IP-3 Output P_{OUT} = 0 dBm/Tone	IP-2 Output P_{OUT} = 0 dBm/Tone
(GHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)	(dBm)	(dBm)
4.0	25.17	-65.00	-16.05	-15.37	50.22	0.99	10.59	11.01	1.79	24.01	20.14
4.2	25.14	-62.07	-16.84	-15.25	36.24	0.99	10.75	11.10	1.68	23.21	20.09
4.4	25.10	-63.95	-17.39	-15.28	45.44	0.99	11.09	11.39	1.63	25.18	20.96
4.6	25.06	-63.86	-17.52	-15.50	45.42	0.99	11.23	11.56	1.55	26.05	21.08
4.8	25.05	-61.92	-17.98	-15.90	36.69	0.99	11.48	11.88	1.52	25.84	21.61
5.0	25.04	-63.92	-18.52	-16.46	46.56	0.99	11.63	12.15	1.49	26.36	22.85
5.2	25.05	-64.53	-19.01	-17.15	50.32	0.99	11.69	12.36	1.47	25.84	22.32
5.4	25.05	-64.46	-20.00	-17.91	50.43	0.99	11.79	12.31	1.45	26.24	22.54
5.6	25.05	-63.19	-20.78	-18.76	43.87	0.99	11.89	12.36	1.44	26.74	22.80
5.8	25.07	-63.37	-21.52	-19.56	45.00	1.00	11.87	12.40	1.41	26.91	23.28
6.0	25.09	-63.55	-22.53	-20.29	46.09	1.00	11.87	12.26	1.45	27.81	24.02
6.2	25.12	-62.31	-23.22	-20.95	40.02	1.00	11.85	12.22	1.38	28.03	24.32
6.4	25.14	-63.32	-24.41	-21.30	45.05	1.00	11.89	12.25	1.37	28.27	24.43
6.6	25.15	-61.65	-25.47	-21.43	37.24	1.00	11.93	12.32	1.40	28.30	24.48
6.8	25.15	-63.31	-25.79	-21.18	45.19	0.99	11.93	12.38	1.41	28.42	25.27
7.0	25.15	-62.54	-26.40	-20.79	41.42	0.99	11.94	12.34	1.39	28.25	25.19
7.2	25.14	-66.55	-25.76	-20.36	65.88	0.99	12.05	12.47	1.41	29.12	24.37
7.4	25.13	-63.53	-24.87	-20.01	46.70	0.99	12.11	12.54	1.39	29.77	24.49
7.6	25.11	-61.21	-23.84	-19.72	35.93	0.99	12.08	12.50	1.34	30.14	25.72
7.8	25.10	-64.07	-22.80	-19.54	50.04	0.99	12.20	12.59	1.37	30.91	25.08
8.0	25.07	-62.79	-21.95	-19.61	43.40	1.00	12.26	12.67	1.41	30.17	25.31
8.2	25.06	-59.86	-21.24	-19.80	31.14	1.00	12.31	12.78	1.34	29.49	26.44
8.4	25.04	-61.82	-20.60	-20.29	39.24	1.00	12.39	12.82	1.35	28.79	26.50
8.6	25.01	-63.04	-20.25	-20.79	45.46	1.00	12.34	12.74	1.35	28.50	26.30
8.8	24.98	-59.44	-19.96	-21.65	30.22	1.00	12.36	12.69	1.36	28.57	26.91
9.0	24.94	-58.25	-19.98	-22.59	26.56	1.00	12.45	12.72	1.39	27.60	27.40
9.2	24.90	-62.83	-20.03	-23.77	45.35	1.01	12.47	12.84	1.43	26.89	28.03
9.4	24.87	-59.38	-20.23	-25.23	30.73	1.01	12.48	12.89	1.45	26.44	29.41
9.6	24.84	-60.60	-20.66	-27.00	35.62	1.01	12.47	13.08	1.48	26.40	28.79
9.8	24.80	-58.40	-21.09	-28.86	27.87	1.01	12.19	13.23	1.51	26.32	28.33
10.0	24.79	-57.08	-21.74	-31.12	24.06	1.01	12.10	13.42	1.50	26.36	30.75
10.2	24.76	-59.14	-22.66	-33.95	30.72	1.00	11.95	13.53	1.49	26.15	31.95
