



TEST REPORT

Product Name: Trail camera
FCC ID: 2BNXI-BST883C
Trademark: N/A
Model Number: BST883C, BST886C, S8C, S9C, LS8C, LS9C, LS801C, LS802C, LS901C, S902C
Prepared For: Shenzhen Qinrui Technology Co., Limited
Address: Floor 5, No. 11, Hebei Industry Park, Hualian Community, Longhua District, Shenzhen Guangdong China
Manufacturer: Shenzhen Qinrui Technology Co., Limited
Address: Floor 5, No. 11, Hebei Industry Park, Hualian Community, Longhua District, Shenzhen Guangdong China
Prepared By: Shenzhen CTB Testing Technology Co., Ltd.
Address: 1&2/F., Building A, No.26, Xinhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date: Jan. 17, 2025
Sample tested Date: Jan. 17, 2025 to Feb. 20, 2025
Issue Date: Feb. 20, 2025
Report No.: CTB25011704001RF01
Test Standards: FCC Part 2, 22, 24E, 27
Test Results: PASS
Remark: This is LTE radio test report.

Compiled by:

Reviewed by:

Approved by:

Zhou kui

Arron Liu



Zhou Kui

Arron Liu

Bin Mei / Director

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.

TABLE OF CONTENT

Test Report Declaration	Page
1. VERSION	3
2. TEST SUMMARY	4
3. MEASUREMENT UNCERTAINTY	5
4. PRODUCT INFORMATION AND TEST SETUP	6
4.1 Product Information	6
4.2 Test Setup Configuration	6
4.3 Support Equipment	6
4.4 Test Mode	7
4.5 Test Environment	10
5. TEST FACILITY AND TEST INSTRUMENT USED	11
5.1 Test Facility	11
5.2 Test Instrument Used	11
6. RF EXPOSURE	13
6.1 Standard Applicable	13
6.2 Test Result	13
7. RF OUTPUT POWER	14
7.1 Standard Applicable	14
7.3 Summary of Test Results/Plots	15
8. PEAK-TO-AVERAGE RATIO (PAR) OF TRANSMITTER	16
8.1 Standard Applicable	16
8.2 Test Procedure	16
8.3 Summary of Test Results	16
9. EMISSION BANDWIDTH	17
9.1 Standard Applicable	17
9.2 Test Procedure	17
9.3 Summary of Test Results/Plots	17
10. OUT OF BAND EMISSIONS AT ANTENNA TERMINAL	18
10.1 Standard Applicable	18
10.2 Test Procedure	19
10.3 Summary of Test Results/Plots	19
11. SPURIOUS RADIATED EMISSIONS	20
11.1 Standard Applicable	20
11.2 Test Procedure	21
11.3 Summary of Test Results/Plots	21
12. FREQUENCY STABILITY	40
12.1 Standard Applicable	40
12.2 Test Procedure	40
12.3 Summary of Test Results/Plots	40

(NOTE: N/A MEANS NOT APPLICABLE)

1. VERSION

Report No.	Issue Date	Description	Approved
CTB25011704001RF01	Feb. 20, 2025	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)(2)/ Part 24.232(c)/Part27.50(h)(2)/ Part27.50(d)(4)/ Part27.50(c)(10)/ Part27.50(b)(10)/ Part27.50(a)(3)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
peak-to-average ratio	Part 22.913(d)/Part 27.50(d) /Part 27.50(a) (1)	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 24.238(a)/Part 27.53(g) (1) Part 22.917(a)/Part 27.53(i) (4)/ Part 27.53(c) /Part 27.253(f)/Part 27.53(a) (2)	KDB 971168 D01v03r01	PASS
Spurious emissions at antenna terminals	Part 2.1051/ Part 24.238(a)/Part 27.53(g) (1) Part 22.917(a)/Part 27.53(i) (4)/ Part 27.53(c) /Part 27.253(f)/Part 27.53(a) (2)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Field strength of spurious radiation	Part 2.1051/ Part 24.238(a)/Part 27.53(g) (1) Part 22.917(a)/Part 27.53(i) (4)/ Part 27.53(c) /Part 27.253(f)/Part 27.53(a) (2)	TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Frequency stability	Part 2.1055/Part 27.54/ Part 22.355	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):	BST883C, BST886C, S8C, S9C, LS8C, LS9C, LS801C, LS802C, LS901C, S902C
Model Description:	All the model are the same circuit and RF module, only the model name and appearance are different. Test sample model: BST883C
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 FDD-LTE BAND 66: 1710-1780MHz
Max. RF output power:	FDD-LTE BAND 2: 23.38dBm FDD-LTE BAND 4: 22.64dBm FDD-LTE BAND 5: 24.14dBm FDD-LTE BAND 12: 23.2dBm FDD-LTE BAND 13: 23.66dBm FDD-LTE BAND 66: 24.76dBm
Type of Modulation:	QPSK, 16QAM
Antenna installation:	Internal antenna
Antenna Gain:	FDD-LTE BAND 2: 2.3dBi FDD-LTE BAND 4: 2.08dBi FDD-LTE BAND 5: 1.33dBi FDD-LTE BAND 12: 0.31dBi FDD-LTE BAND 13: -0.25dBi FDD-LTE BAND 66: -2.08dBi
Ratings:	DC 6V charging from adapter DC 18V by battery

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

Item	Equipment	Mfr/Brand	Model/TypeNo.	SeriesNo.	Note
1.	Adapter	JIYIN	JY-05100C	/	/

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	FDD-LTE BAND 66	Low, Middle, High Channels

LTE BAND 2

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band 2	Low Range	1.4	18607	1850.7
		3	18615	1851.5
		5	18625	1852.5
		10	18650	1855
		15	18675	1857.5
		20	18700	1860
	Mid Range	1.4/3/5/10/15/20	18900	1880
	High Range	1.4	19193	1909.3
		3	19185	1908.5
		5	19175	1907.5
		10	19150	1905
		15	19125	1902.5
		20	19100	1900

