

386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

TEST REPORT For FCC

Test Report No.	:	2010030046

Date of Issue March 15, 2010 :

FCC ID XXZM121STM

Model/Type No. M121STM

Kind of Product 12.1" Shelf Player

Applicant Intellian Technologies, Inc.

7th Floor, Dongik Building, 98 Nonhyun-Dong, Gangnam-Gu, **Applicant Address**

Seoul 135-010, Korea

Manufacturer Intellian Technologies, Inc.

Manufacturer Address 7th Floor, Dongik Building, 98 Nonhyun-Dong, Gangnam-Gu,

Seoul 135-010, Korea

SeungHoon Yang / Electronic Design Engineer **Contact Person**

Telephone +82-31-436-1582

Received Date February 22, 2010

Test period Start: February 22, 2010 End: March 15, 2010

Test Results In Compliance ■ Not in Compliance

The test results presented in this report relate only to the object tested.

Tested by

Lee Young-taek Test Engineer

Date: March 15, 2010

Reviewed by

Young-Joon, Park Technical Manager

Date: March 15, 2010

Test Report No.: 2010030046 Page 1 of 45 Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

REPORT REVISION HISTORY

Date	Revision	Page No
March 15, 2010	Issued (2010030046)	All

This report shall not be reproduced except in full, without the written approval of CTK Co., Ltd. This document may be altered or revised by CTK Co., Ltd. personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by CTK Co., Ltd. will constitute fraud and shall nullify the document.

Test Report No.: 2010030046 Page 2 of 45
Date: March 15, 2010



TABLE OF CONTENTS

REPORT	REVISION HISTORY	2
1.0	General Product Description	2
1.1	Tested Frequency	∠
1.2	Model Differences	4
1.3	Device Modifications	
1.4	Peripheral Devices	
1.5	Calibration Details of Equipment Used for Measurement	5
1.6	Test Facility	5
	Laboratory Accreditations and Listings	
	Summary of tests	
2.1 Tech	nnical Characteristic Test	8
2.1.		8
2.1.	2 Maximum peak Conducted Output Power	13
2.1.	3 Power Spectral Density	18
2.1.		
2.1.	5 Field Strength of Emissions	32
2.1.	6 AC Conducted Emissions	38
APPEND	IX A – Test Equipment Used For Tests	
APPEND	IX B - MPF CALCULATION	44

Test Report No.: 2010030046



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

1.0 General Product Description

Equipment model name : M121STM

Serial number : Prototype

EUT condition : Pre-production, not damaged

Antenna type : PCB antenna Gain 3.42 dBi

Frequency Range : 2412Mhz ~ 2462MHz (DSSS/OFDM)

RF output power : 20.26 dBm Peak Conducted (802.11b) : 19.06 dBm Peak Conducted (802.11g)

Number of channels : 11 (DSSS/OFDM)

Type of Modulation : CCK, DQPSK, DBPSK for DSSS

: 64QAM, 16QAM, QPSK, BPSK for OFDM

Transfer Rate : 11/5.5/2/1 Mbps for 802.11b

: 54/48/36/24/18/12/9/6 Mbps for 802.11g

Power Source : AC ADAPTER(Input : AC 100-240V, Output : DC 12V)

1.1 Tested Frequency

	LOW	MID	HIGH
Frequency (MHz) For 802.11b	2412	2437	2462
Frequency (MHz) For 802.11g	2412	2437	2462

1.2 Model Differences

Not applicable

Test Report No.: 2010030046 Page 4 of 45
Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

1.3 Device Modifications

The following modifications were necessary for compliance:

Not applicable

1.4 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.	FCC ID or DoC

1.5 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

1.6 Test Facility

The measurement facility is located at 386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

Test Report No.: 2010030046 Page 5 of 45
Date: March 15, 2010

Form No.: CTK-RF-EF-Part15 SubpartC(Rev.2)



Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	FC 93250
JAPAN	VCCI	10 meter Open Area Test Site and one conducted site.	V (I) R-948, C-986
KOREA	MIC	EMI (10 meter Open Area Test Site and two conducted sites) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	No. 51, KR0025
International	KOLAS	EMC	KOLAS PESTING NO. 119 3HA
Europe	GLAS	EMC EN 55011, EN 55022, EN 61000-6-3, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 50130-4, EN 55024, EN 61204-3, EN 60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	TÜV No.13000796-02

Test Report No.: 2010030046 Page 6 of 45 Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

2.0 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
15.247(a)	6 dB Bandwidth	> 500 kHz		С
15.247(b)	Transmitter Output Power	< 1 Watt		С
15.247(d)	Conducted Spurious emission	> 20 dBc	Conducted	С
15.247(d)	Band Edge	> 20 dBc		С
15.247(d)	Transmitter Power Spectral	< 8 dBm @ 3 kHz		С
	Density			С
15.209	Field Strength of Harmonics	< 54 dBuV (at 3 m)	Radiated	С
15.207	AC Conducted Emissions	EN 55022	Line Conducted	С

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

The sample was tested according to the following specification:

- FCC Part 15.247, ANSI C63.4-2003

Test Report No.: 2010030046 Page 7 of 45 Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

2.1 Technical Characteristic Test

2.1.1 6dB Bandwidth

Procedure:

The bandwidth at 6dB below the highest in-band spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 6dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz Span = 40 MHz

 $VBW = 100 \text{ kHz} (VBW \ge RBW)$ Sweep = auto

Trace = max hold Detector function = peak

Measurement Data:

Mode Frequenc y (MHz)	Channel	Test Results		
	No.	Measured Bandwidth (MHz)	Result	
	2412	1	12.16	Complies
802.11b	2437	6	12.16	Complies
	2462	11	12.16	Complies
	2412	1	16.56	Complies
802.11g	2437	6	16.56	Complies
	2462	11	16.48	Complies

⁻ See next pages for actual measured spectrum plots.

