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EMC

ADDENDUM TO ZENSHO AMERICA CORPORATION TEST REPORT FC06-035

FOR THE

REAL-TIME SERVICE PAGING SYSTEM, HY-2677A

FCC PART 15 SUBPART C SECTIONS 15.207, 15.209 & 15.231 AND SUBPART B SECTIONS 15.107 & 15.109 CLASS B

COMPLIANCE

DATE OF ISSUE: JANUARY 12, 2007

PREPARED FOR:

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P.O. No.: 44493
W.O. No.: 85098

PREPARED BY:

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Date of test: May 26 - July 24, 2006

Report No.: FC06-035A

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ADMINISTRATIVE INFORMATION

DATE OF TEST:	May 26 - July 24, 2006
DATE OF RECEIPT:	May 26, 2006
MANUFACTURER:	Shenzhen Constant Electronics Co., Ltd. Room A, C Building Nanshan District Shenzhen, Guangdong, China
REPRESENTATIVE:	William Androlia
TEST LOCATION:	CKC Laboratories, Inc. 110 Olinda Place, Brea, CA 92823 22116 23rd Drive S.E., Suite A, Bothell, WA 98021
TEST METHOD:	ANSI C63.4 (2003)
PURPOSE OF TEST:	**Original Report** is to demonstrate the compliance of the Real-Time Service Paging System, HY-2677A with the requirements for FCC Part 15 Subpart C Sections 15.207, 15.209 & 15.231 and Subpart B Sections 15.107 & 15.109 Class B devices. **Addendum A** is to add photos of the transmitter.

CONDITIONS FOR COMPLIANCE

Ferrite: ESD-SR-25 2 loops on DC power, EUT side of the power cable. Copper plate RF shield installed. All crystals are grounded. Data/power cable replaced with shielded cable. Choke and Capacitor filtering network installed. SN1 Modification: shield installed.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:	**TEST PERSONNEL:**
Joyce Walker, Quality Assurance Administrative Manager	Eddie Wong, EMC Engineer

FCC 15.33(a) Frequency Ranges Tested
15.107/15.207 Conducted Emissions: 150 kHz – 30 MHz
15.109 Radiated Emissions: 30 MHz – 5 GHz
15.209 Radiated Emissions: 9 kHz – 5 GHz
15.231 Radiated Emissions: 852 MHz – 5 GHz

FCC SECTION 15.35: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	5 GHz	1 MHz

FCC 15.203 Antenna Requirements
The antenna is an integral part of the EUT and is non-removable; therefore the EUT complies with Section 15.203 of the FCC rules.

FCC 15.205 Restricted Bands
The fundamental operating frequency lies outside the restricted bands and therefore complies with the requirements of Section 15.205 of the FCC rules. Any spurious emission coming from the EUT was investigated to determine if any portion lies inside the restricted band. If any portion of a spurious emissions signal was found to be within a restricted band, investigation was performed to ensure compliance with Section 15.209.

EUT Operating Frequency
The EUT was operating at 426.050 MHz.

Temperature and Humidity during Testing
The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

EQUIPMENT UNDER TEST

Real-Time Service Paging System

Manuf: Shenzhen Constant Electronics Co., Ltd.
Model: HY-2677A
Serial: NA
FCC ID: NA

Caller

Manuf: Shenzhen Constant Electronics Co., Ltd.
Model: HY-2610A
Serial: 0602-01
FCC ID: NA

Controller

Manuf: Shenzhen Constant Electronics Co., Ltd.
Model: HY-2611A
Serial: NA
FCC ID: NA

Infra Red Remote Control

Manuf: Shenzhen Constant Electronics Co., Ltd.
Model: NA
Serial: NA
FCC ID: NA

Power Supply

Manuf: Shen Zhen Shan Jing Power Supply Co.
Model: KW006-2
Serial: NA
FCC ID: NA

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

REPORT OF MEASUREMENTS

The following tables report the worst case emissions levels recorded during the tests performed on the EUT. All readings taken were peak readings unless otherwise stated. The data sheets from which the emissions tables were compiled are contained in Appendix C.

Table 1: FCC 15.107/15.207 Six Highest Conducted Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS HPF dB	Att dB	Cable dB	Lisn dB	CORRECTED READING dBµV	SPEC LIMIT dBµV	MARGIN dB	NOTES
0.184906	45.2	0.3	5.8	0.1	0.1	51.5	54.3	-2.8	WA
0.299077	41.3	0.2	5.8	0.1	0.0	47.4	50.3	-2.9	W
0.325257	40.0	0.2	5.8	0.1	0.1	46.2	49.6	-3.4	B
0.413976	37.7	0.2	5.8	0.1	0.1	43.9	47.6	-3.7	B
1.719243	37.3	0.1	5.8	0.1	0.0	43.3	46.0	-2.7	W
1.719243	36.2	0.1	5.8	0.1	0.0	42.2	46.0	-3.8	B

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart B Section 15.107/15.207 Class B

NOTES: A = Average Reading
B = Black Lead
W = White Lead

COMMENTS: The Controller and IR Remote control are placed on the wooden table. The button of the IR controller is pressed; the controller is in operational mode. Rx Frequency = 426.05 MHz. 24°C, 58% relative humidity. RX antenna is connected to the EUT. Ferrite: ESD-SR-25 2 loops on DC power, EUT side of the power cable. Copper plate RF shield installed. All crystals are grounded. Data/power cable replaced with shielded cable. Choke and Capacitor filtering network installed.

Table 2: FCC 15.109 Six Highest Radiated Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
31.035	44.2	18.5	-27.8	0.9		35.8	40.0	-4.2	V
31.985	44.9	18.0	-27.8	0.9		36.0	40.0	-4.0	V
35.545	46.7	16.4	-27.8	1.1		36.4	40.0	-3.6	H
36.475	44.8	15.9	-27.8	1.1		34.0	40.0	-6.0	V
41.445	48.3	13.4	-27.8	1.2		35.1	40.0	-4.9	V
51.500	47.8	8.6	-27.7	1.3		30.0	40.0	-10.0	V

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart B Section 15.109 Class B
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: The Controller and IR Remote control are placed on the wooden table. The button of the IR controller is pressed; the controller is in operational mode. Rx Frequency = 426.05 MHz. Frequency range of measurement = 30 MHz - 5 GHz. 30 MHz - 5000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 5000 MHz; RBW=1 MHz, VBW=1 MHz. 22°C, 58% relative humidity. RX antenna is connected to the EUT. Ferrite: ESD-SR-25 2 loops on DC power, EUT side of the power cable. Copper plate RF shield installed. All crystals are grounded. Data/power cable replaced with shielded cable. Choke and Capacitor filtering network installed.

