



MOTOROLA

Date: July 28, 2004

Subject: Request for additional information regarding FCC ID: IHDT6EE1 (Portable PCS GSM Transceiver with Embedded Bluetooth)

Reference:

Application Received:	07/16/2004
Correspondence Reference Number:	240727A.IHD
Confirmation Number:	TC4252 and TC4253
Date of Original Email:	07/27/2004

Prepared by:

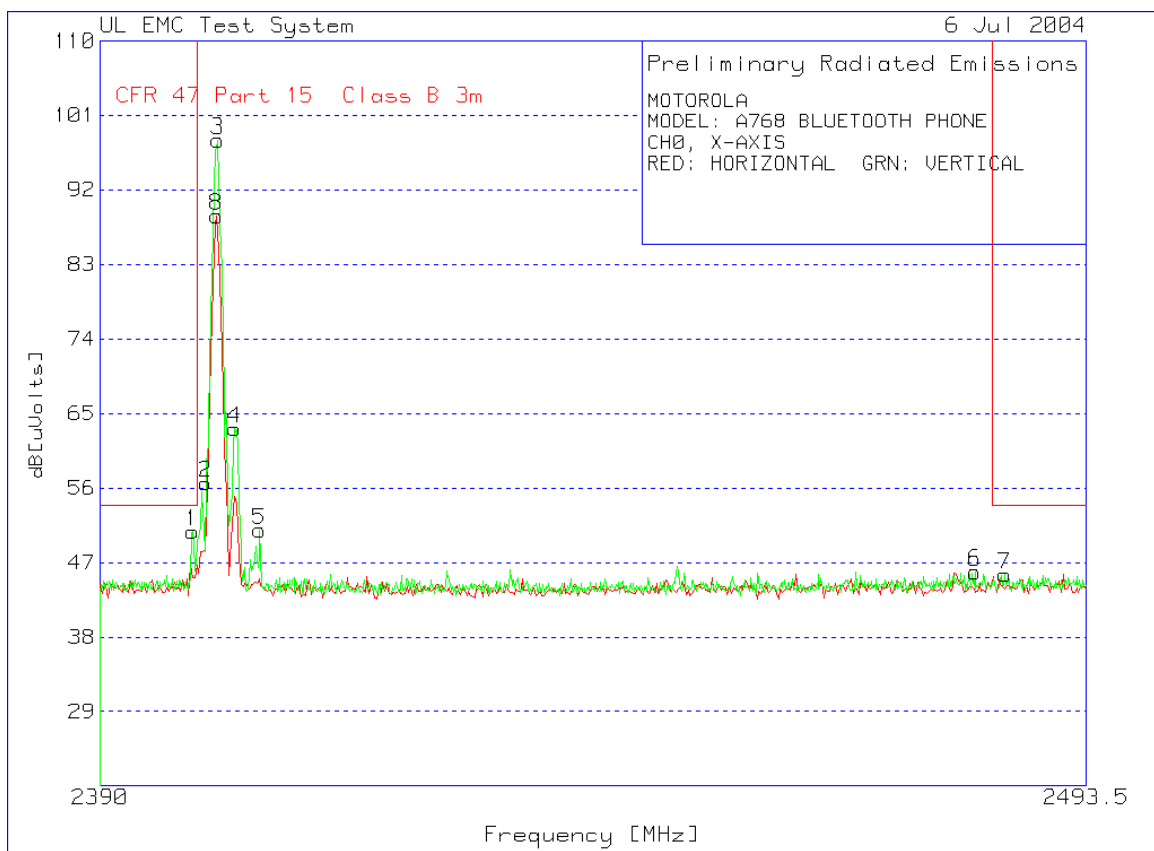
Andrew Bachler, Principal Staff Engineer
Motorola Personal Communications Sector
Libertyville, Illinois

Questions and responses follow:

Bluetooth application:

1. There is no radiated emission data for emissions in the restricted band at 2483.5 - 2500 MHz, however, the spurious conducted emission plots show a relatively strong spur (42 dBc) in this band. Please provide radiated emission data for all emissions in the referenced restricted band.

Response: Please refer to the following data.



