

## TEST REPORT

**Report Number: HK12040547-2**

Application  
for  
Original Grant  
of 47 CFR Part 15 Certification

1.9GHz Digital Modulation Cordless Phone with Caller ID, Speakerphone,  
Digital Answering Machine and Bluetooth - Base Unit Bluetooth Portion

**FCC ID: EW780-8919-00**

Prepared and Checked by:

Approved by:

***Signed on File***

Koo Wai Ip  
Senior Lead Engineer

---

Nip Ming Fung, Melvin  
Assistant Manager  
May 24, 2012

- The test report only allows to be revised within the retention period unless further standard or the requirement was noticed.
- This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

## INTERTEK TESTING SERVICES

---

### GENERAL INFORMATION

<b>Applicant Name:</b>	VTech Telecommunications Ltd.
<b>Applicant Address:</b>	23/F., Tai Ping Industrial Centre, Block 1, 57 Ting Kok Road, Tai Po, N.T., Hong Kong.
<b>FCC Specification Standard:</b>	FCC Part 15, October 1, 2010 Edition
<b>FCC ID:</b>	EW780-8919-00
<b>FCC Model(s):</b>	LS6191, LS6191-13, LS6191-15, LS6191-16, LS6191-17, LS619C-AB
<b>Type of EUT:</b>	Transceiver
<b>Description of EUT:</b>	1.9GHz Digital Modulation Cordless Phone with Caller ID, Speakerphone, Digital Answering Machine and Bluetooth - Base Unit Bluetooth Portion
<b>Serial Number:</b>	N/A
<b>Sample Receipt Date:</b>	April 13, 2012
<b>Date of Test:</b>	May 04 - 11, 2012
<b>Report Date:</b>	May 24, 2012
<b>Environmental Conditions:</b>	Temperature: +10 to 40°C Humidity: 10 to 90%

---

# INTERTEK TESTING SERVICES

---

## Table of Contents

<b>1.0 Test Results Summary &amp; Statement of Compliance</b> .....	4
1.1 Summary of Test Results .....	4
1.2 Statement of Compliance .....	4
<b>2.0 General Description</b> .....	6
2.1 Product Description .....	6
2.2 Test Methodology .....	7
2.3 Test Facility .....	7
<b>3.0 System Test Configuration</b> .....	9
3.1 Justification .....	9
3.2 EUT Exercising Software .....	10
3.3 Details of EUT and Description of Accessories .....	11
3.4 Measurement Uncertainty .....	11
<b>4.0 Test Results</b> .....	13
4.1 Field Strength Calculation .....	13
4.2 Radiated Emissions .....	14
4.2.1 Radiated Emission Configuration Photograph .....	14
4.2.2 Radiated Emission Data .....	14
4.2.3 Transmitter Duty Cycle Calculation .....	15
4.3 Radiated Emission on the Bandedge .....	20
4.4 AC Power Line Conducted Emission .....	21
4.4.1 AC Power Line Conducted Emission Configuration Photograph .....	21
4.4.2 AC Power Line Conducted Emission Data .....	21
<b>5.0 Equipment List</b> .....	29

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 1  
TEST RESULTS SUMMARY & STATEMENT OF COMPLIANCE**

## INTERTEK TESTING SERVICES

---

### 1.0 Test Results Summary & Statement of Compliance

#### 1.1 Summary of Test Results

Test Items	FCC Part 15 Section	Results	Details see section
Antenna Requirement	15.203	Pass	2.1
Radiated Emission	15.249(a), 209, & 109	Pass	4.2
Radiated Emission on the Bandedge	15.249(d)	Pass	4.3
Radiated Emission in Restricted Bands	15.205	Pass	4.2
AC Power Line Conducted Emission	15.207 & 15.107	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 standard:

FCC Part 15, October 1, 2010 Edition

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 2  
GENERAL DESCRIPTION**

## **INTERTEK TESTING SERVICES**

---

### **2.0 General Description**

#### **2.1 Product Description**

The LS6191 is a 1.9GHz Digital Modulation Cordless Phone with Caller ID, Speakerphone, Digital Answering Machine and Bluetooth - Base Unit Bluetooth Portion. Only base unit has Bluetooth feature, and It operates at frequency range of 2402MHz to 2480MHz with 79 channels. The Base Unit is powered by an adaptor 100-240VAC to 6VDC 450mA.

