

Global United Technology Services Co., Ltd.

Report No: GTSE11110089401

FCC REPORT

Applicant: Shenzhen Chuan Qisheng Science and technology Co., ltd

Address of Applicant: Block C, Huawan industrial park, Gushu Section,

Baoan Rd., Baoan district, Shen Zhen City

Equipment Under Test (EUT)

Product Name: Remote control

Model No.: TS-Y150

FCC ID: Z9LTS-Y150T

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249: 2010

Date of sample receipt: Nov.07, 2011

Date of Test: Nov. 07-22, 2011

Date of report issued: Nov. 23, 2011

Test Result: PASS *

In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Stephen Guo Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of GTS International Electrical Approvals or testing done by GTS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by GTS International Electrical Approvals in writing.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



2 Version

Version No.	Date	Description
00	Nov. 23, 2011	Original

Prepared By:	collar. He	Date:	Nov. 23, 2011	
	Project Engineer			
Check By:	Homs. Hu	Date:	Nov. 23, 2011	
	Reviewer	<u> </u>		



3 Contents

			Page
1	COV	VER PAGE	1
2	VER	RSION	2
3	CON	NTENTS	্ব
4		ST SUMMARY	
5		NERAL INFORMATION	
	5.1	CLIENT INFORMATION	5
	5.2	GENERAL DESCRIPTION OF E.U.T.	5
	5.3 5.4	TEST MODE	
	5.4 5.5	TEST FACILITY TEST LOCATION	
	5.6	OTHER INFORMATION REQUESTED BY THE CUSTOMER	
	5.7	TEST INSTRUMENTS LIST	
6	TES	ST RESULTS AND MEASUREMENT DATA	
	6.1	ANTENNA REQUIREMENT:	5
	6.2	RADIATED EMISSION	
	6.2.1	1 Field Strength Of The Fundamental Signal	11
	6.2.2	· ·	
	<i>6.2.</i> 3	3 Band edge (Radiated Emission)	13
7	TES	ST SETUP PHOTO	18
8	EUT	CONSTRUCTIONAL DETAILS	10



4 Test Summary

Test Item	Section in CFR 47	Result	
Antenna requirement	15.203	Pass	
AC Power Line Conducted Emission	15.207	N/A	
Field strength of the fundamental signal	15.249 (a)	Pass	
Spurious emissions	15.249 (a) (d)/15.209	Pass	
Band edge	15.249 (d)/15.205	Pass	
20dB Occupied Bandwidth	15.215 (c)	Pass	

N/A: Not appliance for equipment powerd by battery.

Pass: The EUT comply with the essential requirements in the standard.

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960

Project No.: GTSE111100894RF

Page 4 of 21



Project No.: GTSE111100894RF

5 General Information

5.1 Client Information

Applicant:	Shenzhen Chuan Qisheng Science and technology Co.,ltd
Address of Applicant:	Block C,Huawan industrial park,Gushu Section,
	Baoan Rd.,Baoan district,ShenZhen City
Manufacturer/ Factory:	Shenzhen Chuan Qisheng Science and technology Co.,ltd
Address of Manufacturer/	Block C,Huawan industrial park,Gushu Section,
Factory:	Baoan Rd.,Baoan district,ShenZhen City

5.2 General Description of E.U.T.

Product Name:	Remote control
Model No.:	TS-Y150
Operation Frequency:	2404MHz to 2479MHz
Channel numbers:	32
Modulation type:	GFSK
Antenna Type:	PCB antenna
Antenna gain:	0dBi
Power supply:	DC 4.5V (3 x 1.5V "AAA" Size Batteries)

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2404MHz
The middle channel	2440MHz
The Highest channel	2479MHz

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960 Page 5 of 21



5.3 Test mode

Operation mode: Keep the remote control unit in continuous transmitting mode.							
Pre-Test Mode: (lowest channel=2404MHz)							
GTS has verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:							
Axis X Y Z							
Field Strength(dBuV/m) 85.04 87.13 83.25							

Final Test Mode:

According to ANSI C63.4 standards, the test results are both the "worst case" and "worst setup": Y axis (see the test setup photo)

5.4 Description of Support Units

N/A

5.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC —Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, July 20, 2010.

Industry Canada (IC)

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-1.

