TEST REPORT

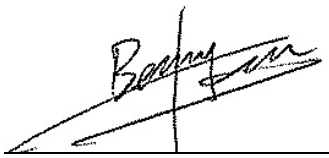
Report No.: HK09020879-2

CITYGROW TECHNOLOGY CO. LTD.

Application
For
Certification
(Original Grant)
(FCC ID: WSFCG201AS-EM)

Transceiver

Prepared and Checked by:



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Approved by:

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Date: June 22, 2009

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GENERAL INFORMATION

CITYGROW TECHNOLOGY CO. LTD.
BRAND NAME: CITYGROW, MODEL: CG201AS-EM

FCC ID: WSFCG201AS-EM

Grantee:	CITYGROW TECHNOLOGY CO. LTD.
Grantee Address:	Room 1404, Block A, Hi-Tech Industrial Centre, Pak Tin Par Street 5-21, Tsuen Wan, Hong Kong.
Contact Person:	Michael Lau
Tel:	852-2611 4878
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e-mail:	N/A
Manufacturer:	N/A
Manufacturer Address:	N/A
Brand Name:	CITYGROW
Model:	CG201AS-EM
Type of EUT:	Transmitter
Description of EUT:	Wireless Adaptor Socket
Serial Number:	N/A
FCC ID:	WSFCG201AS-EM
Date of Sample Submitted:	February 26, 2009
Date of Test:	February 27, 2009
Report No.:	HK09020879-2
Report Date:	June 22, 2009
Environmental Conidtions:	Temperature: +10 to 40°C Humidity: 10 to 90%

SUMMARY OF TEST RESULT

CITYGROW TECHNOLOGY CO. LTD.
BRAND NAME: CITYGROW, MODEL: CG201AS-EM

FCC ID: WSFCG201AS-EM

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
Transmitter Power Line Conducted Emissions	15.207 / RSS-Gen 7.2.2	Pass
Antenna Requirement	15.203	Pass (See Note 1)
Radiated Spurious Emissions	15.247(d) / RSS-210 A8.5	Pass
Receiver / 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.
2. Pursuant to FCC part 15 Section 15.215(c), the 20 dB 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 excepted variations in temperature and supply voltage were considered.

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1.0 General Description

1.1 Product Description

The Equipment Under Test (EUT) is a IEEE802.15.4 ZigBee transceiver operating at 2405-2480MHz with 5MHz spacing. The EUT is power by 120VAC. It is an AC socket which can be switched ON or OFF by the remote controller or by the manual switch on it. When the EUT receives a control signal from the remote controller, it will decode the signal and switch the relay On or Off. Then it will send back an acknowledgment signal to the remote controller to indicate its status.
The EUT should be configured before it can be used. To configure the EUT, it is connected to the remote controller through the provided USB cable and entering the configuration manual of the remote controller.

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 an application for certification of a transmitter portion. The receiver portion, associated with this transmitter, can be exempted from technical requirement of the FCC Part 15 standard.

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 from 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 unit was operated standalone and placed in the center of the turntable.

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

2.2 EUT Exercising Software

There was no special software to exercise the device. Once the unit is powered up, it transmits the RF signal continuously.

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 CITYGROW TECHNOLOGY CO. LTD. will be incorporated in each production model sold/leased in the United States.

Modifications were installed by Intertek Testing Services Hong Kong Ltd. The EUT has been modified to pass the above standard FCC Part 15. The details please refer to the Modification Report.

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

Resistive Load, Remote Controller (Model: CG100R), Coordinator (Model: CG201C)

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
FS = RR + LF
FS = 18 + 9 = 27 dBµV/m

RR = 18.0 dBµV
LF = 9.0 dB

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 4960 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 -3.3 dB

3.4 Conducted Emission Configuration Photograph

The worst case in line-conducted emission was found at 0.546 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 -3.25 dB

4.0 **Measurement Results**

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

[×] 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.

[ ] The antenna port of the EUT was connected to the input of a spectrum analyzer. The analyzer was set for RBW> 6dB bandwidth and power was read directly in dBm. External attenuation and cable loss were compensated for using to OFFSET function of the analyzer.

