Issuing Laboratory:
Intertek Testing Services Hong Kong Limited

HOKLAS 005
TEST

TEST REPORT

Report Number: 13051169HKG-002

Application
for
Original Grant of 47 CFR Part 15 Certification

(Base Unit Bluetooth Portion)

FCC ID: EW780-9267-00

Prepared and Checked by:	Approved by:
Koo Wai Ip	Nip Ming Fung, Melvin
Senior Lead Engineer	Assistant Manager
	June 20, 2103

GENERAL INFORMATION

Applicant Name:	VTech Telecommunications Ltd.
Applicant Address:	23/F, Tai Ping Industrial Centre, Block 1, 57 Ting Kok Road, Tai Po, Hong Kong.
FCC Specification Standard:	FCC Part 15, October 1, 2011 Edition
FCC ID:	EW780-9267-00
FCC Model(s):	DS6751, DS6751-2, DS6751-3, DS675Z-XY
Type of EUT:	Transceiver
Description of EUT:	1.9GHz Digital Modulation Cordless Phone with Caller ID, Speakerphone, Digital Answering Machine, and Bluetooth (Base Unit Bluetooth Portion)
Serial Number:	N/A
Sample Receipt Date:	May 22, 2013
Date of Test:	May28-30, 2013
Report Date:	June 20, 2103
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

Table of Contents

EXHIBIT 1
TEST RESULTS SUMMARY & STATEMENT OF COMPLIANCE

Intertek Testing Services Hong Kong Ltd.
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Tel: (852) 2173 8888 Fax: (852) 2785 5487 Website: www.hk.intertek-etlsemko.com

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 Radiated Emission on the Bandedge	15.249(a), 209, & 109 15.249(d)	Pass Pass	4.2 4.4
Radiated Emission in Restricted Bands	15.205	Pass	4.2
AC Power Line Conducted Emission	15.207 & 15.107	Pass	4.5

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, 2011 Edition

EXHIBIT 2
GENERAL DESCRIPTION

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2.0 General Description

2.1 Product Description

The DS6751-2 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. The Base Unit is powered by an adaptor 100-120VAC to 6VDC 400mA, Model: S005IU0600040, Brand: Ten Po and 100-120VAC to 6VDC 400mA, Model: SSA-5AP-09 US 060040L, Brand: SIL. With Bluetooth and 1.9GHz wireless communications enabled, the Base Unit allows users to use a cordless handset to dial out or receive Bluetooth-equipped cellular phone calls via the cellular network. Two Bluetooth devices can be connected at the same time.

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

The Model(s): DS6751, DS6751-3, and DS675Z-XY are the same as the Model: DS6751-2 in electrical designs including software & firmware, PCB layout and construction design/physical design/enclosure. The only differences between these models are color, cosmetic details, and model number to be sold for marketing purpose. Suffix (X) is presenting number of handset and extra charger for any alphanumeric; Suffix (Y) is presenting difference color of enclosure for any alphanumeric; Suffix (Z) is presenting difference package type (material) for any alphanumeric; ; Model with suffix (X, Y, Z) are identical in in electrical designs including software & firmware, PCB layout and construction design/physical design/enclosure.

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.

2.2 Test Methodology

Both AC power line-conducted and radiated emission measurements method were performed according to the procedures in ANSI C63.4 (2009). Marker-delta measurement method was performed according to the procedures in ANSI C63.10 (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.

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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 Base Unit was powered by a 100-120VAC to 6VDC 400mA 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 without modulation.

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.

For radiated measurement, the spectrum analyzer resolution bandwidth was 100 kHz for frequencies below 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 is 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 Exhibit 4.2.1.

Determination of pulse desensitization was made according to *Hewlett Packard Application Note 150-2, Spectrum Analysis... Pulsed RF.* The effective period (Teff) was 625μs. 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 was 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.

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3.3 Details of EUT and Description of Accessories

Details of EUT:

An AC adaptor (provided with the unit) was used to power the device. Their description are listed below.

