FCC CO-LOCATION RADIO TEST REPORT

FCC ID	:	**PY7-60551T**
Equipment	:	**GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS and NFC**
Brand Name	:	**Sony**
Applicant	:	**Sony Corporation 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan**
Manufacturer	:	**Sony Corporation 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan**
Standard	:	**FCC 47 CFR Part 2,**

The product was received on Apr. 09, 2021 and testing was started from May 03, 2021 and completed on May 18, 2021. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E 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 Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory
No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FG133117E	01	Initial issue of report	May 19, 2021

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.4	§2.1053	Field Strength of Spurious Radiation (Band 41)	Pass	Under limit 6.96 dB at 9988.000 MHz

Remark: The FCC ID: PY7-45256F and FCC ID: PY7-60551T are HW identical, the difference is only SW, and each supported bands are handled by only SW.

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Keven Cheng

Report Producer: Tina Chuang

1 General Description

1.1 Product Feature of Equipment Under Test

GSM/WCDMA/LTE/5G NR, Bluetooth, DTS/UNII a/b/g/n/ac/ax, NFC, and GNSS.

Product Specification subjective to this standard	
Antenna Type	Loop Antenna

Remark: The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

EUT Information List			
HW Version	**SW Version**	**S/N**	**Performed Test Item**
A	0.747	QV7200A07E	Radiated Spurious Emission

Accessory List	
AC Adapter	Model Name : XQZ-UC1
	S/N: 0020W51300039
Earphone	Model Name : MH750
	S/N : N/A
USB Cable	Model Name : XQZ-UB1
	S/N : N/A

Note:

1. Above EUT list used are electrically identical per declared by manufacturer.
2. Above the accessories list are used to exercise the EUT during test, and the serial number of each type of accessories is listed in each section of this report.
3. For other wireless features of this EUT, test report will be issued separately.

1.2 Modification of EUT

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

1.3 Testing Location

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH15-HY
Test Engineer	Leo Lee, Mancy Chou and Bigshow Wang
Temperature	21.2~25.4℃
Relative Humidity	44~64%

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW3786

1.4 Applicable Standards

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

- ANSI C63.26-2015
- ANSI / TIA-603-E
- 47 CFR Part 2,
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- FCC KDB 414788 D01 Radiated Test Site v01r01
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

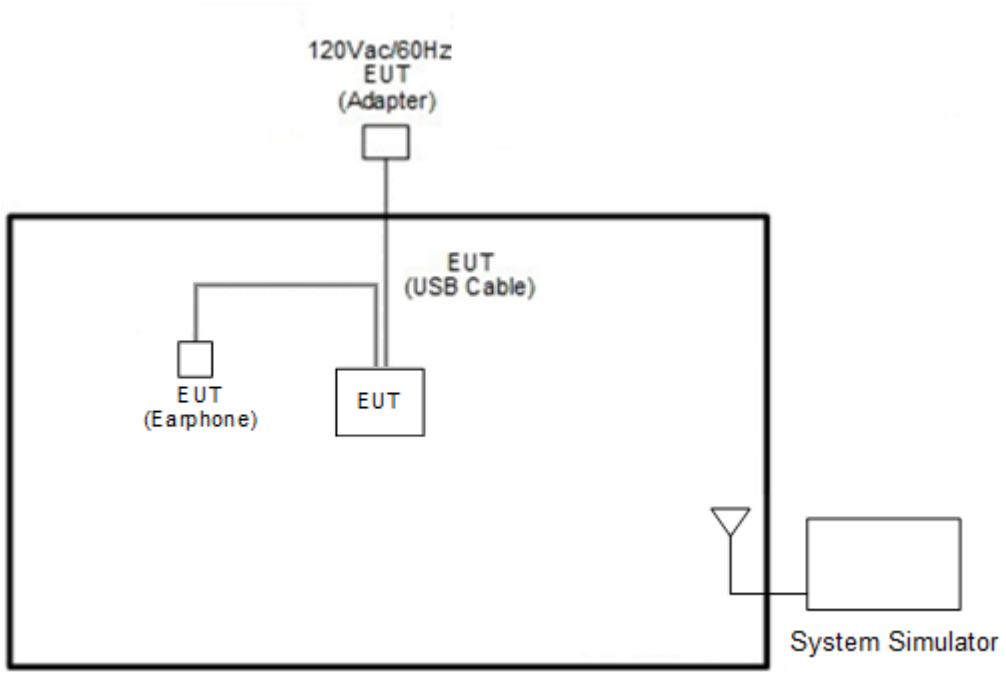
2.1 Test Mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane for WLAN 802.11b_Tx + WWAN LTE Band 41, Y Plane for WLAN 802.11b_Tx + WLAN 802.11a_Tx + WWAN LTE Band 41 and Z Plane for WLAN 802.11a_Tx + BT_1M + WWAN LTE Band 41) were recorded in this report.

