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COMPLIANCE TEST REPORT

PER FCC PT 90, PT 24

AND IC RSS-119, RSS-134

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/Narrow Band PCS/ISM GPS PHONE
DATE SAMPLE RECEIVED	7/2/2009
DATE TESTED	7/9/2009
TESTED BY	Richard Block Nam Nguyen
APPROVED BY	Mario de Aranzeta
TIMCO REPORT NO.	1630AUT9TestReport_iDEN_PCS.pdf
TEST RESULTS	☒ PASS ☐ FAIL

ACCREDITED
Certificate # 0955-01

TABLE OF CONTENTS

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 17025:2005 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: July 20, 2009

REPORT SUMMARY

Disclaimer	The test results relate only to the items tested.
Purpose of Test	To demonstrate compliance with FCC CFR 47, Part 90 requirements. To demonstrate compliance with FCC CFR 47, Part 24 requirements for narrow band PCS equipment. To demonstrate compliance with IC RSS-119 requirements. To demonstrate compliance with IC RSS-134 requirements.
Test Standards	ANSI/TIA 603-C: 2004, FCC CFR 47 Part 90, ANSI C63.4: 2003 RSS-119, RSS-134, RSS-GEN
Related Approval	1630AUT9TestReport_iDEN_PCS.pdf 1630BUT9TestReport_ISM.pdf 1630CUT9TestReport_GPS_DoC.pdf

TEST ENVIRONMENT AND TEST SETUP

Test Facility	RF output power and radiated emission were conducted by Timco Engineering Inc. located at 849 NW State Road 45, Newberry, FL 32669 USA
Laboratory Test Condition	The temperature was 26ºC with a relative humidity of 50%.
Deviation from the standards	No deviation
Modification to the DUT	No modification was made.
Test Exercise (software etc.)	The DUT was placed in continuous transmitting mode of operation.
System Setup	Stand alone device.

DUT SPECIFICATION

DUT Description	iDEN/MotoTalk/GPS PHONE
Project Name	i410
FCC ID	FCC ID: IHDP56KR2
IC Cert	IC: 109O-KR2
Model Number	H76XAH6JR7BN
Serial Number	364VKK3NC8
Hardware	P1A
Software	DA9.00.05
Operating Frequency	806.0125 ~ 824.9875 MHz 896.01875 – 901.98125 MHz
DUT Power Source	☐ 110–120Vac/50– 60Hz
	☐ DC Power 12V
	☒ Battery Operated Exclusively
Test Item	☐ Prototype
	☒ Pre-Production
	☐ Production
Type of Equipment	☐ Fixed
	☐ Mobile
	☒ Portable

EQUIPMENT LIST

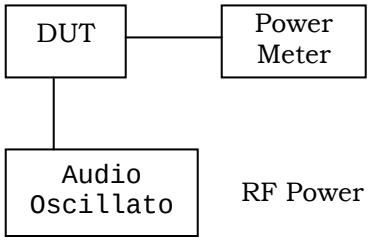
Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/20/07	3/19/10
3-Meter OATS	TEI	N/A	N/A	Listed 1/11/09	1/10/12
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	Listed 5/11/07	5/11/10
AC Voltmeter	HP	400FL	2213A14499	CAL 12/29/08	12/29/10
Analyzer Tan 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 PROCEDURE

Power Line Conducted Interference: The procedure used was ANSI/TIA 603-C:2004, using a 50uH LISN. Both lines were observed with the UUT transmitting. The 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.

Power Output: The RF power output was measured at the antenna feed point using a peak power meter. A 50-ohm, resistive wattmeter was connected to the RF output connector. With a nominal battery voltage or supply voltage, and the transmitter properly adjusted the RF output measures:



RF Power Output Test Setup

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.

Radiation Interference: The test procedure used was ANSI/TIA 603-C:2004, using an Agilent spectrum receiver with pre-selector. The bandwidth (RBW) of the spectrum ANSI/TIA 603-C: 2004, 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. The ambient temperature of the UUT was 76°F with a humidity of 55%.

[Continued]

Modulation Characteristic

Audio frequency response
The audio frequency response was measured in accordance with ANSI/TIA 603-C: 2004. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 – 5000Hz shall be submitted. The audio frequency response curve is shown below.

