



FCC PART 15D

TEST REPORT

For

Xingtel Xiamen Group Co., Ltd.

Xingtel Building, Chuangxin Road, Torch Hi-Tech Industrial District, Xiamen 361006, PR China

FCC ID: QMHI700

Report Type:		Product Type:
Original Report		DECT & Bluetooth Device
Test Engineer:	Felix Li	Felix Li
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Report Date:	2012-03-19	
	Alvin Huang	mi Hung
Reviewed By:	EMC Engineer	
Test Laboratory:	6/F, the 3rd Phase of	0018 20008

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Report No.: RSZ111214008-00FP

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *Xingtel Xiamen Group Co., Ltd.'s* product, model number: *i-700 Twin (FCC ID: QMHI700)* (the "EUT") in this report is a base of *DECT & Bluetooth Device*, named *iPhone Complimate* by applicant, Which was measured approximately: 17.9 cm (L) x 10.6cm (W) x 4.3cm (H), input voltage: DC 6 V from adapter.

Adapter information: Model: MN-A006-L130; Input: AC 100-240V 50/60Hz 0.3A MAX; Output: (1-2) 6.0VDC, 700mA (5-6) 6.0VDC, 300mA

Note: The serial products, model i-700, i-650, i-650 Twin, i-650HS, i-650 Bundle, i-700 Twin and i-700 HS are electrically identical, we select i-700 Twin to test, the difference among them is only model number due to different combination, and please refers to the attached declaration letter.

* All measurement and test data in this report was gathered from production sample serial number: 1112037 (Assigned by BACL, Shenzhen). The EUT was received on 2011-12-14.

Objective

This document is a test report based on the Electromagnetic Interference (EMI) tests performed on the EUT. The EMI measurements were performed according to the measurement procedure described in ANSI C63.17-2006 and ANSI C63.4-2009.

The tests were performed in order to determine compliance with FCC Part 15, Subpart D, and section, 15.203, 15.207, 15.315, 15.317, 15.319 and 15.323 rules.

Related Submittal(s)/Grant(s)

FCC Part 15.247BT DSS submissions and FCC Part 15D PUE submission of portable part portion with FCC ID: QMHI700

Test Methodology

All measurements contained in this report were conducted with ANSI C63.17-2006 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2007070.htm

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in TBR6 mode which was provided by the manufacturer.

Equipment Modifications

No modifications were made to the unit tested.

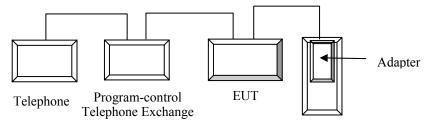
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
R & S	Digital Radio-Communication Tester		
OneKe	Program-control Telephone Exchange	TC-108H	N/A
TIANNIAO	PHONE	TL2201	N/A

External I/O Cable

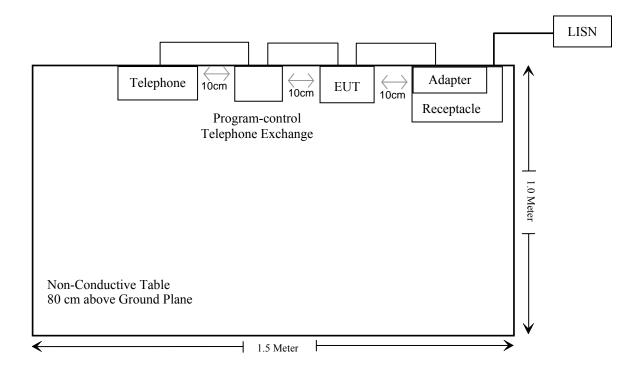
Cable Description	Length (m)	From/Port	То
Unshielded Detectable DC Power Cable	1.5	EUT	Adapter
Unshielded Detectable RJ11 Cable	2.0	EUT	Program-control Telephone Exchange

Configuration of Test Setup



Receptacle

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 15.319 (i)&2.1091	RF Radiation Exposure	Compliance
§ 15.317, § 15.203	Antenna Requirement	Compliance
§ 15.315, § 15.207	AC Line Conducted Emission	Compliance
§ 15.323 (a)	Emission Bandwidth	Compliance
§ 15.319 (c)	Peak Transmit Power	Compliance
§ 15.319 (d)	Power Spectral Density	Compliance
§ 15.323 (d)	Emission Inside and Outside the sub-band	Compliance
§ 15.319 (g)	Radiated Spurious Emission	Compliance
§ 15.323 (f)	Frequency Stability	Compliance
§ 15.323 (c)(e) § 15.319 (f)	Specific Requirements for UPCS	Compliance

FCC§ 15.319 (i) & 2.1091 - RF RADIATION EXPOSURE

Limit

According to FCC §15.319(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	Averaging Time (minute)
	Limits for Gen	eral Population/Unco	ntrolled Exposure	
0.3-1.34	614	1.63	*(100)	30
1.34-30	842/f	2.19/f	*(180/f\2\)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

f = frequency in MHz

* = Plane-wave equivalent power density

MPE Calculation

Predication of MPE limit at a given distance

$S = PG/4\pi R^2$

Where: S = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

 $R = \hat{d}$ istance to the center of radiation of the antenna (appropriate units, e.g., cm);

Frequency	Antenna Gain		Conducted Power		Evaluation	Power	MPE Limit
(MHz)	(dBi)	(numeric)	(dBm)	(mW)	Distance (cm)	Density (mW/cm ²)	(mW/cm ²)
1921.536	0	1	20.71	117.76	20	0.023	1.0

Result: The device meets MPE limit at 20 cm distance.

FCC§15.317&§15.203 - ANTENNA REQUIREMENT

Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

Antenna Connector Construction

This product has two integrated antennas, when EUT working normally, all the antennas work individually, and only one antenna work at a time, antenna 0 (Chain 0) or antenna 1 (Chain 1). Please refer to the internal photos. Their maximum gain is 0 dBi, fulfill the requirement of this section.

Test Result: Compliance

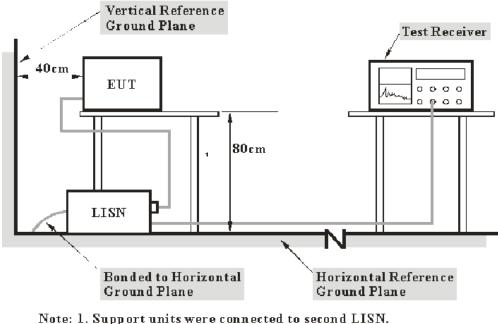
FCC§15.315 & §15.207 - CONDUCTED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on CISPR 16-4-4, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 2.4 dB (k=2, 95% level of confidence).

