



February 20, 2001

Mr. Frank Coperich
Federal Communications Commission
Office of Engineering and Technology, Laboratory
7435 Oakland Mills Road
Columbia, MD 21046

Re: Correspondence Number 17967 with reference to FCC ID: AZ489FT5805.

Gentlemen;

Motorola Inc., 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322, herein submits its' response to Question 1 regarding the request for ERP measurements.

The maximum gain was obtained at frequency 824MHz. For this reason only the results for this frequency are given in the tables.

The tables given here for horizontal and vertical planes contain the following columns:

- ?? HDT502 orientation angle, every 2 deg
- ?? Antenna gain in dBd, as measured by MARS
- ?? Maximum calculated ERP in dBm, according to the following equation:
- ??

$$\text{ERP} = \text{Maximum Pout (dBm)} + \text{Antenna gain measured (dBd)},$$

where Maximum Pout = 700 mWatt = +28.45dBm

- ?? Maximum calculated ERP in mWatt obtained from the previous column

If you have any questions, please contact me at 954-723-5793.

Sincerely,
Mike Ramnath
FCC Liaison
Email: emr003@email.mot.com

TX frequency 824 MHz
Horizontal (H-plane).

Angle (deg)	Antenna gain measured (dBd)	Maximum Calculated ERP (dBm)	Maximum Calculated ERP (mW)
0	-9.39	19.06	80.54
2	-9.38	19.07	80.80
4	-9.36	19.09	81.15
6	-9.34	19.11	81.55
8	-9.32	19.13	81.88
10	-9.29	19.16	82.38
12	-9.28	19.17	82.59
14	-9.27	19.18	82.78
16	-9.26	19.19	82.98
18	-9.24	19.21	83.42
20	-9.23	19.23	83.66
22	-9.21	19.24	83.99
24	-9.19	19.26	84.31
26	-9.18	19.27	84.51
28	-9.16	19.29	84.93
30	-9.14	19.31	85.36
32	-9.11	19.34	85.95
34	-9.10	19.35	86.19
36	-9.08	19.37	86.47
38	-9.11	19.34	85.88
40	-9.12	19.33	85.71
42	-9.16	19.29	84.91
44	-9.19	19.26	84.34
46	-9.23	19.22	83.60
48	-9.27	19.18	82.79
50	-9.31	19.14	82.02
52	-9.36	19.09	81.09
54	-9.39	19.06	80.46
56	-9.43	19.02	79.80
58	-9.48	18.97	78.91
60	-9.52	18.93	78.16
62	-9.56	18.89	77.43
64	-9.63	18.82	76.28
66	-9.67	18.78	75.48
68	-9.74	18.71	74.36
70	-9.81	18.64	73.11
72	-9.86	18.59	72.24

74	-9.92	18.53	71.32
76	-9.99	18.46	70.13
78	-10.04	18.41	69.34
80	-10.10	18.35	68.38
82	-10.13	18.32	67.98
84	-10.09	18.36	68.53
86	-10.04	18.41	69.41
88	-9.94	18.51	70.94
90	-9.86	18.59	72.24
92	-9.78	18.67	73.60
94	-9.65	18.80	75.84
96	-9.59	18.86	76.90
98	-9.52	18.93	78.21
100	-9.41	19.04	80.13
102	-9.34	19.11	81.55
104	-9.23	19.22	83.64
106	-9.14	19.31	85.29
108	-9.08	19.37	86.47
110	-8.99	19.46	88.29
112	-8.82	19.63	91.88
114	-8.73	19.72	93.84
116	-8.59	19.86	96.81
118	-8.50	19.95	98.85
120	-8.38	20.07	101.64
122	-8.23	20.22	105.17
124	-8.09	20.36	108.73
126	-7.99	20.46	111.24
128	-7.85	20.60	114.79
130	-7.73	20.72	118.10
132	-7.59	20.86	121.89
134	-7.49	20.96	124.71
136	-7.38	21.07	127.89
138	-7.27	21.18	131.34
140	-7.20	21.25	133.48
142	-7.10	21.35	136.58
144	-7.05	21.40	138.04
146	-6.98	21.47	140.30
148	-6.87	21.58	143.87
150	-6.75	21.70	147.88
152	-6.64	21.81	151.67
154	-6.57	21.88	154.16
156	-6.46	21.99	158.14
158	-6.39	22.06	160.71
160	-6.30	22.15	164.15

