

TEST REPORT

Product Name: Droppity Agro
FCC ID: 2BA3Z-DA42
Trademark: Droppity
Model Number: DA42
Prepared For: Droppity Corp.
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Sample Received Date: Apr. 21, 2023
Sample tested Date: Apr. 21, 2023 to May. 27, 2023
Issue Date: May. 27, 2023
Report No.: CTB230527005RFX
Test Standards: FCC Part 2, 22, 24E, 27
Test Results: PASS
Remark: This is LTE radio test report.

Compiled by:

Reviewed by:

Approved by:

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Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "*" indicates the testing items were fulfilled by subcontracted lab. "#" indicates the items are not in CNAS accreditation scope.

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(Note: N/A means not applicable)

1. VERSION

Report No.	Issue Date	Description	Approved
CTB230527005RFX	May. 27, 2023	Original	Valid

2. TEST SUMMARY

The Product has been tested according to the following specifications:

Test Item	Test Requirement	Test method	Result
Conducted output power	Part 2.1046(a)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Effective Radiated Power of Transmitter(EIRP)	Part 22.913(a)(5)/Part27.50(h)(2)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
peak-to-average ratio	Part 27.50(d)	KDB 971168 D01v03r01	PASS
99% & 26dB Occupied Bandwidth	Part 2.1049(h)	KDB 971168 D01v03r01	PASS
Band Edge at antenna terminals	Part 2.1051/ Part 22.917(a)/Part 27.53(m) (4)	KDB 971168 D01v03r01	PASS
Spurious emissions at antenna terminals	Part 2.1051/ Part 22.917(a)/Part 27.53(m) (4)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Field strength of spurious radiation	Part 2.1053/ Part 22.917(a)/Part 27.53(m) (4)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Frequency stability	Part 2.1055/Part 27.54	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Item	Uncertainty
Occupancy bandwidth	54.3kHz
Conducted output power Above 1G	0.9dB
Conducted output power below 1G	0.9dB
Power Spectral Density , Conduction	0.9dB
Conduction spurious emissions	2.0dB
Out of band emission	2.0dB
3m camber Radiated spurious emission(30MHz-1GHz)	4.6dB
3m chamber Radiated spurious emission(1GHz-18GHz)	5.1dB
3m chamber Radiated spurious emission(18GHz-40GHz)	3.4dB
Receiver Reference Sensitivity level	1.9dB
humidity uncertainty	5.5%
Temperature uncertainty	0.63°C
frequency	1×10 ⁻⁷

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	DA42
Model Description:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	FDD-LTE BAND 2:1850-1910MHz FDD-LTE BAND 4:1710-1755MHz FDD-LTE BAND 5:824-849MHz FDD-LTE BAND 12:699-716MHz FDD-LTE BAND 13:777-787MHz TDD-LTE BAND 41: 2555-2655MHz
Max. RF output power:	FDD-LTE BAND 2: 19.99dBm FDD-LTE BAND 4: 21.59dBm FDD-LTE BAND 5: 22.45dBm FDD-LTE BAND 12: 22.44dBm FDD-LTE BAND 13: 23.27dBm TDD-LTE BAND 41: 20.35dBm
Type of Modulation:	QPSK, 16QAM
Antenna installation:	FPC antenna
Antenna Gain:	FDD-LTE BAND 2: 3dBi FDD-LTE BAND 4: 3dBi FDD-LTE BAND 5: 3dBi FDD-LTE BAND 12: 3dBi FDD-LTE BAND 13: 3dBi TDD-LTE BAND 41: 3dBi
Ratings:	DC 3.8V

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
/	/	/	/	/	/

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Test Mode

Test Mode List		
Test Mode	Description	Remark
TM1	FDD-LTE BAND 2	Low, Middle, High Channels
TM2	FDD-LTE BAND 4	Low, Middle, High Channels
TM3	FDD-LTE BAND 5	Low, Middle, High Channels
TM4	FDD-LTE BAND 12	Low, Middle, High Channels
TM5	FDD-LTE BAND 13	Low, Middle, High Channels
TM6	TDD-LTE BAND 41	Low, Middle, High Channels

4.5 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(DC):	3.8V
Normal Temperature(°C)	23
Low Temperature(°C)	0
High Temperature(°C)	40

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at 1&2F., Building A, No. 26, Xinhua Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

