TEST REPORT

Report Number: HK10090992-2

Application
for
Original Grant of 47 CFR Part 15 Certification
New Family of RSS-210 Issue 7 Equipment Certification

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

FCC ID: EW780-7728-00

IC: 1135B-80772800

Prepared and Checked by:	Approved by:
	
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November 11, 2010	November 11, 2010

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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, 2009 Edition
FCC ID:	EW780-7728-00
FCC Model(s):	DS6421-2, DS6421-3, DS6421-4, DS642Z-XY
IC Specification Standard:	RSS-210 Issue 7, June 2007 RSS-Gen Issue 2, June 2007 RSS-102 Issue 4, March 2010
IC:	1135B-80772800
IC Model(s):	DS6421-2, DS6421-3, DS6421-4
Type of EUT:	Transceiver
Description of EUT:	1.9GHz Digital Modulation Cordless Phone with Caller ID, Digital Answering Machine and Bluetooth - Base Unit Bluetooth Portion
Serial Number:	N/A
Sample Receipt Date:	September 27, 2010
Date of Test:	October 12-November 09, 2010
Report Date:	November 11, 2010
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

Table of Contents

EXHIBIT 1
TEST RESULTS SUMMARY & STATEMENT OF COMPLIANCE

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	7.1.4#	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 4.4
Radiated Emission in Restricted Bands	15.205	2.2	Pass	4.2
Radiated Emission from Receiver	N/A	2.3	Pass	4.3
AC Power Line Conducted Emission	15.207 & 15.107	7.2.2#	Pass	4.5
Radio Frequency Exposure Compliance	N/A	RSS-102	Pass	4.6

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, 2009 Edition
RSS-210 Issue 7, June 2007
RSS-Gen Issue 2, June 2007
RSS-102 Issue 4, March 2010

EXHIBIT 2
GENERAL DESCRIPTION

2.0 **General Description**

2.1 Product Description

The DS6421-2 is a 1.9GHz Digital Modulation Cordless Phone with Caller ID, 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 100-120VAC to 6VDC 400mA with either Ten Pao brand, Model: S005IU0600040, or Salcomp brand, Model: VT0102. 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, or use a corresponding Bluetooth-equipped headset instead of the cordless headset. Only one cellular phone or headset can be on a call at a time.

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

For FCC, The Model(s): DS6421-3, DS6421-4 and DS642Z-XY are the same as the Model: DS6421-2 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, number of handsets and chargers, and packages material to be sold for marketing purpose. Suffix (X, Y, Z) indicates different number of handsets and chargers, different color of base & handset, and different packages material respectively.

For IC, The Model(s): DS6421-3 and DS6421-4 are the same as the Model: DS6421-2 in electronics/electrical designs, including software & firmware, PCB layout and construction design/Physical design/Enclosure. The only differences between these models are model number and number of handsets and chargers to be sold for marketing purpose.

The circuit description is attached in the Appendix and 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 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 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.

EXHIBIT 3
SYSTEM TEST CONFIGURATION

3.0 **System Test Configuration**

3.1 Justification

For radiated emissions testing, the equipment under test (EUT) was setup to transmit continuously / receive 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.

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 receiver radiated measurement, the spectrum analyzer resolution bandwidth was 1MHz for measurement above 1GHz while 100kHz for measurement from 30MHz to 1GHz.

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. Receiver was performed from 30MHz to the fifth harmonic of the highest frequency or 40GHz, 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 15.109.

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

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 4.2.3.

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 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.

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 (100-120VAC to 6VDC 400mA, Model: S005IU0600040, Brand: Ten Pao) (Supplied by Client)

(2) Base Unit: An AC adaptor (100-120VAC to 6VDC 400mA, Model: VT0102, Brand: Salcomp) (Supplied by Client)

(3) Handset: A "Ni-MH" type rechargeable battery Pack (2.4V, 400mAh) (Supplied by Client)

Description of Accessories:

(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)

3.4 Measurement Uncertainty

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

3.5 Equipment Modification

Any modifications installed previous to testing by VTech Telecommunications Ltd. will be incorporated in each production model sold/leased in the United States and Canada.

