TEST REPORT

Report Number: HK10120177-1

Application
for
Original Grant of 47 CFR Part 15 Certification
Single New of RSS-210 Issue 8 Equipment Certification

900MHz Superheterodyne Receiver (Parent Unit of Baby Monitor)

FCC ID: N7TAC601R

IC: 5786A-AC601R

Prepared and Checked by:	Approved by:
	
Koo Wai Ip	Nip Ming Fung, Melvin
Lead Engineer	Supervisor
December 20, 2010	December 20, 2010

Intertek Testing Services Hong Kong Ltd.
2/F., Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong.
Tel: (852) 2173 8888 Fax: (852) 2785 5487 Website: www.hk.intertek-etlsemko.com

GENERAL INFORMATION

Applicant Name:	Angelcare Monitors Inc.
Applicant Address:	3980, Rue St-Ambroise, Montreal, Quebec, H4C 2C7, Canada.
FCC Specification Standard:	FCC Part 15, October 1, 2009 Edition
FCC ID:	N7TAC601R
FCC Model(s):	AC601
IC Specification Standard:	RSS-210 Issue 8, December 2010 RSS-Gen Issue 3, December 2010
IC:	5786A-AC601R
IC Model(s):	AC601-P
Type of EUT:	Superheterodyne Receiver
Description of EUT:	900MHz Superheterodyne Receiver (Parent Unit of Baby Monitor)
Serial Number:	N/A
Sample Receipt Date:	December 03, 2010
Date of Test:	November 30-December 03, 2010
Report Date:	December 20, 2010
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

Table of Contents

EXHIBIT 1
TEST RESULTS SUMMARY & STATEMENT OF COMPLIANCE

1.0 Test Results Summary & Statement of Compliance

1.1 Summary of Test Results

Test Items	FCC Part 15 Section	RSS-210/ RSS-Gen# / RSS-310^ Section	Results	Details see section
Radiated Emission from Receiver	15.109	2.3	Pass	4.2
AC Power Line Conducted Emission	15.107	7.2.4#	Pass	4.3

1.2 Statement of Compliance

The equipment under test is found to be complying with the following standards:

FCC Part 15, October 1, 2009 Edition
RSS-210 Issue 8, December 2010
RSS-Gen Issue 3, December 2010

EXHIBIT 2
GENERAL DESCRIPTION

2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a 900MHz Superheterodyne Receiver (Parent Unit of Baby Monitor). It operates at 926.2MHz, 926.8MHz and 927.6MHz. The EUT is powered by a 120VAC to 7.5VDC 150mA adaptor, and/or 3 x “AAA” “Ni-MH” type rechargeable battery.

The antenna used in parent unit is integral, and the test sample is a prototype.

For IC, The Model(s): AC601-P is the same as the Model: AC601 in electrical/electronic designs including software & firmware, PCB layout and construction design/physical design/enclosure. The only differences between these model is model number to be sold for marketing purpose.

The circuit description is attached in the Appendix and saved with filename: descri.pdf.

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 at Roof Top and 2nd Floor respectively of Intertek Testing Services Hong Kong Ltd., which is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC and the Industry Canada.

EXHIBIT 3
SYSTEM TEST CONFIGURATION

3.0 **System Test Configuration**

3.1 Justification

For radiated emissions testing, the equipment under test (EUT) was setup to 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 EUT was powered by a 120VAC to 7.5VDC 150mA adaptor or 3 fully charged "AAA" "Ni-MH" type rechargeable battery.

For the measurements, the EUT was attached to a plastic stand if necessary and placed on the wooden turntable. If the EUT attached to peripherals, they were connected and operational to simulate typical use.

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

A typical signal 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.

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 receiver was performed from 30MHz to 5GHz.

3.1 Justification - Cont'd

Detector function for radiated emissions is in peak mode.

The device is a superheterodyne receiver. No desensitization of the measurement equipment is required as the received signals are continuously.

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

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

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 150mA, Model: PA-07.515-DVAA) (Supplied by Client)
(2) Operated battery: 3 x “AAA” “Ni-MH” type rechargeable battery (1.2V, 600mAh) (Supplied by Client)

Description of Accessories:

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

3.4 Measurement Uncertainty

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

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

3.5 Equipment Modification

Any modifications installed previous to testing by Angelcare Monitors Inc. 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.

EXHIBIT 4
TEST RESULTS

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 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

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 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 is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 52.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
FS = RR + LF
FS = 23 + 9 = 32 dBμV/m

RR = 23.0 dBμV
LF = 9.0 dB

Level in μV/m = Common Antilogarithm [(32 dBμV/m)/20] = 39.8 μV/m

4.2 Radiated Emissions from Receiver

4.2.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
at

936.898MHz

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 1-3 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Passed by 2.0 dB margin

Mode: Receiving – Lowest Channel

Table 1

Radiated Emissions Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	936.898	27.0	16	33.0	44.0	46.0	-2.0
H	1873.796	56.4	33	27.2	50.6	54.0	-3.4
H	2810.694	50.4	33	30.4	47.8	54.0	-6.2
V	3747.592	46.5	33	33.3	46.8	54.0	-7.2
V	4684.490	42.6	33	34.9	44.5	54.0	-9.5

NOTES:

1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

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

Mode: Receiving – Middle Channel

Table 2

Radiated Emissions Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	937.500	26.5	16	33.0	43.5	46.0	-2.5
H	1875.000	56.2	33	27.2	50.4	54.0	-3.6
H	2812.500	50.3	33	30.4	47.7	54.0	-6.3
V	3750.000	46.6	33	33.3	46.9	54.0	-7.1
V	4687.500	42.8	33	34.9	44.7	54.0	-9.3

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.

