

Wideband Double Balanced Mixer-Amplifier

MDA4-752H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION GAIN IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		-3	0	+3
1000.1	1030.1	2.85	3.62	3.86
1200.1	1230.1	3.52	3.84	4.16
1420.1	1450.1	1.41	2.60	3.19
1640.1	1670.1	2.70	4.50	5.03
1860.1	1890.1	5.18	6.06	6.44
2080.1	2110.1	6.59	7.30	7.53
2300.1	2330.1	8.11	8.50	8.50
2520.1	2550.1	8.98	9.19	9.14
2740.1	2770.1	9.63	9.77	9.70
2960.1	2990.1	9.90	9.98	9.90
3160.1	3190.1	10.04	10.07	9.95
3380.1	3410.1	9.93	10.10	10.03
3600.1	3630.1	9.61	9.86	9.86
3820.1	3850.1	9.53	9.83	9.81
4040.1	4070.1	8.82	9.52	9.61
4260.1	4290.1	7.80	9.12	9.26
4480.1	4510.1	6.63	8.61	8.87
4700.1	4730.1	6.12	8.33	8.64
4920.1	4950.1	5.88	8.10	8.39
5140.1	5170.1	5.81	7.94	8.19
5340.1	5370.1	6.13	7.91	8.15
5560.1	5590.1	6.37	7.80	8.11
5780.1	5810.1	6.21	7.38	7.75
6000.1	6030.1	6.87	7.79	8.06
6220.1	6250.1	6.98	8.06	8.28
6440.1	6470.1	6.36	7.83	8.13
6660.1	6690.1	5.29	7.31	7.76
6880.1	6910.1	4.03	6.85	7.62
7100.1	7130.1	3.47	6.53	7.46
7320.1	7350.1	2.97	5.87	6.84
7520.1	7550.1	1.04	4.27	5.52
7740.1	7770.1	-2.42	1.91	3.84
7960.1	7990.1	-7.38	-0.99	2.02
8180.1	8210.1	-14.28	-5.71	-0.60

RF (IN) (MHz)	LO (MHz)	IP-3 INPUT (dBm)		
		@LO (dBm)		
		-3	0	+3
1000.1	1030.1	13.36	16.41	17.32
1200.1	1230.1	16.61	22.76	21.47
1420.1	1450.1	15.71	18.05	22.21
1640.1	1670.1	11.73	18.16	21.96
1860.1	1890.1	13.76	17.37	19.93
2080.1	2110.1	11.19	15.16	17.68
2300.1	2330.1	13.36	16.88	18.65
2520.1	2550.1	14.20	16.05	17.57
2740.1	2770.1	14.79	15.90	16.99
2960.1	2990.1	14.19	15.34	16.29
3160.1	3190.1	14.23	15.05	15.90
3380.1	3410.1	13.11	14.26	14.95
3600.1	3630.1	12.52	14.46	15.35
3820.1	3850.1	14.68	16.54	17.44
4040.1	4070.1	12.45	15.07	16.11
4260.1	4290.1	11.02	14.31	15.33
4480.1	4510.1	10.68	13.91	14.88
4700.1	4730.1	11.02	15.25	15.73
4920.1	4950.1	11.33	15.48	16.35
5140.1	5170.1	11.78	16.77	16.54
5340.1	5370.1	15.03	20.49	18.62
5560.1	5590.1	15.65	19.87	19.24
5780.1	5810.1	14.07	16.60	17.77
6000.1	6030.1	14.59	16.80	18.26
6220.1	6250.1	17.28	18.91	19.87
6440.1	6470.1	19.40	19.90	20.39
6660.1	6690.1	16.84	19.37	20.32
6880.1	6910.1	13.75	18.82	18.54
7100.1	7130.1	12.88	18.95	17.74
7320.1	7350.1	13.93	18.57	17.88
7520.1	7550.1	13.18	21.89	19.40
7740.1	7770.1	9.97	17.29	26.43
7960.1	7990.1	6.67	14.29	20.24
8180.1	8210.1	3.53	9.70	20.10

