TEST REPORT

For

Duet

MODEL NUMBER: HM-1005

REPORT NUMBER: 4790868133

ISSUE DATE: Aug. 08, 2023

FCC ID: 2AUCLHM-1005

Prepared for

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Prepared by

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TEST REPORT CERTIFICATION

Applicant:	FX TECHNOLOGY LIMITED
Address:	2 Stone Buildings, Lincoln's Inn, London, United Kingdom
Manufacturer:	UWIN INNOVATION(HONG KONG)LIMITED
Address:	ROOM D 10/F TOWER A BILLION CENTRE 1 WANG KWONG RD KOWLOON BAY KL
Product Name:	Duet
Trademark:	Linxdot
Model Name:	HM-1005
Sample Status:	Normal
Sample Received Date:	May 18, 2023
Date of Test:	May 18, 2023 – Aug. 08, 2023

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Part 22, 24, 27, 96 KDB 971168 D01 v03r01, ANSI C63.26(2015)	PASS

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Revision History

Rev.	Issue Date	Contents
00	Aug. 08, 2023	Initial Issue

1. FACILITIES AND ACCREDITATION& MEASUREMENT UNCERTAINTY

1.1 FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi-tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30 MHz, measurement is performed in anechoic chamber and compared to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.

1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Conduction emission	3.62 dB
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
Radiated Emission (Included Fundamental Emission) (1 GHz to 40 GHz)	5.78 dB (1 GHz-18 GHz)
	5.23dB (18 GHz-26 GHz)
	5.64 dB (26 GHz-40 GHz)
Bandwidth	1.1 %
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.	

2. GENERAL INFORMATION

2.1 TECHNICAL SPECIFICATIONS AND REGULATIONS

2.1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Name:	Duet
Trademark:	Linxdot
Model Name:	HM-1005
Series Model:	N/A
Model Difference:	N/A
Frequency Bands:	SA: n5, n41, n48, n71, n77 NSA: B2+n41/B6+n41/B2+n71/B66+n71
SIM Card:	SIM 1 and SIM 2 is a chipset unit and tested as single chipset, SIM 1 is used to tested.
Antenna:	PIFA
Antenna gain:	n5: -0.95dBi n41: -0.57dBi n48: 0.81dBi n71: -2.51dBi n77: 1.44dBi
Battery:	Capacity: 5500mAh Rated Voltage: 3.85V
Extreme Vol. Limits:	3.465V to 4.235V (Nominal 3.85V)
Extreme Temp. Tolerance:	-0℃ to +40℃
Hardware Version:	N/A
Software Version:	N/A

Note: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.

2.1.2 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

Product Specification Subjective To This Standard	
Tx Frequency	n5: 824-849 MHz n41: 2496-2690 MHz n48: 3550 MHz ~ 3700 MHz n71:663 MHz ~ 698 MHz n77: 3450-3550 MHz, 3700-3980 MHz
Rx Frequency	n5: 869-894 MHz n41: 2496-2690 MHz n48: 3550 MHz ~ 3700 MHz n71: 617 MHz ~ 652 MHz n77: 3450-3550 MHz, 3700-3980 MHz
Bandwidth	n5: 5MHz, 10MHz, 15MHz, 20MHz n41: 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80Mhz, 90MHz, 100MHz n48: 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80Mhz, 90MHz, 100MHz n71: 5MHz, 10MHz, 15MHz, 20MHz n77: 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80Mhz, 90MHz, 100MHz
Subcarrier Spacing	n5: 15KHz n41: 30KHz n48: 30KHz n71: 15KHz n77: 30KHz
Type of Modulation	DFT-s-OFDM: PI/2 BPSK、QPSK、16QAM、64QAM、256QAM CP-OFDM:QPSK、16QAM、64QAM、256QAM

2.1.3 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for filing to comply with the 47 CFR Part 2, 22, 24, 27, 90.

2.1.4 SPECIAL ACCESSORIES

The battery and the charger, earphone supplied by the applicant were used as accessories and being tested with eut intended for fcc grant together.

2.1.5 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission’s requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.1.6 EUT EXERCISE

The Transmitter was operated in the maximum output power mode through Communication Tester. The TX frequency was fixed which was for the purpose of the measurements.

2.1.7 CONFIGURATION OF EUT SYSTEM

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

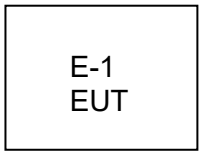


Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	Length	Note
N/A				N/A

Note:

(1) For detachable type I/O cable should be specified the length in cm in『Length』column.