No modifications were installed by Commercial & Electrical Division, Intertek Testing Services Hong Kong Ltd.

EXHIBIT 4
TEST RESULTS

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

FS = RA + AF + CF - AG

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

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

FS = RR + LF

where FS = Field Strength in dBμV/m
RR = RA - AG in dBμV
LF = CF + AF in dB

Assume a receiver reading of 52.0 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, giving a field strength of 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 52.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
FS = RR + LF
FS = 23 + 9 = 32 dBμV/m

RR = 23.0 dBμV
LF = 9.0 dB

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 with adaptor “Salcomp”: 64.000 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 with adaptor “Salcomp”: Passed by 6.7 dB margin

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.

Therefore,

Duty Cycle (DC) = Maximum On time in 100ms/100ms
= 3.125ms/100ms
= 0.03125

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

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	94.6	33	29.4	30.1	60.9	94.0	-33.1
H	***4804.000***	***59.7***	***33***	***34.9***	***30.1***	***31.5***	***54.0***	***-22.5***
H	7206.000	45.1	33	37.9	30.1	19.9	54.0	-34.1
H	9608.000	43.4	33	40.4	30.1	20.7	54.0	-33.3
H	***12010.000***	***44.1***	***33***	***40.5***	***30.1***	***21.5***	***54.0***	***-32.5***
H	14412.000	45.2	33	40.0	30.1	22.1	54.0	-31.9

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	94.6	33	29.4	91.0	114.0	-23.0
H	***4804.000***	***59.7***	***33***	***34.9***	***61.6***	***74.0***	***-12.4***
H	7206.000	45.1	33	37.9	50.0	74.0	-24.0
H	9608.000	43.4	33	40.4	50.8	74.0	-23.2
H	***12010.000***	***44.1***	***33***	***40.5***	***51.6***	***74.0***	***-22.4***
H	14412.000	45.2	33	40.0	52.2	74.0	-21.8

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 / RSS-210 Section 2.2.

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	95.0	33	29.4	30.1	61.3	94.0	-32.7
H	***4882.000***	***60.1***	***33***	***34.9***	***30.1***	***31.9***	***54.0***	***-22.1***
H	***7323.000***	***45.5***	***33***	***37.9***	***30.1***	***20.3***	***54.0***	***-33.7***
H	9764.000	43.5	33	40.4	30.1	20.8	54.0	-33.2
H	***12205.000***	***44.2***	***33***	***40.5***	***30.1***	***21.6***	***54.0***	***-32.4***
H	14646.000	47.4	33	38.4	30.1	22.7	54.0	-31.3

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	95.0	33	29.4	91.4	114.0	-22.6
H	***4882.000***	***60.1***	***33***	***34.9***	***62.0***	***74.0***	***-12.0***
H	***7323.000***	***45.5***	***33***	***37.9***	***50.4***	***74.0***	***-23.6***
H	9764.000	43.5	33	40.4	50.9	74.0	-23.1
H	***12205.000***	***44.2***	***33***	***40.5***	***51.7***	***74.0***	***-22.3***
H	14646.000	47.4	33	38.4	52.8	74.0	-21.2

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.

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	90.8	33	29.4	30.1	57.1	94.0	-36.9
H	***4960.000***	***59.1***	***33***	***34.9***	***30.1***	***30.9***	***54.0***	***-23.1***
H	***7440.000***	***45.7***	***33***	***37.9***	***30.1***	***20.5***	***54.0***	***-33.5***
H	9920.000	43.3	33	40.4	30.1	20.6	54.0	-33.4
H	***12400.000***	***43.9***	***33***	***40.5***	***30.1***	***21.3***	***54.0***	***-32.7***
H	14880.000	47.5	33	38.4	30.1	22.8	54.0	-31.2

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	90.8	33	29.4	87.2	114.0	-26.8
H	***4960.000***	***59.1***	***33***	***34.9***	***61.0***	***74.0***	***-13.0***
H	***7440.000***	***45.7***	***33***	***37.9***	***50.6***	***74.0***	***-23.4***
H	9920.000	43.3	33	40.4	50.7	74.0	-23.3
H	***12400.000***	***43.9***	***33***	***40.5***	***51.4***	***74.0***	***-22.6***
H	14880.000	47.5	33	38.4	52.9	74.0	-21.1

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.

