

Frequency Mixer

LAVI-23VH+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=70MHz (dB)			RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)			RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+20dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+17	+20	+23			+17	+20	+23			+17	+20	+23
270.1	340.1	11.74	11.60	11.35	270.1	340.1	24.59	27.13	29.62	270.1	340.1	1.07	0.72	0.41
340.1	410.1	8.83	8.61	8.42	340.1	410.1	27.55	29.03	26.51	340.1	410.1	1.63	0.85	0.31
410.1	480.1	7.51	7.31	7.17	410.1	480.1	20.40	22.98	27.40	410.1	480.1	1.98	1.18	0.65
480.1	550.1	7.26	7.08	6.95	480.1	550.1	25.44	29.47	30.46	480.1	550.1	1.83	1.01	0.47
550.1	620.1	7.20	7.04	6.93	550.1	620.1	25.80	27.44	29.26	550.1	620.1	1.74	0.89	0.40
620.1	690.1	7.18	7.01	6.89	620.1	690.1	25.94	28.35	31.26	620.1	690.1	1.76	0.85	0.36
690.1	760.1	7.30	7.13	7.01	690.1	760.1	26.03	28.93	32.69	690.1	760.1	1.68	0.76	0.30
760.1	830.1	7.45	7.28	7.15	760.1	830.1	25.76	28.98	32.82	760.1	830.1	1.59	0.66	0.25
830.1	900.1	7.55	7.38	7.26	830.1	900.1	24.94	27.84	31.37	830.1	900.1	1.56	0.67	0.26
900.1	970.1	7.66	7.48	7.36	900.1	970.1	23.56	25.97	29.11	900.1	970.1	1.54	0.68	0.32
970.1	1040.1	7.97	7.79	7.64	970.1	1040.1	23.48	25.28	28.50	970.1	1040.1	1.17	0.59	0.32
1040.1	1110.1	9.61	9.25	8.88	1040.1	1110.1	27.61	31.73	35.69	1040.1	1110.1	0.89	0.37	0.14
1110.1	1180.1	8.56	8.31	8.13	1110.1	1180.1	24.23	27.04	30.15	1110.1	1180.1	1.92	0.85	0.30
1180.1	1250.1	8.36	8.21	8.11	1180.1	1250.1	23.86	27.02	30.76	1180.1	1250.1	1.39	0.57	0.25
1250.1	1320.1	8.33	8.21	8.13	1250.1	1320.1	23.71	27.05	31.42	1250.1	1320.1	1.11	0.48	0.22
1320.1	1390.1	8.31	8.29	8.36	1320.1	1390.1	24.05	27.44	31.72	1320.1	1390.1	1.05	0.49	0.27
1390.1	1460.1	8.36	8.25	8.19	1390.1	1460.1	24.84	28.11	33.69	1390.1	1460.1	1.06	0.49	0.23
1460.1	1530.1	8.41	8.30	8.25	1460.1	1530.1	25.84	29.10	34.95	1460.1	1530.1	1.06	0.49	0.22
1530.1	1600.1	8.39	8.30	8.27	1530.1	1600.1	27.14	30.28	35.76	1530.1	1600.1	1.11	0.51	0.22
1600.1	1670.1	8.40	8.33	8.31	1600.1	1670.1	27.98	30.51	34.55	1600.1	1670.1	1.21	0.56	0.25
1670.1	1740.1	8.49	8.37	8.32	1670.1	1740.1	27.57	29.78	32.15	1670.1	1740.1	1.52	0.67	0.29
1740.1	1810.1	8.55	8.40	8.31	1740.1	1810.1	26.97	29.65	31.70	1740.1	1810.1	1.80	0.78	0.36
1810.1	1880.1	8.55	8.38	8.29	1810.1	1880.1	26.11	29.11	31.23	1810.1	1880.1	2.15	0.97	0.43
1880.1	1950.1	8.56	8.38	8.26	1880.1	1950.1	25.52	28.63	30.96	1880.1	1950.1	2.49	1.18	0.50
1950.1	2020.1	8.65	8.44	8.29	1950.1	2020.1	24.74	27.78	30.24	1950.1	2020.1	2.88	1.47	0.59
2020.1	2090.1	8.73	8.49	8.31	2020.1	2090.1	23.82	26.69	29.38	2020.1	2090.1	3.36	1.86	0.78
2090.1	2160.1	8.76	8.49	8.32	2090.1	2160.1	23.03	26.00	28.54	2090.1	2160.1	3.87	2.14	0.98
2160.1	2230.1	8.79	8.53	8.37	2160.1	2230.1	22.46	25.44	27.89	2160.1	2230.1	4.22	2.40	1.15
2230.1	2300.1	8.93	8.63	8.45	2230.1	2300.1	21.74	24.85	27.53	2230.1	2300.1	4.61	2.74	1.36
2300.1	2370.1	9.07	8.75	8.53	2300.1	2370.1	21.06	23.94	27.03	2300.1	2370.1	5.05	3.30	1.70
2370.1	2440.1	9.23	8.90	8.67	2370.1	2440.1	20.26	23.25	26.54	2370.1	2440.1	5.45	3.71	2.01
2440.1	2510.1	9.43	9.09	8.86	2440.1	2510.1	19.83	22.81	26.12	2440.1	2510.1	5.62	3.91	2.18
2510.1	2580.1	9.66	9.28	9.03	2510.1	2580.1	19.26	22.21	25.47	2510.1	2580.1	5.72	4.05	2.33
2580.1	2650.1	9.93	9.48	9.20	2580.1	2650.1	18.39	21.52	24.64	2580.1	2650.1	6.01	4.27	2.58
2640.1	2710.1	10.16	9.70	9.44	2640.1	2710.1	18.05	21.26	24.40	2640.1	2710.1	6.13	4.42	2.74
2710.1	2780.1	10.45	9.97	9.70	2710.1	2780.1	17.72	20.87	24.00	2710.1	2780.1	6.26	4.56	2.87
2770.1	2840.1	10.71	10.17	9.85	2770.1	2840.1	17.34	20.22	23.44	2770.1	2840.1	6.13	4.63	2.94
2840.1	2910.1	10.97	10.45	10.12	2840.1	2910.1	17.01	19.84	23.00	2840.1	2910.1	6.02	4.52	2.85
2900.1	2970.1	11.22	10.73	10.43	2900.1	2970.1	17.13	20.01	23.37	2900.1	2970.1	6.10	4.61	2.86
2970.1	3040.1	11.56	11.01	10.73	2970.1	3040.1	16.88	19.97	23.31	2970.1	3040.1	6.15	4.57	2.87