EUT Setup



2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC 15.315 and FCC 15.207 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	830245/006	2011-03-03	2012-03-02
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2011-03-09	2012-03-08

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15 .207, with the worst margin reading of:

8.42 dB at 0.470 MHz in the Neutral conducted mode.

Test Data

Environmental Conditions

Temperature:	20 °C	
Relative Humidity:	48 % 100.0 kPa	
ATM Pressure:		

The testing was performed by Felix Li on 2011-12-23

Test Mode: Transmitting

120 V, 60 Hz, Line:



Conducted Emissions				FCC Part 15.2	07
Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.470	44.56	10.10	56.86	12.30	QP
0.470	32.58	10.10	46.86	14.28	Ave.
2.480	41.07	10.10	56.00	14.93	QP
1.090	41.03	10.10	56.00	14.97	QP
0.340	38.75	10.10	60.57	21.82	QP
1.085	23.98	10.10	46.00	22.02	Ave.
2.480	23.38	10.10	46.00	22.62	Ave.
0.340	23.83	10.10	50.57	26.74	Ave.
15.680	32.47	10.10	60.00	27.53	QP
0.205	22.49	10.10	54.43	31.94	Ave.
0.205	32.41	10.10	64.43	32.02	QP
15.680	17.42	10.10	50.00	32.58	Ave.

120 V, 60 Hz, Neutral:



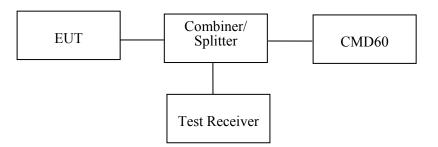
Conducted Emissions				FCC Part 15.2	07
Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.470	38.44	10.10	46.86	8.42	Ave.
0.470	48.06	10.10	56.86	8.80	QP
2.445	44.45	10.10	56.00	11.55	QP
1.365	40.72	10.10	56.00	15.28	QP
1.365	28.09	10.10	46.00	17.91	Ave.
2.425	27.50	10.10	46.00	18.50	Ave.
4.170	36.98	10.10	56.00	19.02	QP
0.345	40.92	10.10	60.43	19.51	QP
4.190	25.89	10.10	46.00	20.11	Ave.
0.345	28.19	10.10	50.43	22.24	Ave.
17.490	32.65	10.10	60.00	27.35	QP
17.630	17.28	10.10	50.00	32.72	Ave.

FCC§15.323 (a) - EMISSION BANDWIDTH

Applicable Standard

Operation shall be contained within the 1920–1930 MHz band. The emission bandwidth shall be less then 2.5 MHz and greater than 50 kHz.

The emission bandwidth is measured in accordance with ANSI C63.17 sub-clause 6.1.3 using the setup below:



The width, in Hz, of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that is 26 dB down relative to the maximum level of the modulated carrier. It is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1% of the emission band-width of the device under measurement. [Extraction from 47 VFR 15, subpart D, 15.303 (C)].

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-11	2012-11-10

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Data

Environmental Conditions

Temperature:	20 °C
Relative Humidity:	50 %
ATM Pressure:	100.0 kPa

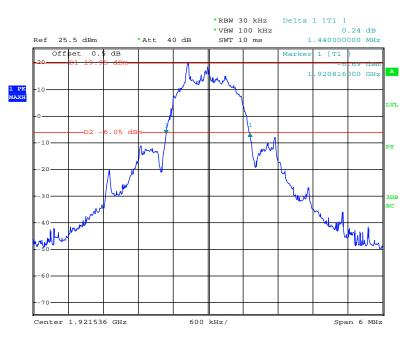
The testing was performed by Felix Li on 2011-12-21.

Test Mode: Transmitting

Channel	Center Frequency (MHz)	26 dB Bandwidth (MHz)	Limit
Low	1921.536	1.440	50kHz < OBW <2.5MHz
Middle	1924.992	1.440	50kHz < OBW <2.5MHz
High	1928.448	1.440	50kHz < OBW <2.5MHz

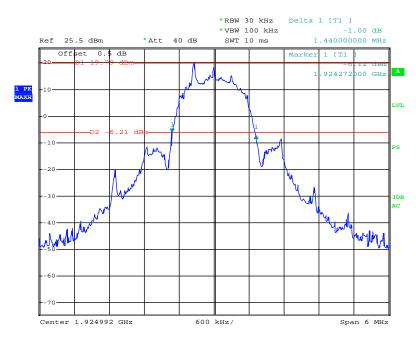
Test Result: Pass

Refer to the attached plots.



Low Channel

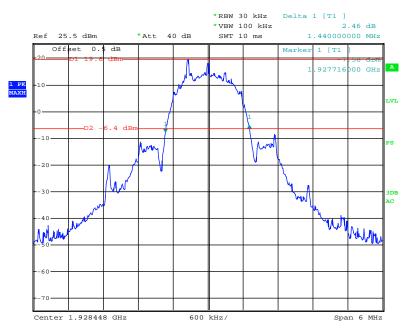
Date: 21.DEC.2011 08:52:49



Middle Channel

Date: 21.DEC.2011 09:03:19

High Channel



Date: 21.DEC.2011 09:06:08

FCC§15.319 (c) - PEAK TRANSMIT POWER

Applicable Standard

The peak transmit power is according to ANSI C63.17-2006 §6.1.2

Per FCC Part15.319 (a), Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in hertz.

Per FCC Part15.319 (e), The peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3 dBi.

Calculation of Peak Transmit Power Limit (P_{max}): $P_{max} = 100 \mu w x (EBW)^{1/2}$ EBW is the transmit emission bandwidth in Hz determined in the other test item:

Test Procedure

Using the manufacturer's information on occupied bandwidth set the spectrum analyzer as follows:

RBW	\geq Emission bandwidth
Video bandwidth	\geq RBW
Span	Zero
Center frequency	Nominal center frequency of channels
Amplitude scale	Log (linear may be used if analyzer has sufficient linear dynamic range and accuracy)
Detection	Peak detection
Trigger	Video
Sweep rate	Sufficiently rapid to permit the transmit pulse to be resolved accurately

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-11	2012-11-10

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Data

Environmental Conditions

Temperature:	20 °C
Relative Humidity:	50 %
ATM Pressure:	100.0 kPa

The testing was performed by Felix Li on 2011-12-20.