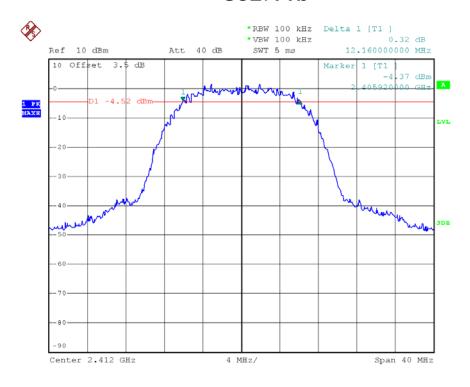
Minimum Standard:

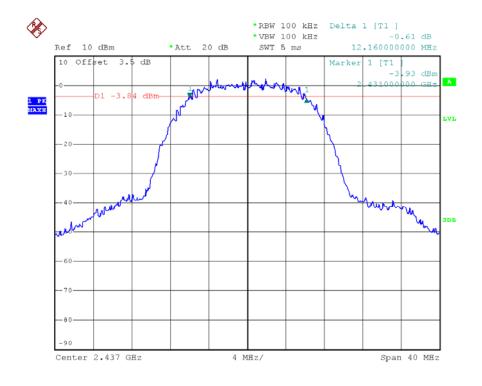
6 dB Bandwidth > 500kHz

See next pages for actual measured spectrum plots.

Test Report No.: 2010030046 Page 8 of 45

802.11b

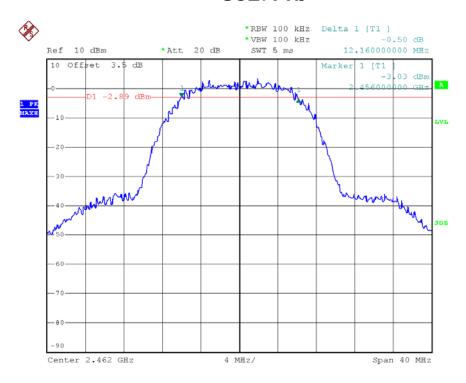




Test Report No.: 2010030046 Page 9 of 45

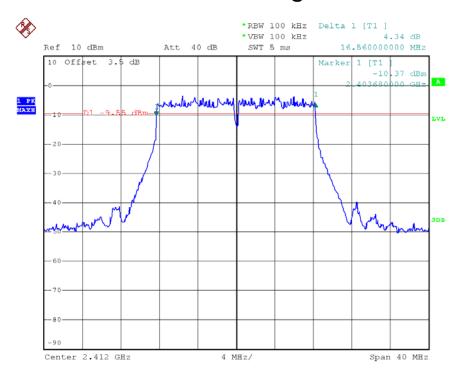


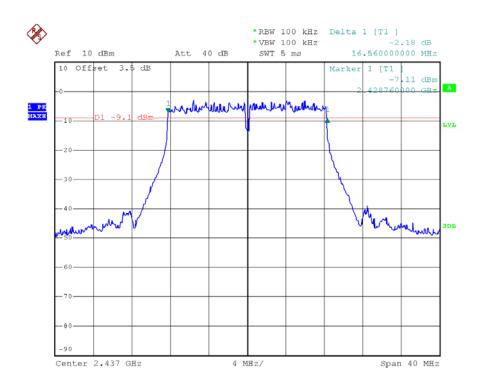
802.11b



Page 10 of 45 Test Report No.: 2010030046 Date: March 15, 2010

802.11g

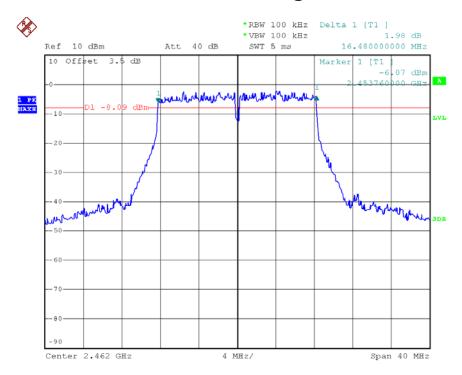




Test Report No.: 2010030046 Page 11 of 45



802.11g



Page 12 of 45 Test Report No.: 2010030046 Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

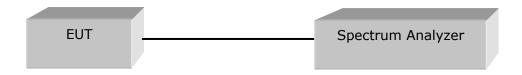
2.1.2 Maximum peak Conducted Output Power

Test Location

RF Test Room

Test Procedures

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth.



Limit

< 1 W

Test Results

802.11b mode

Frequency (MHz)	Channel No.	Peak output power(dBm)	Limit	Result
2412	Low	18.48	30dBm	Complies
2437	Middle	19.13	30dBm	Complies
2462	High	20.26	30dBm	Complies

802.11g mode

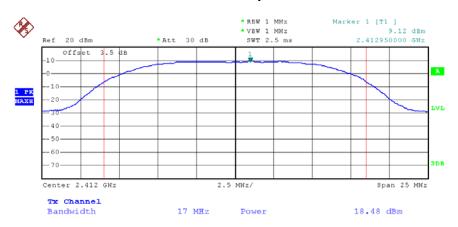
Frequency (MHz)	Channel No.	Peak output power(dBm)	Peak output power(mW)	Result
2412	Low	16.87	30dBm	Complies
2437	Middle	17.77	30dBm	Complies
2462	High	19.06	30dBm	Complies

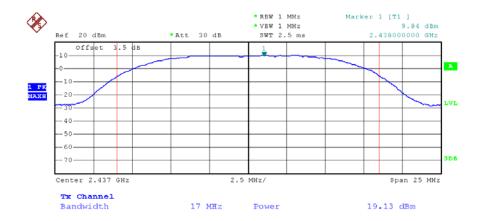
See next pages for actual measured spectrum plots.

