Issuing Laboratory:
Intertek Testing Services Hong Kong Limited

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HOKLAS 005 TEST

TEST REPORT

Report Number: HK12041325-2

Application
for
Original Grant of 47 CFR Part 15 Certification
New Family of RSS-210 Issue 8 Equipment Certification

2.4GHz Frequency Hopping Spread Spectrum Parent Unit

FCC ID: VLJMBP10SPU

IC: 4522A-MBP10SPU

Prepared and Checked by:

Koo Wai Ip
Senior Lead Engineer

Approved by:

Nip Ming Fung, Melvin
Assistant Manager
September 05, 2012

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GENERAL INFORMATION

Applicant Name:	Binatone Electronics International Ltd.
Applicant Address:	Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong.
FCC Specification Standard:	FCC Part 15, October 1, 2010 Edition
FCC ID:	VLJMBP10SPU
FCC Model(s):	MBP10SPU, MBP10S/2PU
IC Specification Standard:	RSS-210 Issue 8, December 2010 RSS-Gen Issue 3, December 2010
IC:	4522A-MBP10SPU
IC Model(s):	MBP10SPU, MBP10S/2PU
Type of EUT:	Transceiver
Description of EUT:	2.4GHz Frequency Hopping Spread Spectrum Parent Unit
Serial Number:	N/A
Sample Receipt Date:	April 27, 2012
Date of Test:	August 10 - 13, 2012
Report Date:	September 05, 2012
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

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EXHIBIT 1
TEST RESULTS SUMMARY & STATEMENT OF COMPLIANCE

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1.0 Test Results Summary & Statement of Compliance

1.1 Summary of Test Results

Test Items	FCC Part 15 Section	RSS-210/ RSS-Gen#/ RSS-310^ Section	Results	Details see section
Antenna Requirement	15.203	7.1.2#	Pass	2.1
Radiated Emission Radiated Emission on the Bandedge	15.249(a), 209, & 109 15.249(d)	A2.9(a) A2.9(b)	Pass Pass	4.2 4.3
Radiated Emission in Restricted Bands	15.205	2.2	Pass	4.2
AC Power Line Conducted Emission	15.207 & 15.107	7.2.4#	Pass	4.4

Note: Pursuant to FCC Part 15 Section 15.215(c), the 20dB 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.

1.2 Statement of Compliance

The equipment under test is found to be complying with the following standards:

FCC Part 15, October 1, 2010 Edition
RSS-210 Issue 8, December 2010
RSS-Gen Issue 3, December 2010

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EXHIBIT 2
GENERAL DESCRIPTION

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2.0 **General Description**

2.1 Product Description

The MBP10SPU is a 2.4GHz Frequency Hopping Spread Spectrum Parent Unit. It operates at frequency range of 2402.784MHz to 2479.680MHz. The Parent Unit is powered by an adaptor 100-240VAC to 5VDC 600mA with either 5ESP brand, Model: 5E-AD050060-U or GPE brand, Model: GPE003W-050060-1 and/or a "Ni-MH" type rechargeable battery pack (2.4V, 600mAh).

The antenna used in parent unit is integral, and the test sample is a prototype.

The Model(s): MBP10S/2PU is the same as the Model: MBP10SPU in electrical designs including software & firmware, PCB layout and construction design/physical design/enclosure. The only differences between these models are model number, cosmetic details and number of parents to be sold for marketing purpose.

The circuit description is saved with filename: descri.pdf.

2.2 Test Methodology

Both AC power line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2009). Preliminary radiated scans and all radiated measurements were performed in Open Area Test Sites. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

2.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data and conducted data are at Roof Top and 2nd Floor respectively of Intertek Testing Services Hong Kong Ltd., which is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC and the Industry Canada.

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EXHIBIT 3
SYSTEM TEST CONFIGURATION

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3.0 System Test Configuration

3.1 Justification

For radiated emissions testing, the equipment under test (EUT) was setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables (if any) were manipulated to produce worst case emissions.

The EUT was powered by a 100-240VAC to 5VDC 600mA adaptor and/or fully charged battery.

For the measurements, the EUT was attached to a plastic stand if necessary and placed on the wooden turntable. If the EUT attached to peripherals, they were connected and operational to simulate typical use.

The signal was maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization were varied during the search for maximum signal level. The antenna height was varied from 1 to 4 meters. Radiated emissions were taken at three meters unless the signal level was too low for measurement at that distance. If necessary, a pre-amplifier was used and/or the test was conducted at a closer distance.

