



# FCC Test Report

**APPLICANT** : Motorola Mobility LLC  
**EQUIPMENT** : Mobile Cellular Phone  
**BRAND NAME** : T-Mobile  
**MODEL NAME** : XT1965-T  
**FCC ID** : IHDT56XN4  
**STANDARD** : 47 CFR Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product was received on Feb. 01, 2019 and testing was completed on Feb. 21, 2019. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.



Approved by: James Huang / Manager

**Sporton International (Kunshan) Inc.**  
**No. 1098, Pengxi North Road, Kunshan Economic Development Zone,**  
**Jiangsu Province 215335, China**



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### REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC920101	Rev. 01	Initial issue of report	Apr. 01, 2019
FC920101	Rev. 02	Update Brand Name to T-Mobile	Apr. 12, 2019



### SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 9.06 dB at 13.560 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 5.88 dB at 46.490 MHz



# 1. General Description

## 1.1. Applicant

Motorola Mobility LLC  
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

## 1.2. Manufacturer

Motorola Mobility LLC  
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

## 1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	T-Mobile
Model Name	XT1965-T
FCC ID	IHDT56XN4
EUT supports Radios application	CDMA/EVDO/GSM/GPRS/EGPRS/WCDMA/HSPA/ DC-HSDPA/HSPA+(16QAM uplink is not supported)/LTE WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC/GNSS/FM Receiver
IMEI Code	Conduction: 355572090012583 Radiation: 355572090012476 354133100003541
HW Version	PVT
SW Version	PCW29.81
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



### 1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 12 : 699.7 MHz ~ 715.3 MHz LTE Band 13 : 779.5 MHz ~ 784.5 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz LTE Band 25 : 1850.7 MHz ~ 1914.3 MHz LTE Band 26 : 814.7 MHz ~ 848.3 MHz LTE Band 38 : 2572.5 MHz ~ 2617.5 MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz LTE Band 66 : 1710.7 MHz ~ 1779.3 MHz LTE Band 71: 665.5 MHz ~ 695.5MHz CDMA2000 BC0: 824.70 MHz ~ 848.31 MHz CDMA2000 BC1: 1851.25 MHz ~ 1908.75 MHz CDMA2000 BC10: 817.9 MHz ~ 823.1 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5700 MHz 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band IV : 2112.4 MHz ~ 2152.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5 MHz ~ 2687.5 MHz LTE Band 12 : 729.7 MHz ~ 745.3 MHz LTE Band 13 : 748.5 MHz ~ 753.5 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz LTE Band 25 : 1930.7 MHz ~ 1994.3 MHz LTE Band 26 : 859.7 MHz ~ 893.3 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz LTE Band 66 : 2110.7 MHz~ 2199.3 MHz LTE Band 71: 619.5 MHz ~ 649.5MHz CDMA2000 BC0: 869.70 MHz ~ 893.31 MHz CDMA2000 BC1: 1931.25 MHz ~ 1988.75 MHz CDMA2000 BC10: 862.9 MHz ~ 868.1 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz;



	<p>5260 MHz ~ 5320 MHz;                      5500 MHz ~ 5700 MHz                      5745 MHz ~ 5825 MHz                      Bluetooth: 2402 MHz ~ 2480 MHz                      GNSS : 1559 MHz ~ 1610 MHz                      NFC : 13.56 MHz                      FM: 88 MHz - 108 MHz</p>
<b>Antenna Type</b>	<p>WWAN : Internal Antenna                      WLAN : Internal Antenna                      Bluetooth : Internal Antenna                      GNSS: Internal Antenna                      NFC : loop Antenna                      FM : External Handset Antenna</p>
<b>Type of Modulation</b>	<p>GSM: GMSK                      GPRS: GMSK                      EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK                      WCDMA : BPSK (Uplink)                      HSDPA/DC-HSDPA : QPSK (Uplink)                      HSUPA : QPSK (Uplink)                      HSPA+ : 16QAM(uplink is not supported)                      DC-HSDPA : 64QAM                      LTE: QPSK / 16QAM / 64QAM                      802.11b : DSSS (DBPSK / DQPSK / CCK)                      802.11a/g/n/ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)                      Bluetooth LE : GFSK                      Bluetooth (1Mbps) : GFSK                      Bluetooth (2Mbps) : <math>\pi/4</math>-DQPSK                      Bluetooth (3Mbps) : 8-DPSK                      GNSS : BPSK                      NFC: ASK                      FM</p>

