

Frequency Mixer

ADE-R11X+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)			RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)			RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+4	+7	+10			+4	+7	+10			+4	+7	+10
10.1	40.1	6.97	6.45	6.40	10.1	40.1	12.56	14.10	13.97	10.1	40.1	1.46	0.93	0.68
70.1	100.1	7.65	7.20	6.97	70.1	100.1	9.94	10.36	10.42	70.1	100.1	1.22	0.84	0.53
130.1	160.1	7.82	7.36	7.08	130.1	160.1	7.76	9.77	13.60	130.1	160.1	1.16	0.74	0.48
190.1	220.1	7.70	7.28	7.09	190.1	220.1	8.06	12.40	22.23	190.1	220.1	1.32	0.88	0.65
250.1	280.1	7.94	7.49	7.23	250.1	280.1	8.99	13.97	16.02	250.1	280.1	1.29	0.91	0.66
310.1	340.1	7.93	7.47	7.24	310.1	340.1	12.99	14.26	13.78	310.1	340.1	1.44	1.02	0.79
370.1	400.1	7.87	7.41	7.17	370.1	400.1	13.91	12.84	13.27	370.1	400.1	1.72	1.30	1.03
430.1	460.1	8.03	7.57	7.29	430.1	460.1	10.97	11.44	13.95	430.1	460.1	1.68	1.29	1.04
490.1	520.1	8.02	7.56	7.31	490.1	520.1	10.79	11.03	11.44	490.1	520.1	1.80	1.40	1.12
550.1	580.1	8.09	7.62	7.33	550.1	580.1	8.23	10.06	12.61	550.1	580.1	1.82	1.46	1.23
610.1	640.1	8.30	7.79	7.50	610.1	640.1	7.48	8.51	9.93	610.1	640.1	1.68	1.38	1.18
670.1	700.1	8.16	7.70	7.45	670.1	700.1	7.79	9.08	10.58	670.1	700.1	1.82	1.51	1.30
730.1	760.1	8.39	7.92	7.63	730.1	760.1	6.78	9.08	11.54	730.1	760.1	1.62	1.36	1.20
790.1	820.1	8.31	7.93	7.68	790.1	820.1	5.93	7.00	8.37	790.1	820.1	1.62	1.29	1.13
850.1	880.1	8.05	7.72	7.52	850.1	880.1	6.57	7.79	8.92	850.1	880.1	1.75	1.45	1.25
910.1	940.1	8.09	7.70	7.49	910.1	940.1	7.37	8.51	9.75	910.1	940.1	1.64	1.38	1.22
970.1	1000.1	7.87	7.51	7.35	970.1	1000.1	8.04	9.28	10.17	970.1	1000.1	1.75	1.48	1.29
1030.1	1060.1	7.93	7.50	7.30	1030.1	1060.1	8.76	10.98	12.73	1030.1	1060.1	1.68	1.50	1.35
1090.1	1120.1	7.87	7.38	7.17	1090.1	1120.1	10.74	12.51	14.51	1090.1	1120.1	1.66	1.57	1.44
1150.1	1180.1	8.10	7.47	7.14	1150.1	1180.1	14.60	13.99	15.07	1150.1	1180.1	1.45	1.40	1.36
1210.1	1240.1	8.42	7.87	7.47	1210.1	1240.1	5.83	7.59	9.51	1210.1	1240.1	1.07	0.90	0.87
1270.1	1300.1	8.18	7.74	7.42	1270.1	1300.1	5.80	6.44	7.48	1270.1	1300.1	1.25	0.93	0.81
1330.1	1360.1	8.26	7.82	7.52	1330.1	1360.1	6.19	6.78	7.63	1330.1	1360.1	1.16	0.81	0.66
1390.1	1420.1	8.11	7.70	7.45	1390.1	1420.1	7.49	8.39	9.39	1390.1	1420.1	1.30	0.87	0.69
1450.1	1480.1	8.11	7.72	7.46	1450.1	1480.1	8.61	10.08	11.15	1450.1	1480.1	1.26	0.82	0.62
1510.1	1540.1	8.21	7.82	7.59	1510.1	1540.1	9.23	11.25	12.79	1510.1	1540.1	1.21	0.75	0.55
1570.1	1600.1	8.16	7.79	7.59	1570.1	1600.1	9.19	11.53	13.57	1570.1	1600.1	1.36	0.82	0.56
1630.1	1660.1	8.34	7.92	7.69	1630.1	1660.1	9.70	12.35	14.40	1630.1	1660.1	1.22	0.69	0.45
1690.1	1720.1	8.46	8.09	7.89	1690.1	1720.1	9.30	12.08	14.51	1690.1	1720.1	1.30	0.73	0.47
1750.1	1780.1	8.55	8.17	7.97	1750.1	1780.1	9.82	12.80	15.21	1750.1	1780.1	1.30	0.71	0.43
1810.1	1840.1	8.73	8.33	8.13	1810.1	1840.1	9.77	13.16	16.03	1810.1	1840.1	1.23	0.63	0.35
1870.1	1900.1	8.85	8.51	8.35	1870.1	1900.1	9.15	13.23	17.24	1870.1	1900.1	1.29	0.60	0.29
1930.1	1960.1	8.95	8.59	8.44	1930.1	1960.1	9.62	14.01	17.74	1930.1	1960.1	1.26	0.55	0.26
1990.1	2020.1	9.19	8.86	8.74	1990.1	2020.1	10.85	15.29	18.59	1990.1	2020.1	1.19	0.48	0.24
2070.1	2100.1	9.54	9.25	9.16	2070.1	2100.1	10.84	15.13	17.80	2070.1	2100.1	1.16	0.51	0.27
2130.1	2160.1	9.89	9.59	9.52	2130.1	2160.1	10.80	14.08	16.76	2130.1	2160.1	1.17	0.60	0.38
2210.1	2240.1	10.42	10.14	10.10	2210.1	2240.1	9.46	11.20	12.31	2210.1	2240.1	1.22	0.81	0.62
2270.1	2300.1	10.91	10.60	10.52	2270.1	2300.1	7.26	8.86	10.16	2270.1	2300.1	1.41	1.05	0.81
2350.1	2380.1	11.69	11.20	10.95	2350.1	2380.1	4.83	7.37	10.17	2350.1	2380.1	1.58	1.21	0.95
2410.1	2440.1	12.27	11.57	11.17	2410.1	2440.1	5.02	8.75	15.18	2410.1	2440.1	1.41	1.15	1.00



