

TEST REPORT

Report Number: HK10041003-1(R1)

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

1. 1.9GHz Digital Modulation Cordless Phone with Bluetooth – Base Unit Bluetooth Portion
2. 1.9GHz Digital Modulation Cordless Phone with Bluetooth and Digital Answering Machine – Base Unit Bluetooth Portion

FCC ID: EW780-7264-01

IC: 1135B-80726400

Supersede report no. HK10041003-1 dated May 24, 2010

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June 25, 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: 2008
FCC ID:	EW780-7264-01
FCC Model(s):	1. DS631Z-XY 2. DS632Z-XY
IC Specification Standard:	RSS-210 Issue 7, June 2007 RSS-Gen Issue 2, June 2007 RSS-102 Issue 4, March 2010
IC:	1135B-80726400
IC Model(s):	1. DS6311-2, 2. DS6321-2, DS6321-3, DS6321-4, DS6322-4
Type of EUT:	Transceiver
Description of EUT:	1. 1.9GHz Digital Modulation Cordless Phone with Bluetooth – Base Unit Bluetooth Portion 2. 1.9GHz Digital Modulation Cordless Phone with Bluetooth and Digital Answering Machine – Base Unit Bluetooth Portion
Serial Number:	N/A
Sample Receipt Date:	April 21, 2010
Date of Test:	April 28-30, 2010
Report Date:	June 25, 2010
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

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1.0 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.

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**EXHIBIT 2
GENERAL DESCRIPTION**

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2.0 General Description

2.1 Product Description

The Model: DS6311-2 is a 1.9GHz Digital Modulation Cordless Phone with Bluetooth – Base Unit Bluetooth Portion, while DS6321-2 is 1.9GHz Digital Modulation Cordless Phone with Digital Answering Machine and Bluetooth – Base Unit Bluetooth Portion. Only Base offers Bluetooth feature, and it operates at frequency range of 2402-2480MHz with 79 channels. Both Base Units for DS6311-2 and DS6321-2 are powered by an AC adaptor: 100-120VAC to 6VDC 400mA (Brand: Tenpao, Model: S005IU0600040) and an alternative AC adaptor (Brand: SIL, Model: SSA-5AP-09 US 060040L).

Handset unit has a “cell” button that manages Bluetooth connections to a Bluetooth-equipped mobile device. With Bluetooth and 1.9GHz wireless communications enable, the base unit allows user to use the cordless handset to dial out or receive cellular phone calls via the cellular network. Two Bluetooth equipped cellular phones can be connected but only one can be a call at a time.

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

For FCC, the Model: DS631Z-XY is same as the tested Model: DS6311-2 in electronics/electrical designs including software & firmware, PCB layout and construction design/physical design/enclosure. The Model DS632Z-XY is the same as the tested Model: DS6321-2 in electronics/electrical designs including software & firmware, PCB layout and construction design/physical design/enclosure. The only differences between these models are cosmetic details, color, model number, number of handset and charger and package material to be sold for marketing purpose. Suffix (X) indicates different number of handset and charger, suffix (Y) indicates different color and suffix (Z) indicates different packaging material.

For IC, the Model: DS6321-3, DS6321-4 and DS6322-4 are the same as the Model: DS6321-2 in electronics/electrical designs including software & firmware, PCB layout and construction design/physical design/enclosure. The only differences between these models are cosmetic details, model number, package material, and number of handset and charger to be sold for marketing purpose.

The Bluetooth RF Modules of DS6311-2 and DS6321-2 are identical including RF algorithm.

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.

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2.2 Purpose of Change for Reassessment of IC RSS-210

The purpose of change is attached in the Appendix and saved with filename: product change.pdf

2.3 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.

2.4 Test Facility

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

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**EXHIBIT 3
SYSTEM TEST CONFIGURATION**

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3.0 System Test Configuration

3.1 Justification

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

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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 4.2.3.

