



TEST REPORT

Product Name:	Fingerprint Handheld Terminal
FCC ID:	2BF3H-FP08
Trademark:	N/A
Model Number:	HF-FP08
Prepared For:	CHONGQING HUIFAN TECHNOLOGY CO.,LTD
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Sample Received Date:	Apr. 14, 2025
Sample tested Date:	Apr. 14, 2025 to Jun. 28, 2025
Issue Date:	Jun. 28, 2025
Report No.:	CTB25041412401RF06
Test Standards	FCC Part 2, 22, 24E, 27
Test Results	PASS
Remark:	This is LTE radio test report.

Compiled by:

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Reviewed by:

Arron Liu

Arron Liu

Approved by:

Bin Mei

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.

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(Note: N/A means not applicable)

1. VERSION

Report No.	Issue Date	Description	Approved
CTB25041412401RF06	Jun. 28, 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)(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 chamber 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):	HF-FP08
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 7: 2500-2570MHz
Max. RF output power:	FDD-LTE BAND 2: 23.27dBm FDD-LTE BAND 4: 21.89dBm FDD-LTE BAND 7: 22.77dBm
Type of Modulation:	QPSK, 16QAM
Antenna installation:	Internal antenna
Antenna Gain:	FDD-LTE BAND 2: 5.1dBi FDD-LTE BAND 4: 4.74dBi FDD-LTE BAND 7: 4.98dBi
Ratings:	DC 5V charging from adapter DC 3.7V 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/Type No.	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 7	Low, Middle, High Channels

4.5 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(DC):	3.7V
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, Xinhe 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.

FCC Test Firm Registration Number: CN1276

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 Meter	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.

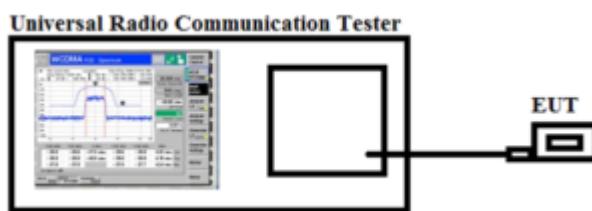
According to §24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

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.

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 §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

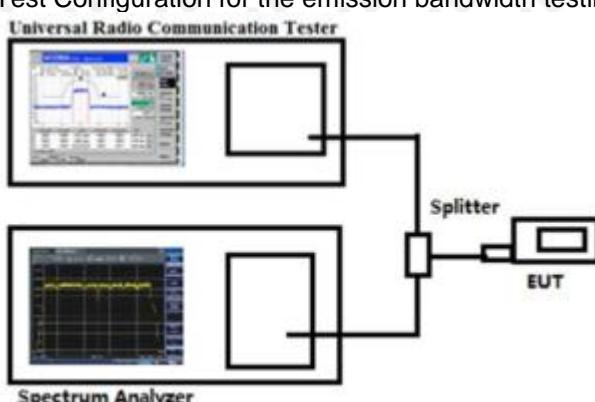
corresponding to the highest PAPR expected during periods of continuous transmission.

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 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.

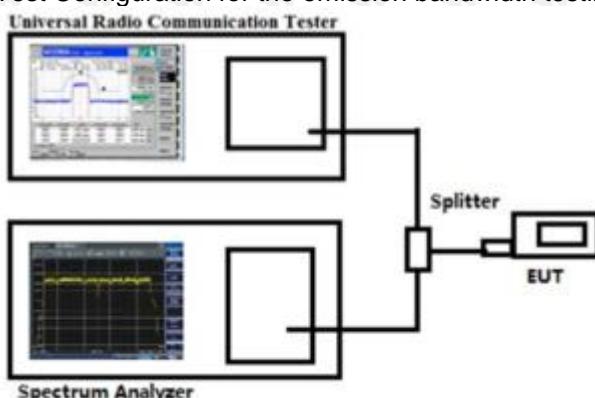
According to §24.238(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

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.

