Dual Matched MMIC Amplifier MPGA-152+

Typical Performance Data

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

TEST CONDITIONS: Vd = 8.00V, Id = 357.81mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
20	12.86	23.17	6.70	9.20	1.45	0.88	37.55	28.12	3.65
30	14.03	21.83	10.75	15.13	1.34	0.85	41.77	28.93	3.18
40	14.25	21.54	12.46	15.04	1.31	0.81	47.64	29.07	2.91
50	14.35	21.43	13.10	14.22	1.29	0.78	43.65	29.30	2.71
60	14.39	21.37	13.33	13.71	1.28	0.77	47.13	29.39	2.63
70	14.42	21.33	13.48	13.40	1.28	0.76	46.35	29.46	2.61
80	14.45	21.30	13.59	13.19	1.27	0.75	46.76	29.47	2.61
90	14.47	21.28	13.67	13.05	1.27	0.74	47.46	29.49	2.58
100	14.49	21.26	13.78	12.99	1.26	0.74	46.29	29.48	2.61
150	14.56	21.18	14.37	13.19	1.25	0.73	45.18	29.60	2.57
200	14.65	21.11	15.22	13.79	1.25	0.73	50.06	29.68	2.55
250	14.71	21.06	16.45	14.70	1.25	0.73	44.84	29.79	2.57
300	14.77	21.02	18.06	15.93	1.25	0.74	47.80	30.04	2.58
350	14.82	21.00	20.24	17.64	1.25	0.74	46.13	30.13	2.62
400	14.86	20.99	22.90	19.84	1.25	0.75	46.02	30.03	2.72
450	14.88	21.01	25.72	22.60	1.25	0.75	45.31	29.88	2.76
500	14.87	21.05	26.39	25.90	1.26	0.76	45.38	29.81	2.76
550	14.84	21.12	24.65	29.13	1.27	0.77	45.63	29.56	2.86
600	14.80	21.21	22.55	28.07	1.28	0.78	45.24	29.37	2.92
650	14.75	21.31	21.09	25.27	1.29	0.79	43.52	29.14	2.97
700	14.71	21.41	20.14	23.34	1.30	0.79	43.42	29.14	3.01
750	14.66	21.52	19.71	22.07	1.31	0.80	43.51	29.03	3.10
800	14.61	21.64	19.63	20.88	1.32	0.81	42.16	28.63	3.18
850	14.54	21.79	19.81	19.39	1.33	0.82	42.25	28.24	3.18
900	14.47	21.96	19.65	17.80	1.35	0.83	42.39	27.77	3.19
950	14.36	22.16	18.72	16.03	1.37	0.83	42.56	27.40	3.27
1000	14.22	22.39	17.05	14.26	1.39	0.84	42.96	26.99	3.39
1100	13.87	22.94	13.30	11.19	1.44	0.83	45.51	26.68	3.50
1200	13.42	23.59	10.54	8.95	1.50	0.81	49.07	26.59	3.42
1300	13.03	24.20	8.88	7.62	1.56	0.79	46.21	26.85	3.77
1400	12.77	24.69	8.19	7.11	1.63	0.79	45.53	27.06	3.87
1500	12.82	24.90	8.43	7.40	1.69	0.80	47.43	27.06	4.09
1600	13.02	24.94	9.96	8.83	1.78	0.83	43.20	27.19	4.31
1700	13.26	25.00	13.82	12.53	1.92	0.89	40.99	26.97	4.56
1800	13.17	25.39	21.31	22.95	2.14	0.94	38.95	25.93	4.99
1900	12.54	26.35	16.73	20.99	2.49	0.97	37.66	24.20	5.45
2000	11.34	27.90	12.26	13.05	3.09	0.98	36.36	22.40	6.07
2100	9.41	30.20	9.12	8.84	4.11	0.99	35.26	20.85	6.80
2200	6.61	33.38	6.36	5.67	5.89	0.92	33.11	19.21	7.69
2300	3.48	36.89	4.50	3.85	8.62	0.81	30.54	17.98	8.66