Test Report No.: 2010030046 Page 13 of 45



Peak Conducted Output Power - 802.11b

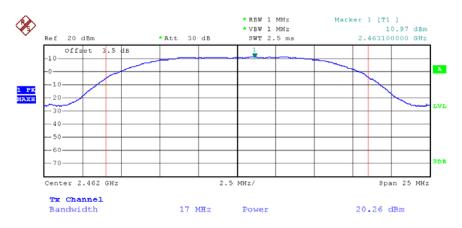




Page 14 of 45 Test Report No.: 2010030046



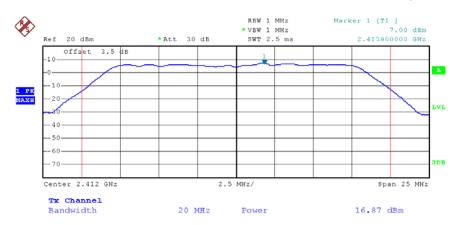
Peak Conducted Output Power - 802.11b

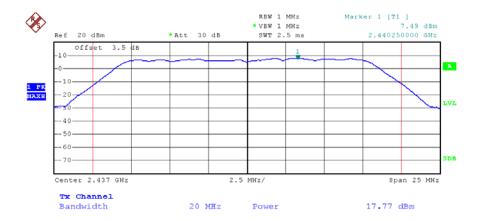


Page 15 of 45 Test Report No.: 2010030046 Date: March 15, 2010



Peak Conducted Output Power - 802.11g

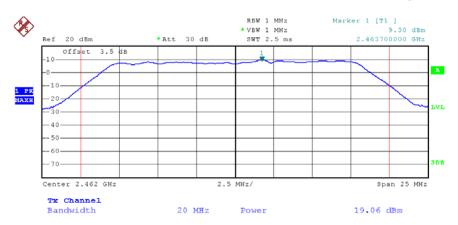




Test Report No.: 2010030046 Page 16 of 45



Peak Conducted Output Power - 802.11g



Page 17 of 45 Test Report No.: 2010030046 Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

2.1.3 Power Spectral Density

Procedure:

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

The spectrum analyzer is set to:

RBW = 3 kHz $VBW = (VBW \ge RBW)$

Sweep = 100 KHz(Span/3KHz) Span = 300 KHzDetector function = peak Trace = max hold

Measurement Data:

Medadi effett bata.					
Mode	Frequency (MHz)	Ch.	Test Results		
Mode		011.	dBm	Result	
	2412	1	-14.05	Complies	
802.11b	2437	6	-12.09	Complies	
	2462	11	-12.28	Complies	
	2412	1	-26.01	Complies	
802.11g	2437	6	-29.90	Complies	
	2462	11	-24.03	Complies	

⁻ See next pages for actual measured spectrum plots.

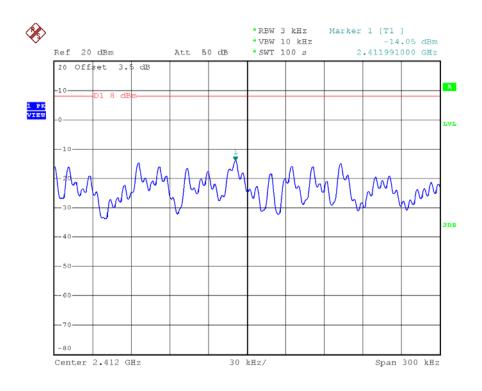
Minimum Standard:

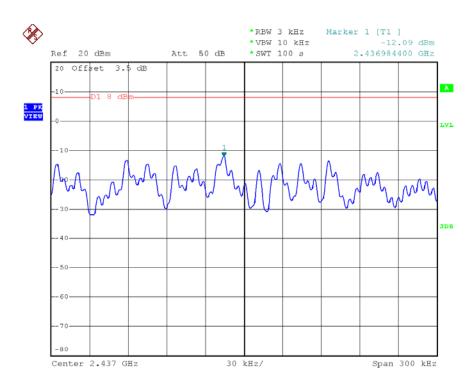
Power Spectral Density	< 8dBm @ 3kHz BW

See next pages for actual measured spectrum plots.

Test Report No.: 2010030046 Page 18 of 45

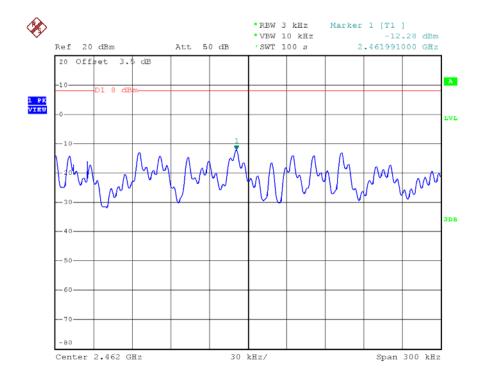
802.11b Power Density Measurement



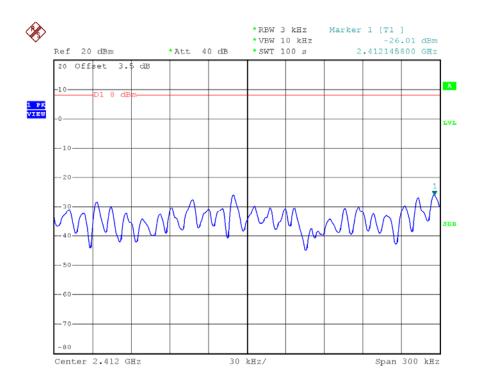


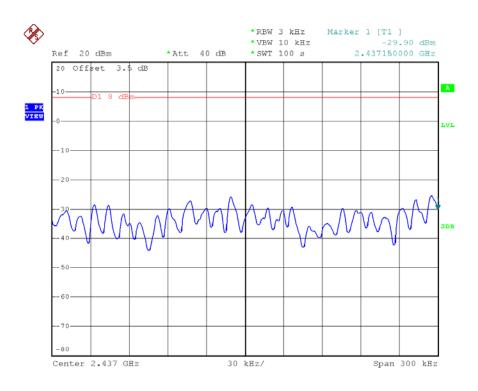
Test Report No.: 2010030046 Page 19 of 45





