TEST REPORT

Report No.: HK10050011-2

Computime Limited

Application
For
Certification
(Original Grant)
(FCC ID: DI2GES3081)

Transceiver

Prepared and Checked by:

Signed On File
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Digitally signed by Terry Chan
Location: Intertek Testing Services Hong Kong Ltd.

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Date: July 16, 2010

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GENERAL INFORMATION

Computime Limited
BRAND NAME: Computime, MODEL: GES3081
BRAND NAME: General Electric (GE), MODEL: IHD1*100*#**

FCC ID: DI2GES3081

Grantee:	Computime Limited
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Manufacturer:	N/A
Manufacturer Address:	N/A
Brand Name:	Computime / General Electric (GE)
Model:	GES3081 / IHD1*100*#**
Type of EUT:	Transceiver
Description of EUT:	Smart Energy In-Home Display
Serial Number:	N/A
FCC ID:	DI2GES3081
Date of Sample Submitted:	May 03, 2010
Date of Test:	June 22, 2010
Report No.:	HK10050011-2
Report Date:	July 16, 2010
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

SUMMARY OF TEST RESULT

Computime Limited
BRAND NAME: Computime, MODEL: GES3081
BRAND NAME: General Electric (GE), MODEL: IHD1*100*#**

FCC ID: DI2GES3081

TEST SPECIFICATION	REFERENCE	RESULTS
Maximum Peak Output Power	15.247(b), (c) / RSS-210 A8.4	Pass
6 dB Bandwidth	15.247(a)(2) / RSS-210 A8.2	Pass
Maximum Power Density	15.247(e) / RSS-210 A8.2	Pass
Out of Band Antenna Conducted Emission	15.247(d) / RSS-210 A8.5	Pass
Radiated Emission in Restricted Bands	15.247(d)	Pass
Radiated Spurious Emissions	15.247(d) / RSS-210 A8.5	Pass
Transmitter Power Line Conducted Emissions	15.207 / RSS-Gen 7.2.2	Pass
Antenna Requirement	15.203	Pass (See Note 1)
Digital Device Radiated Emissions	15.109 / ICES-003	Pass
Digital Device Conducted Emissions	15.107 / ICES-003	Pass

Note: 1. The EUT uses a permanently attached antenna which, in accordance to section 15.203, is considered sufficient to comply with the pervisions of this section.

Table of Contents

1.0 General Description

1.1 Product Description

The Equipment Under Test (EUT) is a IEEE802.15.4 ZigBee transceiver operating at 2405 to 2480MHz with 5MHz channel spacing. The EUT is powered by AC-DC adaptor. The EUT is an Energy Saving In-Home Display unit which can communicate with others energy usage sensors in the same ZigBee network and the Utility Company. It will show the history of the energy usage and forecast your energy usage base on the data it collects. And it can receive and display the message about the energy saving event and price reduction from the Utility Company.

The Model: IHD1*100*#** is the same as the Model: GES3081 in hardware aspect. The different in model number represents different brand name. And the 5th digit represents CBKE or non-CBKE encryption method. The 9th digit represents model year. The "#" represents software version of CBKE or non-CBKE encryption method. The last two "*" represents different color.

Antenna Type: Internal, Integral

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

1.2 Related Submittal(s) Grants

This is a single application for certification of a transceiver.

The Certification procedure of transceiver for this transceiver (with FCC ID: DI2GES2181) is being processed as the same time of this application.

The receiver for this transceiver is exempted from the Part 15 technical rules per 15.101(b).

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). All radiated measurements were performed in an Open Area Test Site. Preliminary scans were performed in the Open Area Test Site only to determine worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the **"Justification Section"** of this Application.

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been placed on file with the FCC.

2.0 System Test Configuration

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2003).

The device was powered by 120VAC.

