RF TEST REPORT

FCC ID: 2ATWZ-S0

Report No.	:	SSP25070404-5E
Applicant	:	Shanghai Dewav IoT Technology Co.,Ltd.
Product Name	:	Real-Time Multisensor
Model Name	:	S0
Test Standard	:	FCC Part 22 Subpart H FCC Part 24 Subpart E FCC Part 27
Date of Issue	:	2025-08-29

Shenzhen CCUT Quality Technology Co., Ltd.
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Test Report Basic Information

Applicant.....:	Shanghai Dewav IoT Technology Co.,Ltd.
Address of Applicant.....:	No.3 Building, Lane 739 of Kangwei Road, Pudong New Area, Shanghai, China
Manufacturer.....:	Shanghai Dewav IoT Technology Co.,Ltd.
Address of Manufacturer.....:	No.3 Building, Lane 739 of Kangwei Road, Pudong New Area, Shanghai, China
Product Name.....:	Real-Time Multisensor
Brand Name.....:	-
Main Model.....:	S0
Series Models.....:	-
Test Standard.....:	FCC Part 22 Subpart H FCC Part 24 Subpart E FCC Part 27
Date of Test .....:	2025-07-25 to 2025-08-29
Test Result.....:	PASS

Tested By .....: Walker Wu (Walker Wu)

Reviewed By.....: Lorzix Luo (Lorzix Luo)

Authorized Signatory.....: Lahm Peng (Lahm Peng)

Shenzhen CCUT Quality Technology Co., Ltd. APPROVED

Note : This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.. All test data presented in this test report is only applicable to presented test sample.

CONTENTS

Revision History

Revision	Issue Date	Description	Revised By
V1.0	2025-08-29	Initial Release	Lahm Peng

1. General Information

1.1 Product Information

Product Name:	Real-Time Multisensor
Trade Name:	-
Test Model:	S0
Series Models:	S0-1, S0-W, S0-W1, S0-B, S0-B1, S0-L, S0-L1, S0-WL, S0-WL1, S0-BL, S0-BL1, S0-P, S0-P-1, S0-P-W, S0-P-W1, S0-P-B, S0-P-B, S0-P-L, S0-P-L1, S0-P-WL, S0-P-WL1, S0-P-BL, S0-P-BL1, S0-H, S0-H-1, S0-H-W, S0-H-W1, S0-H-B, S0-H-B1, S0-H-L, S0-H-L1, S0-H-WL, S0-H-WL1, S0-H-BL, S0-H-BL1
Rated Voltage:	DC 3.7V by battery, USB 5V charging
Battery:	DC 3.7V/600mAh
Test Sample No:	SSP25070404-1
Hardware Version:	V1.0
Software Version:	V1.0
Type of Device:	☐ Portable Device ☒ Mobile Device ☐ Modular Device
Note 1: The test data is gathered from a production sample, provided by the manufacturer. Note 2: The color of appearance, model name, whether there is LED and digital display or not of series models listed are different from the main model, but the circuit and the electronic construction are the same, declared by the manufacturer. The series models include “L”: Without LED The series models include “1”: The digital display screen does not show	

Wireless Specification	
Support Networks:	FDD-LTE Band 2, 4, 5, 7, 66 TDD-LTE Band 38, 40, 41
Uplink Frequency:	FDD-LTE Band 2: Tx: 1850-1910MHz FDD-LTE Band 4: Tx: 1710-1755MHz FDD-LTE Band 5: Tx: 824-849MHz FDD-LTE Band 7: Tx: 2500-2570MHz FDD-LTE Band 66: Tx: 1710-1780MHz TDD-LTE Band 38: Tx: 2570-2620MHz TDD-LTE Band 40: Tx: 2305-2315MHz TDD-LTE Band 40: Tx: 2350-2360MHz TDD-LTE Band 41: Tx: 2496-2690MHz
Downlink Frequency:	FDD-LTE Band 2: Rx: 1930-1990MHz FDD-LTE Band 4: Rx: 2110-2155MHz FDD-LTE Band 5: Rx: 869-894MHz FDD-LTE Band 7: Rx: 2620-2690MHz FDD-LTE Band 66: Rx: 2110-2180MHz TDD-LTE Band 38: Rx: 2570-2620MHz

	TDD-LTE Band 40: Rx: 2305-2315MHz TDD-LTE Band 40: Rx: 2350-2360MHz TDD-LTE Band 41: Rx: 2496-2690MHz
Bandwidth:	FDD-LTE Band 2: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz FDD-LTE Band 4: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz FDD-LTE Band 5: 1.4MHz / 3MHz / 5MHz / 10MHz FDD-LTE Band 7: 5MHz / 10MHz / 15MHz / 20MHz FDD-LTE Band 66: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz TDD-LTE Band 38: 5MHz / 10MHz / 15MHz / 20MHz TDD-LTE Band 40: 5MHz / 10MHz TDD-LTE Band 41: 5MHz / 10MHz / 15MHz / 20MHz
Modulation:	QPSK, 16QAM

Wireless Specification	
RF Output Power:	FDD-LTE Band 2: 23.48dBm FDD-LTE Band 4: 23.33dBm FDD-LTE Band 5: 23.29dBm FDD-LTE Band 7: 23.31dBm FDD-LTE Band 66: 23.05dBm TDD-LTE Band 38: 23.5dBm TDD-LTE Band 40: 23.58dBm TDD-LTE Band 41: 23.69dBm
Antenna Type:	Integral Antenna
Antenna Gain:	FDD-LTE Band 2: -1.01dBi FDD-LTE Band 4: -0.9dBi FDD-LTE Band 5: -0.89dBi FDD-LTE Band 7: 0.28dBi FDD-LTE Band 66: 0.17dBi TDD-LTE Band 38: 0.2dBi TDD-LTE Band 40: 0.18dBi TDD-LTE Band 41: 0.19dBi
Note The Antenna Gain is provided by the manufacturer and can affect the validity of results.	

FDD-LTE Band 2 Channel Frequency (MHz)				
Bandwidth (MHz)	Test Channel	Lowest	Middle	Highest
1.4	Channel No.	18607	18900	19193
	Frequency	1850.7	1880	1909.3
3	Channel No.	18615	18900	19185
	Frequency	1851.5	1880	1908.5
5	Channel No.	18625	18900	19175
	Frequency	1852.5	1880	1907.5
10	Channel No.	18650	18900	19150
	Frequency	1855	1880	1905
15	Channel No.	18675	18900	19125
	Frequency	1857.5	1880	1902.5
20	Channel No.	18700	18900	19100
	Frequency	1860	1880	1900

FDD-LTE Band 4 Channel Frequency (MHz)				
Bandwidth (MHz)	Test Channel	Lowest	Middle	Highest
1.4	Channel No.	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3
3	Channel No.	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
5	Channel No.	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
10	Channel No.	20000	20175	20350
	Frequency	1715	1732.5	1750
15	Channel No.	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
20	Channel No.	20050	20175	20300
	Frequency	1720	1732.5	1745

FDD-LTE Band 5 Channel Frequency (MHz)				
Bandwidth (MHz)	Test Channel	Lowest	Middle	Highest
1.4	Channel No.	20407	20525	20643
	Frequency	824.7	836.5	848.3
3	Channel No.	20415	20525	20635
	Frequency	825.5	836.5	847.5
5	Channel No.	20425	20525	20625
	Frequency	826.5	836.5	846.5
10	Channel No.	20450	20525	20600
	Frequency	829	836.5	844

FDD-LTE Band 7 Channel Frequency (MHz)				
Bandwidth (MHz)	Test Channel	Lowest	Middle	Highest
5	Channel No.	20775	21100	21425
	Frequency	2502.5	2535.0	2567.5
10	Channel No.	20800	21100	21400
	Frequency	2505.0	2535.0	2565.0
15	Channel No.	20825	21100	21375
	Frequency	2507.5	2535.0	2562.5
20	Channel No.	20850	21100	21350
	Frequency	2510.0	2535.0	2560.0

FDD-LTE Band 66 Channel Frequency (MHz)				
Bandwidth (MHz)	Test Channel	Lowest	Middle	Highest
1.4	Channel No.	131979	132322	132665
	Frequency	1710.7	1745	1779.3
3	Channel No.	131987	132322	132657
	Frequency	1711.5	1745	1778.5
5	Channel No.	131997	132322	132647
	Frequency	1712.5	1745	1777.5
10	Channel No.	132022	132322	132622
	Frequency	1715	1745	1775
15	Channel No.	132047	132322	132597
	Frequency	1717.5	1745	1772.5
20	Channel No.	132072	132322	132572
	Frequency	1720	1745	1770

TDD-LTE Band 38 Channel Frequency (MHz)				
Bandwidth (MHz)	Test Channel	Lowest	Middle	Highest
5	Channel No.	37775	38000	38225
	Frequency	2572.5	2595	2572.5
10	Channel No.	37800	38000	38200
	Frequency	2575.0	2595	2615.0
15	Channel No.	37825	38000	38175
	Frequency	2577.5	2595	2612.5
20	Channel No.	37850	38000	38150
	Frequency	2580.0	2595	2610.0

TDD-LTE Band 40(2305-2315) Channel Frequency (MHz)				
Bandwidth (MHz)	Test Channel	Lowest	Middle	Highest
5	Channel No.	38725	38750	38775
	Frequency	2307.5	2310.0	2312.5
10	Channel No.	-	38750	-
	Frequency	-	2310.0	-

TDD-LTE Band 40(2350-2360) Channel Frequency (MHz)				
Bandwidth (MHz)	Test Channel	Lowest	Middle	Highest
5	Channel No.	39175	39200	39225
	Frequency	2352.5	2355.0	2357.5
10	Channel No.	-	39200	-
	Frequency	-	2355.0	-

TDD-LTE Band 41 Channel Frequency (MHz)				
Bandwidth (MHz)	Test Channel	Lowest	Middle	Highest
5	Channel No.	39675	40620	41565
	Frequency	2498.5	2593.0	2687.5
10	Channel No.	39700	40620	41540
	Frequency	2501.0	2593.0	2685.0
15	Channel No.	39725	40620	41515
	Frequency	2503.5	2593.0	2682.5
20	Channel No.	39750	40620	41490
	Frequency	2506.0	2593.0	2680.0

1.2 Test Setup Information

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

List of Test Modes		
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 7	Low, Middle, High Channels
TM5	FDD-LTE Band 66	Low, Middle, High Channels
TM6	TDD-LTE Band 38	Low, Middle, High Channels
TM7	TDD-LTE Band 40	Low, Middle, High Channels
TM8	TDD-LTE Band 41	Low, Middle, High Channels
Only the worst measurement data is recorded in the report		

List and Details of Auxiliary Cable			
Description	Length (cm)	Shielded/Unshielded	With/Without Ferrite
-	-	-	-
-	-	-	-

List and Details of Auxiliary Equipment			
Description	Manufacturer	Model	Serial Number
-	-	-	-
-	-	-	-

Test Conditions					
	NTNV	LTLV	LTHV	HTHV	HTLV
Temperature (°C)	20	-30	-30	50	50
Voltage (V)	3.7	3.33	4.07	4.07	3.33

1.3 Compliance Standard

Compliance Standard	
FCC Rules Part 2	Frequency Alloca-Tions and Radio Treaty Mat-Ters; General Rules and Reg-Ulations.
FCC Rules Part 22	Private Land Mobile Radio Services.
FCC Rules Part 24	Public Mobile Services.
FCC Rules Part 27	Miscellaneous Wireless Communications Services.
All measurements contained in this report were conducted with all above standards	
According to standards for test methodology	
ANSI C63.26:2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services.
TIA/EIA 603 E March 2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.
KDB 971168 D01	Power Meas License Digital Systems v03r01: Measurement Guidance for Certification of Licensed Digital Transmitters.
Maintenance of compliance is the responsibility of the manufacturer or applicant. Any modification of the product, which result is lowering the emission, should be checked to ensure compliance has been maintained.	