Frequency Mixer

ADE-R11X+

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1010.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2020.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+7			+7			+7
990.10	20.00	7.84	10.1	20.1	7.25	1940.1	80.0	0.93
970.10	40.00	7.72	50.1	60.1	6.34	1900.3	119.8	14.01
950.10	60.00	7.72	90.1	100.1	6.84	1860.5	159.6	13.30
930.10	80.00	7.69	130.1	140.1	6.24	1800.8	219.3	12.45
910.10	100.00	7.64	170.1	180.1	6.21	1761.0	259.1	11.93
890.10	120.00	7.61	210.1	220.1	6.32	1701.3	318.8	11.35
870.10	140.00	7.52	250.1	260.1	6.20	1661.5	358.6	11.05
850.10	160.00	7.52	310.1	320.1	6.01	1601.9	418.2	10.58
830.10	180.00	7.52	350.1	360.1	6.02	1562.1	458.0	10.33
810.10	200.00	7.49	410.1	420.1	6.63	1502.4	517.7	10.00
790.10	220.00	7.45	450.1	460.1	6.24	1462.6	557.5	9.78
770.10	240.00	7.38	510.1	520.1	5.85	1402.9	617.2	9.40
750.10	260.00	7.41	550.1	560.1	6.09	1363.1	657.0	9.16
730.10	280.00	7.39	610.1	620.1	6.05	1303.4	716.7	8.85
710.10	300.00	7.34	650.1	660.1	6.17	1263.6	756.5	8.66
690.10	320.00	7.29	710.1	720.1	6.21	1203.9	816.2	8.44
670.10	340.00	7.23	750.1	760.1	6.25	1164.1	856.0	8.37
650.10	360.00	7.26	810.1	820.1	6.16	1104.4	915.7	8.40
630.10	380.00	7.25	850.1	860.1	5.91	1064.6	955.5	8.23
610.10	400.00	7.28	910.1	920.1	6.35	1004.9	1015.2	8.06
570.10	440.00	7.24	950.1	960.1	6.21	965.2	1054.9	7.97
550.10	460.00	7.33	1010.1	1020.1	6.51	905.5	1114.6	7.91
510.10	500.00	7.40	1050.1	1060.1	6.34	865.7	1154.4	7.88
490.10	520.00	7.42	1110.1	1120.1	6.43	806.0	1214.1	7.97
450.10	560.00	7.48	1150.1	1160.1	6.66	766.2	1253.9	7.96
430.10	580.00	7.52	1210.1	1220.1	7.07	706.5	1313.6	7.95
390.10	620.00	7.40	1250.1	1260.1	7.29	666.7	1353.4	7.89
370.10	640.00	7.36	1310.1	1320.1	7.77	607.0	1413.1	7.98
330.10	680.00	7.42	1350.1	1360.1	8.16	567.2	1452.9	8.08
310.10	700.00	7.47	1410.1	1420.1	8.44	507.5	1512.6	8.20
270.10	740.00	7.55	1450.1	1460.1	8.80	467.7	1552.4	8.28
250.10	760.00	7.60	1510.1	1520.1	9.38	408.0	1612.1	8.38
210.10	800.00	7.57	1550.1	1560.1	9.82	368.2	1651.9	8.44
190.10	820.00	7.49	1610.1	1620.1	10.29	308.6	1711.5	8.58
150.10	860.00	7.55	1650.1	1660.1	10.57	268.8	1751.3	8.65
130.10	880.00	7.52	1710.1	1720.1	11.44	209.1	1811.0	8.75
90.10	920.00	7.49	1750.1	1760.1	11.43	169.3	1850.8	8.78
70.10	940.00	7.54	1810.1	1820.1	11.80	109.6	1910.5	8.86
30.10	980.00	7.53	1850.1	1860.1	12.32	69.8	1950.3	8.90
10.10	1000.00	7.81	1910.1	1920.1	12.73	10.1	2010.0	9.25