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

Frequency (GHz)	Output in dBm	Output in mWatt
Low Channel: 2.405	5.53	3.58
Middle Channel: 2.440	5.63	3.66
High Channel: 2.480	4.72	2.96

Cable loss : 0.5 dB External Attenuation : 0 dB

Cable loss, external attenuation: [×] included in OFFSET function
[ ] added to power meter raw reading

EUT dBm max. output level = 5.63 dBm (+30 dBm or less)

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	1620
2440	1630
2480	1650

Limit: at least 500kHz

Refer to the following plots for 6 dB bandwidth sharp:

IEEE 802.11b
Plot B2A: Low Channel 6 dB RF Bandwidth
Plot B2B: Middle Channel 6 dB RF Bandwidth
Plot B2C: High Channel 6 dB RF Bandwidth

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.

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)
2405.054	-11.31
2440.417	-11.63
2480.417	-12.92

Frequency Span = 1.5MHz

Sweep Time = Frequency Span/3kHz
= 500 seconds

Cable Loss: 0.5 dB

Peak Power Density (at 2405.054MHz) = -11.31 + 0.5 = -10.81dBm/3kHz

Limit: 8dBm/ 3kHz

Refer to the following plots for power density data :

Plot B3A: Low Channel power density
Plot B3B: Middle Channel power density
Plot B3C: High Channel power density

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.

Refer to the following plots for out of band conducted emissions data:

Plot B4A1 - B4A2: Low Channel Emissions
Plot B4B1 - B4B2: Middle Channel Emissions
Plot B4C1 - B4C2: High Channel Emissions
Plot B4D1 - B4D2: Low Channel Emissions

The plots showed all spurious emission and up to the tenth harmonic was measured and 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: obantcon.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.

[×] Not required, since all emissions are more than 20dB below fundamental
[ ] See attached data sheet

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	101.7	69.7	-37.7	64.0	32.0

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: CITYGROW TECHNOLOGY CO. LTD. Date of Test: April 30, 2009
Model: CG201AS-EM
Worst-Case Operating Mode: Transmitter (Channel 01)

Table 1-2

Radiated Emissions

Polari-zation	Frequency	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	4809.900	68.4	33	34.9	70.3	32	38.3	54.0	-15.7
H	12024.750	55.5	33	40.5	63.0	32	31.0	54.0	-23.0

Polari-zation	Frequency	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	4809.900	68.4	33	34.9	70.3	0	70.3	74.0	-3.7
H	12024.750	55.5	33	40.5	63.0	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.

Applicant: CITYGROW TECHNOLOGY CO. LTD. Date of Test: April 30, 2009
Model: CG201AS-EM
Worst-Case Operating Mode: Transmitter (Channel 08)

Table 3-4

Radiated Emissions

Polari-zation	Frequency	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	67.7	33	34.9	69.6	32	37.6	54.0	-16.4
V	7320.000	58.5	33	37.9	63.4	32	31.4	54.0	-22.6
H	12200.000	56.5	33	40.5	64.0	32	32.0	54.0	-22.0

Polari-zation	Frequency	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	4880.000	67.7	33	34.9	69.6	0	69.6	74.0	-4.4
V	7320.000	58.5	33	37.9	63.4	0	63.4	74.0	-10.6
H	12200.000	56.5	33	40.5	64.0	0	64.0	74.0	-10.0

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.

Applicant: CITYGROW TECHNOLOGY CO. LTD. Date of Test: April 30, 2009
Model: CG201AS-EM
Worst-Case Operating Mode: Transmitter (Channel 16)

Table 5-6

Radiated Emissions

Polari-zation	Frequency	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	68.8	33	34.9	70.7	32	38.7	54.0	-15.3
V	7440.000	58.6	33	37.9	63.5	32	31.5	54.0	-22.5
H	12400.000	56.3	33	40.5	63.8	32	31.8	54.0	-22.2

Polari-zation	Frequency	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	4960.000	68.8	33	34.9	70.7	0	70.7	74.0	-3.3
V	7440.000	58.6	33	37.9	63.5	0	63.5	74.0	-10.5
H	12400.000	56.3	33	40.5	63.8	0	63.8	74.0	-10.2

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.