For any intentional radiator powered by AC power line, measurements of the radiated signal level of the fundamental frequency component of the emission was performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.

For transmitter radiated measurement, the spectrum analyzer resolution bandwidth was 100 kHz for frequencies below 1000 MHz. The resolution bandwidth was 1 MHz for frequencies above 1000 MHz.

Radiated emission measurement for transmitter was performed 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 to 40 GHz, whichever is lower.

Emission that are directly caused by digital circuits in the transmit path and transmitter portion were measured, and the limit are according to FCC Part 15 Section 15.209. Digital circuitry used to control additional functions other than the operation of the transmitter are subject to FCC Part 15 Section 15.109 Limits.

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3.1 Justification - Cont'd

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 section 4.2.3.

Determination of pulse desensitization was made according to *Hewlett Packard Application Note 150-2, Spectrum Analysis... Pulsed RF.* The effective period (Teff) was referred to Exhibit 4.2.3. With the resolution bandwidth 1MHz and spectrum analyzer IF bandwidth 3dB, the pulse desensitization factor was 0dB.

For AC line conducted emission test, the EUT along with its peripherals were placed on a 1.0m(W)x1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN), which provided 50ohm coupling impedance for measuring instrument. The LISN housing, measuring instrument case, reference ground plane, and vertical ground plane were bounded together. The excess power cable between the EUT and the LISN was bundled.

All connecting cables of EUT and peripherals were manipulated to find the maximum emission.

All relevant operation modes have been tested, and the worst case data is included in this report.

3.2 EUT Exercising Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

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3.3 Details of EUT and Description of Accessories

Details of EUT:

An AC adaptor and/or a battery (provided with the unit) were used to power the device. Their description are listed below.

(1) Parent Unit: An AC adaptor (100-240VAC to 5VDC 600mA, Model: 5E-AD050060-U, Brand: 5ESP or Model: GPE003W-050060-1, Brand: GPE) (Supplied by Client)
(2) Parent Unit Battery: A "Ni-MH" type rechargeable battery (2.4V, 600mAh) (Supplied by Client)

Description of Accessories:

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

3.4 Measurement Uncertainty

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

Uncertainty and Compliance - Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

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EXHIBIT 4
TEST RESULTS

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4.0 **Test 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.

4.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

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

where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB
AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflects the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

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

Example

Assume a receiver reading of 62.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 62.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29 dB
PD = 0 dB
AV = -10 dB

FS = 62 + 7.4 +1.6 -29 +0 + (-10) = 32 dBμV/m
Level in μV/m = Common Antilogarithm [(32 dBμV/m)/20] = 39.8 μV/m

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4.2 Radiated Emissions

4.2.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
at

Parent Unit with GPE Adaptor: 2479.680 MHz

The worst case radiated emission configuration photographs are saved with filename: config photos.pdf

4.2.2 Radiated Emission Data

The data in tables 1-8 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Parent Unit with GPE Adaptor: Passed by 3.5 dB margin peak limit

4.2.3 Transmitter Duty Cycle Calculation

For DBD,
Duty Cycle (DC) = Maximum On time in 100ms/100ms
= (0.822 x 2)ms / 100ms

Average Factor (AF) = 20 log(DC)
= 20* log (0.01644)
= -35.6

The plots of transmitter ON time is saved as below.