Audio Low Pass Filter
The audio low pass filter for voice-modulated equipment was measured in accordance with ANSI/TIA 603-C: 2004. For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter, or of all the circuitry installed between the modulation limiter and the modulated stage shall be submitted.

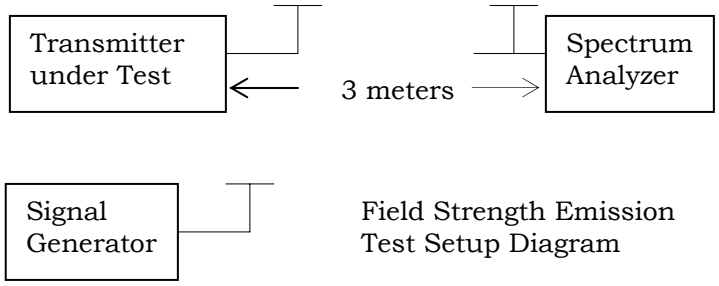
Audio Input versus modulation
The audio input level needed for a particular percentage of modulation was measured in accordance with ANSI/TIA 603-C: 2004. Curves are provided for audio input frequencies of 300, 1000, and 3000 Hz.

Frequency Stability

The frequency stability was measured per ANSI/TIA 603-C: 2004.

Field Strength of Spurious Emissions

The spectrum was scanned from 30 MHz to at least the tenth harmonic of the fundamental. This test was conducted per ANSI/TIA 603-C: 2004 using the substitution method.



Field Strength Emission Test Setup Diagram

RF POWER OUTPUT

Rule Part No.: Pt 2.1046(a), Pt 90, Pt 24, RSS-119, RSS-134

Test Requirements: Pt 2.1046(a), Pt 90, Pt 24, RSS-119, RSS-134

Test Data:

OUTPUT POWER: HIGH – 0.640 Watts

Part 2.1033 (C)(8) DC Input into the final amplifier

FOR HIGH POWER SETTING INPUT POWER: (3.7V)(1.2A) = 4.44 Watts

MODULATION CHARACTERISTICS

Rule Part No.: Part 2.1047(a)(b), Pt 90, Pt 24, RSS-119, RSS-134

Test Requirements: Part 2.1047(a)(b), Pt 90, Pt 24, RSS-119, RSS-134

Test Data:

AUDIO FREQUENCY RESPONSE PLOT

N/A
Digital Emissions

AUDIO LOW PASS FILTER

N/A
Digital Emissions

Audio Input Versus Modulation - Modulation Limiting Plot

N/A
Digital Emissions

OTHER MODULATION CHARACTERISTICS

Rule Part No.: Pt 2.1033(c), Pt 90.209, Pt 90.207, Pt 24, RSS-119, RSS-134

Requirements: Pt 2.1033(c), Pt 90.209, Pt 90.207, Pt 24, RSS-119, RSS-134

Test Data: See Motorola exhibit 12

SPURIOUS EMISSIONS AT ANTENNA TERMINALS (CONDUCTED)

Rule Part No.: Part 2.1051(a), Pt 90, Pt 24, RSS-119, RSS-134

Requirements: Part 2.1051(a), Pt 90, Pt 24, RSS-119, RSS-134

Test Data: 25kHz Channel Spacing = 43+10log(0.64) = 41 dBc

EF	dB below carrier		EF	dB below carrier		EF	dB below carrier
806.0625	0.0		813.5125	0.0		824.9875	0.0
1612.1250	*		1627.0250	*		1649.9750	*
2418.1875	*		2440.5375	*		2474.9625	*
3224.2500	*		3254.0500	*		3299.9500	*
4030.3125	*		4067.5625	*		4124.9375	*
4836.3750	*		4881.0750	*		4949.9250	*
5642.4375	*		5694.5875	*		5774.9125	*
6448.5000	*		6508.1000	*		6599.9000	*
7254.5625	*		7321.6125	*		7424.8875	*
8060.6250	*		8135.1250	*		8249.8750	*

EF	dB below carrier		EF	dB below carrier
896.01875	0.0		901.98125	0.0
1792.03750	*		1803.96250	*
2688.05625	*		2705.94375	*
3584.07500	*		3607.92500	*
4480.09375	*		4509.90625	*
5376.11250	*		5411.88750	*
6272.13125	*		6313.86875	*
7168.15000	*		7215.85000	*
8064.16875	*		8117.83125	*
8960.18750	*		9019.81250	*