4.8 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The transmitter ON time was determined from the resultant time-amplitude display:

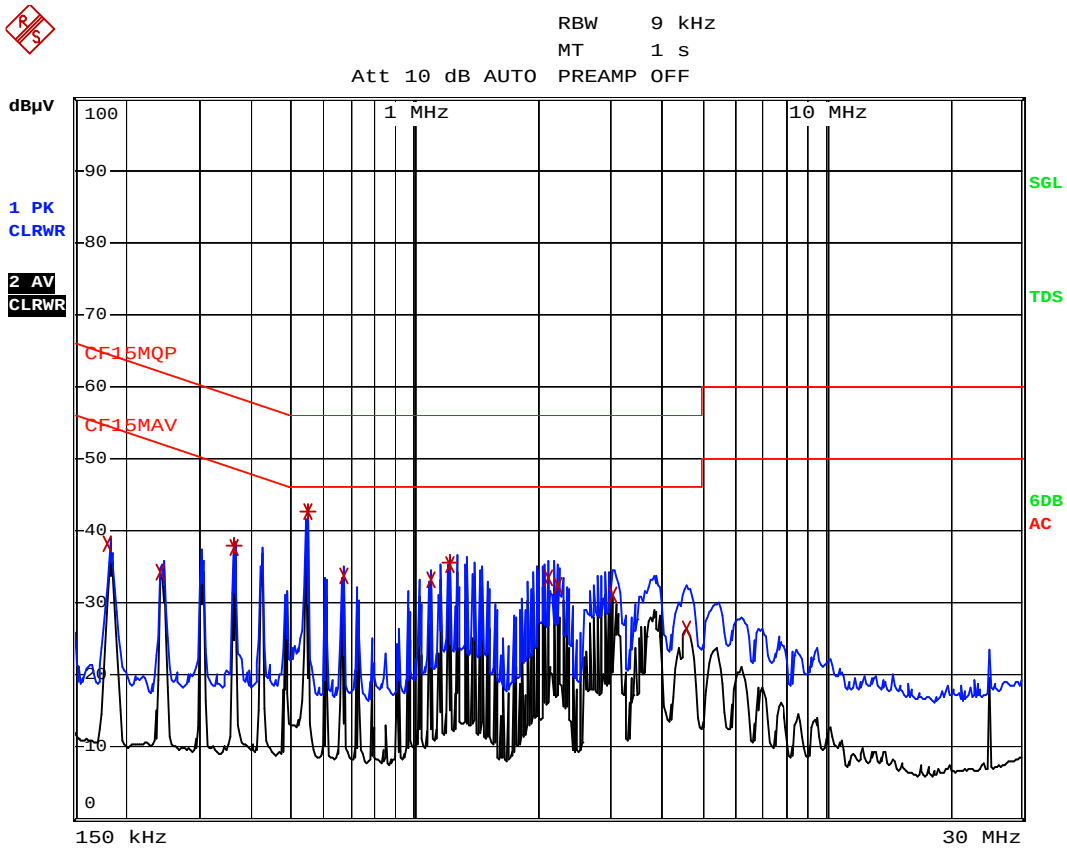
[x] See attached spectrum analyzer chart (s) for transmitter timing

[ ] See transmitter timing diagram provided by manufacturer

[ ] Not applicable, duty cycle was not used.

4.9 AC Line Conducted Emission, FCC Rule 15.107:

Phase:	Live / Neutral
Model No.:	CG201AS-EM
Worst Case:	Device Configuration



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Date: 24.APR.2009 14:36:30

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
2	Average	181.5 kHz	38.20	L1 gnd	-16.21
2	Average	244.5 kHz	34.12	L1 gnd	-17.81
1	Quasi Peak	361.5 kHz	37.84	L1 gnd	-20.85
2	Average	361.5 kHz	37.74	L1 gnd	-10.95
1	Quasi Peak	546 kHz	42.59	L1 gnd	-13.40
2	Average	546 kHz	42.74	L1 gnd	-3.25
2	Average	667.5 kHz	33.77	L1 gnd	-12.22
2	Average	1.0905 MHz	33.27	L1 gnd	-12.72
1	Quasi Peak	1.212 MHz	35.52	L1 gnd	-20.47
2	Average	1.212 MHz	35.42	L1 gnd	-10.57
2	Average	2.121 MHz	33.50	L1 gnd	-12.49
2	Average	2.2425 MHz	32.38	L1 gnd	-13.61
2	Average	3.03 MHz	30.97	L1 gnd	-15.02
2	Average	4.605 MHz	26.42	L1 gnd	-19.58

