FCC 15B Test Report

Equipment	:	**Mobile Phone**
Model No.	:	**301F**
Brand Name	:	**FUJITSU**
Applicant	:	**Fujitsu Mobile Communications Ltd.**
Address	:	**1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki 211-8588, Japan**
Standard	:	**FCC Part 15, Subpart B, Class B ANSI C63.4:2009**
Received Date	:	**Sep. 13, 2013**
Tested Date	:	**Oct. 16 ~ Oct. 21, 2013**

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Approved & Reviewed by:

Kent Chen / Assistant Manager

Testing Laboratory
2732

Table of Contents

1 GENERAL DESCRIPTION 5

1.1 Information 5
1.2 The Equipment and Calibration Data 7
1.3 Testing Applied Standards 9
1.4 Measurement Uncertainty 9

2 TEST CONFIGURATION 10

2.1 Testing Condition 10
2.2 The Worst Case Measurement Configuration 11
2.3 Local Support Equipment List 12
2.4 Test Setup Chart 13
2.5 Test Software and Operating Condition 13

3 EMISSION TESTS RESULTS 14

3.1 Conducted Emissions 14
3.2 Radiated Emissions 17

4 TEST LABORATORY INFORMATION 26

Release Record

Report No.	Version	Description	Issued Date
FD391306	Rev. 01	Initial issue	Nov. 01, 2013

Summary of Test Results

FCC Part 15, Subpart B Emission Tests				
Ref. Std. Clause	**Test Standard**	**Test Items**	**Measured**	**Result**
15.107	FCC Part 15, Subpart B, Class B	Conducted Emissions	-9.04dB AV@ 0.506MHz.	Pass
15.109	FCC Part 15, Subpart B, Class B	Radiated Emissions	-1.75dB QP@ 42.35MHz.	Pass

1 General Description

1.1 Information

1.1.1 Product Details

Product Name	Mobile Phone
Brand Name	FUJITSU
Model Name	301F
IMEI Code	357613050012748
H/W Version	V2.1.0
S/W Version	R25.1e

1.1.2 Specification of the Equipment under Test (EUT)

WLAN	
Operating Frequency	802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5700 MHz
Antenna Type	λ/4 Monopole Antenna
Modulation Type	802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n/ac: OFDM (BPSK / QPSK / 16QAM / 64QAM)
Bluetooth	
Operating Frequency	2402 MHz ~ 2480 MHz
Antenna Type	λ/4 Monopole Antenna
Modulation Type	Bluetooth 4.0 LE: GFSK Bluetooth BR(1Mbps): GFSK Bluetooth EDR (2Mbps): π/4-DQPSK Bluetooth EDR (3Mbps): 8-DPSK
WWAN	
Operating Frequency	TX: GSM1900: 1850.2 MHz ~ 1909.8MHz RX: GSM1900: 1930.2 MHz ~ 1989.8 MHz
Antenna Type	λ/4 Monopole Antenna
Modulation Type	GSM: GMSK GPRS: GMSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink)

RFID/NFC	
Operating Frequency	13.56 MHz
Antenna Type	Loop Antenna
Modulation Type	ASK
GPS	
Operating Frequency	1.57542 GHz
Modulation Type	BPSK
Note: IEEE 11ac standard is still Draft version.	

1.1.3 EUT Operational Condition

Supply Voltage	☒ AC mains	☒ DC	
Type of DC Source	☐ Internal DC supply	☒ External DC adapter	☒ Battery

1.1.4 Accessories

Accessories		
No.	**Equipment**	**Description**
1	Battery	Brand Name: Fujitsu limited Model Name: CA54310-0053 Power Rating: O/P: 3.75Vdc, 2600mA
2	Cradle	Brand Name: SOFTBANK MOBILE Corp. Model Name: CA50601-1881 Power Rating: O/P: 12.0Vdc, 1.5A
3	Adapter for cradle	Brand Name: SOFTBANK MOBILE Corp. Model Name: TA08017-B330 I/P: 100-240Vac, 1000mA O/P: 12.0Vdc, 3000mA DC 1.1m non-shielded cable with one core AC 0.9m non-shielded cable without core