(1) Base Unit: An AC adaptor (100-120VAC 60Hz 150mA to 6VDC 400mA, Model: S005IU0600040, Brand: Ten Pao) (Supplied by Client)
Base Unit: An AC adaptor (100-120VAC 60Hz 200mA to 6VDC 400mA, Model: SSA-5AP-09 US 060040L, Brand: SIL) (Supplied by Client)

Description of Peripherals:

(1) Telecommunication cable with RJ11C connectors (1m, unshielded), terminated (Supplied by Intertek)
(2) Nokia Mobile Phone, Model: 5300, FCC ID: PPIRM-146 (Supplied by Intertek)
(3) Apple Iphone, Model: A1303, FCC ID: BCGA1303B (Supplied by Intertek)
(4) 3m Telephone Line (Supplied by Intertek)
(5) 1m Telephone Line (Supplied by Intertek)

3.4 Measurement Uncertainty

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

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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

<u>Example</u>
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

4.2 Radiated Emissions

4.2.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
at

Base Unit: 55.300 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 1-8 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Base Unit: Passed by 6.1 dB margin

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Mode: TX-Channel 00

Table 1, Base Unit (with adaptor "Ten Pao")

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)
V	2402.000	100.2	33	29.4	24.0	72.6	94.0	-21.4
H	***4804.000***	***57.7***	***33***	***34.9***	***24.0***	***35.6***	***54.0***	***-18.4***
H	7206.000	45.7	33	37.9	24.0	26.6	54.0	-27.4
H	9608.000	44.9	33	40.4	24.0	28.3	54.0	-25.7
H	***12010.000***	***42.0***	***33***	***40.5***	***24.0***	***25.5***	***54.0***	***-28.5***

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)
V	2402.000	100.2	33	29.4	96.6	114.0	-17.4
H	***4804.000***	***57.7***	***33***	***34.9***	***59.6***	***74.0***	***-14.4***
H	7206.000	45.7	33	37.9	50.6	74.0	-23.4
H	9608.000	44.9	33	40.4	52.3	74.0	-21.7
H	***12010.000***	***42.0***	***33***	***40.5***	***49.5***	***74.0***	***-24.5***

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.

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Mode: TX-Channel 39

Table 2, Base Unit (with adaptor "Ten Pao")

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)
V	2441.000	100.1	33	29.4	24.0	72.5	94.0	-21.5
H	***4882.000***	***58.3***	***33***	***34.9***	***24.0***	***36.2***	***54.0***	***-17.8***
H	***7323.000***	***45.5***	***33***	***37.9***	***24.0***	***26.4***	***54.0***	***-27.6***
H	9764.000	45.0	33	40.4	24.0	28.4	54.0	-25.6
H	***12205.000***	***42.0***	***33***	***40.5***	***24.0***	***25.5***	***54.0***	***-28.5***

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)
V	2441.000	100.1	33	29.4	96.5	114.0	-17.5
H	***4882.000***	***58.3***	***33***	***34.9***	***60.2***	***74.0***	***-13.8***
H	***7323.000***	***45.5***	***33***	***37.9***	***50.4***	***74.0***	***-23.6***
H	9764.000	45.0	33	40.4	52.4	74.0	-21.6
H	***12205.000***	***42.0***	***33***	***40.5***	***49.5***	***74.0***	***-24.5***

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.

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Mode: TX-Channel 78

Table 3, Base Unit (with adaptor "Ten Pao")

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)
V	2480.000	99.8	33	29.4	24.0	72.2	94.0	-21.8
H	***4960.000***	***58.4***	***33***	***34.9***	***24.0***	***36.3***	***54.0***	***-17.7***
H	***7440.000***	***45.4***	***33***	***37.9***	***24.0***	***26.3***	***54.0***	***-27.7***
H	9920.000	45.2	33	40.4	24.0	28.6	54.0	-25.4
H	***12400.000***	***41.9***	***33***	***40.5***	***24.0***	***25.4***	***54.0***	***-28.6***

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)
V	2480.000	99.8	33	29.4	96.2	114.0	-17.8
H	***4960.000***	***58.4***	***33***	***34.9***	***60.3***	***74.0***	***-13.7***
H	***7440.000***	***45.4***	***33***	***37.9***	***50.3***	***74.0***	***-23.7***
H	9920.000	45.2	33	40.4	52.6	74.0	-21.4
H	***12400.000***	***41.9***	***33***	***40.5***	***49.4***	***74.0***	***-24.6***

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.