Item	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	2023.07.19
2	Power Sensor	Agilent	U2021XA	MY56120032	2023.07.19
3	Power Sensor	Agilent	U2021XA	MY56120034	2023.07.19
4	Communication test set	R&S	CMW500	108058	2023.07.19
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	2023.07.19
6	Signal Generator	Agilent	N5181A	MY50140365	2023.07.19
7	Vector signal generator	Agilent	N5182A	MY47420195	2023.07.19
8	Communication test set	Agilent	E5515C	MY50102567	2023.07.19
9	2.4 GHz Filter	Shenxiang	MSF2400-2483.5MS-1154	20181015001	2023.07.19
10	5 GHz Filter	Shenxiang	MSF5150-5850 MS-1155	20181015001	2023.07.19
11	Filter	Xingbo	XBLBQ-DZA120	190821-1-1	2023.07.19
12	BT&WI-FI Automatic test software	Microwave	MTS8000	Ver. 2.0.0.0	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	2023.10.30
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	2023.07.19
15	234G Automatic test software	Microwave	MTS8200	Ver. 2.0.0.0	/
16	966 chamber	C.R.T.	966	/	2024.08.11
17	Receiver	R&S	ESPI	100362	2023.07.19
18	Amplifier	HP	8447E	2945A02747	2023.07.19
19	Amplifier	Agilent	8449B	3008A01838	2023.07.19
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	2023.07.22

21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	2023.07.22
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	2023.07.23
24	loop antenna	ZHINAN	ZN30900A	GTS534	/
25	40G Horn antenna	A/H/System	SAS-574	588	2024.10.30
26	Amplifier	AEROFLEX	Aeroflex	097	2024.10.30

6. RF EXPOSURE

6.1 Standard Applicable

According to §1.1307 and §2.1091, §2.1093, the portable transmitter must comply the RF exposure requirements.

6.2 Test Result

This product complied with the requirement of the RF exposure, please see the RF Exposure report.

7. RF OUTPUT POWER

7.1 Standard Applicable

According to §22.913(a)(2), the ERP of mobile and portable stations transmitters and auxiliary test transmitters must not exceed 7 Watts.

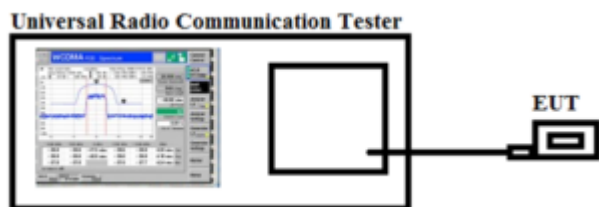
According to §24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to §27.50(d)(4), fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

According to §27.50(c)(10), portable stations (hand-held devices) in the 698-746 MHz band are limited to 3 watts ERP.

7.2 Test Procedure

Conducted output power test method:



Radiated power test method:

1. The setup of EUT is according with per ANSI/TIA Standard 603E and ANSI C63.26 measurement procedure.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

7.3 Summary of Test Results/Plots

Max. Radiated Power:

FDD-LTE Band 2

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	17.98	<33.00	PASS
		H	18.45		
	MCH	V	19.21		PASS
		H	19.39		
	HCH	V	19.09		PASS
		H	17.75		
16QAM	LCH	V	17.96	<33.00	PASS
		H	18.92		
	MCH	V	18.11		PASS
		H	17.78		
	HCH	V	19.02		PASS
		H	18.80		
Channel Bandwidth: 3 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	17.81	<33.00	PASS
		H	16.50		
	MCH	V	18.03		PASS
		H	17.29		
	HCH	V	17.95		PASS
		H	17.90		
16QAM	LCH	V	17.41	<33.00	PASS
		H	16.80		
	MCH	V	18.13		PASS
		H	17.21		
	HCH	V	17.08		PASS
		H	17.77		
Channel Bandwidth: 5 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	16.75	<33.00	PASS
		H	16.39		
	MCH	V	17.96		PASS
		H	16.36		

	HCH	V	17.05		PASS
		H	18.35		
16QAM	LCH	V	16.92	<33.00	PASS
		H	17.21		
	MCH	V	17.88		PASS
		H	16.90		
	HCH	V	16.88		PASS
		H	16.84		
Channel Bandwidth: 10 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	17.96	<33.00	PASS
		H	18.52		
	MCH	V	17.16		PASS
		H	17.81		
	HCH	V	18.16		PASS
		H	18.34		
16QAM	LCH	V	17.23	<33.00	PASS
		H	18.16		
	MCH	V	17.07		PASS
		H	17.10		
	HCH	V	18.37		PASS
		H	17.12		
Channel Bandwidth: 15 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	18.50	<33.00	PASS
		H	18.26		
	MCH	V	18.37		PASS
		H	17.74		
	HCH	V	17.68		PASS
		H	18.07		
16QAM	LCH	V	17.10	<33.00	PASS
		H	16.61		
	MCH	V	17.45		PASS
		H	16.81		
	HCH	V	17.78		PASS
		H	17.68		

Channel Bandwidth: 20 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	19.99	<33.00	PASS
		H	18.37		
	MCH	V	17.95		PASS
		H	19.03		
	HCH	V	17.55		PASS
		H	18.99		
16QAM	LCH	V	18.91	<33.00	PASS
		H	18.43		
	MCH	V	17.74		PASS
		H	19.03		
	HCH	V	18.37		PASS
		H	18.55		