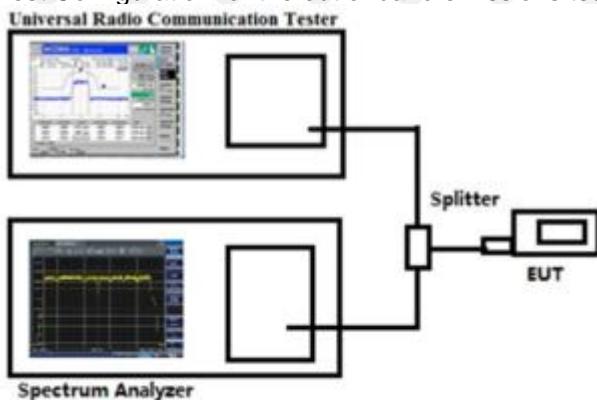
According to §27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$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

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:

- (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 = $43+10 \log 10$ (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.
1428.74	155	311	-57.64	-13	-44.64	Pass	H
1654.85	143	112	-47.79	-13	-34.79	Pass	H
3814.16	156	232	-46.96	-13	-33.96	Pass	H
5871.62	152	231	-46.04	-13	-33.04	Pass	H
6451.79	159	222	-42.83	-13	-29.83	Pass	H
8168.59	141	322	-41.61	-13	-28.61	Pass	H
1195.26	153	173	-54.51	-13	-41.51	Pass	V
1513.03	153	310	-57.13	-13	-44.13	Pass	V
3609.41	156	250	-49.11	-13	-36.11	Pass	V
3798.92	158	337	-53.83	-13	-40.83	Pass	V
5726.11	145	91	-46.02	-13	-33.02	Pass	V
6590.74	149	242	-47.67	-13	-34.67	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.
1216.08	150	91	-55.98	-13	-42.98	Pass	H
1748.60	146	165	-51.31	-13	-38.31	Pass	H
3936.19	150	305	-52.10	-13	-39.10	Pass	H
5963.76	146	20	-43.38	-13	-30.38	Pass	H
6379.68	149	8	-46.78	-13	-33.78	Pass	H
7931.20	151	217	-48.53	-13	-35.53	Pass	H
1190.66	149	18	-51.28	-13	-38.28	Pass	V
1467.36	148	104	-58.49	-13	-45.49	Pass	V
3515.41	147	156	-54.34	-13	-41.34	Pass	V
3914.76	148	97	-52.63	-13	-39.63	Pass	V
5757.00	150	206	-47.01	-13	-34.01	Pass	V
6610.79	150	289	-48.84	-13	-35.84	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.
1292.97	153	99	-54.00	-13	-41.00	Pass	H
1612.54	153	98	-49.06	-13	-36.06	Pass	H
3897.66	152	123	-48.64	-13	-35.64	Pass	H
5956.85	153	189	-38.63	-13	-25.63	Pass	H
6572.63	148	50	-44.95	-13	-31.95	Pass	H
8097.50	148	293	-45.91	-13	-32.91	Pass	H
1290.96	153	209	-54.50	-13	-41.50	Pass	V
1492.08	151	23	-54.36	-13	-41.36	Pass	V
3479.75	151	55	-54.13	-13	-41.13	Pass	V
3835.37	150	134	-48.74	-13	-35.74	Pass	V
5818.87	152	237	-42.07	-13	-29.07	Pass	V
6491.19	148	234	-45.27	-13	-32.27	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.
1400.40	153	274	-61.23	-13	-48.23	Pass	H
1672.31	149	252	-45.59	-13	-32.59	Pass	H
3905.36	151	266	-46.32	-13	-33.32	Pass	H
5992.08	146	27	-42.61	-13	-29.61	Pass	H
6542.77	147	24	-45.57	-13	-32.57	Pass	H
7948.69	147	182	-43.39	-13	-30.39	Pass	H
1124.48	149	343	-52.71	-13	-39.71	Pass	V
1367.44	149	259	-58.53	-13	-45.53	Pass	V
3599.56	154	123	-49.48	-13	-36.48	Pass	V
3917.25	153	4	-52.02	-13	-39.02	Pass	V
5928.77	148	144	-47.27	-13	-34.27	Pass	V
6483.28	145	142	-47.25	-13	-34.25	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.
1382.87	145	118	-53.99	-13	-41.45	Pass	H
1819.57	150	71	-48.49	-13	-37.85	Pass	H
3933.61	153	270	-50.48	-13	-35.2	Pass	H
5981.74	148	339	-46.35	-13	-30.39	Pass	H
6479.84	150	297	-47.09	-13	-32.24	Pass	H
8126.83	152	245	-45.19	-13	-30.22	Pass	H
1211.46	150	130	-58.51	-13	-44.9	Pass	V
1397.97	151	294	-58.07	-13	-43.63	Pass	V
3564.43	151	266	-45.75	-13	-35.94	Pass	V
3847.63	147	191	-51.88	-13	-36.01	Pass	V
5759.70	152	346	-47.05	-13	-33.75	Pass	V
6474.18	147	74	-47.28	-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.
1361.13	154	65	-55.97	-13	-42.97	Pass	H
1700.33	153	176	-47.09	-13	-34.09	Pass	H
3953.15	146	224	-40.48	-13	-27.48	Pass	H
5859.14	145	285	-44.89	-13	-31.89	Pass	H
6409.86	145	156	-40.24	-13	-27.24	Pass	H
8053.39	151	71	-48.80	-13	-35.80	Pass	H
1165.75	151	270	-54.62	-13	-41.62	Pass	V
1439.45	151	21	-55.34	-13	-42.34	Pass	V
3579.35	146	346	-49.90	-13	-36.90	Pass	V
3888.29	152	141	-52.27	-13	-39.27	Pass	V
5725.09	151	271	-49.89	-13	-36.89	Pass	V
6651.94	151	44	-44.88	-13	-31.88	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.