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=10dBm (dB)		
		@LO (dBm)		
		-3	0	+3
1000.1	1030.1	0.56	0.65	0.65
1200.1	1230.1	0.67	0.61	0.69
1420.1	1450.1	-0.50	0.07	0.37
1640.1	1670.1	0.48	1.59	1.78
1860.1	1890.1	1.98	2.35	2.37
2080.1	2110.1	2.12	2.32	2.22
2300.1	2330.1	2.41	2.22	1.95
2520.1	2550.1	2.54	2.20	1.89
2740.1	2770.1	2.68	2.39	2.11
2960.1	2990.1	2.55	2.38	2.19
3160.1	3190.1	2.50	2.35	2.17
3380.1	3410.1	2.24	2.18	2.06
3600.1	3630.1	1.71	1.75	1.70
3820.1	3850.1	1.49	1.46	1.41
4040.1	4070.1	1.16	1.26	1.23
4260.1	4290.1	0.73	1.17	1.15
4480.1	4510.1	0.09	1.01	1.03
4700.1	4730.1	-0.07	0.97	1.01
4920.1	4950.1	-0.15	0.90	0.94
5140.1	5170.1	-0.14	0.86	0.86
5340.1	5370.1	0.16	0.87	0.85
5560.1	5590.1	0.29	0.77	0.82
5780.1	5810.1	0.24	0.59	0.69
6000.1	6030.1	0.72	0.94	0.99
6220.1	6250.1	0.90	1.12	1.07
6440.1	6470.1	0.78	1.15	1.05
6660.1	6690.1	0.52	1.15	1.04
6880.1	6910.1	0.06	1.14	1.09
7100.1	7130.1	0.21	1.35	1.25
7320.1	7350.1	0.73	1.55	1.38
7520.1	7550.1	0.30	1.22	1.13
7740.1	7770.1	-1.39	0.46	0.78
7960.1	7990.1	-4.45	-0.72	0.38
8180.1	8210.1	-9.20	-3.36	-0.37

Wideband Double Balanced Mixer-Amplifier

MDA4-752H+

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION GAIN VS. IF FREQUENCY @RF(IN)=4900.1MHz (dB)
		@LO (dBm)
		0
1760.0	3140.1	1.15
1680.0	3220.1	2.71
1590.0	3310.1	3.67
1500.0	3400.1	3.75
1410.0	3490.1	3.30
1320.0	3580.1	2.98
1230.0	3670.1	2.92
1140.0	3760.1	3.11
1050.0	3850.1	3.36
960.0	3940.1	3.45
870.0	4030.1	3.61
780.0	4120.1	3.88
690.0	4210.1	4.30
600.0	4300.1	4.80
510.0	4390.1	5.27
420.0	4480.1	5.55
330.0	4570.1	5.66
240.0	4660.1	5.70
150.0	4750.1	5.73
60.0	4840.1	6.43
100.0	5000.1	5.91
190.0	5090.1	5.70
270.0	5170.1	5.69
360.0	5260.1	5.58
440.0	5340.1	5.50
530.0	5430.1	5.29
610.0	5510.1	4.99
700.0	5600.1	4.50
780.0	5680.1	4.06
870.0	5770.1	3.67
950.0	5850.1	3.51
1040.0	5940.1	3.36
1120.0	6020.1	3.12
1210.0	6110.1	3.12
1290.0	6190.1	3.21
1380.0	6280.1	3.09
1460.0	6360.1	2.71
1550.0	6450.1	2.20
1630.0	6530.1	1.35

IF (OUT) (MHz)	LO (MHz)	CONVERSION GAIN VS. IF FREQUENCY @RF(IN)=2300.1MHz (dB)
		@LO (dBm)
		0
10.0	2310.1	6.93
50.0	2350.1	7.32
90.0	2390.1	6.55
140.0	2440.1	6.18
180.0	2480.1	6.10
220.0	2520.1	6.04
270.0	2570.1	6.02
310.0	2610.1	5.98
350.0	2650.1	5.91
400.0	2700.1	5.86
440.0	2740.1	5.77
480.0	2780.1	5.63
530.0	2830.1	5.46
570.0	2870.1	5.24
610.0	2910.1	5.13
660.0	2960.1	4.74
700.0	3000.1	4.50
740.0	3040.1	4.35
790.0	3090.1	4.05
830.0	3130.1	4.06
920.0	3220.1	4.02
960.0	3260.1	3.98
1000.0	3300.1	4.02
1050.0	3350.1	3.91
1090.0	3390.1	3.89
1130.0	3430.1	3.90
1170.0	3470.1	3.69
1220.0	3520.1	3.79
1260.0	3560.1	3.66
1310.0	3610.1	3.88
1350.0	3650.1	3.89
1390.0	3690.1	4.11
1440.0	3740.1	4.25
1480.0	3780.1	4.45
1520.0	3820.1	4.48
1570.0	3870.1	4.32
1610.0	3910.1	3.97
1650.0	3950.1	3.37
1700.0	4000.1	2.36