MOTOROLA

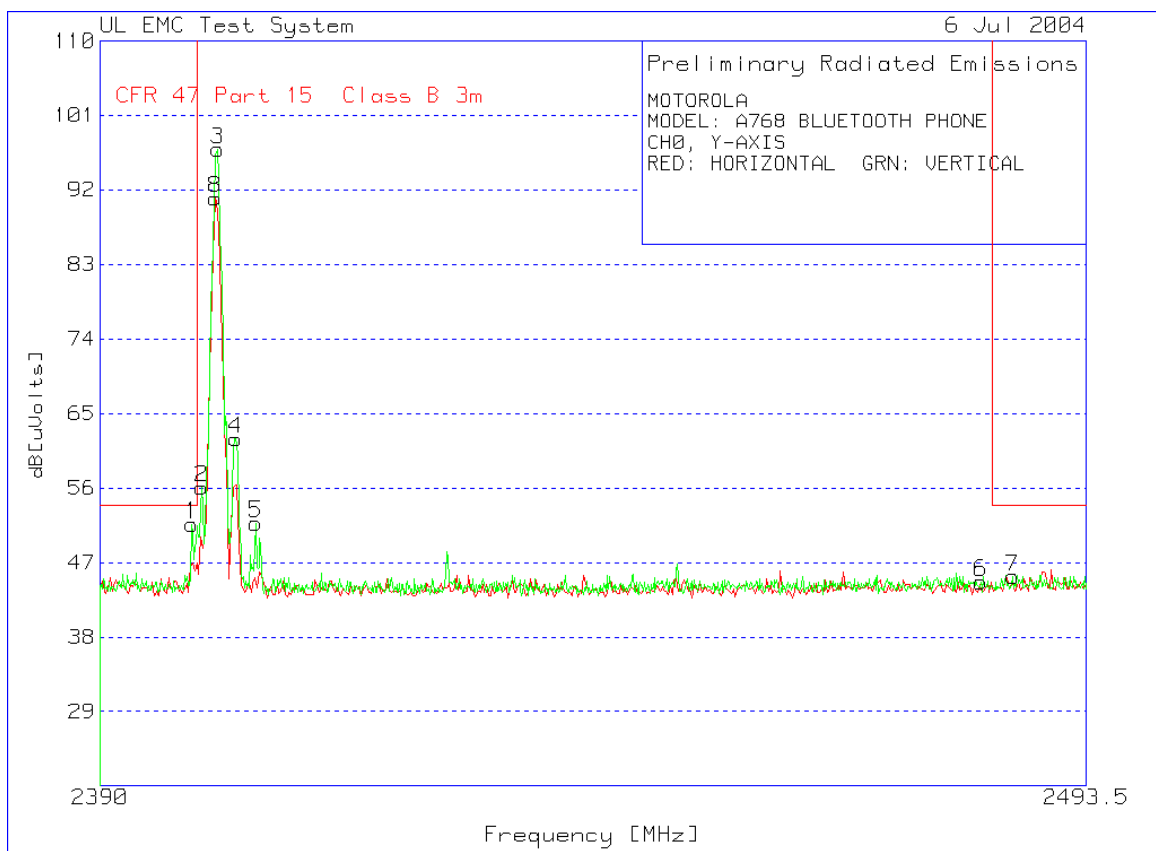
MODEL: A768 BLUETOOTH PHONE

CH0, X-AXIS

RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type [dB]	Gain/Loss Factor [dB]	Transducer Factor	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2390 - 2493.5MHz										
8	2402.03	63.77	pk	3.3	21.8	88.87	999	-910.13	100	Horz
2 - 4GHz 2390 - 2493.5MHz										
1	2399.532	25.61	pk	3.3	21.8	50.71	54	-3.29	100	Vert
2	2400.878	31.49	pk	3.3	21.8	56.59	999	-942.41	100	Vert
3	2402.122	72.93	pk	3.3	21.8	98.03	999	-900.97	100	Vert
4	2403.883	38.08	pk	3.3	21.8	63.18	999	-935.82	100	Vert
5	2406.473	25.82	pk	3.3	21.8	50.92	999	-948.08	100	Vert
6	2481.586	20.59	pk	3.3	22	45.89	999	-953.11	100	Vert
7	2484.798	20.15	pk	3.3	22.1	45.55	54	-8.45	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m