Table 3: FCC 15.209 Six Highest Radiated Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
852.094	40.4	23.3	-27.1	6.4		43.0	46.0	-3.0	V
852.094	38.7	23.3	-27.1	6.4		41.3	46.0	-4.7	H
1704.100	60.3	25.4	-39.6	3.7		49.8	54.0	-4.2	V
2130.150	59.0	26.4	-39.1	4.0		50.3	54.0	-3.7	V
2130.150	54.4	26.4	-39.1	4.0		45.7	54.0	-8.3	H
2556.200	51.6	27.6	-39.1	4.1		44.2	54.0	-9.8	V

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart C Section 15.209
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: The EUT, Caller is placed on the wooden table, in the worse case emission profile. The Caller is set in continuous transmit mode. TX Frequency = 426.050 MHz. 3 new 1.5V batteries were installed. 24°C, 58% relative humidity. Frequency range of measurement = 9 kHz - 5 GHz. Frequency 9 kHz - 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 5000 MHz RBW=1 MHz, VBW=1 MHz. SN1: Shield installed.

FCC 15.231(a)(1) AUTOMATIC TRANSMITTER DEACTIVATION

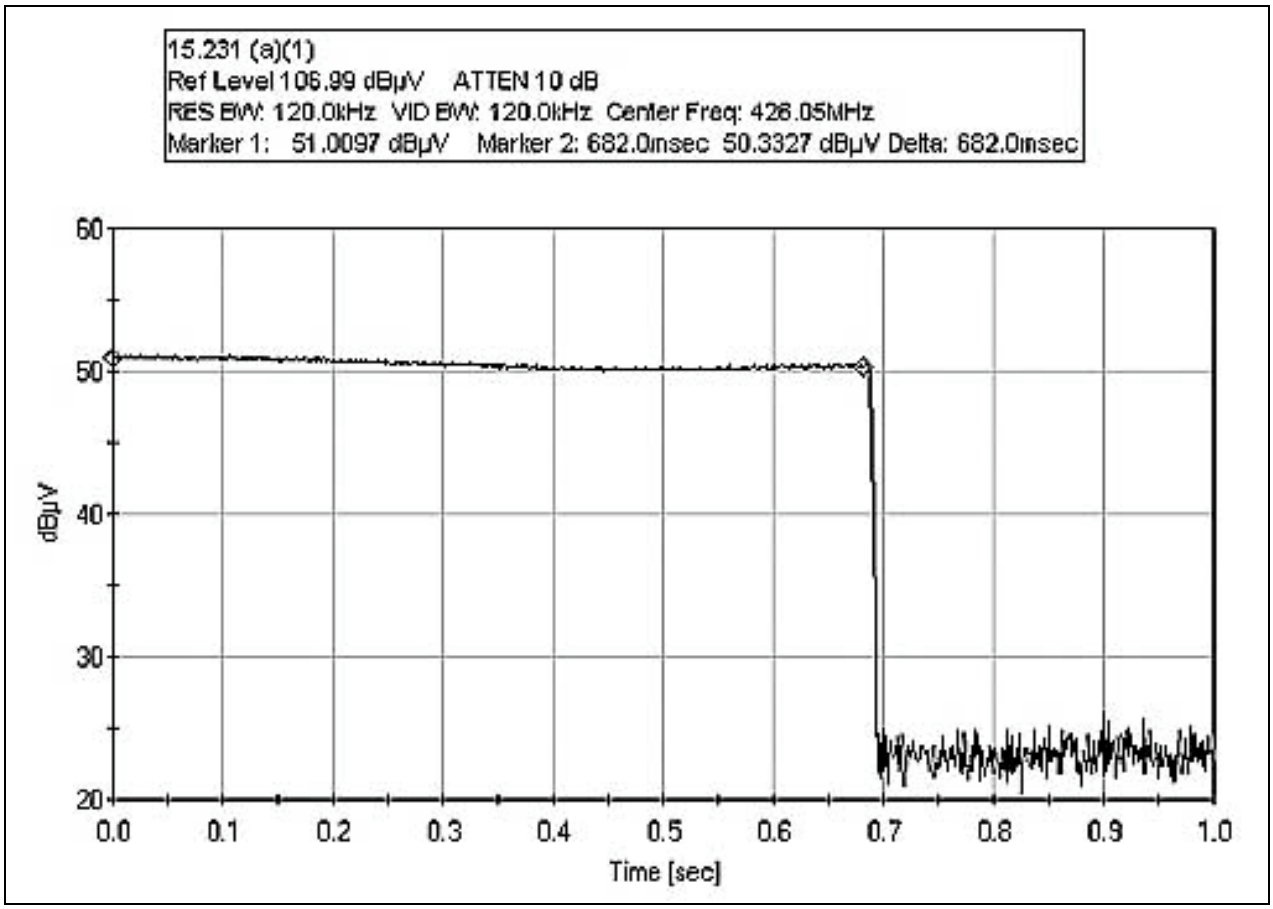


Table 4: FCC 15.231(b) Fundamental Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
426.047	79.7	16.5	-27.7	4.2		72.7	80.2	-7.5	V
426.047	76.3	16.5	-27.7	4.2		69.3	80.2	-10.9	H

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart C Section 15.231(b)
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: The EUT, Caller is placed on the wooden table, in the worse case emission profile. The Caller is set in continuous transmit mode. TX Frequency = 426.050 MHz. 3 new 1.5V batteries were installed. Frequency range of measurement = Fundamental. RBW=VBW=120 kHz. 24°C, 58% relative humidity. SN1: Modification: shield installed.