Mode: Talk

Table 4, Base unit with adaptor "Ten Pao"

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	32.000	38.7	16	10.0	32.7	40.0	-7.3
V	64.000	40.0	16	9.0	33.0	40.0	-7.0
V	96.000	36.6	16	12.0	32.6	43.5	-10.9
H	***128.000***	***34.1***	***16***	***14.0***	***32.1***	***43.5***	***-11.4***
H	160.000	31.6	16	16.0	31.6	43.5	-11.9
H	192.000	30.8	16	16.0	30.8	43.5	-12.7

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. 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.

Mode: TX-Channel 00

Table 5, Base unit with adaptor "Salcomp"

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	95.6	33	29.4	30.1	61.9	94.0	-32.1
H	***4804.000***	***57.7***	***33***	***34.9***	***30.1***	***29.5***	***54.0***	***-24.5***
H	7206.000	44.7	33	37.9	30.1	19.5	54.0	-34.5
H	9608.000	43.4	33	40.4	30.1	20.7	54.0	-33.3
H	***12010.000***	***44.1***	***33***	***40.5***	***30.1***	***21.5***	***54.0***	***-32.5***
H	14412.000	45.2	33	40.0	30.1	22.1	54.0	-31.9

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	95.6	33	29.4	92.0	114.0	-22.0
H	***4804.000***	***57.7***	***33***	***34.9***	***59.6***	***74.0***	***-14.4***
H	7206.000	44.7	33	37.9	49.6	74.0	-24.4
H	9608.000	43.4	33	40.4	50.8	74.0	-23.2
H	***12010.000***	***44.1***	***33***	***40.5***	***51.6***	***74.0***	***-22.4***
H	14412.000	45.2	33	40.0	52.2	74.0	-21.8

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 / RSS-210 Section 2.2.

Mode: TX-Channel 39

Table 6, Base unit with adaptor "Salcomp"

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	95.9	33	29.4	30.1	62.2	94.0	-31.8
H	***4882.000***	***57.0***	***33***	***34.9***	***30.1***	***28.8***	***54.0***	***-25.2***
H	***7323.000***	***44.8***	***33***	***37.9***	***30.1***	***19.6***	***54.0***	***-34.4***
H	9764.000	42.9	33	40.4	30.1	20.2	54.0	-33.8
H	***12205.000***	***44.2***	***33***	***40.5***	***30.1***	***21.6***	***54.0***	***-32.4***
H	14646.000	47.2	33	38.4	30.1	22.5	54.0	-31.5

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	95.9	33	29.4	92.3	114.0	-21.7
H	***4882.000***	***57.0***	***33***	***34.9***	***58.9***	***74.0***	***-15.1***
H	***7323.000***	***44.8***	***33***	***37.9***	***49.7***	***74.0***	***-24.3***
H	9764.000	42.9	33	40.4	50.3	74.0	-23.7
H	***12205.000***	***44.2***	***33***	***40.5***	***51.7***	***74.0***	***-22.3***
H	14646.000	47.2	33	38.4	52.6	74.0	-21.4

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.

Mode: TX-Channel 78

Table 7, Base unit with adaptor "Salcomp"

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	91.2	33	29.4	30.1	57.5	94.0	-36.5
H	***4960.000***	***57.4***	***33***	***34.9***	***30.1***	***29.2***	***54.0***	***-24.8***
H	***7440.000***	***44.4***	***33***	***37.9***	***30.1***	***19.2***	***54.0***	***-34.8***
H	9920.000	43.2	33	40.4	30.1	20.5	54.0	-33.5
H	***12400.000***	***43.8***	***33***	***40.5***	***30.1***	***21.2***	***54.0***	***-32.8***
H	14880.000	47.4	33	38.4	30.1	22.7	54.0	-31.3

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	91.2	33	29.4	87.6	114.0	-26.4
H	***4960.000***	***57.4***	***33***	***34.9***	***59.3***	***74.0***	***-14.7***
H	***7440.000***	***44.4***	***33***	***37.9***	***49.3***	***74.0***	***-24.7***
H	9920.000	43.2	33	40.4	50.6	74.0	-23.4
H	***12400.000***	***43.8***	***33***	***40.5***	***51.3***	***74.0***	***-22.7***
H	14880.000	47.4	33	38.4	52.8	74.0	-21.2

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.