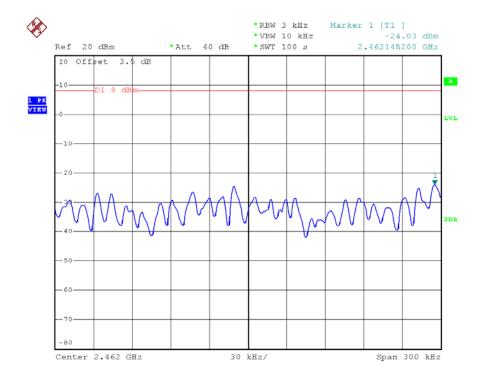
802.11g Power Density Measurement





Test Report No.: 2010030046 Page 21 of 45







386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

2.1.4 Band - edge

Procedure:

The bandwidth at 20dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to measure 20 dB down both sides of the intentional emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz VBW = 100 kHz

Span = 40 MHz Detector function = peak

Trace = \max hold Sweep = auto

Measurement Data: Complies

- All conducted emission in any 100kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.
- See next pages for actual measured spectrum plots.

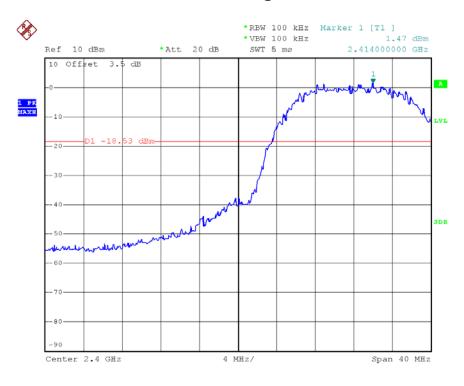
Minimum Chandand	> 20 dp-
Minimum Standard:	> 20 dBC

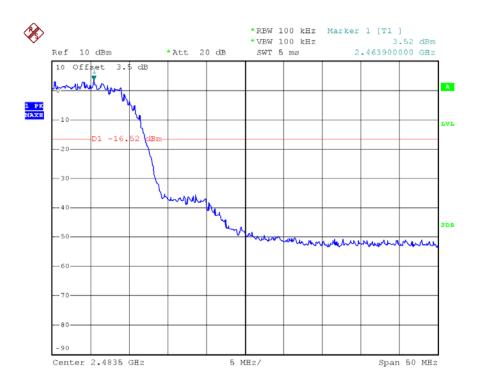
See next pages for actual measured spectrum plots.

Test Report No.: 2010030046 Page 23 of 45
Date: March 15, 2010

Form No.: CTK-RF-EF-Part15 SubpartC(Rev.2)

802.11b Band-edge Measurements



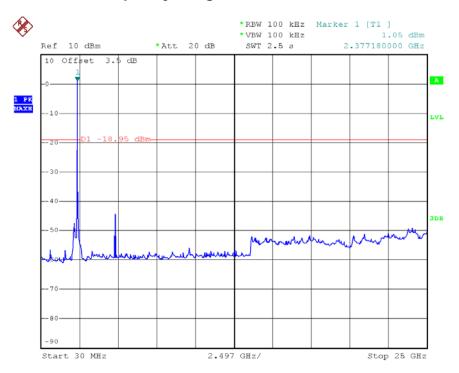


Test Report No.: 2010030046 Page 24 of 45



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

Band – edge (at 20 dB blow) – Low channel (802.11b) Frequency Range = 30 MHz \sim 10th harmonic

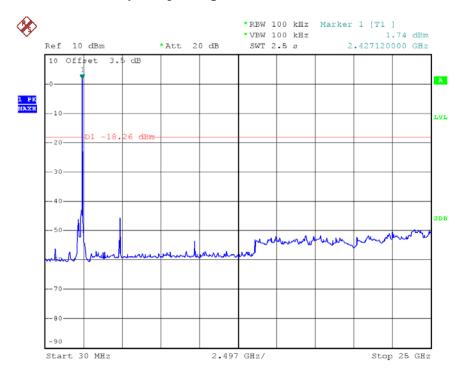


Test Report No.: 2010030046 Page 25 of 45 Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

Band – edge (at 20 dB blow) – Mid channel (802.11b) Frequency Range = 30 MHz $\sim 10^{th}$ harmonic

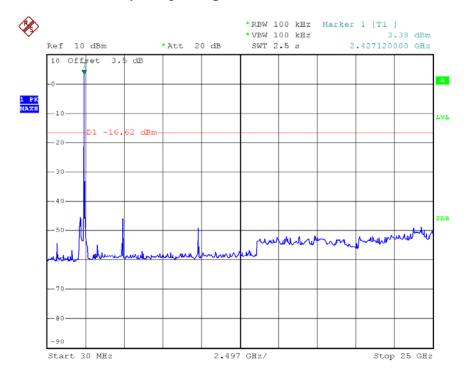


Test Report No.: 2010030046 Page 26 of 45
Date: March 15, 2010



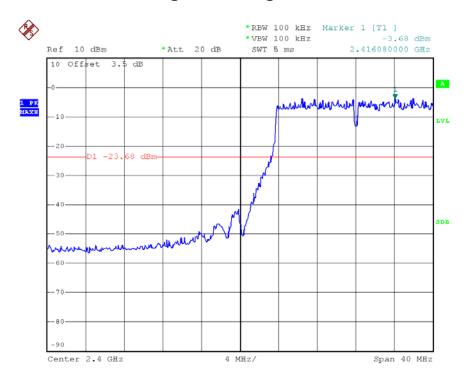
386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