Table 5: FCC 15.231(b) Six Highest Radiated Emission Levels

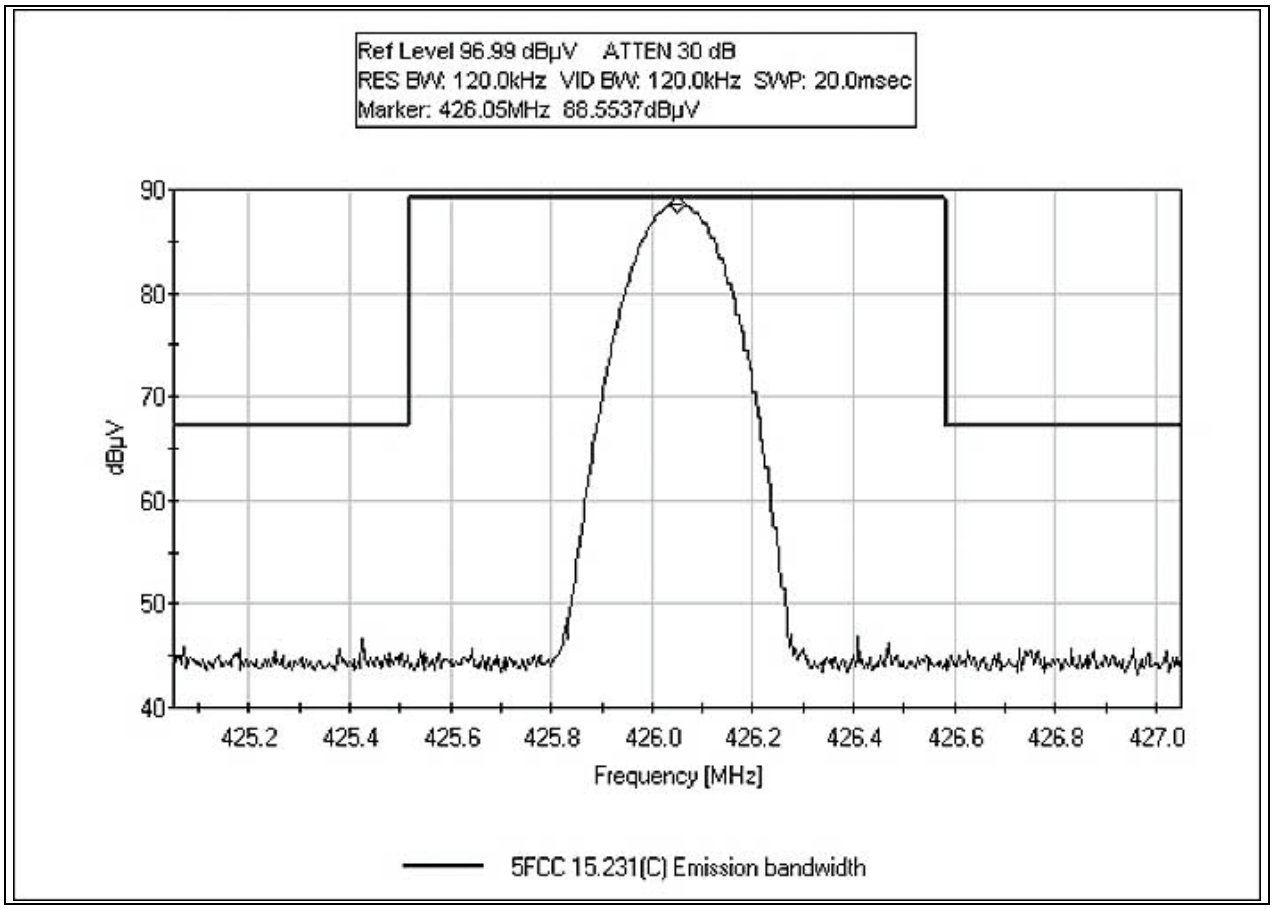
FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
852.094	40.4	23.3	-27.1	6.4	0.0	43.0	61.9	-18.9	V
1704.100	60.3	25.0	-39.6	3.7	0.4	49.8	61.9	-12.1	V
1704.100	54.4	25.0	-39.6	3.7	0.4	43.9	61.9	-18.0	H
2130.150	59.0	26.1	-39.1	4.0	03	50.3	61.9	-11.6	V
2130.150	54.4	26.1	-39.1	4.0	03	45.7	61.9	-16.2	H
2556.200	51.6	27.2	-39.1	4.1	0.4	44.2	61.9	-17.7	V

Test Method: ANSI C63.4 (2003)
Spec Limit: FCC Part 15 Subpart C Section 15.231(b)
Test Distance: 3 Meters

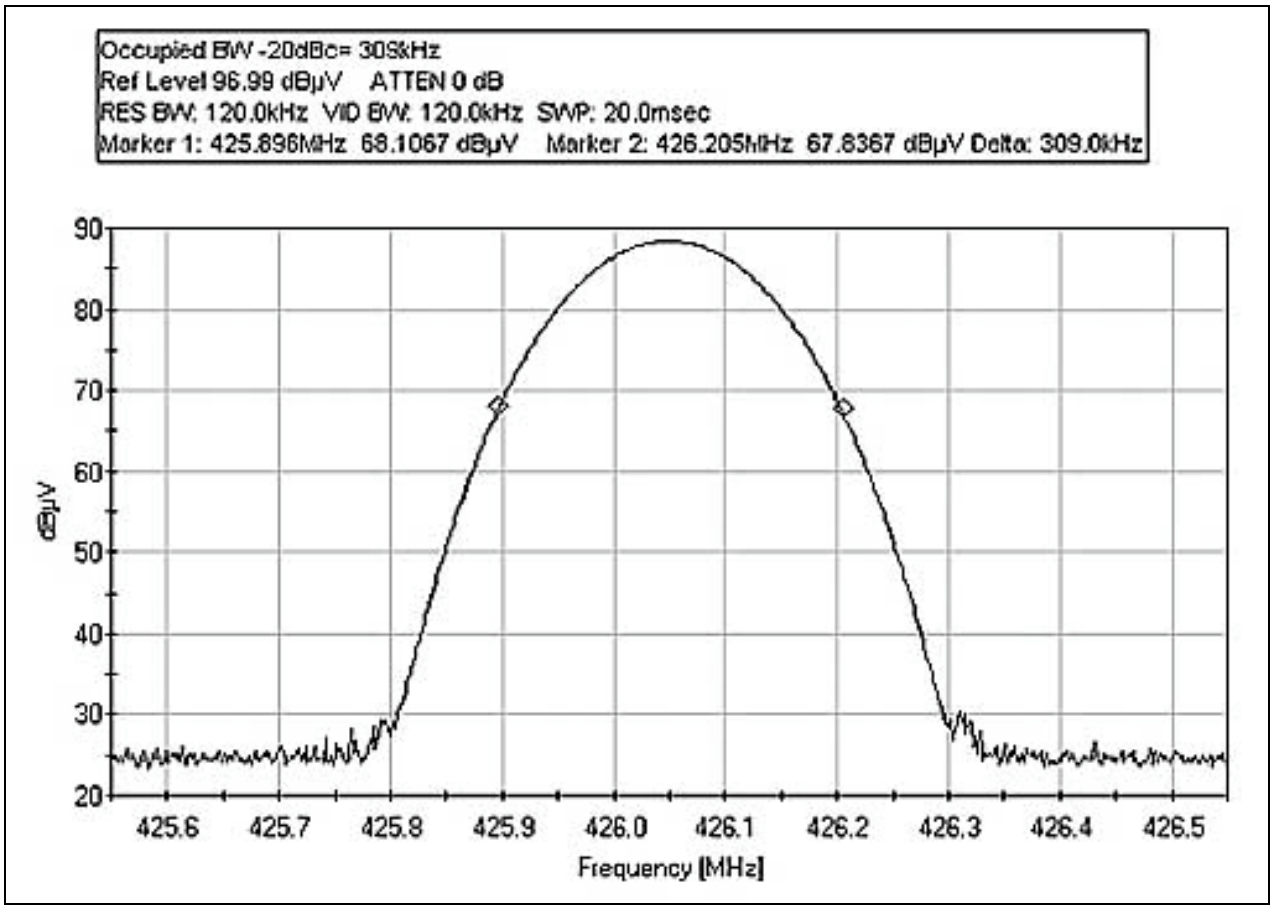
NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: The EUT, Caller is placed on the wooden table, in the worse case emission profile. The Caller is set in continuous transmit mode. TX Frequency = 426.050 MHz. 3 new 1.5V batteries were installed. 24°C, 58% relative humidity. Frequency range of measurement = 852 MHz - 5 GHz. Frequency 852 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 5 MHz RBW=1 MHz, VBW=1 MHz. SN1: Shield installed.