10.4	24.72	-59.07	-23.82	-35.95	30.79	1.00	11.79	13.45	1.48	25.55	32.20
10.6	24.67	-57.30	-25.29	-35.78	25.36	1.00	11.64	13.40	1.53	24.28	32.84
10.8	24.63	-58.36	-27.15	-33.50	28.84	1.00	11.63	13.49	1.53	24.72	33.93
11.0	24.62	-58.51	-28.78	-31.28	29.49	1.00	11.50	13.38	1.53	25.01	34.02
11.2	24.61	-58.43	-28.62	-29.46	29.37	1.00	11.50	13.34	1.56	25.05	33.78
11.4	24.59	-57.22	-26.82	-28.00	25.61	1.00	11.39	13.33	1.54	24.23	33.94
11.6	24.59	-55.86	-24.63	-26.93	21.93	1.00	11.34	13.21	1.55	24.44	34.24
11.8	24.58	-57.93	-22.98	-25.94	27.85	1.00	11.34	13.11	1.53	24.24	34.33
12.0	24.58	-58.05	-21.75	-25.33	28.26	1.00	11.31	13.02	1.52	24.21	34.10
12.2	24.57	-57.61	-20.88	-24.79	26.89	1.00	11.37	13.13	1.53	24.27	35.37
12.4	24.56	-57.61	-20.35	-24.35	26.96	1.00	11.40	13.20	1.55	24.35	35.74
12.6	24.54	-55.94	-19.85	-24.01	22.30	1.01	11.19	13.05	1.56	24.89	34.67
12.8	24.52	-58.39	-19.46	-23.57	29.63	1.01	11.25	13.13	1.58	24.35	34.51
13.0	24.51	-58.39	-19.01	-23.39	29.68	1.01	11.22	13.01	1.56	23.74	33.95
13.2	24.50	-55.39	-18.46	-22.97	21.05	1.01	11.13	12.99	1.58	24.12	33.50
13.4	24.51	-55.12	-17.94	-22.60	20.41	1.01	11.27	13.13	1.54	23.84	34.55
13.6	24.51	-55.58	-17.31	-22.17	21.45	1.01	11.21	12.94	1.54	23.60	32.70
13.8	24.54	-57.46	-16.79	-21.93	26.55	1.01	11.24	13.08	1.59	23.85	33.95
14.0	24.58	-55.21	-16.40	-21.75	20.41	1.01	11.32	13.02	1.60	24.02	33.96
14.2	24.63	-55.94	-16.22	-21.60	22.12	1.02	11.23	12.91	1.60	23.68	32.71
14.4	24.69	-54.77	-16.17	-21.74	19.23	1.02	11.37	13.01	1.60	24.19	32.90
14.6	24.78	-55.73	-16.25	-21.99	21.36	1.02	11.37	12.98	1.59	23.32	32.13
14.8	24.86	-54.64	-16.39	-22.54	18.74	1.02	11.41	12.94	1.59	23.88	32.99
15.0	24.95	-55.31	-16.67	-23.15	20.10	1.02	11.52	12.99	1.61	23.38	32.83
15.2	25.05	-55.14	-16.85	-23.94	19.57	1.02	11.41	12.87	1.59	23.66	32.62
15.4	25.15	-56.19	-16.97	-24.75	21.92	1.02	11.57	12.96	1.64	23.70	32.80
15.6	25.25	-55.31	-17.14	-25.90	19.66	1.02	11.67	13.04	1.63	23.74	33.28
15.8	25.37	-54.41	-17.03	-27.06	17.52	1.02	11.64	12.98	1.64	23.47	32.85
16.0	25.47	-54.96	-16.95	-28.02	18.46	1.02	11.81	13.11	1.63	23.63	32.71
16.2	25.59	-56.24	-16.66	-28.81	21.13	1.02	11.63	12.95	1.67	24.28	33.45
16.4	25.70	-55.02	-16.19	-29.15	18.11	1.02	11.61	12.90	1.69	23.87	33.31
16.6	25.84	-55.87	-15.76	-28.69	19.67	1.02	11.77	13.03	1.69	24.20	32.91
16.8	25.97	-56.08	-15.14	-27.52	19.81	1.03	11.55	12.87	1.67	24.25	32.71
17.0	26.12	-56.80	-14.29	-26.17	21.07	1.03	11.69	13.00	1.65	23.87	33.28

