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COMPLIANCE TEST REPORT

PER FCC PT 15.247 FHSS

AND IC RSS-210

APPLICANT	MOTOROLA, INC. - Libertyville, IL 600 NORTH U.S. HWY 45 LIBERTYVILLE ILLINOIS 60048-5343 USA
FCC ID	FCC ID: IHDP56KR2
IC CERT NO.	IC: 109O-KR2
MODEL NUMBER	H76XAH6JR7BN
PRODUCT DESCRIPTION	iDEN/ISM GPS PHONE
DATE SAMPLE RECEIVED	7/2/2009
DATE TESTED	7/9/2009
TESTED BY	Richard Block & Nam Nguyan
APPROVED BY	Mario de Aranzeta
TIMCO REPORT NO.	1630BUT9TestReport_MT.pdf
TEST RESULTS	☒ PASS ☐ FAIL

ACCREDITED
Certificate # 0955-01

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ATTESTATION

This equipment has been tested in accordance with the standards identified in the referenced 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.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025:2005 requirements.

I attest that the necessary measurements were made by me or under my supervision, at Timco Engineering, Inc. located at 849 N.W. State Road 45, Newberry, Florida 32669 USA.

ACCREDITED

Testing Certificate #0955-01

AUTHORIZED BY: Mario de Aranzeta

SIGNATURE: On file

FUNCTION: Lab Supervisor/ Test Engineer

DATE: July 21, 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:	1630AUT9TestReport_iDEN_PCS.pdf 1630BUT9TestReport_MT.pdf 1630CUT9TestReport_GPS_DoC.pdf 1630DUT9TestReport_Rx.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

DUT DESCRIPTION

DUT Description	iDEN/ISM GPS PHONE
FCC ID	FCC ID: IHDP56KR2
IC CERT NO.	IC: 109O-KR2
MODEL NUMBER	H76XAH6JR7BN
Project Name	i410
Serial Number	364VKK3NC8
Hardware	P1A
Software	DA9.00.05
Maximum Output Power	0.890 W
Operating Frequency	TX: 902.525 – 927.675 MHz
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	Internal
Antenna Connector	N/A

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

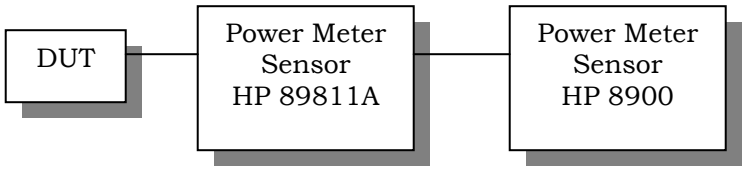
TEST PROCEDURES

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI C63.4-2003 using a 50uH LISN. Both lines were observed with the DUT transmitting. The resolution bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

BANDWIDTH 20 dB: The measurements were made with the spectrum analyzer's resolution bandwidth (RBW) = 1 MHz and the video bandwidth (VBW) = 3 MHz and the span set as shown on plot.

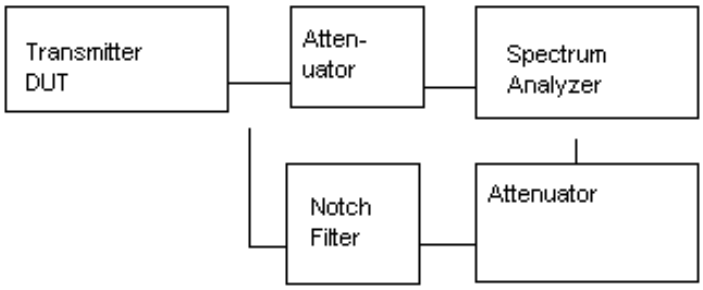
RF Power Output: The RF power output was measured at the antenna feed point using a peak power meter.

Output Power Test Setup Diagram



ANTENNA CONDUCTED EMISSIONS: The RBW = 100 kHz, VBW = 300 kHz and the span set to 10.0 MHz and the spectrum was scanned from 30 MHz to the 10th Harmonic of the fundamental. Above 1 GHz the resolution bandwidth was 1 MHz and the VBW = 3 MHz and the span to 50 MHz. Power was measured by disconnecting the antennas and measuring across a 50 ohm load as recommended by the manufacturer using a peak power meter. The antenna is non-directional and doesn't exceed 6 dBi gain. The power output was measured at three places in the band highest is reported below.