FCC 15.231(c) 0.25 BANDWIDTH



FCC 15.231(c) -20 dBc BANDWIDTH



EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available I/O ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. I/O cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The radiated and conducted emissions data of the EUT was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in Table A.

Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

TABLE A: SAMPLE CALCULATIONS

	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Appendix B were used to collect both the radiated and conducted emissions data. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. For frequencies from 30 to 1000 MHz, the biconilog antenna was used. The horn antenna was used for frequencies above 1000 MHz. Conducted emissions tests required the use of the FCC type LISNs.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dBµV, and a vertical scale of 10 dB per division.

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the Tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

EUT TESTING

Mains Conducted Emissions

During conducted emissions testing, the EUT was located on a wooden table measuring approximately 80 cm high, 1 meter deep, and 1.5 meters in length. One wall of the room where the EUT was located has a minimum 2 meter by 2 meter conductive plane. The EUT was mounted on the wooden table 40 cm away from the conductive plane, and 80 cm from any other conductive surface.

The vertical metal plane used for conducted emissions was grounded to the earth. Power to the EUT was provided through a LISN. The LISN was grounded to the ground plane. All other objects were kept a minimum of 80 cm away from the EUT during the conducted test.

The LISNs used were 50 µH-/+50 ohms. A 30 to 50 second sweep time was used for automated measurements in the frequency bands of 150 kHz to 500 kHz, and 500 kHz to 30 MHz. All readings within 20 dB of the limit were recorded, and those within 6 dB of the limit were examined with additional measurements using a slower sweep time.

Radiated Emissions

The EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters.

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. The frequency range of 30 MHz to 1000 MHz was scanned with the biconilog antenna located about 1.5 meter above the ground plane in the vertical polarity. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. A scan of the FM band from 88 to 110 MHz was then made using a reduced resolution bandwidth and frequency span. The biconilog antenna was changed to the horizontal polarity and the above steps were repeated. For frequencies exceeding 1000 MHz, the horn antenna was used. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable and raising and lowering the antenna from one to four meters as needed. The test engineer maximized the readings with respect to the table rotation, antenna height, and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor.

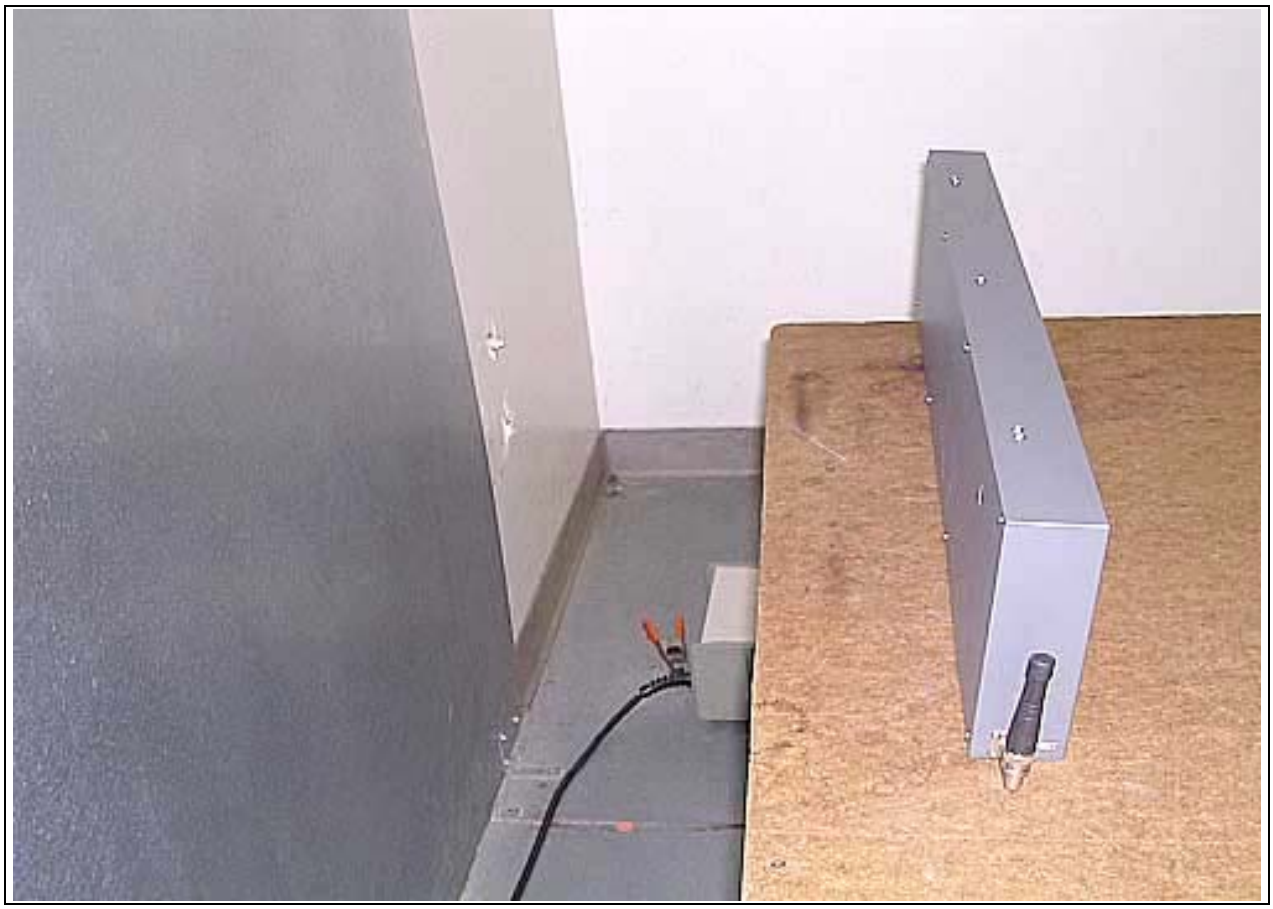
APPENDIX A

TEST SETUP PHOTOGRAPHS

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS

Mains Conducted Emissions - Front View of Receiver

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Side View of Receiver

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Front View of Transmitter

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Back View of Transmitter

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Front View of Receiver

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Back View of Receiver

APPENDIX B

TEST EQUIPMENT LIST

FCC 15.107/15.207

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02672	Agilent	E4446A	US44300438	011405	011407
Conducted Cable	P04358	Harbour Ind	M17/60-RG142	Cable # 21	050906	050908
150kHz HPF	02610	TTE	HB9615-150k-50-720B	G7755	013006	013008
6dB Attenuator	P05267	Weinschel	18W	(none)	092805	092807
LISN	00847	EMCO	3816/2NM	1104	120804	120806

