

**TEST REPORT**

**Report Number: HK10030121-1**

Application  
for  
Original Grant  
of 47 CFR Part 15 Certification  
Single New of RSS-210 Issue 7 Equipment Certification  
2-line Corded Phone with Caller ID and Bluetooth

**FCC ID: MZV2-5216A**

**IC: 3921A-25216A**

Prepared and Checked by:



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Approved by:



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Nip Ming Fung, Melvin  
Supervisor  
March 17, 2010

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### GENERAL INFORMATION

<b>Applicant Name:</b>	Telefield Ltd.
<b>Applicant Address:</b>	Flat D, 2/F., Valiant Industrial Centre, 2-12 Au Pui Wan Street, Fo Tan, N.T., Hong Kong.
<b>FCC Specification Standard:</b>	FCC Part 15: 2008
<b>FCC ID:</b>	MZV2-5216A
<b>FCC Model(s):</b>	25216XXX-X
<b>IC Specification Standard:</b>	RSS-210 Issue 7, June 2007 RSS-Gen Issue 2, June 2007 RSS-102 Issue 3, June 2009
<b>IC:</b>	3921A-25216A
<b>IC Model(s):</b>	TC25216
<b>Type of EUT:</b>	Transceiver
<b>Description of EUT:</b>	2-line Corded Phone with Caller ID and Bluetooth
<b>Serial Number:</b>	N/A
<b>Sample Receipt Date:</b>	March 04, 2010
<b>Date of Test:</b>	March 08-09, 2010
<b>Report Date:</b>	March 17, 2010
<b>Environmental Conditions:</b>	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 <sup>#</sup> / RSS-310 <sup>^</sup> Section	Results	Details see section
Antenna Requirement	15.203	7.1.4 <sup>#</sup>	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 <sup>#</sup>	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: 25216 is a 2-line Corded Phone with Caller ID and Bluetooth. It operates at frequency range of 2402MHz – 2480MHz with 79 channels. The corded phone 25216 is powered by an AC adaptor: 120VAC to 7.5VDC 400mA (Model: T-2757). The corded phone has a “cell link” button that manages Bluetooth connections to a Bluetooth-equipped device. With Bluetooth connection, the corded phone allows user to receive a cellular phone calls via the cellular network. Only one Bluetooth-equipped device can be on 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(s): 25216XXX-X are the same as the tested model: 25216 in electrical designs including software & firmware, PCB layout and construction design/physical design/Enclosure. The only difference between these models are model number, color, cosmetic details and packaging configuration to be sold for marketing purpose. Suffix (XXX-X) indicates different color and packaging configuration.

For IC, the model(s): TC25216 is the same as the tested model: 25216 in electrical designs including software & firmware, PCB layout and construction design/physical design/Enclosure. The only difference is that 25216 is a test model, and TC25216 is an approval model.

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 RJ14C in the 2-wire loop calling central office line.

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### 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 located at Roof Top and 2<sup>nd</sup> 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 / 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 corded phone was powered by a 120VAC to 7.5VDC 400mA adaptor.

For the measurements, the EUT is attached to a plastic stand if necessary and placed on the wooden turntable. If the corded phone attaches to peripherals, they are connected and operational to simulate typical use. The mobile phone is remotely located as far from the antenna and the corded phone as possible to ensure full power transmission from the corded phone.

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.

For EUT 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 were 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 are 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 ( $T_{eff}$ ) was 625 $\mu$ s. With the resolution bandwidth 1MHz and spectrum analyzer IF bandwidth 3dB, the pulse desensitization factor was 0dB.

For AC line conducted emission test, the EUT along with its peripherals were placed on a 1.0m(W)x1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN), which provided 50ohm coupling impedance for measuring instrument. The LISN housing, measuring instrument case, reference ground plane, and vertical ground plane were bounded together. The excess power cable between the EUT and the LISN was bundled.

All connecting cables of EUT and peripherals were manipulated to find the maximum emission.

All relevant operation modes have been tested, and the worst case data is included in this report.