Typical Performance Data

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

TEST CONDITIONS: Vd = 9.00V, Id = 406.32mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
20	12.87	23.17	6.71	9.16	1.45	0.87	39.93	29.18	3.69
30	14.04	21.86	10.76	15.12	1.34	0.85	43.37	29.92	3.31
40	14.27	21.55	12.52	15.07	1.31	0.80	42.09	30.05	2.98
50	14.37	21.43	13.16	14.28	1.29	0.78	43.38	30.28	2.78
60	14.41	21.38	13.41	13.79	1.28	0.77	45.32	30.36	2.69
70	14.44	21.34	13.56	13.48	1.28	0.76	45.81	30.43	2.68
80	14.47	21.31	13.68	13.26	1.27	0.75	44.90	30.43	2.63
90	14.48	21.29	13.78	13.10	1.27	0.74	46.76	30.45	2.66
100	14.50	21.27	13.87	13.03	1.26	0.74	47.77	30.43	2.65
150	14.58	21.19	14.46	13.24	1.26	0.73	46.52	30.53	2.61
200	14.66	21.13	15.33	13.90	1.25	0.73	49.96	30.60	2.60
250	14.72	21.07	16.58	14.81	1.25	0.73	48.89	30.67	2.65
300	14.78	21.04	18.22	15.99	1.25	0.74	45.24	30.89	2.62
350	14.83	21.02	20.44	17.78	1.25	0.74	47.80	31.02	2.64
400	14.86	21.01	23.13	20.09	1.25	0.75	45.40	30.94	2.78
450	14.88	21.03	25.93	23.06	1.25	0.75	45.58	30.81	2.83
500	14.87	21.07	26.40	26.36	1.26	0.76	47.66	30.76	2.85
550	14.85	21.14	24.51	30.49	1.27	0.77	44.59	30.53	2.90
600	14.80	21.23	22.39	29.16	1.28	0.78	45.29	30.37	2.99
650	14.76	21.33	20.95	25.86	1.29	0.79	45.75	30.18	3.01
700	14.72	21.42	19.99	23.76	1.30	0.79	43.49	30.18	3.09
750	14.67	21.53	19.60	22.72	1.31	0.80	44.13	30.11	3.13
800	14.62	21.65	19.53	21.59	1.32	0.81	43.43	29.77	3.24
850	14.57	21.78	19.75	20.04	1.33	0.82	43.25	29.41	3.25
900	14.49	21.95	19.70	18.33	1.35	0.83	43.41	29.01	3.25
950	14.39	22.14	18.90	16.44	1.37	0.83	43.52	28.74	3.38
1000	14.26	22.37	17.28	14.64	1.39	0.84	43.76	28.26	3.44
1100	13.92	22.90	13.49	11.42	1.44	0.83	47.21	27.89	3.52
1200	13.48	23.55	10.68	9.07	1.50	0.81	46.79	27.79	3.65
1300	13.10	24.14	8.97	7.71	1.55	0.79	46.99	28.06	3.83
1400	12.83	24.65	8.27	7.15	1.62	0.78	48.92	28.03	3.98
1500	12.88	24.85	8.50	7.44	1.68	0.79	46.39	28.18	4.16
1600	13.08	24.92	10.03	8.82	1.77	0.83	43.64	28.36	4.36
1700	13.33	24.95	13.89	12.50	1.90	0.89	41.40	28.17	4.68
1800	13.25	25.35	21.06	22.38	2.11	0.94	39.82	27.19	5.09
1900	12.65	26.27	16.45	21.44	2.44	0.97	37.82	25.51	5.62
2000	11.51	27.77	12.21	13.45	3.00	0.99	36.95	23.73	6.16
2100	9.64	30.02	9.20	9.16	3.98	0.99	35.71	22.19	6.94
2200	6.88	33.16	6.44	5.83	5.67	0.93	34.04	20.55	7.79
2300	3.75	36.68	4.54	3.92	8.28	0.81	32.07	19.28	8.78