FCC 15.109, 15.209 and 15.231

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02672	Agilent	E4446A	US44300438	011405	011407
30 MHz-1000 MHz						
Dipole Antenna Set	01239	CKC	CKC	00001	012605	012607
Bilog Antenna	01995	Chase	CBL6111C	2451	020206	020208
Pre-amp	00309	HP	8447D	1937A02548	060106	060108
Antenna cable	P05198	Belden	8268 (RG-214)	Cable#15	010305	010307
Pre-amp to SA cable	P05050	Pasternack	RG223/U	Cable#10	051605	051607
1 GHz-5 GHz						
Horn Antenna	00849	EMCO	3115	6246	062906	062908
Microwave Pre-amp	00786	HP	83017A	3123A00281	071906	071908
Heliax Antenna cable	P04384	Andrew	LDF1-50	Cable#20	091604	091606
24” SMA Cable (White)	P05204	Pasterneck	35591-48	1-40GHz_white	020805	020807
1.0 GHz HPF	02749	K&L	9SH10-1000	1	030706	030708

FCC 15.109, 15.209 and 15.231 and Bandwidth Plots

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02660	Agilent	E4446A	US44300407	120105	120107
9 kHz-30 MHz						
Active Loop ant	00052	Emco	6502	2156	022006	022008
30 MHz-1000 MHz						
Bothell 5m Cable Set	P05444	NA	NA	P05444	11/28/2005	11/28/2007
PreAmp	01517	HP	8447D	2944A08601	07/10/2006	07/10/2008
BILOG	01994	Chase	2453	2453	02/02/2005	02/02/2007
Spectrum Analyzer	02672	Agilent	E4446A	US44300438	011405	011407
1 GHz-5 GHz						
Pre-amp	1271	HP	83017A	3123A00464	100305	100307
Cable Heliax	P04085	Andrew	NA	NA		
Cable 30MHz-40GHz	P05424	Pasterneck	NA	NA	051106	051108
Cable 30MHz-40GHz	P5207	Pasterneck	NA	NA	020805	020807
Horn Antenna	1412	EMCO	3115	9006-4854	010605	010607

APPENDIX C:

MEASUREMENT DATA SHEETS

Test Location:	CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717		
Customer:	**William (Bill) Androlia**		
Specification:	**FCC 15.107/15.207 COND [AVE]**		
Work Order #:	**85098**	Date:	7/24/2006
Test Type:	**Conducted Emissions**	Time:	17:41:49
Equipment:	**Controller**	Sequence#:	22
Manufacturer:	Sukiya	Tested By:	Eddie Wong
Model:	HY-2611A		110V 60Hz
S/N:	NA		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Real-Time Service Paging System	Shenzhen Constant Electronics Co., Ltd.	HY-2677A	NA
Caller	Shenzhen Constant Electronics Co., Ltd.	HY-2610A	0602-01
Controller*	Shenzhen Constant Electronics Co., Ltd.	HY-2611A	NA
Infra Red Remote Control	Shenzhen Constant Electronics Co., Ltd.	NA	NA
Power Supply	Shen Zhen Shan Jing Power Supply Co.	KW006-2	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The Controller and IR Remote control are placed on the wooden table. The button of the IR controller is pressed; the controller is in operational mode. Rx Frequency = 426.05MHz. 24°C, 58% relative humidity. RX antenna is connected to the EUT. Ferrite: ESD-SR-25 2 loops on DC power, EUT side of the power cable. Copper plate RF shield installed. All crystals are grounded. Data/power cable replaced with shielded cable. Choke and Capacitor filtering network installed.

Transducer Legend:

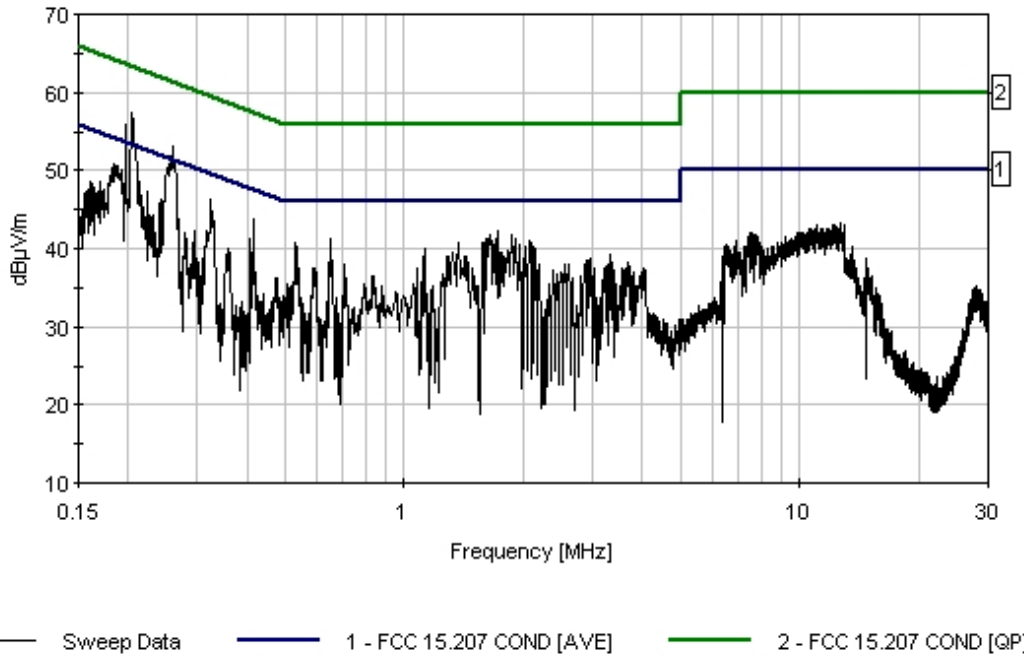
T1=150kHz HPF Asset 02610	T2=6dB Attenuator P05267 092807
T3=Cable #21 Conducted Site A 050907	T4=(L1) Insertion Loss 00847 EMCO 3816/2NM

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	325.257k	40.0	+0.2	+5.8	+0.1	+0.1	+0.0	46.2	49.6	-3.4	Black
2	413.976k	37.7	+0.2	+5.8	+0.1	+0.1	+0.0	43.9	47.6	-3.7	Black
3	1.719M	36.2	+0.1	+5.8	+0.1	+0.0	+0.0	42.2	46.0	-3.8	Black
4	1.872M	35.8	+0.1	+5.8	+0.1	+0.0	+0.0	41.8	46.0	-4.2	Black
5	1.655M	35.7	+0.1	+5.8	+0.1	+0.0	+0.0	41.7	46.0	-4.3	Black
6	650.318k	35.1	+0.2	+5.8	+0.1	+0.0	+0.0	41.2	46.0	-4.8	Black
7	1.672M	35.1	+0.1	+5.8	+0.1	+0.0	+0.0	41.1	46.0	-4.9	Black