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

For FCC, The Model(s): LS6191-13, LS6191-15, LS6191-16, LS6191-17 and LS619C-AB are the same as the Model: LS6191 in electronics/electrical designs including software & firmware, PCB layout and construction design/physical design/enclosure. The only differences between these models are color, model number, package configuration and material to be sold for marketing purpose. Suffix (A) indicates any alphanumeric character or blank presenting number of handset and extra charger, Suffix (B) indicates any alphanumeric character or blank presenting different color of enclosure, Suffix (C) indicates any alphanumeric character presenting different package material.

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

Connection between the device and the telephone network is accomplished through the use of USOC RJ11C in the 2-wire loop calling central office line.

## INTERTEK TESTING SERVICES

---

### 2.2 Test Methodology

Both AC power line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). 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 2<sup>nd</sup> 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.

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 3  
SYSTEM TEST CONFIGURATION**

## INTERTEK TESTING SERVICES

---

### 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 6VDC 450mA, Model: S004LU0600045 adaptor.

For the measurements, the EUT was attached to a plastic stand if necessary and placed on the wooden turntable. If the base unit attached to peripherals, they were connected and operational to simulate typical use. The handset was remotely located as far from the antenna and the base as possible to ensure full power transmission from the base. Else, the base was wired to transmit full power.

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.

## INTERTEK TESTING SERVICES

---

### 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 625 $\mu$ s. 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.

The DECT module was put into transmission mode when taking radiated emission data for determining worst-case spurious emission.

### 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.

## INTERTEK TESTING SERVICES

---

### 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) Base Unit: An AC adaptor (100-240VAC to 6VDC 450mA, Model: S004LU0600045) (Supplied by Client)

#### Description of Peripherals:

- (1) Telephone Line Simulator, Model: TLS-5C-01, S/N: 059355 (Supplied by Intertek)
- (2) Nokia Mobile Phone, Model: 5300, FCC ID: PPIRM-146 (Supplied by Intertek)
- (3) Handset Unit, Model: LS6191, FCC ID: EW780-8919-00 (Supplied by Client)
- (4) Telecommunication cable with RJ11C connectors (3 m, unshielded) (Supplied by Intertek)
- (5) Simple Corded Phone, Brand: Uniden, Model: AS7402 (Supplied by Intertek)

### 3.4 Measurement Uncertainty

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

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 4  
TEST RESULTS**

---

## INTERTEK TESTING SERVICES

---

### 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 dB $\mu$ V/m
- RA = Receiver Amplitude (including preamplifier) in dB $\mu$ V
- 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 reflect 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 dB $\mu$ V 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 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

$$\begin{aligned} RA &= 62.0 \text{ dB}\mu\text{V} \\ AF &= 7.4 \text{ dB} \\ CF &= 1.6 \text{ dB} \\ AG &= 29 \text{ dB} \\ PD &= 0 \text{ dB} \\ AV &= -10 \text{ dB} \\ FS &= 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 \text{ dB}\mu\text{V/m} \end{aligned}$$

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm} [(32 \text{ dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}$$

## INTERTEK TESTING SERVICES

---

### 4.2 Radiated Emissions

#### 4.2.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission  
at

Base Unit: 69.250 MHz

The worst case radiated emission configuration photographs are attached in the Appendix and saved with filename: config photos.pdf

#### 4.2.2 Radiated Emission Data

The data in tables 1-4 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Base Unit: Passed by 6.2 dB margin