1.2 The Equipment and Calibration Data

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
EMC Receiver	R&S	ESCS 30	100358	May 17, 2013	May 16, 2014
LISN	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-667	Dec. 04, 2012	Dec. 03, 2013
LISN (Support Unit)	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-666	Dec. 04, 2012	Dec. 03, 2013
ISN	TESEQ	ISN T800	34406	Apr. 08, 2013	Apr. 07, 2014
ISN	TESEQ	ISN T200A	30494	Apr. 09, 2013	Apr. 08, 2014
ISN	TESEQ	ISN ST08	22589	Jan. 24, 2013	Jan. 23, 2014
RF Current Probe	FCC	F-33-4	121630	Dec. 04, 2012	Dec. 03, 2013
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Dec. 25, 2012	Dec. 24, 2013
ESH3-Z6 V-Network(+)	R&S	ESH3-Z6	100920	Nov. 21, 2012	Nov. 20, 2013
ESH3-Z6 V-Network(-)	R&S	ESH3-Z6	100951	Jan. 30, 2013	Jan. 29, 2014
Two-Line V-Network	R&S	ENV216	101579	Jan. 07, 2013	Jan. 06, 2014
50 ohm terminal	NA	50	01	Apr. 22, 2013	Apr. 21, 2014
50 ohm terminal	NA	50	02	Apr. 22, 2013	Apr. 21, 2014
50 ohm terminal	NA	50	03	Apr. 22, 2013	Apr. 21, 2014
50 ohm terminal (Support Unit)	NA	50	04	Apr. 22, 2013	Apr. 21, 2014
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission below 1GHz test				
Test Site	10m chamber / (10CH01-HY)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
10m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-10M	10CH01-HY	Jun. 10, 2013	Jun. 09, 2014
Spectrum Analyzer	R&S	FSP7	838858/013	Feb. 21, 2013	Feb. 20, 2014
Receiver	R&S	ESI7	838496/009	Jul. 23, 2013	Jul. 22, 2014
Amplifier	Agilent	8447D	2944A10825	Apr. 19, 2013	Apr. 18, 2014
Amplifier	Agilent	8447D	2944A10826	Apr. 12, 2013	Apr. 11, 2014
Biconical Antenna	Schwarz beck	VHBB 9124	286	Aug. 02, 2013	Aug. 01, 2014
Log Antenna	Schwarz beck	VUSLP 9111	206	Aug. 02, 2013	Aug. 01, 2014
Turn Table	HD	DT 60 RPS	1513/004/00	N/A	N/A
Antenna Mast	HD	MA240	240/556/00	N/A	N/A
Antenna Mast	HD	MA240	240/559/00	N/A	N/A
RF Cable-R10m	BELDEN	RG8/U	CB023-INSIDE	Nov. 15, 2012	Nov. 14, 2013
RF Cable-R10m	Suhner Switzerland + Rosenberger	RG223/U + UAA220A-0	CB022-DOOR	Nov. 15, 2012	Nov. 14, 2013
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission above 1GHz test				
Test Site	966 chamber1 / (03CH01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
3m semi-anechoic chamber	CHAMPRO	SAC-03	03CH01-WS	Jan. 04, 2013	Jan. 03, 2014
Spectrum Analyzer	R&S	FSV40	101498	Jan. 24, 2013	Jan. 23, 2014
Receiver	R&S	ESR3	101658	Jan. 28, 2013	Jan. 27, 2014
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jan. 11, 2013	Jan. 10, 2014
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Feb. 18, 2013	Feb. 17, 2014
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Jan. 14, 2013	Jan. 13, 2014
Amplifier	Burgeon	BPA-530	100219	Nov. 28, 2012	Nov. 27, 2013
Amplifier	Agilent	83017A	MY39501308	Dec. 18, 2012	Dec. 17, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable-R03m	Woken	CFD400NL-LW	CFD400NL-001	Dec. 25, 2012	Dec. 24, 2013
RF Cable-R10m	Woken	CFD400NL-LW	CFD400NL-002	Dec. 25, 2012	Dec. 24, 2013
control	EM Electronics	EM1000	60612	N/A	N/A
Note: Calibration Interval of instruments listed above is one year.					

1.3 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

FCC Part 15, Subpart B, Class B
ANSI C63.4:2009

1.4 Measurement Uncertainty

CISPR 16-4-2 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty		
Test Item	**Frequency**	**Uncertainty**
Conducted Emissions	150kHz ~ 30MHz	2.8 dB
Radiated Emissions	30MHz ~ 1GHz	2.58 dB
	Above 1GHz	4.2 dB

2 Test Configuration

2.1 Testing Condition

Testing Location						
☒	ICC Lab	ADD	:	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsein 333, Taiwan (R.O.C.)		
		TEL	:	886-3-271-8666	FAX :	886-3-318-0155
☒	Sporton Lab	ADD	:	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.		
		TEL	:	886-3-327-3456	FAX :	886-3-327-0973

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	21°C / 55%	Skys Huang
Radiated Emissions > 1GHz	03CH02-WS	23°C / 68%	Peter Lin
Radiated Emissions ≤ 1GHz	*10CH01-HY	24°C / 57%	Peter Lin

Note: * ICC lab subcontracts this test item to Sporton Lab (TAF: 1190).

Sporton Lab is a TAF accreditation test firm and also is an approved provider of ICC lab.

2.2 The Worst Case Measurement Configuration

Conduction Pretest Mode	
Pretest Mode	**Operating Description**
1	PCS1900 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable + Adapter
2	PCS1900 Idle + Bluetooth Idle + WLAN (5G) Idle + Camera + Earphone + Battery + USB Cable + Adapter
3	PCS1900 Idle + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4 + Earphone + Battery + USB Cable + Adapter
4	PCS1900 Idle + Bluetooth Idle + WLAN (5G) Idle + SD Card R/W + Earphone + Battery + USB Cable (Data Link with Notebook)
5	PCS1900 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable + charger (with cradle)
For **Pretest mode 5** is the worst case and only its data was record in this test report.	

Radiation Pretest Mode	
Pretest Mode	**Operating Description**
1	PCS1900 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable + Adapter
2	PCS1900 Idle + Bluetooth Idle + WLAN (5G) Idle + Camera + Earphone + Battery + USB Cable + Adapter
3	PCS1900 Idle + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4 + Earphone + Battery + USB Cable + Adapter
4	PCS1900 Idle + Bluetooth Idle + WLAN (5G) Idle + SD Card R/W + Earphone + Battery + USB Cable (Data Link with Notebook)
5	PCS1900 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable + charger (with cradle)
For **Pretest mode 5** is the worst case and only its data was record in this test report.	

