

TEST REPORT**Report No.: 13071240HKG-001****Dongguan Siliten Electronics Co., Ltd.**

Application
For
Certification
(Original Grant)
(FCC ID: XW3DK-3695BI)

Transceiver

Prepared and Checked by:

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Date: August 26, 2013

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GENERAL INFORMATION

Dongguan Siliten Electronics Co., Ltd.

BRAND NAME: PointMobl, MODEL: 2603695,2603699, 2603700, 2603701

BRAND NAME: NA, MODEL: RK-3695BI, RK-3699BI

FCC ID: XW3DK-3695BI

Grantee:	Dongguan Siliten Electronics Co., Ltd.
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Manufacturer:	Siliten Electronics Co., Ltd.
Manufacturer Address:	Sijia Yewu Village Industrial Estate, Shijie Town, Dongguan, China.
Brand Name:	PointMobl/NA
Model:	PointMobl:2603695, 2603699, 2603700, 2603701 NA: RK-3695BI, RK3699BI
Type of EUT:	Transceiver
Description of EUT:	Universal Tablet Case with Bluetooth Keyboard
Serial Number:	N/A
FCC ID:	XW3DK-3695BI
Date of Sample Submitted:	July 30, 2013
Date of Test:	July 30, 2013 to August 15, 2013
Report No.:	13071240HKG-001
Report Date:	August 26, 2013
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

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SUMMARY OF TEST RESULT

Dongguan Siliten Electronics Co., Ltd.

BRAND NAME: PointMobi, MODEL: 2603695,2603699, 2603700, 2603701

BRAND NAME: NA, MODEL: RK-3695BI, RK-3699BI

FCC ID: XW3DK-3695BI

TEST SPECIFICATION	REFERENCE	RESULTS
Transmitter Power Line Conducted Emissions	15.207	Pass
Transmitter Field Strength and Bandwidth Requirement	15.249	Pass
Digital Device Radiated Emissions	15.109	Pass

The equipment under test is found to be complying with the following standards:
FCC Part 15, October 1, 2012 Edition

Note:

1. The EUT uses a permanently attached antenna which, in accordance to section 15.203, is considered sufficient to comply with the provisions of this section.
2. Pursuant to FCC part 15 Section 15.215(c), the 20 dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over expected variations in temperature and supply voltage were considered.

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Table of Contents

1.0	<u>General Description</u>	1
1.1	Product Description	1
1.2	Related Submittal(s) Grants	1
1.3	Test Methodology	1
1.4	Test Facility	1
2.0	<u>System Test Configuration</u>	2
2.1	Justification	2
2.2	EUT Exercising Software	2
2.3	Special Accessories	2
2.4	Equipment Modification	2
2.5	Measurement Uncertainty	3
2.6	Support Equipment List and Description	3
3.0	<u>Emission Results</u>	4
3.1	Field Strength Calculation	4
3.2	Radiated Emission Configuration Photograph	5
3.3	Radiated Emission Data	5
3.4	Conducted Emission Configuration Photograph	5
3.5	Conducted Emission Data	5
4.0	<u>Equipment Photographs</u>	12
5.0	<u>Product Labelling</u>	12
6.0	<u>Technical Specifications</u>	12
7.0	<u>Instruction Manual</u>	12
8.0	<u>Miscellaneous Information</u>	13
8.1	Measured Bandwidth	13
8.2	Discussion of Pulse Desensitization	16
8.3	Calculation of Average Factor	16
8.4	Emissions Test Procedures	16
9.0	<u>Equipment List</u>	18

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1.0 General Description

1.1 Product Description

The Equipment Under Test (EUT) is a Bluetooth Wireless Keyboard. It can pair with a Bluetooth device such as the Android mobile or IOS mobile. The Bluetooth module in the EUT is operating in the frequency range from 2402MHz to 2480MHz (79 channels with 1MHz channel spacing). The EUT is powered by internal 3.7VDC Ni-MH rechargeable battery which can be charged by 5VDC from USB port, and this port is used for charging function only.

The Model: 2603695, 2603700, 2603701, RK-3695BI and RK-3699BI are the same as the Model: 2603699 in hardware aspect except different color and cosmetic details. The difference in model number serves as marketing strategy. Only model: 2603699 is tested.