162	-6.27	22.18	165.25	
164	-6.19	22.26	168.24	
166	-6.12	22.33	170.84	
168	-6.05	22.40	173.76	
170	-5.96	22.49	177.58	
172	-5.92	22.53	179.23	
174	-5.92	22.53	179.23	
176	-5.89	22.56	180.47	
178	-5.87	22.58	181.30	
180	-5.87	22.58	181.30	
182	-5.82	22.63	183.40	
184	-5.84	22.61	182.33	
186	-5.82	22.63	183.34	
188	-5.80	22.65	184.08	Maximum
190	-5.81	22.64	183.76	
192	-5.83	22.62	182.79	
194	-5.83	22.62	182.98	
196	-5.87	22.58	181.30	
198	-5.90	22.55	180.05	
200	-5.92	22.53	179.23	
202	-5.96	22.49	177.58	
204	-6.01	22.44	175.55	
206	-6.07	22.38	173.14	
208	-6.09	22.36	172.35	
210	-6.14	22.31	170.37	
212	-6.22	22.23	167.26	
214	-6.27	22.18	165.35	
216	-6.31	22.14	163.83	
218	-6.38	22.07	161.21	
220	-6.40	22.05	160.47	
222	-6.44	22.01	159.00	
224	-6.53	21.92	155.63	
226	-6.59	21.86	153.41	
228	-6.68	21.77	150.40	
230	-6.80	21.65	146.35	
232	-6.98	21.47	140.41	
234	-7.07	21.38	137.53	
236	-7.29	21.16	130.74	
238	-7.42	21.03	126.88	
240	-7.52	20.93	123.99	
242	-7.69	20.76	119.23	
244	-7.78	20.67	116.79	
246	-7.98	20.47	111.53	
248	-8.08	20.37	108.99	

250	-8.23	20.22	105.19
252	-8.30	20.15	103.51
254	-8.41	20.04	100.97
256	-8.52	19.93	98.46
258	-8.62	19.83	96.22
260	-8.73	19.72	93.75
262	-8.82	19.63	91.88
264	-8.90	19.55	90.15
266	-9.01	19.44	87.90
268	-9.11	19.34	85.93
270	-9.23	19.22	83.56
272	-9.29	19.16	82.39
274	-9.36	19.09	81.03
276	-9.43	19.02	79.76
278	-9.46	18.99	79.22
280	-9.49	18.96	78.71
282	-9.55	18.90	77.61
284	-9.59	18.86	76.90
286	-9.66	18.79	75.65
288	-9.70	18.75	74.99
290	-9.75	18.70	74.12
292	-9.79	18.66	73.44
294	-9.85	18.60	72.44
296	-9.89	18.56	71.75
298	-9.98	18.47	70.37
300	-10.02	18.43	69.68
302	-10.06	18.39	69.01
304	-10.13	18.32	67.90
306	-10.18	18.28	67.22
308	-10.14	18.31	67.75
310	-10.10	18.35	68.38
312	-10.06	18.39	68.96
314	-10.04	18.41	69.32
316	-10.00	18.45	69.95
318	-9.96	18.49	70.57
320	-9.92	18.53	71.29
322	-9.89	18.56	71.76
324	-9.82	18.63	73.01
326	-9.69	18.76	75.14
328	-9.61	18.84	76.54
330	-9.53	18.92	77.97
332	-9.46	18.99	79.25
334	-9.38	19.07	80.76
336	-9.30	19.15	82.20

338	-9.24	19.21	83.35
340	-9.16	19.29	84.88
342	-9.08	19.37	86.47
344	-9.00	19.45	88.08
346	-9.06	19.39	86.90
348	-9.10	19.35	86.10
350	-9.12	19.33	85.70
352	-9.15	19.30	85.11
354	-9.19	19.26	84.33
356	-9.25	19.20	83.18
358	-9.31	19.14	82.04
360	-9.39	19.06	80.54

TX Frequency 824 MHz
Vertical (E- plane).

Angle (deg)	Antenna gain measured (dBd)	Maximum Calculated ERP (dBm)	Maximum Calculated ERP (mW)
0	-12.38	16.07	40.46
2	-12.54	15.91	38.96
4	-12.68	15.77	37.72
6	-12.87	15.58	36.12
8	-13.06	15.39	34.58
10	-13.29	15.16	32.78
12	-13.59	14.86	30.59
14	-13.88	14.57	28.62
16	-14.09	14.36	27.26
18	-14.25	14.20	26.30
20	-14.49	13.96	24.87
22	-14.89	13.56	22.68
24	-15.19	13.26	21.16
26	-15.49	12.96	19.75
28	-15.69	12.76	18.86
30	-15.79	12.66	18.43
32	-15.89	12.56	18.01
34	-16.19	12.26	16.81
36	-16.13	12.33	17.08
38	-16.04	12.41	17.40
40	-15.94	12.51	17.81
42	-15.84	12.61	18.25
44	-15.74	12.71	18.67
46	-15.59	12.86	19.32

48	-15.34	13.11	20.45
50	-15.18	13.27	21.23
52	-15.04	13.41	21.95
54	-14.88	13.58	22.78
56	-14.65	13.80	23.98
58	-14.38	14.07	25.52
60	-14.09	14.36	27.30
62	-13.59	14.86	30.59
64	-13.29	15.16	32.78
66	-12.89	15.56	35.94
68	-12.64	15.81	38.07
70	-12.54	15.91	38.99
72	-12.38	16.08	40.50
74	-12.15	16.30	42.64
76	-11.79	16.66	46.30
78	-11.49	16.96	49.61
80	-11.27	17.18	52.19
82	-11.04	17.41	55.08
84	-10.80	17.65	58.25
86	-10.65	17.80	60.23
88	-10.59	17.86	61.09
90	-10.50	17.95	62.37
92	-10.30	18.15	65.33
94	-10.12	18.33	68.09
96	-9.96	18.49	70.65
98	-9.72	18.73	74.68
100	-9.52	18.93	78.20
102	-9.37	19.08	80.84
104	-9.28	19.17	82.55
106	-9.19	19.26	84.35
108	-9.09	19.36	86.22
110	-8.96	19.49	88.88
112	-8.84	19.61	91.43
114	-8.72	19.73	93.99
116	-8.54	19.91	97.86
118	-8.35	20.10	102.38
120	-8.15	20.30	107.05
122	-7.98	20.47	111.43
124	-7.82	20.63	115.50
126	-7.69	20.76	119.12
128	-7.54	20.91	123.20
130	-7.46	20.99	125.55
132	-7.35	21.10	128.80
134	-7.21	21.24	132.92