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Mode: Talk

Table 4, Base unit (with adaptor "Ten Pao")

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
V	55.300	38.9	16	11.0	33.9	40.0	-6.1
V	***110.600***	***35.8***	***16***	***14.0***	***33.8***	***43.5***	***-9.7***
H	***165.900***	***33.9***	***16***	***17.0***	***34.9***	***43.5***	***-8.6***
H	221.200	33.8	16	17.0	34.8	46.0	-11.2
H	***276.500***	***28.0***	***16***	***22.0***	***34.0***	***46.0***	***-12.0***
H	***331.800***	***25.5***	***16***	***24.0***	***33.5***	***46.0***	***-12.5***

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.

Mode: TX-Channel 00

Table 5, Base Unit (with adaptor "SIL")

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)
V	2402.000	100.1	33	29.4	24.0	72.5	94.0	-21.5
H	***4804.000***	***58.2***	***33***	***34.9***	***24.0***	***36.1***	***54.0***	***-17.9***
H	7206.000	45.7	33	37.9	24.0	26.6	54.0	-27.4
H	9608.000	44.8	33	40.4	24.0	28.2	54.0	-25.8
H	***12010.000***	***42.0***	***33***	***40.5***	***24.0***	***25.5***	***54.0***	***-28.5***

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)
V	2402.000	100.1	33	29.4	96.5	114.0	-17.5
H	***4804.000***	***58.2***	***33***	***34.9***	***60.1***	***74.0***	***-13.9***
H	7206.000	45.7	33	37.9	50.6	74.0	-23.4
H	9608.000	44.8	33	40.4	52.2	74.0	-21.8
H	***12010.000***	***42.0***	***33***	***40.5***	***49.5***	***74.0***	***-24.5***

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.

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Mode: TX-Channel 39

Table 6, Base Unit (with adaptor "SIL")

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)
V	2441.000	100.2	33	29.4	24.0	72.6	94.0	-21.4
H	***4882.000***	***58.3***	***33***	***34.9***	***24.0***	***36.2***	***54.0***	***-17.8***
H	***7323.000***	***45.5***	***33***	***37.9***	***24.0***	***26.4***	***54.0***	***-27.6***
H	9764.000	44.8	33	40.4	24.0	28.2	54.0	-25.8
H	***12205.000***	***42.0***	***33***	***40.5***	***24.0***	***25.5***	***54.0***	***-28.5***

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)
V	2441.000	100.2	33	29.4	96.6	114.0	-17.4
H	***4882.000***	***58.3***	***33***	***34.9***	***60.2***	***74.0***	***-13.8***
H	***7323.000***	***45.5***	***33***	***37.9***	***50.4***	***74.0***	***-23.6***
H	9764.000	44.8	33	40.4	52.2	74.0	-21.8
H	***12205.000***	***42.0***	***33***	***40.5***	***49.5***	***74.0***	***-24.5***

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.

Mode: TX-Channel 78

Table 7, Base Unit (with adaptor "SIL")

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)
V	2480.000	99.8	33	29.4	24.0	72.2	94.0	-21.8
H	***4960.000***	***58.4***	***33***	***34.9***	***24.0***	***36.3***	***54.0***	***-17.7***
H	***7440.000***	***45.4***	***33***	***37.9***	***24.0***	***26.3***	***54.0***	***-27.7***
H	9920.000	45.0	33	40.4	24.0	28.4	54.0	-25.6
H	***12400.000***	***41.9***	***33***	***40.5***	***24.0***	***25.4***	***54.0***	***-28.6***

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)
V	2480.000	99.8	33	29.4	96.2	114.0	-17.8
H	***4960.000***	***58.4***	***33***	***34.9***	***60.3***	***74.0***	***-13.7***
H	***7440.000***	***45.4***	***33***	***37.9***	***50.3***	***74.0***	***-23.7***
H	9920.000	45.0	33	40.4	52.4	74.0	-21.6
H	***12400.000***	***41.9***	***33***	***40.5***	***49.4***	***74.0***	***-24.6***

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.