LTE BAND 4

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band 4	Low Range	1.4	19957	1710.7
		3	19965	1711.5
		5	19975	1712.5
		10	20000	1715
		15	20025	1717.5
		20	20050	1720
	Mid Range	1.4/3/5/10/15/20	20175	1732.5
	High Range	1.4	20393	1754.3
		3	20385	1753.5
		5	20375	1752.5
		10	20350	1750
		15	20325	1747.5
		20	20300	1745

LTE BAND 5

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band 5	Low Range	1.4	20407	824.7
		3	20415	825.5
		5	20425	826.5
		10	20450	829
	Mid Range	1.4/3/5/10	20525	836.5
	High Range	1.4	20643	848.3
		3	20635	847.5
		5	20625	846.5
		10	20600	844

LTE BAND 12

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band 12	Low Range	1.4	23017	699.7
		3	23025	700.5
		5	23035	701.5
		10	23060	704
	Mid Range	1.4/3/5/10	23095	707.5
	High Range	1.4	23173	715.3
		3	23165	714.5
		5	23155	713.5
		10	23130	711

LTE BAND 13

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band 13	Low Range	5	23025	779.5
		10	23230	782
	Mid Range	5/10	23230	782
	High Range	5	23255	784.5
		10	23230	782

LTE BAND 66

Test Mode	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink(MHz)
LTE band 66	Low Range	1.4	66443	2110.7
		3	66451	2111.5
		5	66461	2112.5
		10	66486	2115
		15	66511	2117.5
		20	66536	2120
	Mid Range TX ¹	1.4/3/5/10/15/20	66786	2145
	Mid Range	1.4/3/5/10/15/20	66886	2155
	Paired High Range ²	1.4	67129	2179.3
		3	67121	2178.5
		5	67111	2177.5
		10	67086	2175
		15	67061	2172.5
		20	67036	2170
	High Range ³	1.4	67329	2199.3
		3	67321	2198.5
		5	67311	2197.5
		10	67286	2195
		15	67261	2192.5
		20	67236	2190

Note: EUT is UE category 1, 16QAM Modulation of 10MHz/15MHz/20MHz for all bands FULL RB size is not supported.

4.5 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(DC):	18V
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, Xinghe 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

No.	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	A.14.16	2025/6/28
2	Power Sensor	Agilent	U2021XA	MY56120032	/	2025/6/28
3	Power Sensor	Agilent	U2021XA	MY56120034	/	2025/6/28
4	Communication test set	R&S	CMW500	108058	V3.5.80	2025/6/28
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/6/28
6	Signal Generator	Agilent	N5181A	MY50140365	A.01.60	2025/6/28
7	Vector signal generator	Agilent	N5182A	MY47420195	A.01.87	2025/6/28
8	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/6/28
9	2.4 GHz Filter	Shenxiang	MSF2400-24 83.5MS-1154	20181015001	/	2025/6/30
10	5 GHz Filter	Shenxiang	MSF5150-58 50MS-1155	20181015001	/	2025/6/30
11	Filter	Xingbo	XBLBQ-DZA 120	190821-1-1	/	2025/6/30
12	BT&WI-FI Automatic test software	Microwave	MTS8310	Ver. 2.0.0.0	/	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	/	2025/6/28
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	/	2025/6/28
15	234G Automatic test software	Microwave	MTS8200	Ver. 2.0.0.0	/	/
16	966 chamber	C.R.T.	966	/	/	2027/6/21
17	Receiver	R&S	ESPI	100362	RF_ATTEN_7 (104489/003)	2025/6/28
18	Amplifier	HP	8447E	2945A02747	/	2025/6/28
19	Amplifier	Agilent	8449B	3008A01838	/	2025/6/28
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	/	2025/6/28
21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	/	2025/6/28

22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2025/6/28
24	loop antenna	ZHINAN	ZN30900A	GTS534	/	/
25	40G Horn antenna	A/H/System	SAS-574	588	/	2025/6/28
26	Amplifier	AEROFLEX	Aeroflex	097	/	2025/6/28
27	Power Metter	KEYSIGHT	N1912AP	N/A	A.05.00	2025/6/28

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.

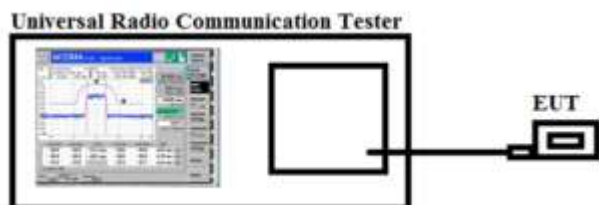
According to §27.50(h)(2), Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

According to §27.50(b)(10), Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

According to §27.50(a)(3), For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, *except that* for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth.

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

Please refer to Appendix 1: Conducted output power

Test result: Pass

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

8.1 Standard Applicable

According to §22.913(d), Power measurement. Measurement of the ERP of Cellular base transmitters and repeaters must be made using an average power measurement technique. The peak-to-average ratio (PAR) of the transmission must not exceed 13 dB.

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(d), 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.

According to §27.50(a) (1), For base and fixed stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, 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.

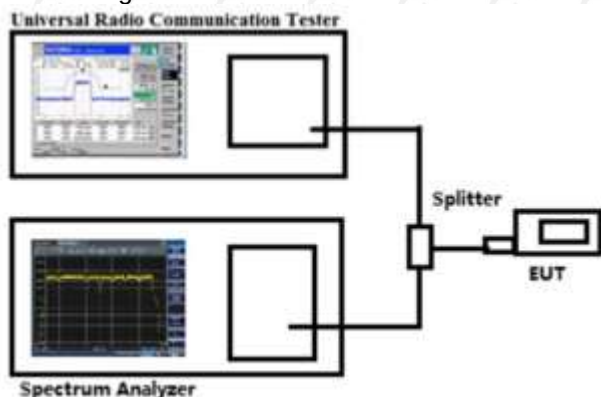
corresponding to the highest PAPR expected during periods of continuous transmission.