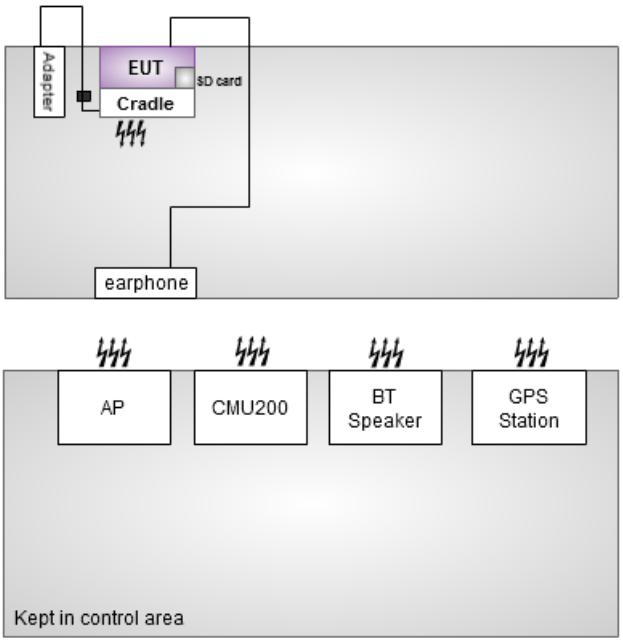
The Determined Worst Case Configurations	
Conducted Emissions	
Test Mode	**Operating Description**
1	PCS1900 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable + charger (with cradle)
Radiated Emissions	
Test Mode ≤1GHz	**Operating Description**
1	PCS1900 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable + charger (with cradle)
Test Mode >1GHz	**Operating Description**
1	PCS1900 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable + charger (with cradle)

2.3 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**S/N**	**Signal cable / Length (m)**
1	Radio Communication Analyzer	R&S	CMU200	108087	---
2	Earphone	APPLE	MD827FE/A	6	1.2m non-shielded w/o core
3	AP	D-LINK	DIR-815	3000228	---
4	BT speaker	Nokia	HF-34W	---	---
5	GPS Station (MXG)	Agilent	N5182B	MY53050081	---
6	Micro SD card	SanDisk	8GB	---	---

2.4 Test Setup Chart

Test Setup Diagram



2.5 Test Software and Operating Condition

a. The EUT was in GSM idle mode during the testing. The EUT was synchronized to the BCCH.
b. Linked with BT speaker (support unit) in idle mode.
c. Linked with Wireless AP (support unit) in idle mode.
d. Executed “GPS Test” to make the EUT receive continuous signals from GPS station.

3 Emission Tests Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

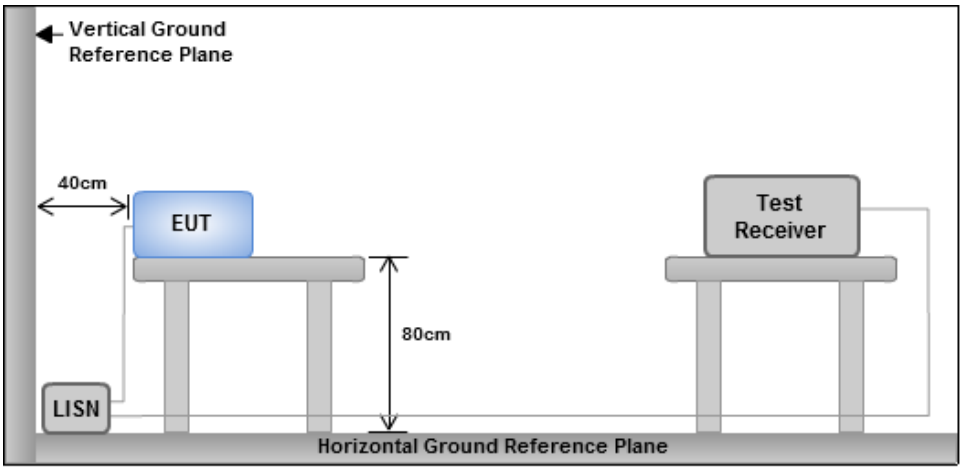
3.1.2 Test Procedures

a. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.

b. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.

c. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.