Test Result: Pass

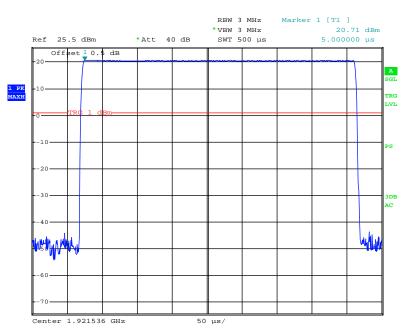
Refer to the attached plots.

Frequency (MHz)	Peak Transmit Power (dBm)	Limit (dBm)
1921.536	20.71	20.79
1924.992	20.66	20.79
1928.448	20.46	20.79

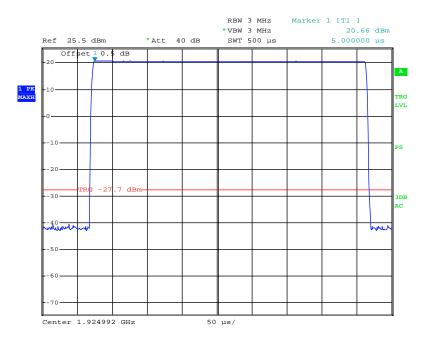
EBW = 1440000Hz

 $P_{max} = 100 \,\mu W \,x \,(1440000)^{1/2} = 20.79 \,dBm$

Low Channel



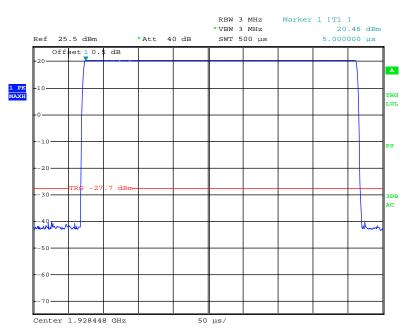
Date: 20.DEC.2011 14:54:59



Middle Channel

Date: 20.DEC.2011 14:58:15

High Channel



Date: 20.DEC.2011 14:57:25

FCC§15.319 (d) - POWER SPECTRAL DENSITY

Applicable Standard

The power spectral density is according to ANSI C63.17-2006 §6.1.5

The average pulse energy in a 3 kHz bandwidth is divided by the pulse duration.

The power spectral density shall not exceed 3mW in any 3 kHz bandwidth as measured with a spectrum analyzer having a resolution bandwidth of 3 kHz.

Test Procedure

Using the manufacturer's information on occupied bandwidth set the spectrum analyzer as follows:

RBW	3 kHz
Video bandwidth	\geq 3 × RBW
Span	Zero span at frequency with the maximum level (frequency determined in 6.1.3 if the same type of signal (continuous versus burst) was used in 6.1.3)
Center frequency	Spectral peak as determined in 6.1.3
Sweep time For burst signals, sufficient to include essentially all of the maxim length burst at the output of a 3 kHz filter (e.g., maximum input b duration plus 600 µs). For continuous signals, 20 ms.	
Amplitude scale	Log power
Detection	Sample detection and averaged for a minimum of 100 sweeps
Trigger	External or internal

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-11	2012-11-10

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Data

Environmental Conditions

Temperature:	20 °C
Relative Humidity:	50 %
ATM Pressure:	100.0 kPa

The testing was performed by Felix Li on 2011-12-21.

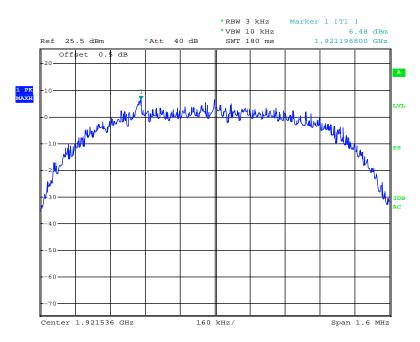
Test Mode: Transmitting

Test Result: Compliance.

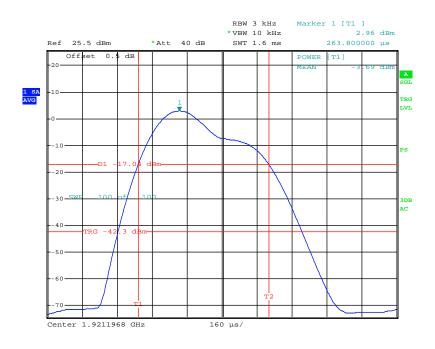
Please refer to following tables and plots

Frequency	Power Spec	tral Density	Limit Result	
(MHz)	(dBm/3 kHz)	(mW/3 kHz)	(mW/3 kHz)	
1921.536	-3.69	0.43	3	Pass
1924.992	-3.13	0.49	3	Pass
1928.448	-2.45	0.57	3	Pass

Low Channel

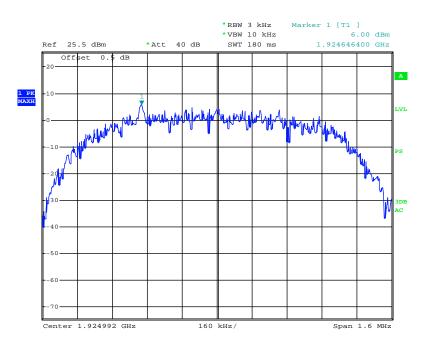


Date: 21.DEC.2011 09:11:46

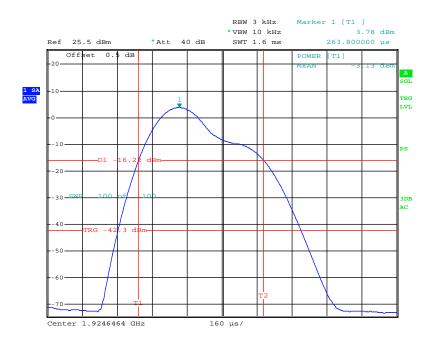


Date: 21.DEC.2011 09:15:51

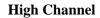


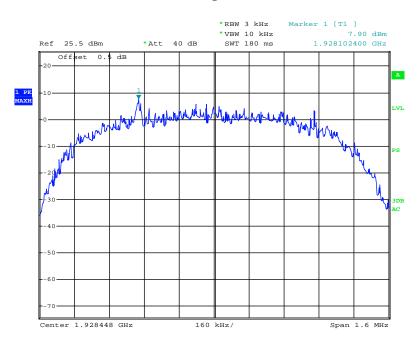


Date: 21.DEC.2011 09:17:57

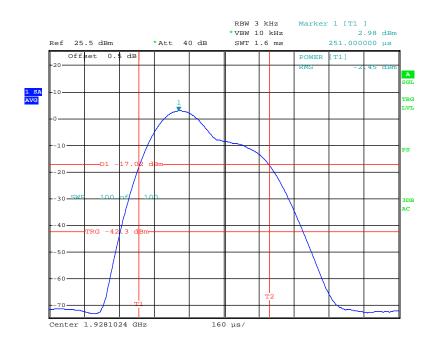


Date: 21.DEC.2011 09:20:52





Date: 21.DEC.2011 09:57:24



Date: 21.DEC.2011 09:59:17

FCC§15.323 (d) - EMISSION INSIDE AND OUTSIDE THE SUB-BAND

Applicable Standard

Emissions inside the sub-band must comply with the following emission mask:

- 1. In the bands between 1B and 2B measured from the center of the emission bandwidth the total power emitted by the device shall be at least 30 dB below the transmit power permitted for that device;
- 2. in the bands between 2B and 3B measured from the center of the emission bandwidth the total power emitted by an intentional radiator shall be at least 50 dB below the transmit power permitted for that radiator;
- 3. in the bands between 3B and the sub-band edge the total power emitted by an intentional radiator in the measurement bandwidth shall be at least 60 dB below the transmit power permitted for that radiator.

Where B = emission bandwidth

Emission Outside the sub-band shall be attenuated below a reference power of 112 mW (20.5 dBm) as follows:

- 1. 30 dB between the sub-band and 1.25 MHz above or below the sub-band;
- 2. 50 dB between 1.25 and 2.5 MHz above or below the sub-band;
- 3. 60 dB at 2.5 MHz or greater above or below the sub-band.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-11	2012-11-10
Rohde & Schwarz	Signal Analyzer	FSIQ 26	609358	2011-07-08	2012-07-07

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Data

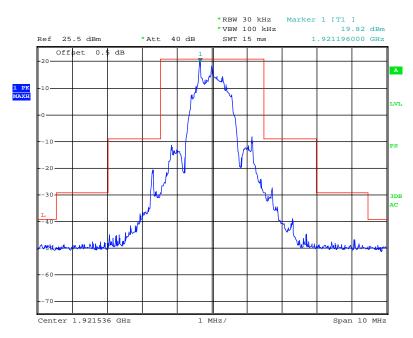
Environmental Conditions

Temperature:	20 °C	
Relative Humidity:	50 %	
ATM Pressure:	100.0 kPa	

The testing was performed by Felix Li on 2011-12-21 and 2011-12-23.

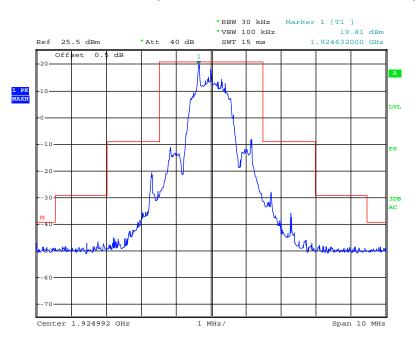
Test Mode: Transmitting

Test Result: Compliant, Please refer to following plots



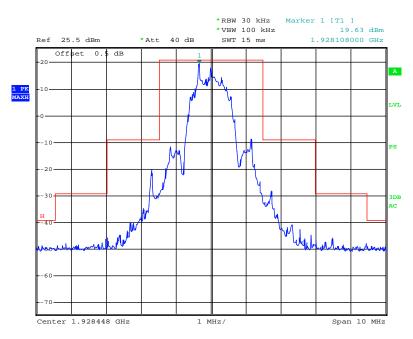
Low Channel (Unwanted Emission inside the Sub-band)

Date: 21.DEC.2011 09:47:26



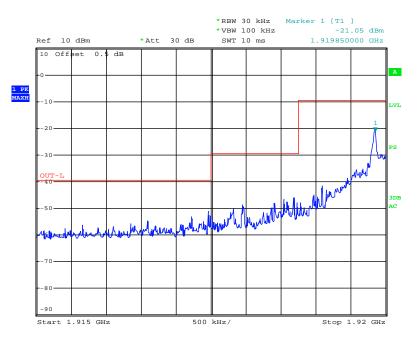
Middle Channel (Unwanted Emission inside the Sub-band)

Date: 21.DEC.2011 09:48:54



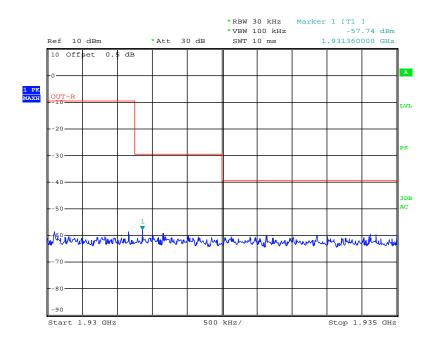
High Channel (Unwanted Emission inside the Sub-band)

Date: 21.DEC.2011 09:50:18

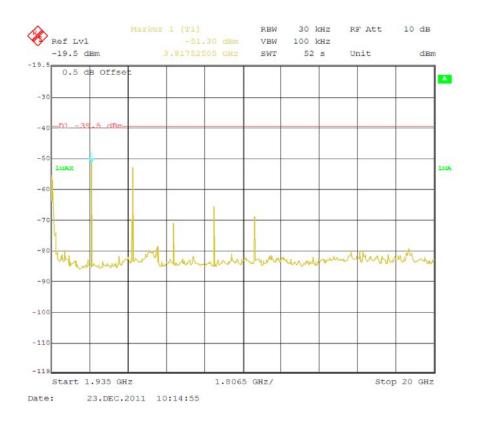


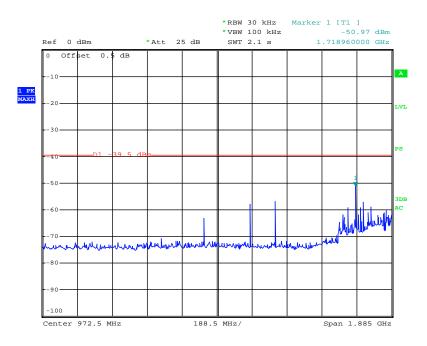
Low Channels (Unwanted Emission outside the Sub-band)