WLAN operation in 5600 MHz ~ 5650 MHz is notched.

### 1.5. Modification of EUT

No modifications are made to the EUT during all test items.

### 1.6. Specification of Accessory

Specification of Accessory				
<b>AC Adapter 1</b>	<b>Brand Name</b>	Motorola (Salom)	<b>Model Name</b>	SC-31
	<b>Power Rating</b>	I/P: 100-240 Vac, 800mA O/P: 5Vdc,3000mA; 9Vdc,3000mA		
<b>AC Adapter 2</b>	<b>Brand Name</b>	Motorola (Acbel)	<b>Model Name</b>	SC-31
	<b>Power Rating</b>	I/P: 100-240 Vac, 800mA O/P: 5Vdc,3000mA; 9Vdc,3000mA		
<b>Battery</b>	<b>Brand Name</b>	Motorola(Amperex)	<b>Model Name</b>	JG40
	<b>Power Rating</b>	3.8Vdc,3000mAh	<b>Type</b>	Li-ion
<b>USB Cable</b>	<b>Brand Name</b>	Motorola (Cabletech)	<b>Model Name</b>	SC18C47591
	<b>Signal Line Type</b>	1.0 meter, shielded cable, without ferrite core		



### 1.7. Test Location

Sporton International (Kunshan) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0).

<b>Test Site</b>	Sporton International (Kunshan) Inc.		
<b>Test Site Location</b>	No. 1098, Pengxi North Road, Kunshan Economic Development Zone, Jiangsu Province 215335, China TEL : 86-512-57900158 FAX : 86-512-57900958		
<b>Test Site No.</b>	<b>Sporton Site No.</b>	<b>FCC designation No.</b>	<b>FCC Test Firm Registration No.</b>
	CO01-KS 03CH02-KS	CN5013	630927

### 1.8. Applicable Standards

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

- ♦ 47 CFR Part 15 Subpart B
- ♦ ANSI C63.4-2014

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.





## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

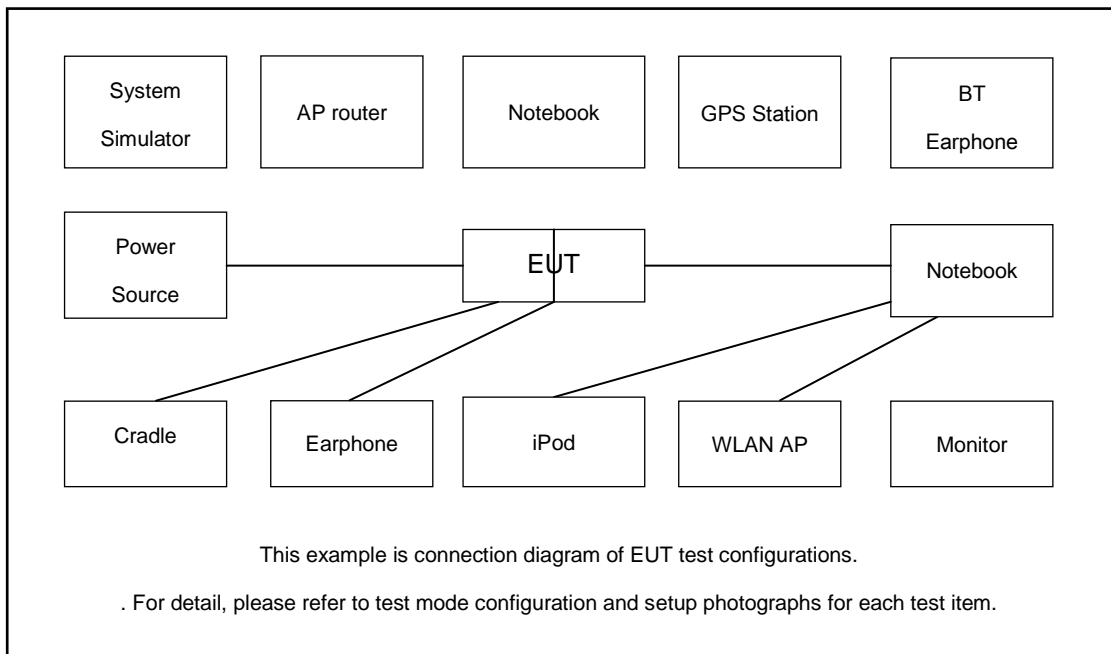
Test Items	Function Type
AC Conducted Emission	Mode 1: GSM850 Rx(Middle) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + USB Cable(Charging from Adapter 1) + Earphone
	Mode 2: GSM1900 Rx + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + USB Cable(Charging from Adapter 2) + Earphone
	Mode 3: CDMA BC10 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4+ USB Cable(Charging from Adapter 1) + Earphone
	Mode 4: LTE Band 12 RX(Middle) + Bluetooth Idle + WLAN (5G) Idle + NFC On + USB Cable(Charging from Adapter 1) + Earphone
	Mode 5: LTE Band 13 Rx(High) + Bluetooth Idle + WLAN (2.4G) Idle + FM Rx(98MHz) + USB Cable(Charging from Adapter 1) + Earphone
	Mode 6: LTE Band 71 Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx + USB Cable (Data Link with Notebook) + Earphone
Radiated Emissions	Mode 1: GSM850 Rx(Middle) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + USB Cable(Charging from Adapter 1) + Earphone + SIM 1
	Mode 2: GSM1900 Rx + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + USB Cable(Charging from Adapter 2) + Earphone + SIM 2
	Mode 3: CDMA BC10 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + MPEG4+ USB Cable(Charging from Adapter 2) + Earphone + SIM 1
	Mode 4: LTE Band 12 RX(Middle) + Bluetooth Idle + WLAN (5G) Idle + NFC On + USB Cable(Charging from Adapter 2) + Earphone + SIM 2
	Mode 5: LTE Band 13 Rx(High) + Bluetooth Idle + WLAN (2.4G) Idle + FM Rx(98MHz) + USB Cable(Charging from Adapter 2) + Earphone + SIM 1
	Mode 6: LTE Band 71 Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + GNSS Rx + USB Cable (Data Link with Notebook) + Earphone + SIM 2



**Remark:**

1. The worst case of AC is mode 4; only the test data of this mode is reported.
2. The worst case of RE is mode 6; only the test data of this mode is reported.
3. Data Link with Notebook means data application transferred mode between EUT and Notebook..
4. GNSS Rx = Galileo + GLONASS + GPS
5. Pre-scanned Low/Middle/High channel for GSM850/CDMABC10/LTE Band 12/13/71, FM Rx, the worst channel was recorded in this report.

