

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com

FCC TEST REPORT

FCC Part 15, Subparts B AND C Part 15.247, band 2400-2483.5 MHz

STANDARD/PROCEDURE(S): DA 00-705, ANSI C63.4 – 2003

APPLICANT: MOTOROLA, PCS.
600 NORTH US HWY 45
LIBERTYVILLE, IL 60048

MODEL NUMBER: i876

**DESCRIPTION OF
PRODUCT:** BLUETOOTH TRANSMITTER INTEGRATED IN
IDEN PHONE

FCC IDs: IHDT56HF1

**DATE SAMPLE
RECEIVED FOR TESTING:** 4/23/2007

DATE TESTED: 5/3/2007

TEST RESULTS: ☒ PASS ☐ FAIL

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com

TABLE OF CONTENTS

1	COMPLIANCE STATEMENT:	3
2	EMC EQUIPMENT LIST	4
3	TEST PROCEDURE.....	5
4	PEAK POWER OUTPUT	5
5	FIELD STRENGTH OF SPURIOUS EMISSIONS:.....	6
5.1	METHOD OF MEASURING RADIATED SPURIOUS EMISSIONS.....	8
5.2	RADIATED SPURIOUS EMISSIONS INTO ADJACENT RESTRICTED BAND.....	9
5.3	BLUETOOTH MODULATION TEST	12

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com

1 COMPLIANCE STATEMENT:

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report and demonstrate that the equipment complies with the appropriate standards. No modifications were made to the equipment during testing in order to demonstrate compliance with these standards.

I attest that the necessary measurements were made, under my supervision, at TIMCO ENGINEERING, INC. located at 849 N.W. State Road 45, Newberry, Florida 32669.

Authorized Signatory Name: MARIO DE ARANZETA

Signature: <*Mario de Aranzeta*>

Function: ENGINEER

Date: 5/7/2007

Test engineer name: NAM NGUYEN

Signature: <ON FILE>

Date: 5/7/2007

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com

2 EMC EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	Listed 5/12/04	5/11/07
Antenna: Biconnical	Eaton	94455-1	1057	CAL 12/12/05	12/12/07
Antenna: Biconnical	Eaton	94455-1	1096	CAL 10/11/06	10/11/08
LISN	Electro-Metrics	ANS-25/2	2604	CAL 10/5/06	10/5/078
Antenna: Log-Periodic	Eaton	96005	1243	CAL 12/14/05	12/14/07
Analyzer Tan Tower Spectrum Analyzer	HP	8566B Opt 462	3138A07786 3144A20661	CAL 12/7/05	12/7/07
Analyzer Tan Tower RF Preselector	HP	85685A	3221A01400	CAL 12/7/05	12/7/07
Analyzer Tan Tower Quasi-Peak Adapter	HP	85650A	3303A01690	CAL 12/8/05	12/8/07
Analyzer Tan Tower Preamplifier	HP	8449B-H02	3008A00372	CAL 12/8/05	12/8/07

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com

3 TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

POWER OUTPUT: The RF power output was measured at the antenna feed point using a peak power meter.

RADIATION INTERFERENCE: The test procedure used was ANSI C63.4-2003 using a spectrum analyzer with a pre-selector. The bandwidth (RBW) of the spectrum analyzer was 100kHz up to 1GHz and 1.0MHz above 1GHz with an appropriate sweep speed. The VBW above 1.0GHz was = 3.0MHz for Peak measurement and 10Hz for linear Average measurement. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the DUT was 76°F with a humidity of 55%.

4 PEAK POWER OUTPUT

The Peak power output was measured at a low, mid, and high channel. The maximum measured power was:

$$P_{out} = 2\text{dBm}$$

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

TIMCO ENGINEERING INC.