## INTERTEK TESTING SERVICES

---

### 4.2.3 Transmitter Duty Cycle Calculation

Based on the Bluetooth Specification Version 2.0 / 2.1 + EDR, the transmitter ON time for each timeslot of Bluetooth is  $625\mu\text{s}$ . DH5 has the maximum duty cycle, which consists of 5 continuous Tx slots and 1 Rx slot. Therefore one hopset take  $(5+1) \times 625\mu\text{s} = 3.75\text{ms}$ . For one period for a pseudo-random hopping through all 79 RF channels, it take:  $79 \times 3.75\text{ms} = 296.25\text{ms}$ .

The dwell time for DH5 is  $5 \times 625\mu\text{s} = 3.125\text{ms}$ .

Therefore,

$$\begin{aligned}\text{Duty Cycle (DC)} &= \text{Maximum On time in } 100\text{ms}/100\text{ms} \\ &= 3.125\text{ms}/100\text{ms} \\ &= 0.03125\end{aligned}$$

$$\begin{aligned}\text{Average Factor (AF) of Bluetooth in dB} &= 20 \log_{10} (0.03125) \\ &= -30.1\text{dB}\end{aligned}$$

## INTERTEK TESTING SERVICES

---

Mode: TX-Channel 00

Table 1, Base Unit

### Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2402.000	100.0	33	29.4	30.1	66.3	94.0	-27.7
<b>H</b>	<b>4804.000</b>	<b>59.3</b>	<b>33</b>	<b>34.9</b>	<b>30.1</b>	<b>31.1</b>	<b>54.0</b>	<b>-22.9</b>
H	7206.000	52.7	33	37.9	30.1	27.5	54.0	-26.5
H	9608.000	49.8	33	40.4	30.1	27.1	54.0	-26.9
<b>H</b>	<b>12010.000</b>	<b>49.3</b>	<b>33</b>	<b>40.5</b>	<b>30.1</b>	<b>26.7</b>	<b>54.0</b>	<b>-27.3</b>
H	14412.000	49.2	33	40.0	30.1	26.1	54.0	-27.9

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Peak Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2402.000	100.0	33	29.4	96.4	114.0	-17.6
<b>H</b>	<b>4804.000</b>	<b>59.3</b>	<b>33</b>	<b>34.9</b>	<b>61.2</b>	<b>74.0</b>	<b>-12.8</b>
H	7206.000	52.7	33	37.9	57.6	74.0	-16.4
H	9608.000	49.8	33	40.4	57.2	74.0	-16.8
<b>H</b>	<b>12010.000</b>	<b>49.3</b>	<b>33</b>	<b>40.5</b>	<b>56.8</b>	<b>74.0</b>	<b>-17.2</b>
H	14412.000	49.2	33	40.0	56.2	74.0	-17.8

- 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.

## INTERTEK TESTING SERVICES

---

Mode: TX-Channel 39

Table 2, Base Unit

### Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2441.000	99.9	33	29.4	30.1	66.2	94.0	-27.8
<b>H</b>	<b>4882.000</b>	<b>59.5</b>	<b>33</b>	<b>34.9</b>	<b>30.1</b>	<b>31.3</b>	<b>54.0</b>	<b>-22.7</b>
<b>H</b>	<b>7323.000</b>	<b>52.3</b>	<b>33</b>	<b>37.9</b>	<b>30.1</b>	<b>27.1</b>	<b>54.0</b>	<b>-26.9</b>
H	9764.000	50.2	33	40.4	30.1	27.5	54.0	-26.5
<b>H</b>	<b>12205.000</b>	<b>49.4</b>	<b>33</b>	<b>40.5</b>	<b>30.1</b>	<b>26.8</b>	<b>54.0</b>	<b>-27.2</b>
H	14646.000	50.8	33	38.4	30.1	26.1	54.0	-27.9