Mode: Receiving – Highest Channel

Table 3

Radiated Emissions Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	938.298	26.3	16	33.0	43.3	46.0	-2.7
H	1876.596	56.1	33	27.2	50.3	54.0	-3.7
H	2814.894	50.0	33	30.4	47.4	54.0	-6.6
V	3753.192	46.5	33	33.3	46.8	54.0	-7.2
V	4691.490	42.6	33	34.9	44.5	54.0	-9.5

NOTES:

1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

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

4.3 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.

4.3.1 AC Power Line Conducted Emission Configuration Photograph

Worst Case Line-Conducted Configuration

The worst case line conducted configuration photographs are attached in the Appendix and saved with filename: config photos.pdf

4.3.2 AC Power Line Conducted Emission Data

The plot(s) and data in the following pages list the significant emission frequencies, the limit and the margin of compliance.

Passed by more than 20 dB margin

Worst Case: Rx & Charging Mode

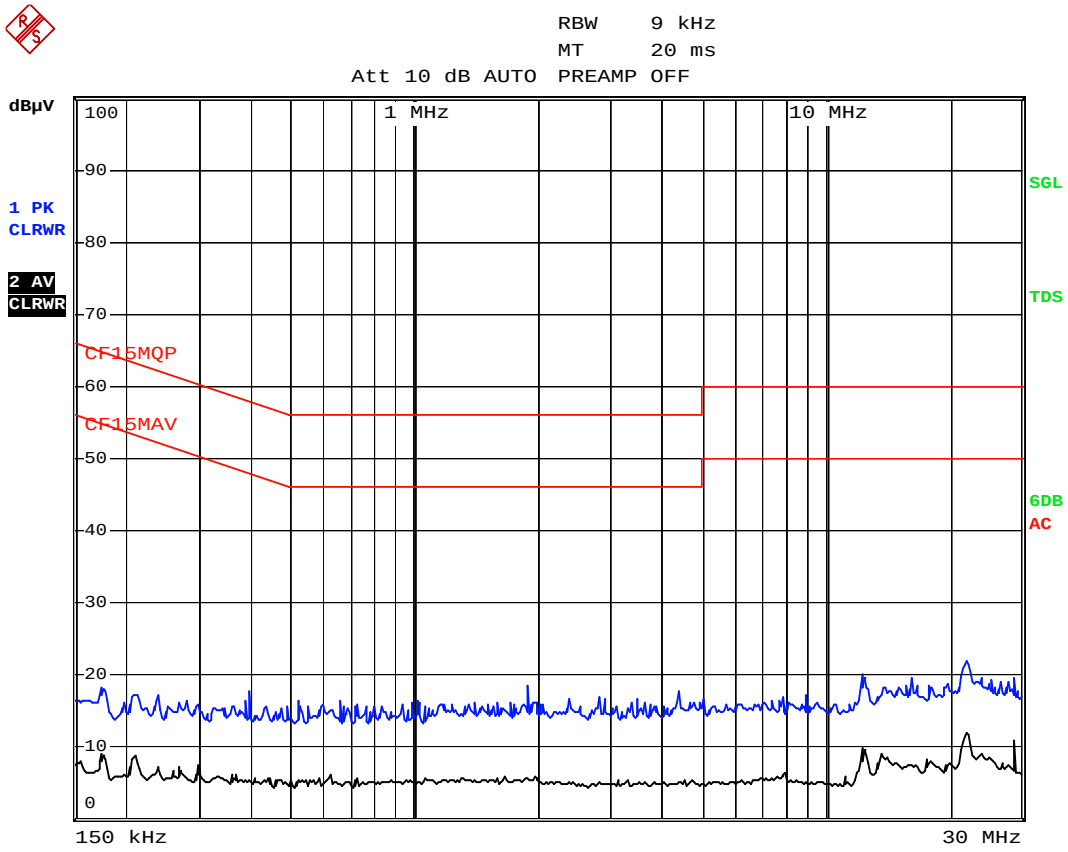

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EXHIBIT 5
EQUIPMENT LIST

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-1015
Manufacturer	EMCO	EMCO	EMCO
Model No.	3104C	3146	3115
Calibration Date	Sep. 30, 2008	Oct. 02, 2008	Jul. 28, 2008
Calibration Due Date	Oct. 14, 2011	Oct. 26, 2011	Aug. 09, 2011

Equipment	Spectrum Analyzer	EMI Test Receiver	Digital Multimeter
Registration No.	EW-2188	EW-2251	EW-1237
Manufacturer	AGILENTTECH	R&S	FLUKE
Model No.	E4407B	ESCI	179
Calibration Date	Dec. 18, 2008	Oct. 22, 2009	Sep. 01, 2010
Calibration Due Date	Dec. 31, 2010	Jan, 22, 2011	Oct. 01, 2011

2) Conducted Emissions Test

Equipment	LISN	Pulse Limiter	EMI Test Receiver
Registration No.	EW-0090	EW-0700	EW-2500
Manufacturer	R&S	R&S	ROHDESCHWARZ
Model No.	ESH3-Z5	ESH3-Z2	ESCI
Calibration Date	Feb. 05, 2010	Jun. 08, 2009	Sep. 20, 2009
Calibration Due Date	Feb. 05, 2011	Dec. 08, 2010	Dec. 20, 2010

END OF TEST REPORT