Spurious Emissions at Antenna Terminals



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RADIATION INTERFERENCE: The test procedure used was ANSI C63.4-2003 using an Agilent spectrum receiver with preselector. The bandwidth (RBW) of the spectrum receiver was 100 kHz up to 1 GHz and 1 MHz above 1 GHz with an appropriate sweep speed. The VBW above 1 GHz was 3 MHz. The analyzer was calibrated in dB above a microvolt at the output of the antenna.

RADIATED SPURIOUS EMISSIONS INTO ADJACENT RESTRICTED BAND: An in band field strength measurement of the fundamental emission using the RBW and detector function required by ANSI C63.4-2003 and the FCC rules.

POWER OUTPUT (conducted)

Rules Part No.: 15.247(b), RSS-210

Requirements: The maximum peak output power shall not exceed 1 watt (30 dBm). If directional transmitting antennas with a gain of more than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Data:

Frequency MHz	Power mW
902.525	890
915.525	890
927.475	890

SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Rules Part No.: 15.247(c)

Requirements: Emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.

Note: The spectrum was scanned to the tenth harmonic.

Test Data:

MHz	dBc		MHz	dBc		MHz	dBc
902.525	0.0		915.525	0.0		927.475	0.0
1805.050	*		1831.050	*		1854.950	*
2707.575	*		2746.575	*		2782.425	*
3610.100	*		3662.100	*		3709.900	*
4512.625	*		4577.625	*		4637.375	*
5415.150	*		5493.150	*		5564.850	*
6317.675	*		6408.675	*		6492.325	*
7220.200	*		7324.200	*		7419.800	*
8122.725	*		8239.725	*		8347.275	*
9025.250	*		9155.250	*		9274.750	*

* = 20 dB or more below the limit

FIELD STRENGTH OF SPURIOUS EMISSIONS

Rules Part No.: 15.247(c), 15.205 &15.209(b)

Requirements:

§15.247(c)& §15.205	
(Fundamental) Frequency	(Field Strength) Limits
902 – 928 MHz 2.4 – 2.4835 GHz	127.37 dBµV/m
§15.209	
30 - 88 MHz	40 dBµV/m @3M
88 -216 MHz	43.5 dBµV/m @3M
216 -960 MHz	46 dBµV/m @3M
ABOVE 960 MHz	54dBµV/m

Emissions that fall in the restricted bands (15.205) must be less than or equal to 500 µV/m (54 dBµV/m). Spurious not in a restricted band must be 20 dBc.

Harmonics were measured to the 10th harmonic.

Test Data:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBµV	Ant. Polarity	Coax Loss dB	Correction Factor dB/m	Field Strength dBµV/m	Margin dB
902.5	902.53	73.6	H	1.95	23.33	98.88	*
902.5	902.53	82.4	V	1.95	22.67	107.02	*
902.5	1,805.05	15.6	H	2.74	29.95	48.29	5.71
902.5	1,805.05	17.3	V	2.74	29.95	49.99	4.01
902.5	2,705.58	13.0	V	3.39	32.54	48.93	5.07
902.5	2,705.58	14.4	H	3.39	32.54	50.33	3.67
902.5	3,610.10	5.8	H	4.15	32.98	42.93	11.07
902.5	3,610.10	6.1	V	4.15	32.98	43.23	10.77
902.5	4,512.63	6.4	H	4.76	34.10	45.26	8.74
902.5	4,512.63	6.8	V	4.76	34.10	45.66	8.34
902.5	5,415.15	4.9	H	5.12	34.60	44.62	9.38
902.5	5,415.15	5.8	V	5.12	34.60	45.52	8.48
902.5	6,317.68	6.0	V	5.40	35.65	47.05	6.95
902.5	6,317.68	6.2	H	5.40	35.65	47.25	6.75

[Continued]