### 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) An AC adaptor (120VAC to 7.5VDC 400mA, Model: T-2757) (Supplied by Client)
- (2) Backup Battery: 5 x "AAA" size 1.5VDC battery (Supplied by Client)

#### Description of Accessories:

- (1) Telephone Headset ( Supplied by Intertek)
- (2) Nokia Mobile Phone, Model: 5300, FCC ID: PPIRM-146 (Supplied by Intertek)
- (3) 2 x 1m Telephone Line with Termination (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 Telefield 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 $\mu$ V/m  
                    RA = Receiver Amplitude (including preamplifier) in dB $\mu$ V  
                    CF = Cable Attenuation Factor in dB  
                    AF = Antenna Factor in dB  
                    AG = Amplifier Gain in dB

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 $\mu$ V/m  
                    RR = RA - AG in dB $\mu$ V  
                    LF = CF + AF in dB

Assume a receiver reading of 52.0 dB $\mu$ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

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

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

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### 4.2 Radiated Emissions

#### 4.2.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission  
at

193.550 & 4804.000 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 1-4 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Passed by 7.7 dB margin & 7.7 dB margin compare with peak limit respectively

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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 $\mu$ s. DH5 has the maximum duty cycle, which consists of 5 continuous Tx slots and 1 Rx slot. Therefore one hopset take (5+1) x 625 $\mu$ s = 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 625 $\mu$ s = 3.125ms.

Therefore,

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

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

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Mode: TX-Channel 00

Table 1

### Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2402.000	101.3	33	29.4	30.1	67.6	94.0	-26.4
<b>H</b>	<b>4804.000</b>	<b>64.4</b>	<b>33</b>	<b>34.9</b>	<b>30.1</b>	<b>36.2</b>	<b>54.0</b>	<b>-17.8</b>
H	7206.000	47.6	33	37.9	30.1	22.4	54.0	-31.6
H	9608.000	44.5	33	40.4	30.1	21.8	54.0	-32.2
<b>H</b>	<b>12010.000</b>	<b>45.9</b>	<b>33</b>	<b>40.5</b>	<b>30.1</b>	<b>23.3</b>	<b>54.0</b>	<b>-30.7</b>
H	14412.000	48.0	33	40.0	30.1	24.9	54.0	-29.1

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Peak Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2402.000	101.3	33	29.4	97.7	114.0	-16.3
<b>H</b>	<b>4804.000</b>	<b>64.4</b>	<b>33</b>	<b>34.9</b>	<b>66.3</b>	<b>74.0</b>	<b>-7.7</b>
H	7206.000	47.6	33	37.9	52.5	74.0	-21.5
H	9608.000	44.5	33	40.4	51.9	74.0	-22.1
<b>H</b>	<b>12010.000</b>	<b>45.9</b>	<b>33</b>	<b>40.5</b>	<b>53.4</b>	<b>74.0</b>	<b>-20.6</b>
H	14412.000	48.0	33	40.0	55.0	74.0	-19.0

- 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 2

### Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2441.000	100.9	33	29.4	30.1	67.2	94.0	-26.8
<b>H</b>	<b>4882.000</b>	<b>63.9</b>	<b>33</b>	<b>34.9</b>	<b>30.1</b>	<b>35.7</b>	<b>54.0</b>	<b>-18.3</b>
<b>H</b>	<b>7323.000</b>	<b>47.4</b>	<b>33</b>	<b>37.9</b>	<b>30.1</b>	<b>22.2</b>	<b>54.0</b>	<b>-31.8</b>
H	9764.000	45.0	33	40.4	30.1	22.3	54.0	-31.7
<b>H</b>	<b>12205.000</b>	<b>47.0</b>	<b>33</b>	<b>40.5</b>	<b>30.1</b>	<b>24.4</b>	<b>54.0</b>	<b>-29.6</b>
H	14646.000	50.2	33	38.4	30.1	25.5	54.0	-28.5

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Peak Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2441.000	100.9	33	29.4	97.3	114.0	-16.7
<b>H</b>	<b>4882.000</b>	<b>63.9</b>	<b>33</b>	<b>34.9</b>	<b>65.8</b>	<b>74.0</b>	<b>-8.2</b>
<b>H</b>	<b>7323.000</b>	<b>47.4</b>	<b>33</b>	<b>37.9</b>	<b>52.3</b>	<b>74.0</b>	<b>-21.7</b>
H	9764.000	45.0	33	40.4	52.4	74.0	-21.6
<b>H</b>	<b>12205.000</b>	<b>47.0</b>	<b>33</b>	<b>40.5</b>	<b>54.5</b>	<b>74.0</b>	<b>-19.5</b>
H	14646.000	50.2	33	38.4	55.6	74.0	-18.4

- 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: TX-Channel 78

Table 3

### Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2480.000	101.4	33	29.4	30.1	67.7	94.0	-26.3
<b>H</b>	<b>4960.000</b>	<b>63.8</b>	<b>33</b>	<b>34.9</b>	<b>30.1</b>	<b>35.6</b>	<b>54.0</b>	<b>-18.4</b>
<b>H</b>	<b>7440.000</b>	<b>47.7</b>	<b>33</b>	<b>37.9</b>	<b>30.1</b>	<b>22.5</b>	<b>54.0</b>	<b>-31.5</b>
H	9920.000	44.9	33	40.4	30.1	22.2	54.0	-31.8
<b>H</b>	<b>12400.000</b>	<b>46.9</b>	<b>33</b>	<b>40.5</b>	<b>30.1</b>	<b>24.3</b>	<b>54.0</b>	<b>-29.7</b>
H	14880.000	50.3	33	38.4	30.1	25.6	54.0	-28.4

