International Certification Corp.
No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.
Tel: 886-3-271-8666 Fax: 886-3-318-0155

FCC 15B Test Report

Equipment	:	**Mobile Phone**
Model No.	:	**F-07E**
Brand Name	:	**Xi**
Applicant	:	**FUJITSU LIMITED**
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	:	**Mar. 19, 2013**
Tested Date	:	**Apr. 18 ~ Apr. 19, 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

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Release Record

Report No.	Version	Description	Issued Date
FD331905	Rev. 01	Initial issue	May 28, 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	-7.69dB AV@ 0.449MHz.	Pass
15.109	FCC Part 15, Subpart B, Class B	Radiated Emissions	-4.40dB PK@ 62.01MHz.	Pass

1 General Description

1.1 Information

1.1.1 Product Details

Product Name	Mobile Phone
Brand Name	Xi
Model Name	F-07E
IMEI Code	355277050017990
H/W Version	V2.1.0
S/W Version	R13.1e

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
Modulaton 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
Modulaton 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: GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz RX: GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz
Antenna Type	λ/4 Monopole Antenna
Modulaton 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
Modulaton Type	ASK
GPS	
Operating Frequency	1.57542 GHz
Modulaton 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	Cradle	Brand Name: Fujitsu limited Model Name: CA50601-1801 Spec.: 5.0Vdc, 1.5A
2	Battery	Brand Name: Fujitsu limited Model Name: CA54310-0045 Rating: 3.8V, 2600mA

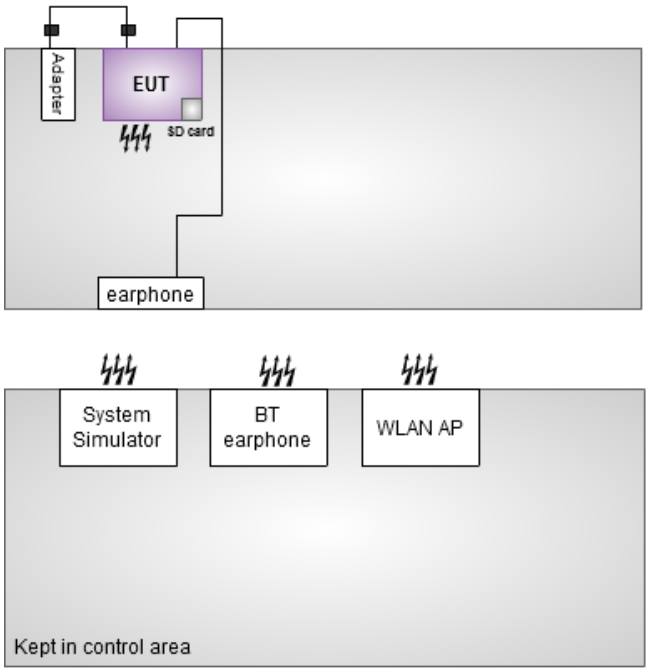
1.2 Local Support Equipment List

Support Equipment List						
No.	**Equipment**	**Brand**	**Model**	**S/N**	**FCC ID**	**Signal cable / Length (m)**
1	Adapter	NTT docomo	AC Adaptor 04	---	---	---
2	Earphone	APPLE	MD827FE/A	---	---	1.2m non-shielded w/o core
3	Micro SD card	SanDisk	---	---	---	---
4	GPS Station	Pendulum	GSG-54	---	---	---
5	BT Earphone	Sony Ericsson	MW600	---	PY7DDA-3029	---
6	AP	D-LINK	DIR-815	3000228	---	---
7	System Simulator	R&S	CMU200	108087	---	---

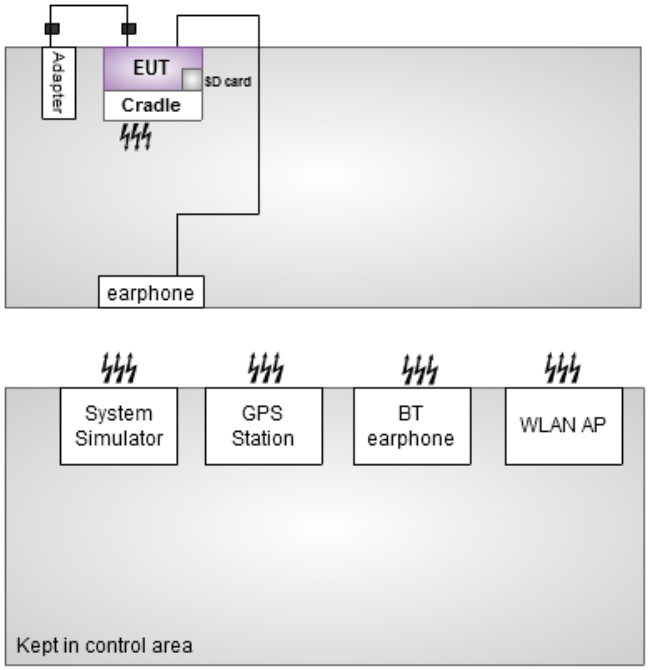
Note: Item 1 was provided by client.