FDD-LTE Band 4

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	19.29	<30.00	PASS
		H	20.07		
	MCH	V	20.04		PASS
		H	19.10		
	HCH	V	18.74		PASS
		H	19.93		
16QAM	LCH	V	20.57	<30.00	PASS
		H	18.93		
	MCH	V	19.78		PASS
		H	19.78		
	HCH	V	20.05		PASS
		H	19.29		
Channel Bandwidth: 3 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	19.12	<30.00	PASS
		H	20.02		
	MCH	V	20.54		PASS
		H	20.17		
	HCH	V	19.12		PASS

		H	20.39		
16QAM	LCH	V	18.92	<30.00	PASS
		H	20.33		
	MCH	V	19.67		PASS
		H	19.72		
	HCH	V	20.56		PASS
		H	20.60		
Channel Bandwidth: 5 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.25	<30.00	PASS
		H	18.68		
	MCH	V	18.65		PASS
		H	19.67		
	HCH	V	18.55		PASS
		H	18.61		
16QAM	LCH	V	19.68	<30.00	PASS
		H	18.86		
	MCH	V	19.99		PASS
		H	19.78		
	HCH	V	19.78		PASS
		H	18.76		
Channel Bandwidth: 10 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.55	<30.00	PASS
		H	18.98		
	MCH	V	20.27		PASS
		H	19.90		
	HCH	V	19.33		PASS
		H	20.48		
16QAM	LCH	V	20.14	<30.00	PASS
		H	18.88		
	MCH	V	20.36		PASS
		H	20.56		
	HCH	V	20.11		PASS
		H	19.30		

Channel Bandwidth: 15 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	19.56	<30.00	PASS
		H	19.30		
	MCH	V	19.76		PASS
		H	19.51		
	HCH	V	20.39		PASS
		H	20.80		
16QAM	LCH	V	20.44	<30.00	PASS
		H	19.71		
	MCH	V	19.60		PASS
		H	19.64		
	HCH	V	19.64		PASS
		H	20.54		
Channel Bandwidth: 20 MHz					
Modulation	Channel	Antenna Polar	EIRP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.59	<30.00	PASS
		H	19.37		
	MCH	V	20.11		PASS
		H	19.14		
	HCH	V	20.39		PASS
		H	19.57		
16QAM	LCH	V	20.86	<30.00	PASS
		H	19.88		
	MCH	V	20.25		PASS
		H	20.99		
	HCH	V	20.51		PASS
		H	19.02		

FDD-LTE Band 5

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	Antenna Polar	ERP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.79	<34.77	PASS
		H	22.19		
	MCH	V	22.00		PASS
		H	22.11		
	HCH	V	22.35		PASS
		H	20.51		
16QAM	LCH	V	21.16	<34.77	PASS
		H	20.78		
	MCH	V	21.73		PASS
		H	21.04		
	HCH	V	21.40		PASS
		H	21.87		
Channel Bandwidth: 3 MHz					
Modulation	Channel	Antenna Polar	ERP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.84	<34.77	PASS
		H	21.74		
	MCH	V	20.64		PASS
		H	22.01		
	HCH	V	21.93		PASS
		H	21.89		
16QAM	LCH	V	20.94	<34.77	PASS
		H	20.56		
	MCH	V	21.26		PASS
		H	20.93		
	HCH	V	20.58		PASS
		H	21.47		
Channel Bandwidth: 5 MHz					
Modulation	Channel	Antenna Polar	ERP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.18	<34.77	PASS
		H	21.35		
	MCH	V	21.48		PASS
		H	22.07		
	HCH	V	20.21		PASS
		H	20.84		

16QAM	LCH	V	21.67	<34.77	PASS
		H	20.66		
	MCH	V	21.67		PASS
		H	21.38		
	HCH	V	20.58		PASS
		H	21.68		
Channel Bandwidth: 10 MHz					
Modulation	Channel	Antenna Polar	ERP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	22.45	<34.77	PASS
		H	21.22		
	MCH	V	20.53		PASS
		H	19.97		
	HCH	V	21.11		PASS
		H	20.15		
16QAM	LCH	V	20.89	<34.77	PASS
		H	21.15		
	MCH	V	19.68		PASS
		H	19.63		
	HCH	V	19.73		PASS
		H	22.39		

FDD-LTE Band 12

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	Antenna Polar	ERP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.91	<34.77	PASS
		H	21.71		
	MCH	V	21.08		PASS
		H	21.73		
	HCH	V	21.82		PASS
		H	21.29		
16QAM	LCH	V	20.53	<34.77	PASS
		H	21.30		
	MCH	V	20.95		PASS
		H	22.23		
	HCH	V	20.95		PASS
		H	20.60		