MOTOROLA

MODEL: A768 BLUETOOTH PHONE

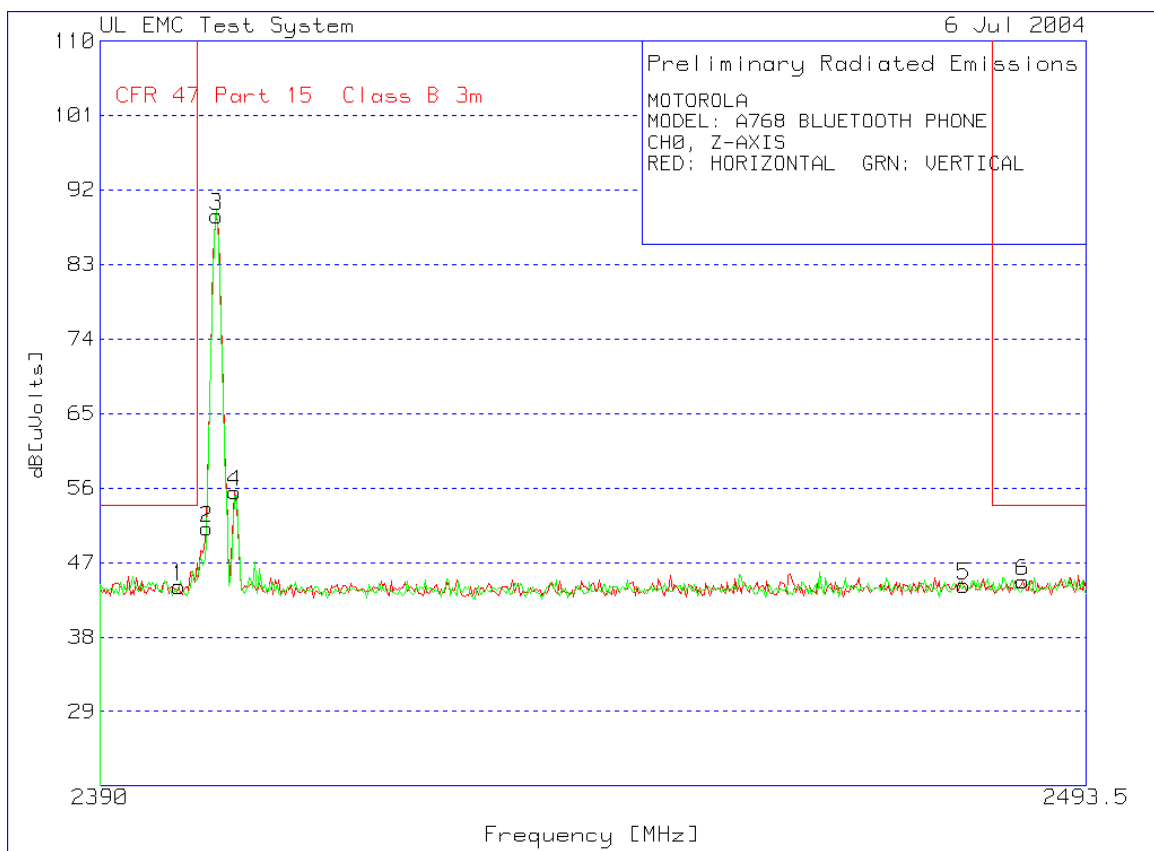
CH0, Y-AXIS

RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type [dB]	Gain/Loss Factor [dB]	Transducer Factor	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2390 - 2493.5MHz										
8	2401.823	65.9 pk		3.3	21.8	91	999	-908	100	Horz
2 - 4GHz 2390 - 2493.5MHz										
1	2399.428	26.51 pk		3.3	21.8	51.61	54	-2.39	100	Vert
2	2400.464	30.95 pk		3.3	21.8	56.05	999	-942.95	100	Vert
3	2402.122	71.82 pk		3.3	21.8	96.92	999	-902.08	100	Vert
4	2403.987	36.85 pk		3.3	21.8	61.95	999	-937.05	100	Vert
5	2406.059	26.66 pk		3.3	21.8	51.76	999	-947.24	100	Vert
6	2482.208	19.38 pk		3.3	22	44.68	999	-954.32	100	Vert
7	2485.626	19.92 pk		3.3	22.1	45.32	54	-8.68	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