(2) "YES" is means "with core"; "NO" is means "without core".

2.1.8 MEASUREMENT INSTRUMENTS

The radiated emission testing was performed according to the procedures of ANSI C63.26 2015 and FCC CFR 47 rules of 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057.

ANTENNA TERMINAL TEST

INSTRUMENT

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	R&S	FSV40	S422060001	Oct.17, 2022	Oct.16, 2023
☑	UXM 5G Wireless test platform	KESIGHT	N7515B	MY60102194	Jan. 9, 2023	Jan. 8, 2024
☑	DC Power Supply	Array	3662A	A1512015	Oct.17, 2022	Oct.16, 2023
Software						
Used	Description		Manufacturer	Name		Version
☑	Tonsend Cellular Test System		Tonsend	JS1120 RF Auto Test System		3.1.46
Radiated Test						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Oct.17, 2022	Oct.16, 2023
☑	UXM 5G Wireless test platform	KESIGHT	N7515B	MY60102194	Jan. 9, 2023	Jan. 8, 2024
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	Aug.02, 2021	Aug.01, 2024
☑	Preamplifier	HP	8447D	2944A09099	Oct.17, 2022	Oct.16, 2023
☑	EMI Measurement Receiver	R&S	ESR26	101377	Oct.17, 2022	Oct.16, 2023
☑	Horn Antenna	TDK	HRN-0118	130940	July 20, 2021	July 19, 2024
☑	Horn Antenna	Schwarzbeck	BBHA9170	697	July 20, 2021	July 19, 2024
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00067	Oct.17, 2022	Oct.16, 2023
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Oct.17, 2022	Oct.16, 2023
☑	Loop antenna	Schwarzbeck	1519B	00008	Dec.14, 2021	Dec.13, 2024
☑	High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Oct.17, 2022	Oct.16, 2023
Software						
Used	Description		Manufacturer	Name		Version
☑	Test Software for Radiated disturbance		Farad	EZ-EMC		Ver. UL-3A1

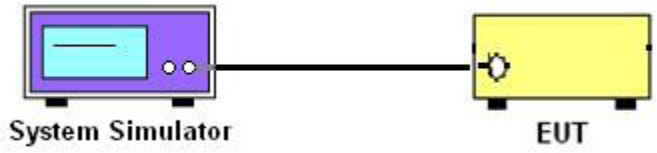
3. CONDUCTED OUTPUT POWER

3.1 DESCRIPTION OF THE CONDUCTED OUTPUT POWER MEASUREMENT

3.1.1 MEASUREMENT METHOD

A system simulator was used to establish communication with the eut. Its parameters were set to force the eut transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.
Configuration follows KDB 971168 D01 v03r01.

3.1.2 TEST SETUP



3.1.3 TEST PROCEDURES

1. The transmitter output port was connected to system simulator.

2. Set EUT at maximum power through the system simulator.

3. Select lowest/middle/highest channels for each band and different modulation.

4. Measure and record the power level from the system simulator.

3.1.4 TEST RESULTS

Note: The test data please reference to attachment Appendix SA, Appendix NSA.

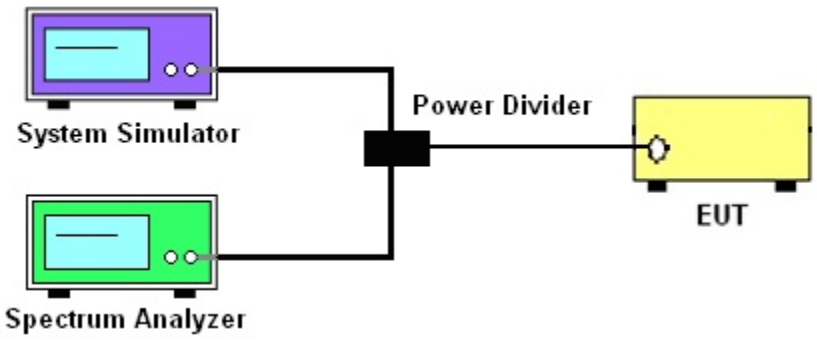
4. PEAK-TO-AVERAGE RATIO

4.1 DESCRIPTION OF THE CONDUCTED OUTPUT POWER MEASUREMENT

4.1.1 MEASUREMENT METHOD

Use one of the procedures presented in 4.1.3 to measure the total peak power and record as PPk. Use one of the applicable procedures presented 4.1.3 to measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

4.1.2 TEST SETUP



4.1.3 TEST PROCEDURES

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.7 and ANSI C63.26 2015 Section 5.2.6.