Typical Performance Data

Note: The following data was taken on the Mini-Circuits Characterization Test Board TB-PMA-163PLNC+ (Figure 2 on datasheet).

Definitions:
Input Return Loss = S11 (dB)
Gain = S21 (dB)
Isolation = S12 (dB)
Output Return Loss = S22 (dB)

TEST CONDITIONS: V_{DD} = V_{EN} = +2.6 V @ Temperature = +25°C

P_{IN} (@ 4 GHz)	P_{OUT} (@ 4 GHz)	Gain (@ 4 GHz)	I_{DD} (@ 4 GHz)	P_{IN} (@ 8 GHz)	P_{OUT} (@ 8 GHz)	Gain (@ 8 GHz)	I_{DD} (@ 8 GHz)	P_{IN} (@ 10 GHz)	P_{OUT} (@ 10 GHz)	Gain (@ 10 GHz)	I_{DD} (@ 10 GHz)
(dBm)	(dBm)	(dB)	(mA)	(dBm)	(dBm)	(dB)	(mA)	(dBm)	(dBm)	(dB)	(mA)
-24.77	1.06	25.84	73.70	-24.88	0.65	25.53	73.40	-24.89	0.09	24.99	73.48
-24.27	1.57	25.85	73.82	-24.38	1.16	25.54	73.46	-24.39	0.60	24.99	73.53
-23.78	2.08	25.85	73.92	-23.88	1.66	25.54	73.49	-23.89	1.11	25.00	73.56
-23.28	2.58	25.86	74.00	-23.38	2.17	25.55	73.52	-23.39	1.61	25.00	73.58
-22.78	3.09	25.87	74.09	-22.87	2.68	25.55	73.55	-22.88	2.11	25.00	73.59
-22.28	3.59	25.88	74.20	-22.37	3.18	25.56	73.57	-22.38	2.62	25.00	73.62
-21.78	4.10	25.88	74.32	-21.87	3.69	25.57	73.59	-21.88	3.11	25.00	73.65
-21.28	4.61	25.89	74.46	-21.37	4.20	25.57	73.63	-21.38	3.62	25.00	73.69
-20.78	5.12	25.90	74.63	-20.87	4.72	25.59	73.68	-20.88	4.12	25.00	73.74
-20.28	5.62	25.91	74.83	-20.37	5.23	25.60	73.74	-20.38	4.62	25.00	73.78
-19.78	6.13	25.91	75.06	-19.87	5.74	25.61	73.81	-19.88	5.13	25.01	73.85
-19.58	6.33	25.91	75.16	-19.67	5.95	25.62	73.83	-19.68	5.33	25.01	73.88
-19.38	6.53	25.92	75.28	-19.47	6.15	25.62	73.88	-19.48	5.53	25.01	73.91
-19.18	6.73	25.92	75.40	-19.27	6.36	25.63	73.90	-19.28	5.73	25.01	73.95
-18.98	6.93	25.91	75.52	-19.07	6.56	25.63	73.93	-19.08	5.93	25.01	73.99
-18.78	7.13	25.92	75.65	-18.87	6.77	25.64	73.97	-18.88	6.13	25.01	74.04
-18.58	7.33	25.91	75.80	-18.67	6.98	25.64	74.01	-18.68	6.33	25.01	74.09
-18.38	7.53	25.91	75.95	-18.47	7.18	25.65	74.06	-18.50	6.52	25.01	74.12
-18.18	7.73	25.91	76.12	-18.27	7.39	25.65	74.12	-18.30	6.72	25.01	74.18
-17.98	7.93	25.91	76.31	-18.10	7.56	25.66	74.16	-18.10	6.92	25.01	74.23
-17.78	8.12	25.90	76.49	-17.90	7.76	25.66	74.21	-17.90	7.12	25.01	74.29
-17.58	8.32	25.90	76.70	-17.70	7.97	25.66	74.27	-17.70	7.31	25.01	74.35
-17.38	8.51	25.89	76.91	-17.49	8.17	25.67	74.35	-17.49	7.51	25.01	74.43
-17.20	8.68	25.88	77.10	-17.29	8.38	25.67	74.41	-17.29	7.71	25.00	74.50
-17.00	8.87	25.87	77.34	-17.09	8.58	25.67	74.48	-17.09	7.91	25.00	74.59
-16.80	9.06	25.86	77.58	-16.89	8.78	25.68	74.57	-16.89	8.10	25.00	74.67
-16.60	9.25	25.85	77.83	-16.69	8.99	25.68	74.65	-16.69	8.30	24.99	74.77
-16.40	9.44	25.84	78.10	-16.49	9.19	25.68	74.75	-16.49	8.50	24.99	74.87
-16.20	9.62	25.82	78.37	-16.29	9.39	25.68	74.85	-16.29	8.69	24.98	74.98
-16.00	9.81	25.81	78.66	-16.09	9.59	25.68	74.97	-16.09	8.88	24.97	75.09
-15.79	9.96	25.76	78.96	-15.89	9.79	25.68	75.10	-15.89	9.08	24.96	75.22
-15.59	10.14	25.74	79.26	-15.68	9.99	25.68	75.21	-15.69	9.27	24.96	75.36
-15.39	10.32	25.71	79.57	-15.48	10.19	25.67	75.35	-15.48	9.46	24.94	75.51
-15.19	10.50	25.69	79.87	-15.28	10.38	25.66	75.49	-15.28	9.65	24.93	75.66
-14.99	10.67	25.66	80.18	-15.08	10.57	25.65	75.63	-15.08	9.84	24.92	75.82