LIMIT 2: NONE



MOTOROLA

MODEL: A768 BLUETOOTH PHONE

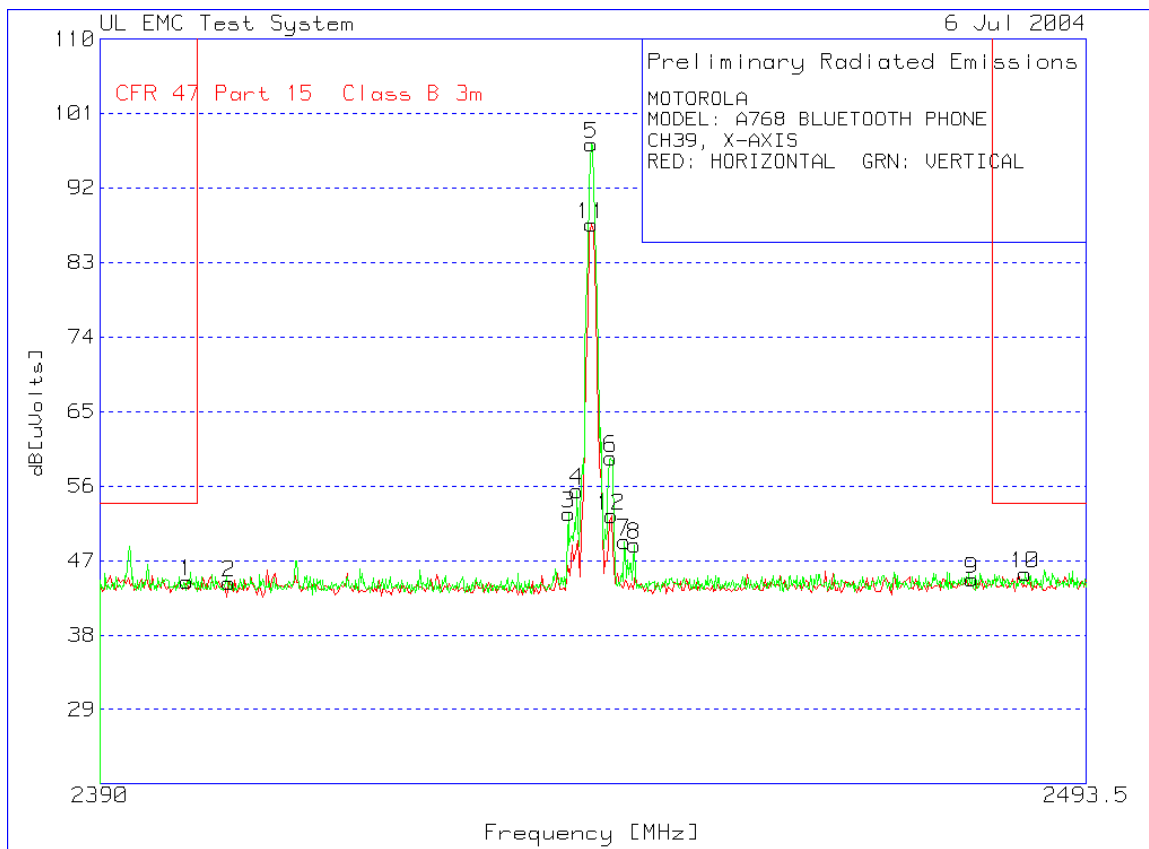
CH0, Z-AXIS

RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type [dB]	Gain/Loss Factor [dB]	Transducer Factor	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2390 - 2493.5MHz										
1	2398.089	19.02	pk		3.3	21.8	44.12	54	-9.88	100 Horz
2	2400.993	26.07	pk		3.3	21.8	51.17	999	-947.83	100 Horz
3	2402.03	63.81	pk		3.3	21.8	88.91	999	-910.09	100 Horz
4	2403.897	30.44	pk		3.3	21.8	55.54	999	-943.46	100 Horz
5	2480.433	18.96	pk		3.3	22	44.26	999	-954.74	100 Horz
6	2486.655	19.32	pk		3.3	22.1	44.72	54	-9.28	100 Horz