## 2.2. Connection Diagram of Test System



## 2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8m
2.	Signal Generator	R&S	GSS7000	NA	NA	Unshielded, 1.8m
3.	Vector Signal Generator	R&S	SMBV100A	258305	N/A	N/A
4.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8m
5.	WLAN AP	TP-LINK	TL-WDR5600	N/A	N/A	Unshielded, 1.8m
6.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
7.	Bluetooth Earphone	Lenovo	LYEJ02LM	N/A	N/A	N/A
8.	Notebook	Lenovo	YOGA S730	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
9.	Notebook	DELL	MT320	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
10.	SD Card	Kingston	8GB	N/A	N/A	N/A
11.	SD Card	SanDisk	Uitra	N/A	N/A	N/A
12.	Hard Disk	Lenovo	LH310	N/A	Shielded, 1.2m	N/A
13.	Earphone	Lenovo	SH100	N/A	Unshielded, 1.2m	N/A



## **2.4. EUT Operation Test Setup**

The EUT was in GSM or CDMA or LTE 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.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Data application is transferred between Notebook and EUT via USB cable.
2. Turn on GNSS function to make the EUT receive continuous signals from GNSS station.
3. Turn on camera to capture images.
4. Turn on MPEG4 function.
5. Turn on FM receiver function to make the EUT receive continuous signals from FM station
6. Turn on NFC function



### 3. Test Result

#### 3.1. Test of AC Conducted Emission Measurement

##### 3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

<Class B Limit>

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency.

##### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

##### 3.1.3 Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

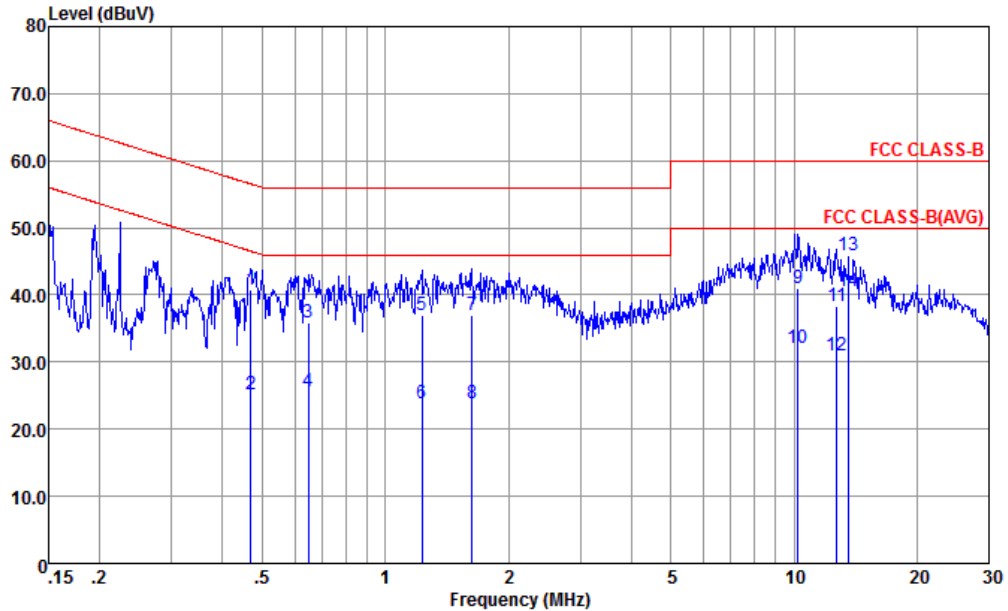
### 3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line

