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COMPLIANCE TEST REPORT
PER FCC PART 15.247
AND IC RSS-210

Applicant	MOTOROLA, INC. - Libertyville, IL
Address	600 NORTH U.S. HWY 45 LIBERTYVILLE ILLINOIS 60048-5343 USA
FCC ID	FCC ID: IHDP56KR1
IC CERT NO.	IC: 109O-KR1
MODEL NUMBER	H76XAH6JR7AN
Product Description	iDEN/ISM/ BT/GPS/PHONE
Date Sample Received	7/2/2009
Date Tested	7/9/2009
Tested By	Richard Block & Nam Nguyan
Approved By	Mario de Aranzeta
Report Number	1498CUT9TestReport_BT.pdf
Test Results	☒ PASS ☐ FAIL

**THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL
WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.**



Certificate # 0955-01

TABLE OF CONTENT

ATTESTATIONS	3
REPORT SUMMARY	4
TEST ENVIRONMENT AND TEST SETUP	4
TEST SUPPORTING EQUIPMENT	4
DUT SPECIFICATION	5
EMC EQUIPMENT LIST	6
TEST PROCEDURES	7
RADIATION INTERFERENCE	8
BAND EDGE COMPLIANCE	11
POWER LINE CONDUCTED INTERFERENCE	15

Applicant: MOTOROLA, INC. - Libertyville, IL

FCC ID: IHDP56KR1, IC: 109O-KR1

Report: M\MOTOROLA_Libertyville_IL\1498CUT9\1498CUT9TestReport_BT.doc

ATTESTATIONS

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.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.



Testing Certificate # 0955-01

I attest that the necessary measurements were made, under my supervision, at:

Timco Engineering Inc.
849 NW State Road 45
Newberry, Fl 32669

Authorized Signatory Name: *Mario de Aranzeta*

Mario de Aranzeta C.E.T.
Compliance Engineer/ Lab. Supervisor

Date: **7/23/2009**

REPORT SUMMARY

Disclaimer:	The test results relate only to the items tested.
Purpose of Test:	To demonstrate that the DUT is compliant with FCC Pt 15.247 requirements for a FHSS radio. To demonstrate that the DUT is compliant with IC RSS-210 requirements for a FHSS radio.
Applicable Standards:	FCC Pt 15.247, ANSI C63.4: 2003, ANSI TIA-603: 2004, FCC Pt 15.109, RSS-210, RSS-GEN
Related Reports:	1489AUT9TestReport_iDEN_PCS.pdf 1489BUT9TestReport_MT.pdf 1489CUT9TestReport_BT.pdf 1489EUT9TestReport_GPS_DoC.pdf

TEST ENVIRONMENT AND TEST SETUP

Test Facilities:	All measurements were made at one or more of the test sites of TIMCO ENGINEERING INC. located at 849 N.W. State Road 45, Newberry, FL 32669.
Laboratory Test Conditions:	Temperature: 26°C Humidity: 55%
Test Exercise:	The DUT was set in continuous transmit mode of operation.
Deviation to the Standards:	There was no deviation from the standard.
Modification to the DUT:	No modification was made.
Supporting Accessories:	None

TEST SUPPORTING EQUIPMENT

Supporting Device	Manufacturer	Model / FCC ID	Serial Number
N/A			

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DUT SPECIFICATION

Applicable Standard	Part 15.247		
DUT Description	iDEN/ISM/ BT GPS PHONE		
FCC ID	FCC ID: IHDP56KR1		
IC CERT NO.	IC: 109O-KR1		
MODEL NUMBER	H76XAH6JR7AN		
Project Name	i410		
Serial Number	364VKK3NC8		
Hardware	P1A		
Software	DA9.00.05		
Operating Frequency	TX: 2.402 – 2.480 GHz	RX: Same	
DUT Power Source	☐ 110–120Vac/50– 60Hz		
	☐ DC Power		
	☒ Battery Operated Exclusively		
Test Item	☐ Prototype	☒ Pre-Production	☐ Production
Type of Equipment	☐ Fixed	☐ Mobile	☒ Portable
Antenna Connector	None		

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EMC EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/20/07	3/19/10
3-Meter OATS	TEI	N/A	N/A	Listed 1/11/09	1/10/12
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	Listed 5/11/07	5/11/10
AC Voltmeter	HP	400FL	2213A14499	CAL 12/29/08	12/29/10
Analyzer Tan Tower Quasi-Peak Adapter	HP	85650A	3303A01690	CAL 11/30/07	11/30/09
Analyzer Tan Tower RF Preselector	HP	85685A	3221A01400	CAL 11/30/07	11/30/09
Analyzer Tan Tower Spectrum Analyzer	HP	8566B Opt 462	3138A07786 3144A20661	CAL 11/30/07	11/30/09
Analyzer Tan Tower Preamplifier	HP	8449B-H02	3008A00372	CAL 11/30/07	11/30/09
Coaxial Cable #64	Semflex Inc.	60637	Timco #64	CHAR 3/30/09	3/30/11
Antenna: Dipole Kit	Electro-Metrics	TDA-30/1-4	152	CAL 3/3/09	3/3/12
Antenna: Dipole Kit	Electro-Metrics	TDA-30/1-4	153	CHAR 4/5/09	4/5/12
Frequency Counter	HP	5385A	2730A03025	CAL 7/6/07	7/6/09
Hygro-Thermometer	Extech	445703	0602	CAL 11/15/07	11/15/09
Antenna: Log-Periodic	Electro-Metrics	LPA-25	1122	CAL 12/1/06	12/1/08
Measuring Tape-7.5M	Kraftixx	7.5M PROFI		CHAR 11/13/07	11/13/09
Modulation Analyzer	HP	8901A	3435A06868	CAL 5/9/09	5/9/11
Digital Multimeter	Fluke	FLUKE-77-3	79510405	CAL 5/14/09	5/14/11
System One	Audio Precision	System One	SYS1-45868	CHAR 2/27/08	2/27/10
Temperature Chamber	Tenney Engineering	TTRC	11717-7	CHAR 4/25/08	4/25/10