Frequency Mixer

LAVI-23VH+

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1600.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1200.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2000.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+20			+20			+20
1190.0	410.1	11.62	10.0	1210.1	8.32	870.0	1130.1	10.79
1127.9	472.2	9.35	50.0	1250.1	8.13	850.0	1150.1	9.84
1065.8	534.3	8.95	90.0	1290.1	8.20	830.0	1170.1	9.19
1003.7	596.4	8.80	130.0	1330.1	8.17	810.0	1190.1	8.76
941.6	658.5	8.66	170.0	1370.1	8.33	790.0	1210.1	8.65
879.5	720.6	8.54	210.0	1410.1	8.19	770.0	1230.1	8.56
817.4	782.7	8.53	250.0	1450.1	8.13	750.0	1250.1	8.58
755.3	844.8	8.32	290.0	1490.1	8.14	730.0	1270.1	8.52
693.2	906.9	8.16	330.0	1530.1	8.10	710.0	1290.1	8.47
631.1	969.0	8.15	370.0	1570.1	8.08	690.0	1310.1	8.43
568.9	1031.2	8.67	410.0	1610.1	8.08	670.0	1330.1	8.40
506.8	1093.3	9.36	450.0	1650.1	8.07	650.0	1350.1	8.35
444.7	1155.4	8.29	490.0	1690.1	8.09	630.0	1370.1	8.73
382.6	1217.5	7.99	530.0	1730.1	8.10	610.0	1390.1	8.61
320.5	1279.6	8.08	570.0	1770.1	8.06	590.0	1410.1	8.29
258.4	1341.7	8.11	610.0	1810.1	8.16	570.0	1430.1	8.29
196.3	1403.8	8.19	650.0	1850.1	8.20	550.0	1450.1	8.33
134.2	1465.9	8.21	690.0	1890.1	8.26	530.0	1470.1	8.35
72.1	1528.0	8.28	730.0	1930.1	8.27	510.0	1490.1	8.37
10.0	1590.1	8.43	770.0	1970.1	8.33	490.0	1510.1	8.27
48.6	1648.7	8.26	810.0	2010.1	8.40	470.0	1530.1	8.37
106.6	1706.7	8.33	850.0	2050.1	8.46	450.0	1550.1	8.39
164.5	1764.6	8.25	890.0	2090.1	8.55	430.0	1570.1	8.46
222.4	1822.5	8.26	930.0	2130.1	8.62	410.0	1590.1	8.49
280.3	1880.4	8.21	970.0	2170.1	8.73	390.0	1610.1	8.48
338.3	1938.4	8.24	1010.0	2210.1	8.78	370.0	1630.1	8.49
396.2	1996.3	8.26	1050.0	2250.1	8.90	350.0	1650.1	8.48
454.1	2054.2	8.28	1090.0	2290.1	9.01	330.0	1670.1	8.54
512.1	2112.2	8.26	1130.0	2330.1	9.11	310.0	1690.1	8.56
570.0	2170.1	8.45	1170.0	2370.1	9.15	290.0	1710.1	8.57
627.9	2228.0	8.56	1210.0	2410.1	9.37	270.0	1730.1	8.53
685.9	2286.0	8.70	1250.0	2450.1	9.50	250.0	1750.1	8.53
743.8	2343.9	8.88	1290.0	2490.1	9.55	210.0	1790.1	8.56
801.7	2401.8	9.04	1330.0	2530.1	9.76	190.0	1810.1	8.54
859.7	2459.8	9.29	1370.0	2570.1	9.87	150.0	1850.1	8.43
917.6	2517.7	9.45	1390.0	2590.1	9.93	130.0	1870.1	8.47
975.5	2575.6	9.58	1430.0	2630.1	10.14	90.0	1910.1	8.48
1033.4	2633.5	9.74	1450.0	2650.1	10.23	70.0	1930.1	8.43
1072.1	2672.2	9.81	1490.0	2690.1	10.44	30.0	1970.1	8.39
1130.0	2730.1	10.03	1510.0	2710.1	10.58	10.0	1990.1	8.51