5.6 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen,

China

Tel: 0755-27798480 Fax:

0755-27798960

5.7 Other Information Requested by the Customer

None.

Global United Technology Services Co., Ltd. 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China 518102

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960 Page 6 of 21



5.8 Test Instruments list

Radi	Radiated Emission:									
Item	Test Equipment Manufacturer Model No.		Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)				
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 30 2011	Mar. 29 2012				
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A				
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 04 2011	Jul. 03 2012				
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 26 2011	Feb. 25 2012				
5	Double -ridged waveguide SCHWARZBECK horn MESS-ELEKTRONIK		9120D-829	GTS208	June 30 2011	June 29 2012				
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 30 2011	Mar. 29 2012				
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A				
8	Coaxial Cable	GTS	N/A	GTS213	Apr. 01 2011	Mar. 31 2012				
9	Coaxial Cable	GTS	N/A	GTS211	Apr. 01 2011	Mar. 31 2012				
9	Coaxial cable	GTS	N/A	GTS210	Apr. 01 2011	Mar. 31 2012				
11	Coaxial Cable	GTS	N/A	GTS212	Apr. 01 2011	Mar. 31 2012				
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 04 2011	Jul. 03 2012				
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 04 2011	Jul. 03 2012				
14	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 30 2011	June 29 2012				
15	Band filter	Amindeon	82346	GTS219	June 30 2011	June 29 2012				

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



6 Test results and Measurement Data

6.1 Antenna requirement:

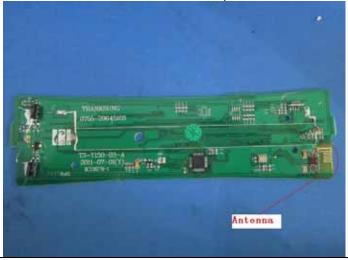
Standard requirement: FCC Part15 C Section 15.203

15.203 requirement:

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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

E.U.T Antenna:

The antenna is no consideration of replacement. The best case gain of the antenna is 0dBi.



Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960 Page 8 of 21



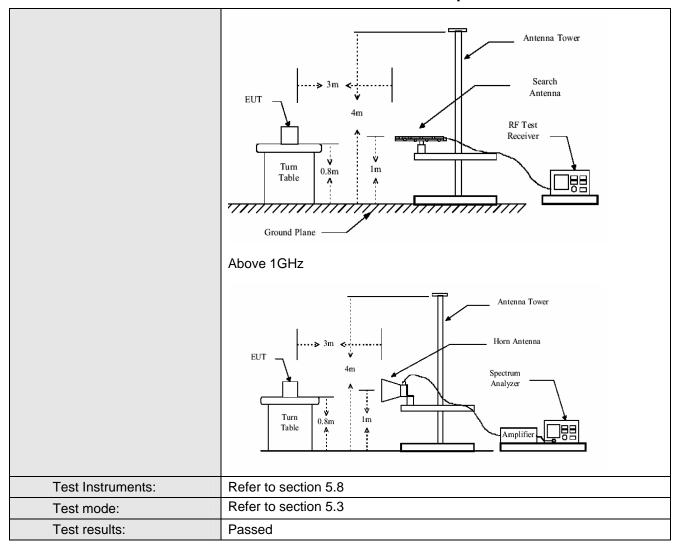
6.2 Radiated Emission

Test Method: Test Frequency Range: Measurement Distance: 3m Receiver setup: Frequency Detector RBW VBW Remark 30MHz-1GHz Quasi-peak 100KHz 300KHz Quasi-peak Value Above 1GHz Peak 1MHz 10Hz Average Value Above 1GHz Peak 1MHz 10Hz Average Value Limit: (Field strength of the fundamental signal) Limit: (Spurious Emissions) Frequency Limit (dBuV/m @3m) Remark 2400MHz-2483.5MHz 114.00 Peak Value Frequency Limit (dBuV/m @3m) Remark 2400MHz-2483.5MHz 114.00 Peak Value B8MHz-216MHz 40.00 Quasi-peak Value B8MHz-216MHz 43.50 Quasi-peak Value 88MHz-216MHz 43.50 Quasi-peak Value 88MHz-216MHz 45.00 Quasi-peak Value 88MHz-216MHz 54.00 Quasi-peak Value Above 1GHz 54.00 Quasi-peak Value Above 1GHz F4.00 Peak Value Limit: (band edge) Limit (band edge) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB betow the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the flield strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be	Test Requirement:	FCC Part15 C Section 15.249 and 15.209						
Test site: Measurement Distance: 3m Receiver setup: Frequency Detector RBW VBW Remark 30MHz-1GHz Quasi-peak 100KHz 300KHz Quasi-peak Value Above 1GHz Peak 1MHz 3MHz Peak Value Peak 1MHz 3MHz Peak Value Above 1GHz Peak 1MHz 10Hz Average Value Peak Value 2400MHz-2483.5MHz 114.00 Peak Value 114.00 Peak Value 2400MHz-2483.5MHz 114.00 Peak Value 2400MHz-2483.5MHz 114.00 Peak Value Peak Value 216MHz-26MHz 43.50 Quasi-peak Value 216MHz-26MHz 43.50 Quasi-peak Value 960MHz-1GHz 54.00 Quasi-peak Value Peak Value 146.00 Quasi-peak Value Peak Value Above 1GHz 54.00 Average Value Above 1GHz 54.00 Average Value Peak Value Semmark Value Above 1GHz 74.00 Peak Value Peak Value Above 1GHz 74.00 Peak Value Overage Value Peak Value Above 1GHz 74.00 Peak Value Overage Value Over	Test Method:	ANSI C63.4:200)9					
Receiver setup: Frequency Detector RBW VBW Remark 30MHz-1GHz Quasi-peak 100KHz 300KHz Quasi-peak Value Above 1GHz Peak 1MHz 3MHz Peak Value Peak 1MHz 10Hz Average Value Average Value Peak 1MHz 10Hz Average Value Peak Value Valu	Test Frequency Range:	30MHz to 25000	OMHz					
Frequency Detector RBW VBW Remark	Test site:	Measurement D	istance: 3m					
Frequency Detector RBW VBW Remark	Receiver setup:							
Limit: (Field strength of the fundamental signal) Limit: (Field strength of the fundamental signal) Limit: (Spurious Emissions) Frequency 2400MHz-2483.5MHz Limit (BuV/m @3m) 2400MHz-2483.5MHz Limit: (Spurious Emissions) Frequency 2400MHz-2483.5MHz Limit (BuV/m @3m) 2400MHz-88MHz 240.00 20uasi-peak Value 216MHz-950MHz 240.00 20uasi-peak Value 216MHz-950MHz 240.00 20uasi-peak Value 216MHz-950MHz 240.00 20uasi-peak Value 216MHz-1GHz 254.00 20uasi-peak Value 260MHz-1GHz 274.00 20uasi-peak Value 274.00 20uasi-peak Value 274.00 20uasi-peak Value 275.00 20uasi-peak Value 20uasi-peak Value 20uasi-peak Value 20u		Frequency	Detector	RBW	VBW	Remark		
Limit: (Field strength of the fundamental signal) Limit: (Spurious Emissions) Frequency Limit (dBuV/m @3m) Remark 94.00 Average Value 114.00 Peak Value Limit: (Spurious Emissions) Frequency Limit (dBuV/m @3m) Remark 14.00 Peak Value Frequency Limit (dBuV/m @3m) Remark 14.00 Quasi-peak Value 1		30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value		
Limit: (Field strength of the fundamental signal) Frequency Limit (dBuV/m @3m) Remark 94.00 Average Value 114.00 Peak Value Limit: (Spurious Emissions) Frequency Limit (dBuV/m @3m) Remark 114.00 Peak Value 114.00 Peak Value 2400MHz-2483.5MHz 40.00 Quasi-peak Value 288MHz-216MHz 43.50 Quasi-peak Value 216MHz-960MHz 46.00 Quasi-peak Value 960MHz-1GHz 54.00 Quasi-peak Value 46.00 Quasi-peak Value 960MHz-1GHz 54.00 Quasi-peak Value Above 1GHz 74.00 Peak Value 216MHz-960MHz 16Hz 16Hz 16Hz 16Hz 16Hz 16Hz 16Hz 16		Above 1GHz	Peak	1MHz	3MHz			
Frequency Limit (dBuV/m @3m) Remark 2400MHz-2483.5MHz 94.00 Average Value 2400MHz-2483.5MHz 114.00 Peak Value Nerage Value Nerage Value 114.00 Peak Value 114.00 Peak Value 114.00 Quasi-peak Value 115.00 Quasi		7,5000 10112	Peak	1MHz	10Hz	Average Value		
Limit: (Spurious Emissions) Frequency	Limit:	F		Lind (JD)	/ @0\	D		
Limit: (Spurious Emissions) Frequency		Freque	ency					
Limit: (Spurious Emissions) Frequency	fundamental signal)	2400MHz-24	83.5MHz					
Frequency	I insta			114.0	JU	Peak value		
Southus Emissions 30MHz-88MHz 40.00 Quasi-peak Value 88MHz-216MHz 43.50 Quasi-peak Value 216MHz-960MHz 46.00 Quasi-peak Value 960MHz-1GHz 54.00 Quasi-peak Value 46.00 Average Value 54.00 Average Value Above 1GHz 54.00 Average Value 74.00 Peak Value Above 1GHz 74.00 Peak Value 46.00 Average Value 74.00 Peak Value 74.00		Frequency Limit (dBuV/m @3m) Remark						
S8MHz-216MHz 43.50 Quasi-peak Value 216MHz-960MHz 46.00 Quasi-peak Value 960MHz-1GHz 54.00 Quasi-peak Value Above 1GHz 54.00 Average Value Above 1GHz 74.00 Peak Value T4.00 Peak Value Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.	(Spurious Emissions)							
216MHz-960MHz								
Limit: (band edge) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.								
Limit: (band edge) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.		960MHz-	1GHz			Quasi-peak Value		
Limit: (band edge) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.		Abovo 1	CU-7	54.00		Average Value		
harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.		74.00 Peak Value						
Toot action	· •	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using						
	Test setup:							