Frequency Mixer

ADE-R11X+

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)		
	+4	+7	+10	+4	+7	+10			+4	+7	+10
10.1	61.19	67.93	78.66	79.13	79.41	82.40	10.1	40.1	57.61	57.15	56.91
70.1	66.45	70.57	72.69	65.61	65.53	65.74	70.1	100.1	40.65	41.82	41.04
130.1	63.34	65.68	68.03	60.49	60.43	60.52	130.1	160.1	36.07	37.09	37.01
190.1	59.15	60.08	62.31	57.30	57.56	57.55	190.1	220.1	33.45	33.66	34.11
250.1	55.11	56.25	58.67	55.13	55.31	55.25	250.1	280.1	31.97	32.51	32.75
310.1	51.88	53.31	55.91	53.33	53.44	53.22	310.1	340.1	31.24	31.84	32.08
370.1	49.44	51.12	53.57	51.52	51.53	51.35	370.1	400.1	30.64	31.35	31.83
430.1	47.45	49.36	51.80	49.99	49.91	49.73	430.1	460.1	30.44	31.38	31.94
490.1	45.64	47.66	50.37	48.50	48.27	48.23	490.1	520.1	29.67	30.48	31.31
550.1	44.37	45.95	47.33	47.39	47.41	47.22	550.1	580.1	29.04	29.68	30.04
610.1	43.30	45.53	47.65	46.31	46.25	46.18	610.1	640.1	28.11	28.94	29.65
670.1	41.75	43.54	45.64	44.99	44.74	44.40	670.1	700.1	26.57	27.04	27.54
730.1	40.57	41.36	41.91	43.78	44.01	44.14	730.1	760.1	24.18	24.47	24.68
790.1	40.09	41.35	42.01	42.44	42.64	42.64	790.1	820.1	22.67	22.87	22.90
850.1	39.18	41.52	43.26	41.55	41.70	41.78	850.1	880.1	21.17	21.31	21.40
910.1	37.20	39.11	40.67	40.45	40.49	40.76	910.1	940.1	20.16	20.35	20.43
970.1	35.24	36.45	37.82	41.00	40.88	40.84	970.1	1000.1	19.65	19.91	20.07
1030.1	33.72	34.00	34.69	40.73	40.90	40.85	1030.1	1060.1	19.18	19.38	19.64
1090.1	32.60	32.22	32.46	40.17	40.52	40.61	1090.1	1120.1	18.93	19.14	19.48
1150.1	32.94	32.32	32.15	38.94	39.41	39.71	1150.1	1180.1	18.95	18.81	18.89
1210.1	33.22	33.28	33.09	38.00	38.28	38.59	1210.1	1240.1	19.38	19.23	19.03
1270.1	34.15	34.73	34.57	37.23	37.46	37.70	1270.1	1300.1	19.39	19.47	19.35
1330.1	34.31	34.96	35.05	36.63	36.64	36.89	1330.1	1360.1	18.82	18.87	18.72
1390.1	34.99	35.59	35.54	36.31	36.31	36.46	1390.1	1420.1	17.85	17.88	17.67
1450.1	35.18	35.45	35.02	35.97	36.09	36.28	1450.1	1480.1	16.57	16.47	16.25
1510.1	34.20	34.24	33.77	35.87	35.95	36.05	1510.1	1540.1	15.18	14.96	14.72
1570.1	33.16	33.06	32.58	35.56	35.58	35.60	1570.1	1600.1	13.98	13.62	13.29
1630.1	31.39	31.15	30.73	35.46	35.10	34.91	1630.1	1660.1	12.65	12.11	11.77
1690.1	29.66	29.14	28.88	36.02	35.26	34.91	1690.1	1720.1	11.60	11.02	10.53
1750.1	28.01	27.34	27.05	34.48	33.79	33.42	1750.1	1780.1	10.57	9.89	9.42
1810.1	26.86	26.13	25.94	32.82	32.12	31.91	1810.1	1840.1	9.63	8.93	8.50
1870.1	26.32	25.71	25.54	31.74	31.20	31.06	1870.1	1900.1	8.72	8.03	7.60
1930.1	26.42	25.70	25.43	30.71	30.13	29.93	1930.1	1960.1	7.89	7.28	6.84
1990.1	27.21	26.13	25.56	31.17	30.31	29.89	1990.1	2020.1	7.22	6.58	6.18
2070.1	28.03	26.67	25.80	31.37	30.14	29.45	2070.1	2100.1	6.42	5.73	5.36
2130.1	28.65	27.14	26.14	31.63	30.07	29.21	2130.1	2160.1	5.99	5.33	5.02
2210.1	29.94	28.12	27.23	32.73	30.49	29.57	2210.1	2240.1	5.63	5.10	4.83
2270.1	30.92	29.66	28.62	34.01	31.60	30.32	2270.1	2300.1	5.74	5.22	5.05
2350.1	30.53	30.67	30.07	37.29	34.42	32.45	2350.1	2380.1	6.46	6.07	5.85
2410.1	27.96	28.73	28.95	38.61	37.16	34.63	2410.1	2440.1	7.19	6.75	6.50