For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

The rear of unit shall be flushed with the rear of the table.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

A Software called <Insight Desktop> is provided by the applicant for controlling the testing channel and power. The RF output power selection is for the setting of RF output power expected by the applicant. And it is going to be fixed on the firmware of the final end product power parameters of the RF module:

Channel	CH11	CH12	CH13	CH14	CH15	CH16	CH17	CH18
Frequency (MHZ)	2405	2410	2415	2420	2425	2430	2435	2440
RF Power Setting	5dBm (boost)	5dBm (boost)	5dBm (boost)	5dBm (boost)	5dBm (boost)	5dBm (boost)	5dBm (boost)	5dBm (boost)

Channel	CH19	CH20	CH21	CH22	CH23	CH24	CH25	CH26
Frequency (MHZ)	2445	2450	2455	2460	2465	2470	2475	2480
RF Power Setting	5dBm (boost)	5dBm (boost)	5dBm (boost)	5dBm (boost)	5dBm (boost)	5dBm (boost)	-5dBm	-10dBm

2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

2.4 Equipment Modification

Any modifications installed previous to testing by Computime Limited will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Intertek Testing Services Hong Kong Ltd.

2.5 Measurement Uncertainty

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

2.6 Support Equipment List and Description

AC-DC Adaptor (Model: CS5B050050FU, Input: 100-240VAC 50/60Hz, Output: 5VDC 0.5A) (Provided by Intertek)

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.

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), Average Factor (optional) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG - AV

where FS = Field Strength in dBµV/m
RA = Receiver Amplitude (including preamplifier) in dBµV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
AV = Average Factor in dB

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

FS = RR + LF

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

Assume a receiver reading of 52.0 dBµV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29 dB and average factor of 5 dB are subtracted, giving a field strength of 27 dBµV/m. This value in dBµV/m was converted to its corresponding level in µV/m.

RA = 52.0 dBµV/m
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
AV = 5.0 dB
RR = 18.0 dBµV
LF = 9.0 dB
FS = RR + LF
FS = 18 + 9 = 27 dBµV/m

Level in µV/m = Common Antilogarithm [(27 dBµV/m)/20] = 22.4 µV/m

3.2 Radiated Emission Configuration Photograph

The worst case in radiated emission was found at 7320.000 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgment: Passed by 4.0 dB

3.4 Conducted Emission Configuration Photograph

The worst case in line-conducted emission was found at 0.321 MHz

For electronic filing, the worst case line-conducted configuration photographs are saved with filename: conducted photos.pdf.

3.5 Conducted Emission Data

For electronic filing, the graph and data table of conducted emission is saved with filename: conducted.pdf.

Judgment: Passed by 9.61 dB

4.0 Measurement Results

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

Test Setup:
The antenna power of the EUT was connected to the input of a power meter. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm).

Frequency (MHz)	Maximum Antenna Gain = 0 dBi	
	Output in dBm	Output in mWatt
Lowest Channel: 2405.000	16.49	44.57
Middle Channel: 2440.000	17.07	50.93
Highest Channel: 2480.000	5.93	3.92

EUT dBm max. output level = 17.07 dBm

Limit: ≤ 30 dBm

For RF Safety, the information is saved with filename: RF exposure.pdf.

4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a)(2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

Frequency (MHz)	6 dB Bandwidth (kHz)
2405.000	1670
2440.000	1630
2480.000	1620

Limit: at least 500kHz

For electronic filing, the above plots are saved with filename: 6db.pdf

4.3 Maximum Power Density Reading, FCC Rule 15.247(e) :

The spectrum analyzer RES BW was set to 3kHz. In order to look for a peak, the START and STOP frequencies were set to the band edges of the maximum output passband. If there is no clear maximum amplitude in any given portion of the band, it may be necessary to make measurements at a number of bands defined by several START and STOP frequency pairs.

Frequency Span = 1.5 MHz

Sweep Time = 500 seconds

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are added to the analyzer raw readings.

Frequency (MHz)	Power Density (dBm/3kHz)
2405.000	2.51
2440.000	3.05
2480.000	-8.57

Peak Power Density = 3.05 dBm/3kHz

Limit: 8dBm/ 3kHz

For electronic filing, the above plots are saved with filename: psd.pdf

4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d)

In any 100 kHz bandwidth outside the EUT passband, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20dB below that of the maximum in-band 100 kHz emission, or else shall meet the general limits for radiated emissions at frequencies outside the passband, whichever results in lower attenuation.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

The plots showed all spurious emission up to the tenth harmonic. They were found to be at least 20 dB below the highest level of the desired power in the passband.