Date: 21.DEC.2011 09:40:23



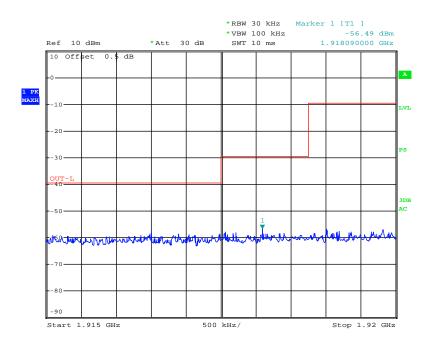
Date: 21.DEC.2011 09:45:01



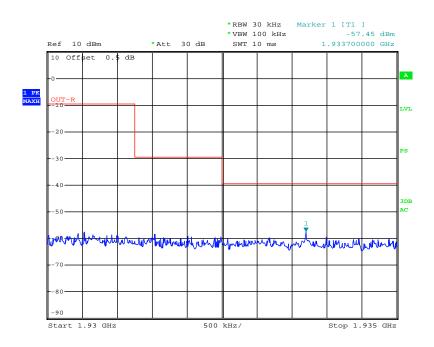


Middle Channels (Unwanted Emission outside the Sub-band)

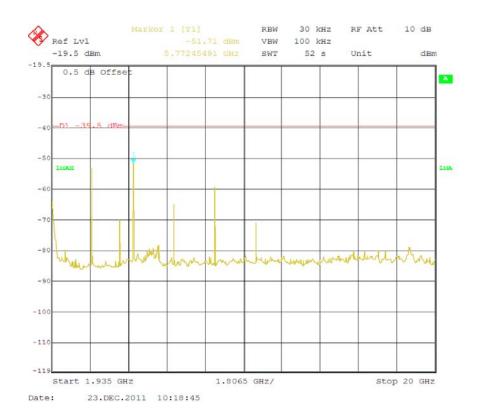
Date: 21.DEC.2011 09:36:37

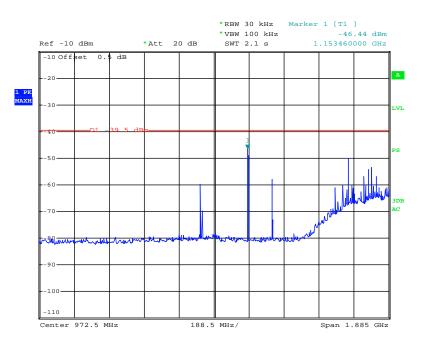


Date: 21.DEC.2011 09:41:28



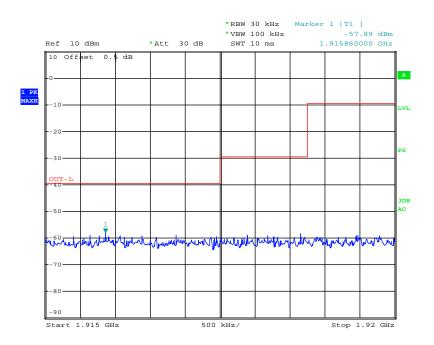
Date: 21.DEC.2011 09:44:09



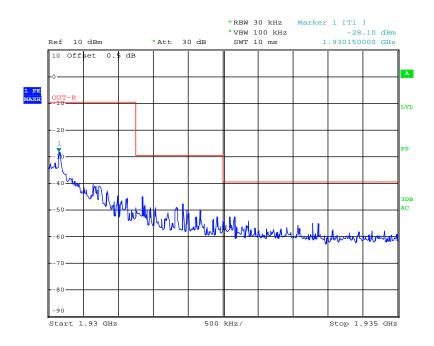


High Channels (Unwanted Emission outside the Sub-band)

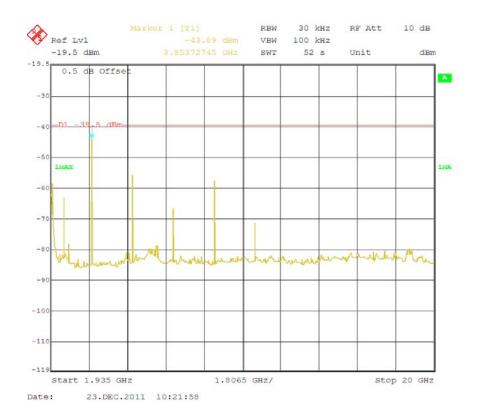
Date: 21.DEC.2011 09:34:00



Date: 21.DEC.2011 09:42:19



Date: 21.DEC.2011 09:43:27



FCC§15.319 (g) - RADIATED SPUIOUS EMISSIONS

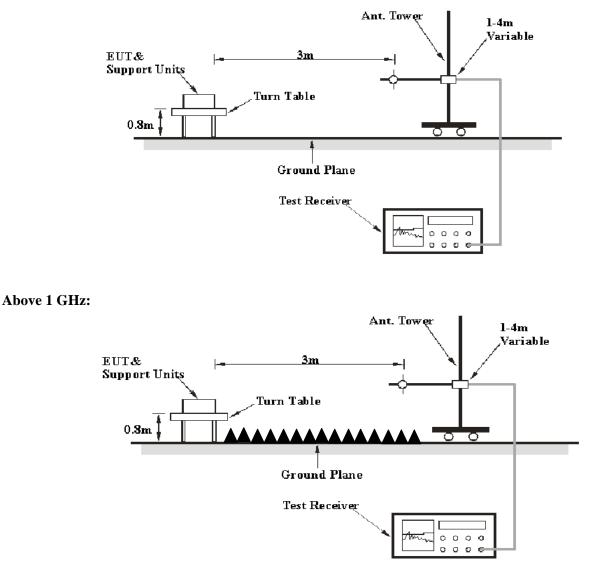
Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-4, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 4.0 dB (k=2, 95% level of confidence).

EUT Setup

Below 1 GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.17 - 2006. The specification used was the FCC 15§ 15.319(g).

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 20 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	
30 MHz – 1000 MHz	100 kHz	300 kHz	
Above 1 GHz	1 MHz	3 MHz	

Test Procedure

For the radiated emissions test, the adapter was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz and peak and Average detection modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss- Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Limit - Corrected Amplitude

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	HP8447D	2944A09795	2011-08-02	2012-08-02
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-11	2012-11-10
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-03-11	2012-03-10
Mini-circuits	Pre-amplifier	ZVA-231+	N/A	2011-09-12	2012-09-11
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-05-05	2012-05-04
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2011-07-08	2012-07-07
Agilent	Spectrum Analyzer	8564E	3943A01781	2011-04-12	2012-04-11
the electro- Mechanics Co.	Horn Antenna	3116	9510-2270	2011-05-05	2012-05-04

Test Equipment List and Details

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.319 (g), with the worst margin reading of:

15.24 dB at 99.60 MHz in the Vertical polarization

Test Data

Environmental Conditions

Temperature:	20 °C
Relative Humidity:	50 %
ATM Pressure:	100.0 kPa

The testing was performed by Felix Li on 2011-12-20.