Typical Performance Data

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

TEST CONDITIONS: Vd = 8.00V, Id = 353.95mA @ Temperature = -45°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
20	13.76	22.37	7.07	10.62	1.31	0.86	37.74	28.42	2.88
30	14.44	21.52	11.01	15.37	1.28	0.81	41.81	29.25	2.53
40	14.54	21.35	12.40	14.65	1.26	0.78	44.76	29.34	2.25
50	14.61	21.27	12.92	13.77	1.25	0.75	46.19	29.55	2.11
60	14.65	21.22	13.09	13.18	1.24	0.74	44.33	29.62	2.02
70	14.67	21.19	13.17	12.76	1.24	0.73	46.95	29.69	2.01
80	14.70	21.16	13.24	12.48	1.23	0.72	47.27	29.70	2.02
90	14.72	21.13	13.28	12.28	1.23	0.71	46.83	29.73	1.99
100	14.74	21.12	13.33	12.13	1.22	0.70	47.50	29.72	1.99
150	14.84	21.01	13.80	12.02	1.21	0.69	48.17	29.85	1.93
200	14.95	20.92	14.81	13.19	1.21	0.69	46.77	29.92	1.90
250	15.04	20.84	16.36	15.28	1.21	0.70	50.38	30.05	1.93
300	15.12	20.79	18.51	17.54	1.21	0.71	47.02	30.32	1.92
350	15.18	20.76	21.27	18.58	1.20	0.71	46.08	30.41	1.90
400	15.22	20.75	24.46	19.11	1.20	0.71	48.04	30.30	2.08
450	15.24	20.77	27.13	20.44	1.20	0.71	45.00	30.08	2.07
500	15.24	20.80	27.12	23.35	1.20	0.72	46.49	30.07	2.10
550	15.23	20.86	25.13	29.03	1.21	0.73	45.78	29.85	2.18
600	15.20	20.94	22.88	35.46	1.22	0.74	45.32	29.61	2.21
650	15.16	21.03	21.24	26.95	1.23	0.75	46.07	29.39	2.26
700	15.11	21.13	20.04	22.31	1.24	0.75	43.25	29.34	2.33
750	15.06	21.23	19.50	19.84	1.24	0.76	43.77	29.33	2.45
800	15.02	21.34	19.36	18.24	1.24	0.77	43.07	29.00	2.42
850	14.97	21.46	19.62	17.20	1.25	0.78	42.47	28.63	2.46
900	14.91	21.61	19.61	16.16	1.26	0.79	42.20	28.22	2.53
950	14.83	21.78	18.79	15.21	1.27	0.80	42.96	27.88	2.54
1000	14.72	21.98	17.12	13.93	1.29	0.80	42.44	27.56	2.58
1100	14.41	22.47	13.28	11.30	1.33	0.80	44.77	27.09	2.62
1200	14.04	23.05	10.46	8.96	1.36	0.78	47.37	26.87	2.75
1300	13.68	23.61	8.81	7.60	1.40	0.76	47.82	27.08	2.89
1400	13.46	24.06	8.05	6.85	1.44	0.74	49.54	27.12	2.96
1500	13.49	24.27	8.23	7.02	1.49	0.74	44.67	27.30	3.14
1600	13.71	24.30	9.68	8.79	1.58	0.80	42.27	27.46	3.37
1700	13.94	24.34	13.47	12.89	1.69	0.87	39.94	27.35	3.54
1800	13.87	24.70	19.94	24.76	1.86	0.92	38.28	26.44	3.94
1900	13.27	25.62	15.67	18.66	2.13	0.95	36.75	24.81	4.38
2000	12.13	27.10	11.76	12.12	2.56	0.96	36.03	23.04	4.93
2100	10.36	29.26	9.00	8.57	3.27	0.98	35.76	21.50	5.59
2200	7.61	32.45	6.15	5.55	4.54	0.92	34.75	20.11	6.42
2300	4.55	35.94	4.28	3.50	6.14	0.78	31.76	18.46	7.34