1.4 Test Facilities

Laboratory Name:	**Shenzhen CCUT Quality Technology Co., Ltd.** 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China
CNAS Laboratory No.:	L18863
A2LA Certificate No.:	6983.01
FCC Registration No:	583813
ISED Registration No.:	CN0164

1.5 List of Measurement Instruments

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Radiated Emissions					
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100154	2025-07-15	2026-07-14
Spectrum Analyzer	KEYSIGHT	N9020A	MY48030972	2025-07-15	2026-07-14
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40-N	101692	2025-07-15	2026-07-14
Amplifier	SCHWARZBECK	BBV 9743B	00251	2025-07-15	2026-07-14
Amplifier	HUABO	YXL0518-2.5-45	--	2025-07-15	2026-07-14
Amplifier	COM-MW	DLAN-18G-4G-02	10229104	2025-07-15	2026-07-14
Loop Antenna	DAZE	ZN30900C	21104	2025-07-12	2026-07-11
Broadband Antenna	SCHWARZBECK	VULB 9168	01320	2025-07-12	2026-07-11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02553	2025-07-12	2026-07-11
Horn Antenna	COM-MW	ZLB7-18-40G-950	12221225	2025-07-12	2026-07-11
Attenuator	QUANJUDA	6dB	220731	2025-07-15	2026-07-14
Test Cable	N/A	Cable 1	N/A	2025-07-15	2026-07-14
Test Cable	N/A	Cable 2	N/A	2025-07-15	2026-07-14
Test Cable	N/A	Cable 3	N/A	2025-07-15	2026-07-14
Test Cable	N/A	Cable 4	N/A	2025-07-15	2026-07-14
Test Cable	N/A	Cable 8	N/A	2025-07-15	2026-07-14
Test Cable	N/A	Cable 9	N/A	2025-07-15	2026-07-14
EMI Test Software	FARA	EZ-EMC	FA-03A2 RE+	N/A	N/A
Conducted RF Testing					
RF Test System	MWRFTest	MW100-RFCB	220418SQS-37	2025-07-16	2026-07-15
Spectrum Analyzer	KEYSIGHT	N9020A	ATO-90521	2025-07-16	2026-07-15
Radio Tester	ROHDE&SCHWARZ	CMW500	2K50-126968	2025-07-15	2026-07-14
RF Test Software	MWRFTest	MTS 8200	N/A	N/A	N/A

1.6 Measurement Uncertainty

Parameter	Conditions	Uncertainty
RF Output Power	9kHz ~ 26GHz	±0.50 dB
Occupied Bandwidth	9kHz ~ 26GHz	±4 %
Frequency Stability	9kHz ~ 26GHz	±1.6 ppm
Conducted Spurious Emissions	9kHz ~ 26GHz	±1.32 dB
Radiated Spurious Emissions	9kHz ~ 30MHz	±2.88 dB
	30MHz ~ 1GHz	±3.32 dB
	1GHz ~ 18GHz	±3.50 dB
	18GHz ~ 40GHz	±3.66 dB

2. Summary of Test Results

FCC Rules	Description of Test Items	Result
§22.913(a), §24.232(c), §27.50(d)	RF Output Power	Passed
§24.51, §27.50	Peak-to-average Ratio (PAR)	Passed
§22.917(b), §24.238(b), §27.53	Emission Bandwidth	Passed
§22.917(a), §24.238(a), §27.53	Out of Band Emissions at Antenna Terminal	Passed
§22.917(a), §24.238(a), §27.53	Radiation Spurious Emissions (RSE)	Passed
§22.355, §24.235, §27.54	Frequency Stability	Passed

Passed: The EUT complies with the essential requirements in the standard

Failed: The EUT does not comply with the essential requirements in the standard

N/A: not applicable

N/T: not test

After the pre-test, different series models it will not affect the test results, so only the test data for main model S0 was presented in the report.

3. RF Output Power

3.1 Standard and Limit

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

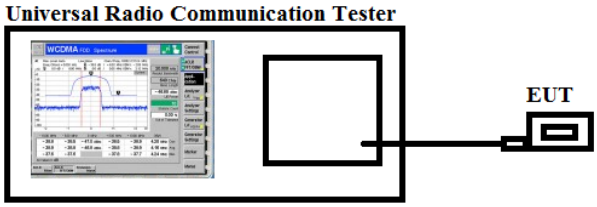
According to §24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

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

3.2 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.

3.3 Test Data and Results

Please refer to Appendix for Conducted output power.

Test result: Pass

4. Peak-to-Average Ratio (PAR)

4.1 Standard and Limit

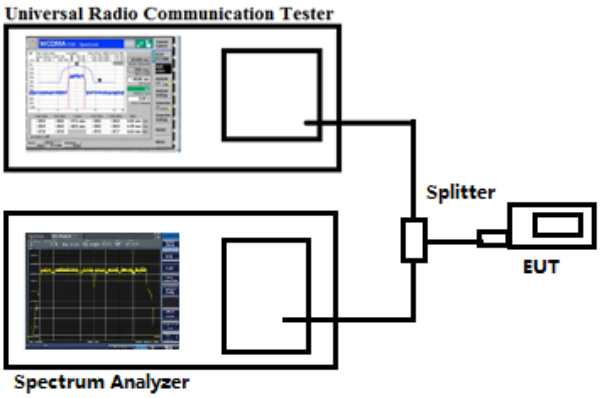
According to §24.232(d), power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in 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 13dB.

According to §27.50(B), the peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13dB 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.

4.2 Test Procedure

According to KDB 971168, Peak-to-Average Ratio test method:
1. The signal analyzer' s CCDF measurement profile is enabled.
2. Frequency = carrier center frequency, Measurement BW > Emission bandwidth of signal.
3. The signal analyzer was set to collect one million samples to generate the CCDF curve.
4. 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 Peak-to-Average Ratio testing:



4.3 Test Data and Results

Please refer to Appendix for Peak to Average Ratio.
Test result: Pass

5. Emission Bandwidth

5.1 Standard and Limit

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 26dB below the transmitter power.

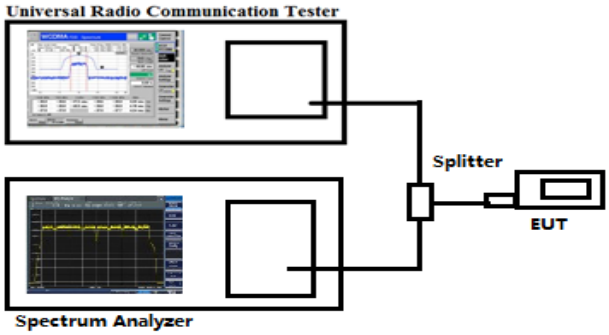
According to §24.238(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

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 26dB below the transmitter power.

5.2 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 26dB below the transmitter power.

Test Configuration for the emission bandwidth testing:



5.3 Test Data and Results

Please refer to Appendix: Occupied Bandwidth
Test result: Pass

6. Out of Band Emissions at Antenna Terminal

6.1 Standard and Limit

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.

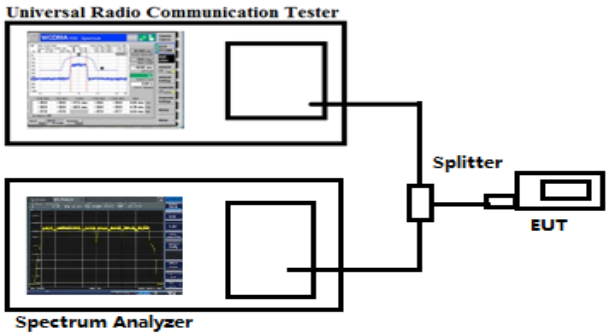
According to §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to §27.53(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 log10 (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 that 43 + 10 log (P) dB on all frequencies between 2490.5MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5MHz.

6.2 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 10th harmonic.

Test Configuration for the out of band emissions testing:



6.3 Test Data and Results

Please refer to Appendix: Band Edge & Out-of-band emissions
Test result: Pass

7. Radiation Spurious Emissions

7.1 Standard and Limit

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(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 log10 (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.

7.2 Test Procedure

1. The setup of EUT is according with per ANSI/TIA-603-E 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.

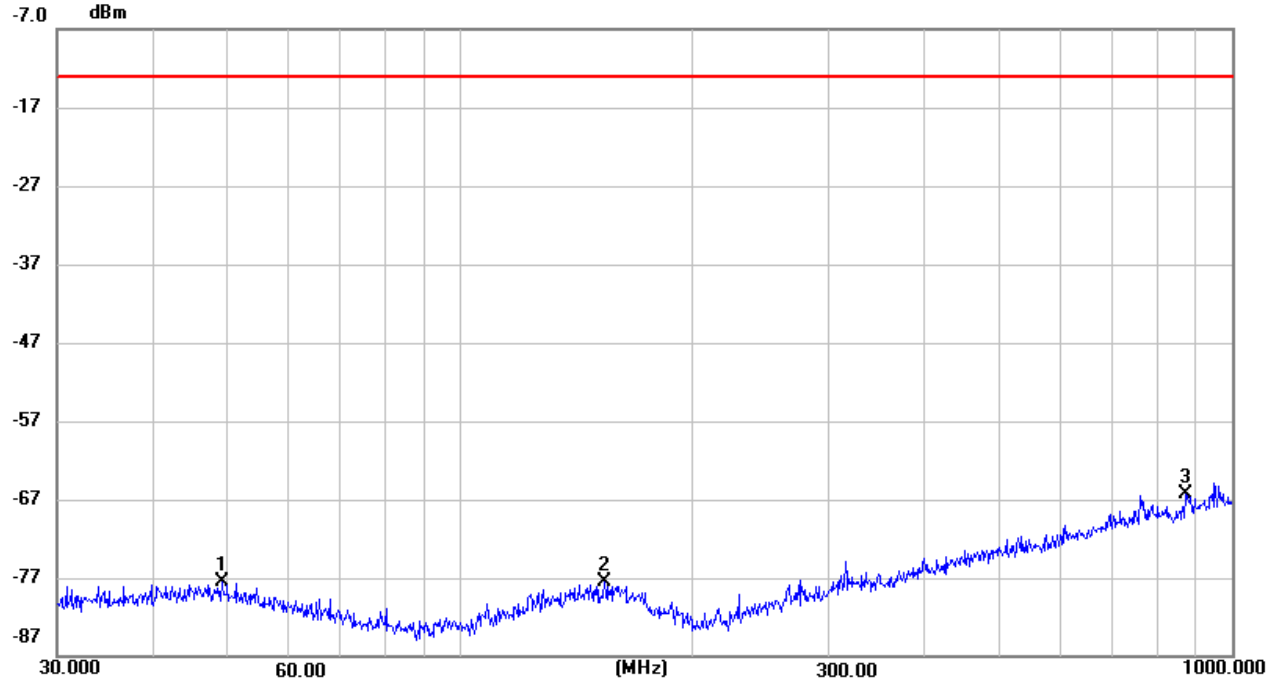
Spurious attenuation limit in dB =43+10 Log10 (power out in Watts)