Antenna Type : Internal, Integral

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

1.2 Related Submittal(s) Grants

This is a single application for certification of a transceiver.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2009). All radiated measurements were performed in an Open Area Test Site. Preliminary scans were performed in the Open Area Test Site only to determine worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the **“Justification Section”** of this Application.

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been placed on file with the FCC.

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2.0 System Test Configuration

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2009).

The device was powered by 1 x 3.7VDC 300mAh rechargeable battery.

For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

The rear of unit shall be flushed with the rear of the table.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was mounted to a plastic stand if necessary and placed on the wooden turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

There was no special software to exercise the device. Once the unit is powered up, it transmits the RF signal continuously.

2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

2.4 Equipment Modification

Any modifications installed previous to testing by Dongguan Siliten Electronics Co., LTD will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Intertek Testing Services Hong Kong Ltd.

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2.5 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

2.6 Support Equipment List and Description

1. 1 x 110cm USB cable
2. Test mode operated by BlueTool 1449.exe
(Provided by Applicant)
3. Notebook Lenovo (Model: T61, S/N: L3-CF468)
4. Smart-Drive External 1394 HDD (Model: HD3-SU2FW, S/N: 0800261)
5. 1 x USB cable with length of 0.7 meter long
6. 1 x 1394 cable with length of 0.8 meter long
(Provided by Intertek)

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3.0 Emission Results

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

3.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any), Average Factor (optional) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG - AV$$

where $FS = \text{Field Strength in } dB\mu V/m$

$RA = \text{Receiver Amplitude (including preamplifier) in } dB\mu V$

$CF = \text{Cable Attenuation Factor in } dB$

$AF = \text{Antenna Factor in } dB$

$AG = \text{Amplifier Gain in } dB$

$AV = \text{Average Factor in } dB$

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

$$FS = RR + LF$$

where $FS = \text{Field Strength in } dB\mu V/m$

$RR = RA - AG - AV \text{ in } dB\mu V$

$LF = CF + AF \text{ in } dB$

Assume a receiver reading of 52.0 $dB\mu V$ is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29 dB and average factor of 5 dB are subtracted, giving a field strength of 27 $dB\mu V/m$. This value in $dB\mu V/m$ was converted to its corresponding level in $\mu V/m$.

$$RA = 52.0 \text{ } dB\mu V/m$$

$$AF = 7.4 \text{ dB}$$

$$RR = 18.0 \text{ } dB\mu V$$

$$CF = 1.6 \text{ dB}$$

$$LF = 9.0 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$AV = 5.0 \text{ dB}$$

$$FS = RR + LF$$

$$FS = 18 + 9 = 27 \text{ } dB\mu V/m$$

$$\text{Level in } \mu V/m = \text{Common Antilogarithm } [(27 \text{ } dB\mu V/m)/20] = 22.4 \text{ } \mu V/m$$

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3.2 Radiated Emission Configuration Photograph

The worst case in radiated emission was found at 2441.000 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgment: Passed by 3.1 dB

3.4 Conducted Emission Configuration Photograph

The worst case in line-conducted emission was found at 0.514 MHz

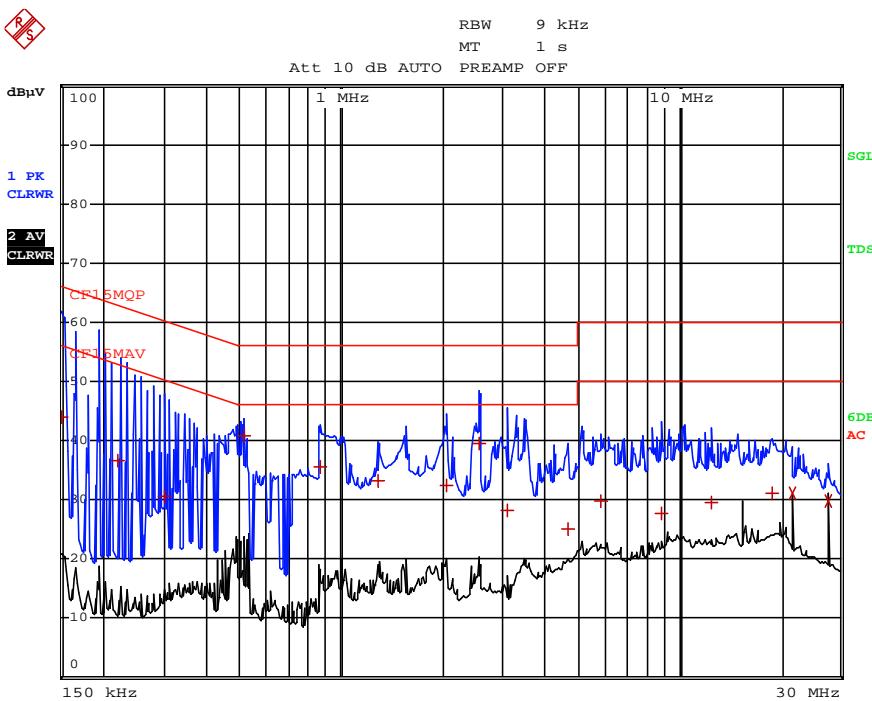
For electronic filing, the worst case line-conducted configuration photographs are saved with filename: conducted photo.pdf.