136	-7.11	21.34	136.22
138	-6.97	21.48	140.48
140	-6.89	21.56	143.22
142	-6.82	21.63	145.65
144	-6.75	21.70	147.91
146	-6.65	21.80	151.29
148	-6.55	21.90	154.85
150	-6.45	22.00	158.42
152	-6.33	22.12	162.97
154	-6.22	22.23	167.19
156	-6.13	22.32	170.65
158	-6.07	22.38	173.00
160	-6.02	22.43	175.00
162	-5.97	22.48	177.01
164	-5.91	22.54	179.60
166	-5.85	22.60	181.97
168	-5.80	22.65	184.08
170	-5.75	22.70	186.21
172	-5.68	22.77	189.28
174	-5.56	22.89	194.58
176	-5.50	22.95	197.24
178	-5.52	22.93	196.47
180	-5.56	22.89	194.58
182	-5.57	22.88	193.91
184	-5.63	22.82	191.25
186	-5.69	22.76	188.84
188	-5.76	22.69	185.82
190	-5.85	22.60	181.97
192	-5.92	22.53	179.18
194	-5.99	22.46	176.20
196	-6.07	22.38	173.02
198	-6.13	22.33	170.80
200	-6.22	22.23	167.11
202	-6.32	22.13	163.34
204	-6.46	21.99	158.13
206	-6.55	21.90	154.95
208	-6.66	21.79	151.04
210	-6.73	21.72	148.61
212	-6.83	21.62	145.22
214	-6.95	21.50	141.25
216	-7.06	21.39	137.63
218	-7.21	21.24	133.16
220	-7.35	21.10	128.77
222	-7.55	20.90	123.08

Maximum

224	-7.68	20.77	119.40
226	-7.86	20.59	114.50
228	-8.02	20.43	110.45
230	-8.18	20.27	106.41
232	-8.30	20.15	103.42
234	-8.47	19.98	99.57
236	-8.61	19.84	96.29
238	-8.78	19.67	92.68
240	-8.95	19.50	89.04
242	-9.22	19.23	83.68
244	-9.43	19.02	79.73
246	-9.69	18.76	75.09
248	-10.09	18.36	68.49
250	-10.49	17.96	62.46
252	-10.81	17.64	58.04
254	-11.11	17.34	54.25
256	-11.42	17.03	50.48
258	-11.75	16.70	46.77
260	-12.12	16.33	42.96
262	-12.44	16.01	39.87
264	-12.99	15.46	35.12
266	-13.49	14.96	31.30
268	-14.09	14.36	27.26
270	-14.69	13.76	23.75
272	-15.29	13.16	20.69
274	-15.99	12.46	17.60
276	-16.89	11.56	14.31
278	-17.59	10.86	12.18
280	-18.59	9.86	9.67
282	-19.59	8.86	7.68
284	-20.99	7.46	5.57
286	-22.04	6.41	4.37
288	-23.94	4.51	2.83
290	-26.64	1.81	1.52
292	-29.59	-1.14	0.77
294	-32.25	-3.80	0.42
296	-34.65	-6.20	0.24
298	-37.38	-8.93	0.13
300	-33.69	-5.24	0.30
302	-29.99	-1.54	0.70
304	-25.99	2.46	1.76
306	-23.00	5.45	3.51
308	-21.27	7.18	5.22
310	-20.09	8.36	6.85

312	-18.89	9.56	9.03
314	-17.99	10.46	11.11
316	-17.19	11.26	13.35
318	-16.49	11.96	15.69
320	-15.59	12.86	19.30
322	-14.69	13.76	23.75
324	-14.09	14.36	27.29
326	-13.49	14.96	31.30
328	-12.79	15.66	36.78
330	-12.19	16.26	42.23
332	-11.89	16.56	45.25
334	-11.79	16.66	46.30
336	-11.39	17.06	50.77
338	-11.29	17.16	51.95
340	-11.19	17.26	53.16
342	-11.23	17.22	52.72
344	-11.28	17.17	52.12
346	-11.42	17.03	50.47
348	-11.54	16.91	49.09
350	-11.78	16.67	46.45
352	-11.92	16.53	44.98
354	-12.05	16.40	43.65
356	-12.17	16.28	42.48
358	-12.25	16.20	41.69
360	-12.38	16.07	40.46