7.3 Test Data and Results

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

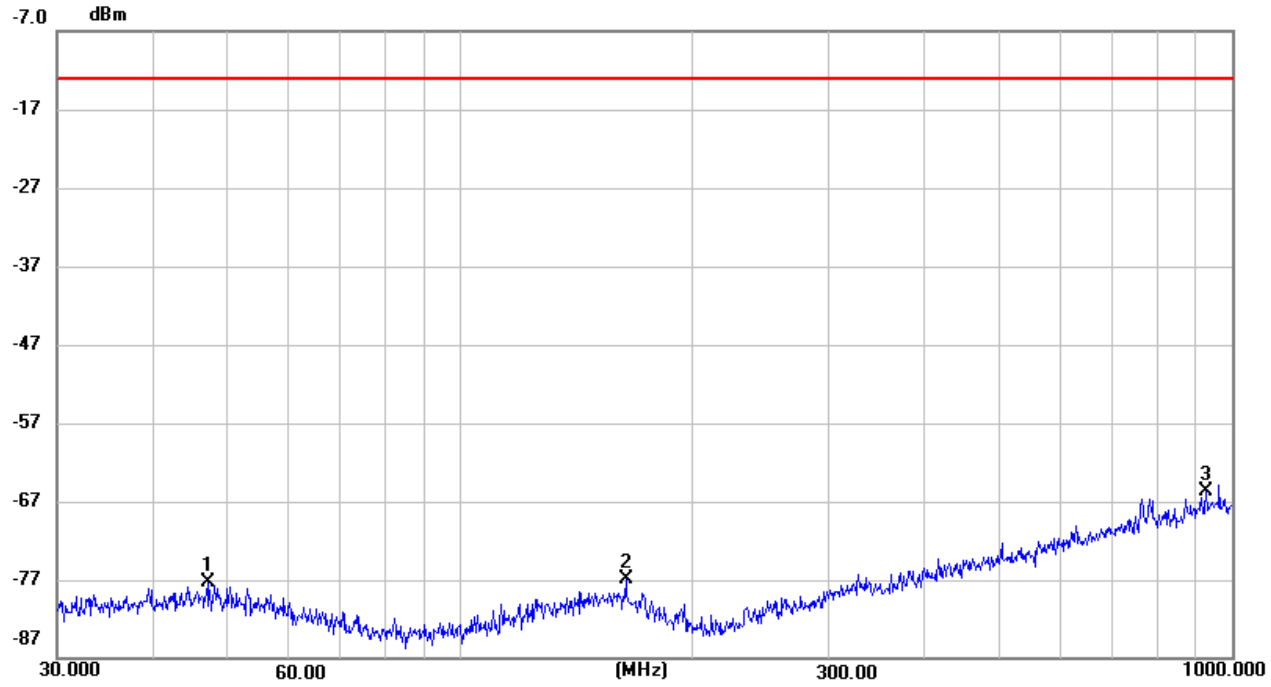
Test Plots and Data of Radiated Spurious Emission Below 1GHz

Test Mode:	LTE Band 2
Test Antenna Polarization:	Horizontal
Remark:	



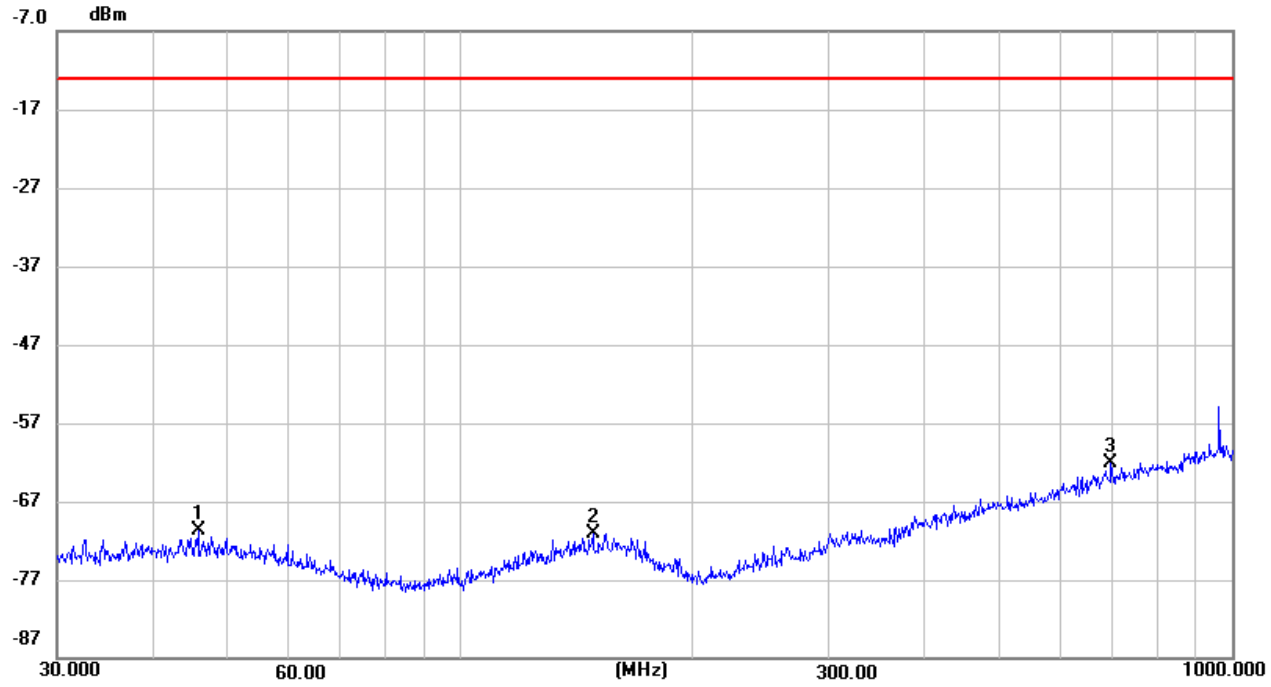
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	49.0145	-80.76	3.31	-77.45	-13.00	-64.45	peak	100	214	P	
2	153.7385	-81.42	3.85	-77.57	-13.00	-64.57	peak	100	221	P	
3 *	869.1302	-79.93	13.71	-66.22	-13.00	-53.22	peak	100	42	P	

Test Mode:	LTE Band 2
Test Antenna Polarization:	Vertical
Remark:	



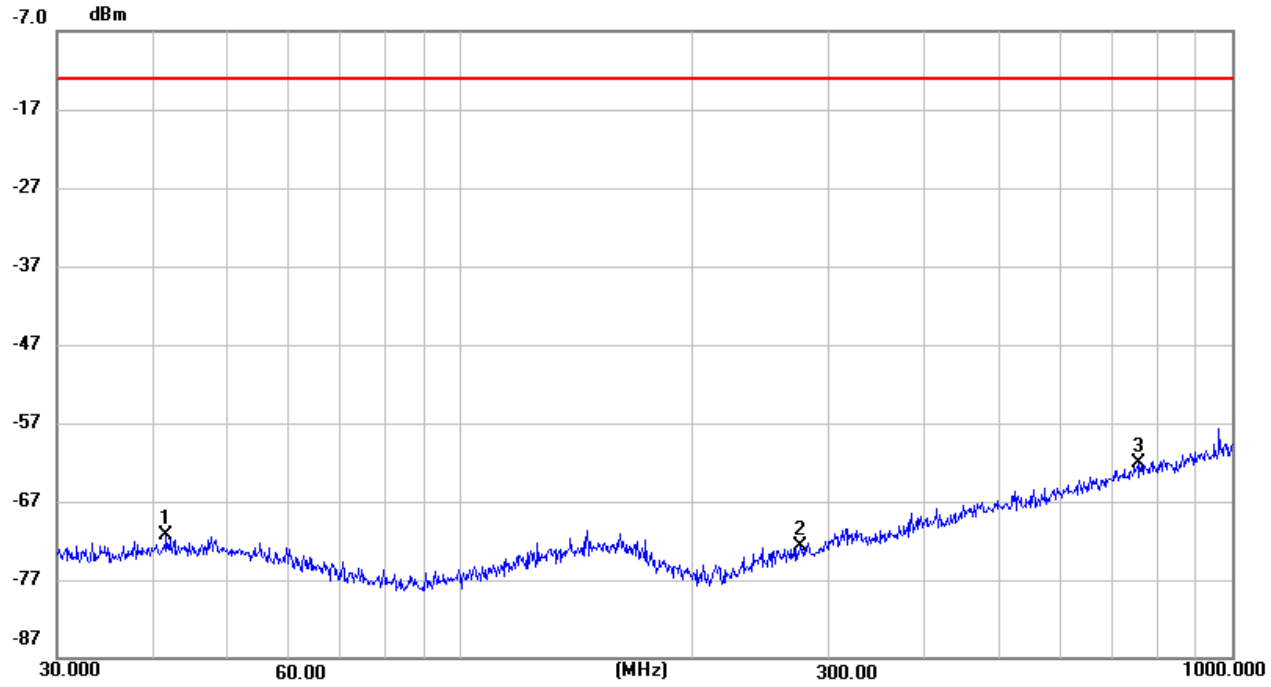
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	46.9948	-80.56	3.36	-77.20	-13.00	-64.20	peak	100	145	P	
2	163.7550	-80.30	3.45	-76.85	-13.00	-63.85	peak	100	321	P	
3 *	925.7563	-80.37	14.65	-65.72	-13.00	-52.72	peak	100	42	P	

Test Mode:	LTE Band 4
Test Antenna Polarization:	Horizontal
Remark:	