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 3: 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.

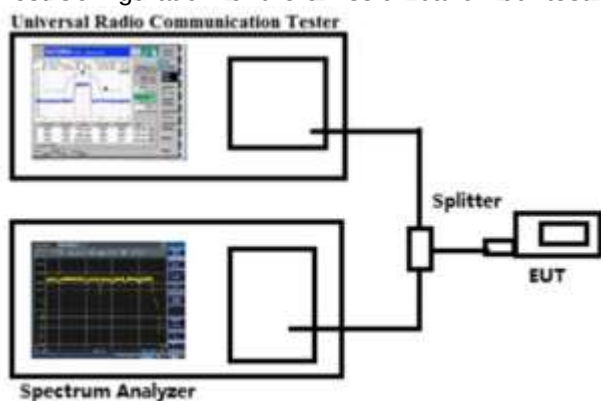
According to §24.238(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

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 4: 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.

According to §27.53(a)(2), For base and fixed stations' operations in the 2305-2320 MHz band and the 2345-2360 MHz band:

(1) By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, and not less than

75 + 10 log (P) dB on all frequencies between 2320 and 2345 MHz;

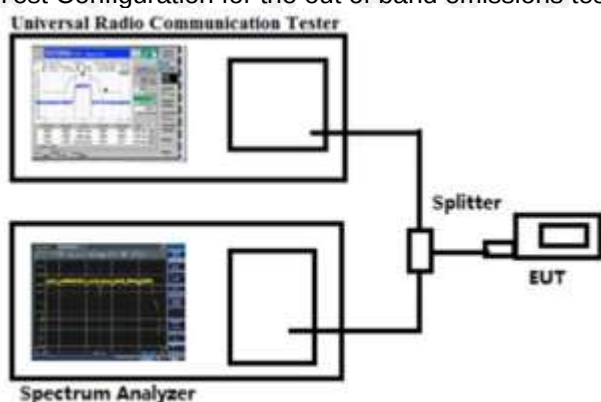
(2) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 70 + 10 log (P) dB on all frequencies between 2287.5 and 2300 MHz, 72 + 10 log (P) dB on all frequencies between 2285 and 2287.5 MHz, and 75 + 10 log (P) dB below 2285 MHz;

(3) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2362.5 MHz, 55 + 10 log (P) dB on all frequencies between 2362.5 and 2365 MHz, 70 + 10 log (P) dB on all frequencies between 2365 and 2367.5 MHz, 72 + 10 log (P) dB on all frequencies between 2367.5 and 2370 MHz, and 75 + 10 log (P) dB above 2370 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 5 & 6: 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:

(6) 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;

(7) 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;

(8) 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;

(9) 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;

(10) 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.

According to §27.53(a)(2), For base and fixed stations' operations in the 2305-2320 MHz band and the 2345-2360 MHz band:

(1) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, and not less than $75 + 10 \log (P)$ dB on all frequencies between 2320 and 2345 MHz;

(2) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2300 and 2305 MHz, $70 + 10 \log (P)$ dB on all frequencies between 2287.5 and 2300 MHz, $72 + 10 \log (P)$ dB on all frequencies between 2285 and 2287.5 MHz, and $75 + 10 \log (P)$ dB below 2285 MHz;

(3) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2360 and 2362.5 MHz, $55 + 10 \log (P)$ dB on all frequencies between 2362.5 and 2365 MHz, $70 + 10 \log (P)$ dB on all frequencies between 2365 and 2367.5 MHz, $72 + 10 \log (P)$ dB on all frequencies between 2367.5 and 2370 MHz, and $75 + 10 \log (P)$ dB above 2370 MHz.