Frequency Mixer

LAVI-23VH+

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)					@LO (dBm)		
	+17	+20	+23	+17	+20	+23			+17	+20	+23
340.1	31.99	31.80	31.86	33.57	33.25	33.05	270.1	340.1	26.81	27.41	28.44
410.1	36.68	36.61	36.68	35.46	35.33	35.36	340.1	410.1	27.14	28.17	29.96
480.1	49.01	51.70	54.77	39.38	37.60	36.11	410.1	480.1	34.02	33.48	32.92
550.1	65.45	70.22	61.58	34.20	33.17	32.38	480.1	550.1	37.10	37.36	36.26
620.1	60.16	55.42	53.19	32.58	31.77	31.13	550.1	620.1	37.50	39.04	39.11
690.1	59.40	55.34	53.27	31.90	31.26	30.79	620.1	690.1	37.25	38.45	39.49
760.1	60.87	58.17	56.11	31.89	31.23	30.82	690.1	760.1	39.75	40.61	42.28
830.1	56.54	58.61	60.51	32.78	32.18	31.76	760.1	830.1	40.55	41.39	44.34
900.1	51.83	53.60	56.80	34.56	34.12	33.69	830.1	900.1	41.57	42.91	44.57
970.1	50.32	51.58	53.17	36.93	36.20	35.67	900.1	970.1	41.12	42.79	41.32
1040.1	49.32	49.48	48.76	37.30	36.98	36.56	970.1	1040.1	39.51	41.18	44.06
1110.1	42.93	42.98	43.23	37.25	38.16	38.82	1040.1	1110.1	38.45	40.04	42.60
1180.1	46.85	47.30	48.05	40.59	41.75	42.92	1110.1	1180.1	36.36	37.65	40.09
1250.1	47.87	48.05	48.74	40.26	40.99	41.94	1180.1	1250.1	37.45	38.80	41.49
1320.1	49.43	49.27	49.86	39.35	39.75	40.34	1250.1	1320.1	38.09	39.80	43.64
1390.1	52.44	49.62	48.10	38.69	39.14	39.75	1320.1	1390.1	37.76	38.96	43.17
1460.1	56.99	56.78	57.29	38.20	38.33	38.52	1390.1	1460.1	37.12	38.28	41.06
1530.1	57.50	57.75	57.63	37.95	38.13	38.31	1460.1	1530.1	36.43	37.34	39.44
1600.1	55.22	55.75	55.93	37.97	38.31	38.69	1530.1	1600.1	35.36	36.06	37.67
1670.1	55.35	56.02	56.33	38.64	39.26	39.86	1600.1	1670.1	34.32	34.82	36.06
1740.1	55.04	55.09	55.03	41.10	41.94	42.78	1670.1	1740.1	34.32	34.77	35.78
1810.1	51.77	51.68	51.29	45.31	46.43	47.49	1740.1	1810.1	35.42	35.76	36.35
1880.1	50.32	50.22	50.22	52.87	52.60	52.25	1810.1	1880.1	35.89	36.14	36.43
1950.1	50.75	50.82	51.18	50.05	48.18	47.17	1880.1	1950.1	36.10	36.44	36.56
2020.1	52.53	52.72	53.02	44.36	43.47	42.68	1950.1	2020.1	36.45	37.00	37.35
2090.1	50.13	49.98	49.76	40.47	40.04	39.59	2020.1	2090.1	36.05	36.57	36.91
2160.1	47.27	47.02	46.59	37.94	37.74	37.40	2090.1	2160.1	35.53	35.94	36.22
2230.1	45.42	44.89	44.63	36.06	35.76	35.68	2160.1	2230.1	35.44	35.69	35.85
2300.1	44.02	43.33	43.03	34.59	34.21	34.13	2230.1	2300.1	35.42	35.58	35.60
2370.1	42.55	42.18	41.72	33.34	33.18	32.94	2300.1	2370.1	35.45	35.50	35.46
2440.1	41.54	41.17	40.75	32.53	32.36	32.13	2370.1	2440.1	35.23	35.22	35.11
2510.1	41.18	40.85	40.46	31.74	31.62	31.37	2440.1	2510.1	34.97	34.91	34.79
2580.1	41.70	41.36	41.03	32.50	32.35	32.06	2510.1	2580.1	34.79	34.70	34.57
2650.1	41.07	40.53	40.36	32.49	32.16	32.00	2580.1	2650.1	35.29	35.17	35.22
2710.1	40.89	40.41	40.27	32.48	32.15	32.04	2640.1	2710.1	35.65	35.51	35.51
2780.1	40.49	40.04	39.91	32.41	32.08	32.00	2710.1	2780.1	36.24	35.99	35.85
2840.1	40.55	40.18	40.30	32.28	32.01	31.78	2770.1	2840.1	36.90	36.59	37.16
2910.1	40.41	40.33	40.49	31.95	31.88	31.64	2840.1	2910.1	37.30	36.78	37.22
2970.1	40.38	40.33	40.23	31.92	31.82	31.50	2900.1	2970.1	37.22	36.47	36.21
3040.1	40.27	40.13	40.17	31.99	31.72	31.48	2970.1	3040.1	36.96	35.99	35.43