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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.
1383.55	148	108	-59.95	-13	-46.95	Pass	H
1608.98	153	162	-46.11	-13	-33.11	Pass	H
3857.89	148	323	-49.83	-13	-36.83	Pass	H
5940.28	146	53	-43.45	-13	-30.45	Pass	H
6653.26	149	118	-43.57	-13	-30.57	Pass	H
7938.80	148	350	-42.37	-13	-29.37	Pass	H
1207.94	147	82	-56.95	-13	-43.95	Pass	V
1486.90	151	159	-53.12	-13	-40.12	Pass	V
3620.60	155	23	-47.83	-13	-34.83	Pass	V
3941.02	149	253	-50.12	-13	-37.12	Pass	V
5787.17	152	74	-47.40	-13	-34.40	Pass	V
6645.88	149	327	-46.06	-13	-33.06	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.
1256.11	146	28	-51.79	-13	-38.79	Pass	H
1823.75	153	209	-46.14	-13	-33.14	Pass	H
3923.90	149	88	-48.32	-13	-35.32	Pass	H
5943.01	149	166	-45.15	-13	-32.15	Pass	H
6408.04	153	214	-45.07	-13	-32.07	Pass	H
8056.47	149	2	-43.27	-13	-30.27	Pass	H
1102.40	146	308	-56.23	-13	-43.23	Pass	V
1376.69	152	110	-60.47	-13	-47.47	Pass	V
3507.57	154	85	-46.47	-13	-33.47	Pass	V
3952.33	145	156	-44.13	-13	-31.13	Pass	V
5870.32	148	170	-42.45	-13	-29.45	Pass	V
6529.89	153	178	-46.36	-13	-33.36	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.
1292.97	151	128	-50.59	-13	-37.59	Pass	H
1731.57	145	152	-47.51	-13	-34.51	Pass	H
3806.35	152	38	-44.08	-13	-31.08	Pass	H
5910.80	149	280	-43.35	-13	-30.35	Pass	H
6450.44	148	101	-40.25	-13	-27.25	Pass	H
8009.77	150	347	-43.07	-13	-30.07	Pass	H
1208.82	148	29	-56.55	-13	-43.55	Pass	V
1508.27	146	149	-52.95	-13	-39.95	Pass	V
3456.07	153	298	-51.32	-13	-38.32	Pass	V
3838.24	145	53	-46.46	-13	-33.46	Pass	V
5802.24	154	75	-48.93	-13	-35.93	Pass	V
6549.48	148	313	-50.12	-13	-37.12	Pass	V