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 = $43 + 10 \log 10$ (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.
1304.35	154	126	-59.75	-13	-46.75	Pass	H
1652.10	145	321	-46.90	-13	-33.90	Pass	H
3940.88	143	6	-49.44	-13	-36.44	Pass	H
5984.58	157	15	-45.30	-13	-32.30	Pass	H
6481.60	143	185	-43.51	-13	-30.51	Pass	H
8020.63	149	62	-45.01	-13	-32.01	Pass	H
1227.66	144	66	-56.24	-13	-43.24	Pass	V
1399.40	151	299	-59.08	-13	-46.08	Pass	V
3464.17	150	29	-47.93	-13	-34.93	Pass	V
3876.65	157	15	-51.28	-13	-38.28	Pass	V
5734.73	160	136	-46.88	-13	-33.88	Pass	V
6651.26	141	218	-44.58	-13	-31.58	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.
1386.36	150	232	-54.60	-13	-41.60	Pass	H
1720.87	146	92	-54.17	-13	-41.17	Pass	H
3848.16	150	70	-52.42	-13	-39.42	Pass	H
5904.76	146	46	-43.59	-13	-30.59	Pass	H
6398.84	149	64	-50.02	-13	-37.02	Pass	H
8012.03	151	211	-49.64	-13	-36.64	Pass	H
1174.38	149	151	-51.33	-13	-38.33	Pass	V
1306.75	148	14	-59.64	-13	-46.64	Pass	V
3618.75	147	35	-56.28	-13	-43.28	Pass	V
3970.94	148	55	-49.67	-13	-36.67	Pass	V
5889.91	150	7	-46.94	-13	-33.94	Pass	V
6561.49	150	107	-49.86	-13	-36.86	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.
1309.74	147	144	-54.18	-13	-41.18	Pass	H
1663.34	145	256	-49.98	-13	-36.98	Pass	H
3937.80	153	4	-46.18	-13	-33.18	Pass	H
5950.67	145	324	-43.61	-13	-30.61	Pass	H
6538.00	150	181	-40.92	-13	-27.92	Pass	H
7981.84	147	280	-47.24	-13	-34.24	Pass	H
1306.72	154	15	-57.43	-13	-44.43	Pass	V
1366.47	153	108	-56.57	-13	-43.57	Pass	V
3452.73	149	0	-53.98	-13	-40.98	Pass	V
3820.84	147	217	-47.47	-13	-34.47	Pass	V
5730.16	153	166	-40.16	-13	-27.16	Pass	V
6556.77	155	77	-49.35	-13	-36.35	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.
1253.46	153	13	-55.90	-13	-42.90	Pass	H
1613.81	150	56	-45.82	-13	-32.82	Pass	H
3788.84	148	122	-46.07	-13	-33.07	Pass	H
6002.22	153	256	-43.46	-13	-30.46	Pass	H
6572.43	154	103	-44.69	-13	-31.69	Pass	H
7911.35	148	172	-39.49	-13	-26.49	Pass	H
1237.69	154	35	-54.18	-13	-41.18	Pass	V
1435.31	146	160	-57.39	-13	-44.39	Pass	V
3565.38	151	117	-54.44	-13	-41.44	Pass	V
3989.50	146	330	-50.40	-13	-37.40	Pass	V
5823.06	154	63	-46.24	-13	-33.24	Pass	V
6605.65	149	8	-51.16	-13	-38.16	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.
1253.32	149	338	-51.77	-13	-41.45	Pass	H
1747.11	153	292	-51.68	-13	-37.85	Pass	H
3870.56	153	8	-50.18	-13	-35.2	Pass	H
5906.53	148	161	-41.84	-13	-30.39	Pass	H
6496.41	147	310	-44.14	-13	-32.24	Pass	H
7999.17	149	347	-44.63	-13	-30.22	Pass	H
1228.89	154	203	-55.77	-13	-44.9	Pass	V
1433.31	151	229	-58.78	-13	-43.63	Pass	V
3623.71	148	116	-47.36	-13	-35.94	Pass	V
3866.30	146	309	-50.73	-13	-36.01	Pass	V
5792.95	146	356	-45.21	-13	-33.75	Pass	V
6449.03	154	51	-44.17	-13	-32.41	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.
1279.77	155	156	-53.56	-13	-40.56	Pass	H
1747.04	155	213	-49.79	-13	-36.79	Pass	H
3993.00	155	142	-41.50	-13	-28.50	Pass	H
5904.65	150	183	-44.58	-13	-31.58	Pass	H
6414.26	154	120	-37.44	-13	-24.44	Pass	H
8131.99	151	356	-47.81	-13	-34.81	Pass	H
1113.65	150	286	-54.62	-13	-41.62	Pass	V
1380.62	146	70	-57.97	-13	-44.97	Pass	V
3605.18	153	280	-48.41	-13	-35.41	Pass	V
3789.94	148	293	-53.22	-13	-40.22	Pass	V
5798.84	150	216	-49.83	-13	-36.83	Pass	V
6528.88	148	339	-44.14	-13	-31.14	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 4 19957 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1335.21	155	225	-58.13	-13	-45.13	Pass	H
1615.61	154	228	-45.23	-13	-32.23	Pass	H
3836.08	151	54	-51.40	-13	-38.40	Pass	H
5917.27	147	119	-43.49	-13	-30.49	Pass	H
6574.95	155	158	-47.20	-13	-34.20	Pass	H
7995.97	152	272	-43.51	-13	-30.51	Pass	H
1117.18	151	220	-51.39	-13	-38.39	Pass	V
1481.29	148	122	-56.85	-13	-43.85	Pass	V
3645.61	149	110	-50.12	-13	-37.12	Pass	V
3922.13	152	73	-54.29	-13	-41.29	Pass	V
5876.74	146	282	-43.73	-13	-30.73	Pass	V
6520.91	146	241	-46.05	-13	-33.05	Pass	V
Band 4 20175 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1324.45	155	328	-51.38	-13	-38.38	Pass	H
1791.09	147	306	-51.41	-13	-38.41	Pass	H
3886.37	154	301	-45.97	-13	-32.97	Pass	H
5895.00	146	20	-40.25	-13	-27.25	Pass	H
6580.52	154	196	-40.97	-13	-27.97	Pass	H
8116.10	148	158	-47.20	-13	-34.20	Pass	H
1114.27	148	101	-57.52	-13	-44.52	Pass	V
1407.07	152	349	-61.87	-13	-48.87	Pass	V
3456.29	147	70	-51.03	-13	-38.03	Pass	V
3892.03	150	255	-48.58	-13	-35.58	Pass	V
5830.93	145	178	-44.92	-13	-31.92	Pass	V
6497.98	148	335	-46.63	-13	-33.63	Pass	V

Band 4 20393 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1298.20	150	300	-55.37	-13	-42.37	Pass	H
1684.60	149	357	-48.43	-13	-35.43	Pass	H
3946.20	154	215	-41.13	-13	-28.13	Pass	H
5853.62	151	195	-40.52	-13	-27.52	Pass	H
6578.74	155	114	-41.98	-13	-28.98	Pass	H
8072.95	147	54	-42.61	-13	-29.61	Pass	H
1241.47	148	167	-55.84	-13	-42.84	Pass	V
1504.67	147	168	-59.36	-13	-46.36	Pass	V
3584.51	148	157	-48.44	-13	-35.44	Pass	V
3778.81	155	335	-51.25	-13	-38.25	Pass	V
5850.14	151	155	-44.25	-13	-31.25	Pass	V
6628.37	147	237	-47.49	-13	-34.49	Pass	V