Frequency Mixer

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Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=2070.1001MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+17	+20	+23		+17	+20	+23		+17	+20	+23
270.1	340.1	1.37	1.37	1.38	340.1	2.54	2.56	2.58	10.1	1.50	1.63	1.76
340.1	410.1	1.44	1.42	1.42	410.1	3.47	3.50	3.52	60.1	1.53	1.67	1.81
410.1	480.1	1.47	1.46	1.46	480.1	4.00	4.06	4.08	100.1	1.48	1.61	1.75
480.1	550.1	1.67	1.63	1.61	550.1	4.24	4.32	4.34	150.1	1.51	1.65	1.79
550.1	620.1	1.83	1.78	1.75	620.1	4.18	4.27	4.28	190.1	1.47	1.60	1.73
620.1	690.1	2.00	1.93	1.87	690.1	4.03	4.13	4.13	240.1	1.48	1.61	1.74
690.1	760.1	2.20	2.11	2.04	760.1	3.90	4.01	4.01	280.1	1.45	1.57	1.70
760.1	830.1	2.52	2.42	2.33	830.1	3.73	3.85	3.86	330.1	1.44	1.56	1.68
830.1	900.1	2.85	2.74	2.64	900.1	3.51	3.61	3.61	370.1	1.40	1.51	1.62
900.1	970.1	2.99	2.88	2.79	970.1	3.28	3.35	3.34	420.1	1.41	1.52	1.64
970.1	1040.1	2.88	2.75	2.60	1040.1	2.95	2.99	2.95	460.1	1.37	1.46	1.57
1040.1	1110.1	2.71	2.64	2.57	1110.1	2.66	2.75	2.80	510.1	1.35	1.44	1.54
1110.1	1180.1	2.99	2.90	2.82	1180.1	2.84	2.92	2.94	550.1	1.31	1.39	1.49
1180.1	1250.1	2.83	2.74	2.67	1250.1	2.80	2.86	2.85	600.1	1.28	1.35	1.44
1250.1	1320.1	2.58	2.49	2.42	1320.1	2.75	2.80	2.80	640.1	1.24	1.30	1.38
1320.1	1390.1	2.40	2.29	2.17	1390.1	2.70	2.69	2.65	690.1	1.20	1.26	1.33
1390.1	1460.1	2.18	2.09	2.02	1460.1	2.66	2.69	2.70	730.1	1.15	1.19	1.26
1460.1	1530.1	1.92	1.82	1.74	1530.1	2.65	2.66	2.66	780.1	1.13	1.16	1.22
1530.1	1600.1	1.72	1.62	1.53	1600.1	2.69	2.69	2.71	820.1	1.11	1.12	1.18
1600.1	1670.1	1.66	1.55	1.46	1670.1	2.74	2.75	2.77	870.1	1.09	1.07	1.12
1670.1	1740.1	1.68	1.57	1.47	1740.1	2.77	2.78	2.80	910.1	1.09	1.05	1.09
1740.1	1810.1	1.62	1.52	1.43	1810.1	2.75	2.75	2.75	960.1	1.07	1.04	1.10
1810.1	1880.1	1.58	1.49	1.41	1880.1	2.72	2.72	2.71	1000.1	1.06	1.02	1.09
1880.1	1950.1	1.56	1.47	1.40	1950.1	2.70	2.72	2.72	1050.1	1.04	1.03	1.11
1950.1	2020.1	1.47	1.39	1.32	2020.1	2.65	2.68	2.69	1090.1	1.02	1.09	1.17
2020.1	2090.1	1.36	1.28	1.22	2090.1	2.56	2.59	2.58	1140.1	1.07	1.14	1.22
2090.1	2160.1	1.29	1.21	1.16	2160.1	2.48	2.52	2.51	1180.1	1.12	1.19	1.27
2160.1	2230.1	1.22	1.15	1.10	2230.1	2.46	2.52	2.52	1230.1	1.19	1.26	1.35
2230.1	2300.1	1.12	1.05	1.05	2300.1	2.43	2.49	2.50	1270.1	1.26	1.35	1.43