2. The EUT was connected to spectrum and system simulator via a power divider

3. Select lowest, middle, and highest channels for each band and different modulation.

4. Set the test probe and measure the peak and average power of the spectrum analyzer

5. Record the deviation as Peak to Average Ratio.

4.1.4 TEST RESULTS

Note: The test data please reference to attachment Appendix SA, Appendix NSA.

5. RADIATED POWER AND EFFECTIVE ISOTROPIC RADIATED POWER

5.1 DESCRIPTION OF THE ERP/EIRP MEASUREMENT

5.1.1 MEASUREMENT METHOD

Determining ERP and/or EIRP from conducted RF output power measurements according to ANSI C63.26 2015 Section 5.2.5.5.
In many cases, RF output power limits are specified in terms of the ERP or the EIRP. Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are defined as the product of the power supplied to the antenna and its gain (relative to a dipole antenna in the case of ERP, and relative to an isotropic antenna in the case of EIRP); however, when working in decibels (i.e., logarithmic scale), the ERP and EIRP represent the sum of the transmit antenna gain (in dBd or dBi, respectively) and the conducted RF output power (expressed in dB relative to watts or milliwatts).
The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows:
(1) ERP or EIRP = PMeas + GT
ERP= EIRP-2.15
where
ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as PMeas, e.g., dBm or dBW)
PMeas measured transmitter output power or PSD, in dBm or dBW
GT gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)
For devices utilizing multiple antennas, see 6.4 for guidance with respect to determining the effective array transmit antenna gain term to be used in the above equation.
The following equations demonstrate the mathematical relationship between ERP and EIRP:
a) ERP = EIRP − 2.15, where ERP and EIRP are expressed in consistent units.
b) EIRP = ERP + 2.15, where ERP and EIRP are expressed in consistent units.

5.1.2 TEST RESULTS

Note:
1. Test is divided into three directions, X/Y/Z. X pattern for the worst.
2. The test data please reference to attachment Appendix SA, Appendix NSA.

6. OCCUPIED BANDWIDTH

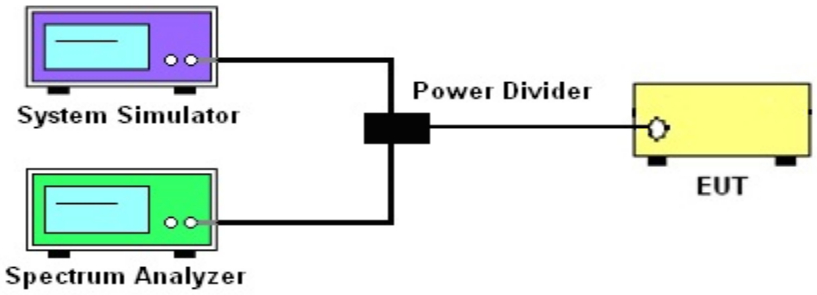
6.1 DESCRIPTION OF OCCUPIED BANDWIDTH MEASUREMENT

6.1.1 MEASUREMENT METHOD

1.The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

2.The 26 db emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 db below the maximum in-band spectral density of the modulated signal. spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

6.1.2 TEST SETUP



6.1.3 TEST PROCEDURES

1. The testing follows FCC KDB 971168 D01 v03r01 Section 4.2 and 4.3.

2. The EUT was connected to spectrum and system simulator via a power divider.

3. Select lowest, middle, and highest channels for each band and different modulation.

4. Set the test probe and measure the Occupied Bandwidth of the spectrum analyzer.

5. Measure and record the Occupied Bandwidth from the Spectrum Analyzer.

6.1.4 MEASUREMENT RESULT

Note: The test data please reference to attachment Appendix SA, Appendix NSA.