-14.79	10.84	25.63	80.48	-14.88	10.76	25.64	75.80	-14.88	10.02	24.91	76.02
-14.59	11.01	25.59	80.78	-14.68	10.95	25.63	75.98	-14.68	10.21	24.89	76.21
-14.39	11.17	25.55	81.08	-14.48	11.14	25.62	76.16	-14.48	10.38	24.86	76.43
-14.19	11.33	25.51	81.35	-14.28	11.32	25.60	76.36	-14.28	10.56	24.84	76.65
-13.99	11.48	25.46	81.62	-14.08	11.50	25.58	76.55	-14.08	10.74	24.81	76.88
-13.78	11.62	25.40	81.86	-13.88	11.68	25.55	76.75	-13.88	10.91	24.79	77.16
-13.58	11.76	25.34	82.08	-13.68	11.85	25.52	76.96	-13.68	11.09	24.76	77.44
-13.38	11.89	25.27	82.26	-13.48	12.01	25.48	77.17	-13.47	11.25	24.73	77.74
-13.18	12.01	25.19	82.40	-13.27	12.16	25.43	77.38	-13.27	11.42	24.69	78.06
-12.98	12.12	25.09	82.52	-13.07	12.31	25.38	77.60	-13.07	11.58	24.65	78.40
-12.77	12.22	25.00	82.59	-12.87	12.44	25.31	77.80	-12.87	11.74	24.60	78.77
-12.57	12.32	24.89	82.62	-12.67	12.57	25.24	78.01	-12.67	11.89	24.56	79.17
-12.37	12.40	24.77	82.62	-12.47	12.70	25.17	78.22	-12.47	12.04	24.50	79.58
-12.17	12.48	24.65	82.58	-12.27	12.81	25.08	78.43	-12.27	12.18	24.45	80.03
-11.96	12.55	24.51	82.48	-12.07	12.92	24.99	78.62	-12.06	12.32	24.38	80.50
-11.76	12.61	24.37	82.37	-11.86	13.02	24.88	78.80	-11.86	12.45	24.31	81.01
-11.56	12.66	24.22	82.21	-11.66	13.11	24.77	78.99	-11.66	12.57	24.23	81.55
-11.35	12.71	24.06	82.00	-11.46	13.19	24.65	79.17	-11.46	12.69	24.15	82.12
-11.15	12.75	23.89	81.76	-11.26	13.27	24.53	79.34	-11.26	12.81	24.07	82.73
-10.94	12.78	23.72	81.50	-11.06	13.34	24.40	79.50	-11.06	12.92	23.98	83.34
-10.74	12.81	23.55	81.21	-10.86	13.40	24.26	79.65	-10.86	13.03	23.89	84.03
-10.53	12.83	23.36	80.88	-10.66	13.45	24.11	79.80	-10.66	13.13	23.79	84.71
-10.33	12.85	23.18	80.53	-10.46	13.50	23.96	79.93	-10.46	13.23	23.69	85.43
-10.12	12.87	22.99	80.17	-10.26	13.54	23.80	80.05	-10.26	13.32	23.58	86.15
-9.91	12.88	22.79	79.79	-10.06	13.58	23.64	80.17	-10.06	13.41	23.47	86.90
-9.71	12.89	22.59	79.41	-9.86	13.61	23.47	80.28	-9.86	13.49	23.35	87.69
-9.50	12.89	22.39	79.02	-9.66	13.64	23.30	80.37	-9.66	13.57	23.23	88.46
-9.30	12.89	22.19	78.64	-9.46	13.67	23.12	80.46	-9.46	13.64	23.10	89.24
-9.09	12.89	21.99	78.26	-9.26	13.69	22.94	80.55	-9.26	13.71	22.97	90.03
-8.89	12.89	21.78	77.90	-9.05	13.70	22.76	80.63	-9.06	13.77	22.83	90.82
-8.68	12.89	21.57	77.58	-8.85	13.72	22.57	80.71	-8.86	13.83	22.68	91.59
-8.48	12.89	21.36	77.27	-8.65	13.73	22.38	80.79	-8.66	13.88	22.53	92.37
-8.27	12.88	21.15	77.00	-8.45	13.74	22.19	80.89	-8.41	13.93	22.34	93.27
-8.07	12.87	20.94	76.77	-8.25	13.75	22.00	80.98	-8.21	13.97	22.18	93.99
-7.87	12.86	20.73	76.57	-8.09	13.75	21.84	81.05	-8.01	14.01	22.01	94.73
				-7.89	13.75	21.65	81.15	-7.81	14.04	21.85	95.43
				-7.69	13.76	21.45	81.24	-7.61	14.06	21.67	96.12
				-7.49	13.76	21.25	81.36	-7.41	14.08	21.49	96.79
				-7.29	13.76	21.05	81.47	-7.21	14.10	21.31	97.42
				-7.09	13.75	20.85	81.58	-7.01	14.12	21.13	98.06
				-6.89	13.75	20.64	81.70	-6.81	14.13	20.94	98.67
				-6.69	13.75	20.44	81.83	-6.61	14.14	20.75	99.26
				-6.49	13.74	20.23	81.96	-6.41	14.14	20.55	99.85
								-6.21	14.14	20.35	100.41
								-6.01	14.14	20.15	100.93
								-5.81	14.14	19.95	101.44
								-5.61	14.14	19.75	101.93