1.3 Test Setup Chart

Test Setup Diagram (for Conducted Emissions)



Test Setup Diagram (for Radiated Emissions)



1.4 Test Software and Operating Condition

a. The EUT was in GSM idle mode during the testing. The EUT was synchronized to the BCCH, and is in continuous receiving mode by setting system simulator's paging reorganization.
b. The EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.
c. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
d. Turn on camera to capture images.

1.5 The Equipment List

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	100169	Dec. 12, 2012	Dec. 11, 2013
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 T8-Cat6	27262	Sep. 17, 2012	Sep. 16, 2013
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. 03, 2013	Jan. 02, 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				
Test Site	966 chamber 2 / (03CH02-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Amplifier	Burgeon	BPA-530	100218	Dec. 14, 2012	Dec. 13, 2013
Amplifier	Agilent	83017A	MY39501309	Dec. 18, 2012	Dec. 17, 2013
Spectrum Analyzer	R&S	FSV40	101499	Jan. 28, 2013	Jan. 27, 2014
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120D	BBHA 9120 D 1095	Jan. 29, 2013	Jan. 28,2014
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Jan. 14, 2013	Jan. 13, 2014
Receiver	R&S	ESR3	101657	Jan. 30,2013	Jan.29,2014
Bilog Antenna	ScHwarzbeck	VULB9168	VULB9168-524	Jan. 11, 2013	Jan. 10, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 25, 2012	Dec. 24, 2013
RF Cable-R03m	Woken	CFD400NL-LW	CFD400NL-003	Dec. 25, 2012	Dec. 24, 2013
RF Cable-R10m	Woken	CFD400NL-LW	CFD400NL-004	Dec. 25, 2012	Dec. 24, 2013

Test Item	Radiated Emission				
Test Site	966 chamber 2 / (03CH02-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
control	EM Electronics	EM1000	060608	N/A	N/A
Note: Calibration Interval of instruments listed above is one year.					

Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2013
Amplifier	MITEQ	AMF-6F-260400	9121372	Apr. 19, 2013	Apr. 18, 2014
Note: Calibration Interval of instruments listed above is two year.					

1.6 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

1.7 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	3.9 dB
	Above 1GHz	4.2 dB

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	22°C / 67%	Skys Huang
Radiated Emissions	03CH02-WS	24°C / 68%	Peter Lin

2.2 The Worst Test Modes and Channel Details

The Determined Worst Case Configurations	
Conducted Emissions	
Test Mode	**Operating Description**
1	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + Adapter
2	**PCS1900 Idle + Bluetooth Idle + WLAN (5G) Idle + Camera + Earphone + Battery + Adapter**
3	WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4 + Earphone + Battery + Adapter
4	PCS1900 Idle + Bluetooth Idle + WLAN (5G) Idle + SD Card R/W + Earphone + Battery + USB Cable (Data Linkwith Notebook)
5	PCS1900 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + Cradle + Adapter
Radiated Emissions	
Test Mode ≤1GHz	**Operating Description**
1	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + Adapter
2	PCS1900 Idle + Bluetooth Idle + WLAN (5G) Idle + Camera + Earphone + Battery + Adapter
3	WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4 + Earphone + Battery + Adapter
4	GSM850 Idle + Bluetooth Idle + WLAN (5G) Idle + SD Card R/W + Earphone + Battery + USB Cable (Data Linkwith Notebook)
5	**GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + Cradle + Adapter**
Test Mode >1GHz	**Operating Description**
1	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + Cradle + Adapter
Note: The worst cases were marked in boldface, therefore, only itsdata wasrecorded in thisreport.	

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.		