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Peak Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2441.000	99.9	33	29.4	96.3	114.0	-17.7
<b>H</b>	<b>4882.000</b>	<b>59.5</b>	<b>33</b>	<b>34.9</b>	<b>61.4</b>	<b>74.0</b>	<b>-12.6</b>
<b>H</b>	<b>7323.000</b>	<b>52.3</b>	<b>33</b>	<b>37.9</b>	<b>57.2</b>	<b>74.0</b>	<b>-16.8</b>
H	9764.000	50.2	33	40.4	57.6	74.0	-16.4
<b>H</b>	<b>12205.000</b>	<b>49.4</b>	<b>33</b>	<b>40.5</b>	<b>56.9</b>	<b>74.0</b>	<b>-17.1</b>
H	14646.000	50.8	33	38.4	56.2	74.0	-17.8

- 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.

## INTERTEK TESTING SERVICES

Mode: TX-Channel 78

Table 3, Base Unit

### Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2480.000	99.8	33	29.4	30.1	66.1	94.0	-27.9
<b>H</b>	<b>4960.000</b>	<b>59.5</b>	<b>33</b>	<b>34.9</b>	<b>30.1</b>	<b>31.3</b>	<b>54.0</b>	<b>-22.7</b>
<b>H</b>	<b>7440.000</b>	<b>52.5</b>	<b>33</b>	<b>37.9</b>	<b>30.1</b>	<b>27.3</b>	<b>54.0</b>	<b>-26.7</b>
H	9920.000	49.9	33	40.4	30.1	27.2	54.0	-26.8
<b>H</b>	<b>12400.000</b>	<b>49.3</b>	<b>33</b>	<b>40.5</b>	<b>30.1</b>	<b>26.7</b>	<b>54.0</b>	<b>-27.3</b>
H	14880.000	50.9	33	38.4	30.1	26.2	54.0	-27.8

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Peak Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2480.000	99.8	33	29.4	96.2	114.0	-17.8
<b>H</b>	<b>4960.000</b>	<b>59.5</b>	<b>33</b>	<b>34.9</b>	<b>61.4</b>	<b>74.0</b>	<b>-12.6</b>
<b>H</b>	<b>7440.000</b>	<b>52.5</b>	<b>33</b>	<b>37.9</b>	<b>57.4</b>	<b>74.0</b>	<b>-16.6</b>
H	9920.000	49.9	33	40.4	57.3	74.0	-16.7
<b>H</b>	<b>12400.000</b>	<b>49.3</b>	<b>33</b>	<b>40.5</b>	<b>56.8</b>	<b>74.0</b>	<b>-17.2</b>
H	14880.000	50.9	33	38.4	56.3	74.0	-17.7

- 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.

---

## INTERTEK TESTING SERVICES

---

Mode: Talk

Table 4, Base unit

### Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	41.475	39.6	16	10.0	33.6	40.0	-6.4
V	69.250	42.8	16	7.0	33.8	40.0	-6.2
<b>H</b>	<b>110.800</b>	<b>36.1</b>	<b>16</b>	<b>14.0</b>	<b>34.1</b>	<b>43.5</b>	<b>-9.4</b>
H	138.500	36.6	16	14.0	34.6	43.5	-8.9
<b>H</b>	<b>166.200</b>	<b>33.8</b>	<b>16</b>	<b>17.0</b>	<b>34.8</b>	<b>43.5</b>	<b>-8.7</b>
H	193.900	33.6	16	16.0	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.

## INTERTEK TESTING SERVICES

---

### 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 (2003) 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, whichever is the lesser attenuation, which meet the requirement of FCC Part 15 Section 15.249(d).