Test Mode: Transmitting

Test Mode: Transmitting

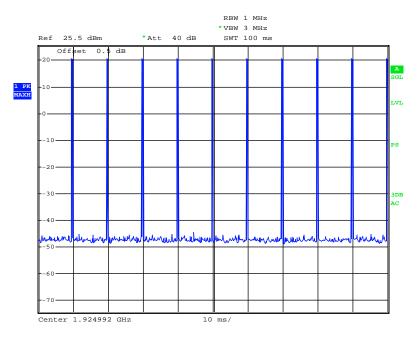
30MHz – 20 GHz

E	Meter	vieler		Pre-	Corrected	FCC Par	rt 15.31	9/205/209				
Freq. (MHz)	Reading (dBµV)	Detector PK/QP/Ave	Direction Degree	Height (m)	Polar (H/V)		Loss (dB)	Amp. Gain (dB)	Amplitude (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remarks
				Low	Chan	nel (1921	l.536M	Hz)				
1921.536	107.90	РК	0	1.2	Н	26.2	2.52	26.5	110.12	/	/	Fund.
1921.536	105.99	РК	125	1.1	V	26.2	2.52	26.5	108.21	/	/	Fund.
138.80	38.20	QP	130	1.3	Н	11.4	0.60	25.30	24.90	43.5	18.60	Spurious
99.60	41.33	QP	125	1.2	V	8.4	0.50	25.73	24.50	40	15.50	Spurious
3843.072	44.25	РК	205	1.1	V	33.0	3.73	26.87	54.11	74	19.89	Harmonic
5764.608	32.55	РК	325	1.2	V	36.2	4.57	26.68	46.64	74	27.36	Harmonic
5764.608	31.49	РК	156	1.1	Н	37.4	4.57	26.68	46.78	74	27.22	Harmonic
3843.072	42.09	РК	159	1.2	Н	33.9	3.73	26.87	52.85	74	21.15	Harmonic
	Middle Channel (1924.992MHz)											
1924.992	107.42	РК	320	1.2	Н	26.2	2.52	26.5	109.64	/	/	Fund.
1924.992	105.53	РК	154	1.2	V	26.2	2.52	26.5	107.75	/	/	Fund.
138.80	37.72	QP	24	1.3	Н	11.4	0.60	25.30	24.42	43.5	19.08	Spurious
99.60	41.59	QP	163	1.2	V	8.4	0.50	25.73	24.76	40	15.24	Spurious
3849.984	43.25	РК	153	1.0	V	33.0	3.73	26.87	53.11	74	20.89	Harmonic
3849.984	41.12	РК	167	1.3	Н	33.9	3.73	26.87	51.88	74	22.12	Harmonic
5774.976	34.01	РК	125	1.5	V	36.2	4.57	26.68	48.10	74	25.90	Harmonic
5774.976	30.89	PK	163	1.2	Н	37.4	4.57	26.68	46.18	74	27.82	Harmonic
				High	Chan	nel (1928	8.448M	Hz)				
1928.448	108.80	РК	0	1.1	Н	26.2	2.52	26.5	111.02	/	/	Fund.
1928.448	106.90	PK	0	1.2	V	26.2	2.52	26.5	109.12	/	/	Fund.
138.80	38.42	QP	125	1.3	Н	11.4	0.60	25.30	25.12	43.5	18.38	Spurious
99.60	41.20	QP	136	1.2	V	8.4	0.50	25.73	24.37	40	15.63	Spurious
3856.896	43.51	РК	156	1.1	V	33.0	3.73	26.87	53.37	74	20.63	Harmonic
3856.896	39.92	РК	346	1.0	Н	33.9	3.73	26.87	50.68	74	23.32	Harmonic
5785.344	32.69	РК	54	1.2	V	36.2	4.57	26.68	46.78	74	27.22	Harmonic
5785.344	31.48	РК	126	1.2	Н	37.4	4.57	26.68	46.77	74	27.23	Harmonic

	Field Strength of Radiated Emission Average							
Freq.	Peak Corrected Amplitude.	Polar	Duty Cycle Factor	Corrected Amplitude.	FCC Part 15.319/205/209		Comment	
(MHz)	@3m (dBµV/m)	H/V (dR) (dR)		Limit (dBµV/m)	Margin (dB)			
			Low Chan	nel				
1921.536	110.12	Н	-27.89	82.23	/	/	Fund.	
1921.536	108.21	V	-27.89	80.32	/	/	Fund.	
3843.072	54.11	V	-27.89	26.22	54	27.78	Harmonic	
3843.072	52.85	Н	-27.89	24.96	54	29.04	Harmonic	
5764.608	46.78	Н	-27.89	18.89	54	35.11	Harmonic	
5764.608	46.64	V	-27.89	18.75	54	35.25	Harmonic	
	Middle Channel							
1924.992	109.64	Н	-27.89	81.75	/	/	Fund.	
1924.992	107.75	V	-27.89	79.86	/	/	Fund.	
3849.984	53.11	V	-27.89	25.22	54	28.78	Harmonic	
3849.984	51.88	Н	-27.89	23.99	54	30.01	Harmonic	
5774.976	48.10	V	-27.89	20.21	54	33.79	Harmonic	
5774.976	46.18	Н	-27.89	18.29	54	35.71	Harmonic	
	High Channel							
1928.448	111.02	Н	-27.89	83.13	/	/	Fund.	
1928.448	109.12	V	-27.89	81.23	/	/	Fund.	
3856.896	53.37	V	-27.89	25.48	54	28.52	Harmonic	
3856.896	50.68	Н	-27.89	22.79	54	31.21	Harmonic	
5785.344	46.78	V	-27.89	18.89	54	35.11	Harmonic	
5785.344	46.77	Н	-27.89	18.88	54	35.12	Harmonic	

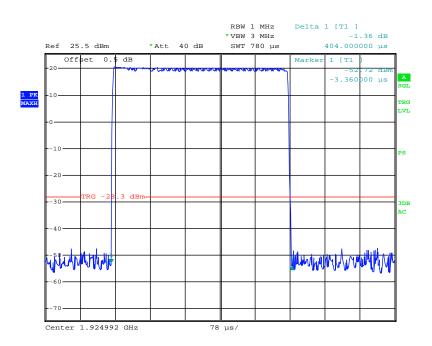
Note: Duty Cycle=Ton/Tp*100% Ton=404 μ s =0.404ms Tp=10.02ms Duty Cycle=4.03% Duty cycle factor = 20lg (Duty Cycle)=-27.89 AV=PK+20* lg(Duty Cycle)