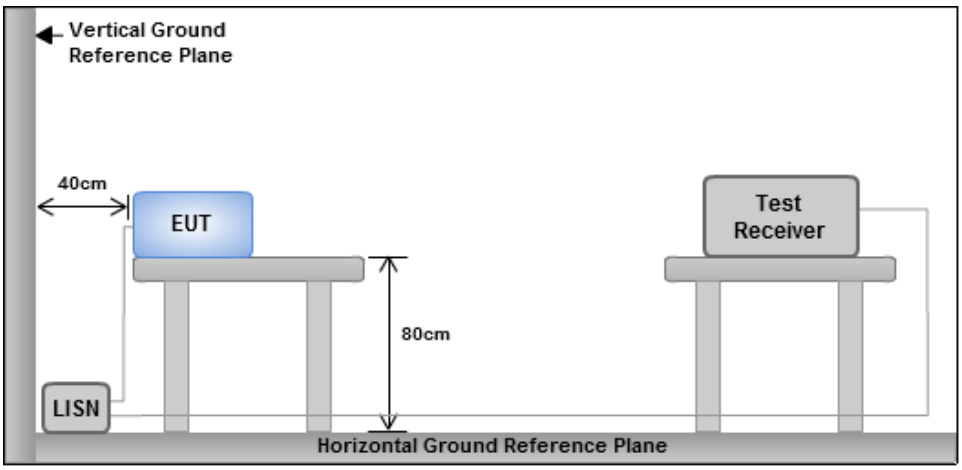
3.1.2 Test Procedures

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

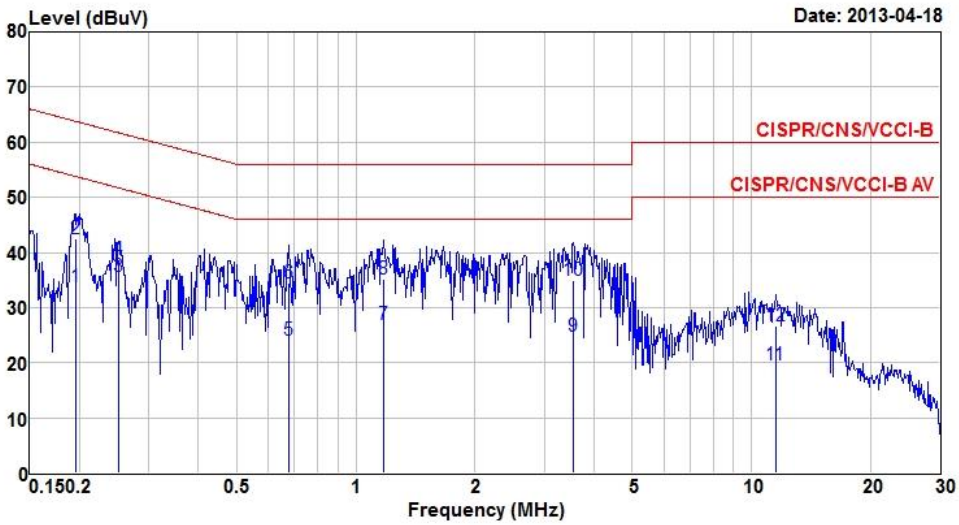


Note: 1. Support units were connected to second LISN.