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

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3.3 Details of EUT and Description of Accessories

Details of EUT:

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

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

Description of Accessories:

- (1) 1 x Telecommunication cable with RJ11C connectors (1m, unshielded), terminated (Supplied by Intertek)
- (2) 1 x 3m Telephone Line (Supplied by Intertek)
- (3) Telephone Line Simulator, Model: TLS-5C-01, S/N: 059355 (Supplied by Intertek)
- (4) Handset, Model No.: DS6311-2 / DS6321-2, FCC ID: EW780-7264-00 (Supplied by Client)
- (5) 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.

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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 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 dB μ V/m
 RA = Receiver Amplitude (including preamplifier) in dB μ V
 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 dB μ V/m
 RR = RA - AG in dB μ V
 LF = CF + AF in dB

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

RA = 52.0 dB μ V	
AF = 7.4 dB	RR = 23.0 dB μ V
CF = 1.6 dB	LF = 9.0 dB
AG = 29.0 dB	
FS = RR + LF	
FS = 23 + 9 = 32 dB μ V/m	

Level in μ V/m = Common Antilogarithm [(32 dB μ V/m)/20] = 39.8 μ V/m

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4.2 Radiated Emissions

4.2.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
at

Base Unit with adaptors “Tenpao” & “SIL” for Model DS6311-2 – 50.375 MHz

Base Unit with adaptors “Tenpao” & “SIL” for Model DS6321-2 – 50.375 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 1-16 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Base Unit with adaptors “Tenpao” & “SIL” for Model DS6311-2 – Passed by 6.1 dB margin

Base Unit with adaptors “Tenpao” & “SIL” for Model DS6321-2 – Passed by 6.4 dB margin

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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 $625\mu\text{s}$. 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,

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

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

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Mode: TX-Channel 00

Table 1, DS6311-2, Base Unit with adaptor "Tenpao"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	99.7	33	29.4	30.1	66.0	94.0	-28.0
V	4804.000	62.4	33	34.9	30.1	34.2	54.0	-19.8
V	7206.000	47.5	33	37.9	30.1	22.3	54.0	-31.7
V	9608.000	43.7	33	40.4	30.1	21.0	54.0	-33.0
V	12010.000	45.1	33	40.5	30.1	22.5	54.0	-31.5
V	14412.000	46.4	33	40.0	30.1	23.3	54.0	-30.7

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	99.7	33	29.4	96.1	114.0	-17.9
V	4804.000	62.4	33	34.9	64.3	74.0	-9.7
V	7206.000	47.5	33	37.9	52.4	74.0	-21.6
V	9608.000	43.7	33	40.4	51.1	74.0	-22.9
V	12010.000	45.1	33	40.5	52.6	74.0	-21.4
V	14412.000	46.4	33	40.0	53.4	74.0	-20.6

- 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 / RSS-210 Section 2.2.

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Mode: TX-Channel 39

Table 2, DS6311-2, Base Unit with adaptor "Tenpao"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	99.4	33	29.4	30.1	65.7	94.0	-28.3
V	4882.000	62.3	33	34.9	30.1	34.1	54.0	-19.9
V	7323.000	47.7	33	37.9	30.1	22.5	54.0	-31.5
V	9764.000	43.5	33	40.4	30.1	20.8	54.0	-33.2
V	12205.000	45.2	33	40.5	30.1	22.6	54.0	-31.4
V	14646.000	48.0	33	38.4	30.1	23.3	54.0	-30.7

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	99.4	33	29.4	95.8	114.0	-18.2
V	4882.000	62.3	33	34.9	64.2	74.0	-9.8
V	7323.000	47.7	33	37.9	52.6	74.0	-21.4
V	9764.000	43.5	33	40.4	50.9	74.0	-23.1
V	12205.000	45.2	33	40.5	52.7	74.0	-21.3
V	14646.000	48.0	33	38.4	53.4	74.0	-20.6

- 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 / RSS-210 Section 2.2.