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Mode: Talk

Table 8, Base Unit (with adaptor "SIL")

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
V	55.300	38.7	16	11.0	33.7	40.0	-6.3
V	***110.600***	***35.8***	***16***	***14.0***	***33.8***	***43.5***	***-9.7***
H	***165.900***	***33.5***	***16***	***17.0***	***34.5***	***43.5***	***-9.0***
H	221.200	33.8	16	17.0	34.8	46.0	-11.2
H	***276.500***	***28.2***	***16***	***22.0***	***34.2***	***46.0***	***-11.8***
H	***331.800***	***25.5***	***16***	***24.0***	***33.5***	***46.0***	***-12.5***

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.

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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 625μs. DH5 has the maximum duty cycle, which consists of 5 continuous Tx slots and 1 Rx slot. Therefore one hopset take (5+1) x 625μs = 3.75ms. For one period for a pseudo-random hopping through all 79 RF channels, it take: 79 x 3.75ms = 296.25ms.

The dwell time for DH5 is 5 x 625μs = 3.125ms.

For the worst case calculation, there are two transmissions might occur in 100ms.

Therefore,

Duty Cycle (DC) = Maximum On time in 100ms/100ms
= 3.125ms x 2 /100ms
= 0.0625

Average Factor (AF) of Bluetooth in dB = 20 $\log_{10}$ (0.0625)
= -24.0dB

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

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

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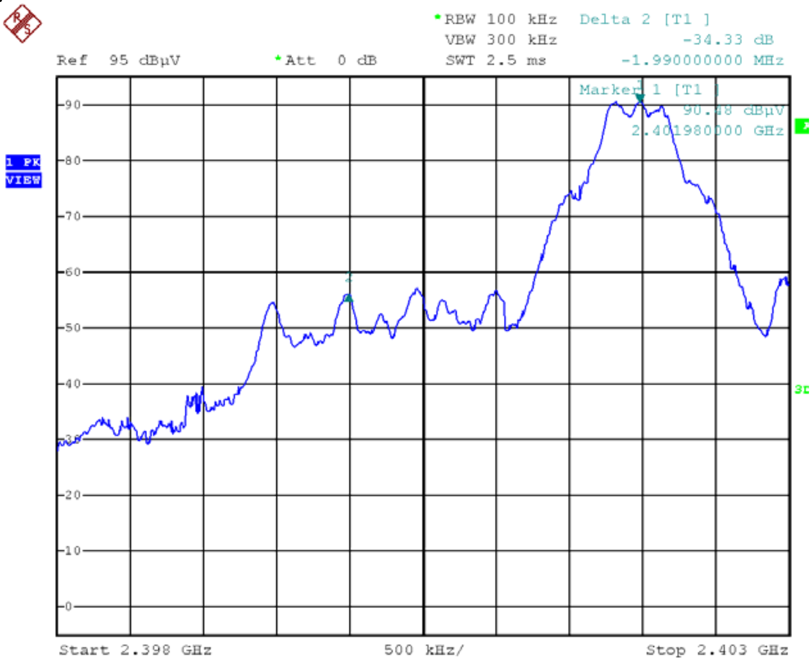
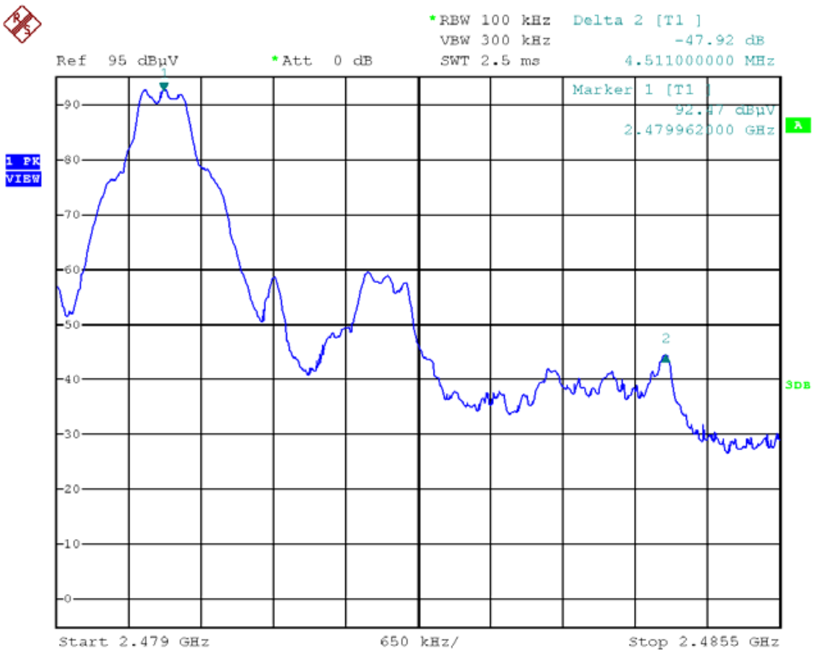
Plots of radiated emission on the bandedge