8	2.081M	35.0	+0.1	+5.8	+0.1	+0.0	+0.0	41.0	46.0	-5.0	Black
9	1.579M	34.8	+0.1	+5.8	+0.1	+0.0	+0.0	40.8	46.0	-5.2	Black
10	1.371M	34.8	+0.1	+5.8	+0.0	+0.0	+0.0	40.7	46.0	-5.3	Black
11	531.056k	34.6	+0.2	+5.8	+0.1	+0.0	+0.0	40.7	46.0	-5.3	Black
12	284.081k Ave	32.0	+0.2	+5.8	+0.1	+0.1	+0.0	38.2	50.7	-12.5	Black
^	284.081k	43.6	+0.2	+5.8	+0.1	+0.1	+0.0	49.8	50.7	-0.9	Black
14	184.768k Ave	26.7	+0.3	+5.8	+0.1	+0.0	+0.0	32.9	54.3	-21.4	Black
15	183.041k Ave	26.3	+0.3	+5.8	+0.1	+0.0	+0.0	32.5	54.3	-21.8	Black
^	183.041k	44.8	+0.3	+5.8	+0.1	+0.0	+0.0	51.0	54.3	-3.3	Black
^	183.452k	44.6	+0.3	+5.8	+0.1	+0.0	+0.0	50.8	54.3	-3.5	Black
^	184.768k	44.0	+0.3	+5.8	+0.1	+0.0	+0.0	50.2	54.3	-4.1	Black

CKC Laboratories Date: 7/24/2006 Time: 17:41:49 William (Bill) Androlia WO#: 85098
FCC 15.207 COND [AVE] Test Lead: Black 110V 60Hz Sequence#: 22 Polarity: Black
Notes: The Controller and IR Remote control are placed on the wooden table. The button of the IR controller is pressed; th



Test Location: CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **William (Bill) Androlia**
Specification: **FCC 15.107/15.207 COND [AVE]**
Work Order #: **85098** Date: 7/24/2006
Test Type: **Conducted Emissions** Time: 17:48:19
Equipment: **Controller** Sequence#: 23
Manufacturer: Sukiya Tested By: Eddie Wong
Model: HY-2611A 110V 60Hz
S/N: NA

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Real-Time Service Paging System	Shenzhen Constant Electronics Co., Ltd.	HY-2677A	NA
Caller	Shenzhen Constant Electronics Co., Ltd.	HY-2610A	0602-01
Controller*	Shenzhen Constant Electronics Co., Ltd.	HY-2611A	NA
Infra Red Remote Control	Shenzhen Constant Electronics Co., Ltd.	NA	NA
Power Supply	Shen Zhen Shan Jing Power Supply Co.	KW006-2	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The Controller and IR Remote control are placed on the wooden table. The button of the IR controller is pressed; the controller is in operational mode. Rx Frequency = 426.05MHz. 24°C, 58% relative humidity. RX antenna is connected to the EUT. Ferrite: ESD-SR-25 2 loops on DC power, EUT side of the power cable. Copper plate RF shield installed. All crystals are grounded. Data/power cable replaced with shielded cable. Choke and Capacitor filtering network installed.

Transducer Legend:

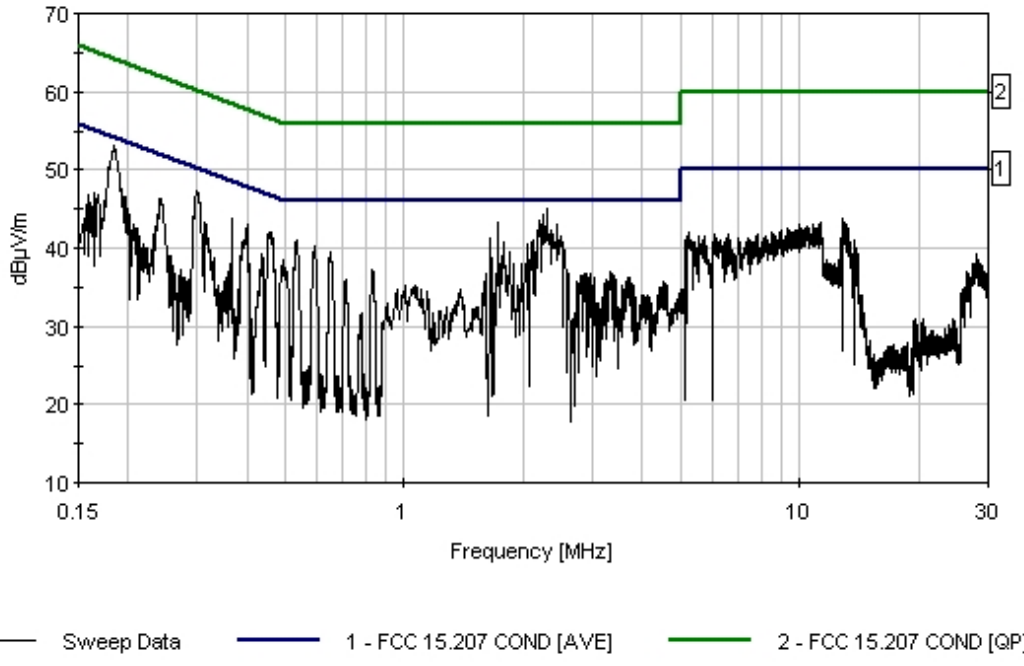
T1=150kHz HPF Asset 02610	T2=6dB Attenuator P05267 092807
T3=Cable #21 Conducted Site A 050907	T4=(L2) Insertion Loss 00847 EMCO 3816/2NM

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1.719M	37.3	+0.1	+5.8	+0.1	+0.0	+0.0	43.3	46.0	-2.7	White
2	184.906k Ave	45.2	+0.3	+5.8	+0.1	+0.1	+0.0	51.5	54.3	-2.8	White
^	184.906k	46.7	+0.3	+5.8	+0.1	+0.1	+0.0	53.0	54.3	-1.3	White
4	299.077k	41.3	+0.2	+5.8	+0.1	+0.0	+0.0	47.4	50.3	-2.9	White
5	459.790k	36.0	+0.2	+5.8	+0.1	+0.0	+0.0	42.1	46.7	-4.6	White
6	365.253k	37.8	+0.2	+5.8	+0.1	+0.0	+0.0	43.9	48.6	-4.7	White

7	1.651M	35.2	+0.1	+5.8	+0.1	+0.0	+0.0	41.2	46.0	-4.8	White
8	400.886k	36.8	+0.2	+5.8	+0.1	+0.0	+0.0	42.9	47.8	-4.9	White
9	2.110M	35.1	+0.1	+5.8	+0.1	+0.0	+0.0	41.1	46.0	-4.9	White
10	533.965k	34.8	+0.2	+5.8	+0.1	+0.0	+0.0	40.9	46.0	-5.1	White
11	1.783M	34.7	+0.1	+5.8	+0.1	+0.0	+0.0	40.7	46.0	-5.3	White
12	2.093M	34.7	+0.1	+5.8	+0.1	+0.0	+0.0	40.7	46.0	-5.3	White
13	2.051M	34.5	+0.1	+5.8	+0.1	+0.0	+0.0	40.5	46.0	-5.5	White
14	2.293M Ave	17.4	+0.1	+5.8	+0.1	+0.1	+0.0	23.5	46.0	-22.5	White
15	2.293M Ave	17.3	+0.1	+5.8	+0.1	+0.1	+0.0	23.4	46.0	-22.6	White
^	2.293M	38.6	+0.1	+5.8	+0.1	+0.1	+0.0	44.7	46.0	-1.3	White