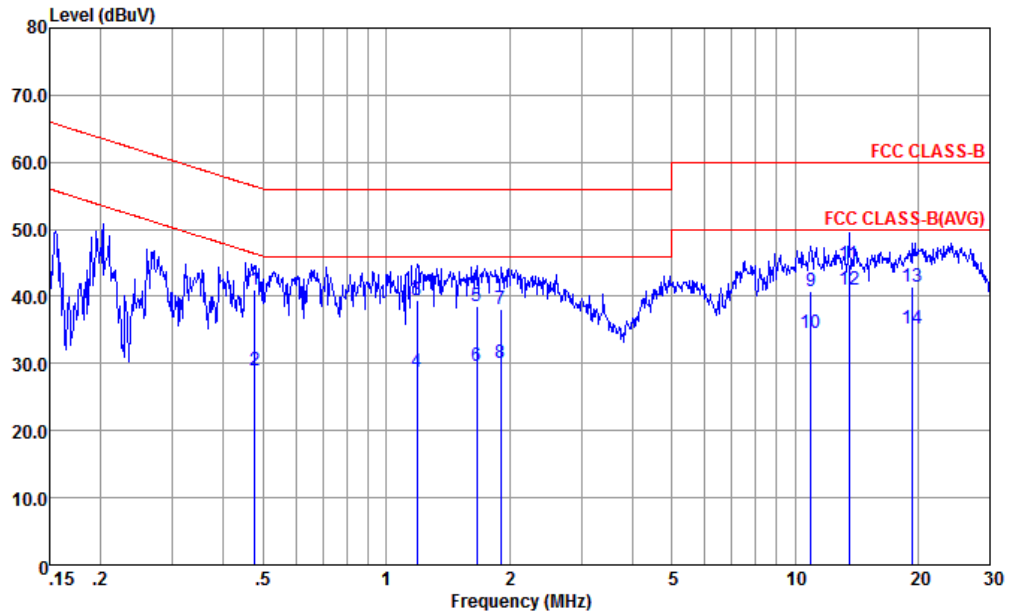


Site : CO01-KS  
 Condition : FCC CLASS-B LISN-L-181013-060103 LINE  
 Project : (FC) 920101  
 mode : Mode 4  
 : 355572090012583 #5

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.469	40.67	-15.87	56.54	30.20	0.23	10.24	QP
2	0.469	25.07	-21.47	46.54	14.60	0.23	10.24	Average
3	0.647	35.97	-20.03	56.00	25.50	0.23	10.24	QP
4	0.647	25.67	-20.33	46.00	15.20	0.23	10.24	Average
5	1.229	37.08	-18.92	56.00	26.60	0.25	10.23	QP
6	1.229	23.78	-22.22	46.00	13.30	0.25	10.23	Average
7	1.628	37.08	-18.92	56.00	26.60	0.25	10.23	QP
8	1.628	23.78	-22.22	46.00	13.30	0.25	10.23	Average
9	10.233	41.09	-18.91	60.00	30.51	0.24	10.34	QP
10	10.233	32.19	-17.81	50.00	21.61	0.24	10.34	Average
11	12.716	38.28	-21.72	60.00	27.60	0.31	10.37	QP
12	12.716	30.88	-19.12	50.00	20.20	0.31	10.37	Average
13	13.560	45.81	-14.19	60.00	35.10	0.33	10.38	QP
14 *	13.560	40.61	-9.39	50.00	29.90	0.33	10.38	Average



Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Site : CO01-KS  
 Condition : FCC CLASS-B LISN-N-181013-060103 NEUTRAL  
 Project : (FC) 920101  
 mode : Mode 4  
 : 355572090012583 #5

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.476	41.03	-15.38	56.41	30.60	0.19	10.24	QP
2	0.476	29.03	-17.38	46.41	18.60	0.19	10.24	Average
3	1.191	39.34	-16.66	56.00	28.90	0.21	10.23	QP
4	1.191	28.64	-17.36	46.00	18.20	0.21	10.23	Average
5	1.662	38.65	-17.35	56.00	28.20	0.22	10.23	QP
6	1.662	29.75	-16.25	46.00	19.30	0.22	10.23	Average
7	1.908	38.05	-17.95	56.00	27.60	0.22	10.23	QP
8	1.908	30.05	-15.95	46.00	19.60	0.22	10.23	Average
9	10.963	40.86	-19.14	60.00	30.30	0.21	10.35	QP
10	10.963	34.46	-15.54	50.00	23.90	0.21	10.35	Average
11	13.560	44.84	-15.16	60.00	34.20	0.26	10.38	QP
12 *	13.560	40.94	-9.06	50.00	30.30	0.26	10.38	Average
13	19.428	41.41	-18.59	60.00	30.61	0.32	10.48	QP
14	19.428	35.11	-14.89	50.00	24.31	0.32	10.48	Average