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Peak Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2480.000	101.4	33	29.4	97.8	114.0	-16.2
<b>H</b>	<b>4960.000</b>	<b>63.8</b>	<b>33</b>	<b>34.9</b>	<b>65.7</b>	<b>74.0</b>	<b>-8.3</b>
<b>H</b>	<b>7440.000</b>	<b>47.7</b>	<b>33</b>	<b>37.9</b>	<b>52.6</b>	<b>74.0</b>	<b>-21.4</b>
H	9920.000	44.9	33	40.4	52.3	74.0	-21.7
<b>H</b>	<b>12400.000</b>	<b>46.9</b>	<b>33</b>	<b>40.5</b>	<b>54.4</b>	<b>74.0</b>	<b>-19.6</b>
H	14880.000	50.3	33	38.4	55.7	74.0	-18.3

- 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.

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Mode: Talk

Table 4

### Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	55.300	35.4	16	11.0	30.4	40.0	-9.6
<b>H</b>	<b>110.599</b>	<b>33.8</b>	<b>16</b>	<b>14.0</b>	<b>31.8</b>	<b>43.5</b>	<b>-11.7</b>
H	138.250	34.7	16	14.0	32.7	43.5	-10.8
<b>H</b>	<b>165.906</b>	<b>31.4</b>	<b>16</b>	<b>17.0</b>	<b>32.4</b>	<b>43.5</b>	<b>-11.1</b>
H	193.550	35.8	16	16.0	35.8	43.5	-7.7
H	221.185	31.7	16	17.0	32.7	46.0	-13.3
<b>H</b>	<b>248.850</b>	<b>30.5</b>	<b>16</b>	<b>20.0</b>	<b>34.5</b>	<b>46.0</b>	<b>-11.5</b>
<b>H</b>	<b>276.499</b>	<b>26.4</b>	<b>16</b>	<b>22.0</b>	<b>32.4</b>	<b>46.0</b>	<b>-13.6</b>
H	359.434	24.3	16	24.0	32.3	46.0	-13.7
H	497.718	22.6	16	26.0	32.6	46.0	-13.4
H	552.964	21.4	16	28.0	33.4	46.0	-12.6

- 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 FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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### 4.3 Radiated Emissions from Receiver

#### 4.3.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission  
at

9765.996 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 table 5 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Base Unit: Passed by 8.4 dB margin

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Mode: Receiving – Middle Channel

Table 5

### Radiated Emissions Data

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2441.499	46.4	33	29.4	42.8	54.0	-11.2
H	4882.998	42.0	33	34.9	43.9	54.0	-10.1
H	7324.497	39.8	33	37.9	44.7	54.0	-9.3
H	9765.996	38.2	33	40.4	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.

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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:

Channel	Fundamental Emission (dB $\mu$ V/m)	Delta from the Plot (dB)	Resultant Field Strength (dB $\mu$ V/m)	Average Limit (dB $\mu$ V/m)	Margin (dB)
Highest	67.7	43.83	23.87	54	-30.13

Channel	Fundamental Emission (dB $\mu$ V/m)	Delta from the Plot (dB)	Resultant Field Strength (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Margin (dB)
Highest	97.8	43.83	53.97	74	-20.03

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 $\mu$ V/m for peak limit and also 54dB $\mu$ 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  
at

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

Judgement -

Passed by 6.730 dB margin compare with average limit

### 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-0954	EW-0446	EW-0194
Manufacturer	EMCO	EMCO	EMCO
Model No.	3104C	3146	3115
Calibration Date	Sep. 30, 2008	Oct. 02, 2008	Dec. 24, 2008
Calibration Due Date	Mar. 30, 2010	Apr. 02, 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	Artificial Mains	Pulse Limiter	EMI Test Receiver
Registration No.	EW-0192	EW-0700	EW-2251
Manufacturer	R&S	R&S	R&S
Model No.	ESH3-Z5	ESH3-Z2	ESCI
Calibration Date	Nov. 23, 2009	Jun. 08, 2009	Oct. 22, 2009
Calibration Due Date	Nov. 23, 2010	Dec. 08, 2010	Oct. 22, 2010

**END OF TEST REPORT**



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**APPENDIX  
EXHIBITS OF APPLICATION FOR CERTIFICATION**