3.5 Conducted Emission Data

The graph and data table of conducted emission is shown as below.

Judgment: Pass by 15.3 dB

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EDIT PEAK LIST (Final Measurement Results)					
Trace1:	CF15MQP				
Trace2:	CF15MAV				
Trace3:	---				
TRACE	FREQUENCY	LEVEL dBµV	DELTA	LIMIT dB	
1	Quasi Peak 150 kHz	43.83	L1	-22.16	
1	Quasi Peak 222 kHz	36.58	L1	-26.16	
1	Quasi Peak 298.5 kHz	30.70	N	-29.57	
1	Quasi Peak 514.5 kHz	40.71	L1	-15.28	
1	Quasi Peak 865.5 kHz	35.52	L1	-20.48	
1	Quasi Peak 1.2885 MHz	33.09	L1	-22.90	
1	Quasi Peak 2.058 MHz	32.41	L1	-23.58	
1	Quasi Peak 2.571 MHz	39.55	L1	-16.44	
1	Quasi Peak 3.102 MHz	28.22	L1	-27.77	
1	Quasi Peak 4.668 MHz	25.00	L1	-30.99	
1	Quasi Peak 5.856 MHz	29.86	L1	-30.13	
1	Quasi Peak 8.8215 MHz	27.71	L1	-32.29	
1	Quasi Peak 12.4485 MHz	29.49	L1	-30.50	
1	Quasi Peak 18.7395 MHz	31.08	L1	-28.91	
2	CISPR Average 21.5025 MHz	31.19	L1	-18.80	
2	CISPR Average 27.6495 MHz	29.71	L1	-20.28	

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Applicant: Dongguan Siliten Electronics Co., LTD

Date of Test: August 15, 2013

Model: 2603699

Worst-Case Operating Mode: Transmitting

Table 1

Radiated Emissions Pursuant to FCC Part 15 Section 15.249 Requirement

Lowest Channel

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	93.9	33	29.4	90.3	0	90.3	94.0	-3.7
H	4804.000	43.6	33	34.9	45.5	0	45.5	54.0	-8.5
H	7206.000	43.3	33	37.9	48.2	0	48.2	54.0	-5.8
H	9608.000	41.7	33	40.4	49.1	0	49.1	54.0	-4.9
H	12010.000	43.1	33	40.5	50.6	0	50.6	54.0	-3.4
H	14412.000	43.2	33	40.0	50.2	0	50.2	54.0	-3.8

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	93.9	33	29.4	90.3	114.0	-23.7
H	4804.000	43.6	33	34.9	45.5	74.0	-28.5
H	7206.000	43.3	33	37.9	48.2	74.0	-25.8
H	9608.000	41.7	33	40.4	49.1	74.0	-24.9
H	12010.000	43.1	33	40.5	50.6	74.0	-23.4
H	14412.000	43.2	33	40.0	50.2	74.0	-23.8

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.