Radiated Emission on bandedge plots are saved with filename: be.pdf

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

Resultant Field Strength = Fundamental Emissions - Delta from the plot

Resultant field strength for the lowest and/or highest channel(s), with corresponding average values are calculated as follows:

	Channel	Fundamental Emission (dB $\mu$ V/m)	Delta from the Plot (dB)	Resultant Field Strength (dB $\mu$ V/m)	Average Limit (dB $\mu$ V/m)	Margin (dB)
Base	Lowest	66.3	32.83	33.47	54	-20.53
	Highest	66.1	47.04	19.06	54	-34.94

	Channel	Fundamental Emission (dB $\mu$ V/m)	Delta from the Plot (dB)	Resultant Field Strength (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Margin (dB)
Base	Lowest	96.4	32.83	63.57	74	-10.43
	Highest	96.2	47.04	49.16	74	-24.84

The resultant field strength meets the general radiated emission limit in FCC Part 15 Section 15.209, which does not exceed 74dB $\mu$ V/m for peak limit and also 54dB $\mu$ V/m for average limit.

## INTERTEK TESTING SERVICES

---

### 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.
- Base Unit connects to AC power line and has transmission. Handset 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

6.369 MHz

The worst case line conducted configuration photographs are attached in the Appendix and 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

Passed by 4.08 dB margin compare with quasi-peak limit

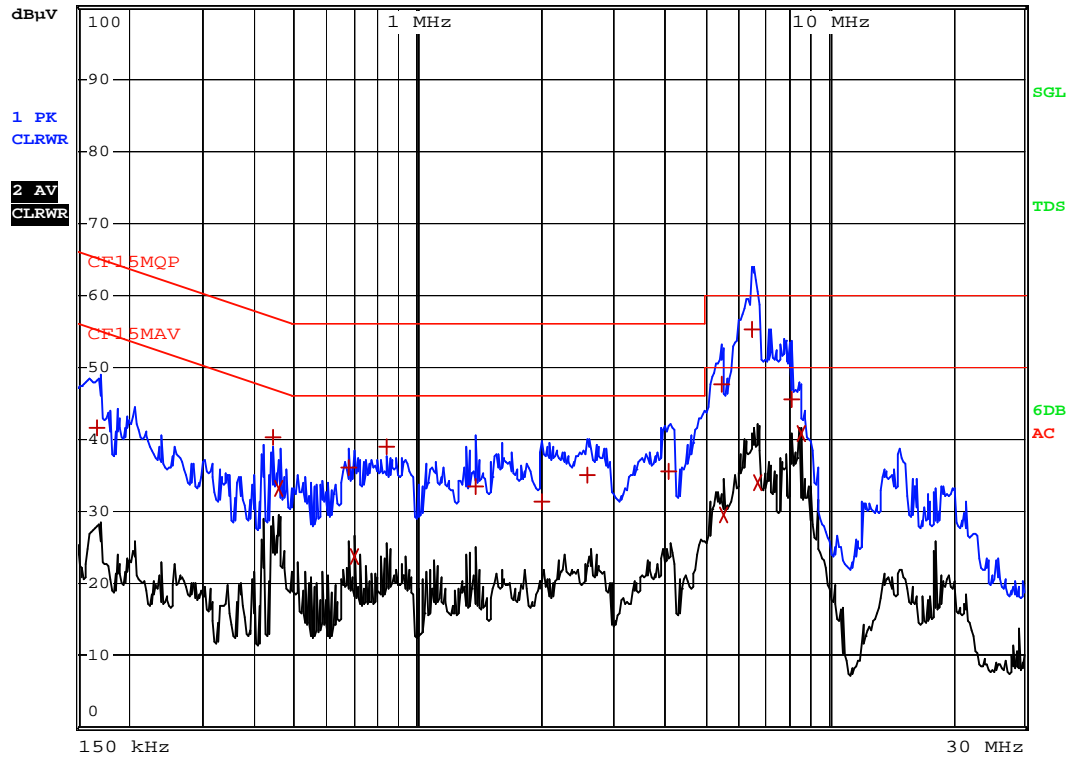
# INTERTEK TESTING SERVICES

## Worst Case: Ringing



RBW 9 kHz  
MT 1 s

Att 10 dB AUTO PREAMP OFF



Date: 11.MAY.2012 15:03:27

---

## INTERTEK TESTING SERVICES

---

### Worst Case: Ringing

EDIT PEAK LIST (Final Measurement Results)					
Trace1:	CF15MQP				
Trace2:	CF15MAV				
Trace3:	---				
TRACE	FREQUENCY	LEVEL	dB $\mu$ V	DELTA	LIMIT dB
1 Quasi Peak	168 kHz	41.68	N gnd	-23.37	
1 Quasi Peak	442.5 kHz	40.35	N gnd	-16.65	
2 CISPR Average	456 kHz	33.30	N gnd	-13.46	
1 Quasi Peak	676.5 kHz	36.06	L1 gnd	-19.93	
2 CISPR Average	699 kHz	23.65	L1 gnd	-22.34	
1 Quasi Peak	838.5 kHz	39.04	L1 gnd	-16.95	
1 Quasi Peak	1.3785 MHz	33.39	L1 gnd	-22.60	
1 Quasi Peak	2.004 MHz	31.31	L1 gnd	-24.68	
1 Quasi Peak	2.58 MHz	34.93	N gnd	-21.06	
1 Quasi Peak	4.1055 MHz	35.66	N gnd	-20.34	
1 Quasi Peak	5.5185 MHz	47.57	N gnd	-12.42	
2 CISPR Average	5.532 MHz	29.57	N gnd	-20.42	
1 Quasi Peak	6.5355 MHz	55.32	L1 gnd	-4.67	
2 CISPR Average	6.7515 MHz	34.01	L1 gnd	-15.98	
1 Quasi Peak	8.151 MHz	45.44	L1 gnd	-14.55	
2 CISPR Average	8.547 MHz	40.89	L1 gnd	-9.10	