Mode: Talk

Table 8, Base unit with adaptor "Salcomp"

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	32.000	38.8	16	10.0	32.8	40.0	-7.2
V	64.000	40.3	16	9.0	33.3	40.0	-6.7
V	96.000	36.7	16	12.0	32.7	43.5	-10.8
H	***128.000***	***34.4***	***16***	***14.0***	***32.4***	***43.5***	***-11.1***
H	160.000	32.0	16	16.0	32.0	43.5	-11.5
H	192.000	31.0	16	16.0	31.0	43.5	-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 / RSS-210 Section 2.2.

4.3 Radiated Emissions from Receiver

4.3.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
at

Base Unit with adaptor “Salcomp”: 12197.500 MHz

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

4.3.2 Radiated Emission Data

The data in tables 9-10 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Base Unit with adaptor “Salcomp”: Passed by 8.4 dB margin

Mode: Receiving – Middle Channel

Table 9, Base Unit Bluetooth with Adaptor "Ten Pao"

Radiated Emissions 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	2439.500	46.1	33	29.4	42.5	54.0	-11.5
V	4879.000	36.9	33	34.9	38.8	54.0	-15.2
V	7318.500	38.1	33	37.9	43.0	54.0	-11.0
V	9758.000	36.7	33	40.4	44.1	54.0	-9.9
V	12197.500	37.7	33	40.5	45.2	54.0	-8.8

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.

Mode: Receiving – Middle Channel

Table 10, Base unit with Adaptor "Salcomp"

Radiated Emissions 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	2439.500	46.5	33	29.4	42.9	54.0	-11.1
V	4879.000	37.1	33	34.9	39.0	54.0	-15.0
V	7318.500	38.8	33	37.9	43.7	54.0	-10.3
V	9758.000	36.8	33	40.4	44.2	54.0	-9.8
V	12197.500	38.1	33	40.5	45.6	54.0	-8.4

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.

4.4 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 / Table 2 of RSS-210, whichever is the lesser attenuation, which meet the requirement of FCC Part 15 Section 15.249(d) / RSS-210 A2.9(b).

Radiated Emission on bandedge plots are attached in the Appendix and 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:

Adaptor	Channel	Fundamental Emission (dBµV/m)	Delta from the Plot (dB)	Resultant Field Strength (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)
"Ten Pao"	Lowest	60.9	32.02	28.88	54	-25.12
"Ten Pao"	Highest	57.1	49.90	7.20	54	-46.80
"Salcomp"	Lowest	61.9	32.02	29.88	54	-24.12
"Salcomp"	Highest	57.5	49.90	7.60	54	-46.40

Adaptor	Channel	Fundamental Emission (dBµV/m)	Delta from the Plot (dB)	Resultant Field Strength (dBµV/m)	Peak Limit (dBµV/m)	Margin (dB)
"Ten Pao"	Lowest	91.0	32.02	58.98	74	-15.02
"Ten Pao"	Highest	87.2	49.90	37.30	74	-36.70
"Salcomp"	Lowest	92.0	32.02	59.98	74	-14.02
"Salcomp"	Highest	87.6	49.90	37.70	74	-36.30

The resultant field strength meets the general radiated emission limit in FCC Part 15 Section 15.209 / Table 2 of RSS-210, which does not exceed 74dBµV/m for peak limit and also 54dBµV/m for average limit.

4.5 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.