Channel Bandwidth: 3 MHz					
Modulation	Channel	Antenna Polar	ERP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.71	<34.77	PASS
		H	21.33		
	MCH	V	21.78		PASS
		H	21.02		
	HCH	V	21.11		PASS
		H	20.83		
16QAM	LCH	V	21.67	<34.77	PASS
		H	20.21		
	MCH	V	21.42		PASS
		H	21.59		
	HCH	V	20.46		PASS
		H	21.90		
Channel Bandwidth: 5 MHz					
Modulation	Channel	Antenna Polar	ERP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.79	<34.77	PASS
		H	20.89		
	MCH	V	21.06		PASS
		H	20.94		
	HCH	V	21.34		PASS
		H	21.38		
16QAM	LCH	V	19.90	<34.77	PASS
		H	19.93		
	MCH	V	20.69		PASS
		H	20.87		
	HCH	V	19.67		PASS
		H	19.89		
Channel Bandwidth: 10 MHz					
Modulation	Channel	Antenna Polar	ERP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	22.44	<34.77	PASS
		H	19.79		
	MCH	V	20.24		PASS
		H	20.91		
	HCH	V	20.75		PASS
		H	19.94		

16QAM	LCH	V	20.46	<34.77	PASS
		H	20.57		
	MCH	V	20.10		PASS
		H	19.90		
	HCH	V	22.29		PASS
		H	20.00		

FDD-LTE Band 13

SS EYE Band 10

Channel Bandwidth: 5 MHz					
Modulation	Channel	Antenna Polar	ERP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.86	<34.77	PASS
		H	21.14		
	MCH	V	22.13		PASS
		H	21.76		
	HCH	V	22.12		PASS
		H	20.92		
16QAM	LCH	V	22.42	<34.77	PASS
		H	22.06		
	MCH	V	22.12		PASS
		H	20.83		
	HCH	V	21.87		PASS
		H	20.63		
Channel Bandwidth: 10 MHz					
Modulation	Channel	Antenna Polar	ERP [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	23.27	<34.77	PASS
		H	22.73		
	MCH	V	21.58		PASS
		H	22.88		
	HCH	V	22.08		PASS
		H	22.08		
16QAM	LCH	V	22.08	<34.77	PASS
		H	21.88		
	MCH	V	22.43		PASS
		H	21.63		
	HCH	V	21.23		PASS
		H	21.11		

TDD-LTE Band 41

Channel Bandwidth: 5 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	22.58	<33.00	PASS
		H	22.40		
	MCH	V	22.37		PASS
		H	22.47		
	HCH	V	21.38		PASS
		H	21.22		
16QAM	LCH	V	21.58	<33.00	PASS
		H	21.49		
	MCH	V	21.47		PASS
		H	20.90		
	HCH	V	20.88		PASS
		H	21.40		
Channel Bandwidth: 10 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	22.03	<33.00	PASS
		H	21.89		
	MCH	V	21.45		PASS
		H	21.34		
	HCH	V	21.78		PASS
		H	21.44		
16QAM	LCH	V	22.17	<33.00	PASS
		H	21.38		
	MCH	V	21.45		PASS
		H	20.78		
	HCH	V	20.33		PASS
		H	20.48		
Channel Bandwidth: 15 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	22.15	<33.00	PASS
		H	22.10		
	MCH	V	21.51		PASS
		H	21.55		
	HCH	V	21.29		PASS
		H	21.26		

16QAM	LCH	V	21.11	<33.00	PASS
		H	20.89		
	MCH	V	21.07		PASS
		H	20.25		
	HCH	V	20.50		PASS
		H	20.47		
Channel Bandwidth: 20 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	22.88	<33.00	PASS
		H	21.89		
	MCH	V	21.39		PASS
		H	21.34		
	HCH	V	21.47		PASS
		H	21.51		
16QAM	LCH	V	22.20	<33.00	PASS
		H	21.49		
	MCH	V	21.41		PASS
		H	21.35		
	HCH	V	20.47		PASS
		H	20.56		

Max. Conducted Output Power

Please refer to Appendix A: Average Power Output Data

Test result: Pass

8. PEAK-TO-AVERAGE RATIO (PAR) OF TRANSMITTER

8.1 Standard Applicable

According to §24.232(d), power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51, in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

According to §27.50(B), the peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal

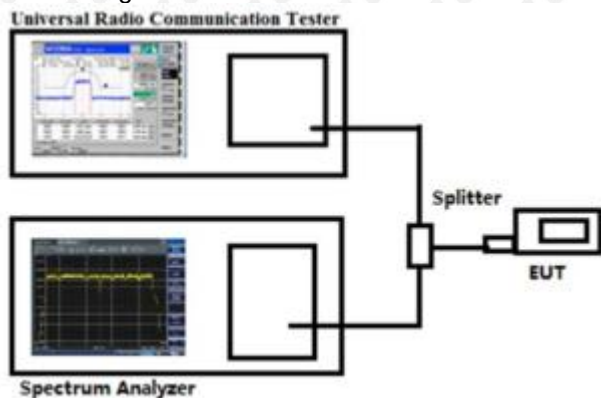
corresponding to the highest PAPR expected during periods of continuous transmission.