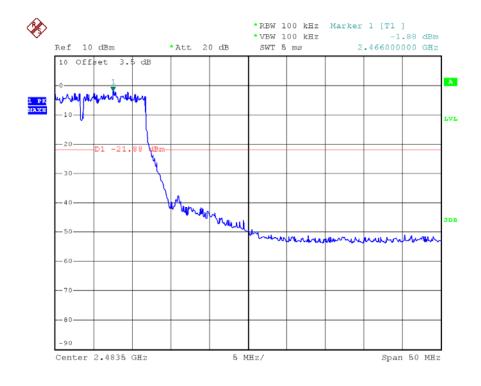
Band – edge (at 20 dB blow) – High channel (802.11b) Frequency Range = 30 MHz $\sim 10^{th}$ harmonic



Test Report No.: 2010030046 Page 27 of 45
Date: March 15, 2010

802.11g Band-edge Measurements



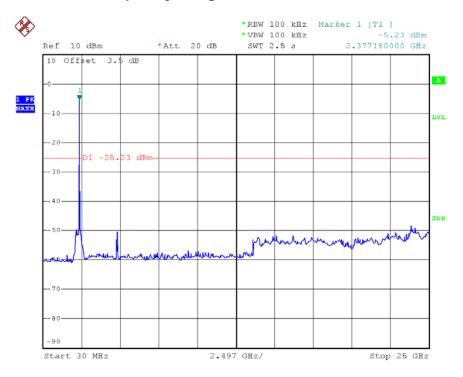


Test Report No.: 2010030046 Page 28 of 45



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

Band – edge (at 20 dB blow) – Low channel (802.11g) Frequency Range = 30 MHz \sim 10th harmonic

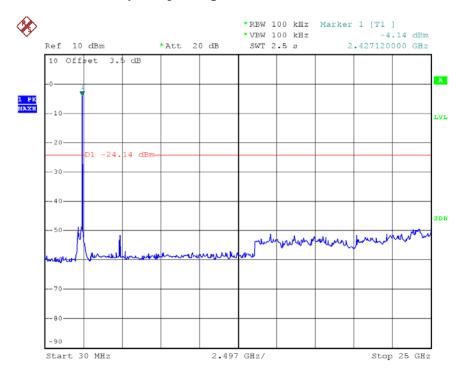


Test Report No.: 2010030046 Page 29 of 45
Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

Band – edge (at 20 dB blow) – Mid channel (802.11g) Frequency Range = 30 MHz $\sim 10^{th}$ harmonic

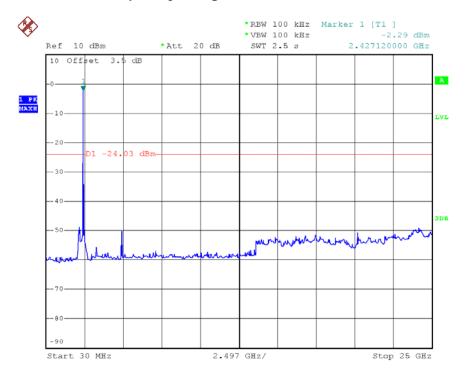


Test Report No.: 2010030046 Page 30 of 45 Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

Band – edge (at 20 dB blow) – High channel (802.11g) Frequency Range = 30 MHz ~ 10th harmonic



Test Report No.: 2010030046 Page 31 of 45 Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

2.1.5 Field Strength of Emissions

Test Location

☐ Testing was performed at a test distance of 3 meter Open Area Test Site

Test Procedures

The height of the measuring antenna was varied between 1 to 4 m and the table was rotated a full revolution in order to obtain maximum values of the electric field intensity. The measurement was made in both the vertical and horizontal polarization, and the maximum value is presented in the report.

The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 30 MHz ~ 10th harmonic

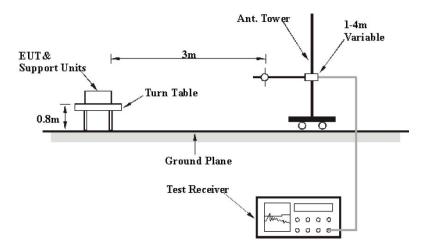
 $RBW = 120 \text{ kHz} (30 \text{ MHz} \sim 1 \text{ GHz}) \quad VBW \geq RBW$

= 1 MHz (1 GHz $\sim 10^{th}$ harmonic)

Span = 100 MHz

Detector function = Quasi-peak

Trace = max hold



Limit

- 15.209(a)

Frequency(MHz)	Field Strength uV/m@3m	Field Strength dBuV/m@3m
30-88	100**	40
88-216	150**	43.5
216-960	200**	46
Above 960	500	54

^{**} Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

Test Report No.: 2010030046 Page 32 of 45

Date: March 15, 2010



Test Results

EUT	12.1" Shelf Player	Measurement Detail				
Model	M121STM	Frequency Range	Below 1000MHz			
Mode	802.11b	Detector function	Quasi-Peak			

The requirements are:

□ Complies

Frequency	Measured Data	Margin	Remark
(MHz)	(dBuV/m)	(dB)	
265.24	33.6	3.4	Quasi-Peak

Test Data

Frequency	Reading	Pol.	Height	Correction Factor			Limits	Result	Margin
[MHz]	[dBuV/m]		[m]	Antenna	Cable	Amp. Gain	[dBuV/m]	[dBuV/m]	[dB]
265.24	49.7	V	1.5	10.3	5.4	31.8	37.0	33.6	3.4
274.84	49.0	Н	3.3	10.6	5.5	31.9	37.0	33.2	3.8
296.84	47.2	V	1.0	11.3	5.8	31.9	37.0	32.4	4.6
311.24	47.2	V	1.0	11.7	6.0	31.9	37.0	33.0	4.0
333.12	45.6	Н	4.0	12.2	6.1	31.9	37.0	32.0	5.0
364.84	45.7	V	1.2	12.9	6.5	31.9	37.0	33.2	3.8

H: Horizontal, V: Vertical

Result = Reading + Antenna + Cable - Amp.Gain

Remark

Page 33 of 45 Test Report No.: 2010030046



Test Results

EUT	12.1" Shelf Player	Measurement Detail				
Model	M121STM	Frequency Range	Below 1000MHz			
Mode	802.11g	Detector function	Quasi-Peak			