Frequency Mixer

ADE-R11X+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=2010.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+4	+7	+10		+4	+7	+10		+4	+7	+10
10.1	40.1	1.20	1.02	1.15	10.1	2.09	2.85	3.85	10.0	1.44	1.48	1.51
70.1	100.1	1.16	1.02	1.13	70.1	2.07	2.89	3.99	50.0	1.21	1.26	1.32
130.1	160.1	1.19	1.04	1.09	130.1	2.07	2.91	3.99	90.0	1.21	1.27	1.33
190.1	220.1	1.21	1.06	1.03	190.1	2.03	2.81	3.84	130.0	1.19	1.25	1.31
250.1	280.1	1.28	1.14	1.05	250.1	2.06	2.87	3.90	170.0	1.20	1.26	1.32
310.1	340.1	1.35	1.20	1.12	310.1	2.07	2.87	3.89	210.0	1.20	1.27	1.33
370.1	400.1	1.43	1.28	1.19	370.1	2.10	2.90	3.90	250.0	1.20	1.27	1.33
430.1	460.1	1.55	1.39	1.29	430.1	2.14	2.95	3.93	290.0	1.21	1.28	1.35
490.1	520.1	1.60	1.46	1.35	490.1	2.20	3.00	3.99	330.0	1.20	1.27	1.34
550.1	580.1	1.69	1.54	1.44	550.1	2.26	3.06	4.02	370.0	1.22	1.30	1.37
610.1	640.1	1.77	1.61	1.52	610.1	2.32	3.11	4.06	410.0	1.22	1.30	1.38
670.1	700.1	1.86	1.72	1.62	670.1	2.37	3.14	4.06	450.0	1.23	1.31	1.39
730.1	760.1	1.93	1.80	1.71	730.1	2.43	3.19	4.09	490.0	1.24	1.33	1.40
790.1	820.1	1.97	1.90	1.84	790.1	2.48	3.23	4.10	530.0	1.26	1.34	1.42
850.1	880.1	1.95	1.92	1.91	850.1	2.54	3.26	4.11	570.0	1.29	1.38	1.45
910.1	940.1	1.93	1.91	1.93	910.1	2.62	3.33	4.17	610.0	1.30	1.38	1.45
970.1	1000.1	1.93	1.90	1.95	970.1	2.69	3.38	4.19	650.0	1.34	1.41	1.47
1030.1	1060.1	1.88	1.84	1.90	1030.1	2.78	3.46	4.25	710.0	1.44	1.50	1.56
1090.1	1120.1	1.86	1.76	1.80	1090.1	2.85	3.52	4.28	750.0	1.49	1.54	1.59
1150.1	1180.1	1.98	1.77	1.69	1150.1	2.95	3.62	4.38	810.0	1.57	1.62	1.66
1210.1	1240.1	2.09	1.95	1.85	1210.1	3.00	3.67	4.43	850.0	1.68	1.72	1.75
1270.1	1300.1	2.05	1.98	1.92	1270.1	3.05	3.70	4.45	910.0	1.78	1.80	1.83
1330.1	1360.1	1.98	1.93	1.91	1330.1	3.09	3.73	4.47	950.0	1.91	1.94	1.95
1390.1	1420.1	1.89	1.86	1.86	1390.1	3.08	3.67	4.39	1010.0	2.12	2.15	2.17
1450.1	1480.1	1.83	1.82	1.84	1450.1	3.15	3.73	4.44	1050.0	2.29	2.33	2.35
1510.1	1540.1	1.75	1.74	1.78	1510.1	3.20	3.75	4.43	1110.0	2.43	2.46	2.48
1570.1	1600.1	1.68	1.68	1.72	1570.1	3.29	3.80	4.45	1150.0	2.64	2.69	2.72
1630.1	1660.1	1.62	1.61	1.66	1630.1	3.39	3.87	4.51	1210.0	2.76	2.80	2.82
1690.1	1720.1	1.55	1.54	1.59	1690.1	3.43	3.85	4.44	1250.0	2.95	3.00	3.02
1750.1	1780.1	1.47	1.46	1.52	1750.1	3.48	3.87	4.45	1310.0	3.15	3.19	3.22