Typical Performance Data

Note: The following data was taken on the Mini-Circuits Characterization Test Board TB-PMA-163PLNC+ (Figure 2 on datasheet).

Definitions:
Input Return Loss = S11 (dB)
Gain = S21 (dB)
Isolation = S12 (dB)
Output Return Loss = S22 (dB)

TEST CONDITIONS: V_{DD} = V_{EN} = +2.6 V @ Temperature = +25°C

P_{IN} (@ 12 GHz)	P_{OUT} (@ 12 GHz)	Gain (@ 12 GHz)	I_{DD} (@ 12 GHz)	P_{IN} (@ 16 GHz)	P_{OUT} (@ 16 GHz)	Gain (@ 16 GHz)	I_{DD} (@ 16 GHz)
(dBm)	(dBm)	(dB)	(mA)	(dBm)	(dBm)	(dB)	(mA)
-24.80	0.10	24.90	73.81	-24.72	0.57	25.28	73.72
-24.30	0.60	24.91	73.85	-24.22	1.07	25.29	73.76
-23.80	1.11	24.91	73.88	-23.71	1.57	25.28	73.77
-23.30	1.61	24.90	73.90	-23.21	2.07	25.28	73.78
-22.79	2.10	24.90	73.93	-22.71	2.57	25.27	73.81
-22.29	2.60	24.89	73.96	-22.21	3.06	25.27	73.82
-21.79	3.10	24.89	73.99	-21.70	3.56	25.26	73.86
-21.29	3.59	24.88	74.04	-21.20	4.05	25.25	73.90
-20.79	4.09	24.88	74.10	-20.70	4.55	25.25	73.96
-20.29	4.59	24.88	74.17	-20.20	5.05	25.25	74.02
-19.79	5.08	24.87	74.24	-19.71	5.55	25.26	74.09
-19.59	5.28	24.87	74.28	-19.51	5.76	25.26	74.15
-19.39	5.48	24.87	74.33	-19.31	5.96	25.26	74.18
-19.19	5.68	24.87	74.37	-19.14	6.13	25.27	74.21
-18.99	5.88	24.87	74.44	-18.93	6.33	25.27	74.25
-18.79	6.07	24.86	74.49	-18.73	6.53	25.27	74.31
-18.63	6.23	24.86	74.51	-18.53	6.73	25.27	74.36
-18.43	6.42	24.85	74.58	-18.33	6.93	25.27	74.42
-18.23	6.62	24.85	74.65	-18.13	7.13	25.27	74.46
-18.03	6.82	24.85	74.72	-17.93	7.33	25.27	74.51
-17.83	7.01	24.84	74.79	-17.73	7.53	25.26	74.60
-17.63	7.21	24.83	74.86	-17.53	7.73	25.26	74.67
-17.43	7.40	24.83	74.96	-17.33	7.93	25.26	74.77
-17.23	7.59	24.82	75.05	-17.13	8.12	25.25	74.83
-17.03	7.79	24.81	75.13	-16.93	8.32	25.25	74.89
-16.83	7.98	24.80	75.24	-16.73	8.52	25.24	75.01
-16.63	8.17	24.79	75.35	-16.53	8.71	25.24	75.12
-16.42	8.36	24.78	75.48	-16.32	8.91	25.23	75.22
-16.22	8.55	24.77	75.59	-16.12	9.10	25.22	75.33
-16.02	8.74	24.76	75.74	-15.92	9.29	25.21	75.44
-15.82	8.93	24.75	75.88	-15.72	9.48	25.20	75.59
-15.62	9.11	24.73	76.03	-15.52	9.67	25.19	75.73
-15.42	9.30	24.72	76.19	-15.32	9.86	25.18	75.88
-15.21	9.48	24.70	76.37	-15.11	10.05	25.16	76.03
-15.01	9.67	24.68	76.55	-14.91	10.23	25.14	76.21