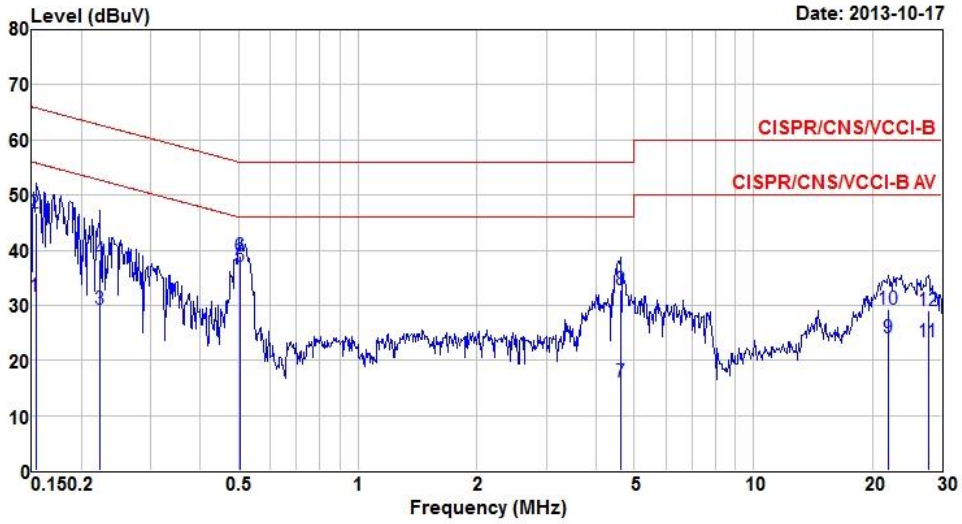
3.1.3 Test Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

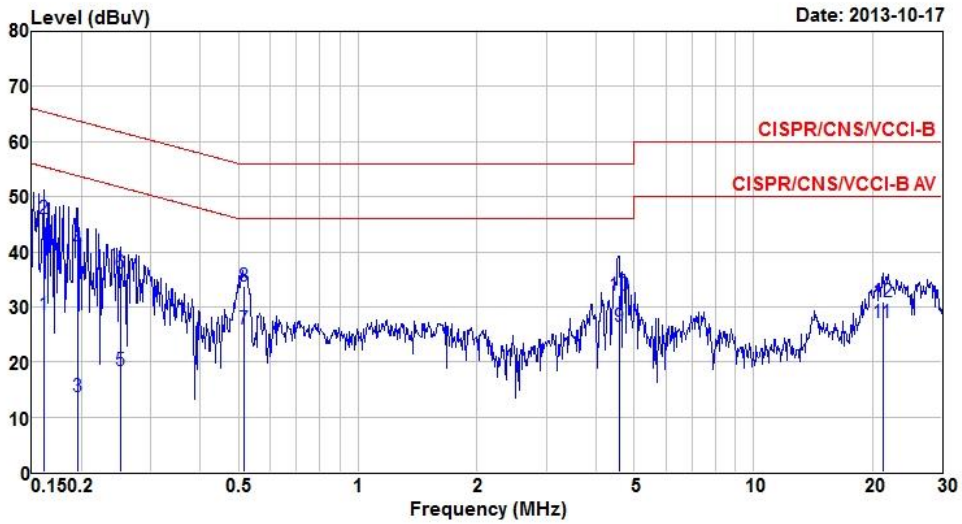
Power Phase	Line	Test Mode	1



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.153	31.65	55.82	-24.17	31.55	0.03	0.07	Average
2	0.153	46.68	65.82	-19.14	46.58	0.03	0.07	QP
3	0.223	29.18	52.70	-23.52	28.99	0.03	0.16	Average
4	0.223	38.21	62.70	-24.49	38.02	0.03	0.16	QP
5	0.506	36.96	46.00	-9.04	36.88	0.03	0.05	Average
6	0.506	39.02	56.00	-16.98	38.94	0.03	0.05	QP
7	4.622	16.01	46.00	-29.99	15.73	0.06	0.22	Average
8	4.622	32.75	56.00	-23.25	32.47	0.06	0.22	QP
9	21.946	24.18	50.00	-25.82	23.73	0.14	0.31	Average
10	21.946	29.16	60.00	-30.84	28.71	0.14	0.31	QP
11	27.708	23.30	50.00	-26.70	22.65	0.14	0.51	Average
12	27.708	28.95	60.00	-31.05	28.30	0.14	0.51	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dBuV) = Limit Line (dBuV) – Level (dBuV).

Power Phase	Neutral	Test Mode	1



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.161	28.53	55.43	-26.90	28.42	0.02	0.09	Average
2	0.161	45.96	65.43	-19.47	45.85	0.02	0.09	QP
3	0.195	13.66	53.80	-40.14	13.47	0.02	0.17	Average
4	0.195	40.29	63.80	-23.51	40.10	0.02	0.17	QP
5	0.251	18.52	51.73	-33.21	18.36	0.02	0.14	Average
6	0.251	36.07	61.73	-25.66	35.91	0.02	0.14	QP
7	0.517	26.00	46.00	-20.00	25.93	0.02	0.05	Average
8	0.517	33.83	56.00	-22.17	33.76	0.02	0.05	QP
9	4.574	26.49	46.00	-19.51	26.22	0.05	0.22	Average
10	4.574	32.07	56.00	-23.93	31.80	0.05	0.22	QP
11	21.260	27.21	50.00	-22.79	26.79	0.14	0.28	Average
12	21.260	30.98	60.00	-29.02	30.56	0.14	0.28	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dBuV) = Limit Line (dBuV) – Level (dBuV).

3.2 Radiated Emissions

3.2.1 Limit of Radiated Emissions

Applicable Standard: FCC Part 15, Subpart B §15.109, ICES-003 §5.4 for class A, §5.5 for class B		
Frequency Range (MHz)	**Class A (10 m)**	**Class B (10 m)**
	Quasi-peak limits (dBμV/m)	
30 to 230	40	30
230 to 1000	47	37
Note 1: The lower limit shall apply at the transition frequency. Note 2: Additional provisions may be required for cases where interference occurs.		