16QAM

Band 4 19957 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1330.22	147	98	-58.70	-13	-45.70	Pass	H
1826.02	153	64	-50.65	-13	-37.65	Pass	H
3904.39	147	306	-48.66	-13	-35.66	Pass	H
5804.81	152	111	-49.40	-13	-36.40	Pass	H
6430.26	149	265	-44.23	-13	-31.23	Pass	H
8034.83	146	18	-50.19	-13	-37.19	Pass	H
1215.29	148	339	-55.83	-13	-42.83	Pass	V
1469.88	150	345	-56.14	-13	-43.14	Pass	V
3516.04	152	93	-49.52	-13	-36.52	Pass	V
3764.53	151	148	-46.83	-13	-33.83	Pass	V
5813.41	151	170	-45.10	-13	-32.10	Pass	V
6640.60	145	355	-44.93	-13	-31.93	Pass	V

Band 4 20175 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1255.08	148	75	-55.05	-13	-42.05	Pass	H
1688.45	155	233	-55.35	-13	-42.35	Pass	H
3831.12	155	61	-52.13	-13	-39.13	Pass	H
5862.48	149	73	-43.06	-13	-30.06	Pass	H
6432.99	146	210	-52.75	-13	-39.75	Pass	H
8032.16	151	351	-46.04	-13	-33.04	Pass	H
1168.12	150	153	-55.70	-13	-42.70	Pass	V
1491.58	150	134	-64.55	-13	-51.55	Pass	V
3553.69	154	32	-53.08	-13	-40.08	Pass	V
3969.08	153	329	-49.54	-13	-36.54	Pass	V
5792.61	151	140	-49.84	-13	-36.84	Pass	V
6486.88	147	347	-45.34	-13	-32.34	Pass	V
Band 4 20393 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1251.95	151	216	-56.52	-13	-43.52	Pass	H
1636.69	150	56	-54.58	-13	-41.58	Pass	H
3786.56	155	159	-47.19	-13	-34.19	Pass	H
5830.60	152	86	-40.76	-13	-27.76	Pass	H
6518.44	148	127	-40.83	-13	-27.83	Pass	H
7954.25	147	197	-43.67	-13	-30.67	Pass	H
1244.95	149	1	-56.46	-13	-43.46	Pass	V
1327.12	152	195	-51.45	-13	-38.45	Pass	V
3431.35	146	183	-52.42	-13	-39.42	Pass	V
3832.08	153	341	-49.66	-13	-36.66	Pass	V
5756.74	153	59	-41.85	-13	-28.85	Pass	V
6563.08	146	31	-49.11	-13	-36.11	Pass	V

Note:

3) 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.

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 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.
1245.43	148	274	-57.58	-13	-44.58	Pass	H
1675.48	141	240	-49.08	-13	-36.08	Pass	H
3939.56	144	22	-46.36	-13	-33.36	Pass	H
5876.60	151	177	-46.73	-13	-33.73	Pass	H
6534.95	158	94	-45.32	-13	-32.32	Pass	H
8141.77	157	217	-43.47	-13	-30.47	Pass	H
1296.33	151	72	-53.76	-13	-40.76	Pass	V
1415.57	142	89	-57.88	-13	-44.88	Pass	V
3559.83	157	154	-52.89	-13	-39.89	Pass	V
3868.69	154	311	-51.91	-13	-38.91	Pass	V
5872.03	152	152	-48.83	-13	-35.83	Pass	V
6500.88	141	198	-45.26	-13	-32.26	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.
1380.71	150	350	-57.69	-13	-44.69	Pass	H
1646.82	146	204	-48.94	-13	-35.94	Pass	H
3843.62	150	265	-48.08	-13	-35.08	Pass	H
5908.89	146	238	-43.71	-13	-30.71	Pass	H
6450.97	149	6	-49.75	-13	-36.75	Pass	H
8072.57	151	151	-46.61	-13	-33.61	Pass	H
1243.67	149	11	-56.47	-13	-43.47	Pass	V
1463.37	148	97	-61.64	-13	-48.64	Pass	V
3557.31	147	324	-55.70	-13	-42.70	Pass	V
3873.59	148	352	-51.71	-13	-38.71	Pass	V
5749.57	150	249	-50.90	-13	-37.90	Pass	V
6458.90	150	35	-45.96	-13	-32.96	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.
1355.34	153	275	-56.97	-13	-43.97	Pass	H
1720.34	154	182	-51.63	-13	-38.63	Pass	H
3939.99	146	223	-46.57	-13	-33.57	Pass	H
5962.88	149	126	-40.97	-13	-27.97	Pass	H
6581.61	150	343	-40.80	-13	-27.80	Pass	H
8030.93	147	170	-44.86	-13	-31.86	Pass	H
1287.58	147	83	-57.48	-13	-44.48	Pass	V
1455.39	154	192	-54.12	-13	-41.12	Pass	V
3478.67	146	25	-51.26	-13	-38.26	Pass	V
3851.74	153	100	-48.68	-13	-35.68	Pass	V
5761.08	150	212	-44.20	-13	-31.20	Pass	V
6499.15	153	17	-49.92	-13	-36.92	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.
1287.97	146	234	-59.22	-13	-46.22	Pass	H
1674.07	148	313	-49.26	-13	-36.26	Pass	H
3953.31	150	226	-50.65	-13	-37.65	Pass	H
5924.32	153	33	-42.33	-13	-29.33	Pass	H
6595.07	150	134	-42.06	-13	-29.06	Pass	H
7955.78	152	151	-45.23	-13	-32.23	Pass	H
1082.24	152	154	-52.50	-13	-39.50	Pass	V
1519.04	153	237	-55.13	-13	-42.13	Pass	V
3586.11	150	91	-51.51	-13	-38.51	Pass	V
3810.46	152	122	-52.17	-13	-39.17	Pass	V
5950.73	153	223	-46.38	-13	-33.38	Pass	V
6535.57	150	158	-47.85	-13	-34.85	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.
1387.15	146	242	-54.53	-13	-41.45	Pass	H
1797.32	150	59	-47.21	-13	-37.85	Pass	H
3822.77	151	157	-48.00	-13	-35.2	Pass	H
5924.07	151	139	-39.65	-13	-30.39	Pass	H
6423.17	150	357	-48.21	-13	-32.24	Pass	H
8108.28	147	45	-41.57	-13	-30.22	Pass	H
1245.76	148	83	-57.30	-13	-44.9	Pass	V
1412.93	148	75	-53.28	-13	-43.63	Pass	V
3475.19	154	243	-48.38	-13	-35.94	Pass	V
3778.65	149	176	-50.91	-13	-36.01	Pass	V
5742.04	150	122	-45.36	-13	-33.75	Pass	V
6532.50	148	9	-47.03	-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.
1312.59	151	99	-58.12	-13	-45.12	Pass	H
1607.75	149	111	-49.07	-13	-36.07	Pass	H
3850.36	146	315	-45.99	-13	-32.99	Pass	H
5952.31	155	246	-38.72	-13	-25.72	Pass	H
6435.77	154	279	-42.98	-13	-29.98	Pass	H
8165.49	146	103	-48.31	-13	-35.31	Pass	H
1105.66	152	175	-58.20	-13	-45.20	Pass	V
1466.68	146	234	-58.40	-13	-45.40	Pass	V
3593.95	147	88	-46.29	-13	-33.29	Pass	V
3814.20	146	92	-52.97	-13	-39.97	Pass	V
5763.70	149	257	-48.22	-13	-35.22	Pass	V
6606.06	145	196	-48.01	-13	-35.01	Pass	V