For the electronic filing, the above plots are saved with filename: oob.pdf

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b), (c):

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. All measurements were performed with peak detection unless otherwise specified.

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

Frequency (MHz)	OATS radiated field strength at carrier frequency measured at 3m (dBµV/m)		Attenuation (dBc)	Calculated radiated field strength at the bandage (dBµV/m)	
	Peak	Average		Peak	Average
2483.5	103.8	72.8	-36.67	67.13	36.13

Limit:
The average radiated field strength at bandedge should be smaller that 54 dBµV/m and the peak radiated field strength at bandedge should be smaller that 74 dBµV/m.

4.7 Radiated Spurious Emissions

Applicant: Computime Limited Date of Test: June 21, 2010
Model: GES3081
Worst-Case Operating Mode: TX mode (Lowest Channel)

Table 1

Radiated Emissions
Pursuant to FCC Part 15 Section 15.247: Emissions Requirement

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	4810.000 *	29.2	33	34.9	62.1	31	31.1	54.0	-22.9
H	7215.000	33.0	33	37.9	68.9	31	37.9	54.0	-16.1
H	9620.000	29.6	33	40.4	68.0	31	37.0	54.0	-17.0
H	12025.000 *	25.0	33	40.5	63.5	31	32.5	54.0	-21.5
H	14430.000	24.5	33	40.0	62.5	31	31.5	54.0	-22.5

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	4810.000 *	60.2	33	34.9	62.1	74.0	-11.9
H	7215.000	64.0	33	37.9	68.9	74.0	-5.1
H	9620.000	60.6	33	40.4	68.0	74.0	-6.0
H	12025.000 *	56.0	33	40.5	63.5	74.0	-10.5
H	14430.000	55.5	33	40.0	62.5	74.0	-11.5

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances 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 harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative sign in the column shows value below limit.

4. Horn antenna is used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000MHz and average limit for frequencies over 1000MHz.

Applicant: Computime Limited Date of Test: June 21, 2010
Model: GES3081
Worst-Case Operating Mode: TX mode (Middle Channel)

Table 2

Radiated Emissions
Pursuant to FCC Part 15 Section 15.247: Emissions Requirement

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	4880.000 *	29.6	33	34.9	62.5	31	31.5	54.0	-22.5
H	7320.000 *	34.1	33	37.9	70.0	31	39.0	54.0	-15.0
H	9760.000	30.4	33	40.4	68.8	31	37.8	54.0	-16.2
H	12200.000 *	25.6	33	40.5	64.1	31	33.1	54.0	-20.9
H	14640.000	26.6	33	38.4	63.0	31	32.0	54.0	-22.0

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	4880.000 *	60.6	33	34.9	62.5	74.0	-11.5
H	7320.000 *	65.1	33	37.9	70.0	74.0	-4.0
H	9760.000	61.4	33	40.4	68.8	74.0	-5.2
H	12200.000 *	56.6	33	40.5	64.1	74.0	-9.9
H	14640.000	56.0	33	40.0	63.0	74.0	-11.0

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances 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 harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative sign in the column shows value below limit.

4. Horn antenna is used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000MHz and average limit for frequencies over 1000MHz.

Applicant: Computime Limited Date of Test: June 21, 2010
Model: GES3081
Worst-Case Operating Mode: TX mode (Highest Channel)

Table 3

Radiated Emissions
Pursuant to FCC Part 15 Section 15.247: Emissions Requirement

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	4960.000 *	17.7	33	34.9	50.6	31	19.6	54.0	-34.4
H	7440.000 *	16.9	33	37.9	52.8	31	21.8	54.0	-32.2
H	9920.000	12.7	33	40.4	51.1	31	20.1	54.0	-33.9
H	12400.000 *	14.5	33	40.5	53.0	31	22.0	54.0	-32.0
H	14880.000	13.6	33	38.4	50.0	31	19.0	54.0	-35.0

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	4960.000 *	48.7	33	34.9	50.6	74.0	-23.4
H	7440.000 *	47.9	33	37.9	52.8	74.0	-21.2
H	9920.000	43.7	33	40.4	51.1	74.0	-22.9
H	12400.000 *	45.5	33	40.5	53.0	74.0	-21.0
H	14880.000	43.0	33	40.0	50.0	74.0	-24.0

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances 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 harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative sign in the column shows value below limit.