The requirements are:

□ Complies

Frequency	Measured Data	Margin	Remark
(MHz)	(dBuV/m)	(dB)	
274.84	33.8	3.2	Quasi-Peak

Test Data

Frequency	Reading	Pol.	Height	Correction Factor			Limits	Result	Margin
[MHz]	[dBuV/m]		[m]	Antenna	Cable	Amp. Gain	[dBuV/m]	[dBuV/m]	[dB]
265.16	49.8	V	1.5	10.3	5.4	31.8	37.0	33.7	3.3
274.84	49.6	Н	3.8	10.6	5.5	31.9	37.0	33.8	3.2
311.24	47.1	V	1.8	11.7	6.0	31.9	37.0	32.9	4.1
345.19	44.9	V	1.2	12.7	6.1	31.9	37.0	31.8	5.2
364.84	46.0	V	1.0	12.9	6.5	31.9	37.0	33.5	3.5
788.92	35.8	V	1.0	19.6	9.6	32.0	37.0	33.0	4.0

H: Horizontal, V: Vertical

Result = Reading + Antenna + Cable - Amp.Gain

Remark

Test Report No.: 2010030046 Page 34 of 45



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

Test Results

EUT	12.1" Shelf Player	Measurement Detail				
Model	M121STM	Frequency Range	1-25GHz			
Channel	Channel 1	Detector function	Peak			

The requirements are:

Frequency	Measured Data	Margin	Remark
(MHz)	(dBuV/m)	(dB)	
4824.01	48.3	5.7	Average

Test Data - 802.11b

Frequency	Read [dBuV	-	Pol.	Height	Correction Factor			Lin [dBu	nits V/m]	Res [dBu	sult V/m]		rgin IB]
[MHz]	AV /	Peak		[m]	Antenna	Amp. Gain	Cable	AV / Peak		AV / Peak		AV /	Peak
4824.01	39.1	52.6	V	1.3	32.7	34.9	11.4	54.0	74.0	48.3	61.8	5.7	12.2
7235.80	25.2	36.6	V	1.4	37.7	34.8	14.3	54.0	74.0	42.4	53.8	11.6	20.2

Test Data - 802.11g

Frequency	Reading		Height		Correction		Limits	Result	Margin
rrequeries	[dBuV/m]	Pol.	ricigitt	Factor			[dBuV/m]	[dBuV/m]	[dB]
[MHz]	AV / Peak		[m]	Antenna	Antenna Amp. Gain Cable AV		AV / Peak	AV / Peak	AV / Peak
4824.01	36.2 49.7	V	1.3	32.7	34.9	11.4	54.0 74.0	45.4 58.9	8.6 15.1
7235.80	20.9 33.9	V	1.4	37.7	34.8	14.3	54.0 74.0	38.1 51.1	15.9 22.9

Restricted band edge test data

Measured frequency range: 2310-2390 MHz, 2483.5-2500 MHz

802.11b

-	JUL: 11													
	Frequency	Rea	ding		Height		Correction		Lin	nits	Res	sult	Mai	rgin
	rrequericy	[dBuV/m]		Pol.	neignt	Factor			[dBuV/m]		[dBuV/m]		[dB]	
	[MHz]	AV .	/ Peak		[m]	Antenna	Amp. Gain	Cable	AV / Peak		AV /	' Peak	AV / Peak	
	2372.40	37.9	48.1	Н	1.0	28.2	35.3	7.4	54.0	74.0	38.2	48.4	15.8	25.6
	2323.53	45.9	56.1	V	1.2	28.2	35.3	7.4	54.0	74.0	46.2	56.4	7.8	17.6

802.11g

Frequency	Frequency Reading [dBuV/m] Pol. [MHz] AV / Peak		Height		Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]	
[MHz]			[m]	Antenna	Amp. Gain	Cable	AV / Peak	AV / Peak	AV / Peak	
2372.40	34.8 43.9	Н	1.0	28.2	35.3	7.4	54.0 74.0	35.1 44.2	18.9 29.8	
2323.53	42.9 54.3	V	1.2	28.2	35.3	7.4	54.0 74.0	43.2 54.6	10.8 19.4	

Test Report No.: 2010030046 Page 35 of 45



Test Results

EUT	12.1" Shelf Player	Measurement Detail	
Model	M121STM	Frequency Range	1-25GHz
Channel	Channel 6	Detector function	Peak

The requirements are:

□ Complies

Frequency	Measured Data	Margin	Remark
(MHz)	(dBuV/m)	(dB)	
4874.31	47.9	6.1	Average

Test Data - 802.11b

Frague may	Readin	ng		Haimbt		Correction		Lin	nits	Res	sult	Mai	rgin
Frequency	[dBuV/m] Po			Height	Factor			[dBuV/m]		[dBuV/m]		[dB]	
[MHz]	AV / P	Peak		[m]	Antenna	Amp. Gain	Cable	AV / Peak		AV /	' Peak	AV / Peak	
4874.31	38.7 5	1.3	V	1.5	32.7	34.9	11.4	54.0	74.0	47.9	60.5	6.1	13.5
7310.59	25.4 3	5.5	V	1.5	37.7	34.8	14.3	54.0	74.0	42.6	52.7	11.4	21.3

Test Data - 802.11q

	oot Bata	<u> </u>	.9							
Frequency	Reading		Height		Correction		Limits	Result	Margin	
Frequency	[dBuV/m]	Pol.	neignt	Factor			[dBuV/m]	[dBuV/m]	[dB]	
[MHz]	AV / Peak	[m] Antenna Amp. Gain Cable		AV / Peak	AV / Peak	AV / Peak				
4874.31	35.3 49.8	V	1.5	32.7	34.9	11.4	54.0 74.0	44.5 59.0	9.5 15.0	
7310.59	21.3 33.5	V	1.5	37.7	34.8	14.3	54.0 74.0	38.5 50.7	15.5 23.3	