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TEST PROCEDURES

Radiation Interference: ANSI C63.4-2003 using a spectrum analyzer, a preselector, a quasi-peak adapter, and an appropriate antenna. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100 kHz with an appropriate sweep speed and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was searched to at least the tenth (10) harmonic of the fundamental.

Formula Of Conversion Factors: The field strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the preselector was accounted for in the spectrum analyzer meter reading.

Example:

Freq (MHz)	Meter Reading	+ ACF	+ CL	= FS
33	20 dBuV	+ 10.36 dB	+ 0.5	= 30.86 dBuV/m @ 3m

Power Line Conducted Interference: The procedure used was ANSI C63.4-2003 using a 50uH LISN. Both lines were observed. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The spectrum was scanned from 0.15 to 30 MHz.

Occupied Bandwidth: A small sample of the transmitter output was fed into the spectrum analyzer and the attached plot was printed. The vertical scale is set to -10 dBm per division.

ANSI C63.4-2003 10.1 Measurement Procedures: The DUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The DUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. Emissions attenuated more than 20 dB below the permissible value are not reported.

RADIATION INTERFERENCE

Rules Part No.: 15.247, 15.209

Requirements:

Frequency	Limits
Part 15.209	
9 to 490 kHz	2400/F (kHz) $\mu\text{V}/\text{m}$ @ 300 meters
490 to 1705 kHz	24000/F (kHz) $\mu\text{V}/\text{m}$ @ 30 meters
1705 kHz to 30 MHz	29.54 dB $\mu\text{V}/\text{m}$ @ 30 meters
30 – 88	40.0 dB $\mu\text{V}/\text{m}$ @ 3 meters
80 – 216	43.5 dB $\mu\text{V}/\text{m}$ @ 3 meters
216 – 960	46.0 dB $\mu\text{V}/\text{m}$ @ 3 meters
Above 960	54.0 dB $\mu\text{V}/\text{m}$ @ 3 meters

Test Data: Peak unless noted otherwise

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dB μV	Ant. Polarity V/H	Coax Loss dB/m	Correction Factor dB/m	Field Strength dB $\mu\text{V}/\text{m}$	Margin dB
2,402.0	2,402.00	56.5	V	3.18	32.25	91.93	2.07
2,402.0	2,402.00	57.9	H	3.18	32.25	93.33	0.67
2,402.0	4,804.00	7.4	H	4.90	34.10	46.40	7.60
2,402.0	4,804.00	7.8	V	4.90	34.10	46.80	7.20
2,402.0	7,206.00	5.5	H	5.72	36.04	47.26	6.74
2,402.0	7,206.00	6.3	V	5.72	36.04	48.06	5.94
2,402.0	9,608.00	5.2	V	6.78	36.71	48.69	5.31
2,402.0	9,608.00	6.6	H	6.78	36.71	50.09	3.91
2,402.0	12,010.00	3.5	V	7.81	38.71	50.02	3.98
2,402.0	12,010.00	5.2	H	7.81	38.71	51.72	2.28
2,441.0	2,441.00	57.8	V	3.21	32.35	93.36	0.64
2,441.0	2,441.00	58.4	H	3.21	32.35	93.96	0.04
2,441.0	4,882.00	7.0	H	4.94	34.10	46.04	7.96
2,441.0	4,882.00	8.2	V	4.94	34.10	47.24	6.76
2,441.0	7,323.00	4.7	V	5.79	36.06	46.55	7.45
2,441.0	7,323.00	6.3	H	5.79	36.06	48.15	5.85
2,441.0	9,764.00	5.0	V	6.83	36.86	48.69	5.31
2,441.0	9,764.00	5.4	H	6.83	36.86	49.09	4.91
2,441.0	12,205.00	4.0	H	7.94	38.86	50.80	3.20
2,441.0	12,205.00	4.3	V	7.94	38.86	51.10	2.90

[Continued]

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FCC ID: IHDP56KR1, IC: 109O-KR1

Report: M\MOTOROLA_Libertyville_IL\1498CUT9\1498CUT9TestReport_BT.doc

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBμV	Ant. Polarity	Coax Loss dB	Correction Factor dB/m	Field Strength dBμV/m	Margin dB
2,480.0	2,480.00	54.8	H	3.24	32.45	90.49	3.51
2,480.0	2,480.00	57.8	V	3.24	32.45	93.49	0.51
2,480.0	4,960.00	4.4	V	4.98	34.10	43.48	10.52
2,480.0	4,960.00	5.5	H	4.98	34.10	44.58	9.42
2,480.0	7,440.00	5.2	H	5.86	36.09	47.15	6.85
2,480.0	7,440.00	5.7	V	5.86	36.09	47.65	6.35
2,480.0	9,920.00	3.7	V	6.88	37.02	47.60	6.40
2,480.0	9,920.00	4.3	H	6.88	37.02	48.20	5.80
2,480.0	12,400.00	2.9	H	8.08	39.02	50.00	4.00
2,480.0	12,400.00	4.0	V	8.08	39.02	51.10	2.90