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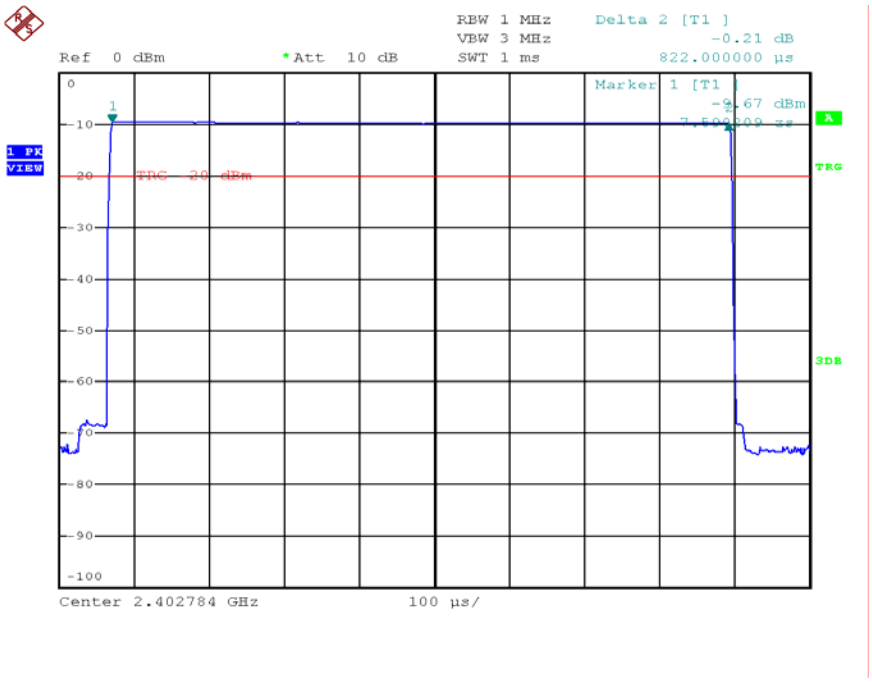
Plots of transmitter ON time

Parent Unit, Traffic



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Mode: TX-Channel 2 (with 5ESP adaptor)

Table 1, Parent Unit

Radiated Emission Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	2402.784	113.8	33	29.4	35.6	74.6	94.0	-19.4
H	***4805.568***	***56.7***	***33***	***34.9***	***35.6***	***23.0***	***54.0***	***-31.0***
H	7208.352	47.5	33	37.9	35.6	16.8	54.0	-37.2
H	9611.136	46.5	33	40.4	35.6	18.3	54.0	-35.7
H	***12013.920***	***44.7***	***33***	***40.5***	***35.6***	***16.6***	***54.0***	***-37.4***
H	14416.704	43.9	33	40.0	35.6	15.3	54.0	-38.7

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	2402.784	113.8	33	29.4	110.2	114.0	-3.8
H	***4805.568***	***56.7***	***33***	***34.9***	***58.6***	***74.0***	***-15.4***
H	7208.352	47.5	33	37.9	52.4	74.0	-21.6
H	9611.136	46.5	33	40.4	53.9	74.0	-20.1
H	***12013.920***	***44.7***	***33***	***40.5***	***52.2***	***74.0***	***-21.8***
H	14416.704	43.9	33	40.0	50.9	74.0	-23.1

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance 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 radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Mode: TX-Channel 46 (with 5ESP adaptor)

Table 2, Parent Unit

Radiated Emission Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	2440.800	113.8	33	29.4	35.6	74.6	94.0	-19.4
H	***4881.600***	***56.5***	***33***	***34.9***	***35.6***	***22.8***	***54.0***	***-31.2***
H	***7322.400***	***47.4***	***33***	***37.9***	***35.6***	***16.7***	***54.0***	***-37.3***
H	9763.200	46.5	33	40.4	35.6	18.3	54.0	-35.7
H	***12204.000***	***44.7***	***33***	***40.5***	***35.6***	***16.6***	***54.0***	***-37.4***
H	14644.800	45.2	33	38.4	35.6	15.0	54.0	-39.0

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	2440.800	113.8	33	29.4	110.2	114.0	-3.8
H	***4881.600***	***56.5***	***33***	***34.9***	***58.4***	***74.0***	***-15.6***
H	***7322.400***	***47.4***	***33***	***37.9***	***52.3***	***74.0***	***-21.7***
H	9763.200	46.5	33	40.4	53.9	74.0	-20.1
H	***12204.000***	***44.7***	***33***	***40.5***	***52.2***	***74.0***	***-21.8***
H	14644.800	45.2	33	38.4	50.6	74.0	-23.4

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance 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 radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Mode: TX-Channel 91 (with 5ESP adaptor)

Table 3, Parent Unit

Radiated Emission Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	2479.680	113.9	33	29.4	35.6	74.7	94.0	-19.3
H	***4959.360***	***56.7***	***33***	***34.9***	***35.6***	***23.0***	***54.0***	***-31.0***
H	***7439.040***	***47.6***	***33***	***37.9***	***35.6***	***16.9***	***54.0***	***-37.1***
H	9918.720	46.8	33	40.4	35.6	18.6	54.0	-35.4
H	***12398.400***	***45.1***	***33***	***40.5***	***35.6***	***17.0***	***54.0***	***-37.0***
H	14878.080	45.4	33	38.4	35.6	15.2	54.0	-38.8