Page 36 of 45 Test Report No.: 2010030046 Date: March 15, 2010



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

Test Results

EUT	12.1" Shelf Player	Measurement Detail	
Model	M121STM	Frequency Range	1-25GHz
Channel	Channel 11	Detector function	Peak

The requirements are:

Frequency	Measured Data	Margin	Remark
(MHz)	(dBuV/m)	(dB)	
4923.18	49.5	4.5	Average

Test Data - 802.11b

Frequency	Frequency Reading [dBuV/m] Pol. [MHz] AV / Peak		Pol.	Height		Correction Factor		Lin [dBu	nits V/m]	Res [dBu	sult V/m]		rgin IB]
[MHz]			[m]	Antenna	Amp. Gain	Cable	AV A	Peak	AV /	Peak	AV /	- Peak	
4923.18	40.3	55.0	V	1.3	32.7	34.9	11.4	54.0	74.0	49.5	64.2	4.5	9.8
7385.21	24.9	38.4	V	1.5	37.7	34.8	14.3	54.0	74.0	42.1	55.6	11.9	18.4

Test Data - 802.11g

Frequency	Reading			Correction			Limits	Result	Margin	
	[dBuV/m]	Pol.	Height	Factor			[dBuV/m]	[dBuV/m]	[dB]	
[MHz]	AV / Peak		[m]	Antenna	Antenna Amp. Gain Cable		AV / Peak	AV / Peak	AV / Peak	
4923.18	35.1 51.1	V	1.3	32.7	34.9	11.4	54.0 74.0	44.3 60.3	9.7 13.7	
7385.21	25.5 39.7	V	1.5	37.7	34.8	14.3	54.0 74.0	42.7 56.9	11.3 17.1	

Restricted band edge test data

Measured frequency range: 2310-2390 MHz, 2483.5-2500 MHz

802.11b

Fraguanay	Reading			Height		Correction			nits	Result [dBuV/m]		Mai	rgin
Frequency	[dBuV/m]		Pol.	neignt	Factor			[dBuV/m]				[dB]	
[MHz]	AV /	' Peak		[m]	Antenna	Amp. Gain	Cable	AV / Peak		AV /	' Peak	k AV / Peak	
2484.62	30.2	41.0	Н	1.1	28.2	35.3	7.4	54.0	74.0	30.5	41.3	23.5	32.7
2488.14	33.9	46.6	V	1.2	28.2	35.3	7.4	54.0	74.0	34.2	46.9	19.8	27.1

802.11g

Frequency	Reading [dBuV/m]	Pol.	Height	Correction Factor			Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]	
[MHz]	AV / Peak		[m]	Antenna	Antenna Amp. Gain Cable		AV / Peak	AV / Peak	AV / Peak	
2484.26	29.6 42.9	Н	1.1	28.2	35.3	7.4	54.0 74.0	29.9 43.2	24.1 30.8	
2489.85	40.2 51.8	V	1.2	28.2	35.3	7.4	54.0 74.0	40.5 52.1	13.5 21.9	

Test Report No.: 2010030046 Page 37 of 45



386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

2.1.6 AC Conducted Emissions

Test Location

Shielded Room

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Procedures

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

Limit

- 15.207(a)

Frequency	Conducted Limit (dBuV)					
(MHz)	Quasi-peak	Average				
0.15 ~ 0.5	66 to 56*	56 to 46*				
0.5 ~ 5	56	46				
5 ~ 30	60	50				

^{*} Decreases with the logarithm of the frequency.

Test Results

The requirements are:

802.11b

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
0.56	35.2	10.8	Average

802.11g

Frequency	Measured Data	Margin	Remark
(MHz)	(dBuV/m)	(dB)	
0.56	35.2	10.8	Average

Test Report No.: 2010030046 Page 38 of 45



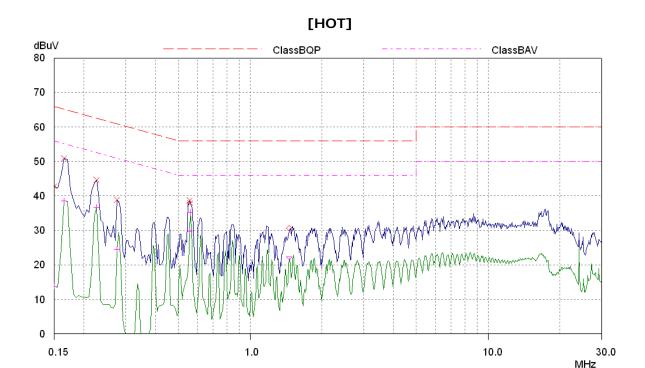
Test Data - 802.11b

Frequency	Correction Factor Line		Correction				Quasi	-peak			Ave	rage	
. ,			Limit	Reading	Result	Margin	Limit	Reading	Result	Margin			
[MHz]	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]		
0.15	0.1	0.1	Н	66.0	42.6	42.8	23.2	56.0	13.6	13.8	42.2		
0.16	0.1	0.1	Н	65.5	50.7	50.9	14.6	55.5	38.3	38.5	17.0		
0.22	0.1	0.1	Н	62.8	44.4	44.6	18.2	52.8	36.5	36.7	16.1		
0.27	0.1	0.1	Н	61.1	38.6	38.8	22.3	51.1	24.4	24.6	26.5		
0.55	0.1	0.1	Н	56.0	38.4	38.6	17.4	46.0	29.6	29.8	16.2		
0.56	0.1	0.1	Н	56.0	37.7	37.9	18.1	46.0	35.0	35.2	10.8		