iDEN + BT Co-location

For TX iDEN 800 MHz band

Bluetooth Signal set to hopping, Tx discrete frequency

	Frequency		Code	Peak	Horizontal		Peak	Vertical		Limit	Margin
	Bluetooth	TX			Reading	E-Field		Reading	E-Field		
	MHz	MHz			MHz	dBμV	MHz	dBμV	dBμV/m	dBμV/m	dB
fht-ftx	hopping	806.0625	A	1656	15.5	47.1	1643	15.6	47.1	54	6.9
		813.5625	B	1617	16.1	47.4	1618	15.5	46.8	54	6.6
		824.9875	C	1609	15.9	47.2	1612	16.4	47.7	54	6.3
fht-ftx	hopping	806.0625	D	3252	7.9	44.4	3260	8.4	44.9	54	9.1
		813.5625	E	3263	8.1	44.6	3279	8.7	45.3	54	8.7
		824.9875	F	3262	8.4	44.9	3263	8.4	44.9	54	9.1

hopping = 2402 to 2480 MHz

[Continued]

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Report: M\MOTOROLA_Libertyville_IL\1498CUT9\1498CUT9TestReport_BT.doc

For TX iDEN 800 MHz band

Bluetooth and TX signals set to discrete values

	Frequency		Code	Peak	Horizontal		Peak	Vertical		Limit	Margin
	Bluetooth	TX			Reading	E-Field		Reading	E-Field		
	MHz	MHz			dBμV	dBμV/m		dBμV	dBμV/m		
fbt-fts	2441	824.9875	G	1616	16.1	47.4	1616	15.7	47.0	54	6.6
	2402	824.9875	H	1577	14.7	45.8	1577	15.6	46.7	54	7.4
	2480	824.9875	I	1655	16.2	47.8	1655	15.8	47.4	54	6.2
fbs+fts	2441	824.9875	G	3266	6.8	43.4	3266	6.6	43.2	54	10.7
	2402	824.9875	H	3227	7.8	44.3	3227	7.5	44.0	54	9.7
	2480	824.9875	I	3305	7.5	44.1	3305	7.3	43.9	54	9.9

For TX iDEN 900 MHz band

Bluetooth Signal set to hopping, Tx discrete

	Frequency		Code	Peak	Horizontal		Peak	Vertical		Limit	Margin
	Bluetooth	TX			Reading	E-Field		Reading	E-Field		
	MHz	MHz			dBμV	dBμV/m		dBμV	dBμV/m		
fbs-fts	hopping	896.01875	A1	1570	15.7	46.7	1549	15.3	46.3	54	7.3
		901.98125	C1	1575	15.3	46.3	1547	15.1	45.9	54	7.7
fbs+fts	hopping	896.01875	D1	3342	8.3	44.9	3373	7.6	44.3	54	9.1
		901.98125	F1	3377	8.1	44.8	3376	7.7	44.4	54	9.2

hopping = 2402 to 2480 MHz

For TX iDEN 900 MHz band

Bluetooth and TX signals set to discrete values

	Frequency		Code	Peak	Horizontal		Peak	Vertical		Limit	Margin
	Bluetooth	TX			Reading	E-Field		Reading	E-Field		
	MHz	MHz			dBμV	dBμV/m		dBμV	dBμV/m		
fbs-fts	2441	901.98125	G1	1539	14.8	45.6	1539	14.7	45.5	54	8.4
	2402	901.98125	H1	1500	13.8	44.3	1500	13.5	44.0	54	9.7
	2480	901.98125	I1	1578	14.5	45.6	1578	14.1	45.2	54	8.4
fbs+fts	2441	901.98125	G1	3343	6.6	43.2	3343	5.7	42.3	54	10.8
	2402	901.98125	H1	3304	6.7	43.3	3304	5.6	42.2	54	10.7
	2480	901.98125	I1	3382	6.9	43.6	3382	7.2	43.9	54	10.1