Note:

5) 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.

6) 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.
1345.09	152	274	-56.72	-13	-43.72	Pass	H
1675.14	151	251	-45.55	-13	-32.55	Pass	H
3923.64	154	313	-51.49	-13	-38.49	Pass	H
6025.15	154	221	-44.22	-13	-31.22	Pass	H
6647.07	148	170	-41.80	-13	-28.80	Pass	H
7925.73	153	1	-41.05	-13	-28.05	Pass	H
1256.28	155	313	-54.14	-13	-41.14	Pass	V
1328.56	146	354	-57.78	-13	-44.78	Pass	V
3540.50	149	19	-52.47	-13	-39.47	Pass	V
3901.28	146	121	-48.03	-13	-35.03	Pass	V
5822.03	153	83	-47.88	-13	-34.88	Pass	V
6560.62	146	349	-48.08	-13	-35.08	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.
1263.05	146	266	-56.51	-13	-43.51	Pass	H
1683.09	147	33	-51.32	-13	-38.32	Pass	H
3762.40	145	195	-48.83	-13	-35.83	Pass	H
5886.83	149	7	-43.00	-13	-30.00	Pass	H
6511.45	153	350	-42.88	-13	-29.88	Pass	H
8060.43	146	226	-45.83	-13	-32.83	Pass	H
1096.94	154	220	-57.25	-13	-44.25	Pass	V
1479.61	149	66	-58.05	-13	-45.05	Pass	V
3605.31	154	128	-51.40	-13	-38.40	Pass	V
3945.34	153	229	-48.31	-13	-35.31	Pass	V
5901.17	154	41	-43.39	-13	-30.39	Pass	V
6548.76	145	254	-42.23	-13	-29.23	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.
1323.85	153	237	-53.82	-13	-40.82	Pass	H
1719.18	150	60	-47.98	-13	-34.98	Pass	H
3993.61	149	78	-45.03	-13	-32.03	Pass	H
5852.20	150	77	-37.96	-13	-24.96	Pass	H
6499.73	152	121	-41.42	-13	-28.42	Pass	H
8084.36	146	161	-41.45	-13	-28.45	Pass	H
1187.76	147	305	-55.25	-13	-42.25	Pass	V
1416.25	151	356	-54.93	-13	-41.93	Pass	V
3494.06	150	143	-49.21	-13	-36.21	Pass	V
3907.85	152	189	-45.97	-13	-32.97	Pass	V
5839.68	147	305	-50.14	-13	-37.14	Pass	V
6577.34	152	68	-50.17	-13	-37.17	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.
1407.95	147	206	-54.45	-13	-41.45	Pass	H
1822.43	147	193	-53.43	-13	-40.43	Pass	H
3824.21	153	51	-51.73	-13	-38.73	Pass	H
5806.81	150	62	-48.49	-13	-35.49	Pass	H
6457.19	147	222	-49.80	-13	-36.80	Pass	H
7940.01	151	313	-50.43	-13	-37.43	Pass	H
1317.99	152	1	-58.67	-13	-45.67	Pass	V
1462.17	152	113	-53.59	-13	-40.59	Pass	V
3602.95	146	19	-52.56	-13	-39.56	Pass	V
3918.25	152	349	-46.31	-13	-33.31	Pass	V
5831.51	150	311	-42.78	-13	-29.78	Pass	V
6533.86	153	26	-49.17	-13	-36.17	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.
1195.94	153	255	-55.33	-13	-42.33	Pass	H
1660.62	154	81	-50.88	-13	-37.88	Pass	H
3826.85	153	70	-50.24	-13	-37.24	Pass	H
5919.96	145	42	-42.94	-13	-29.94	Pass	H
6509.10	149	211	-47.92	-13	-34.92	Pass	H
7948.37	149	118	-47.36	-13	-34.36	Pass	H
1250.51	153	265	-53.60	-13	-40.60	Pass	V
1338.56	153	25	-63.62	-13	-50.62	Pass	V
3597.38	147	61	-55.01	-13	-42.01	Pass	V
3873.43	147	278	-50.50	-13	-37.50	Pass	V
5764.08	149	139	-53.75	-13	-40.75	Pass	V
6501.42	151	237	-51.01	-13	-38.01	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.
1298.27	154	286	-56.31	-13	-43.31	Pass	H
1597.61	154	315	-54.04	-13	-41.04	Pass	H
3802.85	146	328	-47.90	-13	-34.90	Pass	H
5835.61	152	236	-43.50	-13	-30.50	Pass	H
6495.94	152	0	-44.77	-13	-31.77	Pass	H
7923.64	153	4	-47.32	-13	-34.32	Pass	H
1248.07	150	200	-54.69	-13	-41.69	Pass	V
1397.72	146	312	-51.52	-13	-38.52	Pass	V
3501.21	152	4	-53.57	-13	-40.57	Pass	V
3812.65	152	240	-43.70	-13	-30.70	Pass	V
5718.26	153	326	-41.37	-13	-28.37	Pass	V
6544.13	155	348	-49.64	-13	-36.64	Pass	V