7. CONDUCTED BAND EDGE

7.1 DESCRIPTION OF CONDUCTED BAND EDGE MEASUREMENT

7.1.1 MEASUREMENT METHOD

1. §22.917(a)
For operations in the 824 – 849 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

2. §24.238 (a)
For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed

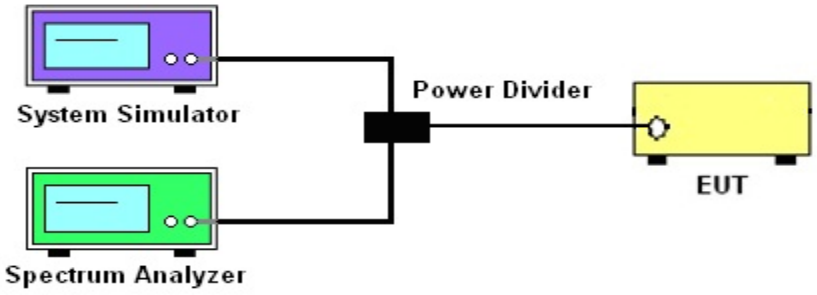
3. §27.53 (h)
For operations in the 1710 – 1755 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4. §27.53(m)(4)
For operations in the 2500 MHz ~ 2570 MHz band this section, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHzand 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licenseesoperating on frequencies below 2495 MHz may also submit a documented interference complaintagainst BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

5. §27.53 (g)
For operations in the 698 -746 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

6. §96.41 (g)
The conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed −13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any emission shall not exceed −25 dBm/MHz.
The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/Mhz.

7.1.2 TEST SETUP



7.1.3 TEST PROCEDURES

1. The testing FCC KDB 971168 D01 v03r01 Section 6.0 and ANSI C63.26 2015 Section 5.7.

2. The EUT was connected to spectrum analyzer and system simulator via a power divider.

3. The band edges of low and high channels for the highest RF powers were measured. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.

4. Set spectrum analyzer with RMS/AVG detector.

5. The RF fundamental frequency should be excluded against the limit line in the operating frquency band.
6.The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
= P(W)- [43 + 10log(P)] (dB)
= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
= -13dBm.

Band 7:
= P(W)- [55 + 10log(P)] (dB)
= [30 + 10log(P)] (dBm) - [55 + 10log(P)] (dB)
= -25dBm.

7.1.4 MEASUREMENT RESULT

Note: The test data please reference to attachment Appendix SA, Appendix NSA.

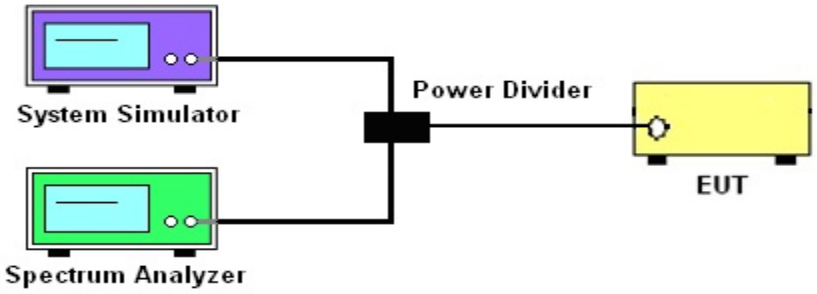
8. CONDUCTED SPURIOUS EMISSION

8.1 DESCRIPTION OF CONDUCTED SPURIOUS EMISSION MEASUREMENT

8.1.1 MEASUREMENT METHOD

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.
For Band 7:
The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 55 + 10 log (P) dB.
The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/MHz.
It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

8.1.2 TEST SETUP



8.1.3 TEST PROCEDURES

1. The testing FCC KDB 971168 D01 v03r01 Section 6.0 and ANSI C63.26 2015 Section 5.7.

2. The EUT was connected to spectrum analyzer and system simulator via a power divider.

3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.
The path loss was compensated to the results for each measurement
4. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
5. The RF fundamental frequency should be excluded against the limit line in the operating frquency band.
6.The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
= P(W)- [43 + 10log(P)] (dB) = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
= -13dBm.
For Band 7: P(W)- [43 + 10log(P)] (dB) =-25dBm

8.1.4 TEST RESULTS

Note: The test data please reference to attachment Appendix SA, Appendix NSA.