### 3.2. Test of Radiated Emission Measurement

#### 3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

<Class B Limit>

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

#### 3.2.2. Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.



### **3.2.3. Test Procedures**

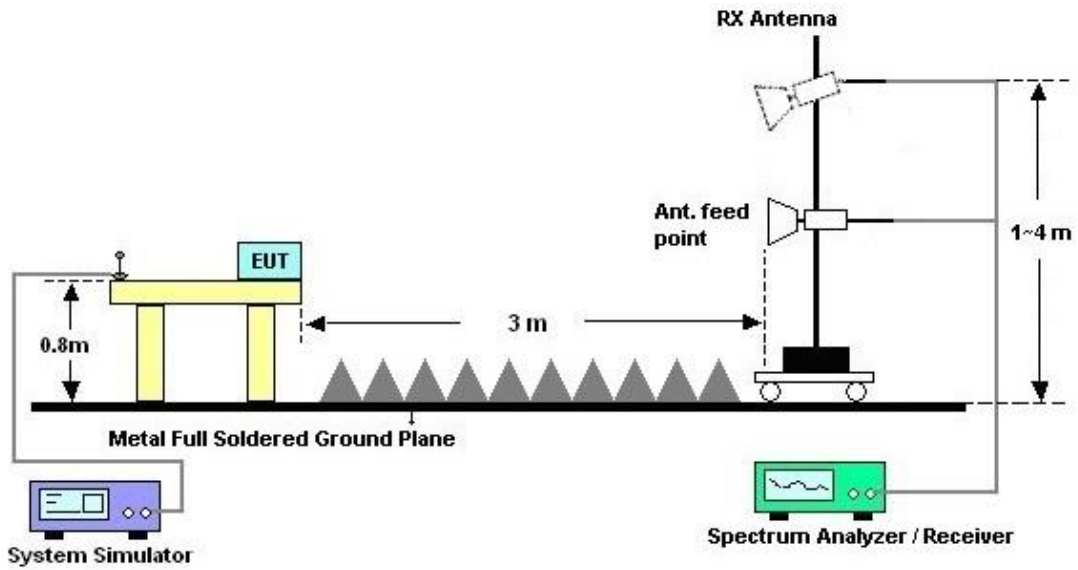
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

### 3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



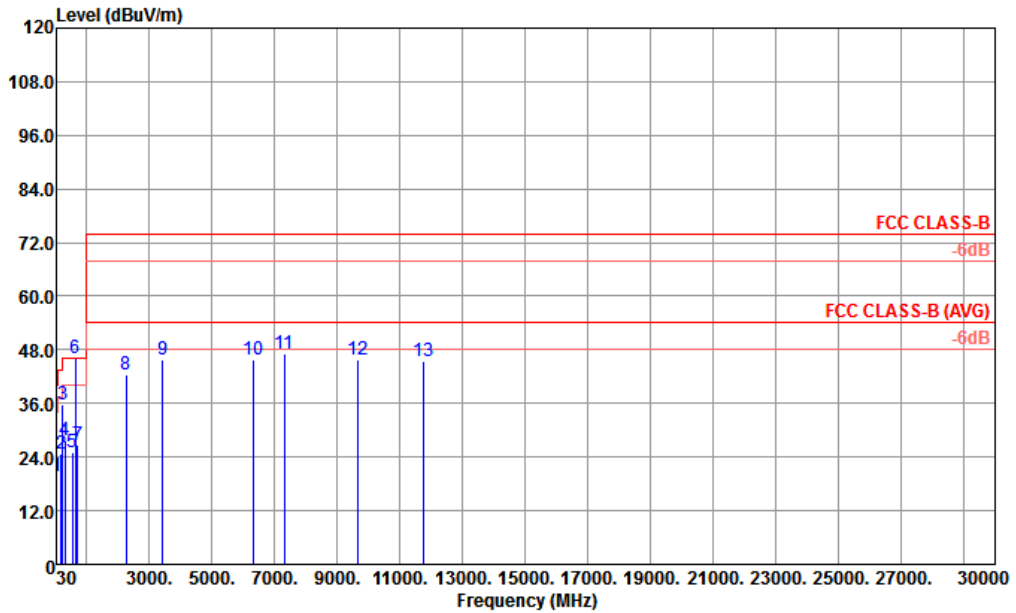
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Engineer :	IMP Xu	Temperature :	21~22°C
		Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Horizontal
Remark :	#6 is system simulator signal which can be ignored.		