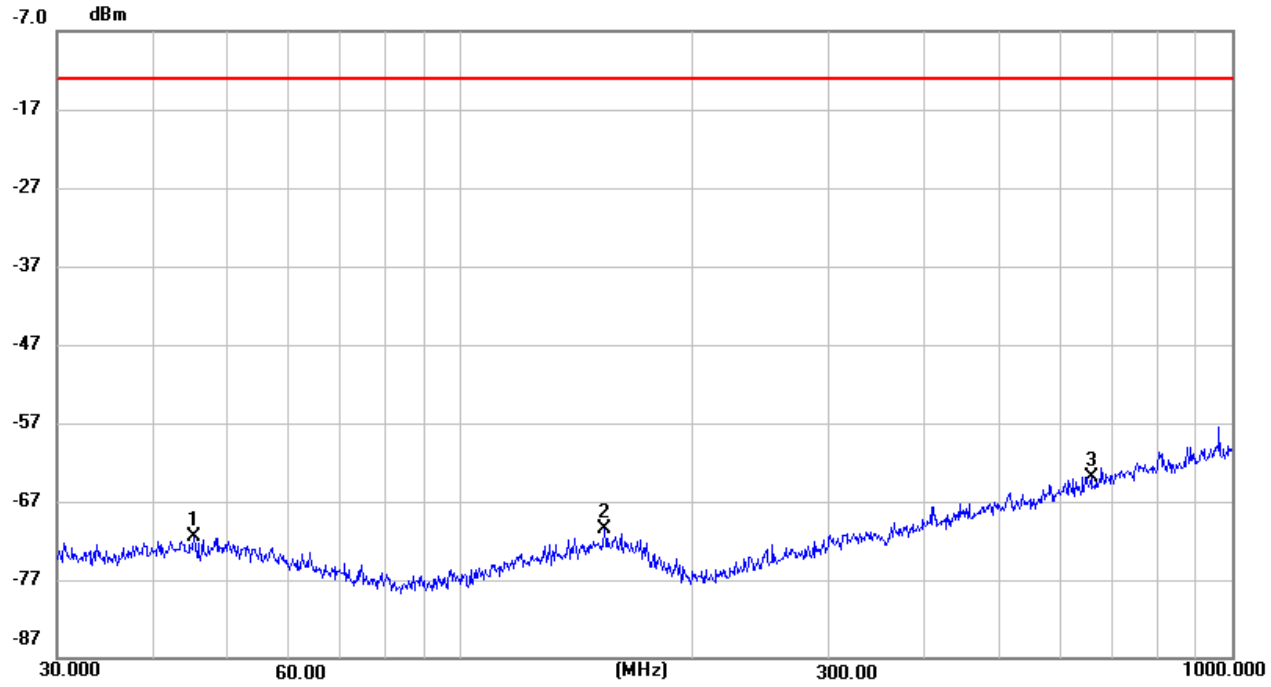
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	45.6948	-74.12	3.39	-70.73	-13.00	-57.73	peak	100	238	P	
2	148.4410	-74.85	3.81	-71.04	-13.00	-58.04	peak	100	266	P	
3 *	696.8567	-73.90	11.85	-62.05	-13.00	-49.05	peak	100	293	P	

Test Mode:	LTE Band 4
Test Antenna Polarization:	Vertical
Remark:	



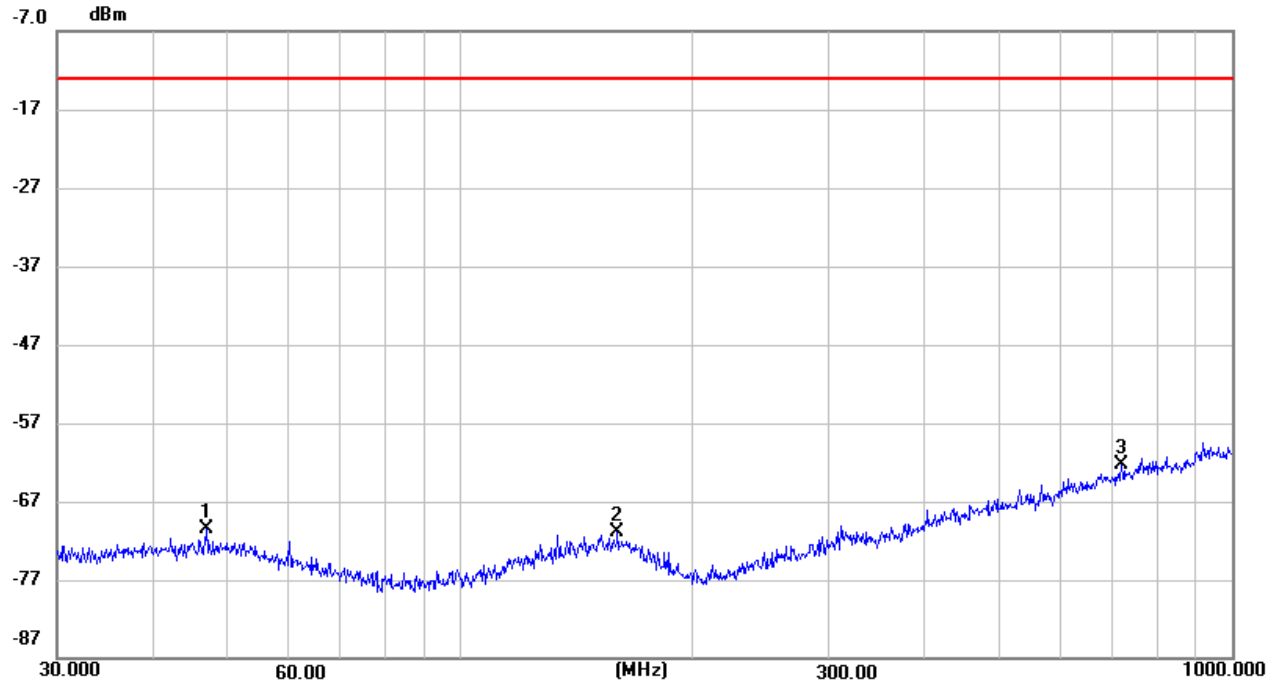
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	41.5670	-74.63	3.36	-71.27	-13.00	-58.27	peak	100	25	P	
2	276.1235	-75.16	2.48	-72.68	-13.00	-59.68	peak	100	11	P	
3 *	755.3873	-74.65	12.57	-62.08	-13.00	-49.08	peak	100	175	P	

Test Mode:	LTE Band 5
Test Antenna Polarization:	Horizontal
Remark:	



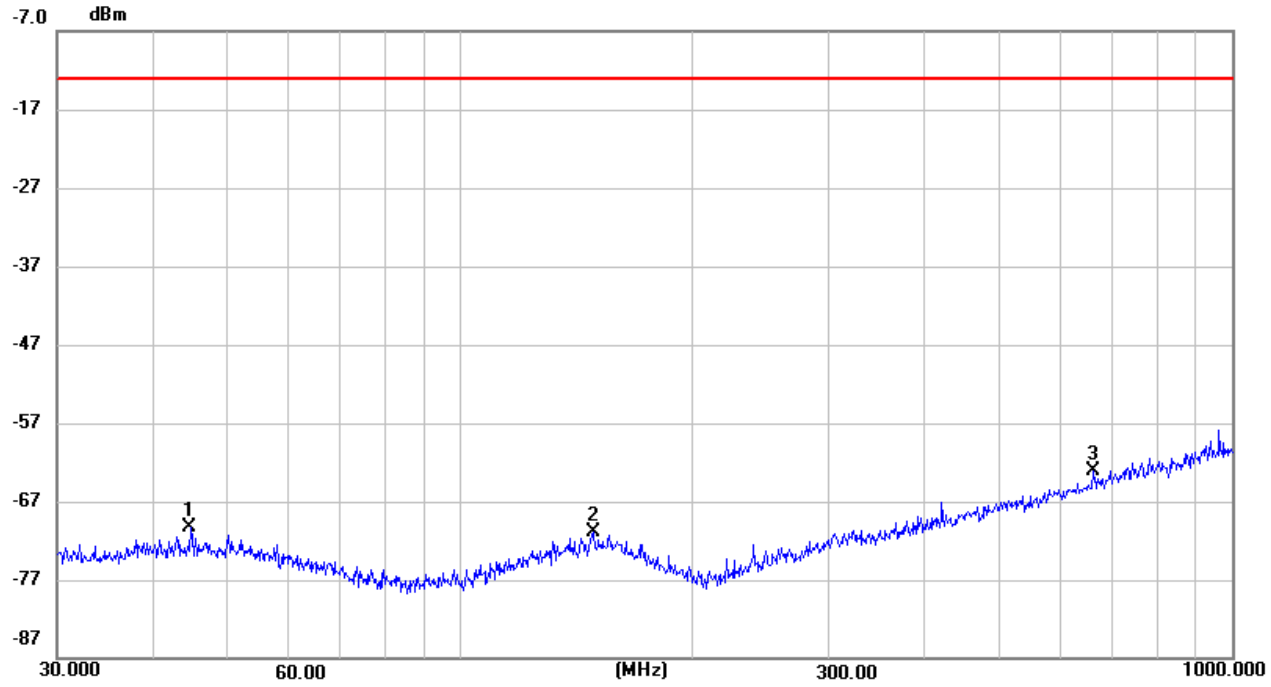
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	45.0583	-74.87	3.41	-71.46	-13.00	-58.46	peak	100	360	P	
2	153.7385	-74.34	3.85	-70.49	-13.00	-57.49	peak	100	258	P	
3 *	656.5300	-74.82	10.98	-63.84	-13.00	-50.84	peak	100	301	P	

Test Mode:	LTE Band 5
Test Antenna Polarization:	Vertical
Remark:	