Typical Performance Data

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

TEST CONDITIONS: Vd = 9.00V, Id = 403.31mA @ Temperature = -45°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
20	13.81	22.41	7.02	10.60	1.30	0.86	38.92	29.31	2.95
30	14.51	21.54	10.99	15.45	1.27	0.81	42.12	30.23	2.59
40	14.61	21.36	12.45	14.77	1.26	0.78	45.60	30.35	2.38
50	14.68	21.28	12.95	13.88	1.25	0.75	44.83	30.57	2.17
60	14.71	21.23	13.12	13.26	1.24	0.74	44.44	30.63	2.11
70	14.74	21.20	13.22	12.84	1.23	0.72	45.80	30.70	2.07
80	14.77	21.17	13.28	12.57	1.23	0.72	49.94	30.71	2.08
90	14.79	21.14	13.34	12.37	1.22	0.71	48.21	30.73	2.06
100	14.81	21.12	13.40	12.23	1.22	0.70	46.21	30.71	2.07
150	14.91	21.03	13.86	12.10	1.21	0.68	45.46	30.84	2.03
200	15.01	20.94	14.90	13.26	1.20	0.69	50.20	30.90	1.98
250	15.11	20.86	16.48	15.39	1.20	0.70	55.06	31.00	1.97
300	15.18	20.81	18.68	17.76	1.20	0.71	43.94	31.25	2.00
350	15.24	20.78	21.50	18.82	1.20	0.71	47.52	31.37	2.03
400	15.28	20.77	24.72	19.33	1.20	0.71	45.27	31.28	2.14
450	15.30	20.79	27.29	20.68	1.20	0.71	48.69	31.07	2.16
500	15.30	20.83	26.97	23.78	1.20	0.72	46.38	31.07	2.16
550	15.28	20.89	24.84	30.03	1.21	0.73	46.53	30.86	2.26
600	15.25	20.96	22.59	36.86	1.22	0.74	45.88	30.64	2.29
650	15.21	21.05	20.96	26.99	1.23	0.74	48.09	30.45	2.34
700	15.17	21.15	19.80	22.38	1.23	0.75	44.61	30.43	2.40
750	15.12	21.25	19.27	19.97	1.24	0.76	43.84	30.41	2.49
800	15.08	21.35	19.16	18.48	1.24	0.77	43.10	30.12	2.53
850	15.04	21.47	19.46	17.54	1.25	0.78	43.76	29.79	2.50
900	14.98	21.61	19.55	16.56	1.26	0.79	43.45	29.41	2.66
950	14.90	21.78	18.86	15.59	1.27	0.79	43.64	29.12	2.63
1000	14.80	21.97	17.27	14.24	1.29	0.80	44.10	28.77	2.66
1100	14.50	22.45	13.41	11.50	1.32	0.80	45.12	28.28	2.78
1200	14.13	23.02	10.55	9.09	1.36	0.78	50.67	28.08	2.85
1300	13.78	23.58	8.87	7.68	1.40	0.76	51.81	28.30	2.94
1400	13.56	24.02	8.09	6.92	1.43	0.73	54.60	28.30	3.07
1500	13.58	24.24	8.27	7.06	1.48	0.74	46.17	28.49	3.20
1600	13.80	24.27	9.73	8.82	1.56	0.80	43.44	28.67	3.41
1700	14.03	24.31	13.53	12.90	1.68	0.87	40.45	28.57	3.67
1800	13.96	24.68	19.76	24.57	1.84	0.92	38.77	27.66	4.10
1900	13.38	25.57	15.41	18.82	2.09	0.95	37.04	26.01	4.58
2000	12.28	27.02	11.65	12.36	2.51	0.96	35.73	24.28	5.09
2100	10.55	29.13	9.04	8.80	3.19	0.99	35.33	22.78	5.73
2200	7.84	32.29	6.21	5.68	4.41	0.93	34.05	21.40	6.53
2300	4.80	35.76	4.30	3.57	5.93	0.78	31.89	19.72	7.47