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Mode: TX-Channel 78

Table 3, DS6311-2, Base Unit with adaptor "Tenpao"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	99.9	33	29.4	30.1	66.2	94.0	-27.8
V	4960.000	63.1	33	34.9	30.1	34.9	54.0	-19.1
V	7440.000	47.9	33	37.9	30.1	22.7	54.0	-31.3
V	9920.000	43.6	33	40.4	30.1	20.9	54.0	-33.1
V	12400.000	45.3	33	40.5	30.1	22.7	54.0	-31.3
V	14880.000	48.2	33	38.4	30.1	23.5	54.0	-30.5

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	99.9	33	29.4	96.3	114.0	-17.7
V	4960.000	63.1	33	34.9	65.0	74.0	-9.0
V	7440.000	47.9	33	37.9	52.8	74.0	-21.2
V	9920.000	43.6	33	40.4	51.0	74.0	-23.0
V	12400.000	45.3	33	40.5	52.8	74.0	-21.2
V	14880.000	48.2	33	38.4	53.6	74.0	-20.4

- NOTES:
1. Peak detector is used for the emission measurement.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna is used for the emission over 1000MHz.
 5. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Mode: Talk

Table 4, DS6311-2, Base Unit with adaptor "Tenpao"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	50.375	38.9	16	11.0	33.9	40.0	-6.1
V	100.750	37.4	16	12.0	33.4	43.5	-10.1
H	151.125	35.3	16	15.0	34.3	43.5	-9.2
H	201.500	34.2	16	16.0	34.2	43.5	-9.3
H	251.875	29.6	16	20.0	33.6	46.0	-12.4
H	302.250	26.8	16	22.0	32.8	46.0	-13.2

- 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. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Mode: TX-Channel 00

Table 5, DS6311-2, Base Unit with adaptor "SIL"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	98.8	33	29.4	30.1	65.1	94.0	-28.9
V	4804.000	62.9	33	34.9	30.1	34.7	54.0	-19.3
V	7206.000	47.7	33	37.9	30.1	22.5	54.0	-31.5
V	9608.000	43.4	33	40.4	30.1	20.7	54.0	-33.3
V	12010.000	45.1	33	40.5	30.1	22.5	54.0	-31.5
V	14412.000	46.1	33	40.0	30.1	23.0	54.0	-31.0

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	98.8	33	29.4	95.2	114.0	-18.8
V	4804.000	62.9	33	34.9	64.8	74.0	-9.2
V	7206.000	47.7	33	37.9	52.6	74.0	-21.4
V	9608.000	43.4	33	40.4	50.8	74.0	-23.2
V	12010.000	45.1	33	40.5	52.6	74.0	-21.4
V	14412.000	46.1	33	40.0	53.1	74.0	-20.9

- 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. Horn antenna is used for the emission over 1000MHz.
 5. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Mode: TX-Channel 39

Table 6, DS6311-2, Base Unit with adaptor "SIL"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	99.2	33	29.4	30.1	65.5	94.0	-28.5
V	4882.000	62.4	33	34.9	30.1	34.2	54.0	-19.8
V	7323.000	47.8	33	37.9	30.1	22.6	54.0	-31.4
V	9764.000	43.7	33	40.4	30.1	21.0	54.0	-33.0
V	12205.000	45.2	33	40.5	30.1	22.6	54.0	-31.4
V	14646.000	47.8	33	38.4	30.1	23.1	54.0	-30.9

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	99.2	33	29.4	95.6	114.0	-18.4
V	4882.000	62.4	33	34.9	64.3	74.0	-9.7
V	7323.000	47.8	33	37.9	52.7	74.0	-21.3
V	9764.000	43.7	33	40.4	51.1	74.0	-22.9
V	12205.000	45.2	33	40.5	52.7	74.0	-21.3
V	14646.000	47.8	33	38.4	53.2	74.0	-20.8

- 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.

INTERTEK TESTING SERVICES

Mode: TX-Channel 78

Table 7, DS6311-2, Base Unit with adaptor "SIL"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	98.9	33	29.4	30.1	65.2	94.0	-28.8
V	4960.000	62.8	33	34.9	30.1	34.6	54.0	-19.4
V	7440.000	48.1	33	37.9	30.1	22.9	54.0	-31.1
V	9920.000	43.6	33	40.4	30.1	20.9	54.0	-33.1
V	12400.000	45.3	33	40.5	30.1	22.7	54.0	-31.3
V	14880.000	47.9	33	38.4	30.1	23.2	54.0	-30.8

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	98.9	33	29.4	95.3	114.0	-18.7
V	4960.000	62.8	33	34.9	64.7	74.0	-9.3
V	7440.000	48.1	33	37.9	53.0	74.0	-21.0
V	9920.000	43.6	33	40.4	51.0	74.0	-23.0
V	12400.000	45.3	33	40.5	52.8	74.0	-21.2
V	14880.000	47.9	33	38.4	53.3	74.0	-20.7

- 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 / RSS-210 Section 2.2.