Note:
1) According to FCC Part 15, Subpart B §15.109(g): As an alternative to the radiated emission limits shown in paragraphs (a) and (b) of this section, digital devices may be shown to comply with the standards contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, "Information Technology Equipment – Radio Disturbance Characteristics – Limits and Methods of Measurement."
2) The CISPR 22 §6 standard limits are applied to the test data hereinafter.

Frequency range (GHz)	**Class A (3 m)**		**Class B (3 m)**	
	Average limit (dBμV/m)	**Peak limit (dBμV/m)**	**Average limit (dBμV/m)**	**Peak limit (dBμV/m)**
Above 1000	60	80	54	74
Note 1: The lower limit shall apply at the transition frequency. Note 2: Additional provisions may be required for cases where interference occurs.				

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	**Upper frequency of measurement range (MHz)**
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

Note: According to FCC Part 15, Subpart B §15.33: For an unintentional radiator is shown in the table above.

3.2.2 Test Procedures

Measuring below 1 GHz:

a. The EUT was placed on a rotatable table top with a height of 0.8 meters which is placed on the ground plane.

b. The EUT received DC power source from the outlet socket under the turntable. All support equipment power received from another socket under the turntable.

c. The EUT was set 10 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.

d. The table was rotated 360 degrees to determine the position of the highest radiation.

e. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.

f. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 to 4 meters) and turn table (from 0 to 360 degrees) to find the maximum reading.

g. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

h. If the emission level of the EUT in peak mode was 2 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 2 dB margin will be repeated one by one using the quasi-peak method and reported.

Measuring above 1 GHz:

a. Same test set up as below 1GHz radiated testing.

b. The EUT was set 3 meters from the interference-receiving antenna which was mounted on the top of a variable height antenna tower.

c. There should be absorber placed between the EUT and Antenna and its located size should let the test site meet CISPR16-1-4 requirement.

d. The table was rotated 360 degrees to determine the position of the highest radiation.

e. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

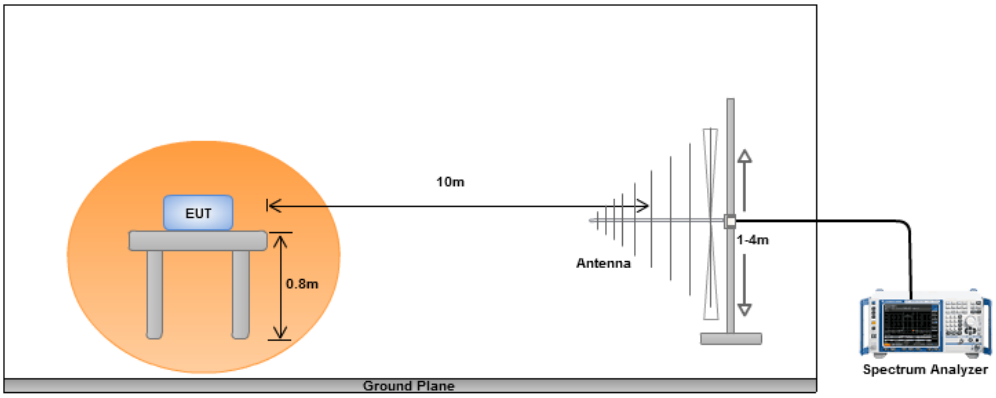
f. Set the Horn Antenna at 1m height, then run the turn table to get the maximum noise reading from Horizontal and Vertical polarity separately.

g. When EUT locating on the turn-table, the Horn Antenna must be raised up and descended down, then turning around the turn-table to get the maximum noise reading of the Horizontal and Vertical polarity separately. Note the maximum raise up height is same as the top of EUT.

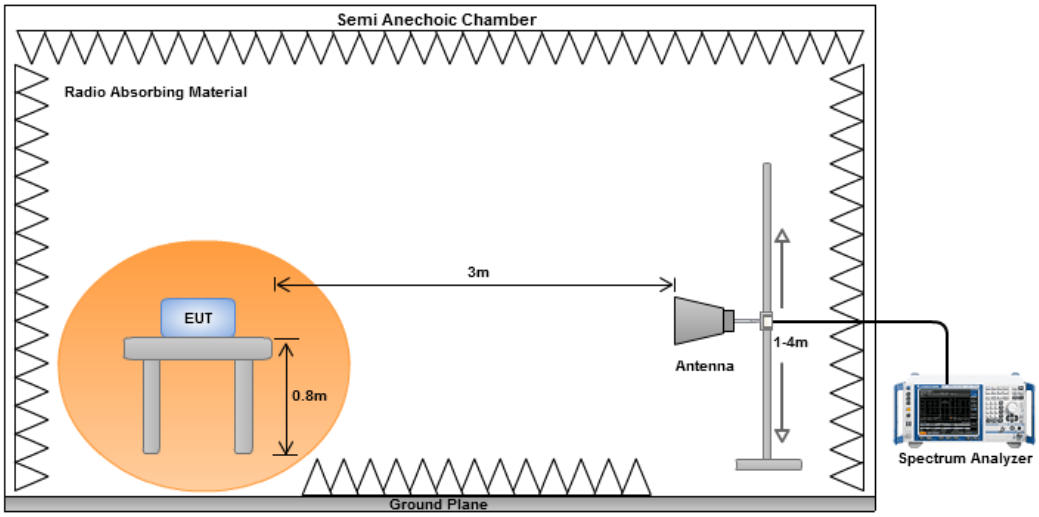
h. If emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.2.3 Test Setup

