

Vtech Telecommunications Ltd.

Application
For
Certification

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

(FCC ID: EW780-7305-00)

HK09100357-1
MN/ cl
November 20, 2009

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Intertek Testing Services Hong Kong Ltd.

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INTERTEK TESTING SERVICES

MEASUREMENT/TECHNICAL REPORT

Vtech Telecommunications Ltd. - Model: TL91XY0, TL92XY0
FCC ID: EW780-7305-00

This report concerns (check one:)		Original Grant <input checked="" type="checkbox"/>	Class II Change <input type="checkbox"/>
Equipment Type : <u>DXX - Pt 15 Low Pwr Com. Device Tx</u>			
Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
		If yes, defer until : _____ date	
Company Name agrees to notify the Commission by:		_____	
		date	
of the intended date of announcement of the product so that the grant can be issued on that date.			
Transition Rules Request per 15.37 ?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-08 Edition] Provision.			
Report reviewed by:	Nip Ming Fung, Melvin Intertek Testing Services Hong Kong Ltd. 2/F., Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. Phone : 852-2173-8535 Fax: 852-2741-1693		

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**EXHIBIT 1
GENERAL DESCRIPTION**

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1.0 General Description

1.1 Product Description

The Model: TL91270 is a 1.9GHz Digital Modulation Cordless Phone with Bluetooth – Base Unit Bluetooth Portion, while TL92270 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.

Handset unit has a “cellular” button that manages Bluetooth connections to a Bluetooth-equipped cell phone or headset. 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 devices can be connected but only one device can be a call at a time.

Both Base Units for TL91270 and TL92270 are powered by an AC adaptor “Ten Pao”: 100-120VAC to 6VDC 400mA (Model: S005IU0600040), and an alternative AC adaptor “Salcomp”: 100-120VAC to 6VDC 400mA (Model: VT0102).

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

The Model: TL91XY0 is the same as the Model: TL91270 in hardware aspect. The Model: TL92XY0 is the same as the Model: TL92270 in hardware aspect. The RF Modules of TL91270 and TL92270 are identical including RF algorithm. Suffix (X) indicates different number of handset and charger, suffix (Y) indicates different color and packaging material. The difference in model number serves as the marketing strategy.

The circuit description is saved with filename: descri.pdf

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1.2 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). Preliminary radiated scans were performed in the Open Area Test Site only to determine worst case modes. 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.

1.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data and conducted data are 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 2
SYSTEM TEST CONFIGURATION**

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2.0 System Test Configuration

2.1 Justification

For emissions testing, the equipment under test (EUT) was setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables (if any) were manipulated to produce worst case emissions. The EUT was powered by an AC adaptor "Ten Pao": 100-120VAC to 6VDC 400mA (Model: S005IU0600040) and an alternative AC adaptor "Salcomp": 100-120VAC to 6VDC 400mA (Model: VT0102).

For the measurements, the EUT is attached to a plastic stand if necessary and placed on the wooden turntable. If the base unit attaches to peripherals, they are connected and operational (as typical as possible).

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

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.

Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz.

Radiated emission measurement were performed 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.

Determination of pulse desensitization was made according to *Hewlett Packard Application Note 150-2, Spectrum Analysis... Pulsed RF*. The effective period (τ_{eff}) was 625 μ s for Bluetooth. With the resolution bandwidth 1MHz and spectrum analyzer IF bandwidth 3 dB, the pulse desensitization factor was 0 dB.

2.2 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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2.3 Details of EUT and Description of Peripherals

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 "Ten Pao" (100-120VAC to 6VDC 400mA, Model: S005IU0600040) (Supplied by Client)
- (2) Base Unit: An AC adaptor "Salcomp" (100-120VAC to 6VDC 400mA, Model: VT0102) (Supplied by Client)

Description of Peripherals:

- (1) Telecommunication cable with RJ11C connectors (1m, unshielded), terminated (Supplied by Intertek)
- (2) Handset: A "Ni-MH" Type Rechargeable Battery Pack 2.4V, 400mAh/750mAh (Supplied by Client)
- (3) Handset, Model: TL91270, FCC ID: EW780-7305-00 (Supplied by Client)
- (4) Nokia Mobile Phone, Model: 5300, FCC ID: PPIRM-146 (Supplied by Intertek)

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2.4 Measurement Uncertainty

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

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

2.5 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.