1810.1	1840.1	1.38	1.40	1.48	1810.1	3.49	3.83	4.39	1350.0	3.34	3.38	3.41
1870.1	1900.1	1.28	1.32	1.41	1870.1	3.57	3.87	4.39	1410.0	3.43	3.46	3.48
1930.1	1960.1	1.21	1.28	1.39	1930.1	3.75	4.01	4.50	1450.0	3.57	3.60	3.61
1990.1	2020.1	1.12	1.24	1.35	1990.1	3.96	4.12	4.55	1510.0	3.66	3.67	3.66
2070.1	2100.1	1.03	1.19	1.31	2070.1	4.22	4.27	4.61	1550.0	3.75	3.74	3.73
2130.1	2160.1	1.08	1.20	1.31	2130.1	4.43	4.41	4.74	1610.0	3.83	3.81	3.79
2210.1	2240.1	1.25	1.31	1.37	2210.1	4.72	4.59	4.84	1650.0	3.85	3.81	3.78
2270.1	2300.1	1.42	1.43	1.45	2270.1	4.86	4.62	4.82	1710.0	3.75	3.67	3.62
2350.1	2380.1	1.66	1.60	1.57	2350.1	5.09	4.78	4.92	1750.0	3.71	3.62	3.56
2410.1	2440.1	1.78	1.67	1.58	2410.1	5.28	4.88	5.02	1810.0	3.62	3.50	3.43

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	11	16	17	32	10	31	29	38	44	44
1	-	10	+0	26	21	24	31	26	36	35	40	46
2	> 90	63	56	55	56	58	51	59	39	58	51	61
3	> 90	63	67	68	58	63	> 68	57	65	59	66	62
4	> 90	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	68	> 68
5	> 90	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68
6	> 90	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68
7	> 90	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68
8	> 90	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68
9	> 90	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68
10	> 90	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68	> 68
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1005.00 MHz; -14.00 dBm.
 LO IN: 1035.00 MHz; +7.00 dBm
 IF OUT: 30.00 MHz; -21.66 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	21	26	27	45	26	48	53	61	68	60
1	-	10	+0	28	21	28	35	33	45	48	58	70
2	70	47	47	44	48	53	50	55	36	55	53	61
3	> 90	38	41	51	38	46	63	41	49	44	54	52
4	> 90	69	60	62	65	59	64	67	62	66	47	65
5	> 90	75	> 78	63	63	70	57	63	62	55	63	59
6	> 90	> 78	71	> 78	72	> 78	> 78	73	76	> 78	72	> 78
7	> 90	> 78	> 78	> 78	> 78	73	73	76	68	76	75	70
8	> 90	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78
9	> 90	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78
10	> 90	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78	> 78
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1005.00 MHz; -4.00 dBm.
 LO IN: 1035.00 MHz; +7.00 dBm
 IF OUT: 30.00 MHz; -11.80 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.