Typical Performance Data

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

TEST CONDITIONS: Vd = 8.00V, Id = 361.61mA @ Temperature = +85°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
20	12.56	23.44	7.18	9.41	1.54	0.89	40.42	27.92	4.41
30	13.81	22.05	11.36	15.95	1.40	0.86	42.59	28.67	3.88
40	14.04	21.74	13.14	15.44	1.36	0.82	41.84	28.76	3.53
50	14.14	21.62	13.74	14.38	1.34	0.80	44.60	28.98	3.35
60	14.18	21.58	13.98	13.81	1.33	0.78	44.98	29.05	3.25
70	14.20	21.55	14.11	13.56	1.32	0.78	45.44	29.12	3.22
80	14.23	21.52	14.24	13.51	1.32	0.77	46.54	29.12	3.19
90	14.25	21.50	14.33	13.54	1.32	0.77	54.07	29.13	3.20
100	14.26	21.48	14.44	13.66	1.31	0.77	47.19	29.11	3.23
150	14.33	21.41	15.02	14.42	1.31	0.77	48.68	29.22	3.21
200	14.41	21.35	15.84	14.87	1.30	0.77	46.54	29.32	3.12
250	14.48	21.30	16.77	15.07	1.29	0.76	47.36	29.41	3.19
300	14.54	21.26	17.95	15.55	1.28	0.76	47.50	29.64	3.20
350	14.60	21.23	19.50	16.63	1.28	0.76	44.63	29.78	3.25
400	14.64	21.23	21.49	18.81	1.29	0.77	43.40	29.72	3.33
450	14.66	21.25	23.66	22.27	1.29	0.78	46.61	29.57	3.36
500	14.65	21.29	24.82	28.53	1.30	0.79	45.02	29.52	3.41
550	14.63	21.37	23.84	33.27	1.31	0.79	45.44	29.31	3.54
600	14.58	21.46	22.11	28.76	1.32	0.80	43.32	29.08	3.55
650	14.53	21.56	20.62	24.59	1.33	0.81	42.59	28.84	3.60
700	14.48	21.67	19.65	22.84	1.34	0.82	43.05	28.77	3.70
750	14.43	21.80	19.19	21.37	1.36	0.82	41.97	28.64	3.78
800	14.37	21.93	19.20	20.58	1.37	0.83	41.61	28.25	3.85
850	14.30	22.10	19.50	19.11	1.39	0.84	41.86	27.84	3.87
900	14.20	22.29	19.51	17.75	1.42	0.85	41.86	27.34	3.91
950	14.08	22.51	18.61	15.78	1.44	0.85	42.76	26.87	4.03
1000	13.91	22.77	16.85	13.93	1.47	0.86	42.41	26.49	4.10
1100	13.49	23.40	12.94	10.85	1.54	0.85	45.23	26.20	4.26
1200	12.98	24.12	10.17	8.87	1.63	0.84	48.18	26.15	4.34
1300	12.53	24.80	8.58	7.82	1.72	0.83	45.42	26.50	4.57
1400	12.28	25.30	7.93	7.39	1.80	0.83	45.94	27.04	4.74
1500	12.32	25.52	8.17	7.58	1.86	0.84	44.94	26.75	4.91
1600	12.57	25.54	9.62	8.66	1.95	0.85	45.84	26.82	5.09
1700	12.85	25.55	13.27	11.27	2.08	0.89	41.40	26.64	5.36
1800	12.83	25.89	21.75	17.56	2.31	0.94	38.85	25.69	5.74
1900	12.26	26.79	18.70	31.87	2.72	0.98	37.78	23.95	6.31
2000	11.10	28.32	13.06	15.65	3.43	1.00	36.36	22.10	6.85
2100	9.17	30.65	9.48	9.72	4.65	1.00	34.90	20.54	7.62
2200	6.50	33.77	6.66	6.06	6.61	0.93	32.95	18.90	8.54
2300	3.35	37.34	4.69	3.98	9.68	0.81	30.91	17.69	9.53