Base unit, Lowest channel



Base unit, Highest channel



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:

Base Unit

Model	Adaptor	Channel	Fundamental Emission (dBμV/m)	Delta from the Plot (dB)	Resultant Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
DS6751-2	"Ten Pao"	Lowest	72.6	34.33	38.27	54	-15.73
DS6751-2	"Ten Pao"	Highest	72.2	47.92	24.28	54	-29.72
DS6751-2	"SIL"	Lowest	72.5	34.33	38.17	54	-15.83
DS6751-2	"SIL"	Highest	72.2	47.92	24.28	54	-29.72

Model	Adaptor	Channel	Fundamental Emission (dBμV/m)	Delta from the Plot (dB)	Resultant Field Strength (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)
DS6751-2	"Ten Pao"	Lowest	96.6	34.33	62.27	74	-11.73
DS6751-2	"Ten Pao"	Highest	96.2	47.92	48.28	74	-25.72
DS6751-2	"SIL"	Lowest	96.5	34.33	62.17	74	-11.83
DS6751-2	"SIL"	Highest	96.2	47.92	48.28	74	-25.72

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

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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.

[x] 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

0.4065 MHz

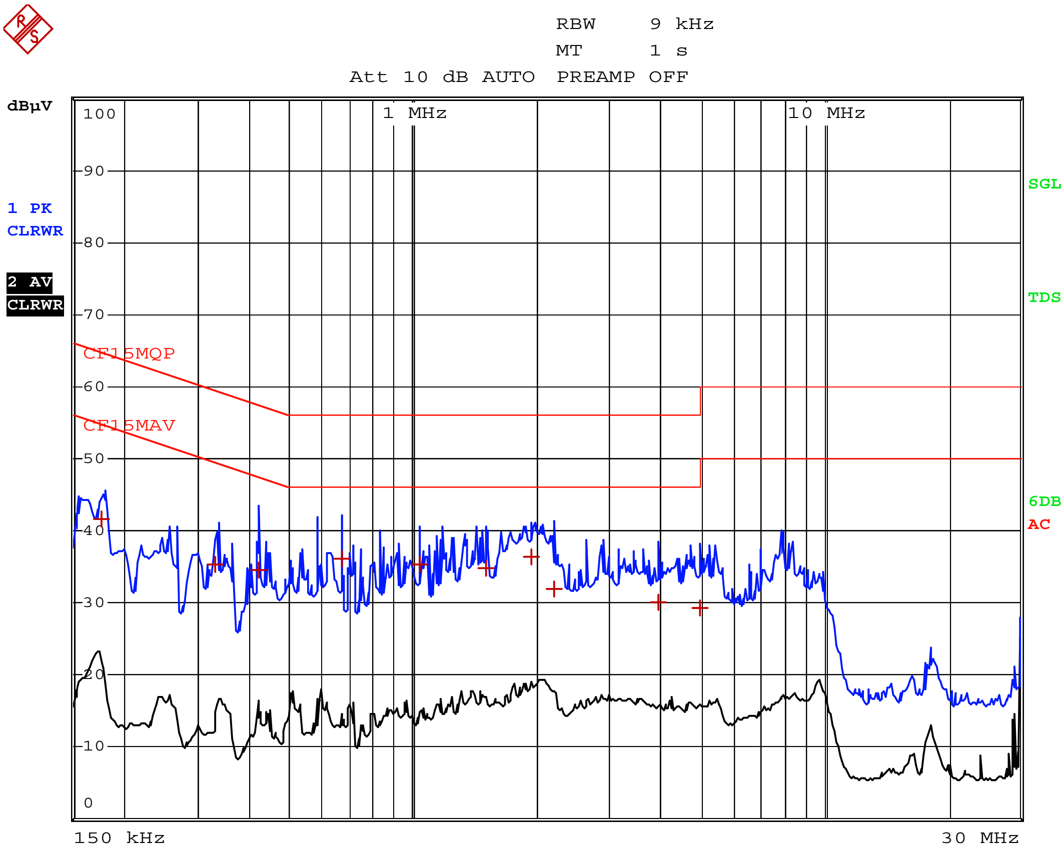
The worst case line conducted configuration photographs are saved with filename: config photos.pdf

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

Passed by 16.03 dB margin compare with average limit

Model No.: DS6751-2
Worst Case: Talking (DECT+ Bluetooth) (with adaptor "Ten Pao")



Date: 28.MAY.2013 09:52:39

Model No.: DS6751-2
Worst Case: Talking (DECT+ Bluetooth) (with adaptor "Ten Pao")

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

TRACE		FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
1	Quasi Peak	177 kHz	41.64	L1	-22.98
1	Quasi Peak	334.5 kHz	35.34	N	-23.99
1	Quasi Peak	420 kHz	34.46	N	-22.98
1	Quasi Peak	667.5 kHz	35.96	N	-20.03
1	Quasi Peak	1.041 MHz	35.33	N	-20.66
1	Quasi Peak	1.5135 MHz	34.76	N	-21.23
1	Quasi Peak	1.95 MHz	36.31	N	-19.68
1	Quasi Peak	2.2065 MHz	31.83	N	-24.16
1	Quasi Peak	3.957 MHz	30.01	N	-25.98
1	Quasi Peak	4.983 MHz	29.37	N	-26.62