Note:

7) 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.

8) 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 13 23025 channel/BW 5(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1406.35	151	197	-57.85	-13	-44.85	Pass	H
1775.61	148	309	-49.33	-13	-36.33	Pass	H
3963.87	145	271	-46.81	-13	-33.81	Pass	H
5849.12	146	3	-47.89	-13	-34.89	Pass	H
6630.65	151	41	-41.35	-13	-28.35	Pass	H
8058.93	152	245	-44.23	-13	-31.23	Pass	H
1165.55	150	350	-55.94	-13	-42.94	Pass	V
1479.79	150	100	-54.76	-13	-41.76	Pass	V
3525.83	149	256	-52.78	-13	-39.78	Pass	V
3866.93	150	139	-48.84	-13	-35.84	Pass	V
5938.41	149	255	-46.94	-13	-33.94	Pass	V
6672.54	153	87	-49.78	-13	-36.78	Pass	V
Band 13 23230 channel/BW 5(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1406.09	147	337	-51.06	-13	-38.06	Pass	H
1752.32	148	101	-45.73	-13	-32.73	Pass	H
3854.31	147	70	-47.72	-13	-34.72	Pass	H
6014.59	153	282	-41.00	-13	-28.00	Pass	H
6562.12	146	304	-41.60	-13	-28.60	Pass	H
8051.16	150	356	-42.39	-13	-29.39	Pass	H
1291.70	151	102	-55.66	-13	-42.66	Pass	V
1415.76	146	267	-56.28	-13	-43.28	Pass	V
3480.91	152	144	-49.97	-13	-36.97	Pass	V
3812.16	146	239	-43.84	-13	-30.84	Pass	V
5852.31	146	74	-41.61	-13	-28.61	Pass	V
6604.69	147	150	-44.48	-13	-31.48	Pass	V

Band 13 23255 channel/BW 5(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1344.87	148	167	-54.54	-13	-41.54	Pass	H
1770.07	148	18	-50.64	-13	-37.64	Pass	H
3876.08	152	238	-45.37	-13	-32.37	Pass	H
5958.83	150	48	-44.03	-13	-31.03	Pass	H
6470.28	147	237	-42.97	-13	-29.97	Pass	H
8083.34	145	105	-39.31	-13	-26.31	Pass	H
1244.70	152	341	-54.36	-13	-41.36	Pass	V
1399.12	151	80	-56.30	-13	-43.30	Pass	V
3633.91	155	17	-52.14	-13	-39.14	Pass	V
3843.64	147	125	-45.17	-13	-32.17	Pass	V
5774.26	148	102	-47.80	-13	-34.80	Pass	V
6639.12	148	130	-49.91	-13	-36.91	Pass	V

16QAM

Band 13 23025 channel/BW 5(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1374.97	149	268	-53.86	-13	-40.86	Pass	H
1681.83	147	246	-55.18	-13	-42.18	Pass	H
3982.91	149	222	-48.32	-13	-35.32	Pass	H
5794.83	151	100	-43.29	-13	-30.29	Pass	H
6401.01	145	37	-47.54	-13	-34.54	Pass	H
7929.88	147	239	-44.23	-13	-31.23	Pass	H
1256.15	151	21	-57.03	-13	-44.03	Pass	V
1457.15	153	216	-56.09	-13	-43.09	Pass	V
3522.77	155	26	-49.27	-13	-36.27	Pass	V
3911.19	147	176	-44.52	-13	-31.52	Pass	V
5800.44	155	167	-47.97	-13	-34.97	Pass	V
6613.59	155	31	-49.69	-13	-36.69	Pass	V

Band 13 23230 channel/BW 5(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1376.27	152	273	-53.70	-13	-40.70	Pass	H
1725.82	152	174	-51.08	-13	-38.08	Pass	H
3898.94	153	351	-45.88	-13	-32.88	Pass	H
5893.02	145	237	-47.20	-13	-34.20	Pass	H
6477.20	146	257	-48.23	-13	-35.23	Pass	H
7974.52	152	305	-45.28	-13	-32.28	Pass	H
1258.05	146	57	-57.01	-13	-44.01	Pass	V
1406.40	145	186	-60.39	-13	-47.39	Pass	V
3506.96	155	98	-48.75	-13	-35.75	Pass	V
3995.06	153	309	-49.99	-13	-36.99	Pass	V
5728.14	146	251	-48.72	-13	-35.72	Pass	V
6430.24	147	42	-50.36	-13	-37.36	Pass	V
Band 13 23255 channel/BW 5(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1267.12	150	21	-56.76	-13	-43.76	Pass	H
1594.26	154	245	-53.12	-13	-40.12	Pass	H
3776.17	147	322	-46.45	-13	-33.45	Pass	H
5872.78	154	172	-41.57	-13	-28.57	Pass	H
6440.07	150	60	-39.59	-13	-26.59	Pass	H
7966.57	151	107	-43.06	-13	-30.06	Pass	H
1229.11	147	34	-51.99	-13	-38.99	Pass	V
1362.94	149	61	-56.10	-13	-43.10	Pass	V
3442.78	145	59	-53.05	-13	-40.05	Pass	V
3832.20	149	58	-44.59	-13	-31.59	Pass	V
5763.66	153	287	-44.73	-13	-31.73	Pass	V
6553.70	151	98	-45.33	-13	-32.33	Pass	V

Note:

9) 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.