CKC Laboratories Date: 7/24/2006 Time: 17:48:19 William (Bill) Androlia WO#: 85098
FCC 15.207 COND [AVE] Test Lead: White 110V 60Hz Sequence#: 23 Polarity: White
Notes: The Controller and IR Remote control are placed on the wooden table. The button of the IR controller is pressed; th



Test Location: CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **William (Bill) Androlia**
Specification: **FCC 15.109**
Work Order #: **85098** Date: 7/24/2006
Test Type: **Radiated Scan** Time: 18:38:03
Equipment: **Real-Time Service Paging System** Sequence#: 14
Manufacturer: Sukiya Tested By: Eddie Wong
Model: HY-2677A
S/N: NA

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Real-Time Service Paging System*	Shenzhen Constant Electronics Co., Ltd.	HY-2677A	NA
Caller	Shenzhen Constant Electronics Co., Ltd.	HY-2610A	0602-01
Controller	Shenzhen Constant Electronics Co., Ltd.	HY-2611A	NA
Infra Red Remote Control	Shenzhen Constant Electronics Co., Ltd.	NA	NA
Power Supply	Shen Zhen Shan Jing Power Supply Co.	KW006-2	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The Controller and IR Remote control are placed on the wooden table. The button of the IR controller is pressed; the controller is in operational mode. Rx Frequency = 426.05MHz. Frequency range of measurement = 30 MHz - 5 GHz. 30 MHz-5000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz-5000 MHz; RBW=1 MHz, VBW=1 MHz. 22°C, 58% relative humidity. RX antenna is connected to the EUT. Ferrite: ESD-SR-25 2 loops on DC power, EUT side of the power cable. Copper plate RF shield installed. All crystals are grounded. Data/power cable replaced with shielded cable. Choke and Capacitor filtering network installed

Transducer Legend:

T1=Preamp 8447D 060108	T2=Bilog AN01995 020208 Chase
T3=Cable #10 051607	T4=Cable #15, Site A, 010307
T5=Cable #20 48ft Heliax 091606	T6=Horn 00849_062908
T7=HP 83017A 071606	T8=1-40 GHz Cable_020807

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	35.545M	46.7	-27.8 +0.0	+16.4 +0.0	+0.1 +0.0	+1.0 +0.0	+0.0	36.4	40.0	-3.6	Horiz
2	31.985M	44.9	-27.8 +0.0	+18.0 +0.0	+0.0 +0.0	+0.9 +0.0	+0.0	36.0	40.0	-4.0	Vert
3	31.035M	44.2	-27.8 +0.0	+18.5 +0.0	+0.0 +0.0	+0.9 +0.0	+0.0	35.8	40.0	-4.2	Vert
4	41.445M	48.3	-27.8 +0.0	+13.4 +0.0	+0.1 +0.0	+1.1 +0.0	+0.0	35.1	40.0	-4.9	Vert

5	36.475M	44.8	-27.8 +0.0	+15.9 +0.0	+0.1 +0.0	+1.0 +0.0	+0.0	34.0	40.0	-6.0	Vert
6	51.500M	47.8	-27.7 +0.0	+8.6 +0.0	+0.1 +0.0	+1.2 +0.0	+0.0	30.0	40.0	-10.0	Vert
7	1618.670M	51.2	+0.0 +2.9	+0.0 +25.3	+0.0 -38.6	+0.0 +0.8	+0.0	41.6	54.0	-12.4	Vert
8	47.210M	42.7	-27.7 +0.0	+10.4 +0.0	+0.1 +0.0	+1.2 +0.0	+0.0	26.7	40.0	-13.3	Horiz
9	36.123M	36.3	-27.8 +0.0	+16.1 +0.0	+0.1 +0.0	+1.0 +0.0	+0.0	25.7	40.0	-14.3	Horiz
10	1619.200M	48.1	+0.0 +2.9	+0.0 +25.3	+0.0 -38.6	+0.0 +0.8	+0.0	38.5	54.0	-15.5	Horiz
11	1781.800M	47.7	+0.0 +2.9	+0.0 +25.8	+0.0 -39.1	+0.0 +0.8	+0.0	38.1	54.0	-15.9	Horiz
12	1218.500M	49.6	+0.0 +2.2	+0.0 +24.8	+0.0 -40.7	+0.0 +0.7	+0.0	36.6	54.0	-17.4	Horiz
13	1135.500M	48.9	+0.0 +2.2	+0.0 +24.8	+0.0 -40.2	+0.0 +0.7	+0.0	36.4	54.0	-17.6	Horiz
14	37.525M	33.5	-27.8 +0.0	+15.4 +0.0	+0.1 +0.0	+1.1 +0.0	+0.0	22.3	40.0	-17.7	Horiz

Test Location: CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **William (Bill) Androlia**
Specification: **FCC 15.209**
Work Order #: **85098** Date: 6/21/2006
Test Type: **Radiated Scan** Time: 14:12:52
Equipment: **Real-Time Service Paging System** Sequence#: 11
Manufacturer: Sukiya Tested By: Eddie Wong
Model: HY-2677A
S/N: NA

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Power Supply	Shen Zhen Shan Jing Power Supply Co.	KW200-7	NA
Real-Time Service Paging System*	Shenzhen Constant Electronics Co., Ltd.	HY-2677A	NA
Caller	Shenzhen Constant Electronics Co., Ltd.	HY-2610A	0602-01
Controller	Shenzhen Constant Electronics Co., Ltd.	HY-2611A	NA
Infra Red Remote Control	Shenzhen Constant Electronics Co., Ltd.	NA	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT, Caller is placed on the wooden table, in the worse case emission profile. The Caller is set in continuous transmit mode. TX Frequency = 426.050MHz. 3 new 1.5V batteries were installed. 24°C, 58% relative humidity. Frequency range of measurement = 9 kHz- 5 GHz. Frequency 9 kHz - 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz- 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz- 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz-5000 MHz RBW=1 MHz, VBW=1 MHz. SN1: Shield installed.