INTERTEK TESTING SERVICES

Mode: Talk

Table 8, DS6311-2, Base Unit with adaptor "SIL"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	50.375	38.9	16	11.0	33.9	40.0	-6.1
V	100.750	37.6	16	12.0	33.6	43.5	-9.9
H	151.125	35.1	16	15.0	34.1	43.5	-9.4
H	201.500	34.2	16	16.0	34.2	43.5	-9.3
H	251.875	29.2	16	20.0	33.2	46.0	-12.8
H	302.250	26.6	16	22.0	32.6	46.0	-13.4

- 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. 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.

INTERTEK TESTING SERVICES

Mode: TX-Channel 00

Table 9, DS6321-2, Base Unit with adaptor "Tenpao"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	100.0	33	29.4	30.1	66.3	94.0	-27.7
V	4804.000	59.0	33	34.9	30.1	30.8	54.0	-23.2
V	7206.000	44.0	33	37.9	30.1	18.8	54.0	-35.2
V	9608.000	42.2	33	40.4	30.1	19.5	54.0	-34.5
V	12010.000	42.9	33	40.5	30.1	20.3	54.0	-33.7
V	14412.000	44.4	33	40.0	30.1	21.3	54.0	-32.7

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	100.0	33	29.4	96.4	114.0	-17.6
V	4804.000	59.0	33	34.9	60.9	74.0	-13.1
V	7206.000	44.0	33	37.9	48.9	74.0	-25.1
V	9608.000	42.2	33	40.4	49.6	74.0	-24.4
V	12010.000	42.9	33	40.5	50.4	74.0	-23.6
V	14412.000	44.4	33	40.0	51.4	74.0	-22.6

- 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 / RSS-210 Section 2.2.

INTERTEK TESTING SERVICES

Mode: TX-Channel 39

Table 10, DS6321-2, Base Unit with adaptor "Tenpao"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	100.4	33	29.4	30.1	66.7	94.0	-27.3
V	4882.000	59.1	33	34.9	30.1	30.9	54.0	-23.1
V	7323.000	43.6	33	37.9	30.1	18.4	54.0	-35.6
V	9764.000	42.1	33	40.4	30.1	19.4	54.0	-34.6
V	12205.000	43.1	33	40.5	30.1	20.5	54.0	-33.5
V	14646.000	46.2	33	38.4	30.1	21.5	54.0	-32.5

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	100.4	33	29.4	96.8	114.0	-17.2
V	4882.000	59.1	33	34.9	61.0	74.0	-13.0
V	7323.000	43.6	33	37.9	48.5	74.0	-25.5
V	9764.000	42.1	33	40.4	49.5	74.0	-24.5
V	12205.000	43.1	33	40.5	50.6	74.0	-23.4
V	14646.000	46.2	33	38.4	51.6	74.0	-22.4

- 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.

INTERTEK TESTING SERVICES

Mode: TX-Channel 78

Table 11, DS6321-2, Base Unit with adaptor "Tenpao"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	99.9	33	29.4	30.1	66.2	94.0	-27.8
V	4960.000	58.5	33	34.9	30.1	30.3	54.0	-23.7
V	7440.000	43.7	33	37.9	30.1	18.5	54.0	-35.5
V	9920.000	42.5	33	40.4	30.1	19.8	54.0	-34.2
V	12400.000	42.7	33	40.5	30.1	20.1	54.0	-33.9
V	14880.000	45.8	33	38.4	30.1	21.1	54.0	-32.9

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	99.9	33	29.4	96.3	114.0	-17.7
V	4960.000	58.5	33	34.9	60.4	74.0	-13.6
V	7440.000	43.7	33	37.9	48.6	74.0	-25.4
V	9920.000	42.5	33	40.4	49.9	74.0	-24.1
V	12400.000	42.7	33	40.5	50.2	74.0	-23.8
V	14880.000	45.8	33	38.4	51.2	74.0	-22.8

- 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.