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	2479.680	113.9	33	29.4	110.3	114.0	-3.7
H	***4959.360***	***56.7***	***33***	***34.9***	***58.6***	***74.0***	***-15.4***
H	***7439.040***	***47.6***	***33***	***37.9***	***52.5***	***74.0***	***-21.5***
H	9918.720	46.8	33	40.4	54.2	74.0	-19.8
H	***12398.400***	***45.1***	***33***	***40.5***	***52.6***	***74.0***	***-21.4***
H	14878.080	45.4	33	38.4	50.8	74.0	-23.2

NOTES:
1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance 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 radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Mode: Talk (with 5ESP adaptor)

Table 4, Parent unit

Radiated Emission Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	41.470	39.8	16	10.0	33.8	40.0	-6.2
V	55.296	38.6	16	11.0	33.6	40.0	-6.4
V	69.120	42.4	16	7.0	33.4	40.0	-6.6
V	82.944	43.1	16	7.0	34.1	40.0	-5.9
H	***110.590***	***36.2***	***16***	***14.0***	***34.2***	***43.5***	***-9.3***
H	138.190	36.0	16	14.0	34.0	43.5	-9.5
H	***165.838***	***32.6***	***16***	***17.0***	***33.6***	***43.5***	***-9.9***

NOTES:
1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance 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 radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Mode: TX-Channel 2 (with GPE adaptor)

Table 5, Parent Unit

Radiated Emission Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	2402.784	114.0	33	29.4	35.6	74.8	94.0	-19.2
H	***4805.568***	***56.7***	***33***	***34.9***	***35.6***	***23.0***	***54.0***	***-31.0***
H	7208.352	47.5	33	37.9	35.6	16.8	54.0	-37.2
H	9611.136	46.6	33	40.4	35.6	18.4	54.0	-35.6
H	***12013.920***	***44.8***	***33***	***40.5***	***35.6***	***16.7***	***54.0***	***-37.3***
H	14416.704	43.8	33	40.0	35.6	15.2	54.0	-38.8

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	2402.784	114.0	33	29.4	110.4	114.0	-3.6
H	***4805.568***	***56.7***	***33***	***34.9***	***58.6***	***74.0***	***-15.4***
H	7208.352	47.5	33	37.9	52.4	74.0	-21.6
H	9611.136	46.6	33	40.4	54.0	74.0	-20.0
H	***12013.920***	***44.8***	***33***	***40.5***	***52.3***	***74.0***	***-21.7***
H	14416.704	43.8	33	40.0	50.8	74.0	-23.2

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance 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 radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Mode: TX-Channel 46 (with GPE adaptor)

Table 6, Parent Unit

Radiated Emission Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	2440.800	113.9	33	29.4	35.6	74.7	94.0	-19.3
H	***4881.600***	***56.6***	***33***	***34.9***	***35.6***	***22.9***	***54.0***	***-31.1***
H	***7322.400***	***47.5***	***33***	***37.9***	***35.6***	***16.8***	***54.0***	***-37.2***
H	9763.200	46.7	33	40.4	35.6	18.5	54.0	-35.5
H	***12204.000***	***45.1***	***33***	***40.5***	***35.6***	***17.0***	***54.0***	***-37.0***
H	14644.800	45.5	33	38.4	35.6	15.3	54.0	-38.7

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	2440.800	113.9	33	29.4	110.3	114.0	-3.7
H	***4881.600***	***56.6***	***33***	***34.9***	***58.5***	***74.0***	***-15.5***
H	***7322.400***	***47.5***	***33***	***37.9***	***52.4***	***74.0***	***-21.6***
H	9763.200	46.7	33	40.4	54.1	74.0	-19.9
H	***12204.000***	***45.1***	***33***	***40.5***	***52.6***	***74.0***	***-21.4***
H	14644.800	45.5	33	38.4	50.9	74.0	-23.1

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance 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 radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Mode: TX-Channel 91 (with GPE adaptor)

Table 7, Parent Unit

Radiated Emission Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	2479.680	114.1	33	29.4	35.6	74.9	94.0	-19.1
H	***4959.360***	***56.7***	***33***	***34.9***	***35.6***	***23.0***	***54.0***	***-31.0***
H	***7439.040***	***47.6***	***33***	***37.9***	***35.6***	***16.9***	***54.0***	***-37.1***
H	9918.720	46.6	33	40.4	35.6	18.4	54.0	-35.6
H	***12398.400***	***45.6***	***33***	***40.5***	***35.6***	***17.5***	***54.0***	***-36.5***
H	14878.080	45.5	33	38.4	35.6	15.3	54.0	-38.7