Radiated Emissions below 1 GHz

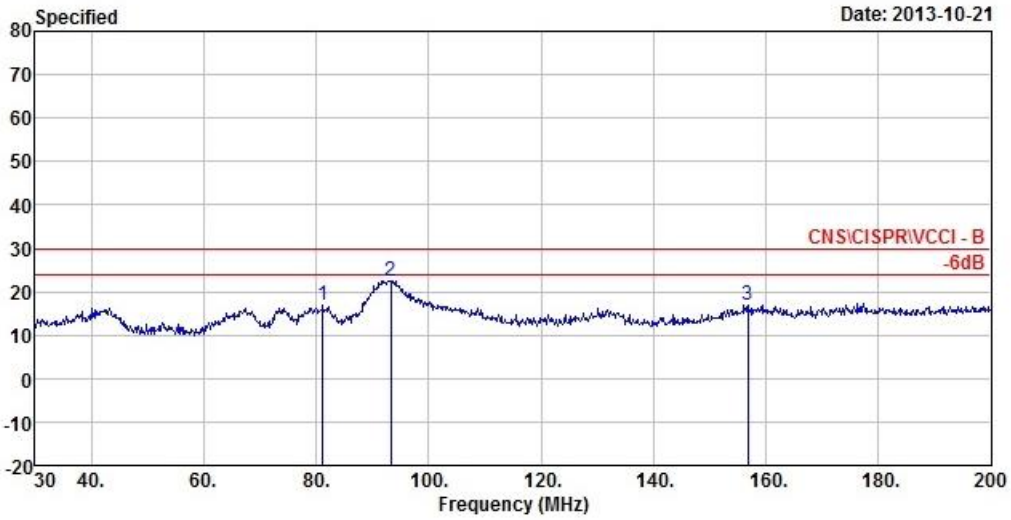


Radiated Emissions above 1 GHz



3.2.4 Radiated Emissions (Below 1GHz)

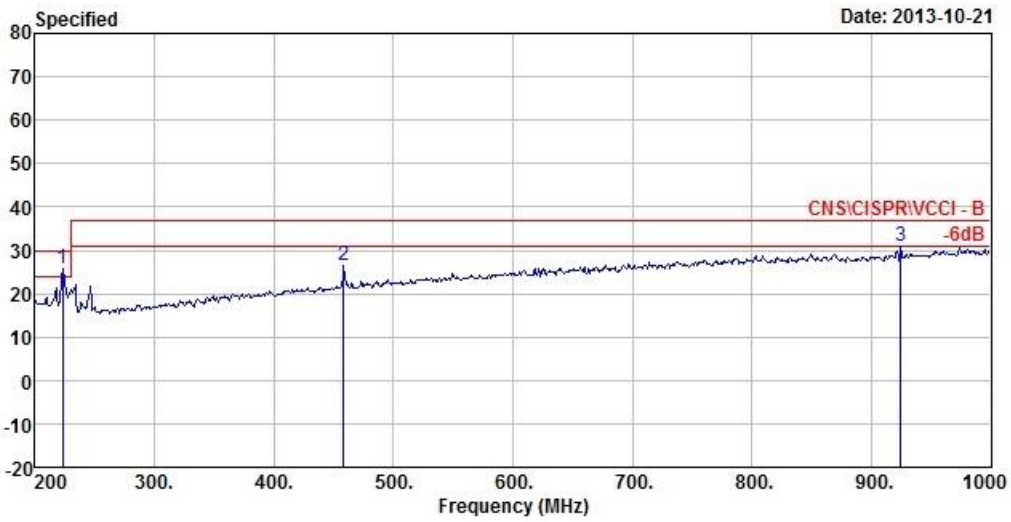
Polarization	Horizontal	**Test Mode**	1



	Freq	Over Limit	Limit Line	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	/m	dB	/m		dB	dB/m	dB		cm	deg
1	81.17	16.87	-13.13	30.00	34.18	2.31	8.88	28.50	Peak	---	---
2	93.24	22.57	-7.43	30.00	39.18	2.52	9.32	28.45	Peak	---	---
3	156.82	16.75	-13.25	30.00	29.42	3.21	12.30	28.18	Peak	---	---

Note 1: Level (dBuV/m) = Read Level (dBuV/m) + Antenna Factor (dB) + Cable Loss (dB) - Preamp Factor (dB).
2: Over Limit (dBuV/m) = Limit Line (dBuV/m) – Level (dBuV/m).