8.2 Test Procedure

According with KDB 971168

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Configuration for the emission bandwidth testing:



8.3 Summary of Test Results

Please refer to Appendix C: Peak-to-Average Ratio

Test result: Pass

9. EMISSION BANDWIDTH

9.1 Standard Applicable

According to §22.917(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

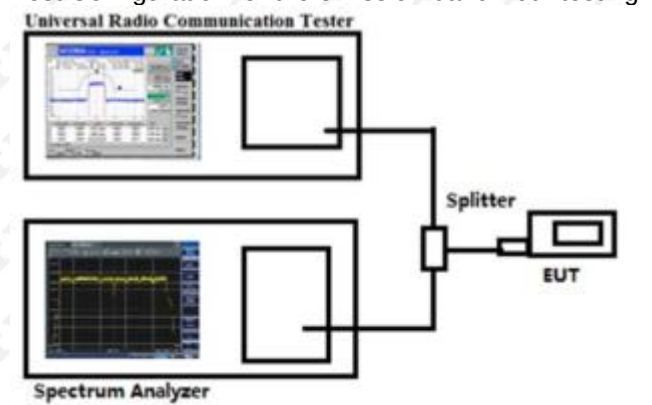
According to §24.238(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §27.53, the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

9.2 Test Procedure

According to §22.917(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Test Configuration for the emission bandwidth testing:



9.3 Summary of Test Results/Plots

Please refer to Appendix D: 26dB Bandwidth and Occupied Bandwidth
Test result: Pass

10. OUT OF BAND EMISSIONS AT ANTENNA TERMINAL

10.1 Standard Applicable

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

According to §27.53 (f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

According to §27.53(h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

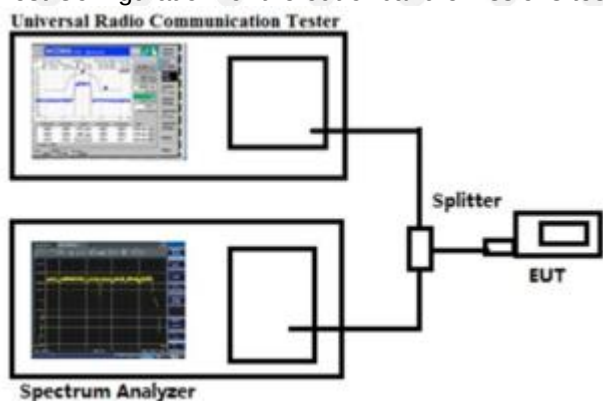
According to §27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB.

According to §27.53(m)(4), for mobile digital stations, 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 than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz.

10.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 100kHz and 1MHz for the scan frequency from 30MHz to 1GHz and the scan frequency from 1GHz to up to 10 th harmonic.

Test Configuration for the out of band emissions testing:



10.3 Summary of Test Results/Plots

Please refer to Appendix E & F: Band Edge & Conducted Spurious Emission

Test result: Pass

11. SPURIOUS RADIATED EMISSIONS

11.1 Standard Applicable

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

According to §27.53 (f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

According to §27.53(h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log(P)$ dB.

According to §27.53(g) the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB.

11.2 Test Procedure

1. The setup of EUT is according with per ANSI/TIA-603-E and ANSI C63.4-2014 measurement procedure.
 2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
 3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
 4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.
- Spurious attenuation limit in dB = $43 + 10 \log_{10}(\text{power out in Watts})$

11.3 Summary of Test Results/Plots

- Note: 1. this EUT was tested in 3 orthogonal positions and the worst case position data was reported.
2. All test modes (different bandwidth and different modulation) are performed, but only the worst case is recorded in this report.

Test Data:
QPSK

Band 2 18607 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1389.66	140	250	-55.76	-13	-42.76	Pass	H
1766.15	149	129	-50.28	-13	-37.28	Pass	H
3874.31	144	147	-48.77	-13	-35.77	Pass	H
5872.77	157	226	-46.61	-13	-33.61	Pass	H
6684.36	149	77	-43.82	-13	-30.82	Pass	H
8099.38	155	179	-49.70	-13	-36.70	Pass	H
1145.38	158	39	-55.85	-13	-42.85	Pass	V
1389.18	150	78	-60.98	-13	-47.98	Pass	V
3509.18	145	210	-54.68	-13	-41.68	Pass	V
3762.40	159	22	-49.69	-13	-36.69	Pass	V
5642.65	146	45	-47.66	-13	-34.66	Pass	V
6484.93	155	61	-48.99	-13	-35.99	Pass	V

Band 2 18900 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1449.39	150	262	-54.13	-13	-41.13	Pass	H
1827.80	146	20	-53.37	-13	-40.37	Pass	H
3825.71	150	317	-48.13	-13	-35.13	Pass	H
5877.24	146	222	-48.16	-13	-35.16	Pass	H
6476.86	149	87	-47.77	-13	-34.77	Pass	H
8096.40	151	247	-50.87	-13	-37.87	Pass	H
1288.58	149	1	-55.16	-13	-42.16	Pass	V
1359.28	148	45	-62.06	-13	-49.06	Pass	V
3498.05	147	314	-54.39	-13	-41.39	Pass	V
3771.23	148	31	-51.96	-13	-38.96	Pass	V
5911.11	150	209	-46.26	-13	-33.26	Pass	V
6641.15	150	226	-51.15	-13	-38.15	Pass	V