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

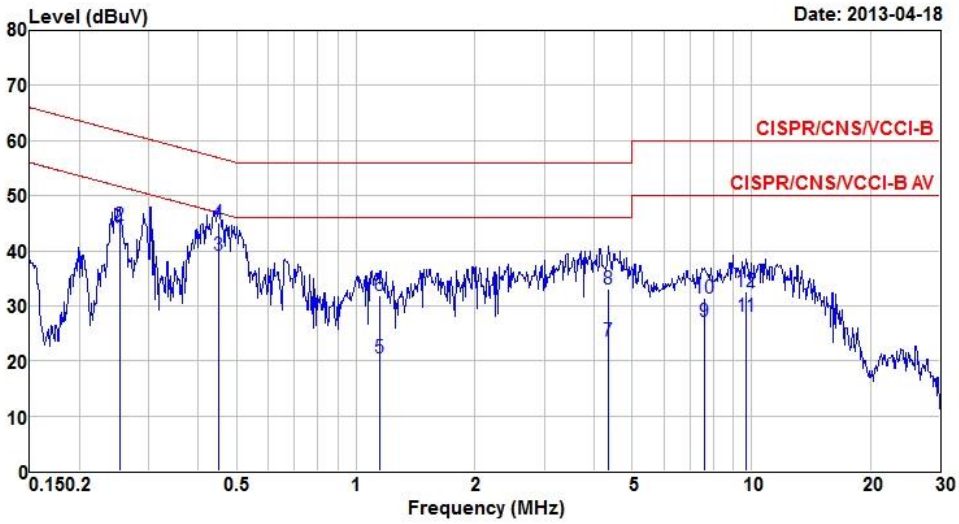
Power Phase	Line	Test Mode	2



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.195	33.84	53.80	-19.96	33.66	0.03	0.17	Average
2	0.195	42.48	63.80	-21.32	42.30	0.03	0.17	QP
3	0.251	35.62	51.73	-16.11	35.48	0.03	0.14	Average
4	0.251	38.81	61.73	-22.92	38.67	0.03	0.14	QP
5	0.675	24.16	46.00	-21.84	24.17	0.03	0.04	Average
6	0.675	34.51	56.00	-21.49	34.52	0.03	0.04	QP
7	1.178	26.90	46.00	-19.10	26.91	0.04	0.07	Average
8	1.178	35.19	56.00	-20.81	35.20	0.04	0.07	QP
9	3.547	24.74	46.00	-21.26	24.56	0.06	0.23	Average
10	3.547	34.99	56.00	-21.01	34.81	0.06	0.23	QP
11	11.498	19.58	50.00	-30.42	19.84	0.16	0.12	Average
12	11.498	26.78	60.00	-33.22	27.04	0.16	0.12	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	2



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.253	42.40	51.64	-9.24	42.27	0.02	0.14	Average
2	0.253	44.51	61.64	-17.13	44.38	0.02	0.14	QP
3	0.449	39.20	46.89	-7.69	39.19	0.02	0.05	Average
4	0.449	45.04	56.89	-11.85	45.03	0.02	0.05	QP
5	1.153	20.43	46.00	-25.57	20.47	0.03	0.06	Average
6	1.153	31.96	56.00	-24.04	32.00	0.03	0.06	QP
7	4.338	23.59	46.00	-22.41	23.42	0.05	0.23	Average
8	4.338	33.14	56.00	-22.86	32.97	0.05	0.23	QP
9	7.606	27.09	50.00	-22.91	27.15	0.08	0.15	Average
10	7.606	31.37	60.00	-28.63	31.43	0.08	0.15	QP
11	9.705	28.14	50.00	-21.86	28.29	0.10	0.11	Average
12	9.705	32.53	60.00	-27.47	32.68	0.10	0.11	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

According to FCC Part 15, Subpart B §15.109, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

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.

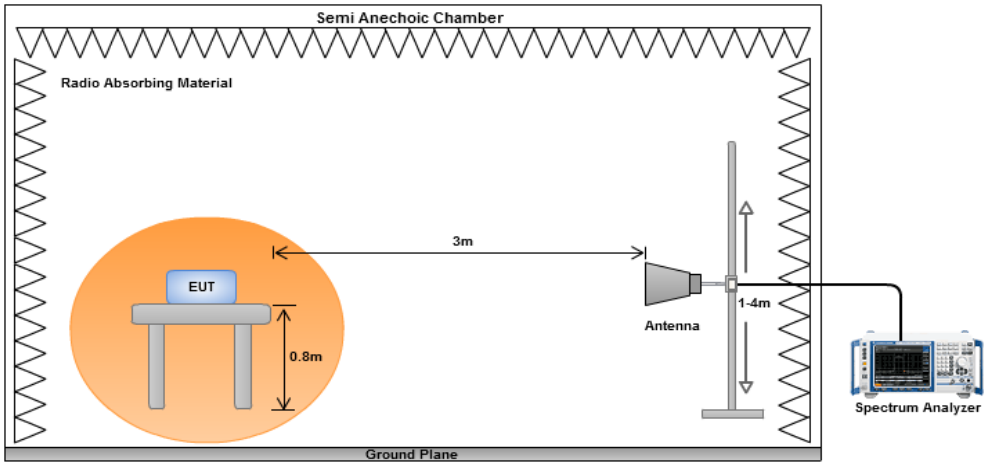
3.2.2 Test Procedures

1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at a height of 0.8 m test table above the ground plane.
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