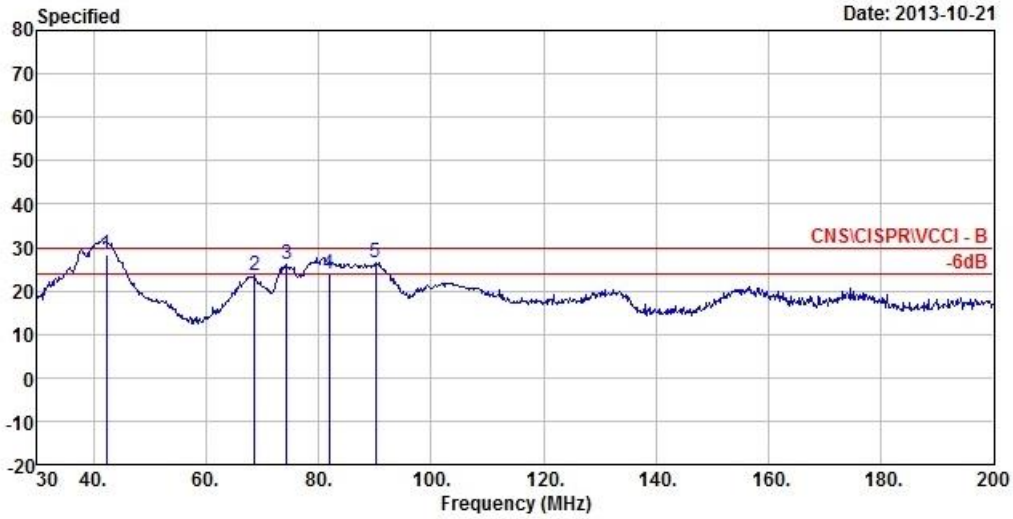
Polarization	Horizontal	Test Mode	1



	Freq		Over Limit	Limit Line	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	/m	dB	/m		dB	dB/m	dB		cm	deg
1	223.20	25.59	-4.41	30.00	35.73	3.80	13.49	27.43	Peak	---	---
2	458.40	26.37	-10.63	37.00	32.07	5.89	16.57	28.16	Peak	---	---
3	924.80	31.00	-6.00	37.00	28.80	8.30	21.26	27.36	Peak	---	---

Note 1: Level (dBuV/m) = Read Level (dBuV/m) + Antenna Factor (dB) + Cable Loss (dB) - Preamp Factor (dB).
2: Over Limit (dBuV/m) = Limit Line (dBuV/m) – Level (dBuV/m).

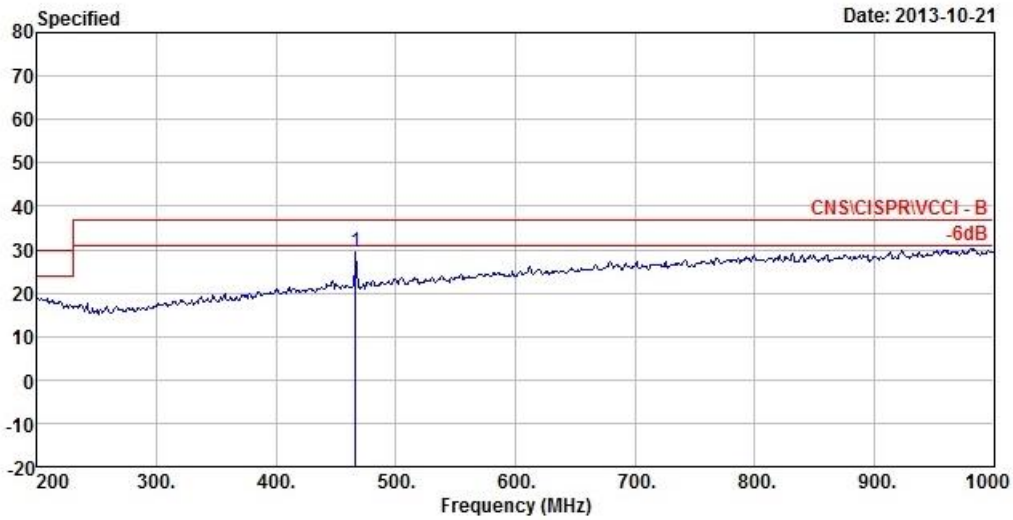
Polarization	Vertical	Test Mode	1



	Freq		Over Limit	Limit Line	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	/m	dB	/m		dB	dB/m	dB		cm	deg
1	42.35	28.25	-1.75	30.00	44.55	1.63	10.68	28.61	QP	100	3
2	68.59	23.46	-6.54	30.00	40.38	2.20	9.41	28.53	Peak	---	---
3	74.37	25.98	-4.02	30.00	43.12	2.25	9.13	28.52	Peak	---	---
4	81.93	23.87	-6.13	30.00	41.14	2.32	8.90	28.49	QP	100	177
5	90.18	26.44	-3.56	30.00	43.36	2.44	9.10	28.46	Peak	---	---

Note 1: Level (dBuV/m) = Read Level (dBuV/m) + Antenna Factor (dB) + Cable Loss (dB) - Preamp Factor (dB).
2: Over Limit (dBuV/m) = Limit Line (dBuV/m) – Level (dBuV/m).