INTERTEK TESTING SERVICES

Applicant: Dongguan Siliten Electronics Co., LTD

Date of Test: August 15, 2013

Model: 2603699

Worst-Case Operating Mode: Transmitting

Table 2

Radiated Emissions Pursuant to FCC Part 15 Section 15.249 Requirement

Middle Channel

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	94.5	33	29.4	90.9	0	90.9	94.0	-3.1
H	4882.000	43.2	33	34.9	45.1	0	45.1	54.0	-8.9
H	7323.000	43.6	33	37.9	48.5	0	48.5	54.0	-5.5
H	9764.000	41.9	33	40.4	49.3	0	49.3	54.0	-4.7
H	12205.000	42.6	33	40.5	50.1	0	50.1	54.0	-3.9
H	14646.000	44.5	33	38.4	49.9	0	49.9	54.0	-4.1

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	94.5	33	29.4	90.9	114.0	-23.1
H	4882.000	43.2	33	34.9	45.1	74.0	-28.9
H	7323.000	43.6	33	37.9	48.5	74.0	-25.5
H	9764.000	41.9	33	40.4	49.3	74.0	-24.7
H	12205.000	42.6	33	40.5	50.1	74.0	-23.9
H	14646.000	44.5	33	38.4	49.9	74.0	-24.1

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.

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Applicant: Dongguan Siliten Electronics Co., LTD

Date of Test: August 15, 2013

Model: 2603699

Worst-Case Operating Mode: Transmitting

Table 3

Radiated Emissions Pursuant to FCC Part 15 Section 15.249 Requirement

Highest Channel

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	91.7	33	29.4	88.1	0	88.1	94.0	-5.9
H	4960.000	43.3	33	34.9	45.2	0	45.2	54.0	-8.8
H	7440.000	43.4	33	37.9	48.3	0	48.3	54.0	-5.7
H	9920.000	42.0	33	40.4	49.4	0	49.4	54.0	-4.6
H	12400.000	42.6	33	40.5	50.1	0	50.1	54.0	-3.9
H	14880.000	45.1	33	38.4	50.5	0	50.5	54.0	-3.5

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	91.7	33	29.4	88.1	114.0	-25.9
H	4960.000	43.3	33	34.9	45.2	74.0	-28.8
H	7440.000	43.4	33	37.9	48.3	74.0	-25.7
H	9920.000	42.0	33	40.4	49.4	74.0	-24.6
H	12400.000	42.6	33	40.5	50.1	74.0	-23.9
H	14880.000	45.1	33	38.4	50.5	74.0	-23.5

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.

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Applicant: Dongguan Siliten Electronics Co., LTD

Date of Test: August 15, 2013

Model: 2603699

Worst-Case Operating Mode: PC Charging

Table 4

Radiated Emissions Pursuant to FCC Part 15 Section 15.109 Requirement

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	36.000	36.8	16	10.0	30.8	40.0	-9.2
H	120.000	35.2	16	14.0	33.2	43.5	-10.3
H	180.000	28.6	16	20.0	32.6	43.5	-10.9
H	216.000	32.2	16	17.0	33.2	43.5	-10.3
H	240.000	29.6	16	19.0	32.6	46.0	-13.4
H	300.000	26.8	16	22.0	32.8	46.0	-13.2
H	432.000	25.1	16	25.0	34.1	46.0	-11.9
H	456.000	24.0	16	26.0	34.0	46.0	-12.0

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.

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Applicant: Dongguan Siliten Electronics Co., LTD

Date of Test: August 15, 2013

Model: 2603699

Worst-Case Operating Mode: Bluetooth Keyboard On

Table 5

Radiated Emissions Pursuant to FCC Part 15 Section 15.109 Requirement

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	33.855	38.5	16	10.0	32.5	40.0	-7.5
V	38.940	38.1	16	10.0	32.1	40.0	-7.9
V	45.890	39.8	16	10.0	33.8	40.0	-6.2
V	49.860	37.6	16	11.0	32.6	40.0	-7.4
V	53.850	37.6	16	11.0	32.6	40.0	-7.4
V	57.860	36.1	16	11.0	31.1	40.0	-8.9

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.

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4.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf and internal photos.pdf.

5.0 Product Labelling

For electronics filing, the FCC ID label artwork and the label location are saved with filename: label.pdf.