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	2479.680	114.1	33	29.4	110.5	114.0	-3.5
H	***4959.360***	***56.7***	***33***	***34.9***	***58.6***	***74.0***	***-15.4***
H	***7439.040***	***47.6***	***33***	***37.9***	***52.5***	***74.0***	***-21.5***
H	9918.720	46.6	33	40.4	54.0	74.0	-20.0
H	***12398.400***	***45.6***	***33***	***40.5***	***53.1***	***74.0***	***-20.9***
H	14878.080	45.5	33	38.4	50.9	74.0	-23.1

NOTES:
1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance 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 radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Mode: Talk (with GPE adaptor)

Table 8, Parent Unit

Radiated Emission Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	41.470	39.6	16	10.0	33.6	40.0	-6.4
V	55.296	38.8	16	11.0	33.8	40.0	-6.2
V	69.120	42.6	16	7.0	33.6	40.0	-6.4
V	82.944	43.1	16	7.0	34.1	40.0	-5.9
H	***110.592***	***36.4***	***16***	***14.0***	***34.4***	***43.5***	***-9.1***
H	138.190	35.6	16	14.0	33.6	43.5	-9.9
H	***165.838***	***32.4***	***16***	***17.0***	***33.4***	***43.5***	***-10.1***

NOTES:
1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance 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 radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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4.3 Radiated Emission on the Bandedge

From the following plots, they show that the fundamental emissions are confined in the specified band (2400MHz and 2483.5MHz). In case of emissions up to two standard bandwidths away 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 50 dB below the level of the fundamental or to the general radiated emission limits in FCC Part 15 Section 15.209 / Table 5 of RSS-Gen, whichever is the lesser attenuation, which meet the requirement of FCC Part 15 Section 15.249(d) / RSS-210 A2.9(b).

The plots of radiated emission on the bandedge are saved as below.

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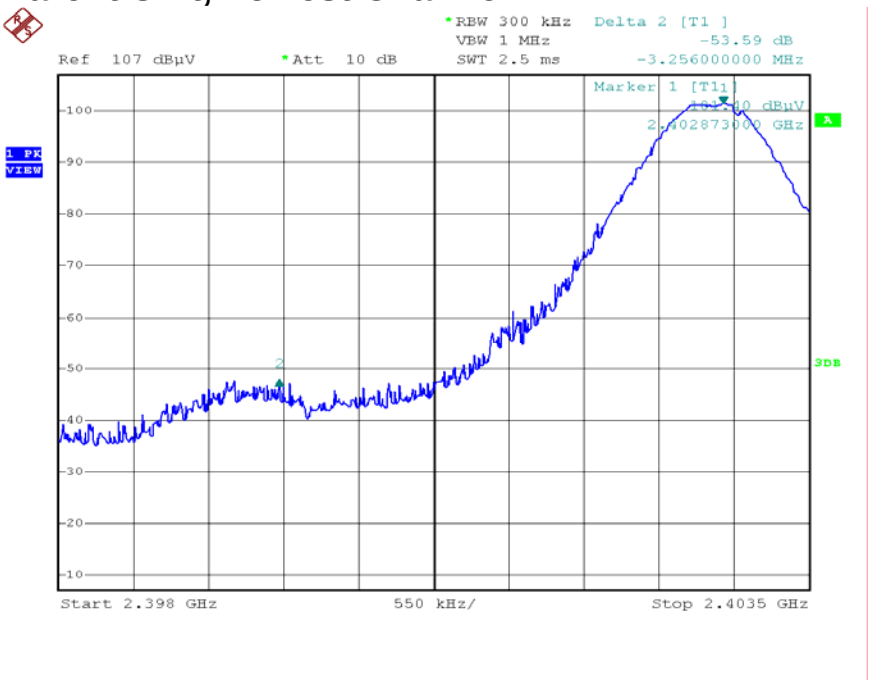
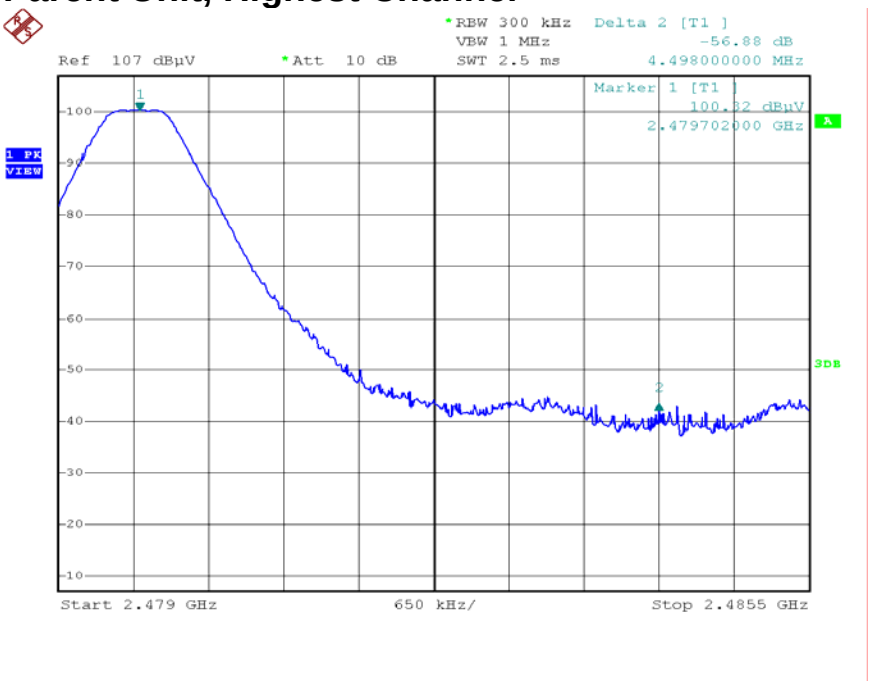
Plots of radiated emission on the bandedge