Date: 28.MAY.2013 09:52:29

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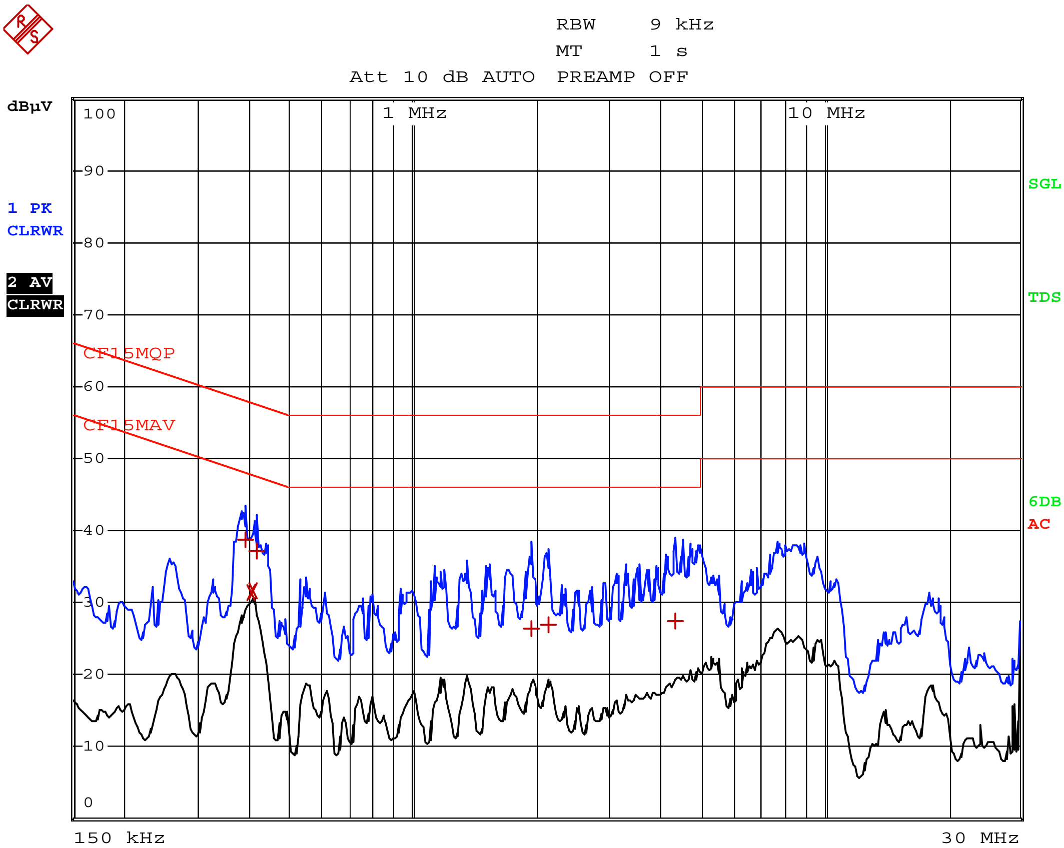
Model No.: DS6751-2
Worst Case: Talking (DECT+ Bluetooth) (with adaptor "SIL")



Date: 28.MAY.2013 10:20:58

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Model No.: DS6751-2
Worst Case: Talking (DECT+ Bluetooth) (with adaptor "SIL")

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

TRACE		FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
1	Quasi Peak	388.5 kHz	38.81	L1	-19.27
2	CISPR Average	402 kHz	31.36	N	-16.45
2	CISPR Average	406.5 kHz	31.68	N	-16.03
1	Quasi Peak	415.5 kHz	37.13	L1	-20.40
1	Quasi Peak	1.9545 MHz	26.34	L1	-29.65
1	Quasi Peak	2.13 MHz	26.94	L1	-29.05
1	Quasi Peak	4.3665 MHz	27.33	L1	-28.66

Date: 28.MAY.2013 10:20:37

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EXHIBIT 5
EQUIPMENT LIST

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5.0 **Equipment List**