Global United Technology Services Co., Ltd. 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China 518102

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960





Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



Project No.: GTSE111100894RF

Measurement Data

6.2.1 Field Strength Of The Fundamental Signal

Peak value:

1 oak valao.	1 dak valad.								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization	
2404.00	88.89	27.54	3.83	34.83	85.43	114.00	-28.57	Horizontal	
2404.00	90.59	27.54	3.83	34.83	87.13	114.00	-26.87	Vertical	
2440.00	86.52	27.46	3.85	34.85	82.98	114.00	-31.02	Horizontal	
2440.00	87.38	27.46	3.85	34.85	83.84	114.00	-30.16	Vertical	
2479.00	86.21	27.52	3.89	34.86	82.76	114.00	-31.24	Horizontal	
2479.00	87.36	27.52	3.89	34.86	83.91	114.00	-30.09	Vertical	

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2404.00	83.67	27.54	3.83	34.83	80.21	94.00	-13.79	Horizontal
2404.00	85.63	27.54	3.83	34.83	82.17	94.00	-11.83	Vertical
2440.00	82.91	27.46	3.85	34.85	79.37	94.00	-14.63	Horizontal
2440.00	83.62	27.46	3.85	34.85	80.08	94.00	-13.92	Vertical
2479.00	82.19	27.52	3.89	34.86	78.74	94.00	-15.26	Horizontal
2479.00	83.26	27.52	3.89	34.86	79.81	94.00	-14.19	Vertical

6.2.2 Spurious Emissions

30MHz~1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
39.70	40.20	11.30	0.60	28.09	24.01	40.00	-15.99	Vertical
118.27	46.99	8.02	1.25	27.70	28.56	43.50	-14.94	Vertical
129.91	49.29	7.70	1.28	27.61	30.66	43.50	-12.84	Vertical
144.46	46.35	8.53	1.31	27.49	28.70	43.50	-14.80	Vertical
432.55	42.40	16.56	2.34	27.52	33.78	46.00	-12.22	Vertical
78.50	39.12	7.59	1.05	28.00	19.76	40.00	-20.24	Horizontal
118.27	43.50	8.02	1.25	27.70	25.07	43.50	-18.43	Horizontal
129.91	51.67	7.70	1.28	27.61	33.04	43.50	-10.46	Horizontal
144.46	41.60	8.53	1.31	27.49	23.95	43.50	-19.55	Horizontal
710.94	37.50	21.60	2.94	27.24	34.80	46.00	-11.20	Horizontal