9. RADIATED SPURIOUS EMISSION

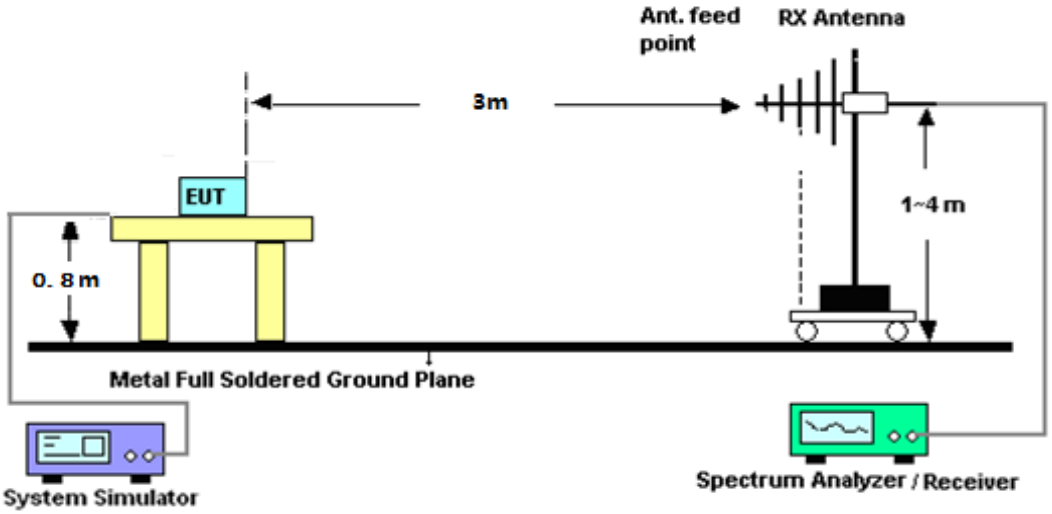
9.1 DESCRIPTION OF RADIATED SPURIOUS EMISSION

9.1.1 MEASUREMENT METHOD

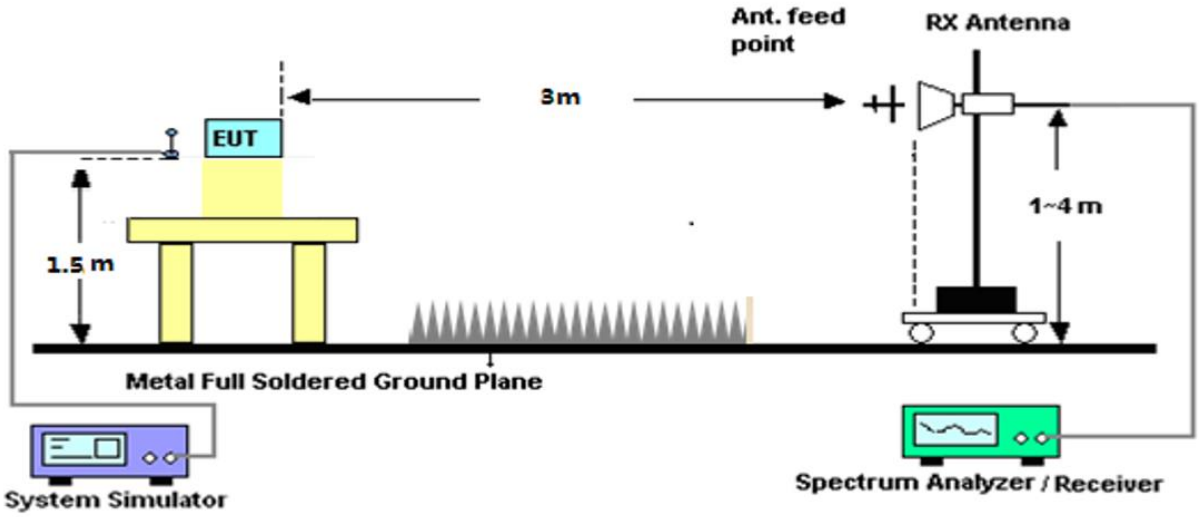
The radiated spurious emission was measured by substitution method according to ANSI C63.26 2015. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.
The power of any emission outside of the authorized operating frequency ranges must attenuated below the transmitter power (P) by a factor of at least 55 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

9.1.2 TEST SETUP

The procedure of radiated spurious emissions is as follows:
a) Pre-calibration With pre-calibration method, the Radiated Spurious Emissions(RSE) is calculated as, RSE=Rx（dBuV）+CL（dB）+SA（dB）+Gain（dBi）-107（dBuV to dBm）The SA is calibrated using following setup.
b) EUT was placed on 1.5 m non-conductive stand at a 3 m test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 m from the test item for emission measurements. The height of receiving antenna is 0.8m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the test item and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic measured with peak detector and 1MHz bandwidth.
Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of any band into any of the other blocks.
The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established and the ARpl is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss and the air loss. The measurement results are obtained as described below:
Power=PMea+ARpl
For radiated test from 30MHz to 1GHz



For radiated test from above 1GHz



9.1.3 TEST PROCEDURES

1. The testing FCC KDB 971168 D01 Section 7 and ANSI C63.26 2015 Section 5.5.

2. The EUT was placed on a rotatable wooden table with 1.5 meter above ground.

3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.