Parent Unit, Lowest Channel



Parent Unit, Highest Channel



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4.4 AC Power Line Conducted Emission

[ ] Not applicable – EUT is only powered by battery for operation.

[×] EUT connects to AC power line. Emission Data is listed in following pages.

[ ] Parent Unit connects to AC power line and has transmission. Parent Unit connects to AC power line but has no transmission. Emission Data of Base Unit is listed in following pages.

4.4.1 AC Power Line Conducted Emission Configuration Photograph

Worst Case Line-Conducted Configuration
at

Parent Unit with 5ESP Adaptor: 0.150 MHz

The worst case line conducted configuration photographs are saved with filename: config photos.pdf

4.4.2 AC Power Line Conducted Emission Data

The plot(s) and data in the following pages list the significant emission frequencies, the limit and the margin of compliance.

Parent Unit with 5ESP Adaptor: Passed by 7.2 dB margin compare
with quasi-peak limit

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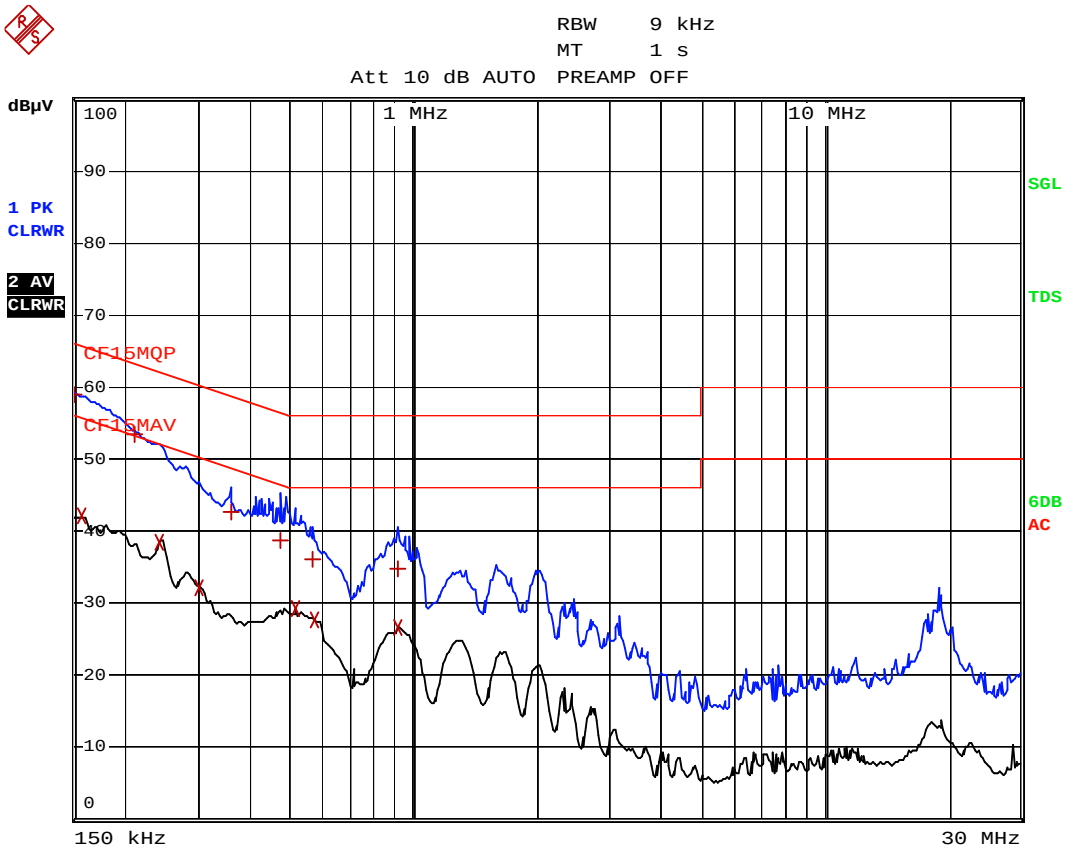
Worst Case: Sound Receiving (5ESP Adaptor)