IF (OUT) (MHz)	LO (MHz)	CONVERSION GAIN VS. IF FREQUENCY @RF(IN)=7500.1MHz (dB)
		@LO (dBm)
		0
2000.0	5500.1	-9.19
1950.0	5550.1	-7.77
1900.0	5600.1	-6.07
1850.0	5650.1	-4.38
1800.0	5700.1	-2.84
1750.0	5750.1	-1.21
1700.0	5800.1	-0.02
1650.0	5850.1	1.02
1600.0	5900.1	1.69
1550.0	5950.1	2.17
1500.0	6000.1	2.52
1450.0	6050.1	2.71
1400.0	6100.1	2.93
1340.0	6160.1	3.09
1290.0	6210.1	3.21
1240.0	6260.1	3.18
1190.0	6310.1	3.26
1140.0	6360.1	3.21
1090.0	6410.1	3.16
1040.0	6460.1	3.12
940.0	6560.1	3.06
890.0	6610.1	3.04
840.0	6660.1	3.22
790.0	6710.1	3.15
740.0	6760.1	3.43
680.0	6820.1	3.30
630.0	6870.1	3.59
580.0	6920.1	3.40
530.0	6970.1	3.70
480.0	7020.1	3.44
430.0	7070.1	3.66
380.0	7120.1	3.31
330.0	7170.1	3.40
280.0	7220.1	2.97
230.0	7270.1	2.96
180.0	7320.1	2.49
130.0	7370.1	2.58
80.0	7420.1	2.40
20.0	7480.1	6.16

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	-3	0	+3	-3	0	+3
1030.1	20.73	24.16	26.52	0.60	0.59	1.17
1230.1	24.00	26.93	29.33	0.46	0.45	0.97
1450.1	25.03	26.76	28.01	0.72	0.71	0.95
1670.1	30.60	30.62	30.14	2.56	2.56	2.66
1890.1	26.69	23.65	22.66	9.15	9.15	8.88
2110.1	28.43	23.68	22.07	17.32	17.32	15.93
2330.1	25.21	22.53	21.70	22.81	22.80	21.66
2550.1	21.78	21.23	21.64	27.48	27.48	27.46
2770.1	21.26	21.20	22.32	32.33	32.32	33.10
2990.1	19.33	20.45	23.05	36.57	36.58	37.83
3190.1	18.90	20.13	24.05	37.91	37.89	39.71
3410.1	24.73	26.60	33.93	37.84	37.83	39.91
3630.1	25.68	29.11	42.93	46.42	46.42	48.79
3850.1	27.21	34.43	40.04	57.84	58.01	60.80
4070.1	27.38	32.09	40.86	64.72	64.32	67.01
4290.1	27.88	30.24	35.23	67.85	67.35	70.42
4510.1	27.48	29.80	33.52	67.30	66.39	69.34
4730.1	27.45	30.55	34.87	65.88	65.67	67.86
4950.1	25.18	25.96	28.29	65.06	65.39	66.91
5170.1	23.11	22.98	24.20	62.25	62.00	64.15
5370.1	22.34	22.59	23.70	61.10	61.43	63.58
5590.1	21.09	22.06	23.57	61.58	61.41	63.92
5810.1	20.01	21.41	23.22	59.82	59.69	61.77
6030.1	19.40	20.85	22.66	59.05	58.95	60.95
6250.1	18.68	20.04	21.78	58.06	58.16	59.84
6470.1	18.35	19.62	21.27	55.55	55.59	57.35
6690.1	17.88	18.86	20.42	54.00	54.12	55.37
6910.1	17.89	18.73	20.16	54.56	54.71	55.75
7130.1	18.50	19.41	20.81	55.37	55.11	56.36
7350.1	20.41	21.21	22.47	59.37	59.35	60.52
7550.1	24.13	24.21	24.55	64.31	63.14	66.29
7770.1	33.38	27.73	25.42	68.83	68.76	68.94
7990.1	22.89	23.00	23.19	66.91	66.15	66.53
8210.1	16.30	16.84	18.08	63.43	63.74	64.11