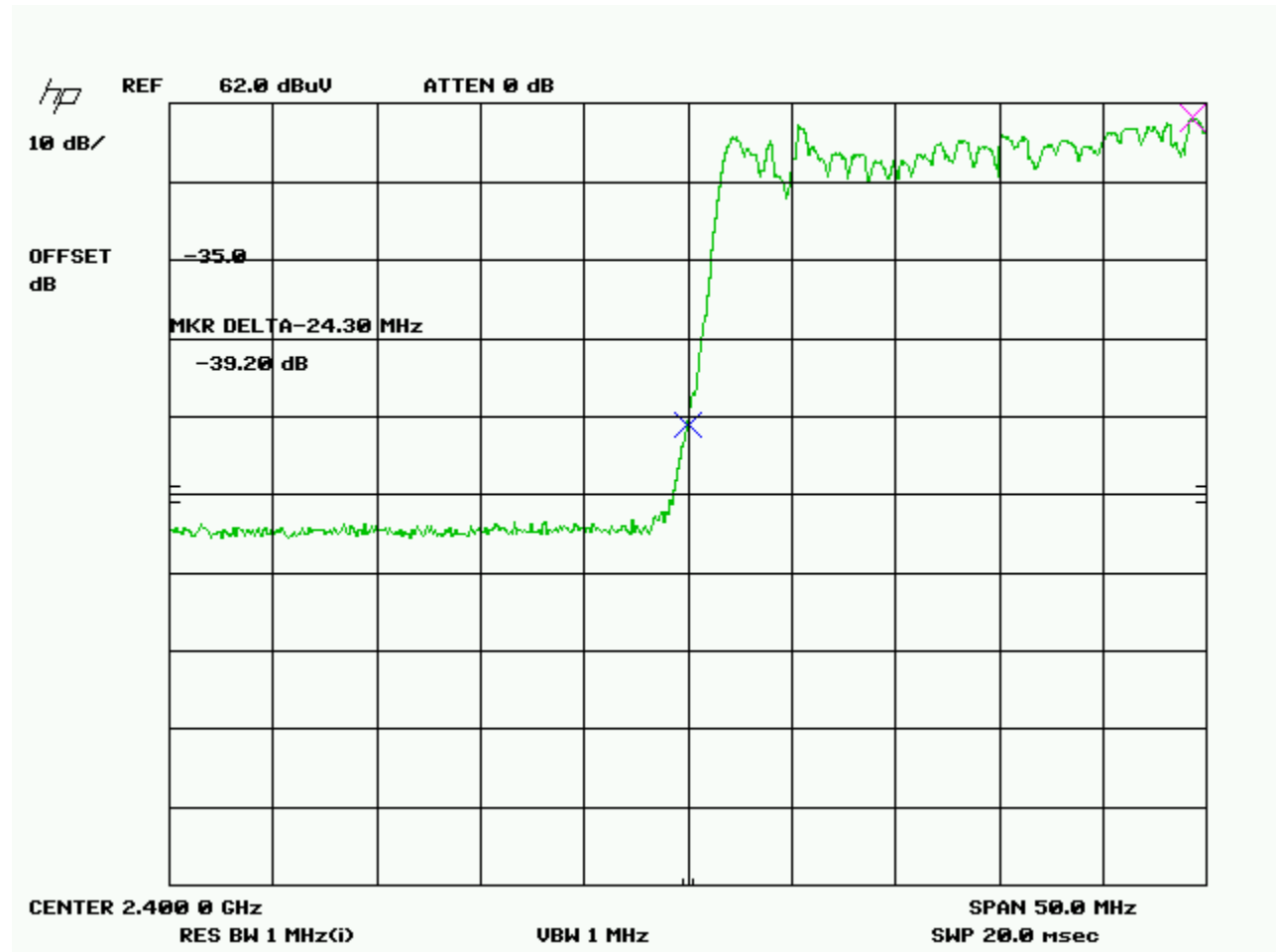
BAND EDGE COMPLIANCE

Rules Part No.: FCC Pt 15.247 (d), RSS-210

Requirements: Restricted bands 54 dB μ V/m.

Test Data:

Lower bandedge (Peak)



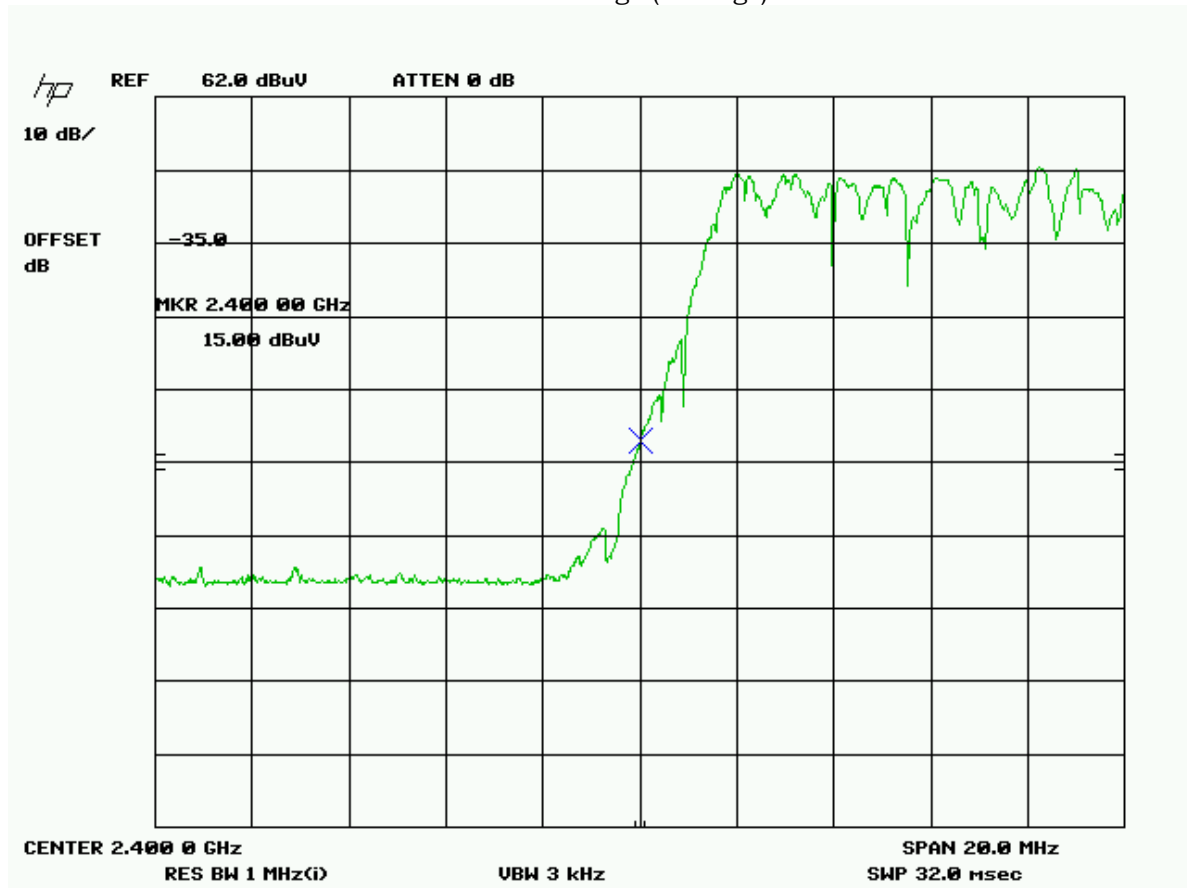
Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dB μ V	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dB μ V/m	Margin dB
2402.00	2,400.00	21.2	V	3.18	32.24	56.62	17.38