2300.1	2370.1	1.06	1.06	1.12	2370.1	2.39	2.44	2.44	1320.1	1.33	1.42	1.51
2370.1	2440.1	1.05	1.09	1.15	2440.1	2.38	2.44	2.42	1360.1	1.43	1.53	1.63
2440.1	2510.1	1.02	1.09	1.17	2510.1	2.35	2.42	2.42	1410.1	1.53	1.64	1.74
2510.1	2580.1	1.08	1.15	1.23	2580.1	2.47	2.54	2.54	1450.1	1.64	1.75	1.86
2580.1	2650.1	1.13	1.22	1.30	2650.1	2.50	2.56	2.52	1500.1	1.83	1.95	2.08
2640.1	2710.1	1.13	1.23	1.30	2710.1	2.56	2.62	2.60	1540.1	1.96	2.08	2.21
2710.1	2780.1	1.17	1.27	1.35	2780.1	2.65	2.71	2.70	1590.1	2.15	2.28	2.42
2770.1	2840.1	1.25	1.34	1.44	2840.1	2.66	2.70	2.65	1630.1	2.36	2.51	2.65
2840.1	2910.1	1.28	1.38	1.47	2910.1	2.69	2.74	2.72	1680.1	2.52	2.66	2.80
2900.1	2970.1	1.32	1.41	1.51	2970.1	2.76	2.82	2.82	1720.1	2.77	2.92	3.08
2970.1	3040.1	1.41	1.51	1.62	3040.1	2.75	2.80	2.77	1770.1	2.99	3.14	3.30

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	11	10	22	18	31	38	34	56	31	66
1	-	28	+0	32	26	42	40	53	57	51	50	66
2	66	56	59	79	66	61	67	58	66	63	75	>82
3	>90	>82	80	79	67	78	>82	>82	>82	>82	>82	>82
4	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
5	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
6	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
7	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
8	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
9	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
10	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1600 MHz; 0.00 dBm.
 LO IN: 1670 MHz; +20.00 dBm
 IF OUT: 70 MHz; -8.3 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	23	19	33	28	42	42	45	63	43	64
1	-	28	+0	32	26	42	41	54	57	52	51	71
2	46	45	50	65	56	50	58	48	58	52	64	74
3	89	79	62	63	46	61	60	72	69	77	86	74
4	>90	74	86	86	69	77	75	83	84	77	82	85
5	>90	83	>92	89	89	75	77	77	85	86	87	>92
6	>90	>92	>92	>92	>92	>92	82	88	89	90	>92	>92
7	>90	>92	>92	>92	>92	>92	>92	85	89	>92	>92	>92
8	>90	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
9	>90	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
10	>90	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1600 MHz; 10.00 dBm.
 LO IN: 1670 MHz; +20.00 dBm
 IF OUT: 70 MHz; 1.58 dBm

- Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
 2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
 3. RF Cal represent the Harmonics level of the RF input signal to the mixer.