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960 Page 11 of 21



Average

-10.26

-6.94

Project No.: GTSE111100894RF

Horizontal

Horizontal

Horizontal

Horizontal

Horizontal

74.00

54.00

54.00

54.00

54.00

Above 1GHz

14412.00

Test channel:

Test channe	l:	L	owest		Level:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4808.00	43.50	31.53	5.87	35.46	45.44	74.00	-27.90	Vertical
7212.00	44.36	36.47	7.10	35.31	52.62	74.00	-20.85	Vertical
9616.00	44.47	38.10	9.01	35.72	55.86	74.00	-17.53	Vertical
12010.00	*					74.00		Vertical
14412.00	*					74.00		Vertical
4808.00	42.93	31.53	5.87	35.46	44.87	74.00	-28.58	Horizontal
7212.00	43.67	36.47	7.10	35.31	51.93	74.00	-21.53	Horizontal
9616.00	43.56	38.10	9.01	35.72	54.95	74.00	-18.21	Horizontal
12010.00	*					74.00		Horizontal

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4808.00	34.67	31.53	5.87	35.46	36.61	54.00	-16.75	Vertical
7212.00	35.53	36.47	7.10	35.31	43.79	54.00	-9.70	Vertical
9616.00	35.60	38.10	9.01	35.72	46.99	54.00	-6.38	Vertical
12010.00	*					54.00		Vertical
14412.00	*					54.00		Vertical
4808.00	34.12	31.53	5.87	35.46	36.06	54.00	-17.31	Horizontal

35.31

35.72

Level:

43.12

46.53

Remark:

7212.00

9616.00

12010.00

14412.00

34.86

35.14

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor

7.10

9.01

2. "*", means this data is the too weak instrument of signal is unable to test.

36.47

38.10

Lowest

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960 Page 12 of 21



Project No.: GTSE111100894RF

Test channe	l:	N	/liddle		Level:	Level:		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4880.00	44.24	31.58	5.91	35.48	46.25	74.00	-27.75	Vertical
7320.00	46.05	36.48	7.14	35.27	54.40	74.00	-19.60	Vertical
9760.00	44.01	38.45	9.06	35.75	55.77	74.00	-18.23	Vertical
12205.00	*					74.00		Vertical
14480.00	*					74.00		Vertical
4880.00	43.56	31.58	5.91	35.48	45.57	74.00	-28.43	Horizontal
7320.00	45.37	36.48	7.14	35.27	53.72	74.00	-20.28	Horizontal
9760.00	43.33	38.45	9.06	35.75	55.09	74.00	-18.91	Horizontal
12205.00	*					74.00		Horizontal
14480.00	*					74.00		Horizontal

Test channe	l:		Middle		Level:	Level:		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4880.00	35.39	31.58	5.91	35.48	37.40	54.00	-16.60	Vertical
7320.00	37.20	36.48	7.14	35.27	45.55	54.00	-8.45	Vertical
9760.00	35.16	38.45	9.06	35.75	46.92	54.00	-7.08	Vertical
12205.00	*					54.00		Vertical
14480.00	*					54.00		Vertical
4880.00	34.83	31.58	5.91	35.48	36.84	54.00	-17.16	Horizontal
7320.00	36.64	36.48	7.14	35.27	44.99	54.00	-9.01	Horizontal
9760.00	34.60	38.45	9.06	35.75	46.36	54.00	-7.64	Horizontal
12205.00	*					54.00		Horizontal
14480 00	*					54 00		Horizontal

Remark:

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- "*", means this data is the too weak instrument of signal is unable to test.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960 Page 13 of 21



Average

Project No.: GTSE111100894RF

Test channe	l:	H	Highest		Level:	Level:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
4958.00	43.92	31.69	5.97	35.49	46.09	74.00	-27.91	Vertical	
7437.00	44.42	36.60	7.18	35.23	52.97	74.00	-21.03	Vertical	
9916.00	44.99	38.66	9.11	35.78	56.98	74.00	-17.02	Vertical	
12400.00	*					74.00		Vertical	
14646.00	*					74.00		Vertical	
4958.00	43.24	31.69	5.97	35.49	45.41	74.00	-28.59	Horizontal	
7437.00	43.74	36.60	7.18	35.23	52.29	74.00	-21.71	Horizontal	
9916.00	44.31	38.66	9.11	35.78	56.30	74.00	-17.70	Horizontal	
12400.00	*					74.00		Horizontal	
14646.00	*					74.00		Horizontal	