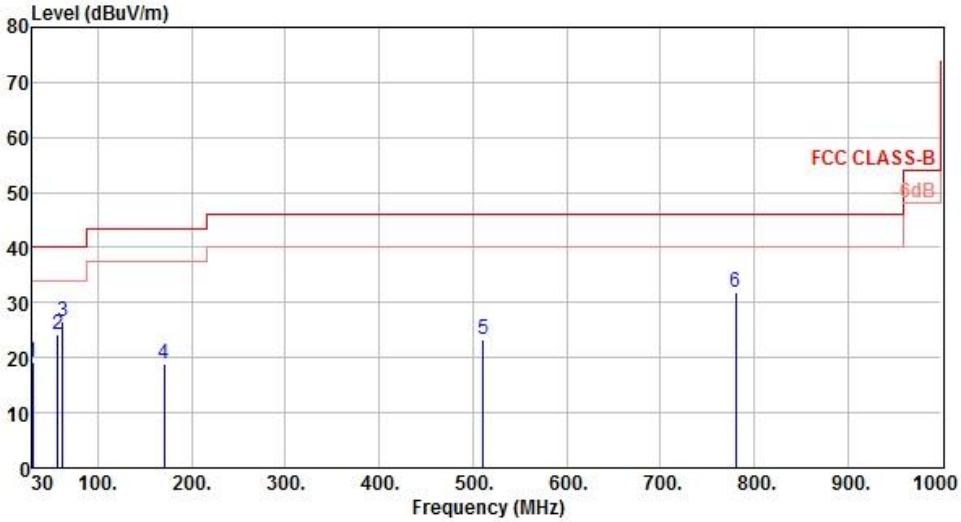
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=3MHz and RMS detector is for average measured value of radiated emission above 1GHz.

3.2.3 Test Setup



3.2.4 Radiated Emissions (Below 1GHz)

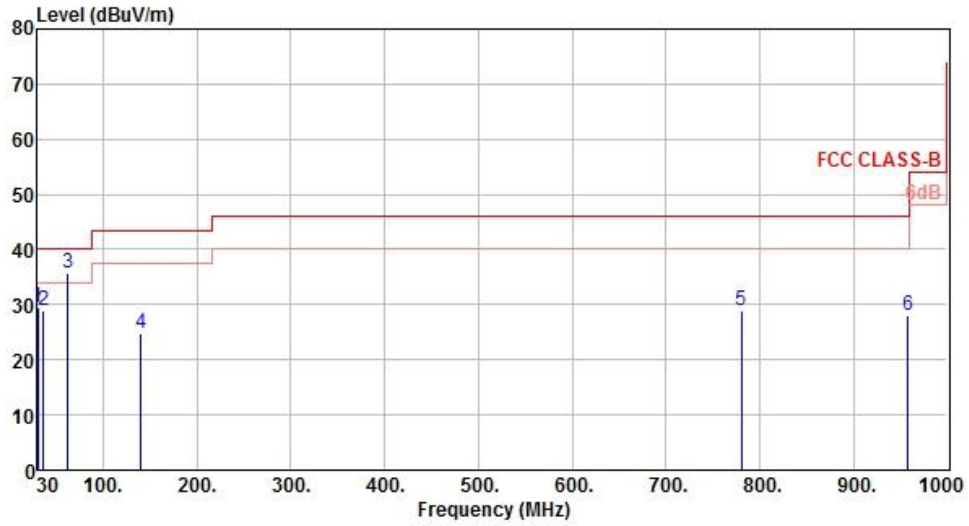
Polarization	Horizontal	Test Mode	5



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.00	19.09	40.00	-20.91	36.13	-17.04	Peak	----------	
2	57.16	24.26	40.00	-15.74	40.73	-16.47	Peak	----------	
3	62.01	26.69	40.00	-13.31	43.78	-17.09	Peak	200	136
4	170.65	18.78	43.50	-24.72	35.65	-16.87	Peak	----------	
5	511.12	23.33	46.00	-22.67	34.11	-10.78	Peak	----------	
6	780.78	32.00	46.00	-14.00	38.29	-6.29	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**	5