10) 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 66 131979 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1299.05	159	80	-58.33	-13	-45.33	Pass	H
1799.85	152	227	-47.75	-13	-34.75	Pass	H
3905.76	147	187	-48.32	-13	-35.32	Pass	H
5837.56	148	168	-43.33	-13	-30.33	Pass	H
6537.70	158	179	-44.37	-13	-31.37	Pass	H
8077.24	154	311	-41.93	-13	-28.93	Pass	H
1260.67	150	275	-54.37	-13	-41.37	Pass	V
1452.71	154	324	-56.02	-13	-43.02	Pass	V
3627.68	141	150	-49.62	-13	-36.62	Pass	V
3728.56	152	294	-51.26	-13	-38.26	Pass	V
5887.01	151	190	-46.83	-13	-33.83	Pass	V
6495.57	142	232	-47.56	-13	-34.56	Pass	V
Band 66 132322 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1375.19	150	342	-58.10	-13	-45.10	Pass	H
1730.36	146	326	-52.59	-13	-39.59	Pass	H
3870.48	150	349	-48.64	-13	-35.64	Pass	H
5889.60	146	165	-47.50	-13	-34.50	Pass	H
6374.88	149	2	-46.30	-13	-33.30	Pass	H
7954.94	151	344	-45.61	-13	-32.61	Pass	H
1218.41	149	216	-52.71	-13	-39.71	Pass	V
1368.69	148	132	-61.43	-13	-48.43	Pass	V
3617.89	147	59	-51.86	-13	-38.86	Pass	V
3876.11	148	269	-51.36	-13	-38.36	Pass	V
5730.28	150	320	-49.40	-13	-36.40	Pass	V
6503.59	150	289	-48.67	-13	-35.67	Pass	V

Band 66 132665 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1299.22	149	305	-56.16	-13	-43.16	Pass	H
1621.06	151	50	-54.67	-13	-41.67	Pass	H
3854.77	148	88	-47.93	-13	-34.93	Pass	H
5812.08	154	319	-42.69	-13	-29.69	Pass	H
6518.88	152	282	-41.96	-13	-28.96	Pass	H
8082.43	154	46	-47.66	-13	-34.66	Pass	H
1331.63	149	116	-56.67	-13	-43.67	Pass	V
1453.45	154	2	-54.76	-13	-41.76	Pass	V
3469.59	153	264	-54.36	-13	-41.36	Pass	V
3979.78	145	173	-48.23	-13	-35.23	Pass	V
5696.67	153	55	-40.23	-13	-27.23	Pass	V
6513.64	153	108	-48.72	-13	-35.72	Pass	V

16QAM

Band 66 131979 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1429.78	146	134	-61.11	-13	-48.11	Pass	H
1671.18	149	295	-47.99	-13	-34.99	Pass	H
3832.89	155	148	-46.52	-13	-33.52	Pass	H
5958.42	154	267	-42.52	-13	-29.52	Pass	H
6528.20	152	247	-44.34	-13	-31.34	Pass	H
7922.05	147	136	-41.19	-13	-28.19	Pass	H
1184.50	145	348	-52.19	-13	-39.19	Pass	V
1424.87	147	164	-53.58	-13	-40.58	Pass	V
3650.68	155	138	-53.87	-13	-40.87	Pass	V
3891.07	148	100	-50.38	-13	-37.38	Pass	V
5808.83	154	178	-46.08	-13	-33.08	Pass	V
6651.28	154	232	-50.93	-13	-37.93	Pass	V

Band 66 132322 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1302.57	149	140	-50.49	-13	-41.45	Pass	H
1731.84	149	11	-47.43	-13	-37.85	Pass	H
3873.47	150	129	-50.30	-13	-35.2	Pass	H
5903.80	155	3	-41.76	-13	-30.39	Pass	H
6559.08	150	23	-42.25	-13	-32.24	Pass	H
8012.95	147	217	-39.71	-13	-30.22	Pass	H
1212.98	149	55	-54.99	-13	-44.9	Pass	V
1358.52	154	194	-53.97	-13	-43.63	Pass	V
3498.99	148	238	-51.08	-13	-35.94	Pass	V
3844.63	149	271	-48.50	-13	-36.01	Pass	V
5893.10	154	178	-43.81	-13	-33.75	Pass	V
6511.32	151	203	-47.61	-13	-32.41	Pass	V
Band 66 132665 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1424.70	152	20	-57.03	-13	-44.03	Pass	H
1640.56	153	165	-50.48	-13	-37.48	Pass	H
3810.87	145	317	-43.35	-13	-30.35	Pass	H
5835.65	146	235	-38.94	-13	-25.94	Pass	H
6428.52	149	164	-43.07	-13	-30.07	Pass	H
8139.40	148	132	-48.65	-13	-35.65	Pass	H
1163.29	154	234	-55.83	-13	-42.83	Pass	V
1521.68	154	186	-61.18	-13	-48.18	Pass	V
3496.57	151	7	-52.77	-13	-39.77	Pass	V
3864.41	146	149	-47.78	-13	-34.78	Pass	V
5827.28	149	350	-49.79	-13	-36.79	Pass	V
6560.08	151	136	-46.19	-13	-33.19	Pass	V

Note:

11) 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.

12) 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.

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=DC18V; Low Voltage LV=DC16.2V; High Voltage HV=DC19.8V

Please refer to Appendix 2: Frequency Stability

Test result: Pass

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