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

All the items listed under section 2.0 of this report are confirmed by:

Confirmed by:

*Nip Ming Fung, Melvin
Supervisor
Intertek Testing Services
Agent for Vtech Telecommunications Ltd.*



Signature

November 20, 2009 Date

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**EXHIBIT 3
EMISSION RESULTS**

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3.0 Emission 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.

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3.1 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
CF = 1.6 dB
AG = 29.0 dB
FS = RR + LF
FS = 23 + 9 = 32 dB μ V/m

RR = 23.0 dB μ V
LF = 9.0 dB

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

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3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission

at

Base Unit with adaptor “Ten Pao” for Model: TL91270 – 4804.000MHz

Base Unit with adaptor “Salcomp” for Model: TL91270 – 4882.000MHz

Base Unit with adaptor “Ten Pao” for Model: TL92270 – 4804.000MHz & 4882.000MHz

Base Unit with adaptor “Salcomp” for Model: TL92270 – 4882.000MHz

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

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3.3 Radiated Emission Data

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement :

Base Unit with adaptor "Ten Pao" for Model: TL91270 – Passed by 3.2 dB margin
compared with average limit

Base Unit with adaptor "Salcomp" for Model: TL91270 – Passed by 3.2 dB margin
compared with average limit

Base Unit with adaptor "Ten Pao" for Model: TL92270 – Passed by 0.8 dB margin
compared with average limit

Base Unit with adaptor "Salcomp" for Model: TL92270 – Passed by 0.8 dB margin
compared with average limit

TEST PERSONNEL:



Tester Signature

Koo Wai Ip, Engineer
Typed/Printed Name

November 20, 2009
Date

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.
Model: TL91270
Mode : TX-Channel 0 (adaptor "Ten Pao")

Date of Test: October 22-28, 2009

Table 1

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	82.8	33	29.4	79.2	94.0	-14.8
H	4804.000	48.9	33	34.9	50.8	54.0	-3.2
H	7206.000	43.7	33	37.9	48.6	54.0	-5.4
H	9608.000	40.8	33	40.4	48.2	54.0	-5.8
H	12010.000	40.1	33	40.5	47.6	54.0	-6.4

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL91270

Mode : TX-Channel 39 (adaptor "Ten Pao")

Table 2

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	82.9	33	29.4	79.3	94.0	-14.7
H	4882.000	48.7	33	34.9	50.6	54.0	-3.4
H	7323.000	43.6	33	37.9	48.5	54.0	-5.5
H	9764.000	40.8	33	40.4	48.2	54.0	-5.8
H	12205.000	40.0	33	40.5	47.5	54.0	-6.5

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL91270

Mode : TX-Channel 78 (adaptor "Ten Pao")

Table 3, Base unit

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	83.0	33	29.4	79.4	94.0	-14.6
<i>H</i>	<i>4960.000</i>	<i>48.7</i>	<i>33</i>	<i>34.9</i>	<i>50.6</i>	<i>54.0</i>	<i>-3.4</i>
<i>H</i>	<i>7440.000</i>	<i>43.3</i>	<i>33</i>	<i>37.9</i>	<i>48.2</i>	<i>54.0</i>	<i>-5.8</i>
H	9920.000	40.6	33	40.4	48.0	54.0	-6.0
<i>H</i>	<i>12400.000</i>	<i>39.7</i>	<i>33</i>	<i>40.5</i>	<i>47.2</i>	<i>54.0</i>	<i>-6.8</i>

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL91270

Mode : Talk (adaptor "Ten Pao")