LIMIT 1: CFR 47 Part 15 Class B 3m

LIMIT 2: NONE



MOTOROLA

MODEL: A768 BLUETOOTH PHONE

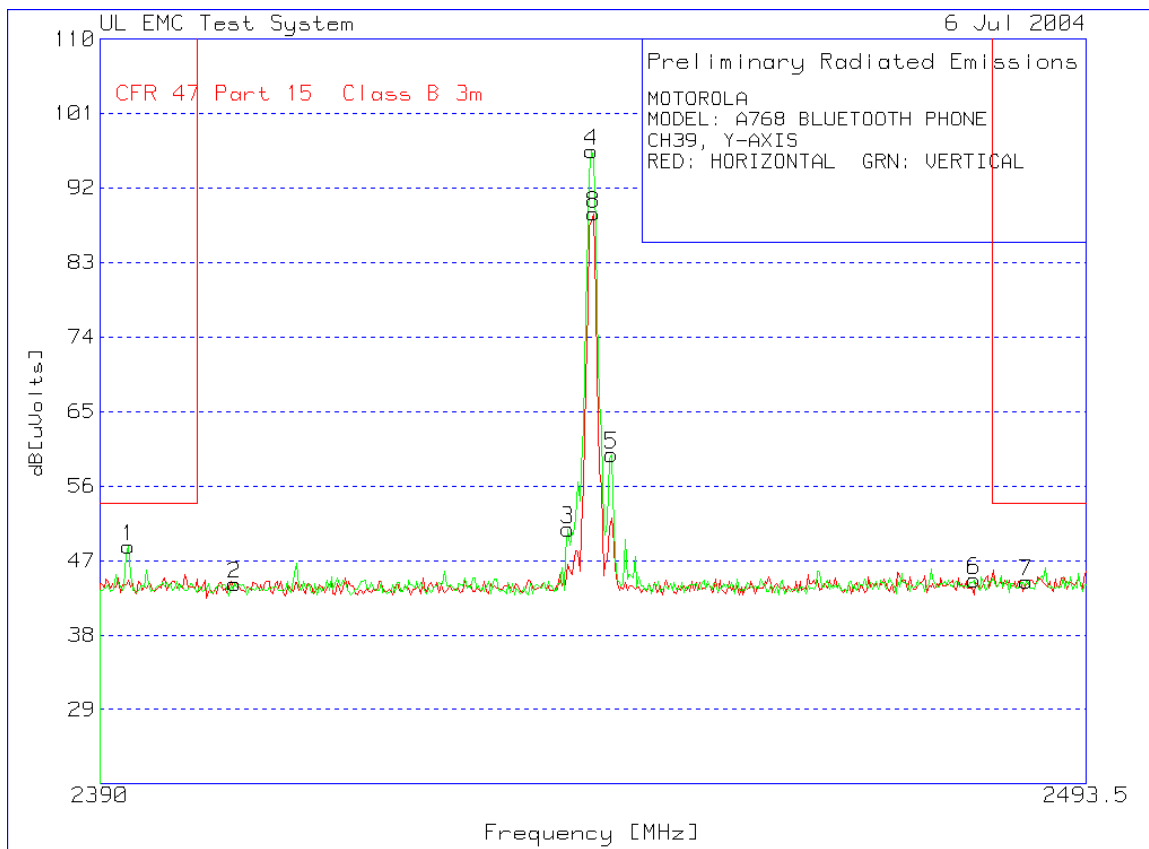
CH39, X-AXIS

RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type [dB]	Gain/Loss Factor [dB]	Transducer Factor	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2390 - 2493.5MHz										
1	2398.919	19.36 pk		3.3	21.8	44.46	54	-9.54	100	Horz
2	2403.275	19.25 pk		3.3	21.8	44.35	999	-954.65	100	Horz
11	2441.024	62.4 pk		3.3	21.9	87.6	999	-911.4	100	Horz
12	2443.098	27.22 pk		3.3	21.9	52.42	999	-946.58	100	Horz
2 - 4GHz 2390 - 2493.5MHz										
3	2438.59	27.46 pk		3.3	21.9	52.66	999	-946.34	100	Vert
4	2439.523	30.24 pk		3.3	21.9	55.44	999	-943.56	100	Vert
5	2440.973	72.09 pk		3.3	21.9	97.29	999	-901.71	100	Vert
6	2443.045	34.23 pk		3.3	21.9	59.43	999	-939.57	100	Vert
7	2444.496	24.09 pk		3.3	21.9	49.29	999	-949.71	100	Vert
8	2445.532	23.7 pk		3.3	21.9	48.9	999	-950.1	100	Vert
9	2481.275	19.4 pk		3.3	22	44.7	999	-954.3	150	Vert
10	2486.973	20.03 pk		3.3	22.1	45.43	54	-8.57	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

LIMIT 2: NONE



MOTOROLA

MODEL: A768 BLUETOOTH PHONE

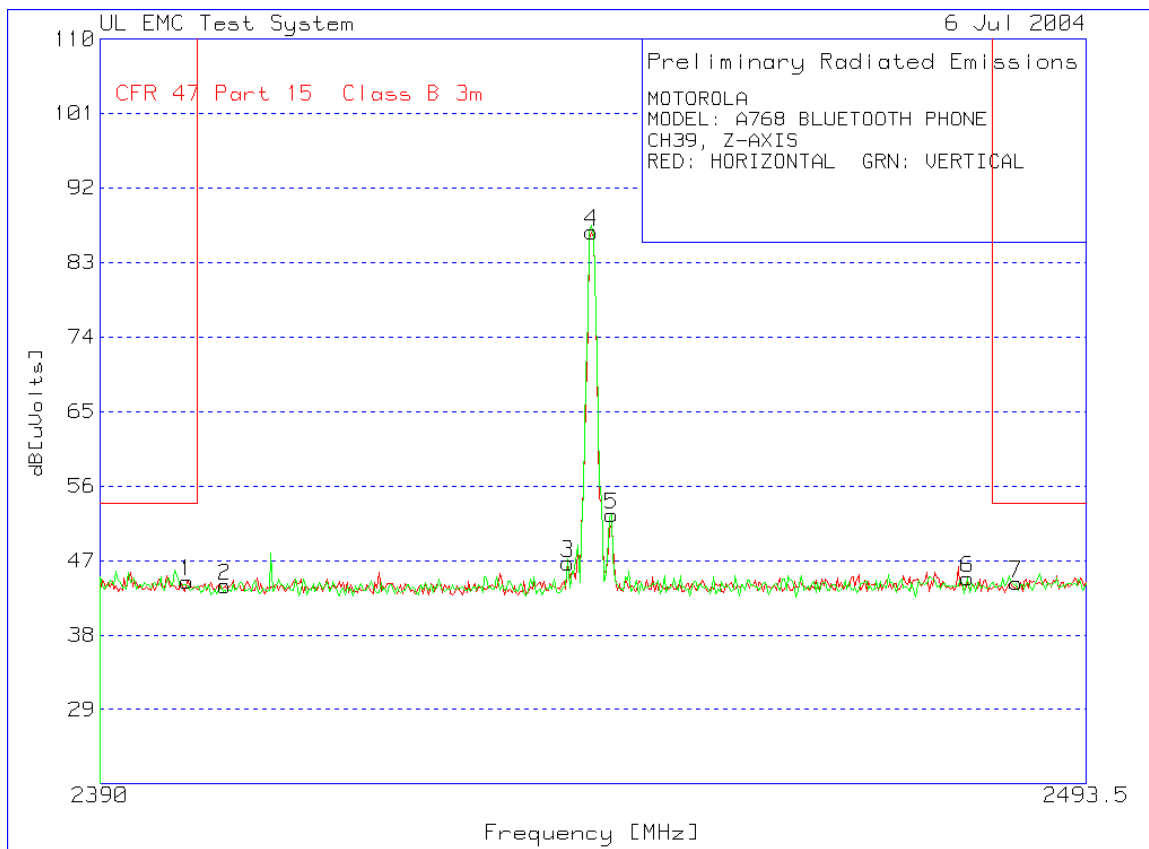
CH39, Y-AXIS

RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type [dB]	Gain/Loss Factor [dB]	Transducer Factor	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2390 - 2493.5MHz										
8	2441.232	63.72 pk		3.3	21.9	88.92	999	-910.08	100	Horz
2 - 4GHz 2390 - 2493.5MHz										
1	2392.904	23.57 pk		3.3	21.8	48.67	54	-5.33	100	Vert
2	2403.897	19.06 pk		3.3	21.8	44.16	999	-954.84	100	Vert
3	2438.535	25.63 pk		3.3	21.9	50.83	999	-948.17	100	Vert
4	2441.024	71.28 pk		3.3	21.9	96.48	999	-902.52	100	Vert
5	2443.098	34.62 pk		3.3	21.9	59.82	999	-939.18	100	Vert
6	2481.47	19.37 pk		3.3	22	44.67	999	-954.33	100	Vert
7	2487.07	19.03 pk		3.3	22.1	44.43	54	-9.57	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