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBµV	Ant. Polarity	Coax Loss dB	Correction Factor dB/m	Field Strength dBµV/m	Margin dB
902.5	7,220.20	5.5	H	5.73	36.04	47.27	6.73
902.5	7,220.20	5.7	V	5.73	36.04	47.47	6.53
902.5	8,122.73	5.1	V	6.25	36.00	47.35	6.65
902.5	8,122.73	5.3	H	6.25	36.00	47.55	6.45
902.5	9,025.25	6.1	H	6.61	36.32	49.03	4.97
902.5	9,025.25	6.6	V	6.61	36.32	49.53	4.47
915.5	915.53	72.0	H	1.97	23.34	97.31	*
915.5	915.53	84.5	V	1.97	22.60	109.07	18.31
915.5	1,831.05	16.3	H	2.76	30.12	49.18	4.82
915.5	1,831.05	18.6	V	2.76	30.12	51.48	2.52
915.5	2,746.58	12.4	V	3.42	32.55	48.37	5.63
915.5	2,746.58	15.1	H	3.42	32.55	51.07	2.93
915.5	3,662.10	5.8	V	4.20	33.06	43.06	10.94
915.5	3,662.10	7.0	H	4.20	33.06	44.26	9.74
915.5	4,577.63	6.7	H	4.79	34.10	45.59	8.41
915.5	4,577.63	7.2	V	4.79	34.10	46.09	7.91
915.5	5,493.15	5.9	V	5.15	34.69	45.74	8.26
915.5	5,493.15	6.0	H	5.15	34.69	45.84	8.16
915.5	6,408.68	5.1	V	5.42	35.73	46.25	7.75
915.5	6,408.68	5.8	H	5.42	35.73	46.95	7.05
915.5	7,324.20	5.7	V	5.79	36.06	47.55	6.45
915.5	7,324.20	6.3	H	5.79	36.06	48.15	5.85
915.5	8,239.73	5.3	H	6.30	36.00	47.60	6.40
915.5	8,239.73	6.0	V	6.30	36.00	48.30	5.70
915.5	9,155.25	6.1	H	6.65	36.39	49.14	4.86
915.5	9,155.25	6.2	V	6.65	36.39	49.24	4.76
927.5	927.48	75.9	H	1.99	23.45	101.34	*
927.5	927.48	83.9	V	1.99	22.67	108.56	18.82
927.5	1,854.95	16.4	H	2.78	30.27	49.45	4.55
927.5	1,854.95	20.6	V	2.78	30.27	53.65	0.35
927.5	2,782.43	6.3	H	3.45	32.56	42.31	11.69
927.5	2,782.43	14.1	V	3.45	32.56	50.11	3.89
927.5	3,709.90	6.8	H	4.24	33.14	44.18	9.82
927.5	3,709.90	7.9	V	4.24	33.14	45.28	8.72
927.5	4,637.38	5.9	H	4.82	34.10	44.82	9.18
927.5	4,637.38	6.7	V	4.82	34.10	45.62	8.38
927.5	5,564.85	4.8	V	5.17	34.79	44.76	9.24
927.5	5,564.85	5.3	H	5.17	34.79	45.26	8.74

[Continued]

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBµV	Ant. Polarity	Coax Loss dB	Correction Factor dB/m	Field Strength dBµV/m	Margin dB
927.5	6,492.33	5.1	V	5.45	35.79	46.34	7.66
927.5	6,492.33	5.4	H	5.45	35.79	46.64	7.36
927.5	7,419.80	6.1	H	5.85	36.08	48.03	5.97
927.5	7,419.80	7.1	V	5.85	36.08	49.03	4.97
927.5	8,347.28	5.6	H	6.34	36.00	47.94	6.06
927.5	8,347.28	6.7	V	6.34	36.00	49.04	4.96
927.5	9,274.75	6.0	H	6.68	36.46	49.14	4.86
927.5	9,274.75	6.3	V	6.68	36.46	49.44	4.56

* = 20 dB or more below the limit

All readings are peak unless marked otherwise.

Harmonics were checked through the 10th harmonic.