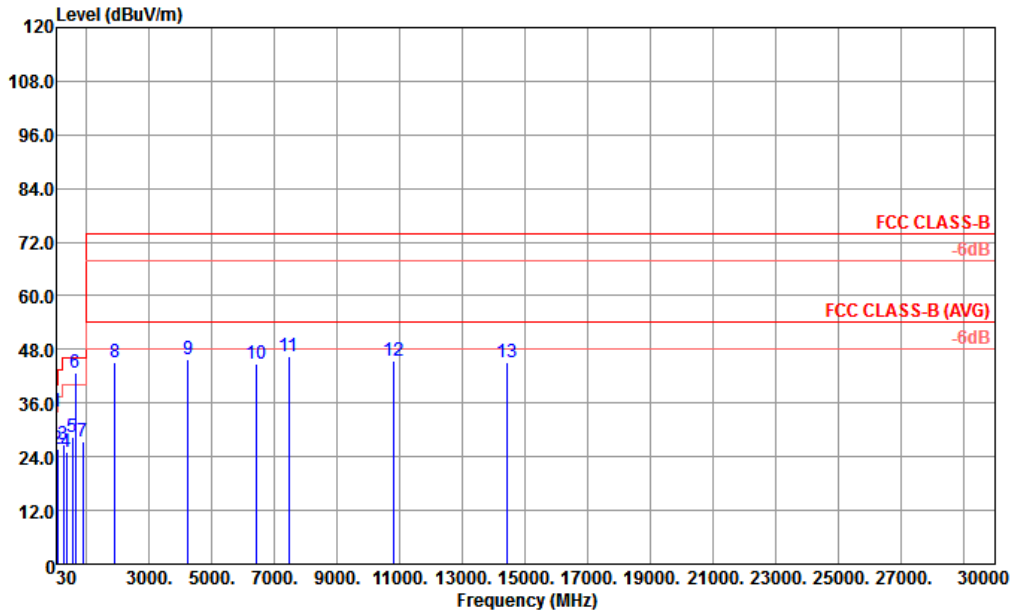


Site : 03CH02-KS  
 Condition : FCC CLASS-B 3m LF 23182-3M HORIZONTAL  
 Project : (FC)920101  
 Mode : 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.000	19.77	-20.23	40.00	26.64	24.50	0.61	31.98	---	---	Peak
2	180.350	24.72	-18.78	43.50	40.08	15.20	1.36	31.92	---	---	Peak
3	240.490	35.80	-10.20	46.00	48.67	17.40	1.68	31.95	100	0	Peak
4	299.660	27.59	-18.41	46.00	38.77	19.00	1.82	32.00	---	---	Peak
5	539.250	25.08	-20.92	46.00	31.32	23.63	2.45	32.32	---	---	Peak
6 *	634.310	46.04			50.62	24.94	2.86	32.38	---	---	Peak
7	718.700	26.59	-19.41	46.00	30.49	25.34	3.07	32.31	---	---	Peak
8	2248.000	42.45	-31.55	74.00	43.23	31.05	4.89	36.72	---	---	Peak
9	3416.000	45.64	-28.36	74.00	42.58	33.41	6.04	36.39	---	---	Peak
10	6336.000	45.84	-28.16	74.00	39.25	34.86	8.49	36.76	---	---	Peak
11	7304.000	47.29	-26.71	74.00	39.21	35.89	9.12	36.93	---	---	Peak
12	9648.000	45.75	-28.25	74.00	35.25	37.37	10.85	37.72	---	---	Peak
13	11772.000	45.53	-28.47	74.00	30.85	39.58	11.71	36.61	---	---	Peak



Test Engineer :	IMP Xu	Temperature :	21~22°C
		Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Vertical
Remark :	#6 is system simulator signal which can be ignored.		