Typical Performance Data

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

TEST CONDITIONS: Vd = 9.00V, Id = 409.92mA @ Temperature = +85°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
20	12.60	23.45	7.23	9.42	1.54	0.89	38.21	28.97	4.46
30	13.83	22.07	11.45	16.03	1.40	0.86	43.69	29.64	3.96
40	14.06	21.76	13.21	15.54	1.36	0.82	42.75	29.71	3.63
50	14.15	21.65	13.85	14.46	1.34	0.80	42.11	29.92	3.46
60	14.19	21.61	14.08	13.89	1.33	0.79	44.73	29.98	3.34
70	14.22	21.57	14.20	13.64	1.32	0.78	46.81	30.04	3.31
80	14.25	21.54	14.33	13.58	1.32	0.77	48.04	30.04	3.29
90	14.26	21.52	14.42	13.62	1.32	0.77	47.95	30.04	3.29
100	14.28	21.50	14.53	13.74	1.31	0.77	46.76	30.01	3.26
150	14.35	21.43	15.14	14.50	1.31	0.77	46.77	30.10	3.25
200	14.43	21.37	15.96	14.96	1.30	0.77	49.27	30.19	3.22
250	14.50	21.32	16.90	15.16	1.29	0.76	45.88	30.24	3.23
300	14.56	21.28	18.10	15.66	1.28	0.76	48.03	30.43	3.26
350	14.61	21.26	19.67	16.76	1.28	0.76	45.49	30.60	3.30
400	14.65	21.25	21.69	18.97	1.29	0.77	44.59	30.58	3.41
450	14.67	21.27	23.83	22.51	1.29	0.78	47.92	30.46	3.44
500	14.66	21.32	24.83	29.16	1.30	0.79	47.14	30.43	3.52
550	14.64	21.39	23.73	35.36	1.31	0.79	47.14	30.24	3.58
600	14.59	21.48	21.96	29.38	1.32	0.80	45.96	30.06	3.62
650	14.54	21.58	20.48	25.03	1.33	0.81	44.71	29.87	3.68
700	14.49	21.69	19.52	23.28	1.35	0.82	42.75	29.80	3.77
750	14.44	21.81	19.06	21.85	1.36	0.82	43.08	29.71	3.89
800	14.39	21.94	19.09	21.14	1.37	0.83	43.43	29.38	3.89
850	14.32	22.10	19.43	19.69	1.39	0.84	42.94	29.02	3.96
900	14.23	22.28	19.55	18.29	1.42	0.85	43.67	28.62	4.02
950	14.12	22.50	18.77	16.22	1.44	0.85	44.17	28.24	4.15
1000	13.96	22.75	17.06	14.25	1.47	0.86	44.22	27.77	4.18
1100	13.55	23.37	13.11	11.02	1.54	0.85	46.17	27.41	4.31
1200	13.04	24.08	10.28	8.96	1.62	0.84	52.19	27.33	4.57
1300	12.59	24.76	8.66	7.88	1.71	0.83	49.47	27.64	4.71
1400	12.34	25.26	8.00	7.43	1.79	0.83	47.34	27.86	4.83
1500	12.37	25.48	8.24	7.61	1.86	0.83	47.18	27.77	4.99
1600	12.62	25.51	9.70	8.67	1.94	0.85	45.09	27.90	5.23
1700	12.89	25.53	13.37	11.24	2.06	0.89	41.70	27.77	5.48
1800	12.87	25.86	21.64	17.28	2.29	0.94	39.57	26.91	5.88
1900	12.34	26.73	18.40	31.06	2.68	0.98	37.68	25.27	6.43
2000	11.23	28.21	13.04	16.25	3.35	1.00	36.53	23.47	7.01
2100	9.35	30.49	9.57	10.07	4.52	1.01	35.47	21.90	7.62
2200	6.73	33.57	6.75	6.23	6.41	0.94	33.98	20.29	8.70
2300	3.57	37.14	4.74	4.05	9.37	0.82	32.41	19.01	9.74