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FCC ID: IHDP56KR1, IC: 1090-KR1

Report: M\MOTOROLA_Libertyville_IL\1498CUT9\1498CUT9TestReport_BT.doc

Lower bandedge (Average)



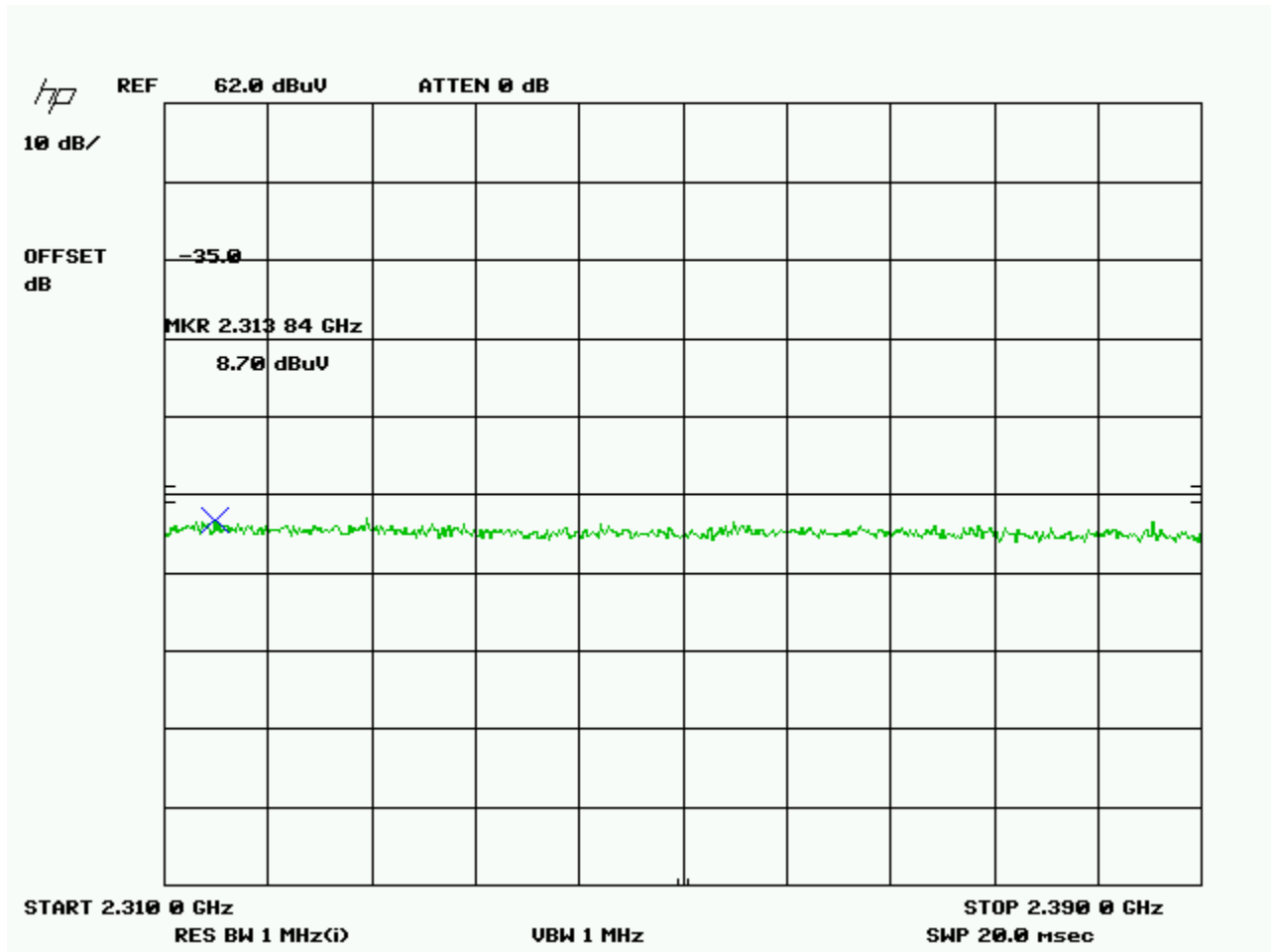
Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBμV	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dBμV/m	Margin dB
2402.00	2,400.00	15.0	V	3.18	32.24	50.42	3.58

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Report: M\MOTOROLA_Libertyville_IL\1498CUT9\1498CUT9TestReport_BT.doc