849 NW State Road 45
Newberry, Florida 32669
<http://www.timcoengr.com>
888.472.2424 F 352.472.2030 email: info@timcoengr.com

5 FIELD STRENGTH OF SPURIOUS EMISSIONS:

FCC rules part: 15.247(c), 15.205, and 15.209

REQUIREMENTS:

Emission Frequency (MHz)	Field Strength		At Distance (m)	Detector Type
	(μ V/m)	(dB μ V/m)		
0.009 – 0.490	2400/f (kHz)	67.6 / kHz	300	AV (9-90 kHz, 110-490 kHz) QP (others)
0.490 – 1.705	24000/f (kHz)	87.6 / kHz	30	QP
1.705 – 30.0	30	29.5	30	QP
30 – 88	100	40	3	QP
88 – 216	150	43.5	3	QP
216 – 960	200	46	3	QP
> 960	500	54	3	AV (> 1GHz)

Emissions that fall in the restricted bands, as listed in part 15.205, must be less than 54dB μ V/m above 1GHz based on an average detector. The provisions of part 15.35 apply: The Peak limit is 20dB above the average limit. Emissions that fall outside the restricted band must be attenuated by at least 20dB below the fundamental emission based on a 100kHz RBW.

TEST DATA - S/N 364VGLGB0S:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dB μ V	Ant. Pol.	Coax Loss dB	Correction Factor dB	Field Strength dB μ V/m	Margin dB
2,402.00	2,402.00	62	V	3.18	32.33	97.51	29.87
2,402.00	2,402.00	65.2	H	3.18	32.33	100.71	26.67
2,402.00	4,803.92	8.6	V	4.9	34.34	47.84	6.16
2,402.00	4,803.98	14.3	H	4.9	34.34	53.54	0.46
2,402.00	7,206.00	5.8	V	5.72	36.15	47.67	6.33
2,402.00	7,206.00	6.3	H	5.72	36.15	48.17	5.83
2,441.00	2,441.00	59	V	3.21	32.43	94.64	32.74
2,441.00	2,441.00	63	H	3.21	32.43	98.64	28.74
2,441.00	4,882.00	10.3	H	4.94	34.41	49.65	4.35

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com

TEST DATA CONTD.

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Pol.	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
2,441.00	4,882.20	7.8	V	4.94	34.41	47.15	6.85
2,441.00	7,323.00	7	V	5.79	36.29	49.08	4.92
2,441.00	7,323.00	7.7	H	5.79	36.29	49.78	4.22
2,441.00	7,323.00	7.7	V	5.79	36.29	49.78	4.22
2,480.00	2,480.00	62.2	V	3.24	32.54	97.98	29.4
2,480.00	2,480.00	63.1	H	3.24	32.54	98.88	28.5
2,480.00	4,960.00	9.3	V	4.98	34.47	48.75	5.25
2,480.00	4,960.00	9.8	H	4.98	34.47	49.25	4.75
2,480.00	7,440.00	7.7	V	5.86	36.43	49.99	4.01
2,480.00	7,440.00	8	H	5.86	36.43	50.29	3.71

NOTES: The spectrum was investigated for harmonics and spurious emissions up to the 10th harmonic.

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

TIMCO ENGINEERING INC.

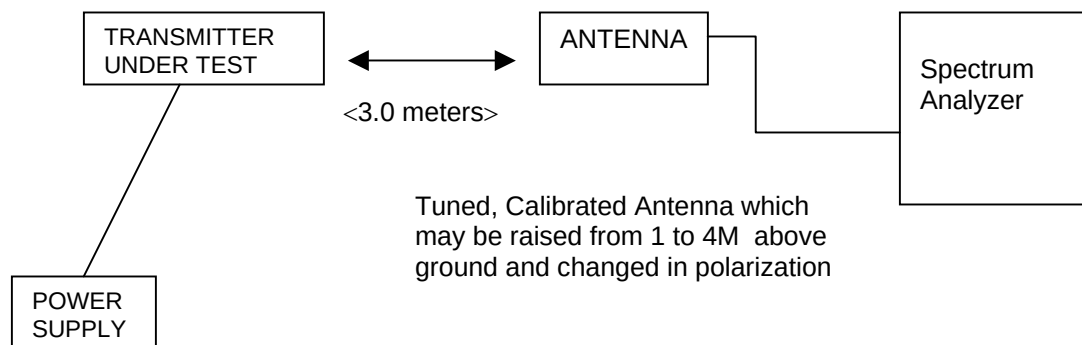
849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com

5.1 METHOD OF MEASURING RADIATED SPURIOUS EMISSIONS



Equipment placed 80cm above ground on a turntable.