* = 20 dB or more below the limit

FIELD STRENGTH OF SPURIOUS EMISSIONS

Rule Parts. No.: Part 2.1051(a), Pt 90, Pt 24, RSS-119, RSS-134

Requirements: 25 kHz Channel Spacing = 43+10log(0.64) = 41 dBc

Test Data:

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)		Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)		Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
806.06	0	0		813.51	0	0		824.99	0	0
1612.13	V	*		1627.03	V	*		1649.98	V	*
2418.19	H	*		2440.54	H	*		2474.96	H	*
3224.25	V	*		3254.05	H	*		3299.95	H	*
4030.31	H	*		4067.56	H	*		4124.94	V	*
4836.38	V	*		4881.08	H	*		4949.93	V	*
5642.44	H	*		5694.59	V	*		5774.91	H	*
6448.50	H	*		6508.10	V	*		6599.90	V	*
7254.56	H	*		7321.61	H	*		7424.89	V	*
8060.63	V	*		8135.13	V	*		8249.88	V	*

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)		Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
896.02	0	0		901.98	0	0
1792.04	V	*		1803.96	V	*
2688.06	V	*		2705.94	H	*
3584.08	V	*		3607.93	H	*
4480.09	H	*		4509.91	H	*
5376.11	H	*		5411.89	H	*
6272.13	H	*		6313.87	V	*
7168.15	H	*		7215.85	V	*
8064.17	H	*		8117.83	H	*
8960.19	H	*		9019.81	V	*

* = 20 dB or more below the limit

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		

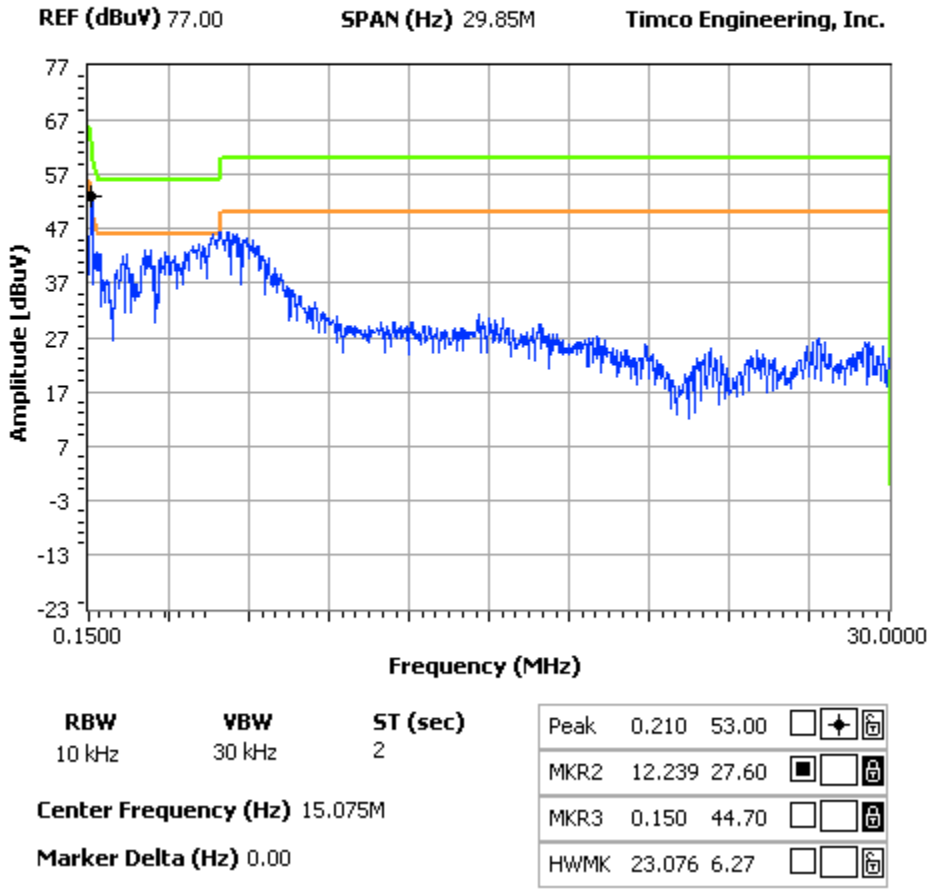
Test Data: The following plots represent the emissions read for power line conducted. Both lines were observed.