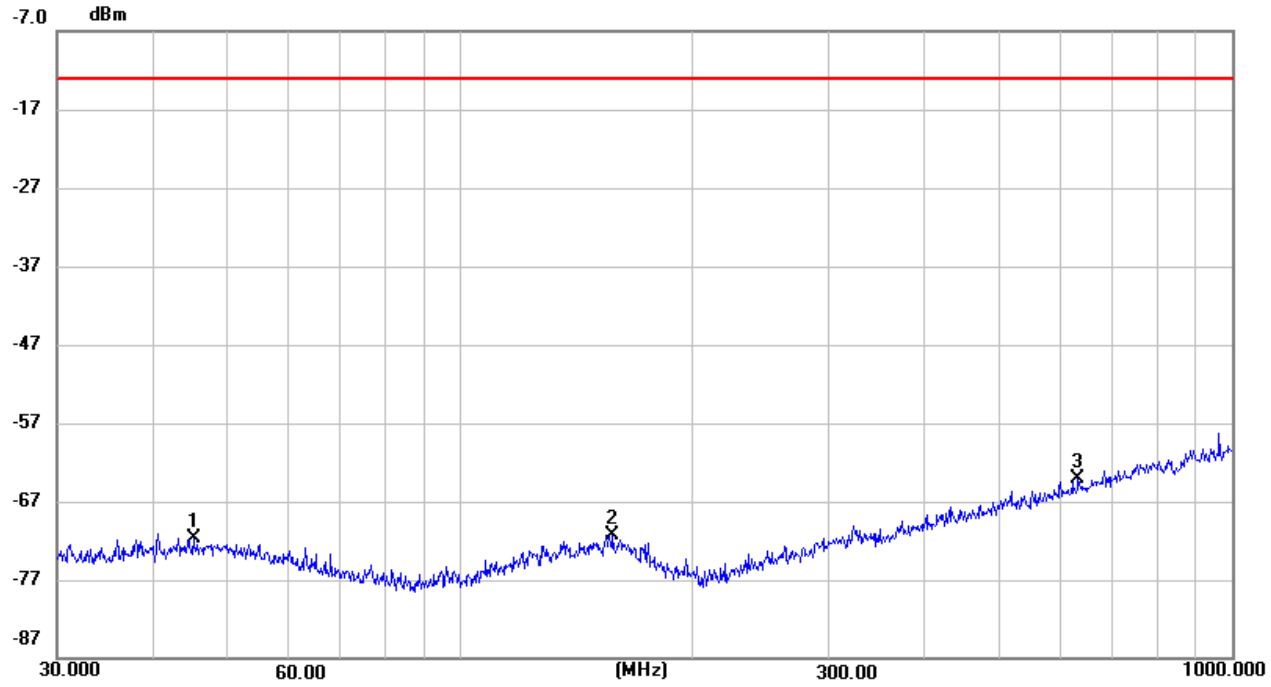
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	46.8303	-73.87	3.36	-70.51	-13.00	-57.51	peak	100	267	P	
2	159.7844	-74.77	3.79	-70.98	-13.00	-57.98	peak	100	170	P	
3 *	719.1995	-74.47	12.14	-62.33	-13.00	-49.33	peak	100	33	P	

Test Mode:	LTE Band 7
Test Antenna Polarization:	Horizontal
Remark:	



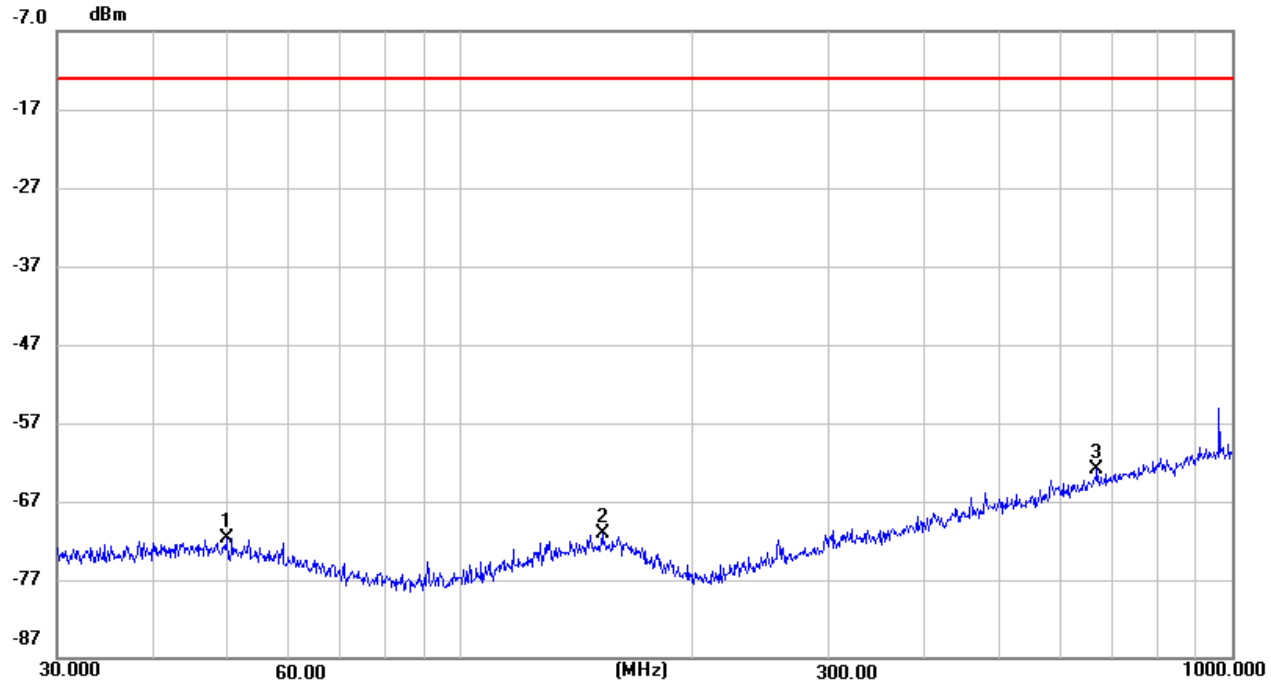
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	44.7433	-73.77	3.41	-70.36	-13.00	-57.36	peak	100	349	P	
2	148.9625	-74.78	3.84	-70.94	-13.00	-57.94	peak	100	75	P	
3 *	661.1505	-74.09	11.07	-63.02	-13.00	-50.02	peak	100	185	P	

Test Mode:	LTE Band 7
Test Antenna Polarization:	Vertical
Remark:	



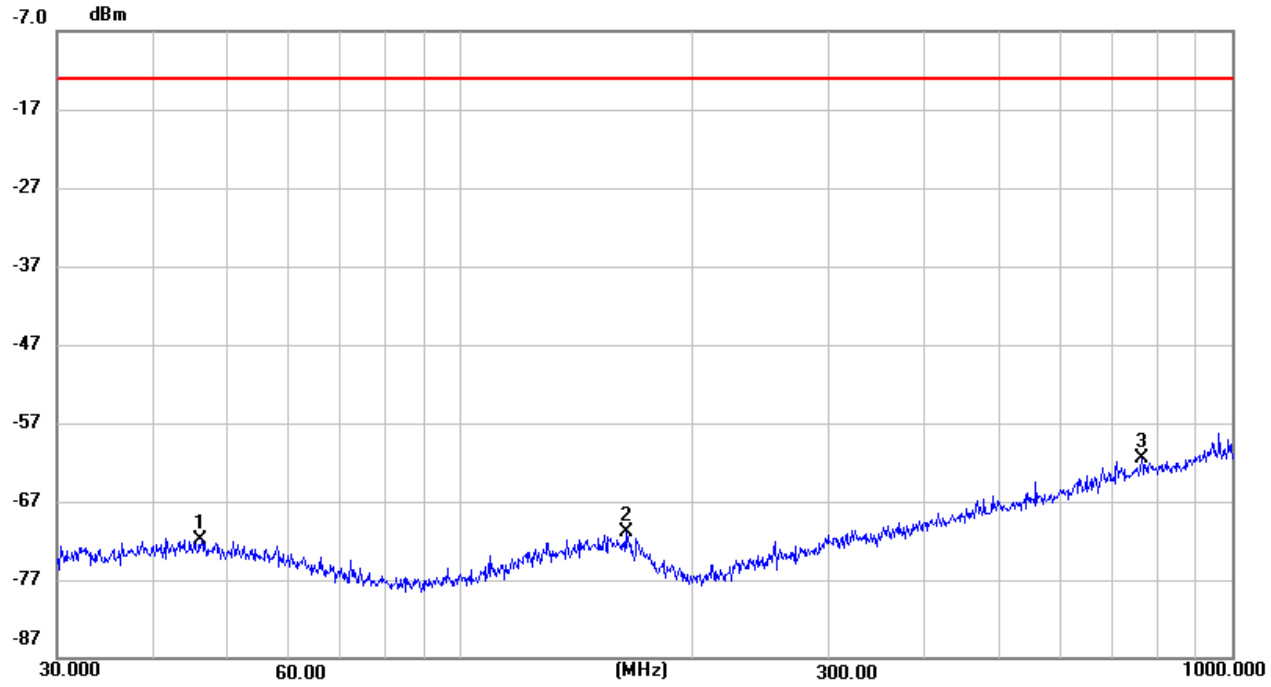
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	45.0583	-75.04	3.41	-71.63	-13.00	-58.63	peak	100	38	P	
2	157.5588	-75.11	3.81	-71.30	-13.00	-58.30	peak	100	340	P	
3 *	631.6884	-74.70	10.55	-64.15	-13.00	-51.15	peak	100	148	P	

Test Mode:	LTE Band 38
Test Antenna Polarization:	Horizontal
Remark:	



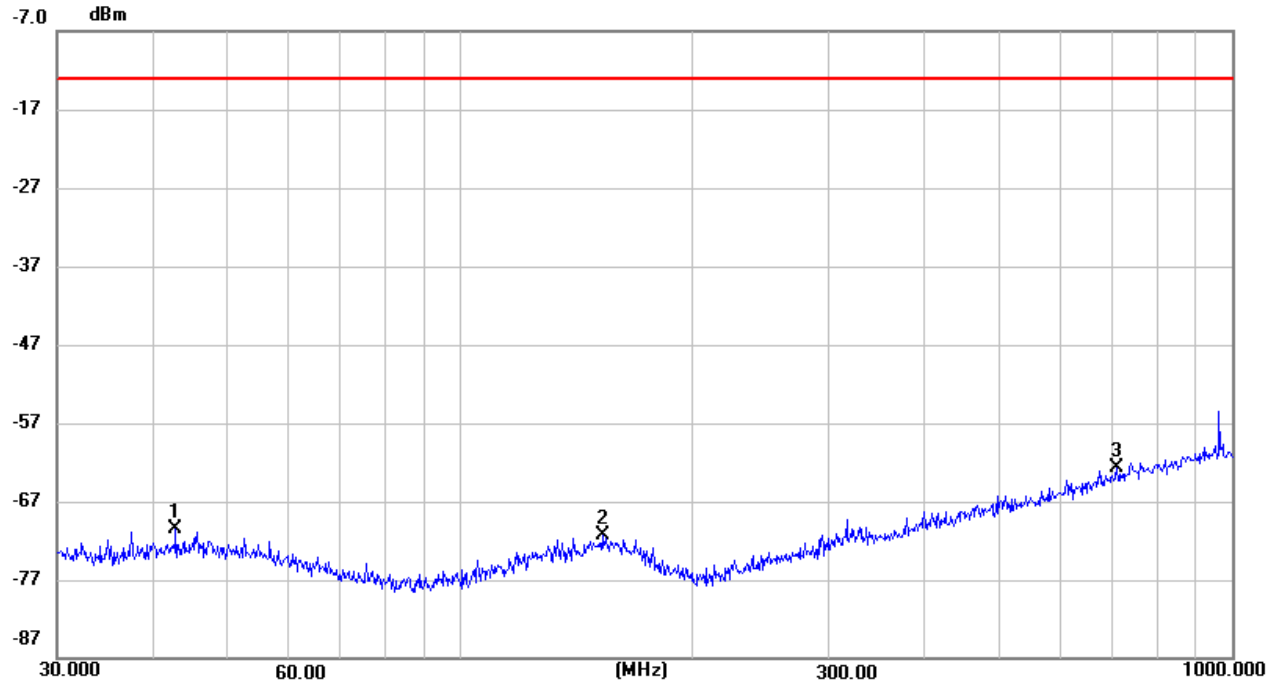
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	49.7066	-74.96	3.30	-71.66	-13.00	-58.66	peak	100	11	P	
2	152.6641	-75.03	3.86	-71.17	-13.00	-58.17	peak	100	11	P	
3 *	668.1422	-74.13	11.22	-62.91	-13.00	-49.91	peak	100	328	P	