Sweep time at 100ms:



Date: 20.DEC.2011 15:05:15

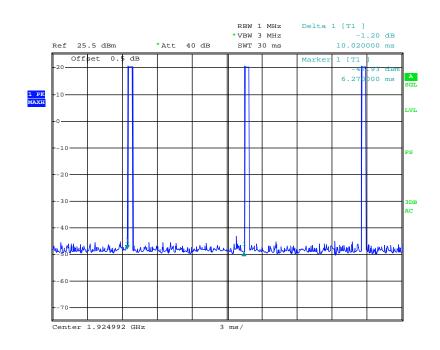
T_{on}:



Date: 20.DEC.2011 15:04:05

Bay Area Compliance Laboratories Corp. (Shenzhen)

T_p:



Date: 20.DEC.2011 15:04:48

FCC§15.323 (f) - FREQUENCY STABILITY

Applicable Standard

Per §15.323(f), the frequency stability of the carrier frequency of the intentional radiator shall be maintained within ± 10 ppm over 1 hour or the interval between channel access monitoring, whichever is shorter. The frequency stability shall be maintained over a temperature variation of -20° to $+50^{\circ}$ C at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of 20 °C. For equipment that is capable only of operating from a battery, the frequency stability tests shall be performed using a new battery without any further requirement to vary supply voltage.

Test Procedure

Temperature	Supply Voltage
20° C	85-115% of declared nominal voltage
-20° C	Normal
+50° C	Normal

This procedure should be carried out for each of the following test cases:

^a Use the lowest temperature at which the EUT is specified to operate if it is above -20 $^{\circ}$ C.

Using the mean carrier frequency at 20° C and at nominal supply voltage as the reference, the mean carrier frequency shall be maintained within ± 10 ppm at the two extreme temperatures (or as declared by the manufacturer) and at normal temperature (typically 20° C) at the two extreme supply voltages.

Test Equipment List and Details

Manufacturer			Serial Number	Calibration Date	Calibration Due Date
WUHUAN	Temperature & Humidity Chamber	HTP205	20021115	2011-06-04	2012-06-03
R & S	Digital Radio-Communication Tester	CMD60	829902/026	2011-10-21	2012-10-20

Test Data

Environmental Conditions

Temperature:	20 °C	
Relative Humidity:	50 %	
ATM Pressure:	100.0 kPa	

The testing was performed by Felix Li on 2011-12-21.

Test Result: Compliance.

Temperature (°C)	Voltage (V _{AC})	Channel Frequency (MHz)	Measured Frequency Offset (kHz)	Measured Frequency Offset (ppm)	Limit (ppm)
	102	1924.992	-6	-3.1	±10
20	120	1924.992	-11	-5.7	±10
	138	1924.992	-9	-4.7	±10
-20	120	1924.992	-10	-5.2	±10
50	120	1924.992	-13	-6.8	±10

Test Mode: Transmitting

FCC§15.323 (c) (e) & §15.319(f) – SPECIFIC REQUIREMENTS FOR UPCS DEVICE

Automatic Discontinuation of Transmission, FCC Part 15.319(f)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. The provisions in this section are not intended to preclude transmission of control and signaling information or use of repetitive codes used by certain digital technologies to complete frame or burst intervals.

Test Procedure:

Please according to the declaration provided by manufacturer.

Test result:

Meet the requirement

Monitoring Time FCC 15.323 (c) (1)

Immediately prior to initiating transmission, devices must monitor the combined time and spectrum window in which they intend to transmit. For a period of at least 10 milliseconds for systems designed to use a 10 milliseconds or shorter frame period or at least 20 milliseconds for systems designed to use a 20 milliseconds frame period

Test procedure:

Measurement method according to ANSI C63.17 2006 clause 7.3.4

Test result:

EUT monitors the combined time and spectrum window prior to initiation of transmission. Test result please according to FCC15.323(c) (4).

Lower Monitoring Threshold Part15.323 (c)(2)

The monitoring threshold must not be more than 30 dB above the thermal noise power for a bandwidth equivalent to the emission bandwidth used by the device.

Test procedure: Measurement method according to ANSI C63.17 2006 clause 7.3.1 **Test result:** Not Apply

Maximum Transmit Period FCC Part15.323 (c)(3)

If no signal above the threshold level is detected, transmission may commence and continue with the same emission bandwidth in the monitored time and spectrum windows without further monitoring. However,

occupation of the same combined time and spectrum windows by a device or group of cooperating devices continuously over a period of time longer than 8 hours is not permitted without repeating the access criteria

Test procedure:

Measurement method according to ANSI C63.17 2006 clause 8.2.2

Test result:

Repetition of Access Criteria	Measured Maximum Transmission Time (Second)	Limit (Second)	Results	
First	22320	28,800	Pass	
Second	19800	28,800	Pass	

System Acknowledgement, FCC Part15.323 (c) (4)

Once access to specific combined time and spectrum windows is obtained an acknowledgment from a system participant must be received by the initiating transmitter within one second or transmission must cease. Periodic acknowledgments must be received at least every 30 seconds or transmission must cease. Channels used exclusively for control and signaling information may transmit continuously for 30 seconds without receiving an acknowledgment, at which time the access criteria must be repeated.

Test procedure:

Measurement method according to ANSI C63.17 2006 clause 8.1.1, 8.2.1

Test result:

Test	Time taken(second)	Limit (second)	Result
Connection acknowledgement	0.1	1	Pass
Change of access criteria for control information	23.4	30	Pass
Transmission cease time	1.1	30	Pass
Pulse length	0.000404	0.01	Pass

Least Interfered Channel (LIC) Selection, FCC Part15.323 (c) (5)

If access to spectrum is not available as determined by the above, and a minimum of 40 duplex system access channels are defined for the system, the time and spectrum windows with the lowest power level below a monitoring threshold of 50 dB above the thermal noise power determined for the emission bandwidth may be accessed.