Date: 11.MAY.2012 15:03:08

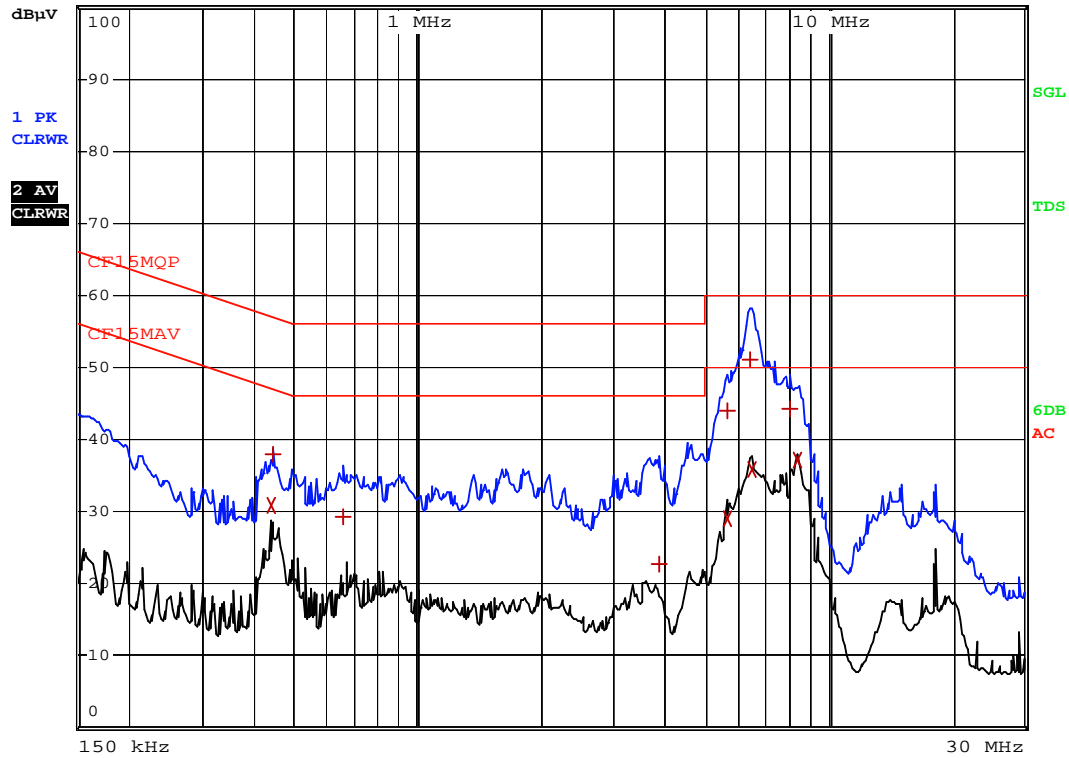
# INTERTEK TESTING SERVICES

## Worst Case: Handset Online



RBW 9 kHz  
MT 1 s

Att 10 dB AUTO PREAMP OFF



Date: 11.MAY.2012 15:08:14

# INTERTEK TESTING SERVICES

---

Worst Case: Handset Online

EDIT PEAK LIST (Final Measurement Results)				
Trace1:	CF15MQP			
Trace2:	CF15MAV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dB $\mu$ V		DELTA LIMIT dB
2	CISPR Average 438 kHz	30.76	N gnd	-16.33
1	Quasi Peak 442.5 kHz	38.03	N gnd	-18.98
1	Quasi Peak 658.5 kHz	29.28	N gnd	-26.71
1	Quasi Peak 3.876 MHz	22.77	L1 gnd	-33.22
2	CISPR Average 5.676 MHz	29.08	L1 gnd	-20.91
1	Quasi Peak 5.694 MHz	43.94	L1 gnd	-16.05
1	Quasi Peak 6.432 MHz	51.12	L1 gnd	-8.87
2	CISPR Average 6.522 MHz	35.80	L1 gnd	-14.20
1	Quasi Peak 8.088 MHz	44.35	L1 gnd	-15.64
2	CISPR Average 8.403 MHz	37.01	L1 gnd	-12.98