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		-3	0	+3
1000.1	1030.1	-2.25	-1.47	-0.88
1200.1	1230.1	-3.00	-2.05	-1.37
1420.1	1450.1	-4.55	-4.06	-3.88
1640.1	1670.1	-4.77	-4.26	-4.16
1860.1	1890.1	-0.03	0.07	-0.10
2080.1	2110.1	5.83	5.52	5.20
2300.1	2330.1	10.85	10.53	10.38
2520.1	2550.1	15.96	15.74	15.65
2740.1	2770.1	21.52	21.32	21.30
2960.1	2990.1	26.44	26.41	26.51
3160.1	3190.1	29.05	28.98	29.03
3380.1	3410.1	28.73	28.50	28.36
3600.1	3630.1	34.39	33.98	33.93
3820.1	3850.1	46.19	45.48	45.35
4040.1	4070.1	55.28	54.12	54.62
4260.1	4290.1	59.86	60.68	60.98
4480.1	4510.1	64.70	64.06	62.79
4700.1	4730.1	63.98	64.07	71.90
4920.1	4950.1	69.35	66.94	67.32
5140.1	5170.1	67.10	69.81	68.35
5340.1	5370.1	66.91	61.88	64.31
5560.1	5590.1	60.93	63.56	64.17
5780.1	5810.1	59.00	62.41	60.04
6000.1	6030.1	57.88	58.51	58.37
6220.1	6250.1	53.97	56.93	55.83
6440.1	6470.1	51.14	51.57	51.71
6660.1	6690.1	48.82	49.72	50.55
6880.1	6910.1	49.95	50.76	50.61
7100.1	7130.1	51.31	50.66	51.51
7320.1	7350.1	51.70	52.41	53.15
7520.1	7550.1	52.95	52.46	54.78
7740.1	7770.1	53.94	54.52	54.41
7960.1	7990.1	56.31	56.69	57.25
8180.1	8210.1	58.84	56.87	57.77

Wideband Double Balanced Mixer-Amplifier

MDA4-752H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=7530.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		-3	0	+3		-3	0	+3		-3	0	+3
1000.1	1030.1	6.39	6.36	6.38	1030.1	1.26	1.27	1.40	10.1	4.26	3.88	4.00
1200.1	1230.1	5.94	6.17	6.26	1230.1	1.16	1.12	1.27	110.1	4.06	4.00	3.96
1420.1	1450.1	6.33	6.35	6.32	1450.1	1.22	1.17	1.24	210.1	3.27	3.25	3.21
1640.1	1670.1	4.87	4.86	4.78	1670.1	1.22	1.21	1.28	310.1	2.78	2.78	2.73
1860.1	1890.1	3.96	3.86	3.73	1890.1	1.11	1.17	1.28	410.1	3.12	3.11	3.08
2080.1	2110.1	3.59	3.51	3.42	2110.1	1.04	1.14	1.24	520.1	4.37	4.33	4.27
2300.1	2330.1	2.97	3.01	3.02	2330.1	1.16	1.14	1.18	620.1	5.48	5.44	5.38
2520.1	2550.1	2.41	2.49	2.56	2550.1	1.28	1.17	1.13	720.1	5.83	5.76	5.73
2740.1	2770.1	1.93	1.98	2.03	2770.1	1.40	1.23	1.13	820.1	5.20	5.16	5.11
2960.1	2990.1	1.60	1.59	1.60	2990.1	1.46	1.25	1.12	930.1	3.80	3.78	3.75
3160.1	3190.1	1.49	1.49	1.48	3190.1	1.52	1.27	1.10	1030.1	2.47	2.47	2.46
3380.1	3410.1	1.26	1.29	1.32	3410.1	1.59	1.29	1.06	1130.1	1.55	1.55	1.55
3600.1	3630.1	1.06	1.15	1.18	3630.1	1.70	1.33	1.05	1230.1	1.32	1.32	1.33
3820.1	3850.1	1.14	1.12	1.15	3850.1	1.88	1.43	1.06	1340.1	1.71	1.70	1.71
4040.1	4070.1	1.57	1.42	1.38	4070.1	1.92	1.47	1.12	1440.1	1.83	1.83	1.82
4260.1	4290.1	2.02	1.80	1.75	4290.1	1.96	1.53	1.20	1540.1	1.45	1.45	1.45
4480.1	4510.1	2.45	2.11	2.03	4510.1	1.89	1.53	1.24	1640.1	1.29	1.30	1.30
4700.1	4730.1	2.76	2.34	2.24	4730.1	1.76	1.47	1.26	1740.1	3.33	3.33	3.34
4920.1	4950.1	2.96	2.48	2.37	4950.1	1.61	1.37	1.30	1850.1	8.87	8.86	8.85
5140.1	5170.1	3.12	2.63	2.50	5170.1	1.47	1.32	1.37	1950.1	16.45	16.44	16.38
5340.1	5370.1	3.09	2.69	2.54	5370.1	1.42	1.36	1.51	2050.1	23.90	23.90	24.01
5560.1	5590.1	3.07	2.79	2.66	5590.1	1.52	1.54	1.71	2150.1	30.01	30.07	29.86
5780.1	5810.1	2.96	2.75	2.66	5810.1	1.83	1.84	2.01	2260.1	35.27	35.42	34.95
6000.1	6030.1	2.60	2.40	2.32	6030.1	2.31	2.28	2.41	2360.1	38.29	37.69	37.69
6220.1	6250.1	2.25	2.04	1.95	6250.1	2.97	2.83	2.88	2500.1	41.28	41.06	41.41
6440.1	6470.1	2.00	1.80	1.71	6470.1	3.59	3.31	3.29	2560.1	41.55	41.26	41.54
6660.1	6690.1	1.86	1.69	1.60	6690.1	3.96	3.65	3.61	2670.1	43.66	43.96	43.95
6880.1	6910.1	2.03	1.82	1.72	6910.1	3.93	3.71	3.68	2770.1	45.40	45.68	45.14
7100.1	7130.1	2.34	2.08	1.96	7130.1	3.60	3.55	3.60	2870.1	45.86	45.42	45.37
7320.1	7350.1	2.63	2.36	2.24	7350.1	3.27	3.34	3.45	2970.1	46.34	45.99	46.13
7520.1	7550.1	2.95	2.67	2.53	7550.1	3.03	3.15	3.29	3070.1	43.25	43.30	43.17
7740.1	7770.1	3.26	2.96	2.78	7770.1	2.84	2.94	3.08	3180.1	44.42	44.35	44.49
7960.1	7990.1	3.32	3.09	2.91	7990.1	2.71	2.77	2.87	3280.1	45.56	45.99	45.94
8180.1	8210.1	2.93	2.85	2.72	8210.1	2.54	2.56	2.65	3380.1	47.08	47.08	46.82