4.5.1 AC Power Line Conducted Emission Configuration Photograph

Worst Case Line-Conducted Configuration
at

Base Unit with adaptor “Salcomp”: 1.505 MHz

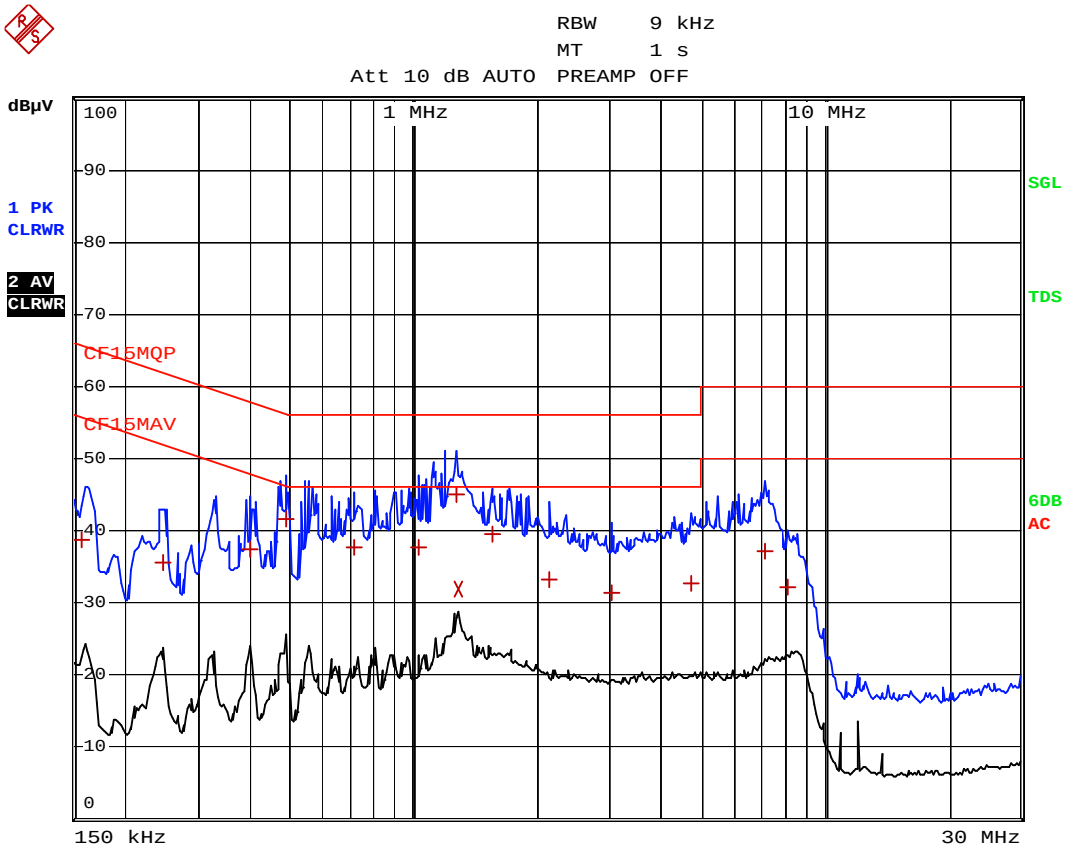
The worst case line conducted configuration photographs are attached in the Appendix and saved with filename: config photos.pdf

4.5.2 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.

Base Unit with adaptor “Salcomp”: Passed by 9.35 dB margin compare with quasi-peak limit