Band 2 19193 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1340.71	153	4	-56.73	-13	-43.73	Pass	H
1669.90	152	21	-52	-13	-39	Pass	H
3845.50	151	316	-45.66	-13	-32.66	Pass	H
5906.91	146	50	-40.96	-13	-27.96	Pass	H
6531.65	152	170	-42.47	-13	-29.47	Pass	H
8000.07	152	116	-44.74	-13	-31.74	Pass	H
1257.63	152	37	-56.49	-13	-43.49	Pass	V
1403.18	145	150	-56.84	-13	-43.84	Pass	V
3525.24	146	254	-52.79	-13	-39.79	Pass	V
3912.13	151	199	-48.59	-13	-35.59	Pass	V
5788.31	147	242	-43.05	-13	-30.05	Pass	V
6576.29	151	36	-47.76	-13	-34.76	Pass	V

16QAM

Band 2 18607 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1340.71	149	4	-56.73	-13	-43.73	Pass	H
1669.90	151	23	-52	-13	-39	Pass	H
3845.50	153	340	-45.66	-13	-32.66	Pass	H
5906.91	153	30	-40.96	-13	-27.96	Pass	H
6531.65	153	68	-42.47	-13	-29.47	Pass	H
8000.07	154	44	-44.74	-13	-31.74	Pass	H
1257.63	150	64	-56.49	-13	-43.49	Pass	V
1403.18	153	312	-56.84	-13	-43.84	Pass	V
3525.24	150	70	-52.79	-13	-39.79	Pass	V
3912.13	149	137	-48.59	-13	-35.59	Pass	V
5788.31	152	131	-43.05	-13	-30.05	Pass	V
6576.29	146	35	-47.76	-13	-34.76	Pass	V

Band 2 18900 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1209.67	154	118	-56.73	-13	-43.73	Pass	H
1797.63	146	101	-52	-13	-39	Pass	H
3763.01	150	51	-45.66	-13	-32.66	Pass	H
5902.86	150	171	-40.96	-13	-27.96	Pass	H
6365.11	150	1	-42.47	-13	-29.47	Pass	H
8232.75	149	342	-44.74	-13	-31.74	Pass	H
1169.61	148	172	-56.49	-13	-43.49	Pass	V
1366.85	152	311	-56.84	-13	-43.84	Pass	V
3647.82	148	259	-52.79	-13	-39.79	Pass	V
3747.40	149	82	-48.59	-13	-35.59	Pass	V
5877.02	155	102	-43.05	-13	-30.05	Pass	V
6563.94	152	149	-47.76	-13	-34.76	Pass	V

Band 2 19193 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1371.91	148	37	-56.73	-13	-43.73	Pass	H
1828.55	149	284	-52	-13	-39	Pass	H
3801.79	153	33	-45.66	-13	-32.66	Pass	H
6104.27	151	265	-40.96	-13	-27.96	Pass	H
6597.79	152	58	-42.47	-13	-29.47	Pass	H
8000.19	151	39	-44.74	-13	-31.74	Pass	H
1141.60	149	339	-56.49	-13	-43.49	Pass	V
1504.25	150	259	-56.84	-13	-43.84	Pass	V
3468.77	149	217	-52.79	-13	-39.79	Pass	V
4010.22	151	209	-48.59	-13	-35.59	Pass	V
5792.52	147	245	-43.05	-13	-30.05	Pass	V
6473.97	153	145	-47.76	-13	-34.76	Pass	V

Note:

- 1) Scan from 9kHz to 40GHz, the disturbance above 13GHz and below 1GHz are attenuated more than 20 dB below the applicable limit and not required to be reported, the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
- 2) Tested with all kind of bandwidth, RB Size and RB Offset, Found the 1.4MHz with full RB were the worst case; and then Only the worst case is recorded in the report.

QPSK

Band 5 20407 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1318.07	145	127	-56.29	-13	-43.29	Pass	H
1740.67	158	77	-49.07	-13	-36.07	Pass	H
3895.87	146	176	-47.23	-13	-34.23	Pass	H
5829.36	153	173	-43.67	-13	-30.67	Pass	H
6525.21	158	73	-43.38	-13	-30.38	Pass	H
8068.55	143	254	-48.29	-13	-35.29	Pass	H
1135.14	154	250	-57.75	-13	-44.75	Pass	V
1442.06	144	201	-57.42	-13	-44.42	Pass	V
3533.20	142	334	-52.93	-13	-39.93	Pass	V
3924.35	156	54	-47.53	-13	-34.53	Pass	V
5769.22	145	328	-43.48	-13	-30.48	Pass	V
6599.82	157	87	-47.91	-13	-34.91	Pass	V