Table 4

Radiated Emissions Pursuant to FCC Part 15 Section 15.209, 15.109 Requirements

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	55.150	38.6	16	11.0	33.6	40.0	-6.4
V	82.950	43.1	16	7.0	34.1	40.0	-5.9
V	110.620	36.6	16	14.0	34.6	43.5	-8.9
H	193.250	33.8	16	16.0	33.8	43.5	-9.7
H	221.200	32.4	16	17.0	33.4	46.0	-12.6
H	276.952	29.0	16	22.0	35.0	46.0	-11.0
H	303.274	28.1	16	22.0	34.1	46.0	-11.9

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

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL91270

Mode : TX-Channel 0 (adaptor "Salcomp")

Table 5

**Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements**

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	82.9	33	29.4	79.3	94.0	-14.7
<i>H</i>	<i>4804.000</i>	<i>48.7</i>	<i>33</i>	<i>34.9</i>	<i>50.6</i>	<i>54.0</i>	<i>-3.4</i>
H	7206.000	43.5	33	37.9	48.4	54.0	-5.6
H	9608.000	40.8	33	40.4	48.2	54.0	-5.8
<i>H</i>	<i>12010.000</i>	<i>40.0</i>	<i>33</i>	<i>40.5</i>	<i>47.5</i>	<i>54.0</i>	<i>-6.5</i>

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.
Model: TL91270
Mode : TX-Channel 39 (adaptor "Salcomp")

Date of Test: October 22-28, 2009

Table 6

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	83.0	33	29.4	79.4	94.0	-14.6
H	4882.000	48.9	33	34.9	50.8	54.0	-3.2
H	7323.000	43.7	33	37.9	48.6	54.0	-5.4
H	9764.000	40.8	33	40.4	48.2	54.0	-5.8
H	12205.000	39.9	33	40.5	47.4	54.0	-6.6

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.
Model: TL91270
Mode : TX-Channel 78 (adaptor "Salcomp")

Date of Test: October 22-28, 2009

Table 7

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	82.8	33	29.4	79.2	94.0	-14.8
H	4960.000	48.7	33	34.9	50.6	54.0	-3.4
H	7440.000	43.3	33	37.9	48.2	54.0	-5.8
H	9920.000	40.6	33	40.4	48.0	54.0	-6.0
H	12400.000	40.1	33	40.5	47.6	54.0	-6.4

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL91270

Mode : Talk (adaptor "Salcomp")

Table 8

Radiated Emissions Pursuant to FCC Part 15 Section 15.209, 15.109 Requirements

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	55.150	38.4	16	11.0	33.4	40.0	-6.6
V	82.950	43.2	16	7.0	34.2	40.0	-5.8
V	110.650	36.6	16	14.0	34.6	43.5	-8.9
H	193.250	33.9	16	16.0	33.9	43.5	-9.6
H	221.200	32.6	16	17.0	33.6	46.0	-12.4
H	276.952	29.1	16	22.0	35.1	46.0	-10.9
H	303.274	28.8	16	22.0	34.8	46.0	-11.2

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL92270

Mode : TX-Channel 0 (adaptor "Ten Pao")

Table 9

Radiated Emissions Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	83.4	33	29.4	79.8	94.0	-14.2
<i>H</i>	<i>4804.000</i>	<i>51.3</i>	<i>33</i>	<i>34.9</i>	<i>53.2</i>	<i>54.0</i>	<i>-0.8</i>
H	7206.000	43.9	33	37.9	48.8	54.0	-5.2
H	9608.000	40.8	33	40.4	48.2	54.0	-5.8
<i>H</i>	<i>12010.000</i>	<i>40.4</i>	<i>33</i>	<i>40.5</i>	<i>47.9</i>	<i>54.0</i>	<i>-6.1</i>

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL92270

Mode : TX-Channel 39 (adaptor "Ten Pao")

Table 10

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	83.4	33	29.4	79.8	94.0	-14.2
H	4882.000	51.3	33	34.9	53.2	54.0	-0.8
H	7323.000	43.6	33	37.9	48.5	54.0	-5.5
H	9764.000	40.8	33	40.4	48.2	54.0	-5.8
H	12205.000	40.1	33	40.5	47.6	54.0	-6.4

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL92270

Mode : TX-Channel 78 (adaptor "Ten Pao")