Worst Case: Conference Home & Cell Calls Mode (Bluetooth) with Adaptor: Ten Pao



Date: 9.NOV.2010 06:23:13

Worst Case: Conference Home & Cell Calls Mode (Bluetooth) with Adaptor: Ten Pao

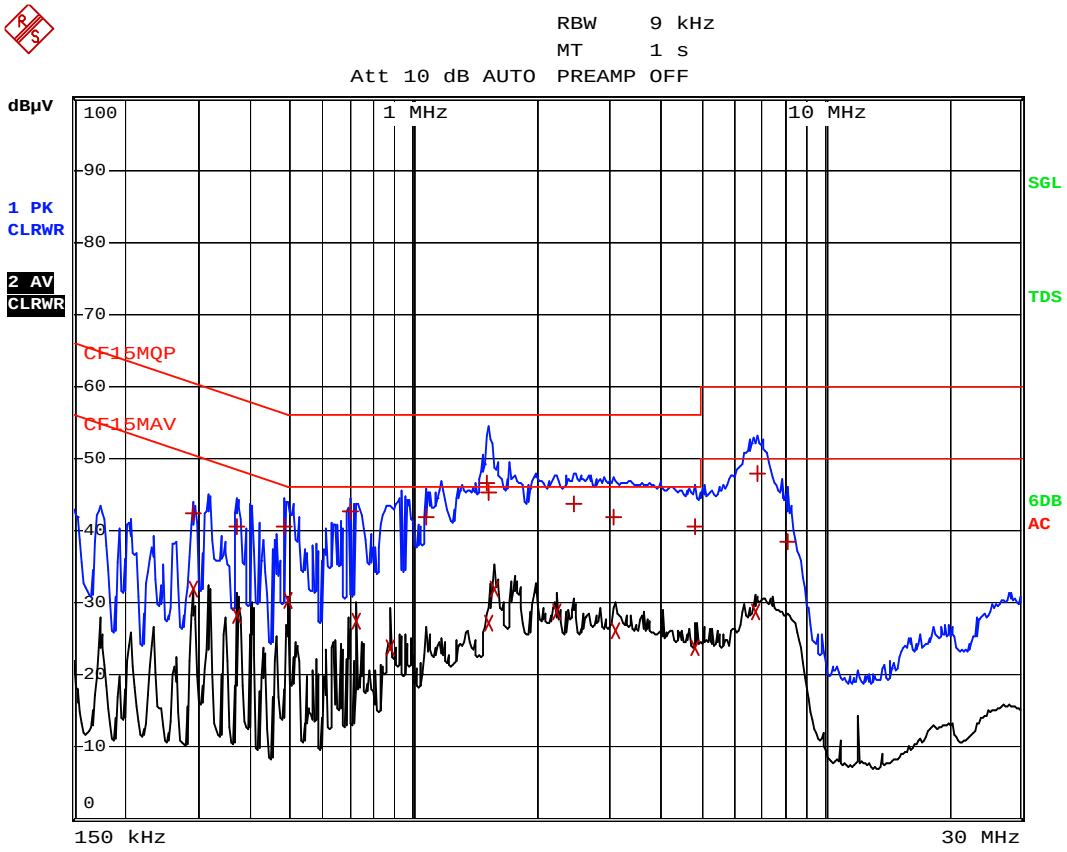
EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
1	Quasi Peak	159 kHz	38.58	L1 gnd	-26.93
1	Quasi Peak	249 kHz	35.61	L1 gnd	-26.17
1	Quasi Peak	397.5 kHz	37.40	L1 gnd	-20.49
1	Quasi Peak	487.5 kHz	41.49	L1 gnd	-14.71
1	Quasi Peak	717 kHz	37.67	L1 gnd	-18.32
1	Quasi Peak	1.0275 MHz	37.66	N gnd	-18.33
1	Quasi Peak	1.266 MHz	44.93	N gnd	-11.07
2	CISPR Average	1.2885 MHz	31.90	N gnd	-14.09
1	Quasi Peak	1.554 MHz	39.38	N gnd	-16.61
1	Quasi Peak	2.148 MHz	33.09	N gnd	-22.90
1	Quasi Peak	3.039 MHz	31.43	L1 gnd	-24.56
1	Quasi Peak	4.767 MHz	32.64	N gnd	-23.35
1	Quasi Peak	7.2015 MHz	37.10	N gnd	-22.89
1	Quasi Peak	8.187 MHz	32.02	N gnd	-27.97