Band 5 20525 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1201.81	150	160	-58.24	-13	-45.24	Pass	H
1769.30	146	232	-52.70	-13	-39.70	Pass	H
3874.98	150	103	-53.17	-13	-40.17	Pass	H
5869.27	146	326	-43.37	-13	-30.37	Pass	H
6544.26	149	133	-47.88	-13	-34.88	Pass	H
8036.36	151	70	-47.57	-13	-34.57	Pass	H
1284.65	149	126	-52.10	-13	-39.10	Pass	V
1296.35	148	121	-56.77	-13	-43.77	Pass	V
3584.22	147	295	-56.31	-13	-43.31	Pass	V
3854.19	148	75	-51.82	-13	-38.82	Pass	V
5858.99	150	56	-46.36	-13	-33.36	Pass	V
6554.70	150	330	-51.05	-13	-38.05	Pass	V

Band 5 20643 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1340.71	154	30	-56.73	-13	-43.73	Pass	H
1669.90	147	48	-52	-13	-39	Pass	H
3845.50	150	63	-45.66	-13	-32.66	Pass	H
5906.91	151	345	-40.96	-13	-27.96	Pass	H
6531.65	153	280	-42.47	-13	-29.47	Pass	H
8000.07	151	44	-44.74	-13	-31.74	Pass	H
1257.63	151	295	-56.49	-13	-43.49	Pass	V
1403.18	154	250	-56.84	-13	-43.84	Pass	V
3525.24	148	284	-52.79	-13	-39.79	Pass	V
3912.13	147	266	-48.59	-13	-35.59	Pass	V
5788.31	154	79	-43.05	-13	-30.05	Pass	V
6576.29	148	102	-47.76	-13	-34.76	Pass	V

16QAM

Band 5 20407 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1428.66	148	277	-58.74	-13	-45.74	Pass	H
1689.48	154	147	-47.22	-13	-34.22	Pass	H
3811.21	146	184	-50.86	-13	-37.86	Pass	H
5882.97	152	250	-45.06	-13	-32.06	Pass	H
6554.61	152	92	-41.65	-13	-28.65	Pass	H
8026.22	148	146	-40.51	-13	-27.51	Pass	H
1168.31	152	47	-50.88	-13	-37.88	Pass	V
1424.60	152	255	-57.51	-13	-44.51	Pass	V
3669.45	154	91	-52.13	-13	-39.13	Pass	V
3994.24	155	35	-49.28	-13	-36.28	Pass	V
5838.46	150	182	-45.07	-13	-32.07	Pass	V
6580.21	151	213	-51.30	-13	-38.30	Pass	V

Band 5 20525 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1243.29	154	280	-54.08	-13	-41.45	Pass	H
1822.27	155	234	-50.45	-13	-37.85	Pass	H
3905.83	150	11	-50.77	-13	-35.2	Pass	H
5932.98	152	290	-44.17	-13	-30.39	Pass	H
6519.78	148	281	-41.26	-13	-32.24	Pass	H
8138.63	146	40	-41.54	-13	-30.22	Pass	H
1269.67	149	49	-57.39	-13	-44.9	Pass	V
1362.45	152	130	-58.15	-13	-43.63	Pass	V
3546.01	152	348	-49.01	-13	-35.94	Pass	V
3892.59	151	106	-51.33	-13	-36.01	Pass	V
5749.36	153	165	-43.78	-13	-33.75	Pass	V
6510.69	150	274	-43.22	-13	-32.41	Pass	V

Band 5 20643 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1407.75	147	2	-55.60	-13	-42.60	Pass	H
1610.87	147	268	-51.36	-13	-38.36	Pass	H
3844.21	152	359	-47.19	-13	-34.19	Pass	H
5869.92	146	74	-41.25	-13	-28.25	Pass	H
6454.16	150	347	-39.13	-13	-26.13	Pass	H
8045.93	153	128	-44.92	-13	-31.92	Pass	H
1129.26	146	16	-58.34	-13	-45.34	Pass	V
1460.28	148	197	-57.61	-13	-44.61	Pass	V
3504.45	149	30	-51.12	-13	-38.12	Pass	V
3927.46	154	35	-53.30	-13	-40.30	Pass	V
5750.44	145	216	-47.72	-13	-34.72	Pass	V
6590.28	149	294	-48.09	-13	-35.09	Pass	V

Note:

3) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 1GHz are attenuated more than 20 dB below the applicable limit and not required to be reported, the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

4) Tested with all kind of bandwidth, RB Size and RB Offset, Found the 1.4MHz with full RB were the worst case; and then Only the worst case is recorded in the report.