INTERTEK TESTING SERVICES

Mode: Talk

Table 12, DS6321-2, Base Unit with adaptor "Tenpao"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	50.375	38.6	16	11.0	33.6	40.0	-6.4
V	100.750	38.1	16	12.0	34.1	43.5	-9.4
H	151.125	35.5	16	15.0	34.5	43.5	-9.0
H	201.500	34.2	16	16.0	34.2	43.5	-9.3
H	251.875	29.9	16	20.0	33.9	46.0	-12.1
H	302.250	26.6	16	22.0	32.6	46.0	-13.4

- 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. 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.

INTERTEK TESTING SERVICES

Mode: TX-Channel 00

Table 13, DS6321-2, Base Unit with adaptor "SIL"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	98.7	33	29.4	30.1	65.0	94.0	-29.0
V	4804.000	58.9	33	34.9	30.1	30.7	54.0	-23.3
V	7206.000	43.9	33	37.9	30.1	18.7	54.0	-35.3
V	9608.000	42.1	33	40.4	30.1	19.4	54.0	-34.6
V	12010.000	42.5	33	40.5	30.1	19.9	54.0	-34.1
V	14412.000	44.1	33	40.0	30.1	21.0	54.0	-33.0

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	98.7	33	29.4	95.1	114.0	-18.9
V	4804.000	58.9	33	34.9	60.8	74.0	-13.2
V	7206.000	43.9	33	37.9	48.8	74.0	-25.2
V	9608.000	42.1	33	40.4	49.5	74.0	-24.5
V	12010.000	42.5	33	40.5	50.0	74.0	-24.0
V	14412.000	44.1	33	40.0	51.1	74.0	-22.9

- 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. 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.

INTERTEK TESTING SERVICES

Mode: TX-Channel 39

Table 14, DS6321-2, Base Unit with adaptor "SIL"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	99.0	33	29.4	30.1	65.3	94.0	-28.7
V	4882.000	58.4	33	34.9	30.1	30.2	54.0	-23.8
V	7323.000	43.7	33	37.9	30.1	18.5	54.0	-35.5
V	9764.000	42.0	33	40.4	30.1	19.3	54.0	-34.7
V	12205.000	43.1	33	40.5	30.1	20.5	54.0	-33.5
V	14646.000	46.2	33	38.4	30.1	21.5	54.0	-32.5

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	99.0	33	29.4	95.4	114.0	-18.6
V	4882.000	58.4	33	34.9	60.3	74.0	-13.7
V	7323.000	43.7	33	37.9	48.6	74.0	-25.4
V	9764.000	42.0	33	40.4	49.4	74.0	-24.6
V	12205.000	43.1	33	40.5	50.6	74.0	-23.4
V	14646.000	46.2	33	38.4	51.6	74.0	-22.4

- 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.

INTERTEK TESTING SERVICES

Mode: TX-Channel 78

Table 15, DS6321-2, Base Unit with adaptor "SIL"

Radiated Emission Data

Polarization	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	99.2	33	29.4	30.1	65.5	94.0	-28.5
V	4960.000	58.4	33	34.9	30.1	30.2	54.0	-23.8
V	7440.000	44.7	33	37.9	30.1	19.5	54.0	-34.5
V	9920.000	42.1	33	40.4	30.1	19.4	54.0	-34.6
V	12400.000	43.2	33	40.5	30.1	20.6	54.0	-33.4
V	14880.000	46.3	33	38.4	30.1	21.6	54.0	-32.4

Polarization	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	99.2	33	29.4	95.6	114.0	-18.4
V	4960.000	58.4	33	34.9	60.3	74.0	-13.7
V	7440.000	44.7	33	37.9	49.6	74.0	-24.4
V	9920.000	42.1	33	40.4	49.5	74.0	-24.5
V	12400.000	43.2	33	40.5	50.7	74.0	-23.3
V	14880.000	46.3	33	38.4	51.7	74.0	-22.3

- 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.