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Radiated Spurious Emission	41	-	-		v			v			v			v		
Remark	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. During the Radiated Spurious Emission test, the EUT turn on the WLAN functions simultaneously, the LTE mode selected the frequency band with the closest transmission frequency and used the WLAN worst case output power.															

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m

2.4 Frequency List of Low/Middle/High Channels

LTE Band 41 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	39750	40620	41490
	Frequency	2506.0	2593.0	2680.0
15	Channel	39725	40620	41515
	Frequency	2503.5	2593.0	2682.5
10	Channel	39700	40620	41540
	Frequency	2501.0	2593.0	2685.0
5	Channel	39675	40620	41565
	Frequency	2498.5	2593.0	2687.5

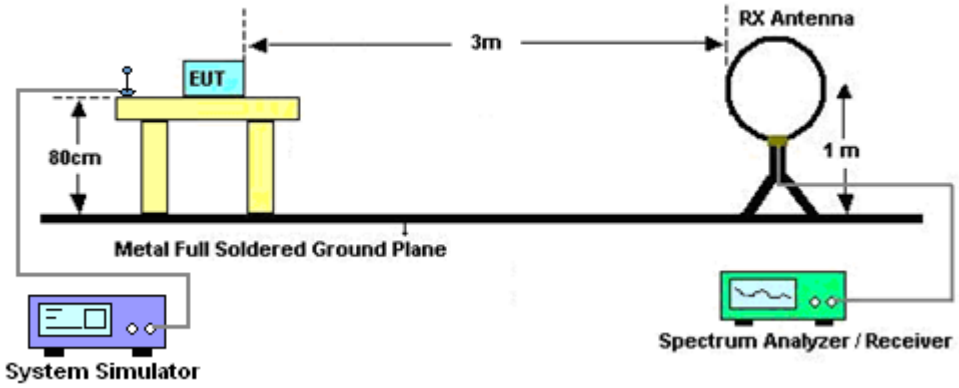
3 Radiated Test Items

3.1 Measuring Instruments

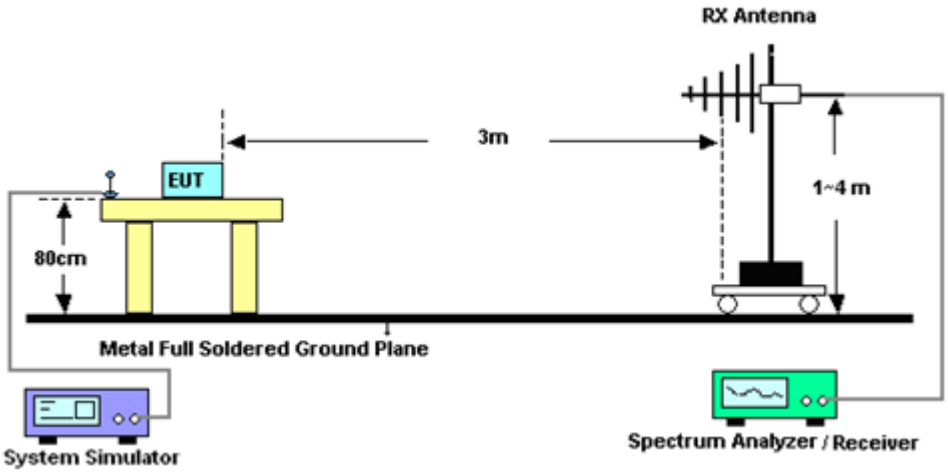
See list of measuring instruments of this test report.

