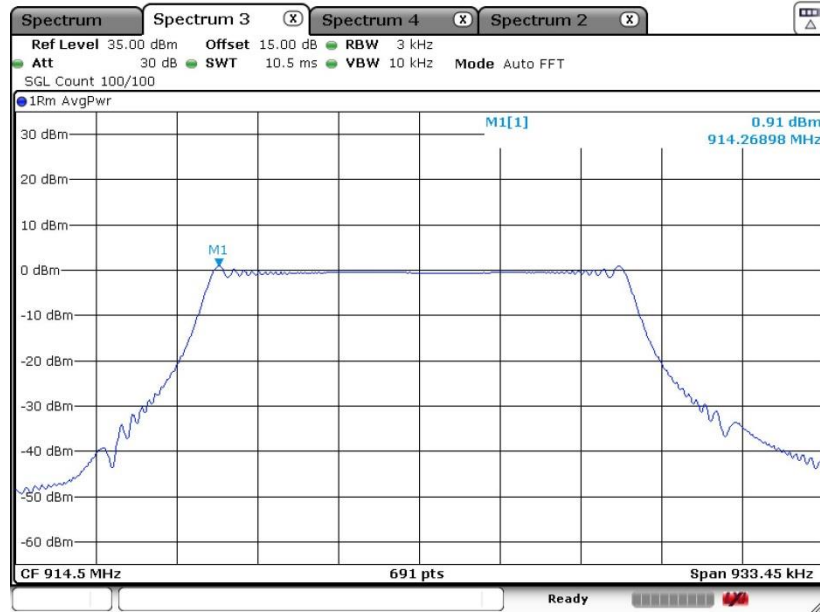


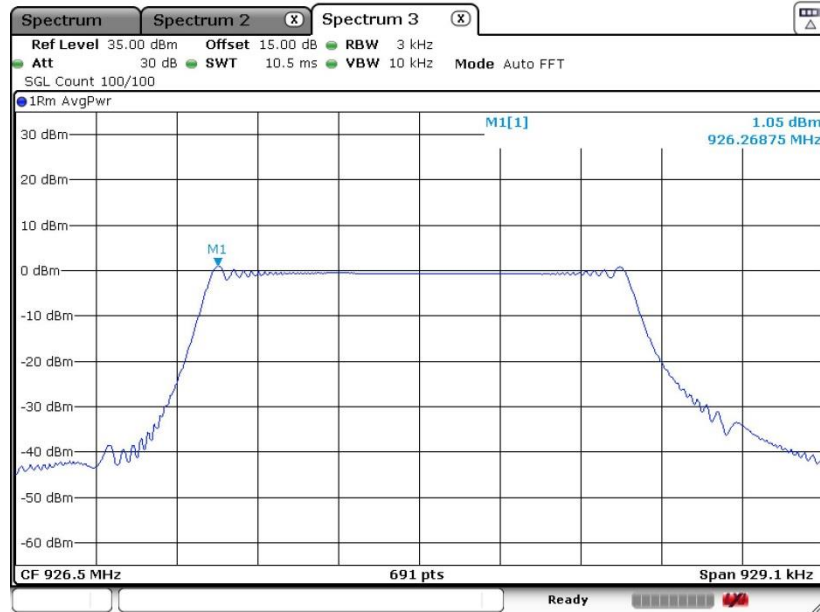


PSD 3kHz Plot on 914.5 MHz



Date: 8 JUN.2022 03:21:15

PSD 3kHz Plot on 926.5 MHz

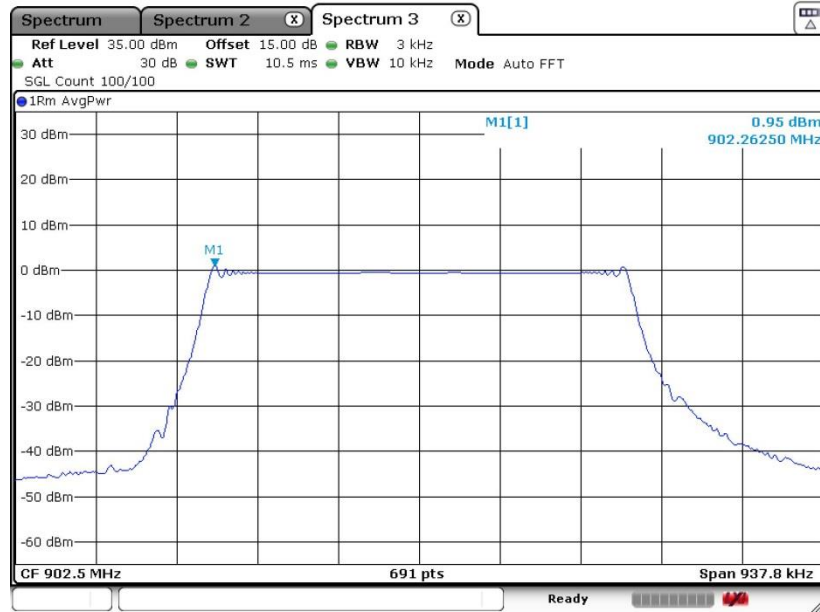


Date: 8 JUN.2022 03:28:57



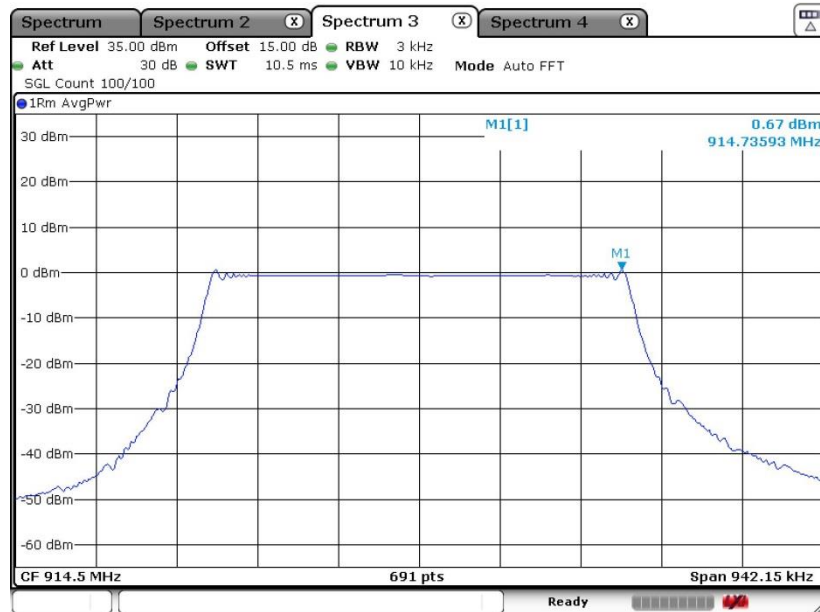
For SF10:

PSD 3kHz Plot on 902.5 MHz



Date: 8 JUN.2022 04:18:19

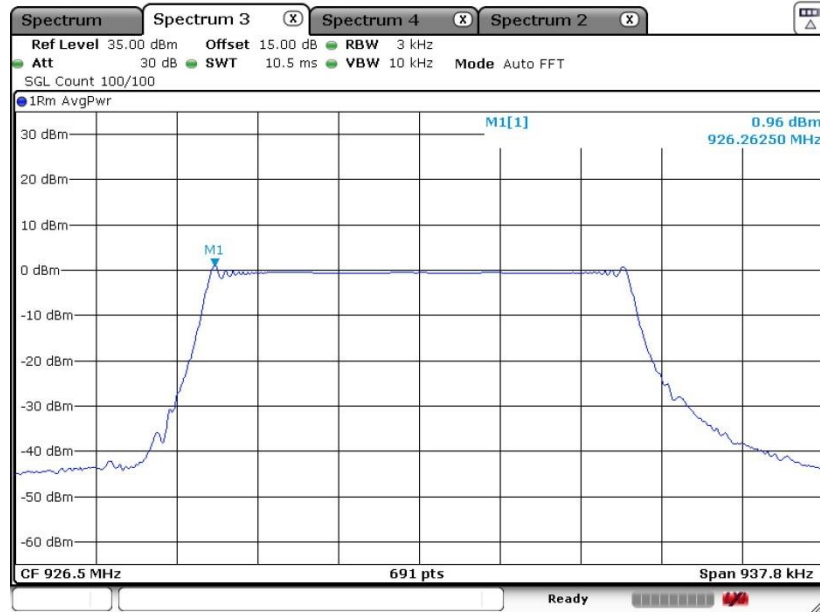
PSD 3kHz Plot on 914.5 MHz



Date: 8 JUN.2022 04:25:15



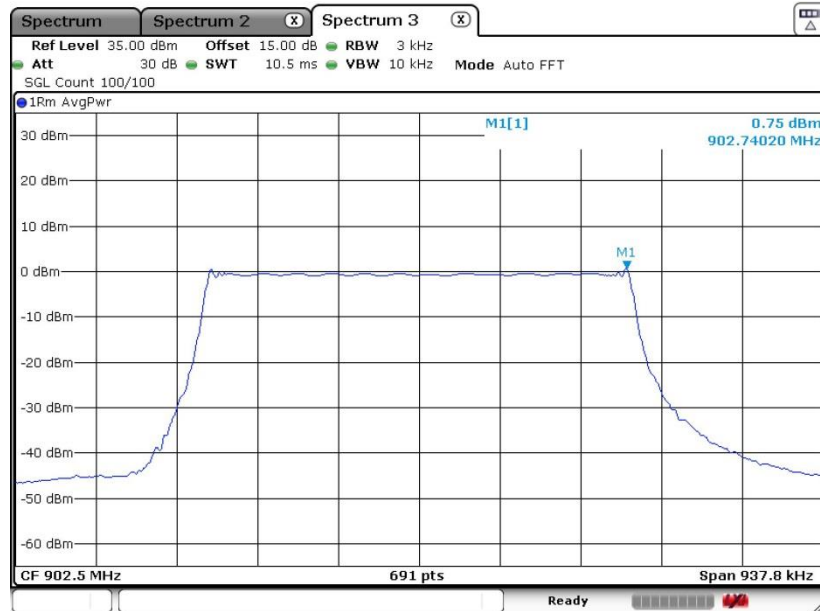
PSD 3kHz Plot on 926.5 MHz



Date: 8 JUN.2022 04:32:45

For SF11:

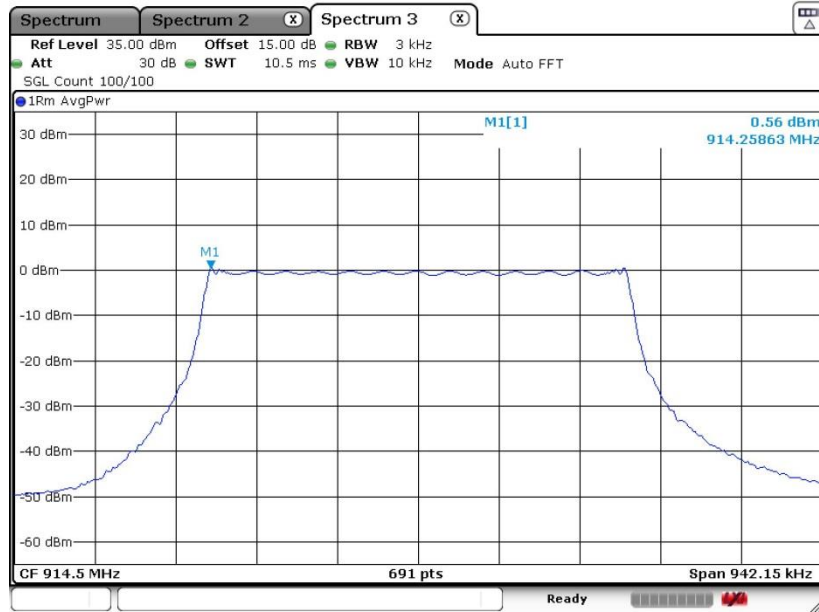
PSD 3kHz Plot on 902.5 MHz



Date: 8 JUN.2022 05:09:37

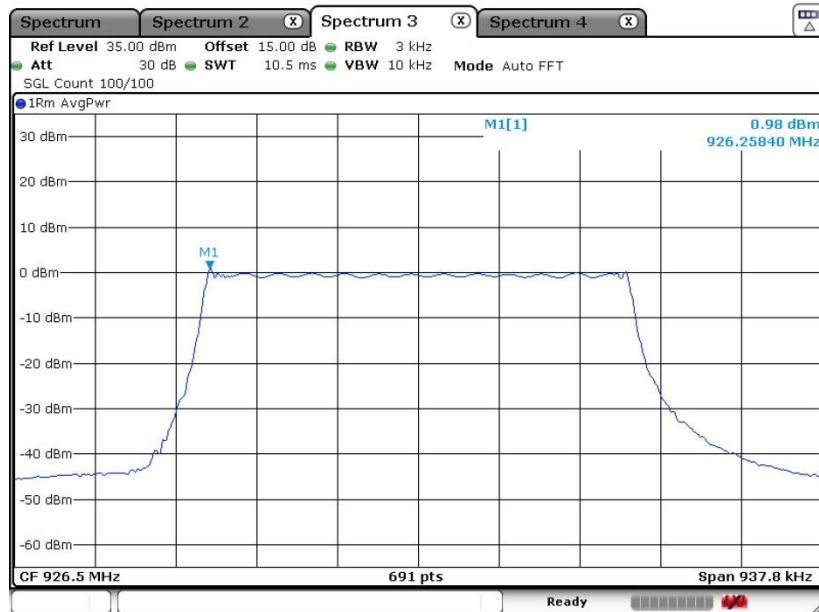


PSD 3kHz Plot on 914.5 MHz



Date: 8 JUN.2022 05:15:31

PSD 3kHz Plot on 926.5 MHz



Date: 8 JUN.2022 05:23:12

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission

All harmonics/spurious must be at least 30 dB down from the highest emission level within the authorized band.

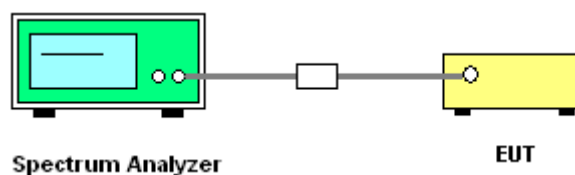
3.4.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.4.3 Test Procedure

1. The testing follows ANSI C63.10-2013 clause 11.13
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz when the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval.
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup

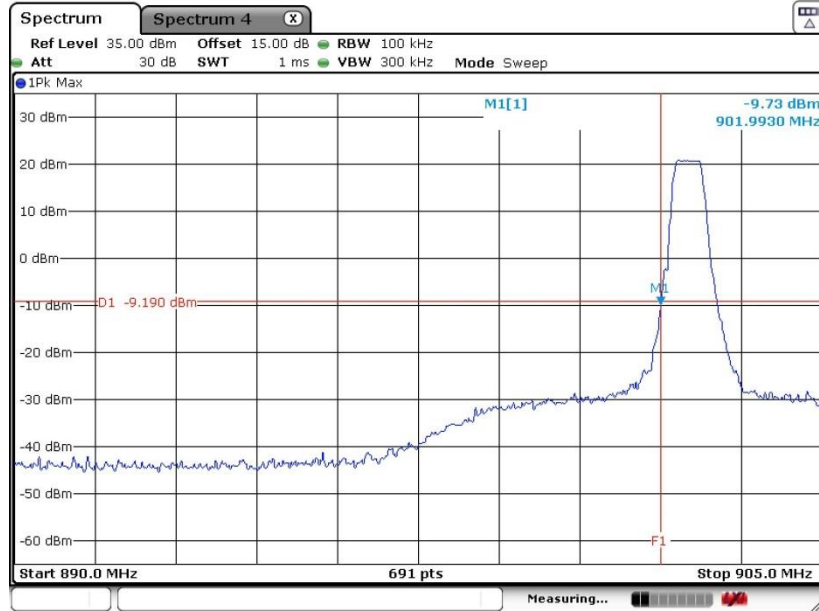




3.4.5 Test Result of Conducted Band Edges Plots

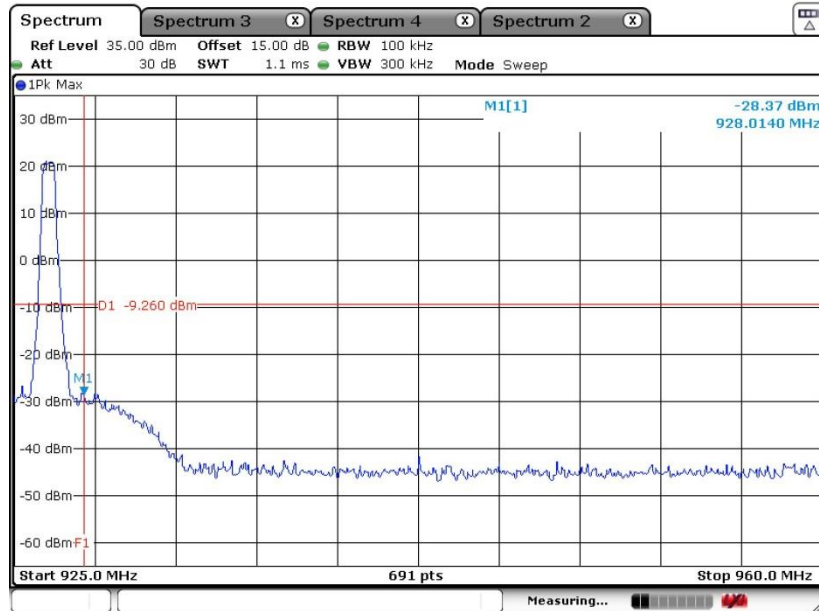
For SF5:

Low Band Edge Plot on 902.5 MHz