POWER LINE CONDUCTED INTERFERENCE

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

Requirements:

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

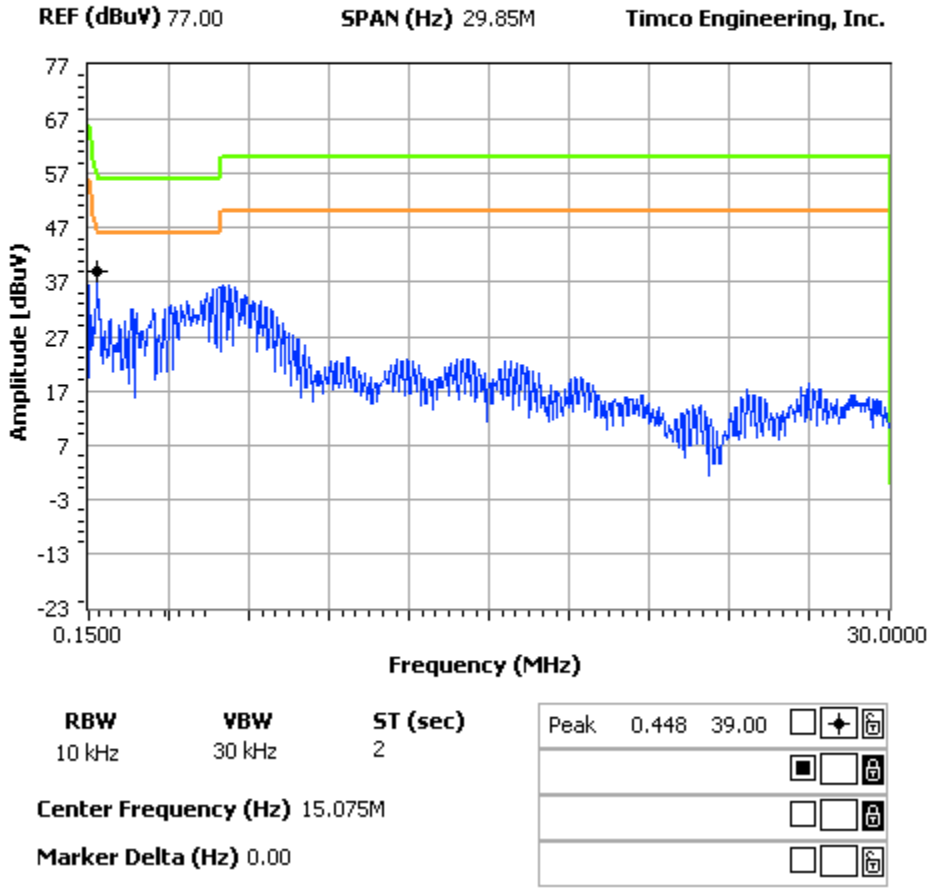
Test Data: The following plots represent the emissions read for power line conducted. Both lines were observed.

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

NOTES:

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

FCC 15.107 Mask Class B

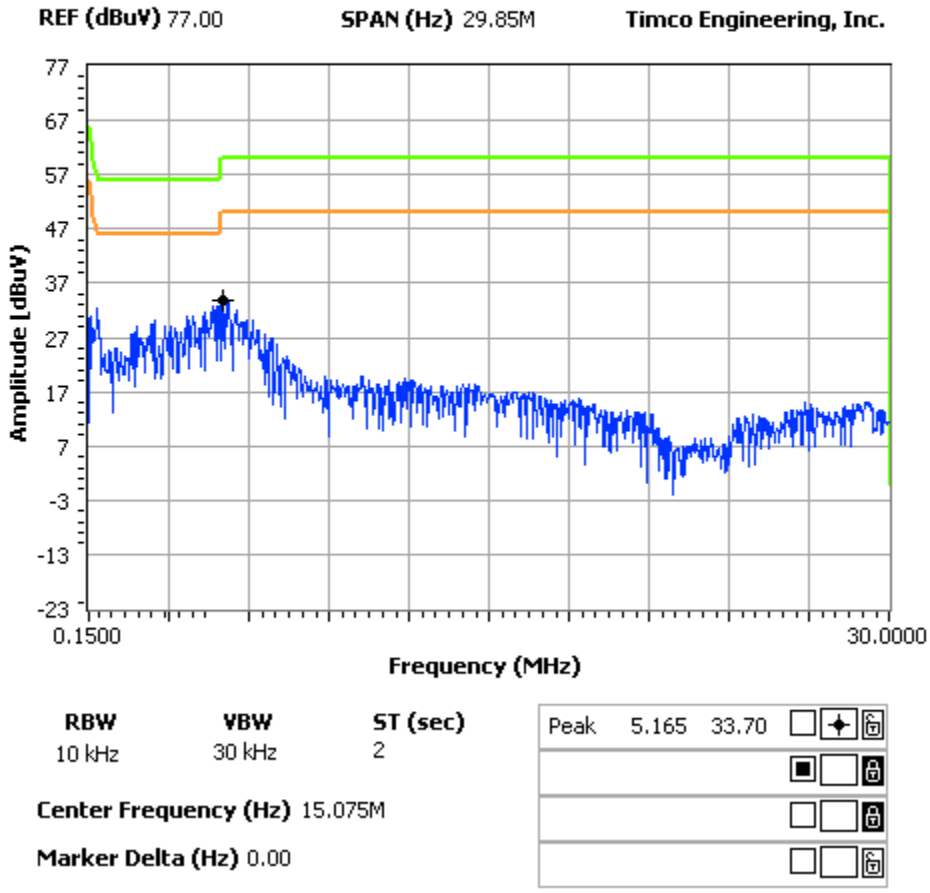


POWERLINE CONDUCTED EMISSIONS – LINE 2

NOTES:

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

FCC 15.107 Mask Class B

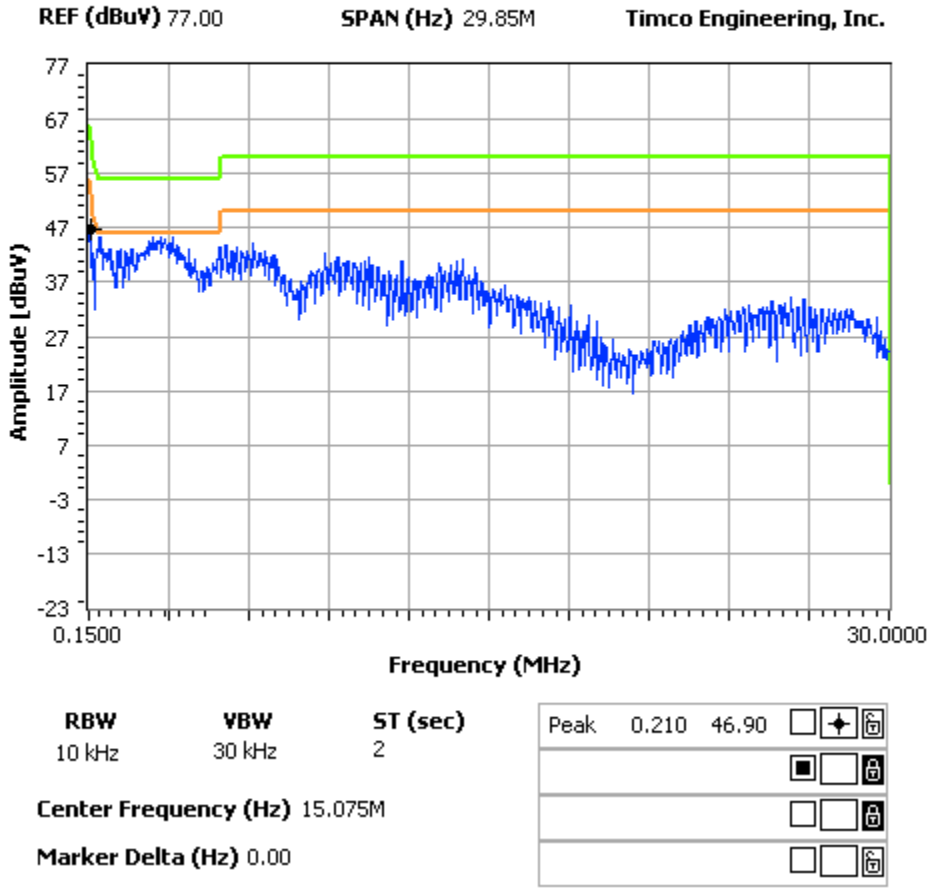


USB CHARGING, TX ON
MOTO TALK -- HOPPING
POWERLINE CONDUCTED EMISSIONS – LINE 1

NOTES:

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

FCC 15.107 Mask Class B



NOTES:

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

FCC 15.107 Mask Class B