Test Mode:	LTE Band 38
Test Antenna Polarization:	Vertical
Remark:	



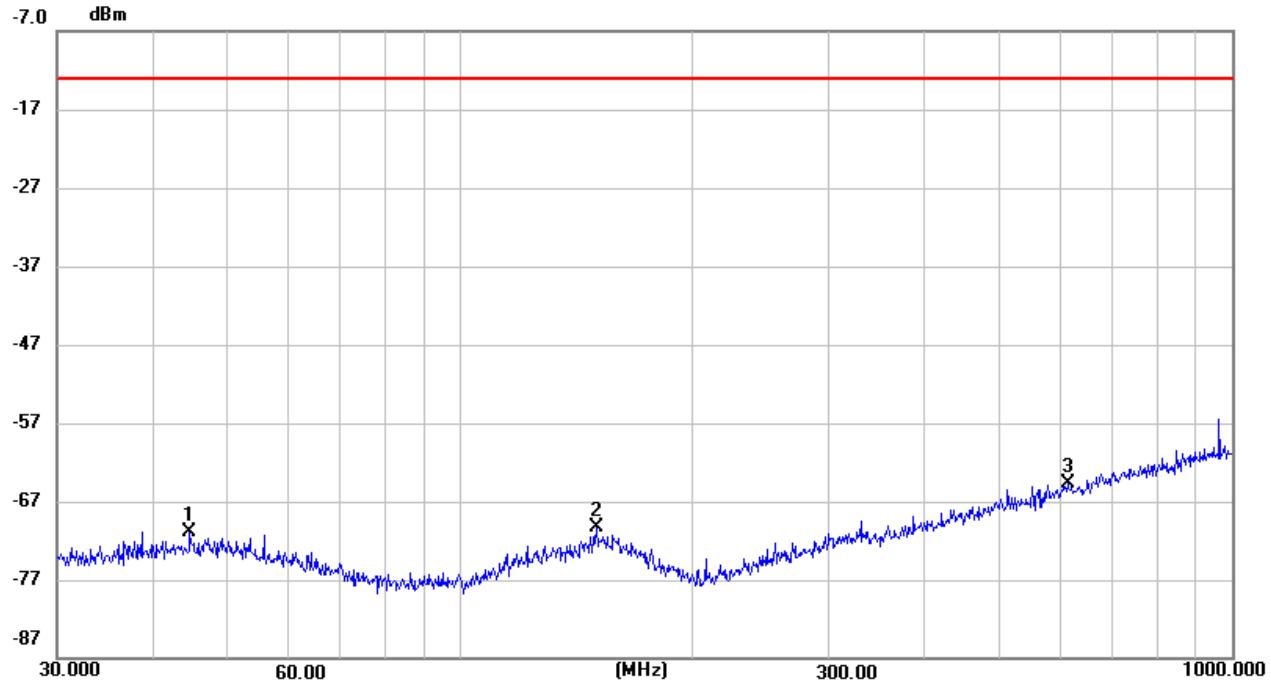
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	46.1779	-75.24	3.39	-71.85	-13.00	-58.85	peak	100	8	P	
2	163.7550	-74.41	3.45	-70.96	-13.00	-57.96	peak	100	8	P	
3 *	763.3757	-74.22	12.68	-61.54	-13.00	-48.54	peak	100	348	P	

Test Mode:	LTE Band 66
Test Antenna Polarization:	Horizontal
Remark:	



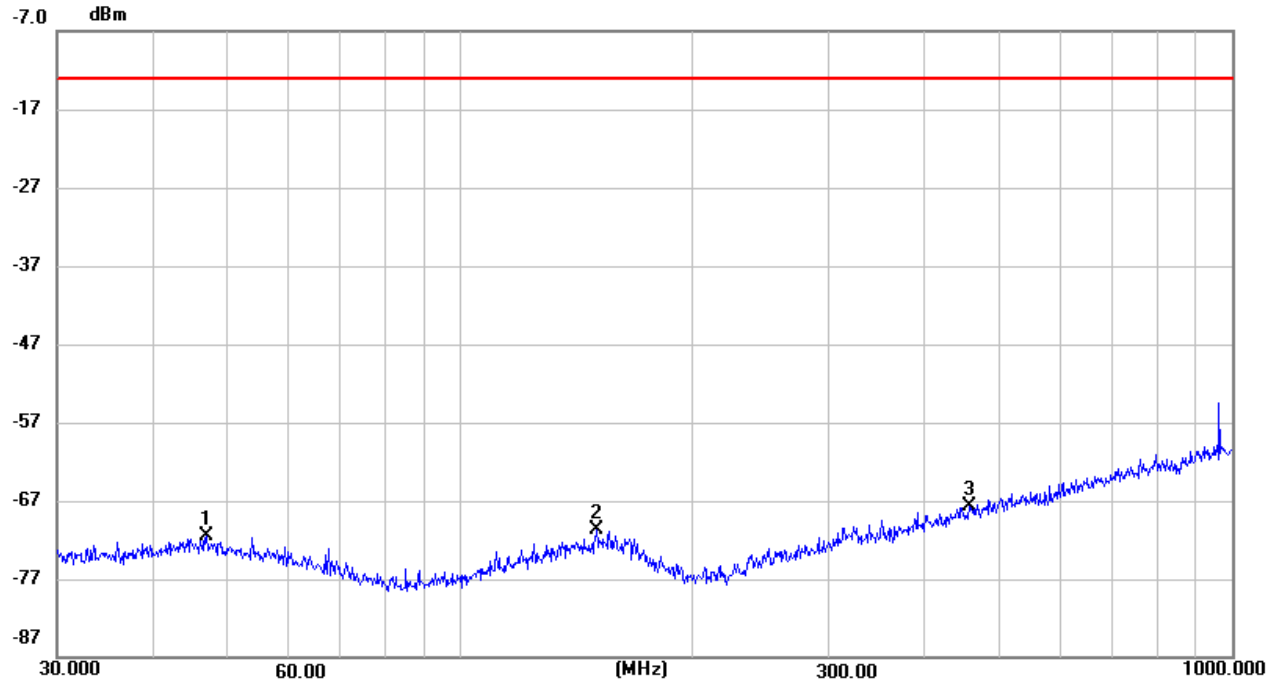
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	42.7496	-73.96	3.38	-70.58	-13.00	-57.58	peak	100	94	P	
2	152.6641	-75.23	3.86	-71.37	-13.00	-58.37	peak	100	351	P	
3 *	709.1823	-74.64	12.02	-62.62	-13.00	-49.62	peak	100	329	P	

Test Mode:	LTE Band 66
Test Antenna Polarization:	Vertical
Remark:	



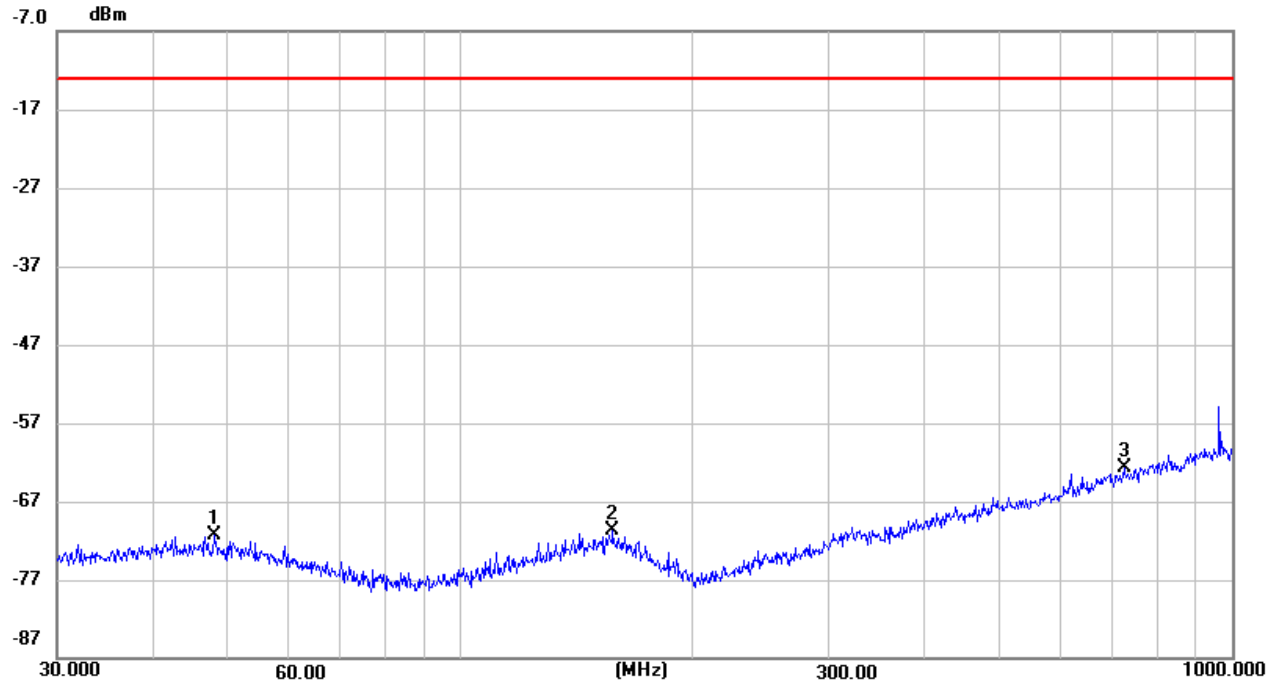
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	44.5868	-74.39	3.41	-70.98	-13.00	-57.98	peak	100	141	P	
2	150.0108	-74.15	3.90	-70.25	-13.00	-57.25	peak	100	72	P	
3 *	612.0642	-74.98	10.25	-64.73	-13.00	-51.73	peak	100	349	P	

Test Mode:	LTE Band 40(2305-2315)
Test Antenna Polarization:	Horizontal
Remark:	