1) Radiated Emissions Test

Equipment	EMI Test Receiver	Double Ridged Guide Antenna	Spectrum Analyzer
Registration No.	EW-2500	EW-1133	EW-2188
Manufacturer	R&S	EMCO	AGILENTTECH
Model No.	ESCI	3115	E4407B
Calibration Date	Mar. 22, 2013	Oct. 5, 2012	Nov. 5, 2012
Calibration Due Date	Feb. 28, 2014	Apr. 5, 2014	Nov. 5, 2013

Equipment	Biconical Antenna	Log Periodic Antenna	Broad-Band Horn Antenna
Registration No.	EW-0954	EW-0446	EW-1679
Manufacturer	EMCO	EMCO	SCHWARZBECK
Model No.	3104C	3146	BBHA9170
Calibration Date	Apr. 30, 2013	Apr. 30, 2013	Apr. 1, 2013
Calibration Due Date	Oct. 30, 2014	Oct. 30, 2014	Apr. 1, 2014

2) Conducted Emissions Test

Equipment	EMI Test Receiver	Artificial Mains Network
Registration No.	EW-2500	EW-2874
Manufacturer	R&S	R&S
Model No.	ESCI	ENV216
Calibration Date	Mar. 22, 2013	Aug. 15, 2012
Calibration Due Date	Feb. 28, 2014	Aug. 15, 2013

END OF TEST REPORT

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