Calculation of monitoring threshold limits for isochroous devices:

Lower threshold: $T_L = -174+10Log_{10}B + M_u + P_{MAX}-P_{EUT}$ (dBm) Upper threshold: $T_U = -174+10Log_{10}B + M_u + P_{MAX}-P_{EUT}$ (dBm) Where: B=Emission bandwidth (Hz) $M_u = dB$ the threshold may exceed thermal noise (30 for T_L & 50 for T_U) $P_{MAX} = 5Log_{10}B-10$ (dBm) $P_{EUT} = Transmitted power (dBm)$

Limit:

Monitor Threshold	B(MHz)	$M_U(dB)$	P _{MAX} (dBm)	P _{EUT} (dBm)	Threshold (dBm)
T_L	1.440	30	20.79	20.71	-82.34
T _U	1.440	50	20.79	20.71	-62.34

The EUT must not transmit until the interference level is less than or equal to: Measured Threshold Level $\leq T_U$ Where: T_U =Upper threshold level

Test procedure:

Measurement method according to ANSI C63.17 clause 7.3.2, 7.3.3, 7.3.4

Test result:

Monitor threshold	Measured Threshold Level	Limit (dBm)
Lower Threshold(dBm)	N/A	-82.34
Upper Threshold(dBm)	N/A	-62.34

Note: The upper threshold is applicable as the EUT utilizes more than 40 duplex system channels

Random waiting FCC 15.323(c)(6)

If the selected combined time and spectrum windows are unavailable, the device may either monitor and select different windows or seek to use the same window after waiting an amount of time, randomly chosen from a uniform random distribution between 10 and 150 milliseconds, commencing when the channel becomes available.

Test procedure:

Measurement method according to ANSI C63.17 2006 clause 8.1.3

Test result:

The manufacturer declares that this provision is not utilized by the EUT.

Monitoring Bandwidth, FCC Part 15.323 (c) (7)

The monitoring system bandwidth must be equal to or greater than the emission bandwidth of the intended transmission and have a maximum reaction time less than 50xSQRT (1.25/emission bandwidth in MHz) microseconds for signals at the applicable threshold level but shall not be required to be less than 50 microseconds

Test procedure:

Measurement method according to ANSI C63.17 2006 clause 7.5

Test result:

Test Equation (µs)	B(bandwidth)(MHz)	Pulse width(µs)	Limit(µs)	Result
$50 (1.25/B)^{1/2}$	1.440	46.58	50	Pass
35 (1.25/B) ^{1/2}	1.440	32.61	35	Pass

Monitoring Antenna, FCC Part15.323 (c) (8)

The monitoring system shall use the same antenna used for transmission, or an antenna that yields equivalent reception at that location.

Test procedure:

Measurement method according to ANSI C63.17 2006 paragraph 4

Test result:

The antenna of the EUT used for transmission is the same interior antenna that used for monitoring.

Monitoring threshold relation FCC 15.323(c)(9)

Devices that have a power output lower than the maximum permitted under the rules can increase their monitoring detection threshold by one decibel for each one decibel that the transmitter power is below the maximum permitted.

Test procedure:

Measurement method according to ANSI C63.17 2006 paragraph 4

Test result:

Not apply based on 15.323 (c) (5)

Duplex Connections, FCC Part15.323 (c) (10)

An initiating device may attempt to establish a duplex connection by monitors both its intended transmit and receive time and spectrum windows. If both the intended transmit and receive time and spectrum windows meet the access criteria, then the initiating device can initiate a transmission in the intended transmit time and spectrum window. If the power detected by the responding device can be decoded as a duplex connection signal from the initiating device, then the responding device may immediately begin transmitting on the receive time and spectrum window monitored by the initiating device.

Test procedure:

Measurement method according to ANSI C63.17 clause 8.3

Test result:

The manufacturer declares that this provision is not utilized by the EUT.

Alternative monitoring interval for co-located devices, FCC Part 15.323 (c) (11)

An initiating device that is prevented from monitoring during its intended transmit window due to monitoring system blocking from the transmissions of a co-located (within one meter) transmitter of the same system, may monitor the portions of the time and spectrum windows in which they intend to receive over a period of at least 10 milliseconds. The monitored time and spectrum window must total at least 50 percent of the 10 millisecond frame interval and the monitored spectrum must be within 1.25 MHz of the center frequency of channel(s) already occupied by that device or co-located co-operating devices. If the access criteria is met for the intended receive time and spectrum window under the above conditions, then transmission in the intended transmit window by the initiating device may commence.

Test procedure:

Measurement method according to ANSI C63.17 2006 clause 8.4

Test result:

The manufacturer declares that this provision is not utilized by the EUT.

Fair Access, FCC Part 15.323 (c)(12)

The provisions of FCC Part15.323(c)(10) or (c)(11) shall not be used to extend the range of spectrum occupied over space or time for the purpose of denying fair access to spectrum to other devices.

Test result:

The manufacturer declares that this device does not use any mechanisms as provided by Part15.323 (c) (10) or (c) (11) to extend the range of spectrum occupied over space or time for the purpose of denying fail access to spectrum to other device.

Frame Repetition Stability, Part15 .323 (e)

The frame period (a set of consecutive time slots in which the position of each time slot can be identified by reference to a synchronizing source) of an intentional radiator operating in these sub-bands shall be 20 milliseconds or 10 milliseconds/X where X is a positive whole number.

Test procedure:

Measurement method according to ANSI C63.17 2006 clause 6.2.2, 6.2.3

Test result:

Frame Repetition Stability:

Frame Repetition Stability (ppm)	Limit (ppm)	Result (Pass/Fail)
3.06	10	Pass

Frame Period and Jitter:

Max.pos.Jitter	Max.neg.Jitter (us)	Frame period (ms)	Limit	
(us)			Frame Period (ms)	Jitter (µs)
0.01	-0.03	10.00000	20 or10/X	25us

Note: X is a positive whole number.

DECALARATION LETTER

XINGTEL XIAMEN GROUP CO., LTD. Xingtel Building, Chuangxin Road,Torch Hi-Tech Industrial District, Xiamen 361006, P R China E-mail:info@xingtel.com Website://www.xingtel.com

Tel: +86-592-562-5929 +86-592-603-6442(6 lines) Fax: +86-592-603-7860

To: Bay Area Compliance Laboratories Corp Declaration of Similarity

To whom it may concern,

We, Xingtel Xiamen Group Co., Ltd., hereby declare that our **iPhone Complimate**, Trade Name: **iCreation**, model number: **i-700 Twin** was tested by BACL ,and for our marketing purpose we would like to list a series of models on reports and certifications ,All these models are named differently due to different combination only, for details as below:

Model number	Combination		
i-700	1base+1handset		
i-700 Twin	1base+2handsets+1charger		
i-700 HS	1handset+1charger		
i-650	1base+1handset		
i-650 Twin	1base+2handsets+1charger		
i-650 Bundle	1base+2handsets+1charger		
i-650 HS	1handset+1charger		

If you have any other questions, please contact me as soon as possible.

Simon Liu Director February 28, 2012

***** END OF REPORT *****