Lower non-adjacent restricted band



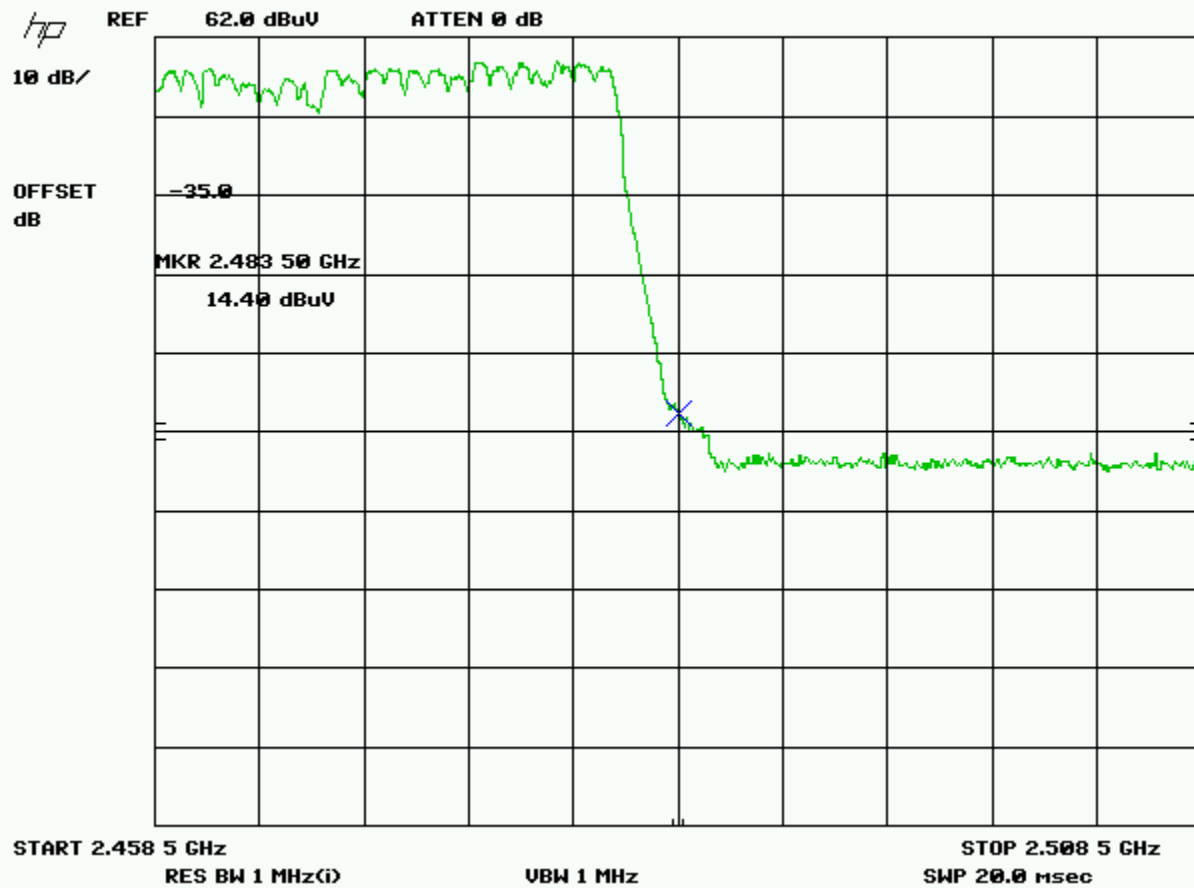
Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBμV	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dBμV/m	Margin dB
2,318.8	2,318.84	8.7	V	3.12	32.03	43.85	10.15

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Report: M\MOTOROLA_Libertyville_IL\1498CUT9\1498CUT9TestReport_BT.doc

Upper bandedge



Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBμV	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dBμV/m	Margin dB
2,483.5	2,483.50	14.4	V	3.25	32.48	50.13	3.87

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Report: M\MOTOROLA_Libertyville_IL\1498CUT9\1498CUT9TestReport_BT.doc

POWER LINE CONDUCTED INTERFERENCE

Rules Part No.: FCC Pt 15.207, RSS-GEN

Requirements:

Frequency (MHz)	Quasi Peak Limits (dB μ V)	Average Limits (dB μ V)
0.15 – 0.5	66 – 56 *	56 – 46 *
0.5 – 5.0	56	46
5.0 – 30	60	50
* Decrease with logarithm of frequency		

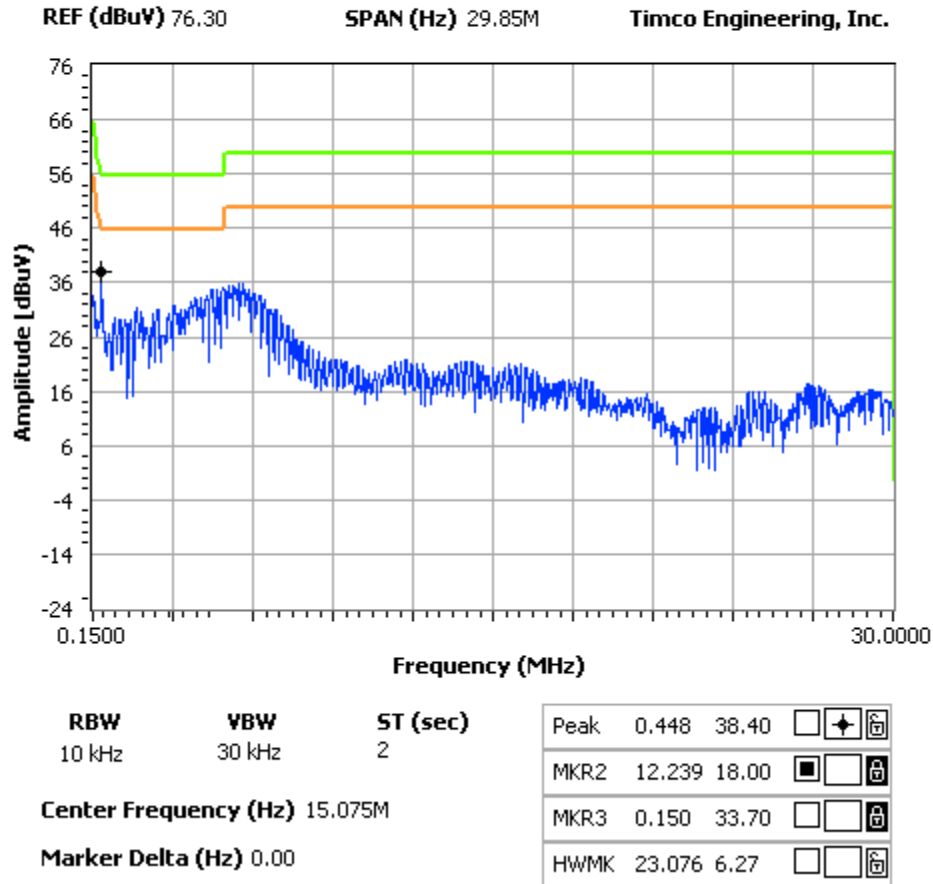
Test Data: The following plots represent the emissions read for power line conducted.
Both lines were observed.