METHOD OF MEASUREMENT: The procedure used was ANSI C63.4-2003 Measurements were made at the open field test site of TIMCO ENGINEERING INC. located at 849 N.W. State Road 45, Newberry, FL 32669.

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com

5.2 RADIATED SPURIOUS EMISSIONS INTO ADJACENT RESTRICTED BAND

REQUIREMENTS: Emissions that fall in the restricted bands (15.205). These emissions must be less than or equal to 500 uV/m (54 dBuV/m). Part 15.35(b) applies in the restricted bands.

TEST PROCEDURE: An in band field strength measurement of the fundamental Emission using the RBW and detector function required by ANSI C63.4-2003 and FCC Rules. The procedure was repeated with an average detector and a plot made. The calculated field strength in the adjacent restricted band is presented below.

Fundamental Frequency (MHz)	Field Strength Level of Fundamental (dBuV/m)	Peak or Avg	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) *	Calculated Max. Out of Band Emission Level (dBuV/m) **	Limit (dBuV/m)	Margin (dB)
2402.00	100.71	Peak	2390.00	45.78	54.93	74	19.07
2480.00	98.88	Peak	2483.50	42.92	55.96	74	18.04

* According to step 2 of Marker-Delta Method DA 00-705 (following plots included).

** According to step 3 of Marker-Delta Method:

Calculated Emission Level = Field Strength Level - Delta Marker Level

The frequency hopping function was enabled during testing.

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

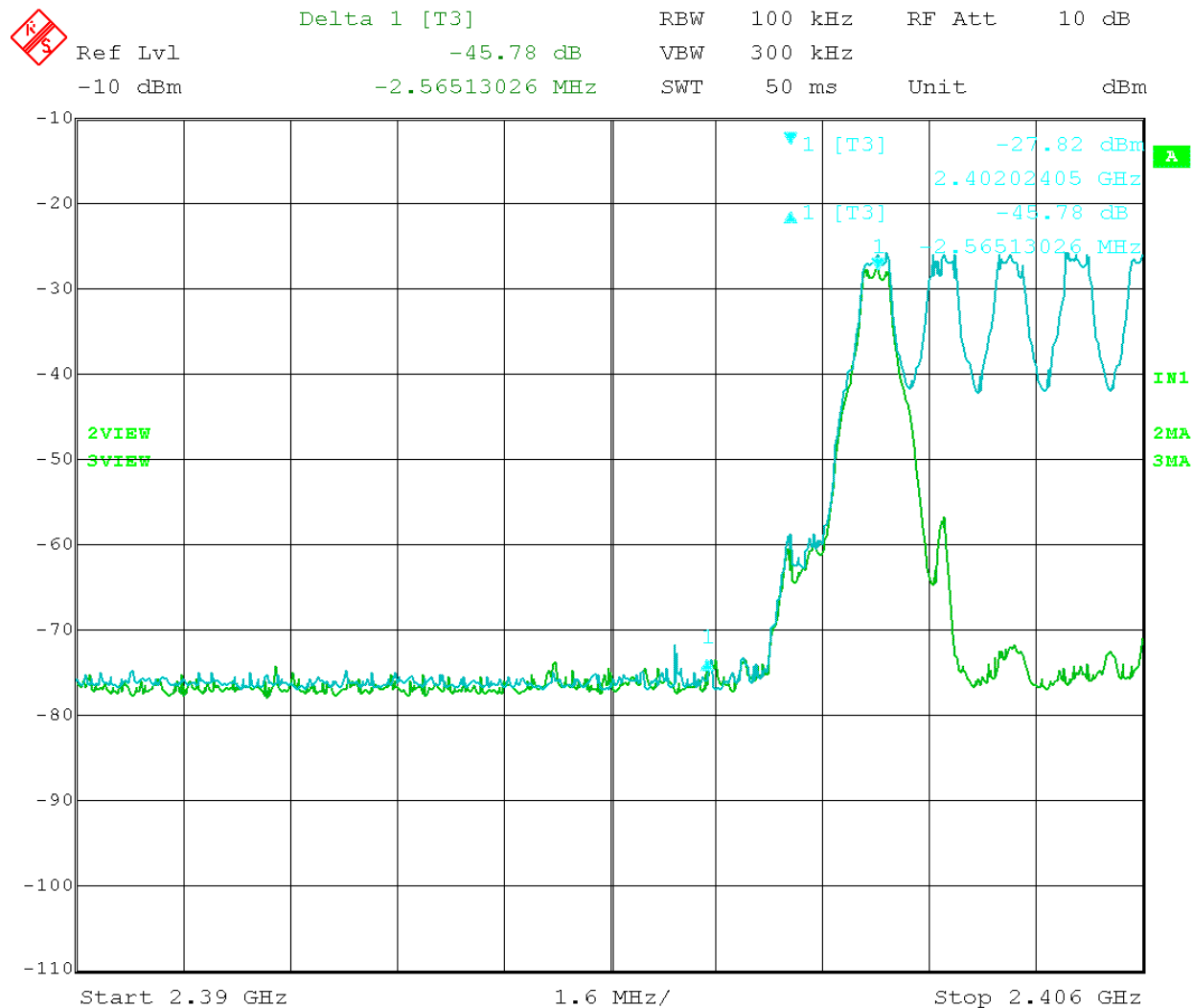
TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com



APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

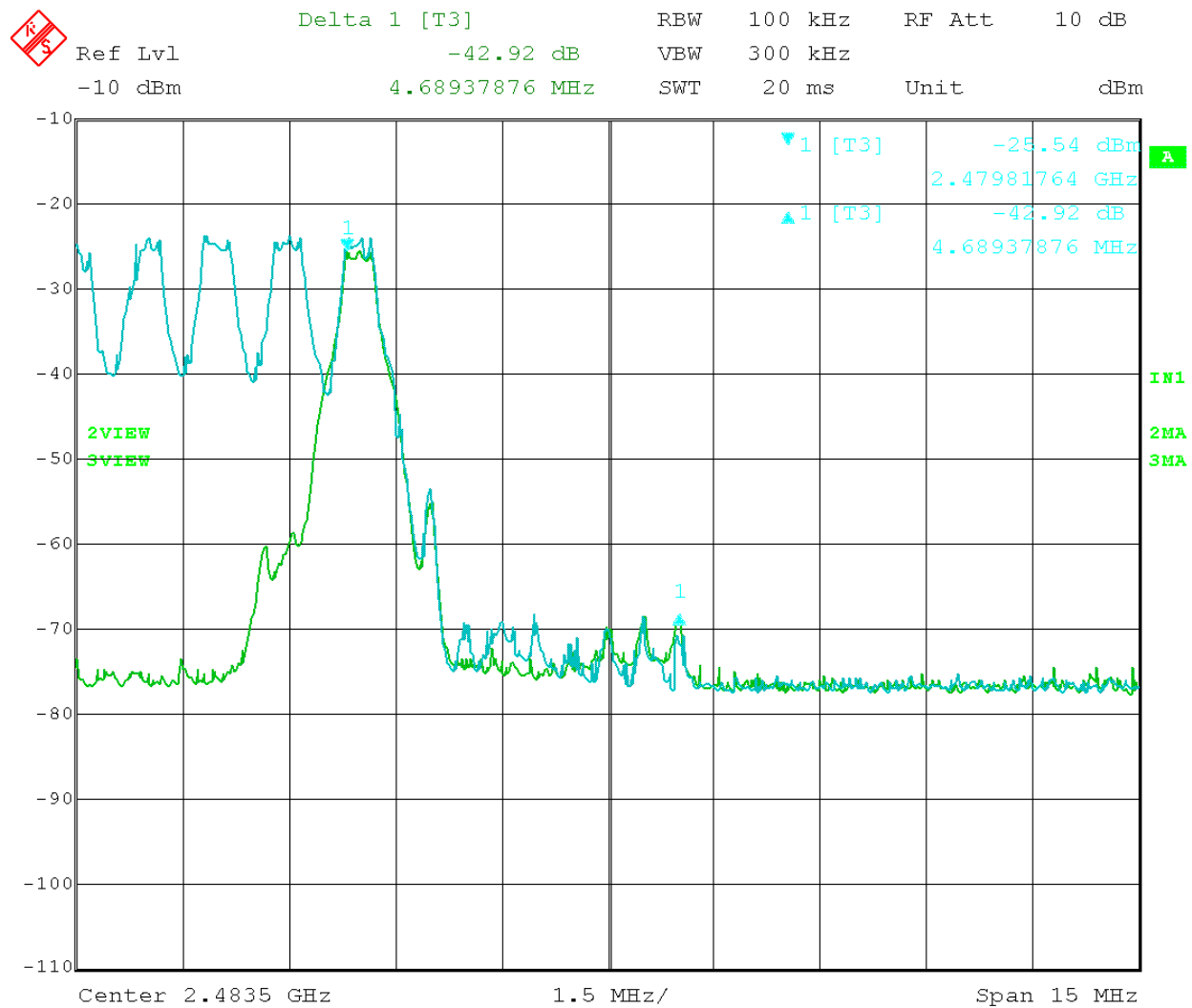
TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com



APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com

5.3 BLUETOOTH MODULATION TEST

- 800 MHz band:

Code	Peak Frequency MHz	Meter Reading dBuV	Ant. Polarity	Field Strength dBuV/m	Margin dB
A	1604.00	10.3	H	41.7	12.3
A	1612.06	10.5	V	41.96	12.04
B	1613.61	9.9	H	41.37	12.63
B	1591.15	9.5	V	40.82	13.18
C	1584.06	9.6	H	40.87	13.13
C	1585.95	9.8	V	41.09	12.91
D	3244.69	9.1	H	46.17	7.83
D	3254.20	9	V	46.08	7.92
E	3246.57	9	H	46.07	7.93
E	3263.42	8.8	V	45.89	8.11
F	3277.23	8	H	45.11	8.89
F	3280.66	8.6	V	45.71	8.29
G	3167.20	9.3	H	46.93	7.07
G	1850.75	12.1	V	45.18	8.82
H	2381.9	9.9	H	45.34	8.66
H	1792.37	14.4	V	47.08	6.92
I	2500.04	10.5	H	46.35	7.65
I	2496.24	9.5	V	45.34	8.66

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: info@timcoengr.com

- 900 MHz band:

Code	Peak Frequency MHz	Meter Reading dBuV	Ant. Polarity	Field Strength dBuV/m	Margin dB
A1	1581.10	8.2	H	39.49	14.51
A1	1546.24	8.8	V	39.82	14.18
B1	1501.23	9	H	39.71	14.29
B1	1507.16	8.8	V	39.55	14.45
C1	1511.38	9.3	H	40.08	13.92
C1	1540.17	8.6	V	39.57	14.43
D1	3359.00	7.4	H	44.59	9.41
D1	3372.50	7.5	V	44.72	9.28
E1	3369.24	7.6	H	44.8	9.2
E1	3372.04	7.7	V	44.9	9.1
F1	3377.59	7.5	H	44.72	9.28
F1	3371.58	7.8	V	45	9
G1	2459.5	8.8	H	44.51	9.49
G1	2452.69	8.4	V	44.09	9.91
H1	1792.24	15.1	H	47.78	6.22
H1	1792.32	12.7	V	45.38	8.62
I1	2500.15	9.8	H	45.65	8.35
I1	2499.95	9.5	V	45.35	8.65

APPLICANT: MOTOROLA PCS

MODEL #: i876

FCC ID: IHDT56HF1

REPORT #: W:\M\MOTOROLA_Libertyville_IL\951EUT7\951EUT7TestReport.doc