Table 11

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polari- zation	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	83.2	33	29.4	79.6	94.0	-14.4
H	4960.000	51.2	33	34.9	53.1	54.0	-0.9
H	7440.000	43.7	33	37.9	48.6	54.0	-5.4
H	9920.000	40.8	33	40.4	48.2	54.0	-5.8
H	12400.000	40.0	33	40.5	47.5	54.0	-6.5

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL92270

Mode : Talk (adaptor "Ten Pao")

Table 12

Radiated Emissions Pursuant to FCC Part 15 Section 15.209, 15.109 Requirements

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	36.425	39.8	16	10.0	33.8	40.0	-6.2
V	72.850	43.2	16	7.0	34.2	40.0	-5.8
V	109.275	36.3	16	14.0	34.3	43.5	-9.2
H	145.700	35.6	16	14.0	33.6	43.5	-9.9
H	182.125	28.8	16	20.0	32.8	43.5	-10.7
H	218.550	31.4	16	17.0	32.4	46.0	-13.6

- 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. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL92270

Mode : TX-Channel 0 (adaptor "Salcomp")

Table 13

**Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements**

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2402.000	83.5	33	29.4	79.9	94.0	-14.1
<i>H</i>	<i>4804.000</i>	<i>51.2</i>	<i>33</i>	<i>34.9</i>	<i>53.1</i>	<i>54.0</i>	<i>-0.9</i>
H	7206.000	44.0	33	37.9	48.9	54.0	-5.1
H	9608.000	40.8	33	40.4	48.2	54.0	-5.8
<i>H</i>	<i>12010.000</i>	<i>40.3</i>	<i>33</i>	<i>40.5</i>	<i>47.8</i>	<i>54.0</i>	<i>-6.2</i>

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.
Model: TL92270
Mode : TX-Channel 39 (adaptor "Salcomp")

Date of Test: October 22-28, 2009

Table 14

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polari- zation	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2441.000	83.4	33	29.4	79.8	94.0	-14.2
H	4882.000	51.3	33	34.9	53.2	54.0	-0.8
H	7323.000	43.7	33	37.9	48.6	54.0	-5.4
H	9764.000	40.9	33	40.4	48.3	54.0	-5.7
H	12205.000	40.0	33	40.5	47.5	54.0	-6.5

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.
Model: TL92270
Mode : TX-Channel 78 (adaptor "Salcomp")

Date of Test: October 22-28, 2009

Table 15

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249(a) Requirements

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Calculated at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
V	2480.000	83.2	33	29.4	79.6	94.0	-14.4
H	4960.000	51.1	33	34.9	53.0	54.0	-1.0
H	7440.000	43.6	33	37.9	48.5	54.0	-5.5
H	9920.000	40.8	33	40.4	48.2	54.0	-5.8
H	12400.000	40.0	33	40.5	47.5	54.0	-6.5

- 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 part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.

Date of Test: October 22-28, 2009

Model: TL92270

Mode : Talk (adaptor "Salcomp")

Table 16

Radiated Emissions Pursuant to FCC Part 15 Section 15.209, 15.109 Requirements

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	36.425	39.9	16	10.0	33.9	40.0	-6.1
V	72.850	43.1	16	7.0	34.1	40.0	-5.9
V	109.275	36.2	16	14.0	34.2	43.5	-9.3
H	145.700	35.6	16	14.0	33.6	43.5	-9.9
H	182.125	28.4	16	20.0	32.4	43.5	-11.1
H	218.550	31.2	16	17.0	32.2	46.0	-13.8

- 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. Emission (the row indicated by **bold italic**) within the restricted band meets the requirement of part 15.205.

Test Engineer: Koo Wai Ip

INTERTEK TESTING SERVICES

3.4 Radiated Emission on the Bandedge, FCC Rule 15.249(d)

From the following plots, they show that the fundamental emissions are confined in the specified band (2400MHz to 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 Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).