INTERTEK TESTING SERVICES

Mode: Talk

Table 16, DS6321-2, Base Unit with adaptor "SIL"

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	50.375	38.6	16	11.0	33.6	40.0	-6.4
V	100.750	38.1	16	12.0	34.1	43.5	-9.4
H	151.125	35.3	16	15.0	34.3	43.5	-9.2
H	201.500	34.2	16	16.0	34.2	43.5	-9.3
H	251.875	29.6	16	20.0	33.6	46.0	-12.4
H	302.250	26.9	16	22.0	32.9	46.0	-13.1

- NOTES:
1. Peak detector is used for the emission measurement.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

INTERTEK TESTING SERVICES

4.3 Radiated Emissions from Receiver

4.3.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
at

Base Unit with adaptor "SIL" for Model DS6311-2 – 14637.000 MHz

Base Unit with adaptor "SIL" for Model DS6321-2 – 14637.000 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 17-20 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Base Unit with adaptor "SIL" for Model DS6311-2 – Passed by 6.3 dB margin

Base Unit with adaptor "SIL" for Model DS6321-2 – Passed by 5.7 dB margin

INTERTEK TESTING SERVICES

Mode: Receiving – Middle Channel

Table 17, DS6311-2, Base Unit with adaptor “Tenpao”

Radiated Emissions Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	2439.500	46.3	33	29.4	42.7	54.0	-11.3
V	4879.000	41.5	33	34.9	43.4	54.0	-10.6
V	7318.500	40.0	33	37.9	44.9	54.0	-9.1
V	9758.000	38.2	33	40.4	45.6	54.0	-8.4
V	12197.500	38.4	33	40.5	45.9	54.0	-8.1
V	14637.000	37.4	33	42.4	46.8	54.0	-7.2

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.

INTERTEK TESTING SERVICES

Mode: Receiving – Middle Channel

Table 18, DS6311-2, Base Unit with adaptor “SIL”

Radiated Emissions Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	2439.500	46.2	33	29.4	42.6	54.0	-11.4
V	4879.000	41.6	33	34.9	43.5	54.0	-10.5
V	7318.500	39.7	33	37.9	44.6	54.0	-9.4
V	9758.000	38.3	33	40.4	45.7	54.0	-8.3
V	12197.500	39.2	33	40.5	46.7	54.0	-7.3
V	14637.000	38.3	33	42.4	47.7	54.0	-6.3

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.

INTERTEK TESTING SERVICES

Mode: Receiving – Middle Channel

Table 19, DS6321-2, Base Unit with adaptor “Tenpao”

Radiated Emissions Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	2439.500	46.2	33	29.4	42.6	54.0	-11.4
V	4879.000	41.9	33	34.9	43.8	54.0	-10.2
V	7318.500	39.7	33	37.9	44.6	54.0	-9.4
V	9758.000	37.9	33	40.4	45.3	54.0	-8.7
V	12197.500	38.7	33	40.5	46.2	54.0	-7.8
V	14637.000	38.4	33	42.4	47.8	54.0	-6.2

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.

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Mode: Receiving – Middle Channel

Table 20, DS6321-2, Base Unit with adaptor “SIL”

Radiated Emissions Data

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	2439.500	46.1	33	29.4	42.5	54.0	-11.5
V	4879.000	41.6	33	34.9	43.5	54.0	-10.5
V	7318.500	39.8	33	37.9	44.7	54.0	-9.3
V	9758.000	38.2	33	40.4	45.6	54.0	-8.4
V	12197.500	39.5	33	40.5	47.0	54.0	-7.0
V	14637.000	38.9	33	42.4	48.3	54.0	-5.7

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.