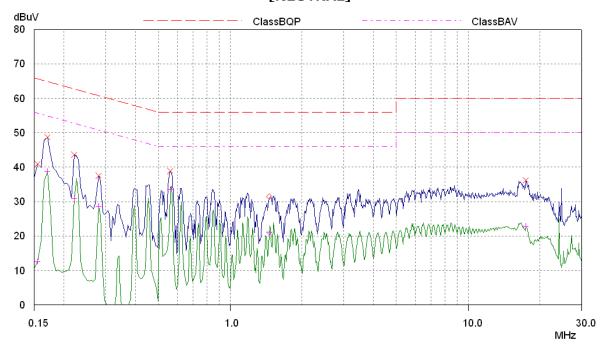
H: HOT, N: NEUTRAL

Page 39 of 45 Test Report No.: 2010030046 Date: March 15, 2010





[NEUTRAL]



Test Report No.: 2010030046



Test Data - 802.11g

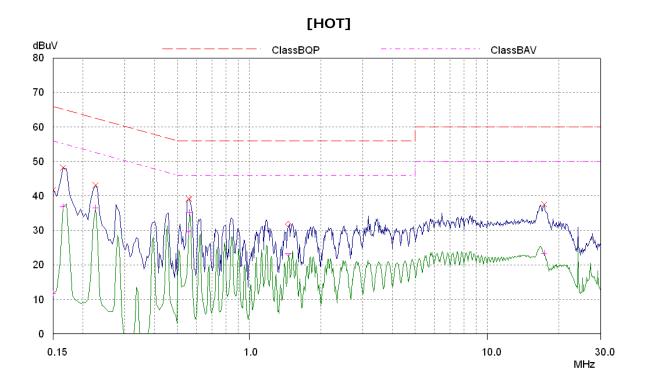
Frequency	Correction				Quasi	-peak			Ave	rage	
. ,	Fac	Factor Line		Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
[MHz]	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]
0.16	0.1	0.1	Н	65.5	48.0	48.2	17.3	55.5	36.7	36.9	18.6
0.22	0.1	0.1	Н	62.8	42.8	43.0	19.8	52.8	36.3	36.5	16.3
0.55	0.1	0.1	Н	56.0	39.1	39.3	16.7	46.0	29.3	29.5	16.5
0.56	0.1	0.1	Н	56.0	38.8	39.0	17.0	46.0	35.0	35.2	10.8
3.38	0.1	0.1	N	56.0	39.0	39.2	16.8	46.0	16.3	16.5	29.5
17.29	0.7	0.1	Н	60.0	36.8	37.6	22.4	50.0	22.2	23.0	27.0

H: HOT, N: NEUTRAL

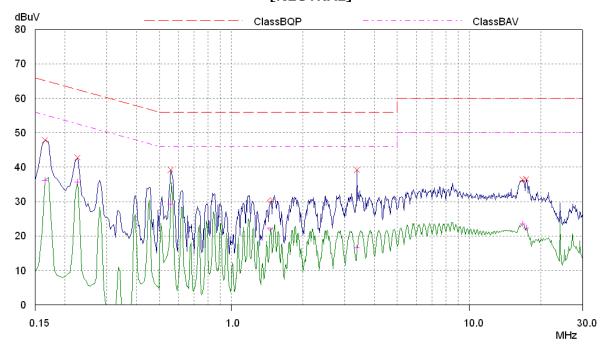
Page 41 of 45 Test Report No.: 2010030046

Date: March 15, 2010





[NEUTRAL]



Test Report No.: 2010030046



APPENDIX A – Test Equipment Used For Tests

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
1	Signal Analyzer	Agilent	N9020A	MY48011598	2010-10-30
2	Spectrum Analyzer	Rohde & Schwarz	FSP-30	100994	2010-10-30
3	EMI Test Receiver	Rohde & Schwarz	ESVS30	826638/008	2010-06-10
4	ULTRA Broadband Antenna	Rohde & Schwarz	HL562	361324/014	2010-06-12
5	LOOP ANTENNA	EMCO	6502	9107-2652	2010-10-13
6	System Power Supply	HP	6032A	3440A-10521	2010-07-07
7	EPM Series Power Meter	HP	E4418A	GB38272734	2010-10-30
8	Power Sensor	HP	8487A	3318A03524	2010-07-09
9	Audio Analyzer	HP	8903B	2747A03432	2010-11-03
10	ESG-D Series Signal Generator	Agilent	E4432B	US40054094	2010-10-30
11	SYNTHESIZED SWEEPER	HP	8341B	2819A01563	2010-10-30
12	Modulation Analyzer	HP	8901B	3438A05228	2010-11-06
13	Attenuator	HP	8494A	3308A33351	2010-11-02
14	Temp&Humi Chamber	Kunpoong	KP-1000	2002KP050041	2011-01-25
15	DC POWER SUPPLY	Agilent	E3632A	MY40011638	2010-10-30
16	EMC Analyzer	Agilent	E7405A	MY45110859	2011-01-25
17	Horn Antenna	ETS-Lindgren	3115	00078894	2010-12-18
18	Horn Antenna	ETS-Lindgren	3115	00078895	2010-12-18
19	Dipole Antenna	SCHWARZBECK	VHA 9103	VHA91032557	2010-11-27
20	Dipole Antenna	SCHWARZBECK	UHA 9105	UHA91052417	2010-11-27
21	OPT H64 AMPLIFIER	HP	8447F	3113A06814	2010-04-09
22	PREAMPLIFIER	Agilent	8449B	3008A02307	2010-10-30
23	Radio Communication Tester	Rohde & Schwarz	CMU200	106765	2011-02-23
24	Band Reject Filter	Wainwright Instruments	WRCG824	-	2010-04-09
25	Band Reject Filter	Wainwright Instruments	WRCG1750	-	2010-04-09
26	Field Strength Meter	Rohde & Schwarz	ESHS30	862024/001	2011-03-08
27	LISN	Rohde & Schwarz	ESH3-Z5	100207	2010-12-15
28	LISN	EMCO	3825/2	9206-1971	2010-12-16
29	DC POWER SUPPLY	Agilent	E3632A	MY40011638	2010-10-30

Test Report No.: 2010030046 Page 43 of 45