Radiated emission on bandedge plots are saved with filename: emission.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:

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)
TL91270	"Ten Pao"	Lowest	79.2	34.58	44.62	54	9.38
TL91270	"Ten Pao"	Highest	79.4	46.14	33.26	54	20.74
TL91270	"Salcomp"	Lowest	79.3	34.15	45.15	54	8.85
TL91270	"Salcomp"	Highest	79.2	43.87	35.33	54	18.67
TL92270	"Ten Pao"	Lowest	79.8	31.67	48.13	54	5.87
TL92270	"Ten Pao"	Highest	79.6	47.38	32.22	54	21.78
TL92270	"Salcomp"	Lowest	79.9	31.72	48.18	54	5.82
TL92270	"Salcomp"	Highest	79.6	47.63	31.97	54	22.03

Therefore, the resultant field strength meets the general radiated emission limit in section 15.209, which does not exceed 74dB μ V/m and 54dB μ V/m for peak and average limits respectively.

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.

INTERTEK TESTING SERVICES

3.5 Line Conducted Configuration Photograph

Worst Case Line-Conducted Configuration

Base Unit with adaptor “Ten Pao” for Model: TL91270 at 1.320MHz

Base Unit with adaptor “Salcomp” for Model: TL92270 at 0.366MHz

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

Remarks:

- [x] 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.

INTERTEK TESTING SERVICES

3.6 Line Conducted Emission Data

The data on the following pages list the significant emission frequencies, the limit, and the margin of compliance.

Judgement : Base Unit with adaptor "Ten Pao" for Model: TL91270 – Passed by 3.4 dB margin compared with quasi-peak limit

Base Unit with adaptor "Salcomp" for Model: TL92270 – Passed by 9.5 dB margin compared with quasi-peak limit

TEST PERSONNEL:



Tester Signature

Koo Wai Ip, Engineer
Typed/Printed Name

November 20, 2009
Date

INTERTEK TESTING SERVICES

Company: Vtech Telecommunications Ltd.
Model: TL91270, TL92270

Date of Test: October 22-28, 2009

Conducted Emissions Pursuant to FCC Part 15 Section 15.207, 15.107 Requirements

The conducted emission test result is saved with filename: conduct.pdf

INTERTEK TESTING SERVICES

**EXHIBIT 4
EQUIPMENT LIST**

INTERTEK TESTING SERVICES

4.0 Equipment List

1) Radiated Emissions Test

Equipment	EMI Test Receiver	Biconical Antenna	Log Periodic Antenna
Registration No.	EW-0014	EW-0954	EW-0446
Manufacturer	R&S	EMCO	EMCO
Model No.	ESVS30	3104C	3146
Calibration Date	Jun. 01, 2009	Sep. 30, 2008	Oct. 02, 2008
Calibration Due Date	Jun. 01, 2010	Mar. 30, 2010	Apr. 02, 2010

Equipment	Broad-Band Horn Antenna	Spectrum Analyzer	Double Ridged Guide Antenna
Registration No.	EW-1679	EW-2188	EW-1015
Manufacturer	SCHWARZBECK	AGILENTTECH	EMCO
Model No.	BBHA9170	E4407B	3115
Calibration Date	Feb. 10, 2009	Dec. 18, 2008	Jul. 28, 2008
Calibration Due Date	Feb. 10, 2010	Dec. 18, 2009	Jan. 28, 2010

Equipment	Spectrum Analyzer	Digital Multimeter
Registration No.	EW-1792	EW-1237
Manufacturer	R&S	FLUKE
Model No.	FSP40	179
Calibration Date	Feb. 02, 2009	Sep. 01, 2009
Calibration Due Date	Feb. 02, 2010	Oct. 01, 2010

2) Conducted Emissions Test

Equipment	LISN	Pulse Limiter	EMI Test Receiver
Registration No.	EW-0090	EW-0700	EW-0017
Manufacturer	R&S	R&S	R&S
Model No.	ESH3-Z5	ESH3-Z2	ESHS30
Calibration Date	Jan. 20, 2009	Jun. 08, 2009	Jun. 01, 2009
Calibration Due Date	Jan. 20, 2010	Dec. 08, 2010	Jun. 01, 2010

INTERTEK TESTING SERVICES

**APPENDIX
EXHIBITS FOR APPLICATION OF CERTIFICATION**