LIMIT 2: NONE



MOTOROLA

MODEL: A768 BLUETOOTH PHONE

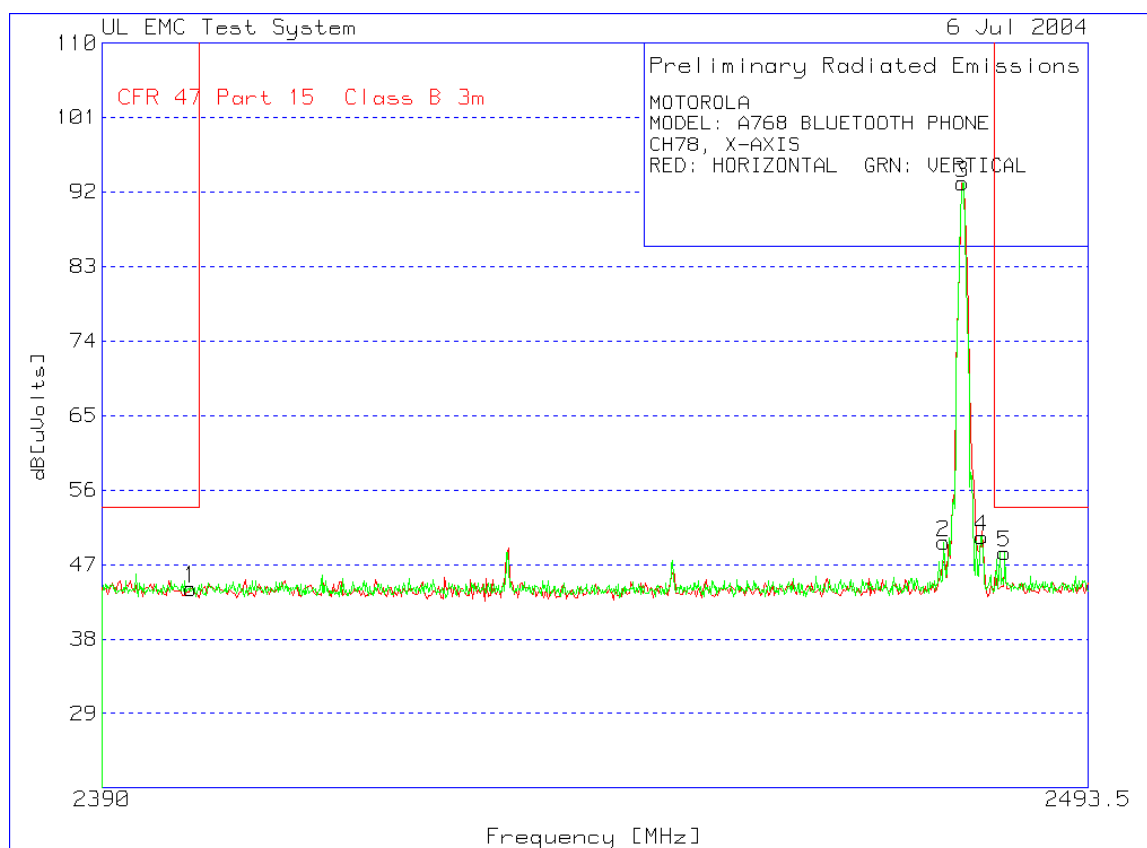
CH39, Z-AXIS

RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type [dB]	Gain/Loss Factor [dB]	Transducer Factor	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2390 - 2493.5MHz										
1	2398.919	19.36	pk	3.3	21.8	44.46	54	-9.54	100	Horz
2	2402.86	18.86	pk	3.3	21.8	43.96	999	-955.04	100	Horz
3	2438.535	21.53	pk	3.3	21.9	46.73	999	-952.27	100	Horz
4	2441.024	61.49	pk	3.3	21.9	86.69	999	-912.31	100	Horz
2 - 4GHz 2390 - 2493.5MHz										
5	2443.098	27.29	pk	3.3	21.9	52.49	999	-946.51	100	Vert
6	2480.848	19.58	pk	3.3	22	44.88	999	-954.12	100	Vert
7	2486.033	18.88	pk	3.3	22.1	44.28	54	-9.72	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