-14.81	9.85	24.66	76.76	-14.71	10.41	25.12	76.39
-14.61	10.03	24.64	76.98	-14.51	10.59	25.10	76.58
-14.41	10.21	24.61	77.20	-14.31	10.77	25.08	76.78
-14.21	10.38	24.59	77.45	-14.11	10.94	25.05	77.01
-14.01	10.55	24.56	77.71	-13.91	11.09	25.00	77.24
-13.80	10.70	24.51	77.98	-13.71	11.25	24.96	77.46
-13.60	10.87	24.47	78.28	-13.51	11.41	24.92	77.69
-13.40	11.03	24.43	78.59	-13.31	11.56	24.87	77.96
-13.20	11.19	24.39	78.91	-13.11	11.70	24.81	78.23
-13.00	11.35	24.34	79.25	-12.91	11.84	24.75	78.50
-12.80	11.50	24.29	79.65	-12.71	11.97	24.68	78.80
-12.59	11.64	24.24	80.03	-12.51	12.09	24.60	79.09
-12.39	11.78	24.18	80.44	-12.31	12.21	24.52	79.40
-12.19	11.92	24.11	80.88	-12.10	12.32	24.43	79.72
-11.99	12.05	24.04	81.33	-11.91	12.43	24.33	80.03
-11.79	12.17	23.96	81.79	-11.71	12.53	24.23	80.39
-11.59	12.29	23.88	82.30	-11.51	12.62	24.13	80.71
-11.39	12.40	23.79	82.81	-11.30	12.71	24.01	81.10
-11.19	12.51	23.70	83.36	-11.10	12.79	23.89	81.50
-10.99	12.61	23.60	83.88	-10.91	12.86	23.77	81.87
-10.79	12.70	23.49	84.47	-10.71	12.93	23.64	82.27
-10.59	12.79	23.38	85.07	-10.51	12.99	23.50	82.69
-10.39	12.88	23.26	85.67	-10.31	13.05	23.36	83.10
-10.19	12.96	23.14	86.29	-10.11	13.11	23.22	83.53
-9.99	13.03	23.02	86.93	-9.91	13.16	23.07	84.00
-9.79	13.11	22.89	87.58	-9.71	13.21	22.92	84.45
-9.59	13.18	22.76	88.26	-9.51	13.25	22.76	84.94
-9.38	13.24	22.63	88.92	-9.31	13.30	22.61	85.44
-9.19	13.31	22.49	89.62	-9.12	13.33	22.46	85.91
-8.98	13.37	22.35	90.32	-8.93	13.37	22.30	86.41
-8.78	13.43	22.21	91.05	-8.73	13.41	22.13	86.95
-8.66	13.46	22.12	91.50	-8.53	13.44	21.97	87.50
-8.46	13.51	21.98	92.22	-8.33	13.47	21.80	88.06
-8.26	13.56	21.83	92.95	-8.13	13.50	21.63	88.62
-8.06	13.61	21.67	93.71	-7.93	13.53	21.46	89.20
-7.86	13.66	21.52	94.48	-7.73	13.56	21.29	89.79
-7.66	13.70	21.36	95.25	-7.53	13.59	21.11	90.41
-7.46	13.74	21.20	96.03	-7.33	13.61	20.94	91.03
-7.26	13.78	21.04	96.81	-7.13	13.63	20.76	91.65
-7.06	13.82	20.88	97.57	-6.93	13.66	20.58	92.31
-6.86	13.85	20.71	98.36	-6.73	13.68	20.41	92.97
-6.66	13.89	20.55	99.12	-6.52	13.70	20.23	93.65
-6.46	13.92	20.38	99.90	-6.32	13.72	20.04	94.30
-6.26	13.95	20.21	100.67				
-6.06	13.97	20.03	101.44				
-5.86	14.00	19.85	102.20				
-5.66	14.02	19.68	102.93				