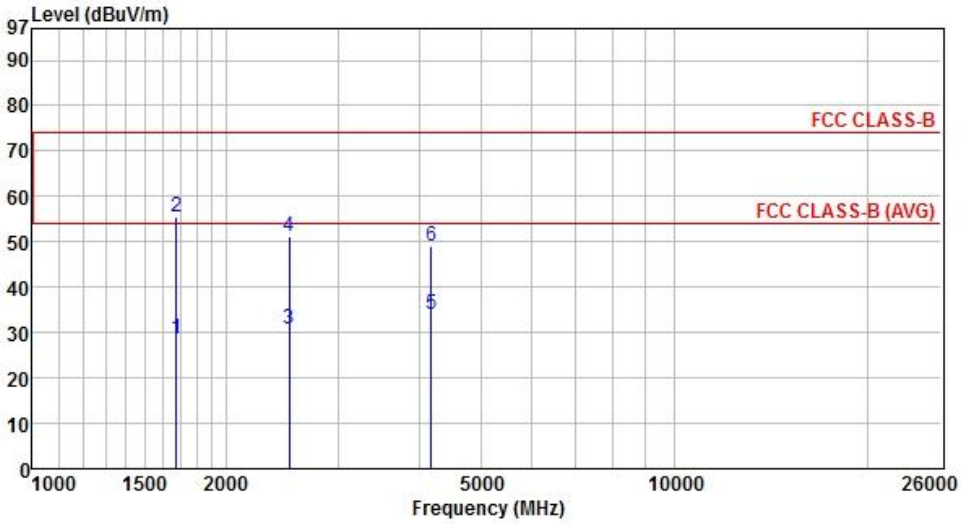


	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	30.00	29.52	40.00	-10.48	46.56	-17.04	Peak	----------	
2	36.79	29.00	40.00	-11.00	45.63	-16.63	Peak	----------	
3	62.01	35.60	40.00	-4.40	52.69	-17.09	Peak	100	179
4	140.58	24.80	43.50	-18.70	41.49	-16.69	Peak	----------	
5	780.78	28.99	46.00	-17.01	35.28	-6.29	Peak	----------	
6	958.29	28.04	46.00	-17.96	31.82	-3.78	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)

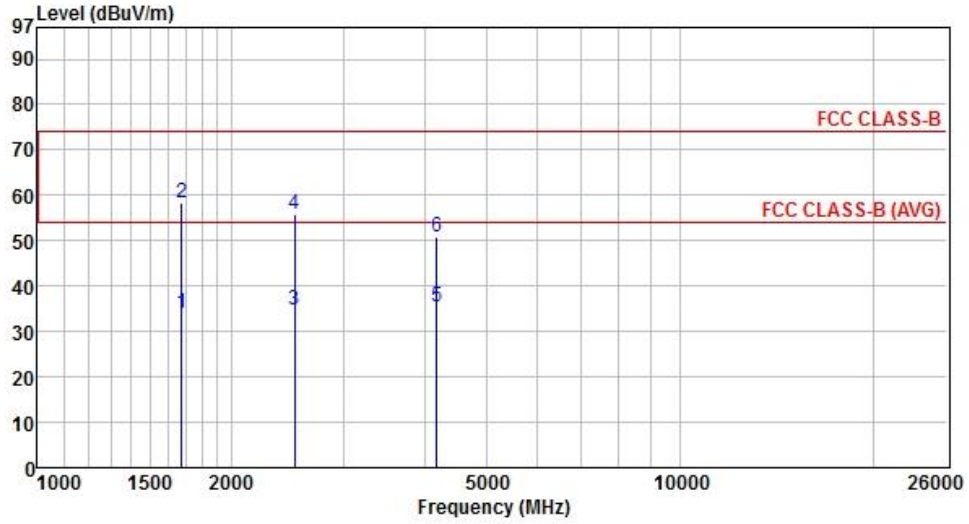
Polarization	Horizontal	Test Mode	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1673.24	28.50	54.00	-25.50	34.22	-5.72	Average	123	97
2	1673.24	55.50	74.00	-18.50	61.22	-5.72	Peak	123	97
3	2509.80	30.68	54.00	-23.32	32.95	-2.27	Average	105	221
4	2509.80	51.02	74.00	-22.98	53.29	-2.27	Peak	105	221
5	4182.98	34.14	54.00	-19.86	31.14	3.00	Average	120	178
6	4182.98	49.06	74.00	-24.94	46.06	3.00	Peak	120	178

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	1673.16	34.02	54.00	-19.98	39.74	-5.72	Average	100	203
2	1673.16	58.18	74.00	-15.82	63.90	-5.72	Peak	100	203
3	2509.85	34.84	54.00	-19.16	37.11	-2.27	Average	100	274
4	2509.85	55.95	74.00	-18.05	58.22	-2.27	Peak	100	274
5	4183.07	35.60	54.00	-18.40	32.60	3.00	Average	115	181
6	4183.07	50.80	74.00	-23.20	47.80	3.00	Peak	115	181

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).

==END==