6.0 Technical Specifications

For electronic filing, the block diagram and schematic of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

7.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

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8.0 Miscellaneous Information

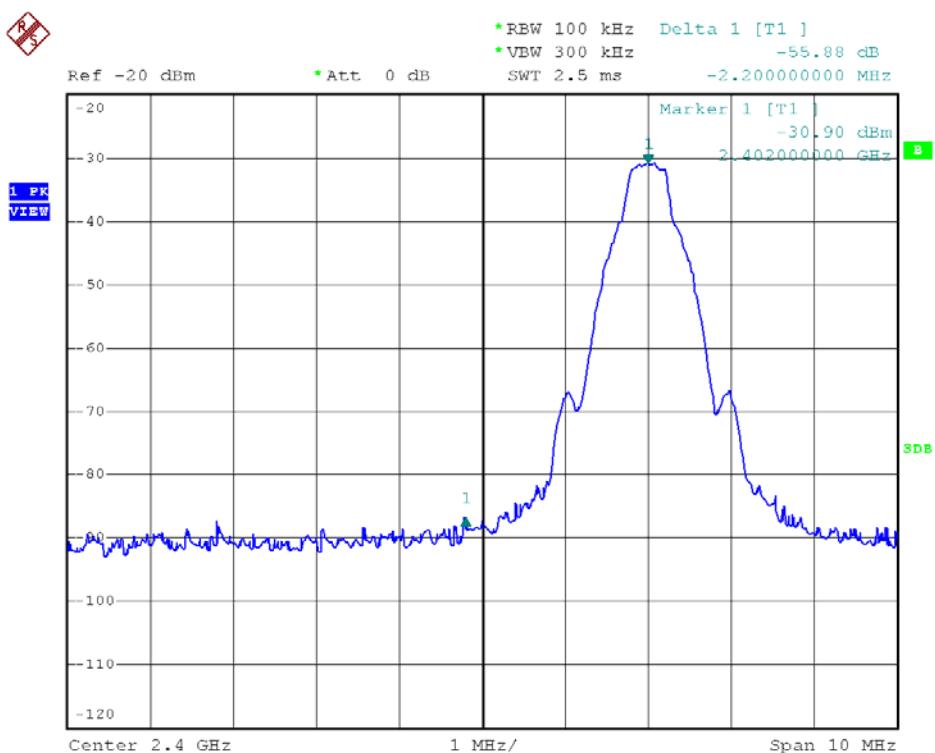
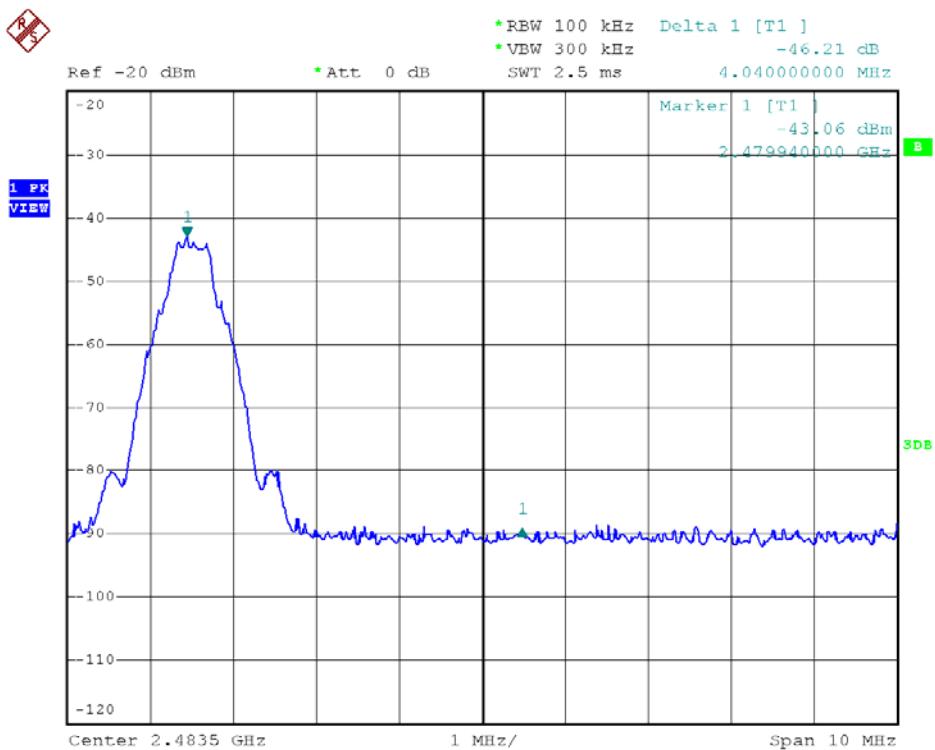
The miscellaneous information includes details of the test procedure and measured bandwidth / calculation of factor such as pulse desensitization and averaging factor (calculation and timing diagram).