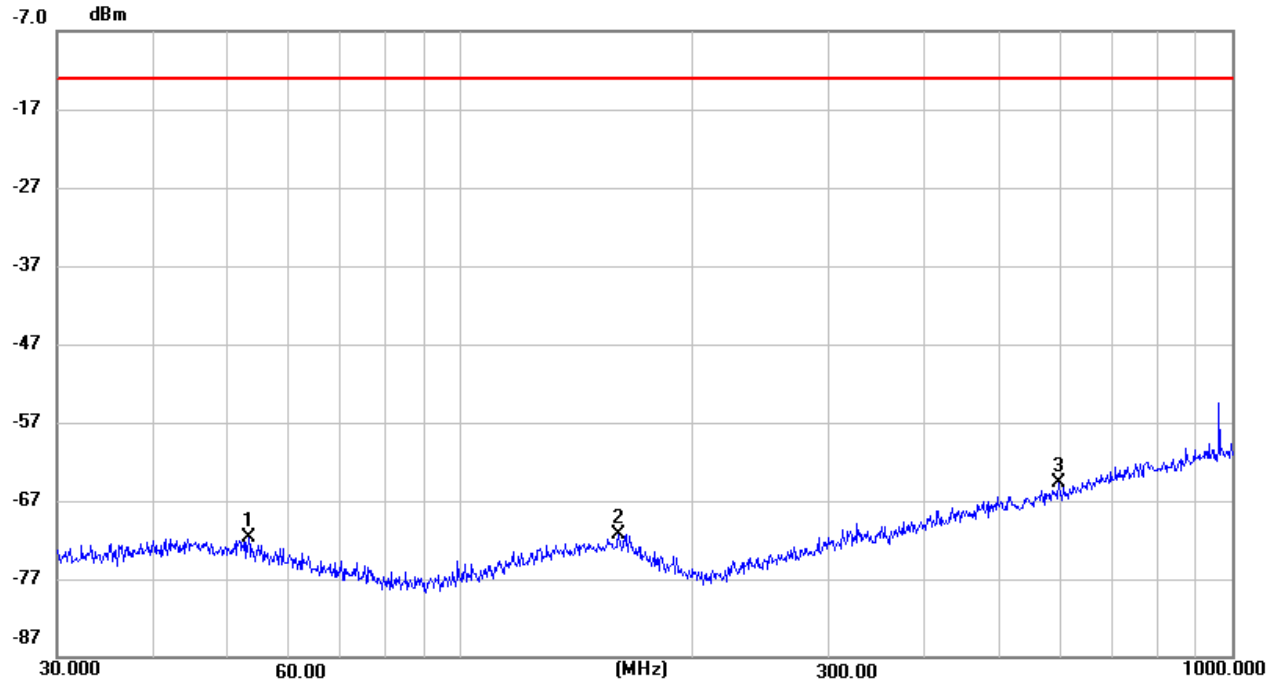
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	46.8303	-74.95	3.36	-71.59	-13.00	-58.59	peak	100	349	P	
2	150.0108	-74.58	3.90	-70.68	-13.00	-57.68	peak	100	349	P	
3 *	455.9058	-75.08	7.34	-67.74	-13.00	-54.74	peak	100	10	P	

Test Mode:	LTE Band 40(2305-2315)
Test Antenna Polarization:	Vertical
Remark:	



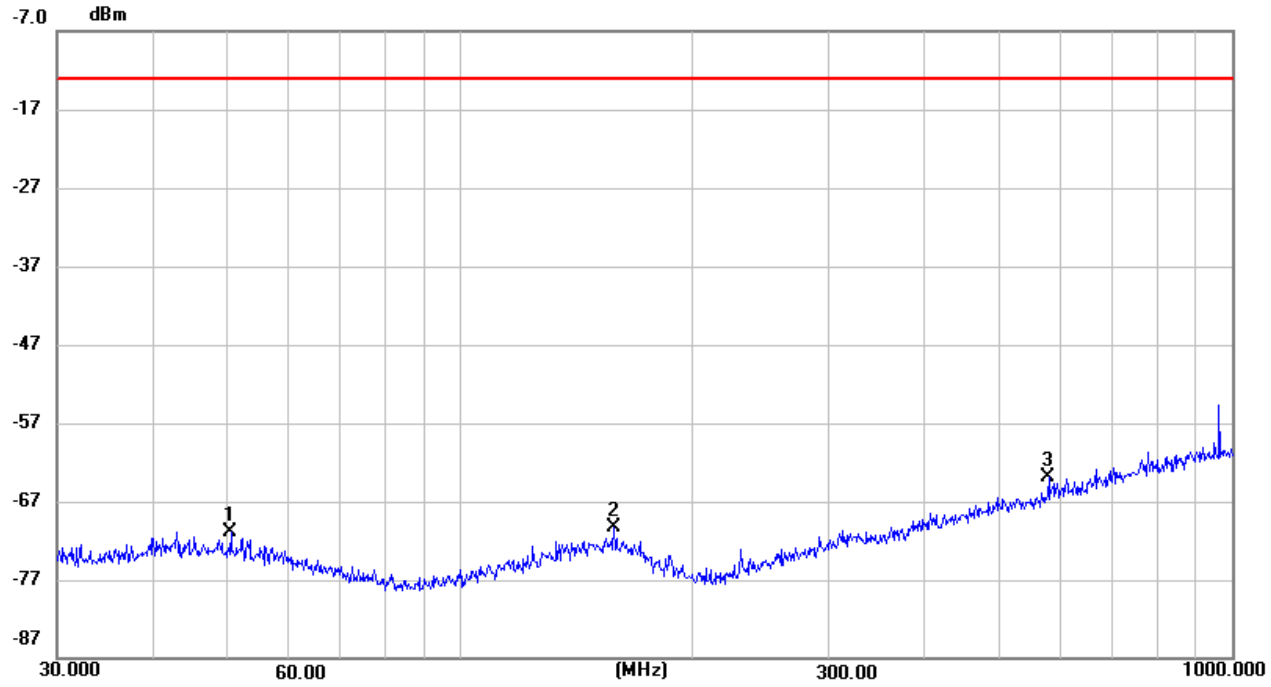
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	47.9940	-74.55	3.34	-71.21	-13.00	-58.21	peak	100	288	P	
2	157.5588	-74.44	3.81	-70.63	-13.00	-57.63	peak	100	12	P	
3 *	724.2611	-75.00	12.20	-62.80	-13.00	-49.80	peak	100	349	P	

Test Mode:	LTE Band 40(2350-2360)
Test Antenna Polarization:	Horizontal
Remark:	



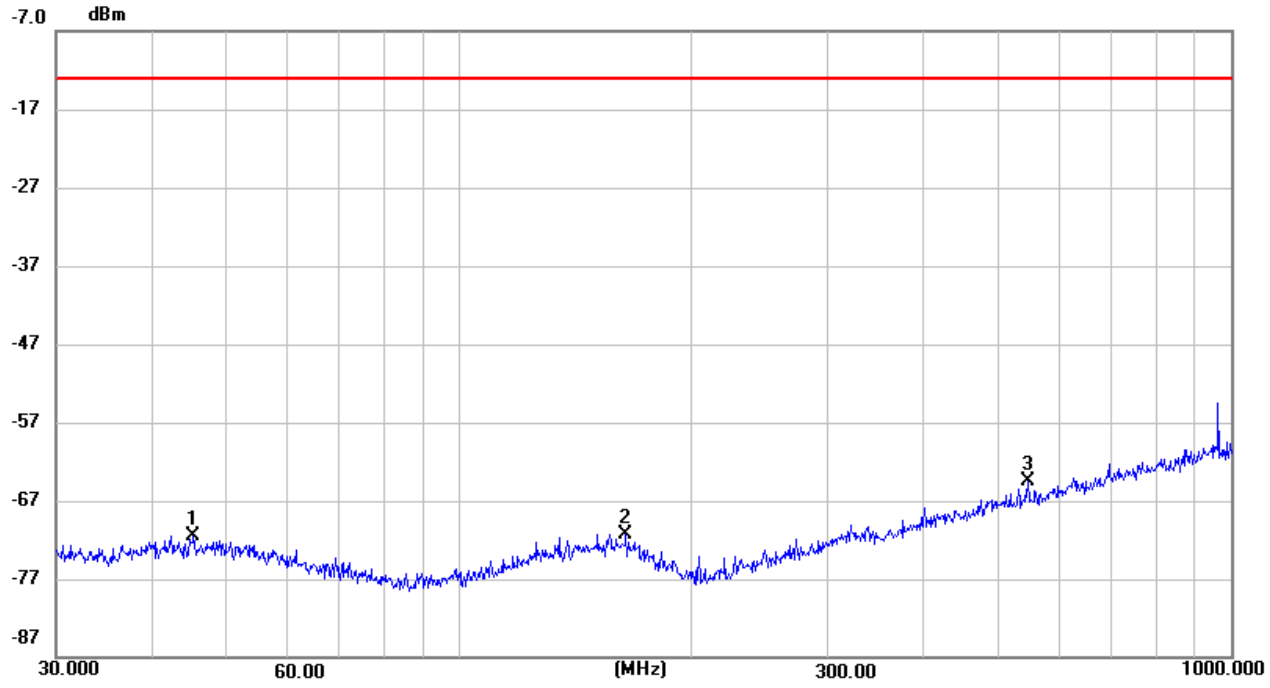
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	53.1313	-74.55	2.80	-71.75	-13.00	-58.75	peak	100	231	P	
2	160.3456	-74.98	3.76	-71.22	-13.00	-58.22	peak	100	341	P	
3 *	595.1329	-74.60	9.94	-64.66	-13.00	-51.66	peak	100	314	P	

Test Mode:	LTE Band 40(2350-2360)
Test Antenna Polarization:	Vertical
Remark:	