QPSK

Band 12 23017 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1448.38	147	290	-57.91	-13	-44.91	Pass	H
1735.05	149	8	-47.88	-13	-34.88	Pass	H
3838.41	153	338	-47.59	-13	-34.59	Pass	H
5986.70	151	342	-45.67	-13	-32.67	Pass	H
6538.90	153	36	-46.37	-13	-33.37	Pass	H
8030.85	146	176	-43.59	-13	-30.59	Pass	H
1152.75	147	52	-57.76	-13	-44.76	Pass	V
1330.45	154	52	-62.75	-13	-49.75	Pass	V
3473.07	147	336	-52.44	-13	-39.44	Pass	V
3726.52	151	343	-49.29	-13	-36.29	Pass	V
5847.66	148	228	-40.79	-13	-27.79	Pass	V
6589.57	155	340	-48.67	-13	-35.67	Pass	V

Band 12 23095 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1481.05	154	111	-55.53	-13	-42.53	Pass	H
1642.00	146	279	-55.54	-13	-42.54	Pass	H
3840.83	152	7	-51.44	-13	-38.44	Pass	H
5767.82	154	256	-47.24	-13	-34.24	Pass	H
6415.37	153	158	-48.56	-13	-35.56	Pass	H
7920.56	147	309	-44.41	-13	-31.41	Pass	H
1185.06	146	1	-56.90	-13	-43.90	Pass	V
1486.80	152	163	-58.85	-13	-45.85	Pass	V
3716.71	154	18	-51.92	-13	-38.92	Pass	V
3879.89	146	307	-45.24	-13	-32.24	Pass	V
5702.46	145	119	-42.16	-13	-29.16	Pass	V
6652.88	154	164	-51.97	-13	-38.97	Pass	V

Band 12 23173 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1370.67	151	29	-54.09	-13	-41.09	Pass	H
1807.10	148	198	-49.78	-13	-36.78	Pass	H
3992.26	145	53	-43.97	-13	-30.97	Pass	H
6037.46	151	240	-39.67	-13	-26.67	Pass	H
6621.13	148	149	-43.27	-13	-30.27	Pass	H
7906.53	153	154	-50.23	-13	-37.23	Pass	H
1059.91	149	72	-59.31	-13	-46.31	Pass	V
1634.76	151	166	-54.20	-13	-41.20	Pass	V
3522.23	154	158	-51.26	-13	-38.26	Pass	V
3797.86	153	358	-51.96	-13	-38.96	Pass	V
5760.45	145	201	-52.43	-13	-39.43	Pass	V
6647.94	155	326	-44.18	-13	-31.18	Pass	V

16QAM

Band 12 23017 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1364.68	150	263	-52.73	-13	-39.73	Pass	H
1662.33	152	155	-49.94	-13	-36.94	Pass	H
3961.26	146	69	-47.55	-13	-34.55	Pass	H
5882.63	147	81	-44.18	-13	-31.18	Pass	H
6638.92	149	97	-45.44	-13	-32.44	Pass	H
8098.61	149	99	-46.81	-13	-33.81	Pass	H
1241.00	150	328	-50.69	-13	-37.69	Pass	V
1415.96	151	272	-58.93	-13	-45.93	Pass	V
3607.34	149	69	-47.85	-13	-34.85	Pass	V
3653.90	154	148	-49.93	-13	-36.93	Pass	V
5950.82	153	3	-52.69	-13	-39.69	Pass	V
6549.18	149	36	-45.17	-13	-32.17	Pass	V

Band 12 23095 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1364.35	148	133	-55.81	-13	-42.81	Pass	H
1569.63	149	228	-44.62	-13	-31.62	Pass	H
3745.67	145	296	-47.19	-13	-34.19	Pass	H
5906.37	148	163	-44.00	-13	-31.00	Pass	H
6677.25	154	104	-43.82	-13	-30.82	Pass	H
8188.84	148	64	-45.16	-13	-32.16	Pass	H
1325.61	149	270	-54.29	-13	-41.29	Pass	V
1357.63	151	282	-61.02	-13	-48.02	Pass	V
3664.05	150	20	-49.99	-13	-36.99	Pass	V
3894.90	153	170	-49.77	-13	-36.77	Pass	V
5760.56	151	354	-45.46	-13	-32.46	Pass	V
6440.21	146	308	-43.80	-13	-30.80	Pass	V

Band 12 23173 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1484.33	148	23	-37.34	-13	-24.34	Pass	H
1617.66	153	126	-30.70	-13	-17.70	Pass	H
3836.55	154	116	-25.35	-13	-12.35	Pass	H
5883.05	152	3	-27.13	-13	-14.13	Pass	H
6463.48	148	249	-33.53	-13	-20.53	Pass	H
8051.99	152	316	-31.63	-13	-18.63	Pass	H
1156.45	147	164	-39.71	-13	-26.71	Pass	V
1475.54	152	185	-48.28	-13	-35.28	Pass	V
3568.09	152	106	-34.60	-13	-21.60	Pass	V
3838.83	153	212	-37.29	-13	-24.29	Pass	V
5802.10	149	265	-31.93	-13	-18.93	Pass	V
6696.91	154	251	-31.71	-13	-18.71	Pass	V

12. FREQUENCY STABILITY

12.1 Standard Applicable

According to §22.355, §24.235, §27.54 the limit is 2.5ppm.

12.2 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

12.3 Summary of Test Results/Plots

Note: 1.Normal Voltage NV=DC3.8V; Low Voltage LV=DC3.42V; High Voltage HV=DC4.18V

Please refer to Appendix B: Frequency Stability

Test result: Pass

***** END OF REPORT *****