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Date: 24.APR.2009 14:36:56

4.10 Radiated Emissions, FCC Ref: 15.109

Applicant: CITYGROW TECHNOLOGY CO. LTD. Date of Test: April 30, 2009
Model: CG201AS-EM
Worst-Case Operating Mode: Device Configuration

Data Table
Radiated Scan
Pursuant to FCC 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	31.975	37.1	16	10.0	31.1	40.0	-8.9
V	47.975	35.8	16	11.0	30.8	40.0	-9.2
V	63.975	36.8	16	9.0	29.8	40.0	-10.2
V	79.975	39.0	16	6.0	29.0	40.0	-11.0
V	95.975	31.6	16	12.0	27.6	43.5	-15.9
H	111.975	30.5	16	14.0	28.5	43.5	-15.0

Notes: 1. Peak Detector Data.

2. Negative sign (-) in the margin column signify levels below the limit.

3. Only emissions significantly above equipment noise floor are reported.

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 calculation of factor such as averaging factor (calculation and timing diagram).

9.1 Calculation of Average Factor

The duty cycle is simply the on-time divided by the period:
The duration of one cycle = (0.4+2.12) ms
Effective period of the cycle = 100ms
DC = 2.52/ 100 = 0.0252

Therefore, the averaging factor is found by 20log(0.0252) = -32.0dB.

9.2 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. A detailed description for the calculation of the average factor can be found in Exhibit 8.3.

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.

9.2 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 Confidentiality Request

For electronic filing, a preliminary copy of the confidentiality request is saved with filename: request.pdf.

11.0 **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	May. 09, 2008	Sep. 30, 2008	Oct. 02, 2008
Calibration Due Date	May. 09, 2009	Mar. 30, 2010	Apr. 02, 2010

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

2) Conducted Emissions Test

Equipment	EMI Test Receiver	Pulse Limiter	LISN
Registration No.	EW-2251	EW-0700	EW-0192
Manufacturer	R&S	R&S	R&S
Model No.	ESCI	ESH3-Z2	ESH3-Z5
Calibration Date	Oct. 28, 2008	Dec. 04, 2007	Nov. 12, 2008
Calibration Due Date	Oct. 28, 2009	Jun. 04, 2009	Nov. 12, 2009

MODIFICATION REPORT

To	:	CITYGROW TECHNOLOGY CO. LTD.	Date	:	June 22, 2009
Attn.	:	Michael Lau			
Fax	:	2611 4805	Total Pages	:	5
From	:	Benny Lau			

RE : Modified Circuit for Wireless Adaptor Socket, Model: CG201AS-EM (Report No.: HK09020879-2)

Dear Sirs,

Enclosed please find the modified scheme implemented as per your request. Added Component information and photo are also attached for illustrating exact ways of changes.

Please kindly note that the component leads of those added components should be as short as possible when bonded onto the indicated locations. And all wiring shall be identical to modified sample.

Regarding the final test result after modification, please refer to our test report (Number: HK09020879-2) for details.

Should you find any queries, please feel free to contact Mr. Benny Lau at Tel: 21738503 or Fax: 23710914.

We thank you for using our testing facilities and hope to render our service to your company again in the very near future.

Best regards,

Sign On File
Benny Lau
Engineer

P.S.:
1. As a kind reminder, although we have taken every precaution to avoid any change in functionality of the sample, Intertek Testing Services shall not be liable for any claim whatsoever due to the change in functionality.
2. Also, please note any changes may affect other test compliance (e.g. LVD safety), you should consult with the relevant laboratory for verification.