Transducer Legend:

T1=Preamp 8447D 060106	T2=Bilog AN01995 020208 Chase
T3=Cable #10 051607	T4=Cable #15, Site A, 010307
T5=Cable #20 48ft Heliax 091606	T6=Horn 6246_072206
T7=HP 83017A 071606	T8=1-40 GHz Cable_020807
T9=Filter 1GHz HP AN02749	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	852.094M	40.4	-27.1 +0.0 +0.0	+23.3 +0.0	+0.6 +0.0	+5.8 +0.0	+0.0	43.0	46.0	-3.0	Vert
2	2130.150M	59.0	+0.0 +3.1 +0.3	+0.0 +26.1	+0.0 -39.1	+0.0 +0.9	+0.0	50.3	54.0	-3.7	Vert

3	1704.100M	60.3	+0.0 +2.9 +0.4	+0.0 +25.0	+0.0 -39.6	+0.0 +0.8	+0.0	49.8	54.0	-4.2	Vert
4	852.094M	38.7	-27.1 +0.0 +0.0	+23.3 +0.0	+0.6 +0.0	+5.8 +0.0	+0.0	41.3	46.0	-4.7	Horiz
5	2130.150M	54.4	+0.0 +3.1 +0.3	+0.0 +26.1	+0.0 -39.1	+0.0 +0.9	+0.0	45.7	54.0	-8.3	Horiz
6	2556.200M	51.6	+0.0 +3.1 +0.4	+0.0 +27.2	+0.0 -39.1	+0.0 +1.0	+0.0	44.2	54.0	-9.8	Vert
7	1704.100M	54.4	+0.0 +2.9 +0.4	+0.0 +25.0	+0.0 -39.6	+0.0 +0.8	+0.0	43.9	54.0	-10.1	Horiz
8	2556.200M	49.6	+0.0 +3.1 +0.4	+0.0 +27.2	+0.0 -39.1	+0.0 +1.0	+0.0	42.2	54.0	-11.8	Horiz
9	2982.150M	46.1	+0.0 +3.7 +0.3	+0.0 +28.7	+0.0 -38.7	+0.0 +1.1	+0.0	41.2	54.0	-12.8	Vert
10	1278.050M	53.1	+0.0 +2.4 +0.5	+0.0 +23.8	+0.0 -39.7	+0.0 +0.7	+0.0	40.8	54.0	-13.2	Vert
11	1278.050M	51.0	+0.0 +2.4 +0.5	+0.0 +23.8	+0.0 -39.7	+0.0 +0.7	+0.0	38.7	54.0	-15.3	Horiz

Test Location: CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **William (Bill) Androlia**
Specification: **FCC 15.231 (b) Field Strength of Fundamental**
Work Order #: **85098** Date: 6/21/2006
Test Type: **Radiated Scan** Time: 08:30:22
Equipment: **Real-Time Service Paging System** Sequence#: 3
Manufacturer: Sukiya Tested By: Eddie Wong
Model: HY-2677A
S/N: NA

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Real-Time Service Paging System*	Shenzhen Constant Electronics Co., Ltd.	HY-2677A	NA
Caller	Shenzhen Constant Electronics Co., Ltd.	HY-2610A	0602-01
Controller	Shenzhen Constant Electronics Co., Ltd.	HY-2611A	NA
Infra Red Remote Control	Shenzhen Constant Electronics Co., Ltd.	NA	NA
Power Supply	Shen Zhen Shan Jing Power Supply Co.	KW200-7	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT Caller is placed on the wooden table, in the worse case emission profile. The Caller is set in continuous transmit mode. TX Frequency = 426.050MHz 3 new 1.5V batteries were installed. Frequency range of measurement = Fundamental RBW=VBW=120kHz. 24°C, 58% relative humidity. SN1 Modification: shield installed.

Transducer Legend:

T1=Preamp 8447D 060106	T2=Bilog AN01995 020208 Chase
T3=Cable #10 051607	T4=Cable #15, Site A, 010307

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	426.047M	79.7	-27.7	+16.5	+0.3	+3.9	+0.0	72.7	80.2	-7.5	Vert
2	426.047M	76.3	-27.7	+16.5	+0.3	+3.9	+0.0	69.3	80.2	-10.9	Horiz

Test Location: CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **William (Bill) Androlia**
Specification: **FCC 15.231(b) Field Strength of Spurious Emission**
Work Order #: **85098** Date: 6/21/2006
Test Type: **Radiated Scan** Time: 14:12:52
Equipment: **Real-Time Service Paging System** Sequence#: 11
Manufacturer: Sukiya Tested By: Eddie Wong
Model: HY-2677A
S/N: NA

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Power Supply	Shen Zhen Shan Jing Power Supply Co.	KW200-7	NA
Real-Time Service Paging System*	Shenzhen Constant Electronics Co., Ltd.	HY-2677A	NA
Caller	Shenzhen Constant Electronics Co., Ltd.	HY-2610A	0602-01
Controller	Shenzhen Constant Electronics Co., Ltd.	HY-2611A	NA
Infra Red Remote Control	Shenzhen Constant Electronics Co., Ltd.	NA	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT Caller is placed on the wooden table, in the worse case emission profile. The Caller is set in continuous transmit mode. TX Frequency = 426.050MHz. 3 new 1.5V batteries were installed. 24°C, 58% relative humidity. Frequency range of measurement = 852 MHz - 5 GHz. Frequency 852 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz -5 MHz RBW=1 MHz, VBW=1 MHz. SN1: Shield installed.

Transducer Legend:

T1=Preamp 8447D 060106	T2=Bilog AN01995 020208 Chase
T3=Cable #10 051607	T4=Cable #15, Site A, 010307
T5=Cable #20 48ft Heliax 091606	T6=Horn 6246_072206
T7=HP 83017A 071606	T8=1-40 GHz Cable_020807
T9=Filter 1GHz HP AN02749	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	2130.150M	59.0	+0.0 +3.1 +0.3	+0.0 +26.1	+0.0 -39.1	+0.0 +0.9	+0.0	50.3	61.9	-11.6	Vert
2	1704.100M	60.3	+0.0 +2.9 +0.4	+0.0 +25.0	+0.0 -39.6	+0.0 +0.8	+0.0	49.8	61.9	-12.1	Vert

3	2130.150M	54.4	+0.0 +3.1 +0.3	+0.0 +26.1	+0.0 -39.1	+0.0 +0.9	+0.0	45.7	61.9	-16.2	Horiz
4	2556.200M	51.6	+0.0 +3.1 +0.4	+0.0 +27.2	+0.0 -39.1	+0.0 +1.0	+0.0	44.2	61.9	-17.7	Vert
5	1704.100M	54.4	+0.0 +2.9 +0.4	+0.0 +25.0	+0.0 -39.6	+0.0 +0.8	+0.0	43.9	61.9	-18.0	Horiz
6	852.094M	40.4	-27.1 +0.0 +0.0	+23.3 +0.0	+0.6 +0.0	+5.8 +0.0	+0.0	43.0	61.9	-18.9	Vert
7	2556.200M	49.6	+0.0 +3.1 +0.4	+0.0 +27.2	+0.0 -39.1	+0.0 +1.0	+0.0	42.2	61.9	-19.7	Horiz
8	852.094M	38.7	-27.1 +0.0 +0.0	+23.3 +0.0	+0.6 +0.0	+5.8 +0.0	+0.0	41.3	61.9	-20.6	Horiz
9	2982.150M	46.1	+0.0 +3.7 +0.3	+0.0 +28.7	+0.0 -38.7	+0.0 +1.1	+0.0	41.2	61.9	-20.7	Vert
10	1278.050M	53.1	+0.0 +2.4 +0.5	+0.0 +23.8	+0.0 -39.7	+0.0 +0.7	+0.0	40.8	61.9	-21.1	Vert
11	1278.050M	51.0	+0.0 +2.4 +0.5	+0.0 +23.8	+0.0 -39.7	+0.0 +0.7	+0.0	38.7	61.9	-23.2	Horiz