ADAPTOR CHARGING, TX ON
BLUETOOTH -- HOPPING
POWERLINE CONDUCTED EMISSIONS – LINE 1

NOTES:

POWERLINE CONDUCTED -- LINE 1
ADAPTOR CHARGING --BT HOPPING

FCC 15.107 Mask Class B



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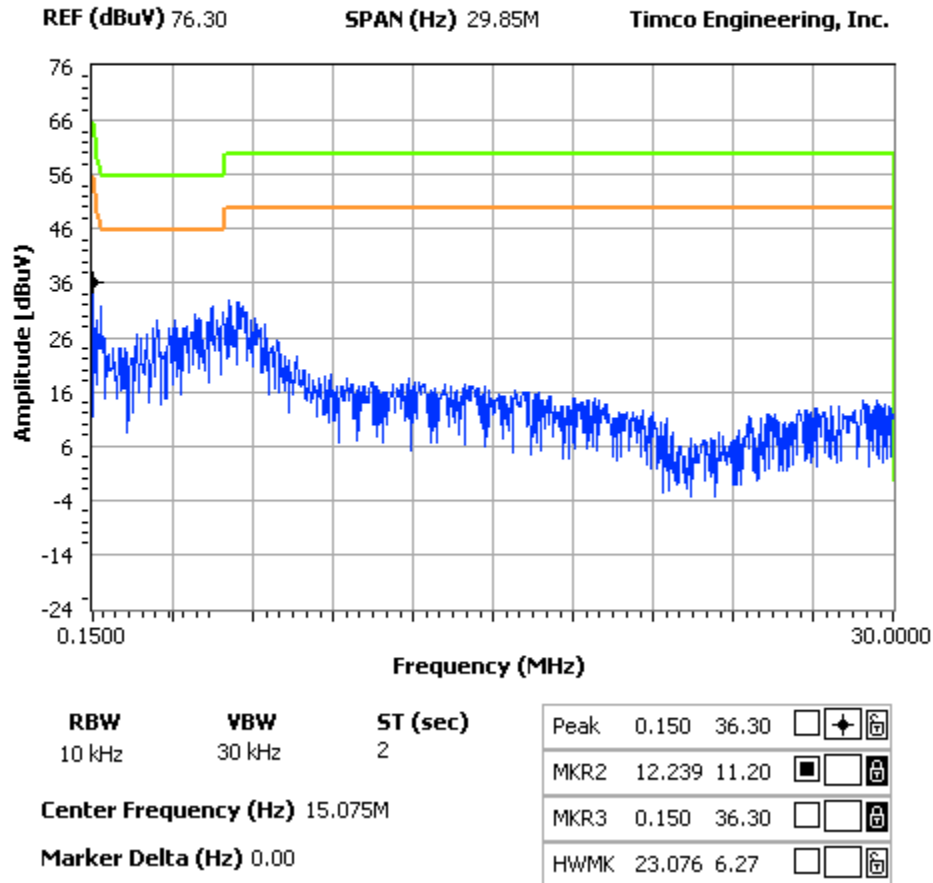
Report: M\MOTOROLA_Libertyville_IL\1498CUT9\1498CUT9TestReport_BT.doc

POWERLINE CONDUCTED EMISSIONS – LINE 2

NOTES:

POWERLINE CONDUCTED -- LINE 2
ADAPTOR CHARGING --BT HOPPING

FCC 15.107 Mask Class B



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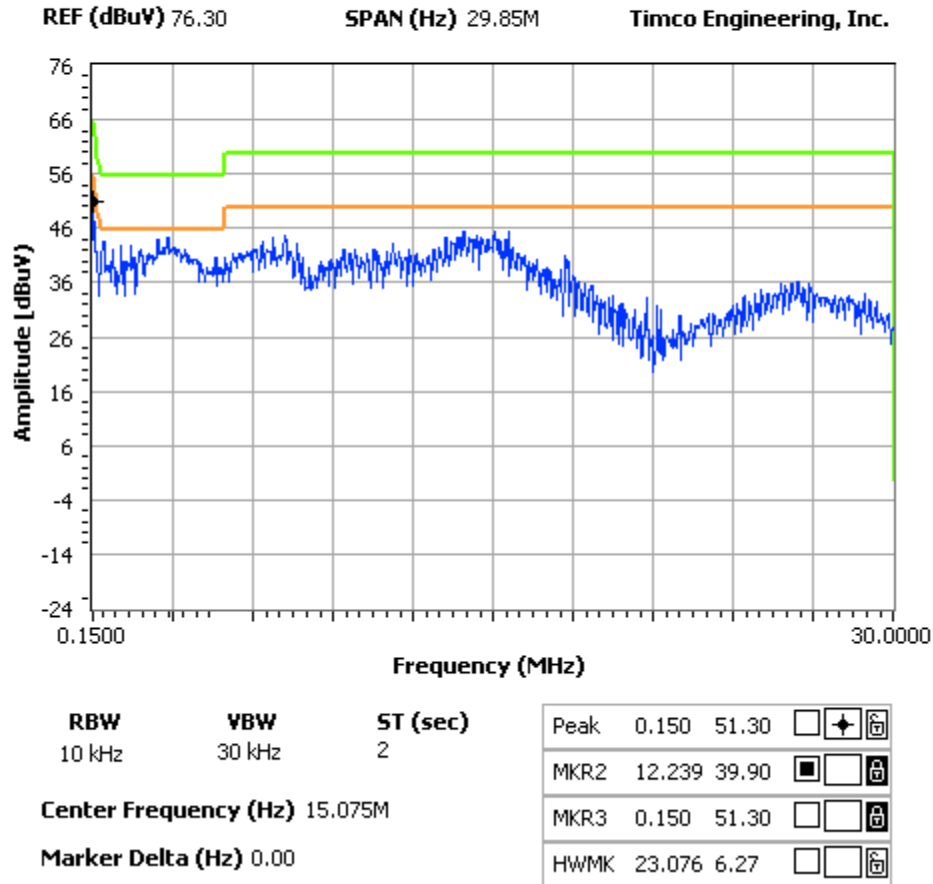
Report: M\MOTOROLA_Libertyville_IL\1498CUT9\1498CUT9TestReport_BT.doc

USB CHARGING, TX ON
BLUETOOTH -- HOPPING
POWERLINE CONDUCTED EMISSIONS – LINE 1

NOTES:

POWERLINE CONDUCTED -- LINE 1
USB CHARGING --BT HOPPING

FCC 15.107 Mask Class B



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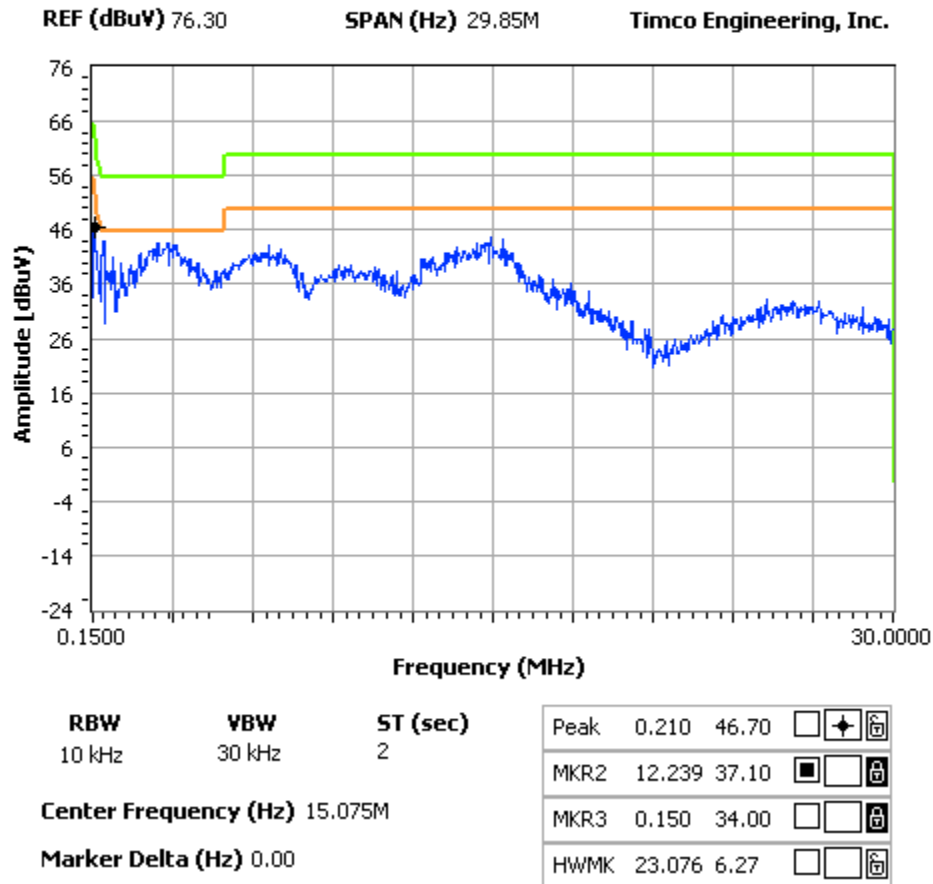
Report: M\MOTOROLA_Libertyville_IL\1498CUT9\1498CUT9TestReport_BT.doc

POWERLINE CONDUCTED EMISSIONS – LINE 2

NOTES:

POWERLINE CONDUCTED -- LINE 2
USB CHARGING --BT HOPPING

FCC 15.107 Mask Class B



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