Polarization	Vertical	Test Mode	1

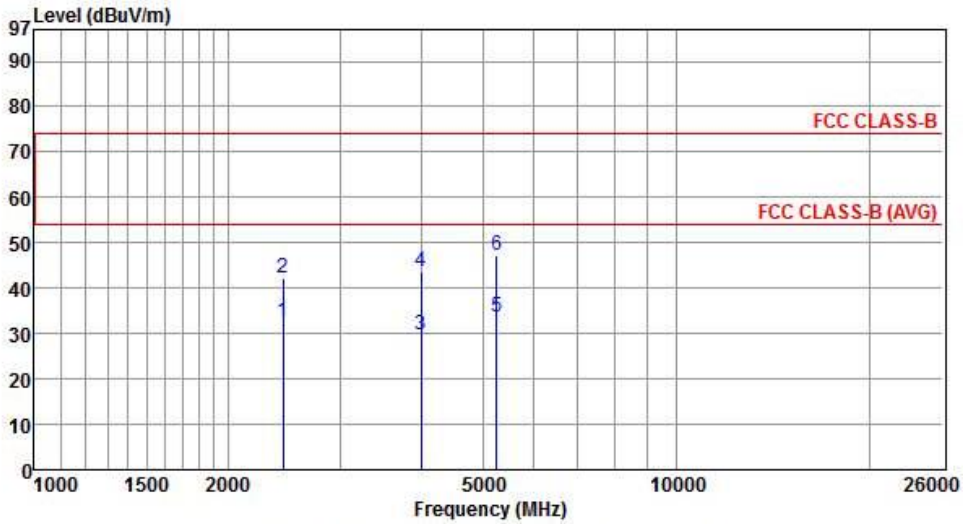


	Freq	Over Limit	Limit Line	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	/m	dB	/m		dB	dB/m	dB		cm	deg
1	466.40	29.59	-7.41	37.00	35.33	5.72	16.73	28.19	Peak	---	---

Note 1: Level (dBuV/m) = Read Level (dBuV/m) + Antenna Factor (dB) + Cable Loss (dB) - Preamp Factor (dB).
2: Over Limit (dBuV/m) = Limit Line (dBuV/m) – Level (dBuV/m).

3.2.5 Radiated Emissions (Above 1GHz)

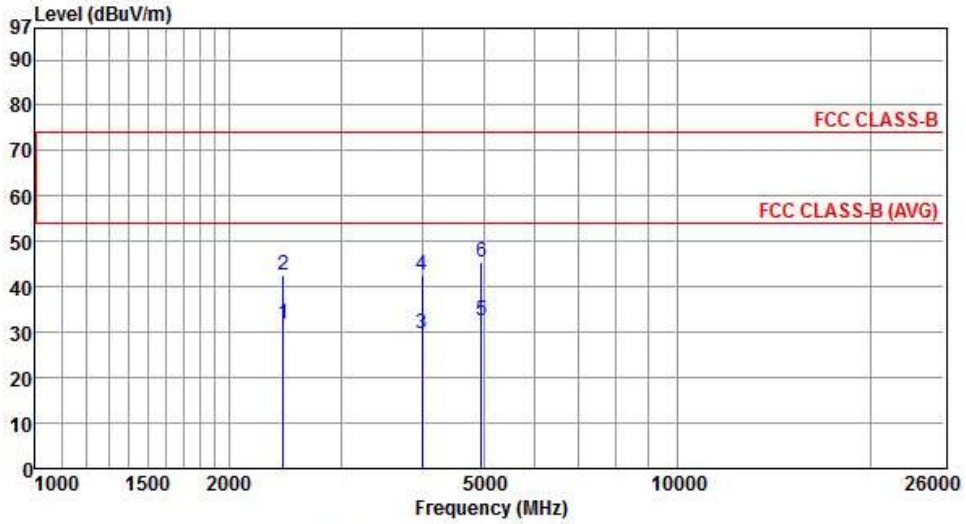
Polarization	Horizontal	Test Mode	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2436.00	32.53	54.00	-21.47	35.19	-2.66	Average	100	39
2	2436.00	42.30	74.00	-31.70	44.96	-2.66	Peak	100	39
3	4002.00	29.83	54.00	-24.17	27.45	2.38	Average	107	253
4	4002.00	43.84	74.00	-30.16	41.46	2.38	Peak	107	253
5	5247.00	33.59	54.00	-20.41	28.22	5.37	Average	110	228
6	5247.00	47.27	74.00	-26.73	41.90	5.37	Peak	110	228

Note 1: Level (dBuV/m) = Read Level (dBuV/m) + Antenna Factor (dB) + Cable Loss (dB) - Preamp Factor (dB).
2: Over Limit (dBuV/m) = Limit Line (dBuV/m) – Level (dBuV/m).

Polarization	Vertical	Test Mode	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2433.00	31.78	54.00	-22.22	34.44	-2.66	Average	103	196
2	2433.00	42.63	74.00	-31.37	45.29	-2.66	Peak	103	196
3	3998.00	29.72	54.00	-24.28	27.34	2.38	Average	109	78
4	3998.00	42.66	74.00	-31.34	40.28	2.38	Peak	109	78
5	4952.00	32.57	54.00	-21.43	27.67	4.90	Average	100	333
6	4952.00	45.31	74.00	-28.69	40.41	4.90	Peak	100	333

Note 1: Level (dBuV/m) = Read Level (dBuV/m) + Antenna Factor (dB) + Cable Loss (dB) - Preamp Factor (dB).
2: Over Limit (dBuV/m) = Limit Line (dBuV/m) – Level (dBuV/m).

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp, it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan Hsiang. Location map can be found on our website http://www.icertifi.com.tw.

Linkou

Tel: 886-2-2601-1640

No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.

Kwei Shan

Tel: 886-3-271-8666

No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

═END═