Typical Performance Data

Note: The following data was taken on the Mini-Circuits Characterization Test Board TB-PMA-163PLNC+ (Figure 2 on datasheet).

Definitions:
Input Return Loss = S11 (dB)
Gain = S21 (dB)
Isolation = S12 (dB)
Output Return Loss = S22 (dB)

TEST CONDITIONS: V_{DD} = V_{EN} = +2.6 V @ Temperature = +25°C

P_{OUT}/TONE (@ 4 GHz)	IM3 (@ 4 GHz)	P_{OUT}/TONE (@ 8 GHz)	IM3 (@ 8 GHz)	P_{OUT}/TONE (@ 10 GHz)	IM3 (@ 10 GHz)	P_{OUT}/TONE (@ 12 GHz)	IM3 (@ 12 GHz)	P_{OUT}/TONE (@ 16 GHz)	IM3 (@ 16 GHz)
(dBm)	(dBc)	(dBm)	(dBc)	(dBm)	(dBc)	(dBm)	(dBc)	(dBm)	(dBc)
-5	-62.91	-5	-69.25	-5	-72.29	-5	-66.72	-5	-63.70
-4	-60.19	-4	-66.38	-4	-69.39	-4	-63.58	-4	-60.59
-3	-57.28	-3	-63.54	-3	-66.53	-3	-60.75	-3	-57.80
-2	-54.40	-2	-60.85	-2	-63.51	-2	-57.57	-2	-54.82
-1	-51.43	-1	-58.43	-1	-60.39	-1	-54.36	-1	-51.86
0	-48.41	0	-55.82	0	-57.01	0	-51.00	0	-48.91
1	-45.54	1	-53.42	1	-53.33	1	-47.54	1	-45.97
2	-42.27	2	-51.32	2	-49.28	2	-43.87	2	-42.99
3	-38.66	3	-49.51	3	-44.91	3	-40.03	3	-39.89
4	-34.80	4	-47.45	4	-40.21	4	-36.03	4	-36.59
5	-30.74	5	-43.13	5	-35.28	5	-31.84	5	-32.86
6	-26.30	6	-35.78	6	-30.30	6	-27.54	6	-28.49
7	-21.55	7	-27.76	7	-24.94	7	-22.78	7	-23.15
8	-16.87	8	-21.37	8	-20.07	8	-18.47	8	-18.28
9	-12.82	9	-15.89	9	-15.86	9	-14.54	9	-14.24
10	-9.55	10	-11.68	10	-12.40	10	-11.50	10	-11.02
11	-6.58	11	-8.41	11	-9.53	11	-8.68	11	-8.44
12	-4.39	12	-5.96	12	-7.02	12	-6.43	12	-6.09
13	-2.03	13	-4.10	13	-4.48	13	-4.21	13	-3.78
		14	-0.94	14	-1.88				