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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 the fundamental emissions are within two standard bandwidths from the bandedge, the delta measurement technique is used for determining bandedge compliance. Standard bandwidth is the bandwidth specified by ANSI C63.4 (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:

Base Unit

Model	Adaptor	Channel	Fundamental Emission (dB μ V/m)	Delta from the Plot (dB)	Resultant Field Strength (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)
DS6311-2	"Ten Pao"	Lowest	66.0	32.34	33.66	54	-20.34
DS6311-2	"Ten Pao"	Highest	66.2	48.74	17.46	54	-36.54
DS6311-2	"SIL"	Lowest	65.1	32.34	32.76	54	-21.24
DS6311-2	"SIL"	Highest	65.2	48.74	16.46	54	-37.54
DS6321-2	"Ten Pao"	Lowest	66.3	32.34	33.96	54	-20.04
DS6321-2	"Ten Pao"	Highest	66.2	48.74	17.46	54	-36.54
DS6321-2	"SIL"	Lowest	65.0	32.34	32.66	54	-21.34
DS6321-2	"SIL"	Highest	65.5	48.74	16.76	54	-37.24

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4.4 Radiated Emission on the Bandedge - Cont'd

Base Unit

Model	Adaptor	Channel	Fundamental Emission (dB μ V/m)	Delta from the Plot (dB)	Resultant Field Strength (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)
DS6311-2	"Ten Pao"	Lowest	96.1	32.34	63.76	74	-10.24
DS6311-2	"Ten Pao"	Highest	96.3	48.74	47.56	74	-26.44
DS6311-2	"SIL"	Lowest	95.2	32.34	62.86	74	-11.14
DS6311-2	"SIL"	Highest	95.3	48.74	46.56	74	-27.44
DS6321-2	"Ten Pao"	Lowest	96.4	32.34	64.06	74	-9.94
DS6321-2	"Ten Pao"	Highest	96.3	48.74	47.56	74	-26.44
DS6321-2	"SIL"	Lowest	95.1	32.34	62.76	74	-11.24
DS6321-2	"SIL"	Highest	95.6	48.74	46.86	74	-27.14

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 74dB μ V/m for peak limit and also 54dB μ V/m for average limit.

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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

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 conducted emission test result is attached in the Appendix and saved with filename: conduct.pdf

Judgement -

Passed by more than 20 dB margin

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

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5.0 Equipment List

1) Radiated Emissions Test

Equipment	Biconical Antenna	Log Periodic Antenna	Double Ridged Guide Antenna
Registration No.	EW-2512	EW-0447	EW-0194
Manufacturer	EMCO	EMCO	EMCO
Model No.	3104C	3146	3115
Calibration Date	Oct. 31, 2008	Nov. 12, 2008	Dec. 24, 2008
Calibration Due Date	Apr. 30, 2010	May. 12, 2010	Jun. 24, 2010

Equipment	EMI Test Receiver	Spectrum Analyzer	
Registration No.	EW-0014	EW-2188	EW-2466
Manufacturer	R&S	AGILENTTECH	R&S
Model No.	ESVS30	E4407B	FSP30
Calibration Date	Jun. 01, 2009	Dec. 25, 2009	Nov. 11, 2009
Calibration Due Date	Jun. 01, 2010	Dec. 31, 2010	Nov. 11, 2010

Equipment	Broad-Band Horn Antenna with frequency range 14G - 40GHz	Digital Multimeter
Registration No.	EW-1679	EW-1237
Manufacturer	SCHWARZBECK	FLUKE
Model No.	BBHA9170	179
Calibration Date	Feb. 17, 2010	Sep. 01, 2009
Calibration Due Date	Feb. 17, 2011	Oct. 01, 2010

2) Conducted Emissions Test

Equipment	EMI Test Receiver	Artificial Mains	Pulse Limiter
Registration No.	EW-2251	EW-0192	EW-0699
Manufacturer	R&S	R&S	R&S
Model No.	ESCI	ESH3-Z5	ESH3-Z2
Calibration Date	Oct. 22, 2009	Nov. 23, 2009	Dec. 24, 2009
Calibration Due Date	Oct. 22, 2010	Nov. 23, 2010	Jun. 24, 2011

END OF TEST REPORT

INTERTEK TESTING SERVICES

**APPENDIX
EXHIBITS OF APPLICATION FOR CERTIFICATION**