LIMIT 2: NONE



MOTOROLA

MODEL: A768 BLUETOOTH PHONE

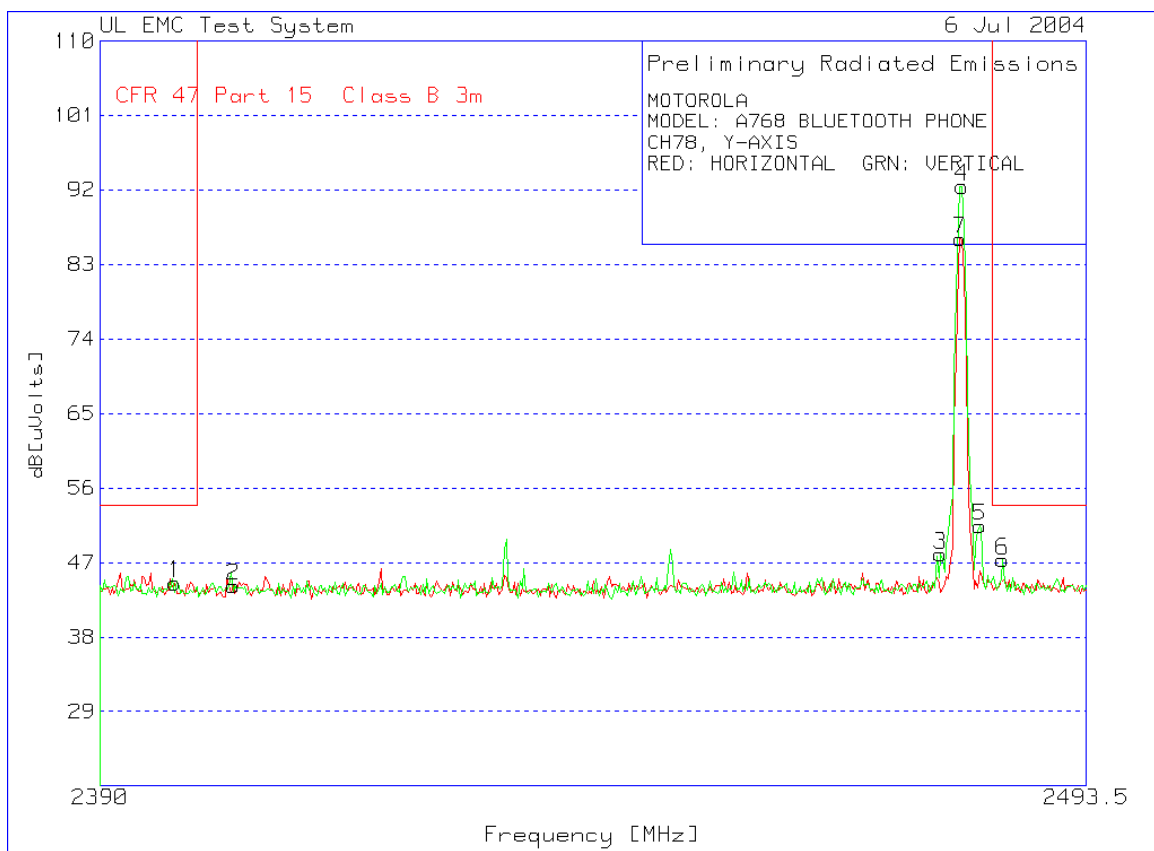
CH78, X-AXIS

RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type [dB]	Gain/Loss Factor [dB]	Transducer Factor	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2390 - 2493.5MHz										
1	2399.126	19	pk	3.3	21.8	44.1	54	-9.9	100	Horz
2 - 4GHz 2390 - 2493.5MHz										
2	2478.063	24.39	pk	3.3	22	49.69	999	-949.31	100	Vert
3	2480.032	67.79	pk	3.3	22	93.09	999	-905.91	100	Vert
4	2482.104	25.03	pk	3.3	22	50.33	999	-948.67	100	Vert
5	2484.59	23.01	pk	3.3	22.1	48.41	54	-5.59	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