8.1 Measured Bandwidth

From the following plots, they show that the fundamental emissions are confined in the specified band (2400MHz to 2483.5MHz). In case of the fundamental emissions are within two standard bandwidths from the bandedge, the delta measurement technique is used for determining bandedge compliance. Standard bandwidth is the bandwidth specified by ANSI C63.4 (2009) for frequency being measured.

Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50dB below the level of the fundamental or to the general radiated emissions limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).

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Peak Measurement

Bandedge compliance is determined by applying marker-delta method, i.e. (Bandedge Plot).

Lower bandedge

Peak Resultant field strength = Fundamental emissions (peak value) – delta from the plot

$$=90.3 \text{ dB}\mu\text{V/m} - 55.9 \text{ dB}$$

$$=34.4 \text{ dB}\mu\text{V/m}$$

Average Resultant field strength = Fundamental emissions (average value) – delta from the plot

$$=90.3 \text{ dB}\mu\text{V/m} - 55.9 \text{ dB}$$

$$=34.4 \text{ dB}\mu\text{V/m}$$

Upper bandedge

Peak Resultant field strength = Fundamental emissions (peak value) – delta from the plot

$$=88.1 \text{ dB}\mu\text{V/m} - 46.2 \text{ dB}$$

$$=41.9 \text{ dB}\mu\text{V/m}$$

Average Resultant field strength = Fundamental emissions (average value) – delta from the plot

$$=88.1 \text{ dB}\mu\text{V/m} - 46.2 \text{ dB}$$

$$=41.9 \text{ dB}\mu\text{V/m}$$

The resultant field strength meets the general radiated emission limit in section 15.209, which does not exceed 74 dB μ V/m (Peak Limit) and 54 dB μ V/m (Average Limit).

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8.2 Discussion of Pulse Desensitization

Pulse desensitivity is not applicable for this device.

8.3 Calculation of Average Factor

The average factor is not applicable for this device as the transmitted signal is a continuously signal.

8.4 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services Hong Kong Ltd. in the measurements of transmitter operating under the Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 (2009). A typical or an unmodulated CW signal at the operating frequency of the EUT has been supplied to the EUT for all measurements. Such a signal is supplied by a signal generator and an antenna in close proximity to the EUT. The signal level is sufficient to stabilize the local oscillator of the EUT.

The transmitting equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axis to obtain maximum emission levels. The antenna height and polarization are also varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in Exhibit 8.3.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower. For line conducted emissions, the range scanned is 150 kHz to 30 MHz.

INTERTEK TESTING SERVICES

8.4 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements were made as described in ANSI C63.4 (2009).

The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater when frequency is below 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.1). Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the forbidden bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, unless otherwise reported. Measurements taken at a closer distance are so marked.

INTERTEK TESTING SERVICES

9.0 Equipment List

1) Radiated Emissions Test

Equipment	EMI Test Receiver	Biconical Antenna	Log Periodic Antenna
Registration No.	EW-2500	EW-0954	EW-0446
Manufacturer	R&S	EMCO	EMCO
Model No.	ESCI	3104C	3146
Calibration Date	Mar. 22, 2013	Apr. 30, 2013	Apr. 30, 2013
Calibration Due Date	Feb. 28, 2014	Oct. 30, 2014	Oct. 30, 2014

Equipment	Spectrum Analyzer	Double Ridged Guide Antenna
Registration No.	EW-2188	EW-1133
Manufacturer	AGILENTTECH	EMCO
Model No.	E4407B	3115
Calibration Date	Nov. 05, 2012	Oct. 05, 2012
Calibration Due Date	Nov. 05, 2013	Apr. 05, 2014

2) Conducted Emissions Test

Equipment	EMI Test Receiver	LISN
Registration No.	EW-2500	EW-2874
Manufacturer	R&S	R&S
Model No.	ESCI	ENV-216
Calibration Date	Mar. 22, 2013	Aug. 15, 2012
Calibration Due Date	Feb. 28, 2014	Aug. 15, 2013

3) Bandedge Measurement

Equipment	Spectrum Analyzer
Registration No.	EW-2249
Manufacturer	R&S
Model No.	FSP30
Calibration Date	Oct. 04, 2012
Calibration Due Date	Oct. 04, 2013