4. The table was rotated 360 degrees to determine the position of the highest spurious emission.

5. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations

6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.

7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.

8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.

9. Taking the record of output power at antenna port.

10. Repeat step 7 to step 8 for another polarization.

11. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
= P(W)- [43 + 10log(P)] (dB)
= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
= -13dBm
The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
= [30 + 10log(P)] (dBm) - [55 + 10log(P)] (dB)
= -25dBm
PMea=S.G Level+ Ant-Cable loss; Margin=PMea-Limit.

9.1.4 TEST RESULTS

N5

Horizontal

No.	Frequency	Reading	Correct	Result	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBm)	(dBm)	(dB)	
1	1656.000	52.87	-12.20	40.67	-54.58	-13.00	-41.58	peak
2	1992.000	55.55	-11.09	44.46	-50.79	-13.00	-37.79	peak
3	2656.000	51.70	-8.02	43.68	-51.57	-13.00	-38.57	peak
4	3992.000	50.60	-4.51	46.09	-49.16	-13.00	-36.16	peak
5	5328.000	41.32	0.22	41.54	-53.71	-13.00	-40.71	peak
6	7976.000	38.35	5.65	44.00	-51.25	-13.00	-38.25	peak

Vertical

No.	Frequency	Reading	Correct	Result	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBm)	(dBm)	(dB)	
1	1704.000	63.09	-12.04	51.05	-44.20	-13.00	-31.20	peak
2	2656.000	57.53	-8.02	49.51	-45.74	-13.00	-32.74	peak
3	4000.000	50.04	-4.48	45.56	-49.69	-13.00	-36.69	peak
4	4664.000	45.35	-1.49	43.86	-51.39	-13.00	-38.39	peak
5	6664.000	39.51	4.54	44.05	-51.20	-13.00	-38.20	peak
6	7968.000	40.17	5.65	45.82	-49.43	-13.00	-36.43	peak

N41

Horizontal

No.	Frequency	Reading	Correct	Result	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBm)	(dBm)	(dB)	
1	3420.000	51.04	-5.01	46.03	-49.22	-25.00	-24.22	peak
2	7875.000	38.07	6.31	44.38	-50.87	-25.00	-25.87	peak
3	9210.000	36.84	10.57	47.41	-47.84	-25.00	-22.84	peak
4	11640.000	35.21	16.98	52.19	-43.06	-25.00	-18.06	peak
5	13590.000	33.70	21.09	54.79	-40.46	-25.00	-15.46	peak
6	17955.000	28.88	25.42	54.30	-40.95	-25.00	-15.95	peak

Vertical

No.	Frequency	Reading	Correct	Result	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBm)	(dBm)	(dB)	
1	3975.000	52.48	-3.86	48.62	-46.63	-25.00	-21.63	peak
2	4650.000	45.82	-0.88	44.94	-50.31	-25.00	-25.31	peak
3	7965.000	41.63	6.31	47.94	-47.31	-25.00	-22.31	peak
4	11790.000	35.14	17.38	52.52	-42.73	-25.00	-17.73	peak
5	14085.000	32.66	21.61	54.27	-40.98	-25.00	-15.98	peak
6	17970.000	28.62	25.51	54.13	-41.12	-25.00	-16.12	peak

N48

Horizontal

No.	Frequency	Reading	Correct	Result	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBm)	(dBm)	(dB)	
1	9145.000	37.06	10.43	47.49	-47.76	-40.00	-7.76	peak
2	11851.000	35.15	17.43	52.58	-42.67	-40.00	-2.67	peak
3	12621.000	35.13	17.98	53.11	-42.14	-40.00	-2.14	peak
4	13622.000	33.54	20.95	54.49	-40.76	-40.00	-0.76	peak
5	13996.000	32.57	21.87	54.44	-40.81	-40.00	-0.81	peak
6	17989.000	28.45	26.04	54.49	-40.76	-40.00	-0.76	peak