Date: 9.NOV.2010 06:22:37

Worst Case: Conference Home & Cell Calls Mode (Bluetooth) with Adaptor: Salcomp



Date: 9.NOV.2010 04:29:00

Worst Case: Conference Home & Cell Calls Mode (Bluetooth) with Adaptor: Salcomp

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV			DELTA LIMIT dB
1	Quasi Peak	289.5 kHz	42.37	N	gnd	-18.15
2	CISPR Average	289.5 kHz	31.89	L1	gnd	-18.64
1	Quasi Peak	370.5 kHz	40.61	N	gnd	-17.87
2	CISPR Average	370.5 kHz	28.21	L1	gnd	-20.27
1	Quasi Peak	483 kHz	40.55	N	gnd	-15.73
2	CISPR Average	492 kHz	30.20	L1	gnd	-15.92
1	Quasi Peak	699 kHz	42.54	N	gnd	-13.45
2	CISPR Average	726 kHz	27.31	L1	gnd	-18.69
2	CISPR Average	874.5 kHz	23.70	L1	gnd	-22.30
1	Quasi Peak	1.0725 MHz	41.75	N	gnd	-14.24
1	Quasi Peak	1.5045 MHz	46.64	L1	gnd	-9.35
2	CISPR Average	1.518 MHz	27.12	L1	gnd	-18.87
1	Quasi Peak	1.527 MHz	45.31	L1	gnd	-10.69
2	CISPR Average	1.5675 MHz	31.76	L1	gnd	-14.23
2	CISPR Average	2.2425 MHz	28.78	N	gnd	-17.21
1	Quasi Peak	2.454 MHz	43.66	L1	gnd	-12.33
1	Quasi Peak	3.075 MHz	41.96	N	gnd	-14.03
2	CISPR Average	3.1065 MHz	26.14	N	gnd	-19.86
1	Quasi Peak	4.857 MHz	40.67	N	gnd	-15.32
2	CISPR Average	4.857 MHz	23.68	N	gnd	-22.31

Date: 9.NOV.2010 04:27:58

Worst Case: Conference Home & Cell Calls Mode (Bluetooth) with Adaptor: Salcomp

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

TRACE		FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
2	CISPR Average	6.8235 MHz	28.80	L1 gnd	-21.19
1	Quasi Peak	6.8595 MHz	47.93	L1 gnd	-12.06
1	Quasi Peak	8.142 MHz	38.40	N gnd	-21.59

Date: 9.NOV.2010 04:28:35

4.6 Radio Frequency Exposure Compliance

The Routine RF Exposure Evaluation, Routine SAR Evaluation and Declaration of RF Exposure Compliance are saved as filename: RF exposure.pdf

EXHIBIT 5
EQUIPMENT LIST

5.0 **Equipment List**

1) Radiated Emissions Test

Equipment	EMI Test Receiver	Spectrum Analyzer	Biconical Antenna
Registration No.	EW-2251	EW-2188	EW-0954
Manufacturer	R&S	AGILENTTECH	EMCO
Model No.	ESCI	E4407B	3104C
Calibration Date	Oct. 22, 2009	Dec. 25, 2009	Apr. 14, 2010
Calibration Due Date	Jan, 22, 2011	Dec. 31, 2010	Oct. 14, 2011

Equipment	Double Ridged Guide Antenna	Log Periodic Antenna	Broad-Band Horn Antenna
Registration No.	EW-0194	EW-0446	EW-1679
Manufacturer	EMCO	EMCO	SCHWARZBECK
Model No.	3115	3146	BBHA9170
Calibration Date	Jul. 06, 2010	Apr. 26, 2010	Feb. 17 , 2010
Calibration Due Date	Jan. 06 2012	Oct. 26, 2011	Feb. 17, 2011

Equipment	Digital Multimeter	Spectrum Analyzer
Registration No.	EW-1237	EW-2466
Manufacturer	FLUKE	R&S
Model No.	179	FSP30
Calibration Date	Sep. 01, 2010	Nov. 11, 2009
Calibration Due Date	Oct. 01, 2011	Nov. 11, 2010

2) Conducted Emissions Test

Equipment	LISN	EMI Test Receiver	Pulse Limiter
Registration No.	EW-0090	EW-2500	EW-0698
Manufacturer	R&S	ROHDESCHWARZ	R&S
Model No.	ESH3-Z5	ESCI	ESH3-Z2
Calibration Date	Feb. 05, 2010	Sep. 20, 2009	Mar. 01, 2010
Calibration Due Date	Feb. 05, 2011	Dec. 20, 2010	Mar. 01, 2011

END OF TEST REPORT