Date: 11.MAY.2012 15:07:54

# INTERTEK TESTING SERVICES

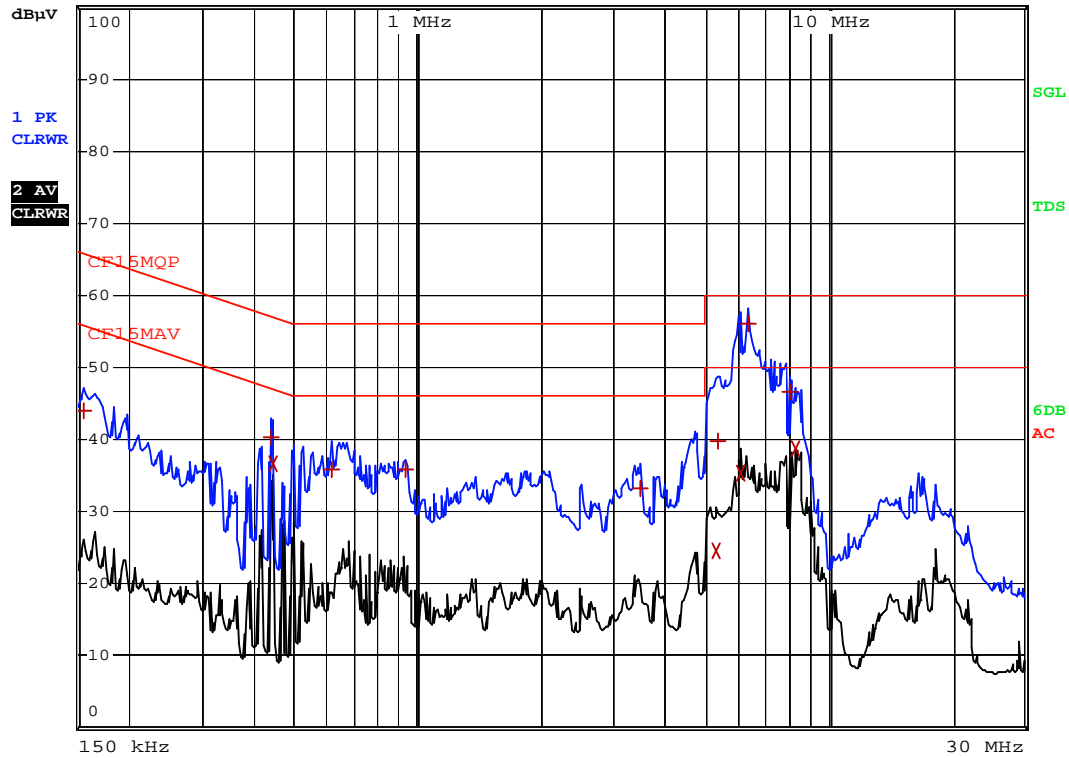
## Worst Case: Answer Machine Recording



RBW 9 kHz

MT 1 s

Att 10 dB AUTO PREAMP OFF



Date: 11.MAY.2012 15:17:09

# INTERTEK TESTING SERVICES

---

## Worst Case: Answer Machine Recording

EDIT PEAK LIST (Final Measurement Results)				
Trace1:	CF15MQP			
Trace2:	CF15MAV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dB $\mu$ V		DELTA LIMIT dB
1 Quasi Peak	154.5 kHz	43.86	N gnd	-21.88
1 Quasi Peak	438 kHz	40.18	L1 gnd	-16.91
2 CISPR Average	442.5 kHz	36.57	N gnd	-10.44
1 Quasi Peak	613.5 kHz	35.76	N gnd	-20.23
1 Quasi Peak	933 kHz	35.82	L1 gnd	-20.17
1 Quasi Peak	3.471 MHz	33.15	L1 gnd	-22.84
2 CISPR Average	5.3475 MHz	24.63	L1 gnd	-25.36
1 Quasi Peak	5.4015 MHz	39.78	L1 gnd	-20.21
2 CISPR Average	6.1035 MHz	35.26	L1 gnd	-14.73
1 Quasi Peak	6.369 MHz	55.91	L1 gnd	-4.08
1 Quasi Peak	8.088 MHz	46.58	L1 gnd	-13.41
2 CISPR Average	8.3265 MHz	38.72	L1 gnd	-11.27

Date: 11.MAY.2012 15:16:50

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 5  
EQUIPMENT LIST**

## INTERTEK TESTING SERVICES

---

### 5.0 Equipment List

#### 1) Radiated Emissions Test

Equipment	Log Periodic Antenna	Broad-Band Horn Antenna	Spectrum Analyzer
Registration No.	EW-0446	EW-1679	EW-2188
Manufacturer	EMCO	SCHWARZBECK	AGILENTTECH
Model No.	3146	BBHA9170	E4407B
Calibration Date	Oct. 31, 2011	Mar. 21, 2012	Sep. 26, 2011
Calibration Due Date	Apr. 30, 2013	Mar. 21, 2013	Sep. 26, 2012

Equipment	EMI Test Receiver	Biconical Antenna 20MHz to 200MHz	Double Ridged Guide Antenna (1GHz -18GHz)
Registration No.	EW-2500	EW-2512	EW-1133
Manufacturer	R&S	EMCO	EMCO
Model No.	ESCI	3104C	3115
Calibration Date	Feb. 24, 2012	Nov. 15, 2011	Mar. 02, 2011
Calibration Due Date	Feb. 24, 2013	May. 15, 2013	Sep. 02, 2012

#### 2) Conducted Emissions Test

Equipment	EMI Test Receiver	Artificial Mains Network
Registration No.	EW-2500	EW-2501
Manufacturer	R&S	R&S
Model No.	ESCI	CMD60
Calibration Date	Feb. 24, 2012	Mar. 30, 2011
Calibration Due Date	Feb. 24, 2013	Jun. 29, 2012