LIMIT 2: NONE



MOTOROLA

MODEL: A768 BLUETOOTH PHONE

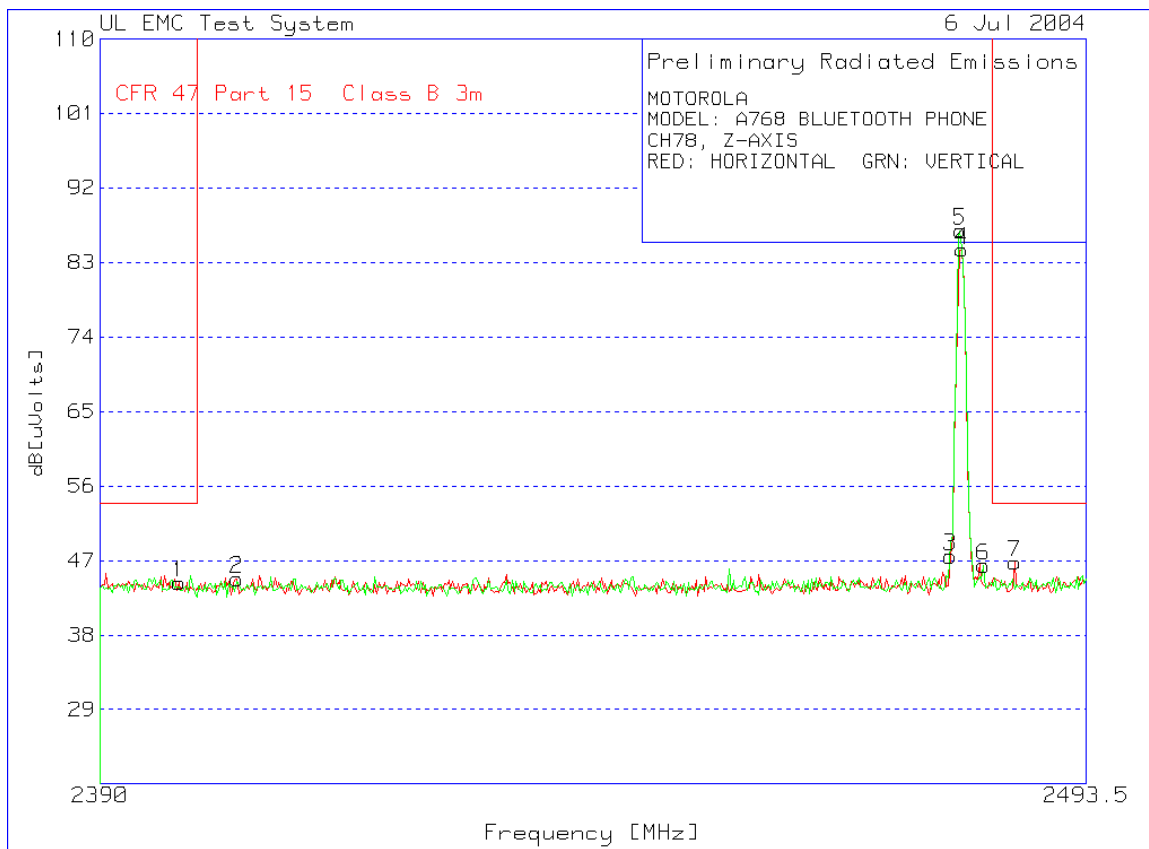
CH78, Y-AXIS

RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type [dB]	Gain/Loss Factor [dB]	Transducer Factor	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2390 - 2493.5MHz										
1	2397.674	19.43	pk		3.3	21.8	44.53	54	-9.47	100 Horz
2	2403.689	19.1	pk		3.3	21.8	44.2	999	-954.8	100 Horz
7	2480.018	60.81	pk		3.3	22	86.11	999	-912.89	100 Horz
2 - 4GHz 2390 - 2493.5MHz										
3	2477.944	22.67	pk		3.3	22	47.97	999	-951.03	100 Vert
4	2480.226	67.13	pk		3.3	22	92.43	999	-906.57	100 Vert
5	2482.092	26.09	pk		3.3	22	51.39	999	-947.61	100 Vert
6	2484.581	21.89	pk		3.3	22.1	47.29	54	-6.71	100 Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

LIMIT 2: NONE



MOTOROLA
MODEL: A768 BLUETOOTH PHONE
CH78, Z-AXIS
RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type [dB]	Gain/Loss Factor [dB]	Transducer Factor	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2390 - 2493.5MHz										
1	2398.089	19.23 pk		3.3	21.8	44.33	54	-9.67	100	Horz
2	2404.104	19.68 pk		3.3	21.8	44.78	999	-954.22	100	Horz
3	2478.981	22.23 pk		3.3	22	47.53	999	-951.47	100	Horz
4	2480.226	59.25 pk		3.3	22	84.55	999	-914.45	100	Horz
7	2485.826	21.39 pk		3.3	22.1	46.79	54	-7.21	100	Horz
2 - 4GHz 2390 - 2493.5MHz										
5	2480.018	61.57 pk		3.3	22	86.87	999	-912.13	100	Vert
6	2482.507	21.11 pk		3.3	22	46.41	999	-952.59	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m
LIMIT 2: NONE

2. What is the gain of the antenna used with the BT transmitter?

Response: The Bluetooth antenna gain is -3dBi.

3. The statements listed in Sections 15.21 and 15.19(a)(3) are required to be in the user's manual, however, they are not. Please include them in the manual.

Response: Please refer to exhibit 8A.

PCS GSM application:

4. Page 3 of the SAR report lists the Bluetooth output power as 0 dBm, however, the BT test report lists the measured level as 3.7 dBm. Please correct the SAR report.

Response: Please refer to the following table

FCC ID Number	IHDT6EE1			
Serial number	004400-00-667015-0			
Mode(s) of Operation	GSM 900	GSM1800	GSM1900	BlueTooth
Modulation Mode(s)	GSM	GSM	GSM	BlueTooth
Maximum Output Power Setting	32.50dBm	29.50dBm	29.50dBm	3.7 dBm
Duty Cycle	1:8	1:8	1:8	1:1
Transmitting Frequency Rang(s)	880.2-914.8MHz	1710.2-1784.8M Hz	1850.2-1909.8M Hz	2400.0-2483.5MHz
Production Unit or Identical Prototype (47 CFR §2.908)	Identical Prototype			
Device Category	Portable			
RF Exposure Limits	General Population / Uncontrolled			

5. The left tilt, right touch and right tilt SAR plots list tissue parameters not shown in the Table on p.5 of the SAR report. It appears that a line of tissue parameter data is missing from the Table. Please address.

Response: Please refer to the supplemental SAR report dated 7/28/04.