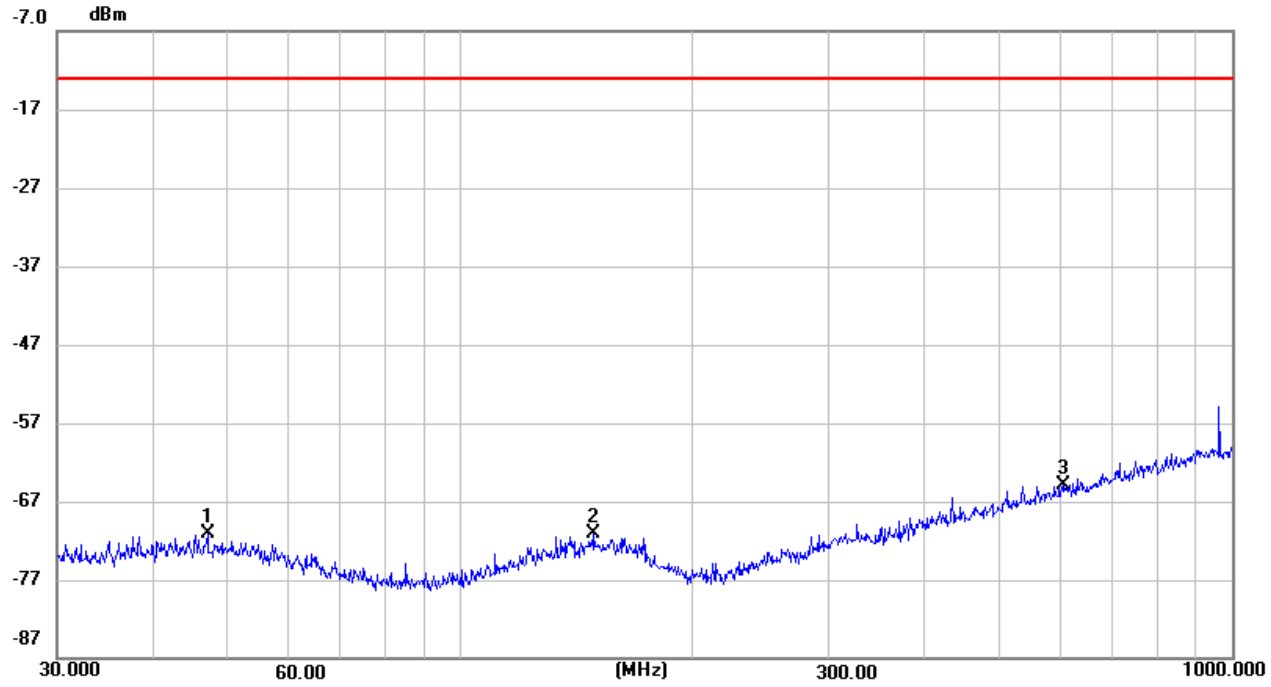
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	50.4089	-74.14	3.23	-70.91	-13.00	-57.91	peak	100	308	P	
2	158.1123	-74.20	3.81	-70.39	-13.00	-57.39	peak	100	349	P	
3 *	578.6699	-73.56	9.57	-63.99	-13.00	-50.99	peak	100	349	P	

Test Mode:	LTE Band 41
Test Antenna Polarization:	Horizontal
Remark:	



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	45.2166	-74.81	3.40	-71.41	-13.00	-58.41	peak	100	32	P	
2	164.3301	-74.69	3.41	-71.28	-13.00	-58.28	peak	100	73	P	
3 *	545.1826	-73.38	8.84	-64.54	-13.00	-51.54	peak	100	183	P	

Test Mode:	LTE Band 41
Test Antenna Polarization:	Vertical
Remark:	



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	46.9948	-74.49	3.36	-71.13	-13.00	-58.13	peak	100	286	P	
2	148.9625	-74.97	3.84	-71.13	-13.00	-58.13	peak	100	68	P	
3 *	605.6592	-75.15	10.16	-64.99	-13.00	-51.99	peak	100	40	P	

Test Data of Radiated Spurious Emission Above 1GHz

LTE Band 2

Frequency	Result	Limit	Margin	Polar
(MHz)	(dBm)	(dBm)	(dB)	H/V
Lowest Channel (1850.7MHz)				
3701.40	-46.39	-13	-33.39	H
5552.10	-42.35	-13	-29.35	H
3701.40	-45.14	-13	-32.14	V
5552.10	-41.92	-13	-28.92	V
Middle Channel (1880MHz)				
3760.00	-45.74	-13	-32.74	H
5640.00	-41.91	-13	-28.91	H
3760.00	-43.9	-13	-30.90	V
5640.00	-42.79	-13	-29.79	V
Highest Channel (1909.3MHz)				
3818.60	-48.72	-13	-35.72	H
5727.90	-40.42	-13	-27.42	H
3818.60	-41.21	-13	-28.21	V
5727.90	-41.43	-13	-28.43	V

LTE Band 4

Frequency	Result	Limit	Margin	Polar
(MHz)	(dBm)	(dBm)	(dB)	H/V
Lowest Channel (1710.7MHz)				
3421.40	-42.79	-13	-29.79	H
5132.10	-42.77	-13	-29.77	H
3421.40	-41.7	-13	-28.70	V
5132.10	-41.8	-13	-28.80	V
Middle Channel (1732.5MHz)				
3465.00	-46.75	-13	-33.75	H
5197.50	-41.24	-13	-28.24	H
3465.00	-48.98	-13	-35.98	V
5197.50	-40.35	-13	-27.35	V
Highest Channel (1754.3MHz)				
3508.60	-47.87	-13	-34.87	H
5262.90	-41.56	-13	-28.56	H
3508.60	-42.59	-13	-29.59	V
5262.90	-41.94	-13	-28.94	V

LTE Band 5

Frequency	Result	Limit	Margin	Polar
(MHz)	(dBm)	(dBm)	(dB)	H/V
Lowest Channel (824.7MHz)				
1649.40	-47.39	-13	-34.39	H
2474.10	-42.56	-13	-29.56	H
1649.40	-43.17	-13	-30.17	V
2474.10	-41.99	-13	-28.99	V
Middle Channel (836.5MHz)				
1673.00	-43.46	-13	-30.46	H
2509.50	-40.47	-13	-27.47	H
1673.00	-40.81	-13	-27.81	V
2509.50	-42.31	-13	-29.31	V
Highest Channel (848.3MHz)				
1696.60	-43.46	-13	-30.46	H
2544.90	-40.34	-13	-27.34	H
1696.60	-44.77	-13	-31.77	V
2544.90	-40.27	-13	-27.27	V

LTE Band 7

Frequency	Result	Limit	Margin	Polar
(MHz)	(dBm)	(dBm)	(dB)	H/V
Lowest Channel (2502.5MHz)				
5005.00	-48.87	-13	-35.87	H
7507.50	-41.75	-13	-28.75	H
5005.00	-47.69	-13	-34.69	V
7507.50	-42.1	-13	-29.10	V
Middle Channel (2535.0MHz)				
5070.00	-44.88	-13	-31.88	H
7605.00	-42.83	-13	-29.83	H
5070.00	-44.15	-13	-31.15	V
7605.00	-40.49	-13	-27.49	V
Highest Channel (2567.5MHz)				
5135.00	-44.79	-13	-31.79	H
7702.50	-41.22	-13	-28.22	H
5135.00	-44.85	-13	-31.85	V
7702.50	-40.86	-13	-27.86	V

LTE Band 38

Frequency	Result	Limit	Margin	Polar
(MHz)	(dBm)	(dBm)	(dB)	H/V
Lowest Channel (2572.5MHz)				
5145.00	-42.74	-13	-29.74	H
7717.50	-42.73	-13	-29.73	H
5145.00	-42.72	-13	-29.72	V
7717.50	-40.61	-13	-27.61	V
Middle Channel (2595MHz)				
5190.00	-41.42	-13	-28.42	H
7785.00	-42.72	-13	-29.72	H
5190.00	-47.83	-13	-34.83	V
7785.00	-40.82	-13	-27.82	V
Highest Channel (2572.5MHz)				
5145.00	-41.13	-13	-28.13	H
7717.50	-40.4	-13	-27.40	H
5145.00	-42.65	-13	-29.65	V
7717.50	-41.62	-13	-28.62	V

LTE Band 66

Frequency	Result	Limit	Margin	Polar
(MHz)	(dBm)	(dBm)	(dB)	H/V
Lowest Channel (1710.7MHz)				
3420.77	-41.06	-13	-28.06	H
5131.47	-40.16	-13	-27.16	H
3420.77	-42.39	-13	-29.39	V
5131.47	-41.12	-13	-28.12	V
Middle Channel (1745MHz)				
3490.00	-41.81	-13	-28.81	H
5235.00	-40.56	-13	-27.56	H
3490.00	-49.46	-13	-36.46	V
5235.00	-41.34	-13	-28.34	V
Highest Channel (1779.3MHz)				
3558.60	-40.24	-13	-27.24	H
5337.90	-41.53	-13	-28.53	H
3558.60	-40.61	-13	-27.61	V
5337.90	-40.5	-13	-27.50	V

LTE Band 40(2305-2315)

Frequency	Result	Limit	Margin	Polar
(MHz)	(dBm)	(dBm)	(dB)	H/V
Lowest Channel (2307.5MHz)				
4615.00	-43.69	-13	-30.69	H
6922.50	-42.99	-13	-29.99	H
4615.00	-43.38	-13	-30.38	V
6922.50	-40.22	-13	-27.22	V
Middle Channel (2310.0MHz)				
4620.00	-49.69	-13	-36.69	H
6930.00	-40.29	-13	-27.29	H
4620.00	-47.06	-13	-34.06	V
6930.00	-41.41	-13	-28.41	V
Highest Channel (2312.5MHz)				
4625.00	-45.98	-40	-5.98	H
6937.50	-40.14	-13	-27.14	H
4625.00	-41.07	-40	-1.07	V
6937.50	-40.25	-13	-27.25	V

LTE Band 40(2350-2360)

Frequency	Result	Limit	Margin	Polar
(MHz)	(dBm)	(dBm)	(dB)	H/V
Lowest Channel (2352.5MHz)				
4705.00	-46.8	-13	-33.80	H
7057.50	-41.53	-13	-28.53	H
4705.00	-44.29	-13	-31.29	V
7057.50	-42.37	-13	-29.37	V
Middle Channel (2355.0MHz)				
4710.00	-43.5	-13	-30.50	H
7065.00	-40.08	-13	-27.08	H
4710.00	-41.67	-13	-28.67	V
7065.00	-40.42	-13	-27.42	V
Highest Channel (2357.5MHz)				
4715.00	-45.39	-13	-32.39	H
7072.50	-41.41	-13	-28.41	H
4715.00	-40.21	-13	-27.21	V
7072.50	-41.53	-13	-28.53	V

LTE Band 41

Frequency	Result	Limit	Margin	Polar
(MHz)	(dBm)	(dBm)	(dB)	H/V
Lowest Channel (2498.5MHz)				
4997.00	-41.28	-13	-28.28	H
7495.50	-42.43	-13	-29.43	H
4997.00	-47.97	-13	-34.97	V
7495.50	-42.29	-13	-29.29	V
Middle Channel (2593.0MHz)				
5186.00	-48.39	-13	-35.39	H
7779.00	-42.66	-13	-29.66	H
5186.00	-46.19	-13	-33.19	V
7779.00	-42.76	-13	-29.76	V
Highest Channel (2687.5MHz)				
5375.00	-46.14	-13	-33.14	H
8062.50	-40.34	-13	-27.34	H
5375.00	-45.53	-13	-32.53	V
8062.50	-41.25	-13	-28.25	V

8. Frequency Stability

8.1 Standard and Limit

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

8.2 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.

8.3 Test Data and Results

Please refer to Appendix: Frequency Stability
Test result: Pass

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