3.2 Test Setup

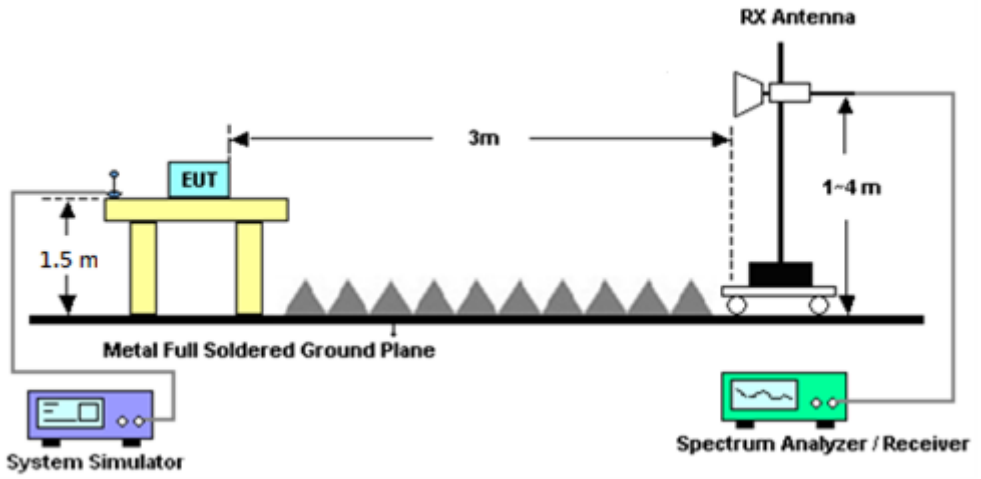
For radiated test below 30MHz



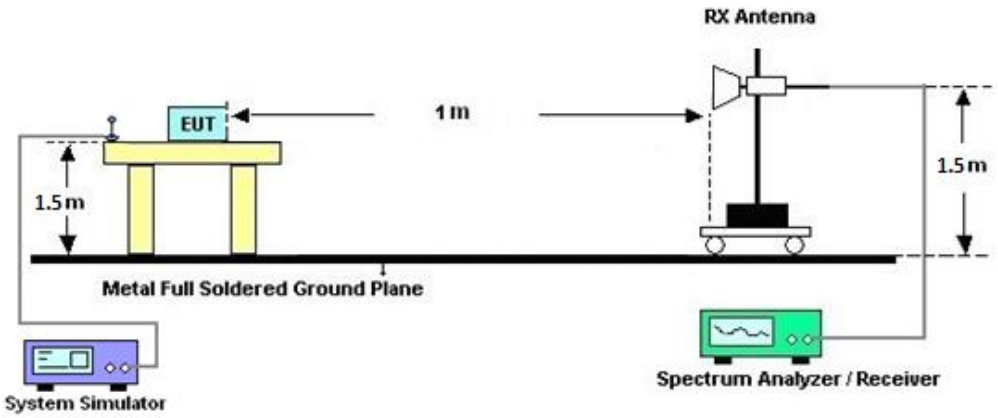
For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



For radiated test above 18GHz



3.3 Test Result of Radiated Test

Please refer to Appendix A.

Note:

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.4 Field Strength of Spurious Radiation Measurement

3.4.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.4.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI / TIA-603-E Section 2.2.12.

1. The EUT was placed on a rotatable wooden table 0.8 meters for frequency below 1GHz and 1.5 meter for frequency above 1GHz above the ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
13. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Jul. 14, 2020	May 03, 2021~ May 18 , 2021	Jul. 13, 2021	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	37059 & 01	30MHz~1GHz	Oct. 11, 2020	May 03, 2021~ May 18 , 2021	Oct. 10, 2021	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL6111D&00 800N1D01N-0 6	41912&05	30MHz to 1GHz	Feb. 08, 2021	May 03, 2021~ May 18 , 2021	Feb. 07, 2022	Radiation (03CH15-HY)
Amplifier	SONOMA	310N	363440	9kHz~1GHz	Dec. 28, 2020	May 03, 2021~ May 18 , 2021	Dec. 27, 2021	Radiation (03CH15-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-02114	1-18GHz	Aug. 04, 2020	May 03, 2021~ May 18 , 2021	Aug. 03, 2021	Radiation (03CH15-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1326	1GHz~18GHz	Nov. 03, 2020	May 03, 2021~ May 18 , 2021	Nov. 02, 2021	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917025 1	18GHz- 40GHz	Dec. 02, 2020	May 03, 2021~ May 18 , 2021	Dec. 01, 2021	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917057 6	18GHz~40GHz	May 22, 2020	May 03, 2021~ May 18 , 2021	May 21, 2021	Radiation (03CH15-HY)
Preamplifier	Jet-Power	JPA0118-55-3 03	1710001800 055006	1GHz~18GHz	May 07, 2020	May 03, 2021~ May 05 , 2021	May 06, 2021	Radiation (03CH15-HY)
Amplifier	EMCI	EMC118A45S E	980791	1GHz-18GHz	Nov. 16, 2020	May 05, 2021~ May 06 , 2021	Nov. 15, 2021	Radiation (03CH15-HY)
Preamplifier	Jet-Power	JPA0118-55-3 03	1710001800 055006	1GHz~18GHz	May 06, 2021	May 06, 2021~ May 18 , 2021	May 05, 2022	Radiation (03CH15-HY)
Preamplifier	Keysight	83017A	MY53270195	1GHz~26.5GHz	Aug. 21, 2020	May 03, 2021~ May 18 , 2021	Aug. 20, 2021	Radiation (03CH15-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz ~ 40GHz	Jun. 15, 2020	May 03, 2021~ May 18 , 2021	Jun. 14, 2021	Radiation (03CH15-HY)
Spectrum Analyzer	Keysight	N9038A	MY54130085	20MHz~8.4GHz	Nov. 02, 2020	May 03, 2021~ May 18 , 2021	Nov. 01, 2021	Radiation (03CH15-HY
Spectrum Analyzer	Keysight	N9010A	MY54200485	10Hz~44GHz	Mar. 05, 2021	May 03, 2021~ May 18 , 2021	Mar. 04, 2022	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	May 03, 2021~ May 18 , 2021	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	May 03, 2021~ May 18 , 2021	N/A	Radiation (03CH15-HY)
Software	Audix	E3 6.2009-8-24(k 5)	RK-000451	N/A	N/A	May 03, 2021~ May 18 , 2021	N/A	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104, 102E	MY36980/4, MY9838/4PE ,508405/2E	30MHz~18G	Nov. 16, 2020	May 03, 2021~ May 18 , 2021	Nov. 15, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz-40GHz	Feb. 22, 2021	May 03, 2021~ May 18 , 2021	Feb. 21, 2022	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz-40GHz	Feb. 22, 2021	May 03, 2021~ May 18 , 2021	Feb. 21, 2022	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 11, 2021	May 03, 2021~ May 18 , 2021	Mar. 10, 2022	Radiation (03CH15-HY)
Filter	Wainwright	WLK4-1000-15 30-8000-40SS	SN4	1.53G Low Pass	Jul. 03, 2020	May 03, 2021~ May 18 , 2021	Jul. 02, 2021	Radiation (03CH15-HY)
Filter	Wainwright	WHKX12-1080 -1200-15000-6 0ST	SN5	1.2GHz High Pass Filter	Jul. 01, 2020	May 03, 2021~ May 18 , 2021	Jun. 30, 2021	Radiation (03CH15-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 0ST	SN4	3GHz High Pass Filter	Sep. 16, 2020	May 03, 2021~ May 18 , 2021	Sep. 15, 2021	Radiation (03CH15-HY)
Signal Generator	Anritsu	MG3694C	163401	0.1Hz~40GHz	Jan. 31, 2021	May 03, 2021~ May 18 , 2021	Jan. 30, 2022	Radiation (03CH15-HY)