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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.
1301.98	154	272	-56.69	-13	-43.69	Pass	H
1699.89	153	126	-49.47	-13	-36.47	Pass	H
3908.56	152	9	-53.18	-13	-40.18	Pass	H
5808.24	153	24	-48.30	-13	-35.30	Pass	H
6533.58	153	357	-44.62	-13	-31.62	Pass	H
8017.33	153	301	-49.09	-13	-36.09	Pass	H
1314.26	147	130	-57.91	-13	-44.91	Pass	V
1490.48	146	31	-56.84	-13	-43.84	Pass	V
3570.43	146	233	-47.22	-13	-34.22	Pass	V
3776.42	147	190	-50.08	-13	-37.08	Pass	V
5801.93	151	101	-48.04	-13	-35.04	Pass	V
6476.05	145	245	-47.84	-13	-34.84	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.
1376.42	149	83	-57.44	-13	-44.44	Pass	H
1807.14	155	287	-55.83	-13	-42.83	Pass	H
3956.29	149	251	-48.29	-13	-35.29	Pass	H
5953.65	147	345	-42.24	-13	-29.24	Pass	H
6455.52	148	7	-48.62	-13	-35.62	Pass	H
7980.89	152	329	-45.36	-13	-32.36	Pass	H
1193.57	145	18	-51.92	-13	-38.92	Pass	V
1392.20	146	18	-65.65	-13	-52.65	Pass	V
3645.15	153	23	-52.05	-13	-39.05	Pass	V
3957.13	148	3	-50.10	-13	-37.10	Pass	V
5766.87	155	61	-49.94	-13	-36.94	Pass	V
6422.26	147	324	-48.17	-13	-35.17	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.
1272.29	152	113	-56.19	-13	-43.19	Pass	H
1637.80	146	91	-51.37	-13	-38.37	Pass	H
3815.10	146	264	-48.99	-13	-35.99	Pass	H
5898.40	154	125	-41.14	-13	-28.14	Pass	H
6468.03	155	230	-43.30	-13	-30.30	Pass	H
7937.88	153	108	-42.30	-13	-29.30	Pass	H
1196.93	148	306	-53.79	-13	-40.79	Pass	V
1399.40	148	268	-54.15	-13	-41.15	Pass	V
3474.20	150	25	-50.50	-13	-37.50	Pass	V
3896.39	153	221	-48.42	-13	-35.42	Pass	V
5785.84	147	222	-42.97	-13	-29.97	Pass	V
6555.06	147	359	-49.27	-13	-36.27	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.

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Band 7 20775 channel/BW 5(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1317.97	146	53	-54.18	-13	-41.18	Pass	H
1738.28	153	163	-50.20	-13	-37.20	Pass	H
3838.78	147	321	-48.27	-13	-35.27	Pass	H
5985.97	150	179	-42.47	-13	-29.47	Pass	H
6511.41	154	128	-42.20	-13	-29.20	Pass	H
7982.32	154	357	-42.44	-13	-29.44	Pass	H
1144.21	148	325	-56.30	-13	-43.30	Pass	V
1506.05	148	330	-58.30	-13	-45.30	Pass	V
3536.25	151	10	-51.64	-13	-38.64	Pass	V
3943.59	148	156	-49.95	-13	-36.95	Pass	V
5769.31	147	234	-44.02	-13	-31.02	Pass	V
6648.90	153	76	-45.16	-13	-32.16	Pass	V

Band 7 21100 channel/BW 5 (middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1334.92	148	36	-54.51	-13	-41.51	Pass	H
1693.52	146	108	-49.58	-13	-36.58	Pass	H
3871.56	153	332	-48.42	-13	-35.42	Pass	H
5942.94	152	239	-38.33	-13	-25.33	Pass	H
6521.00	151	110	-46.35	-13	-33.35	Pass	H
8053.42	151	312	-42.38	-13	-29.38	Pass	H
1097.93	153	101	-54.19	-13	-41.19	Pass	V
1396.17	149	141	-56.25	-13	-43.25	Pass	V
3570.73	146	308	-47.54	-13	-34.54	Pass	V
3872.97	152	78	-45.64	-13	-32.64	Pass	V
5823.94	148	247	-41.96	-13	-28.96	Pass	V
6461.37	149	212	-45.63	-13	-32.63	Pass	V