Date: 10.AUG.2012 10:58:10

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Worst Case: Sound Receiving (5ESP Adaptor)

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
1	Quasi Peak	150 kHz	58.79	L1	-7.20
2	CISPR Average	159 kHz	42.16	L1	-13.35
1	Quasi Peak	213 kHz	53.40	L1	-9.68
2	CISPR Average	244.5 kHz	38.35	L1	-13.58
2	CISPR Average	298.5 kHz	32.06	L1	-18.21
1	Quasi Peak	357 kHz	42.61	L1	-16.18
1	Quasi Peak	469.5 kHz	38.70	L1	-17.81
2	CISPR Average	514.5 kHz	29.28	L1	-16.71
1	Quasi Peak	568.5 kHz	36.12	L1	-19.87
2	CISPR Average	573 kHz	27.63	L1	-18.36
1	Quasi Peak	915 kHz	34.82	L1	-21.17
2	CISPR Average	915 kHz	26.51	L1	-19.48

Date: 10.AUG.2012 10:57:47

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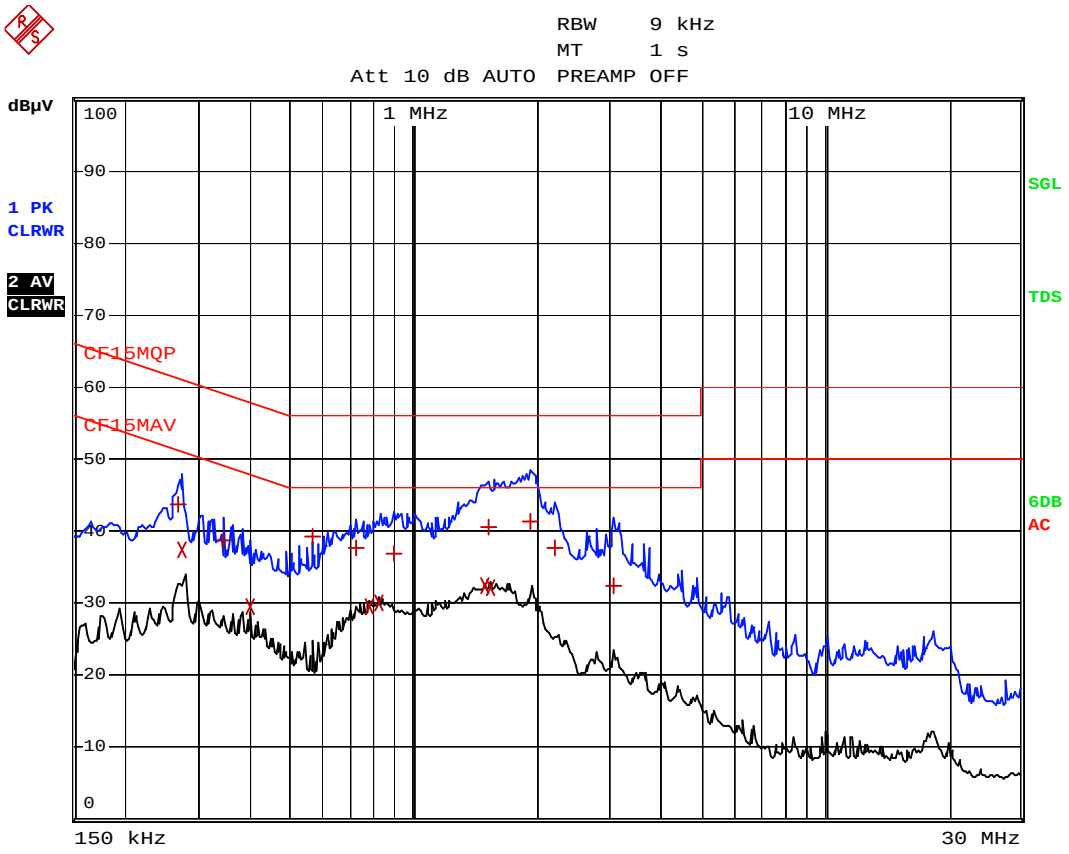
Worst Case: Sound Receiving (GPE Adaptor)