Site : 03CH02-KS  
 Condition : FCC CLASS-B 3m LF 23182-3M VERTICAL  
 Project : (FC)920101  
 Mode : 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 !	46.490	34.12	-5.88	40.00	49.72	15.62	0.72	31.94	100	0	Peak
2	71.710	25.80	-14.20	40.00	44.17	12.67	0.88	31.92	---	---	Peak
3	263.770	26.68	-19.32	46.00	37.72	19.19	1.76	31.99	---	---	Peak
4	359.800	25.09	-20.91	46.00	34.69	20.57	1.92	32.09	---	---	Peak
5	544.100	28.33	-17.67	46.00	33.24	24.80	2.62	32.33	---	---	Peak
6 !	633.340	42.95			47.55	24.93	2.85	32.38	---	---	Peak
7	883.600	27.57	-18.43	46.00	29.02	26.70	3.42	31.57	---	---	Peak
8	1912.000	44.99	-29.01	74.00	47.62	29.73	4.42	36.78	---	---	Peak
9	4240.000	45.63	-28.37	74.00	39.63	35.51	7.34	36.85	---	---	Peak
10	6424.000	44.77	-29.23	74.00	38.12	34.87	8.48	36.70	---	---	Peak
11	7456.000	46.36	-27.64	74.00	38.17	35.98	9.22	37.01	---	---	Peak
12	10809.000	45.45	-28.55	74.00	33.02	38.79	11.36	37.72	---	---	Peak
13	14409.000	45.25	-28.75	74.00	27.80	40.77	12.78	36.10	---	---	Peak



### 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Receiver	R&S	ESC17	100768	9kHz~7GHz;	Apr. 19, 2018	Feb. 20, 2019	Apr. 18, 2019	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 12, 2018	Feb. 20, 2019	Oct. 11, 2019	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Nov. 22, 2018	Feb. 20, 2019	Nov. 21, 2019	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	AC 0V~300V, 45Hz~1000Hz	Oct. 12, 2018	Feb. 20, 2019	Oct. 11, 2019	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Ma x 30dBm	Aug. 08, 2018	Feb. 21, 2019	Aug. 07, 2019	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz-44G,MAX 30dB	Oct. 10, 2018	Feb. 21, 2019	Oct. 09, 2019	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	23182	30MHz-2GHz	Dec. 29, 2018	Feb. 21, 2019	Dec. 28, 2019	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75959	1GHz~18GHz	Jan. 27, 2019	Feb. 21, 2019	Jan. 26, 2020	Radiation (03CH02-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Jan. 05, 2019	Feb. 21, 2019	Jan. 04, 2020	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Aug. 06, 2018	Feb. 21, 2019	Aug. 05, 2019	Radiation (03CH02-KS)
Amplifier	Keysight	83017A	MY53270203	500MHz~26.5G Hz	Apr. 18, 2018	Feb. 21, 2019	Apr. 17, 2019	Radiation (03CH02-KS)
Amplifier	MITEQ	TTA1840-35-H G	2014749	18~40GHz	Jan. 14, 2019	Feb. 21, 2019	Jan. 13, 2020	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	61601000247 3	N/A	NCR	Feb. 21, 2019	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Feb. 21, 2019	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Feb. 21, 2019	NCR	Radiation (03CH02-KS)

NCR: No Calibration Required



## 5. Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.9 dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.8 dB
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### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.2 dB
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### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.0 dB
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