4. Horn antenna is used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000MHz and average limit for frequencies over 1000MHz.

Applicant: Computime Limited
Model: GES3081
Worst-Case Operating Mode: On mode

Date of Test: June 21, 2010

Table 4

Radiated Emissions
Pursuant to FCC Part 15 Section 15.109: Emissions Requirement

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	32.100	38.1	16	10.0	32.1	40.0	-7.9
H	64.200	39.3	16	9.0	32.3	40.0	-7.7
H	96.300	36.1	16	12.0	32.1	43.5	-11.4
H	128.400	33.0	16	14.0	31.0	43.5	-12.5
H	160.500	30.8	16	16.0	30.8	43.5	-12.7
H	192.600	30.0	16	16.0	30.0	43.5	-13.5

Notes: Negative signs (-) in the margin column signify levels below the limit.

5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf and internal photos.pdf.

6.0 Product Labelling

For electronics filing, the FCC ID label artwork and the label location are saved with filename: label.pdf.

7.0 Technical Specifications

For electronic filing, the block diagram and schematic of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

9.0 Miscellaneous Information

The miscellaneous information includes details of the test procedure and measured bandwidth, calculation of factor such as pulse desensitization and averaging factor (calculation and timing diagram).

9.1 Discussion Pulse Desensitivity

Pulse desnesitivity is not applicable for this device. The effective period (Teff) is approximately 700μs for a dititал "1" bit which illustrated on technical specification, with a resolution bandwidth (3dB) of 1MHz, so the pulse densensitivity factor is 0dB.

9.2 Calculation of Average Factor

The duty cycle is simply the on-time divided by the period:

The duration of one cycle = 100ms

Effective period of the cycle = 2.8ms

DC = 2.8 / 100ms

Therefore, the averaging factor is found by 20log 0.028 = -31.0dB.

9.3 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services Hong Kong Ltd. in the measurements of transmitter operating under the Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 2003. A typical or an unmodulated CW signal at the operating frequency of the EUT has been supplied to the EUT for all measurements. Such a signal is supplied by a signal generator and an antenna in close proximity to the EUT. The signal level is sufficient to stabilize the local oscillator of the EUT.

The transmitting equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axis to obtain maximum emission levels. The antenna height and polarization are also varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

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.

The frequency range scanned is 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 40 GHz, whichever is lower. For line conducted emissions, the range scanned is 150 kHz to 30 MHz.

9.3 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements were made as described in ANSI C63.4 - 2003.

The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater when frequency is below 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.1). Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the forbidden bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, unless otherwise reported. Measurements taken at a closer distance are so marked.

10.0 **Equipment List**

1) Radiated Emissions Test

Equipment	EMI Test Receiver	Biconical Antenna	Log Periodic Antenna
Registration No.	EW-0016	EW-0571	EW-0446
Manufacturer	R&S	EMCO	EMCO
Model No.	ESVS30	3104C	3146
Calibration Date	Apr 21, 2010	Nov 12, 2008	Apr 26, 2010
Calibration Due Date	Apr 21, 2011	Aug 13, 2010	Oct 26, 2011

Equipment	Spectrum Analyzer	Double Ridged Guide Antenna
Registration No.	EW-2188	EW-0194
Manufacturer	AGILENTTECH	EMCO
Model No.	E4407B	3115
Calibration Date	Dec 25, 2009	Dec 24, 2008
Calibration Due Date	Dec 31, 2010	Jun 24, 2010

2) Conducted Emissions Test

Equipment	EMI Test Receiver	LISN	Pulse Limiter
Registration No.	EW-2251	EW-0192	EW-0698
Manufacturer	R&S	R&S	R&S
Model No.	ESCI	ESH3-Z5	ESH3-Z2
Calibration Date	Oct 22, 2009	Nov 23, 2009	Feb 03, 2009
Calibration Due Date	Oct 22, 2010	Nov 23, 2010	Feb 03, 2010

3) 15.247 Measurement

Equipment	Spectrum Analyzer
Registration No.	EW-2249
Manufacturer	R&S
Model No.	FSP30
Calibration Date	Jun 25, 2009
Calibration Due Date	Jun 25, 2010