Date: 10.AUG.2012 11:52:07

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Worst Case: Sound Receiving (GPE Adaptor)

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
1	Quasi Peak	271.5 kHz	43.73	L1	-17.33
2	CISPR Average	276 kHz	37.36	L1	-13.56
1	Quasi Peak	343.5 kHz	38.79	L1	-20.32
2	CISPR Average	397.5 kHz	29.62	L1	-18.28
1	Quasi Peak	564 kHz	39.31	L1	-16.68
1	Quasi Peak	726 kHz	37.53	L1	-18.46
2	CISPR Average	775.5 kHz	29.56	L1	-16.43
2	CISPR Average	825 kHz	30.00	L1	-15.99
1	Quasi Peak	897 kHz	36.93	L1	-19.06
2	CISPR Average	1.4955 MHz	32.37	L1	-13.62
1	Quasi Peak	1.5225 MHz	40.57	L1	-15.42
2	CISPR Average	1.545 MHz	32.20	L1	-13.79
1	Quasi Peak	1.9275 MHz	41.20	L1	-14.79
1	Quasi Peak	2.211 MHz	37.72	L1	-18.27
1	Quasi Peak	3.0795 MHz	32.48	L1	-23.52

Date: 10.AUG.2012 11:51:45

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EXHIBIT 5
EQUIPMENT LIST

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5.0 **Equipment List**

1) Radiated Emissions Test

Equipment	Biconical Antenna	Log Periodic Antenna	Double Ridged Guide Antenna
Registration No.	EW-2512	EW-0446	EW-1133
Manufacturer	EMCO	EMCO	EMCO
Model No.	3104C	3146	3115
Calibration Date	Nov. 15, 2011	Oct. 31, 2011	Mar. 02, 2011
Calibration Due Date	May. 15, 2013	Apr. 30, 2013	Sep. 02, 2012

Equipment	EMI Test Receiver	Spectrum Analyzer	Spectrum Analyzer
Registration No.	EW-2500	EW-2188	EW-2253
Manufacturer	R&S	AGILENTTECH	R&S
Model No.	ESCI	E4407B	FSP40
Calibration Date	Feb. 24, 2012	Sep. 26, 2011	Jan. 12, 2012
Calibration Due Date	Feb. 24, 2013	Sep. 26, 2012	Jan. 12, 2013

Equipment	Broad-Band Horn Antenna with frequency range	Digital Multimeter
Registration No.	EW-1679	EW-1237
Manufacturer	SCHWARZBECK	FLUKE
Model No.	BBHA9170	179
Calibration Date	Mar. 21, 2012	Sep. 05, 2011
Calibration Due Date	Mar. 21, 2013	Oct. 01, 2012

2) Conducted Emissions Test

Equipment	EMI Test Receiver	Artificial Mains	Pulse Limiter
Registration No.	EW-2666	EW-0192	EW-0698
Manufacturer	R&S	R&S	R&S
Model No.	ESCI7	ESH3-Z5	ESH3-Z2
Calibration Date	May. 21, 2012	Apr. 11, 2012	Apr. 06, 2012
Calibration Due Date	May. 21, 2013	Apr. 11, 2013	Apr. 06, 2013

END OF TEST REPORT

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