ADAPTOR CHARGING, TX ON
iDEN 806.0625 MHz
POWERLINE CONDUCTED EMISSIONS – LINE 1

NOTES:

POWERLINE CONDUCTED -- LINE 1
ADAPTOR CHARGING -- 806.0625 MHz

FCC 15.107 Mask Class B

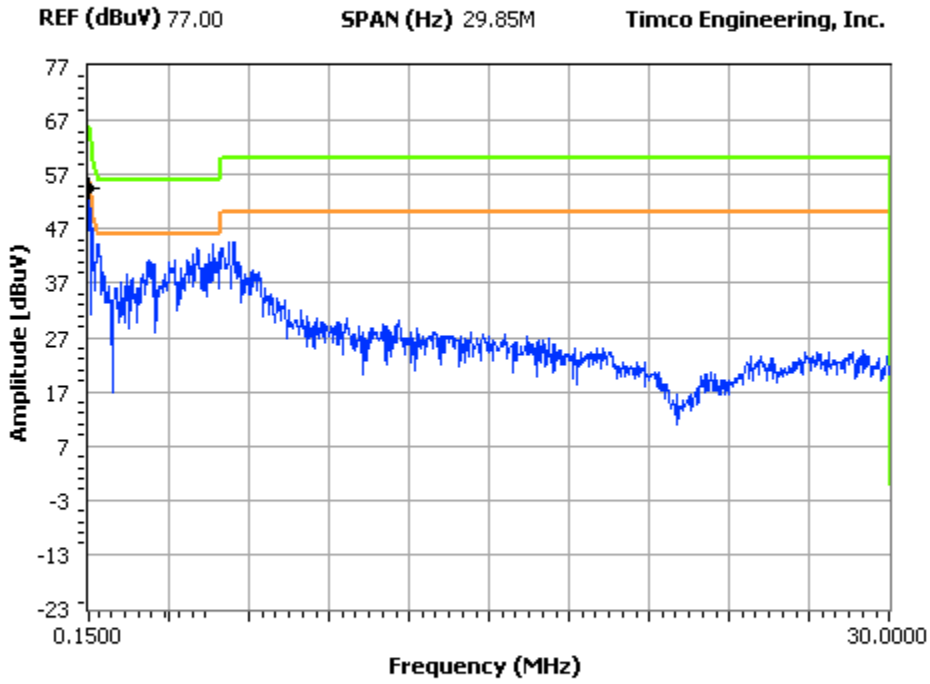


POWERLINE CONDUCTED EMISSIONS – LINE 2

NOTES:

POWERLINE CONDUCTED -- LINE 2
ADAPTOR CHARGING -- 806.0625 MHz

FCC 15.107 Mask Class B



RBW	VBW	ST (sec)
10 kHz	30 kHz	2

Center Frequency (Hz) 15.075M

Marker Delta (Hz) 0.00

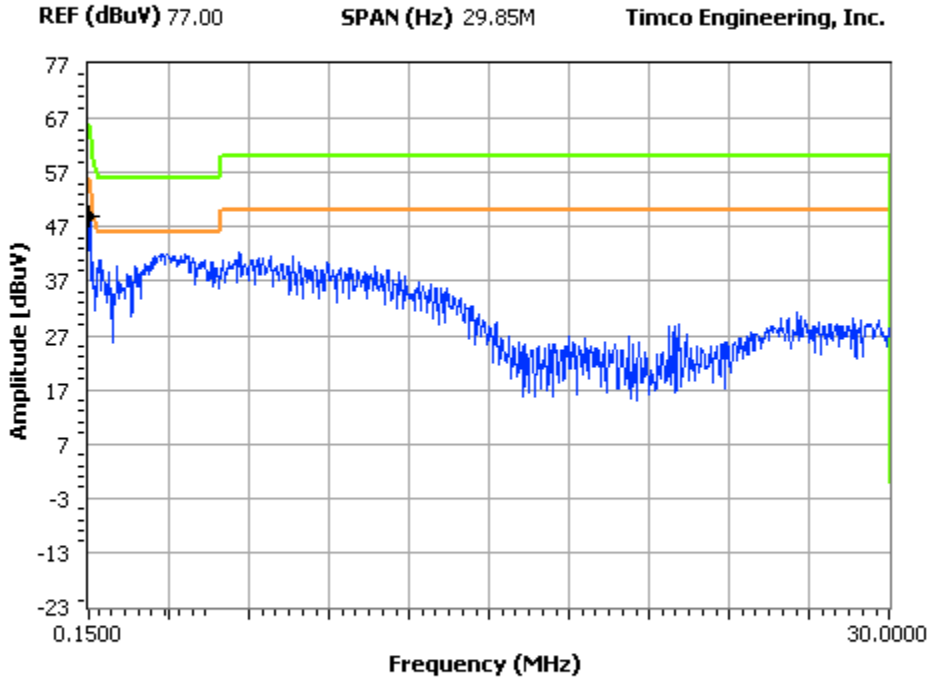
Peak	0.150	54.40
MKR2	12.239	26.60
MKR3	0.150	54.40
HWMK	23.076	6.27

USB CHARGING, TX ON
iDEN 806.0625 MHz
POWERLINE CONDUCTED EMISSIONS – LINE 1

NOTES:

POWERLINE CONDUCTED -- LINE 1
USB CHARGING -- 806.0625 MHz

FCC 15.107 Mask Class B



RBW	VBW	ST (sec)
10 kHz	30 kHz	2

Center Frequency (Hz) 15.075M

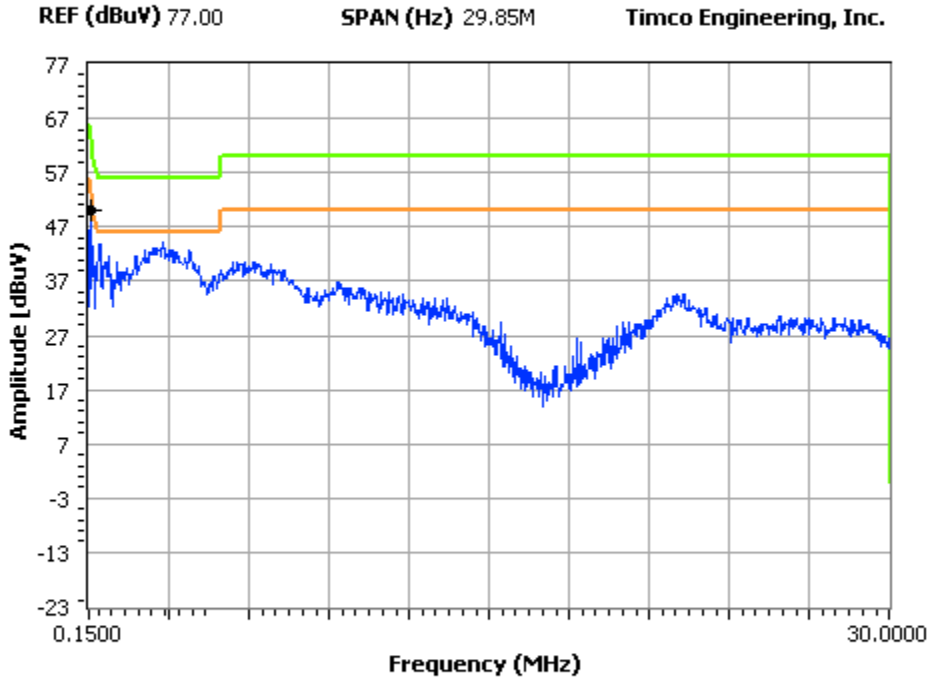
Marker Delta (Hz) 0.00

Peak	0.150	49.10
MKR2	12.239	34.00
MKR3	0.150	49.10
HWMK	23.076	6.27

NOTES:

POWERLINE CONDUCTED -- LINE 2
USB CHARGING -- 806.0625 MHz

FCC 15.107 Mask Class B



RBW	VBW	ST (sec)
10 kHz	30 kHz	2

Center Frequency (Hz) 15.075M

Marker Delta (Hz) 0.00

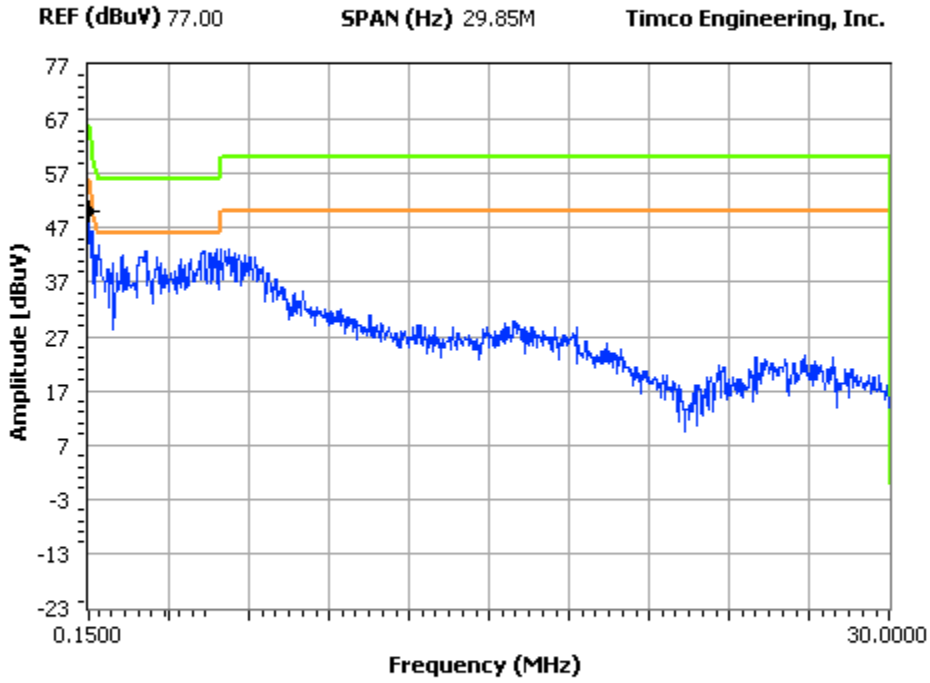
Peak	0.210	50.00
MKR2	12.239	33.00
MKR3	0.150	32.50
HWMK	23.076	6.27

ADAPTOR CHARGING, TX ON
iDEN 901.98125 MHz
POWERLINE CONDUCTED EMISSIONS – LINE 1

NOTES:

POWERLINE CONDUCTED -- LINE 1
ADAPTOR CHARGING -- 901.98125 MHz

FCC 15.107 Mask Class B



RBW	VBW	ST (sec)
10 kHz	30 kHz	2

Center Frequency (Hz) 15.075M

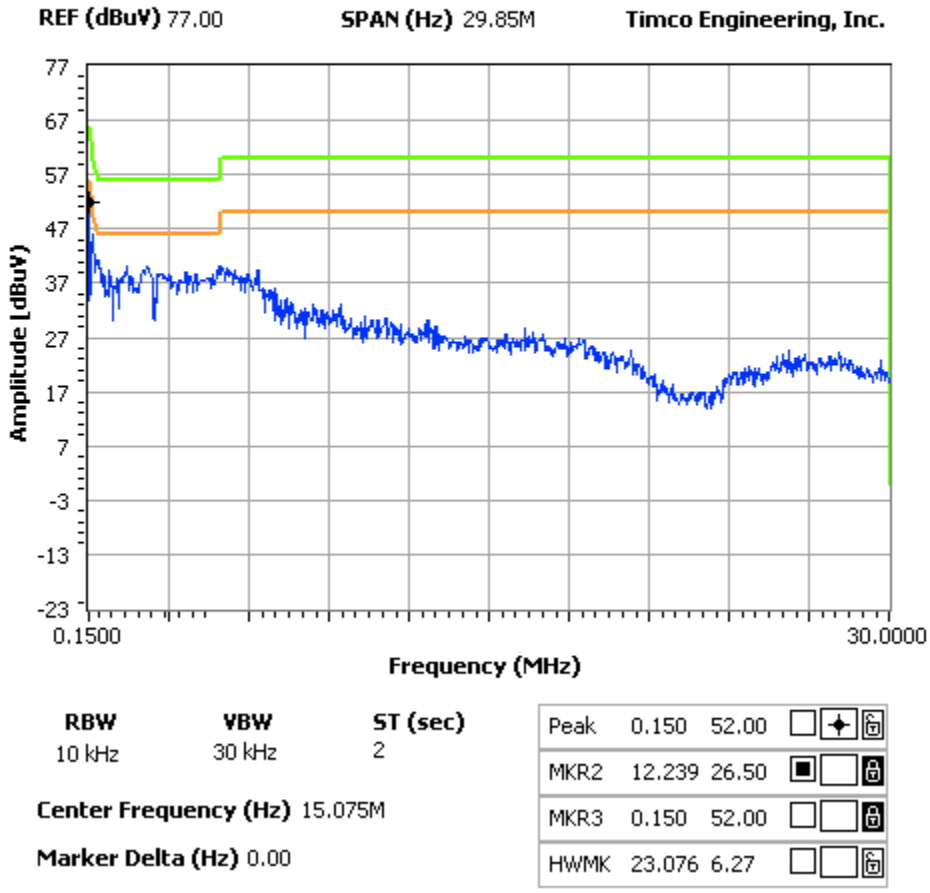
Marker Delta (Hz) 0.00

Peak	0.150	50.10
MKR2	12.239	26.30
MKR3	0.150	50.10
HWMK	23.076	6.27

NOTES:

POWERLINE CONDUCTED -- LINE 2
ADAPTOR CHARGING -- 901.98125 MHz

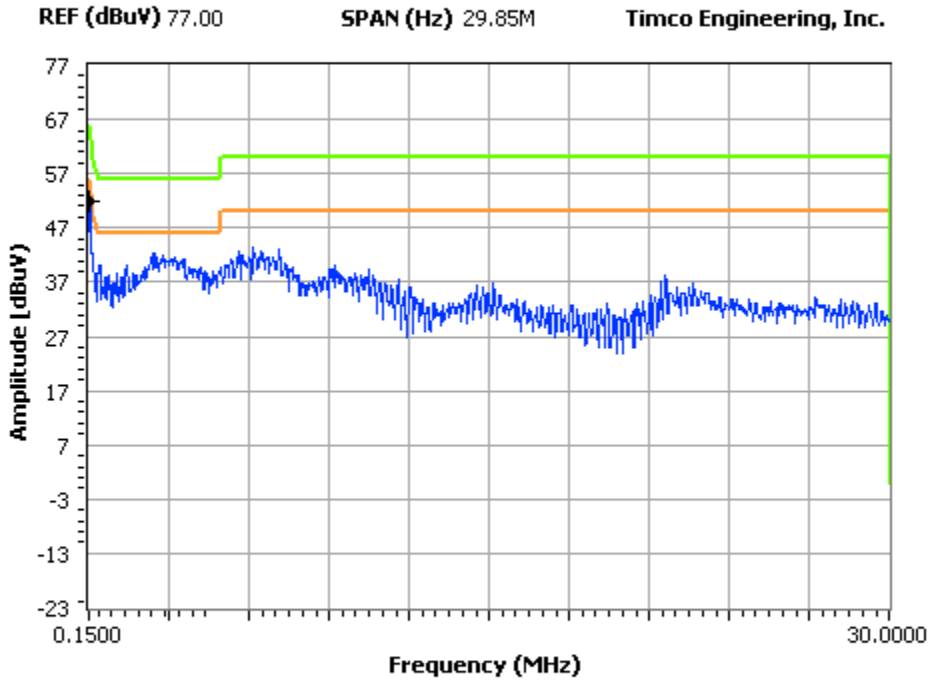
FCC 15.107 Mask Class B



NOTES:

POWERLINE CONDUCTED -- LINE 1
USB CHARGING -- 901.98125 MHz

FCC 15.107 Mask Class B



RBW	VBW	ST (sec)
10 kHz	30 kHz	2

Center Frequency (Hz) 15.075M

Marker Delta (Hz) 0.00

Peak	0.150	51.80
MKR2	12.239	27.70
MKR3	0.150	51.80
HWMK	23.076	6.27

NOTES:

POWERLINE CONDUCTED -- LINE 2
USB CHARGING -- 901.98125 MHz

FCC 15.107 Mask Class B