Vertical

No.	Frequency	Reading	Correct	Result	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBm)	(dBm)	(dB)	
1	7968.000	42.96	6.45	49.41	-45.84	-40.00	-5.84	peak
2	10872.000	36.27	14.23	50.50	-44.75	-40.00	-4.75	peak
3	11818.000	35.39	17.36	52.75	-42.50	-40.00	-2.50	peak
4	12676.000	35.44	18.05	53.49	-41.76	-40.00	-1.76	peak
5	13402.000	34.09	20.20	54.29	-40.96	-40.00	-0.96	peak
6	17714.000	30.09	24.16	54.25	-41.00	-40.00	-1.00	peak

N71

Horizontal

No.	Frequency	Reading	Correct	Result	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBm)	(dBm)	(dB)	
1	1330.000	64.48	-13.50	50.98	-44.27	-13.00	-31.27	peak
2	1660.000	57.51	-12.19	45.32	-49.93	-13.00	-36.93	peak
3	2662.000	55.25	-8.01	47.24	-48.01	-13.00	-35.01	peak
4	4000.000	50.75	-4.48	46.27	-48.98	-13.00	-35.98	peak
5	4666.000	46.61	-1.48	45.13	-50.12	-13.00	-37.12	peak
6	6658.000	38.70	4.49	43.19	-52.06	-13.00	-39.06	peak

Vertical

No.	Frequency	Reading	Correct	Result	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBm)	(dBm)	(dB)	
1	1330.000	58.41	-13.50	44.91	-50.34	-13.00	-37.34	peak
2	1990.000	55.98	-11.09	44.89	-50.36	-13.00	-37.36	peak
3	2656.000	52.93	-8.02	44.91	-50.34	-13.00	-37.34	peak
4	3988.000	49.56	-4.51	45.05	-50.20	-13.00	-37.20	peak
5	5326.000	40.38	0.22	40.60	-54.65	-13.00	-41.65	peak
6	6874.000	37.17	5.57	42.74	-52.51	-13.00	-39.51	peak

N77

Horizontal

No.	Frequency	Reading	Correct	Result	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBm)	(dBm)	(dB)	
1	9233.000	36.75	10.48	47.23	-48.02	-13.00	-35.02	peak
2	11697.000	35.54	17.13	52.67	-42.58	-13.00	-29.58	peak
3	13457.000	33.67	20.46	54.13	-41.12	-13.00	-28.12	peak
4	13589.000	33.48	20.86	54.34	-40.91	-13.00	-27.91	peak
5	13963.000	32.89	21.78	54.67	-40.58	-13.00	-27.58	peak
6	17956.000	28.09	25.82	53.91	-41.34	-13.00	-28.34	peak

Vertical

No.	Frequency	Reading	Correct	Result	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBm)	(dBm)	(dB)	
1	9288.000	36.77	10.52	47.29	-47.96	-13.00	-34.96	peak
2	11422.000	35.81	16.46	52.27	-42.98	-13.00	-29.98	peak
3	12731.000	35.18	18.12	53.30	-41.95	-13.00	-28.95	peak
4	13512.000	33.30	20.68	53.98	-41.27	-13.00	-28.27	peak
5	13864.000	32.57	21.53	54.10	-41.15	-13.00	-28.15	peak
6	18000.000	28.45	26.12	54.57	-40.68	-13.00	-27.68	peak

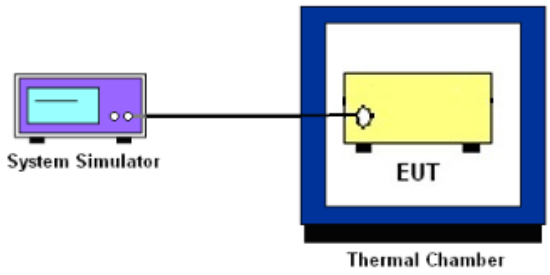
10. FREQUENCY STABILITY

10.1 DESCRIPTION OF FREQUENCY STABILITY MEASUREMENT

10.1.1 MEASUREMENT METHOD

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

10.1.2 TEST SETUP



10.1.3 TEST PROCEDURES FOR TEMPERATURE VARIATION

1. The EUT was set up in the thermal chamber and connected with the system simulator.

2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

10.1.4 TEST PROCEDURES FOR VOLTAGE VARIATION

1. The testing follows FCC KDB 971168 D01v01r03 Section 9.

2. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simlator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.

4. The variation in frequency was measured for the worst case.

10.1.5 TEST RESULTS

Note: The test data please reference to attachment Appendix SA, Appendix NSA.

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