Band 7 21425 channel/BW 5 (highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1283.84	154	38	-55.18	-13	-42.18	Pass	H
1635.62	152	320	-49.81	-13	-36.81	Pass	H
3822.43	151	308	-45.72	-13	-32.72	Pass	H
5888.70	152	283	-41.16	-13	-28.16	Pass	H
6610.38	155	186	-42.49	-13	-29.49	Pass	H
8040.66	145	304	-38.78	-13	-25.78	Pass	H
1142.50	151	23	-51.25	-13	-38.25	Pass	V
1436.54	152	250	-55.58	-13	-42.58	Pass	V
3500.15	148	106	-49.37	-13	-36.37	Pass	V
3815.41	152	33	-44.96	-13	-31.96	Pass	V
5841.96	149	145	-46.39	-13	-33.39	Pass	V
6484.48	149	35	-48.11	-13	-35.11	Pass	V

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Band 7 20775 channel/BW 5 (lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1308.85	149	251	-56.50	-13	-43.50	Pass	H
1673.09	148	83	-55.19	-13	-42.19	Pass	H
3963.54	151	266	-47.12	-13	-34.12	Pass	H
5851.66	152	315	-44.37	-13	-31.37	Pass	H
6565.24	149	138	-46.79	-13	-33.79	Pass	H
7969.34	148	104	-49.24	-13	-36.24	Pass	H
1211.54	153	308	-60.24	-13	-47.24	Pass	V
1393.76	150	82	-55.52	-13	-42.52	Pass	V
3642.62	149	6	-46.65	-13	-33.65	Pass	V
3918.57	152	328	-49.33	-13	-36.33	Pass	V
5787.63	152	247	-48.29	-13	-35.29	Pass	V
6499.65	148	285	-50.15	-13	-37.15	Pass	V

Band 7 21100 channel/BW 5 (middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1298.87	146	314	-54.79	-13	-41.79	Pass	H
1771.93	154	228	-53.59	-13	-40.59	Pass	H
3791.19	151	112	-51.65	-13	-38.65	Pass	H
5810.50	149	309	-41.28	-13	-28.28	Pass	H
6542.05	150	304	-47.27	-13	-34.27	Pass	H
8015.82	146	202	-42.90	-13	-29.90	Pass	H
1240.22	150	325	-50.48	-13	-37.48	Pass	V
1388.18	147	15	-60.85	-13	-47.85	Pass	V
3666.84	148	325	-50.99	-13	-37.99	Pass	V
3979.87	152	106	-50.82	-13	-37.82	Pass	V
5884.13	145	48	-51.04	-13	-38.04	Pass	V
6477.83	147	317	-49.49	-13	-36.49	Pass	V

Band 7 21425 channel/BW 5 (highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1332.26	150	346	-55.30	-13	-42.30	Pass	H
1630.02	149	344	-51.64	-13	-38.64	Pass	H
3810.92	152	129	-49.42	-13	-36.42	Pass	H
5881.69	154	162	-41.82	-13	-28.82	Pass	H
6525.37	149	108	-44.15	-13	-31.15	Pass	H
7923.48	146	284	-47.13	-13	-34.13	Pass	H
1238.21	154	301	-51.70	-13	-38.70	Pass	V
1335.63	153	324	-51.18	-13	-38.18	Pass	V
3482.96	146	34	-51.44	-13	-38.44	Pass	V
3834.16	154	357	-42.83	-13	-29.83	Pass	V
5768.18	147	197	-48.02	-13	-35.02	Pass	V
6494.40	155	280	-45.81	-13	-32.81	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.

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=DC 3.7V; Low Voltage LV=DC 3.33V; High Voltage HV=DC 4.07V

Please refer to Appendix 2: Frequency Stability

Test result: Pass

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