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
	RF CAL	0	1	2	3	4	5	6	7	8	9	10
0	---	---	62.97	76.13	56.11	59.52	65.19	---	---	---	---	---
1	---	75.76	---	99.40	103.05	70.24	97.58	92.61	---	---	---	---
2	116.22	104.13	103.43	62.14	106.55	101.63	101.66	98.20	94.13	---	---	---
3	115.35	99.82	104.16	104.49	70.53	104.70	102.05	102.75	97.14	95.24	93.27	---
4	109.79	98.09	100.72	103.04	103.66	106.14	102.67	104.83	101.59	99.56	95.85	---
5	110.96	97.39	97.90	102.18	103.37	102.95	101.62	104.73	103.59	98.58	97.97	95.39
6	107.35	---	94.02	98.61	102.89	103.78	103.17	99.61	103.61	103.14	101.77	98.04
7	107.94	---	---	96.64	96.30	102.04	103.95	102.22	97.28	102.66	103.32	98.91
8	108.10	---	---	---	98.01	98.58	100.99	102.36	104.30	101.67	102.71	103.58
9	108.61	---	---	---	---	96.78	98.48	103.27	102.66	104.17	102.18	102.85
10	105.11	---	---	---	---	---	96.74	97.92	102.98	105.23	104.02	108.05

LO HARMONICS ORDER

Test conditions: RF IN: 4600.1 MHz; -15 dBm.
LO IN: 4630.1 MHz; 0 dBm
IF OUT: 30 MHz; -6.58 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
	RF CAL	0	1	2	3	4	5	6	7	8	9	10
0	---	---	73.01	85.89	66.05	69.14	75.99	---	---	---	---	---
1	---	76.23	---	97.03	107.77	70.35	97.11	98.56	---	---	---	---
2	102.04	109.87	112.49	51.33	114.12	111.83	104.19	101.15	102.49	---	---	---
3	110.23	103.44	110.51	113.48	52.05	111.14	110.91	106.31	106.34	103.12	102.33	---
4	107.47	105.95	109.60	111.57	109.83	73.91	111.38	111.84	110.72	106.67	100.83	---
5	105.63	102.63	106.87	107.33	111.42	110.20	79.84	112.41	110.97	108.80	105.73	103.15
6	102.94	---	106.84	107.49	108.02	112.01	112.72	90.84	111.77	113.29	108.12	105.73
7	103.85	---	---	103.29	106.15	109.99	112.08	108.75	94.49	110.83	111.10	108.65
8	104.68	---	---	---	103.68	105.93	109.26	110.69	112.10	101.11	111.84	111.24
9	103.58	---	---	---	---	103.97	106.13	107.59	112.47	110.71	101.05	110.06
10	104.42	---	---	---	---	---	102.45	107.06	112.35	111.62	112.62	111.85

LO HARMONICS ORDER

Test conditions: RF IN: 4600.1 MHz; -5 dBm.
LO IN: 4630.1 MHz; 0 dBm
IF OUT: 30 MHz; 3.27dBm

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