			9					
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4958.00	35.07	31.69	5.97	35.49	37.24	54.00	-16.76	Vertical
7437.00	35.57	36.60	7.18	35.23	44.12	54.00	-9.88	Vertical
9916.00	35.14	38.66	9.11	35.78	47.13	54.00	-6.87	Vertical
12400.00	*					54.00		Vertical
14646.00	*					54.00		Vertical
4958.00	34.51	31.69	5.97	35.49	36.68	54.00	-17.32	Horizontal
7437.00	35.01	36.60	7.18	35.23	43.56	54.00	-10.44	Horizontal
9916.00	34.58	38.66	9.11	35.78	46.57	54.00	-7.43	Horizontal
12400.00	*					54.00		Horizontal
14646.00	*					54.00		Horizontal

Level:

Remark:

Test channel:

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. "*", means this data is the too weak instrument of signal is unable to test.

Highest

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960 Page 14 of 21



6.2.3 Band edge (Radiated Emission)

Test channe	el:	Lowe	est	Le	evel:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	41.88	27.58	3.81	34.83	38.44	74.00	-35.56	Horizontal
2400.00	53.62	27.58	3.83	34.83	50.20	74.00	-23.80	Horizontal
2390.00	43.18	27.58	3.81	34.83	39.74	74.00	-34.26	Vertical
2400.00	55.30	27.58	3.83	34.83	51.88	74.00	-22.12	Vertical

Test channe	el:	Low	est	Le	evel:		Average	
Frequenc y (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	32.68	27.58	3.81	34.83	29.24	54.00	-24.76	Horizontal
2400.00	45.15	27.58	3.83	34.83	41.73	54.00	-12.27	Horizontal
2390.00	33.49	27.58	3.81	34.83	30.05	54.00	-23.95	Vertical
2400.00	45.63	27.58	3.83	34.83	42.21	54.00	-11.79	Vertical

Test channe	el:	High	est	Le	evel:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	56.45	27.52	3.89	34.86	53.00	74.00	-21.00	Horizontal
2500.00	46.39	27.55	3.90	34.87	42.97	74.00	-31.03	Horizontal
2483.50	57.38	27.52	3.89	34.86	53.93	74.00	-20.07	Vertical
2500.00	46.77	27.55	3.90	34.87	43.35	74.00	-30.65	Vertical

Test channe	el:	High	est	Le	evel:		Average	
Frequenc y (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	47.34	27.52	3.89	34.86	43.89	54.00	-10.11	Horizontal
2500.00	37.14	27.55	3.90	34.87	33.72	54.00	-20.28	Horizontal
2483.50	48.12	27.52	3.89	34.86	44.67	54.00	-9.33	Vertical
2500.00	38.36	27.55	3.90	34.87	34.94	54.00	-19.06	Vertical

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



Project No.: GTSE111100894RF

6.3 20dB Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.4:2009
Receiver setup:	RBW=30KHz, VBW=100KHz, detector: Peak
Limit:	Operation Frequency range 2400MHz-2483.5MHz
Test Procedure:	According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.
	2. Set the EUT to proper test channel.
	3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points.
	4. Read 20dB bandwidth.
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table
	Ground Reference Plane
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

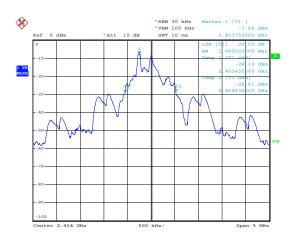
Measurement Data

Test channel	20dB bandwidth (MHz)	Results
Lowest	1.080	Pass
Middle	1.090	Pass
Highest	1.090	Pass

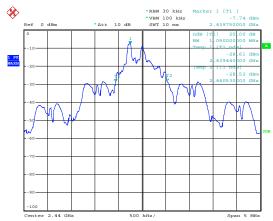
Test plot as follows:

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960 Page 16 of 21





Lowest channel



Middle channel



Highest channel

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960