5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.98**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.31**

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.92**

Appendix A. Test Results of Radiated Test

WLAN 802.11b_Tx_Ch01 + WWAN LTE Band 41 BW: 20MHz CH39750 Link

11b_Tx_Ch01+LTE Band 41 BW: 20MHz CH39750 Link									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	4994	-43.87	-25	-18.87	-67.7	-53.21	3.27	12.61	H
	7491	-37.17	-25	-12.17	-66.68	-44.35	4.00	11.18	H
	9988	-31.96	-25	-6.96	-65.33	-38.47	4.67	11.18	H
									H
									H
									H
									H
	4994	-42.91	-25	-17.91	-67.42	-52.25	3.27	12.61	V
	7491	-37.19	-25	-12.19	-67.07	-44.37	4.00	11.18	V
	9988	-33.67	-25	-8.67	-66.79	-40.18	4.67	11.18	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WLAN 802.11a_Tx_Ch36+BT_1M_Ch39 + WWAN LTE Band 41 BW: 20MHz CH39750 Link

11a_Tx_Ch36+BT_1M_Ch39+LTE Band 41 BW: 20MHz CH39750 Link									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	4994	-44.05	-25	-19.05	-67.88	-53.39	3.27	12.61	H
	7491	-38.09	-25	-13.09	-67.6	-45.27	4.00	11.18	H
	9988	-32.78	-25	-7.78	-66.14	-39.29	4.67	11.18	H
									H
									H
									H
									H
	4994	-42.62	-25	-17.62	-647.12	-51.96	3.27	12.61	V
	7491	-36.40	-25	-11.40	-66.28	-43.58	4.00	11.18	V
	9988	-33.61	-25	-8.61	-66.72	-40.12	4.67	11.18	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WLAN 802.11b_Tx_Ch01+ WLAN 802.11a_Tx_Ch36+ WWAN LTE Band 41 BW: 20MHz CH39750 Link

11b_Tx_Ch01+ 11a_Tx_Ch36+LTE Band 41 BW: 20MHz CH39750 Link									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	4994	-43.90	-25	-18.90	-67.73	-53.24	3.27	12.61	H
	7491	-37.27	-25	-12.27	-66.78	-44.45	4.00	11.18	H
	9988	-33.69	-25	-8.69	-67.05	-40.20	4.67	11.18	H
									H
									H
									H
									H
	4994	-42.66	-25	-17.66	-67.16	-52.00	3.27	12.61	V
	7491	-37.58	-25	-12.58	-67.46	-44.76	4.00	11.18	V
	9988	-33.78	-25	-8.78	-66.89	-40.29	4.67	11.18	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

THE END