Date: 8.JUN.2022 20:27:32

High Band Edge Plot on 926.5 MHz

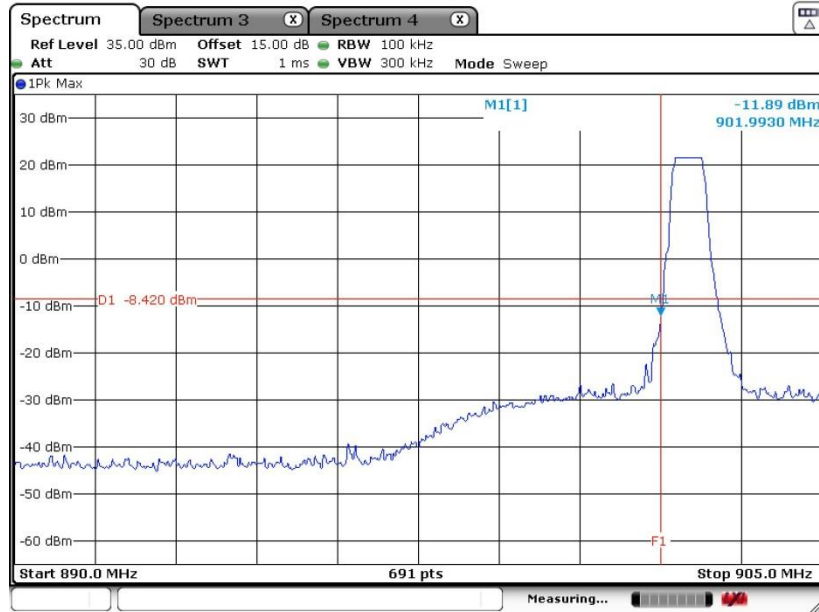


Date: 8.JUN.2022 20:40:11



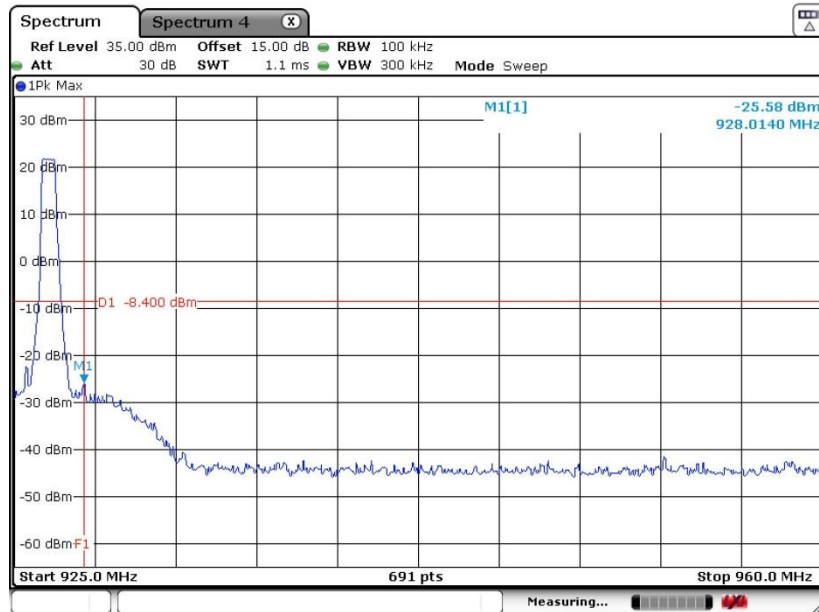
For SF7:

Low Band Edge Plot on 902.5 MHz



Date: 8 JUN.2022 00:38:51

High Band Edge Plot on 926.5 MHz

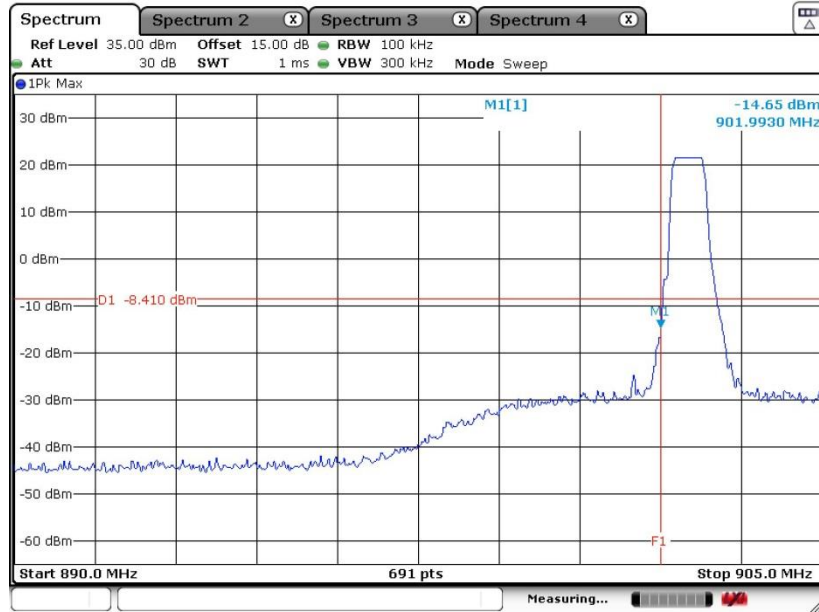


Date: 8 JUN.2022 00:53:29



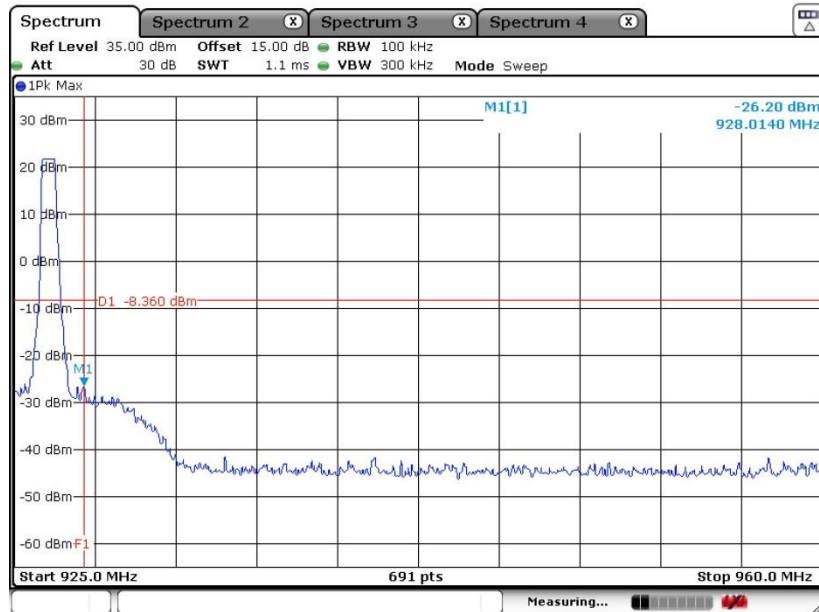
For SF8:

Low Band Edge Plot on 902.5 MHz



Date: 8 JUN.2022 02:18:22

High Band Edge Plot on 926.5 MHz

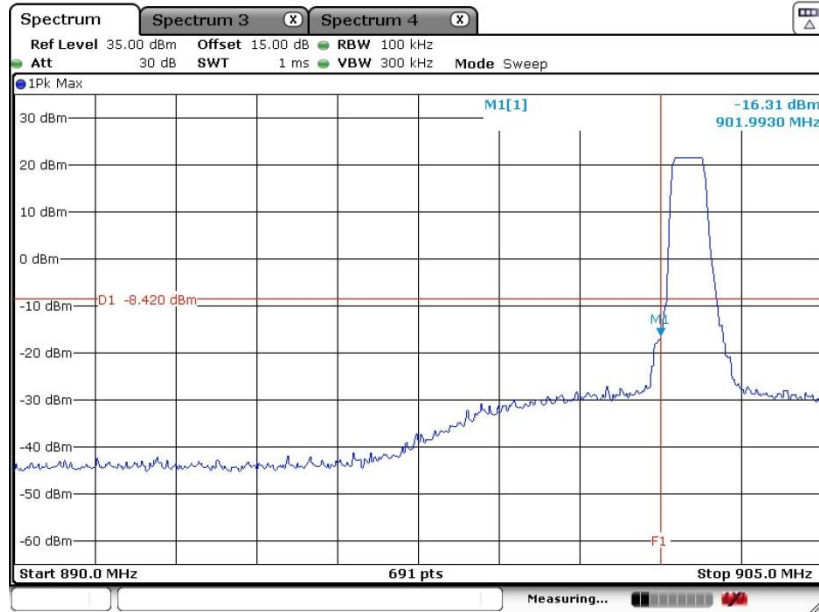


Date: 8 JUN.2022 02:37:59

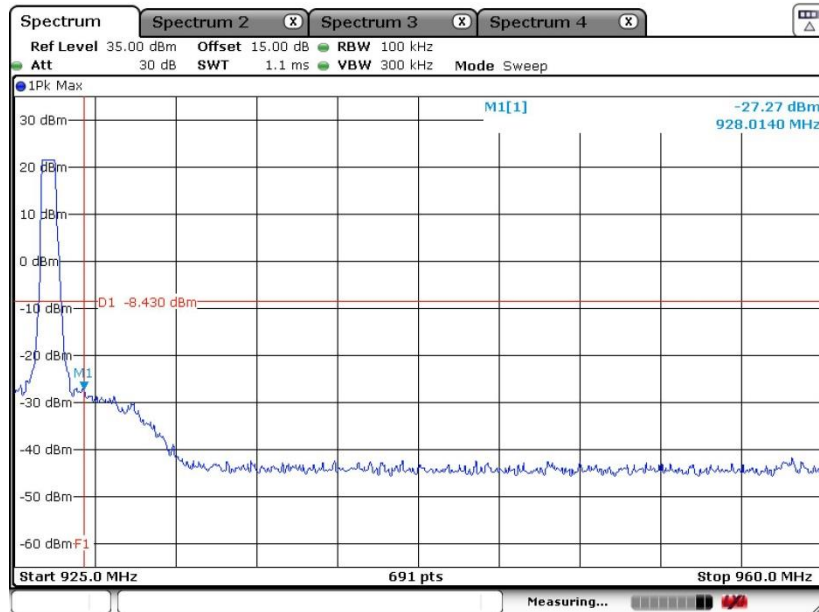


For SF9:

Low Band Edge Plot on 902.5 MHz



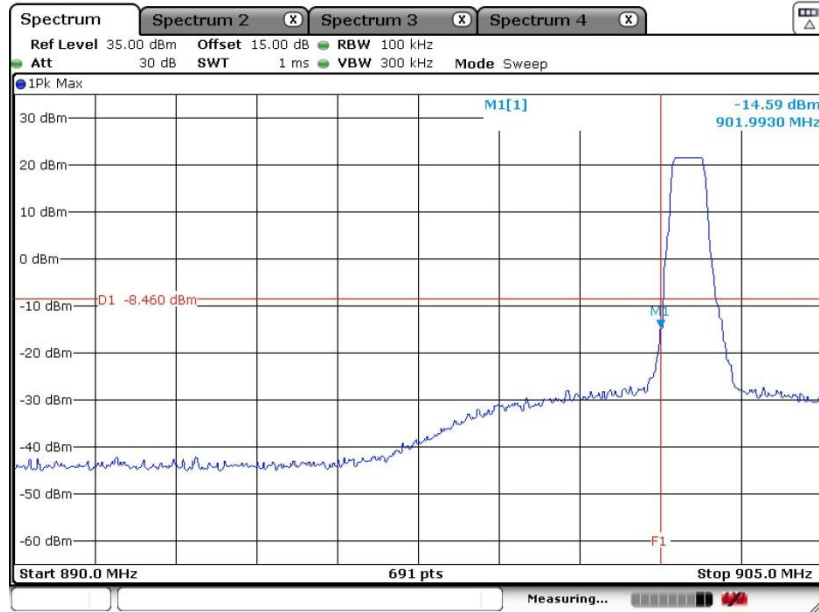
High Band Edge Plot on 926.5 MHz





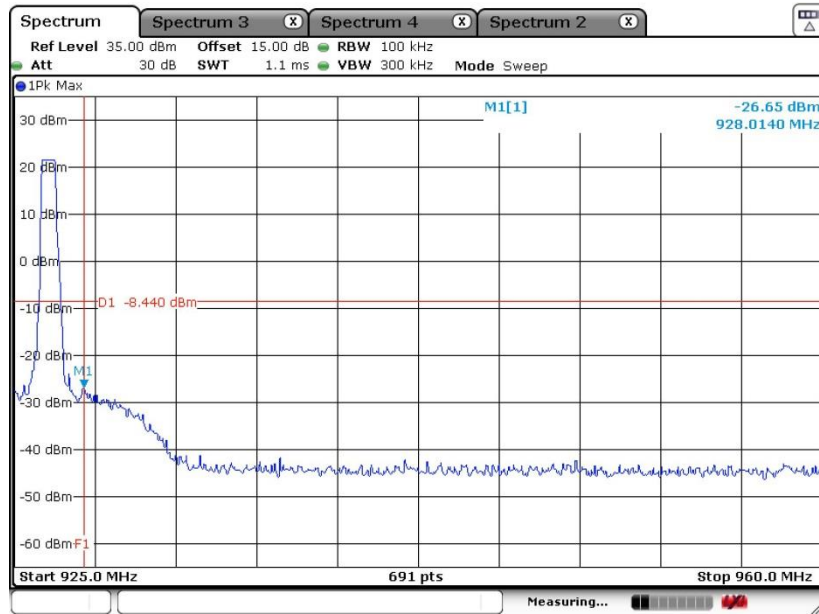
For SF10:

Low Band Edge Plot on 902.5 MHz



Date: 8 JUN.2022 04:19:51

High Band Edge Plot on 926.5 MHz

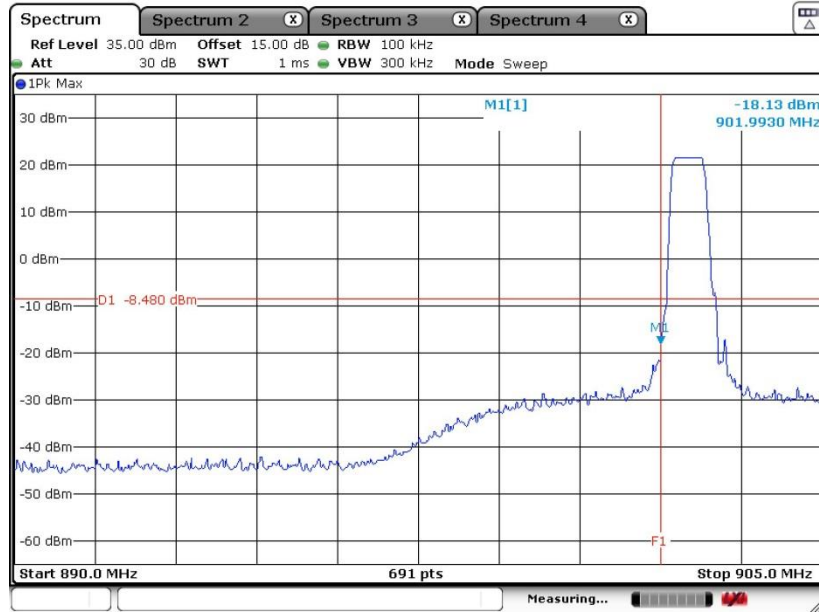


Date: 8 JUN.2022 04:34:32



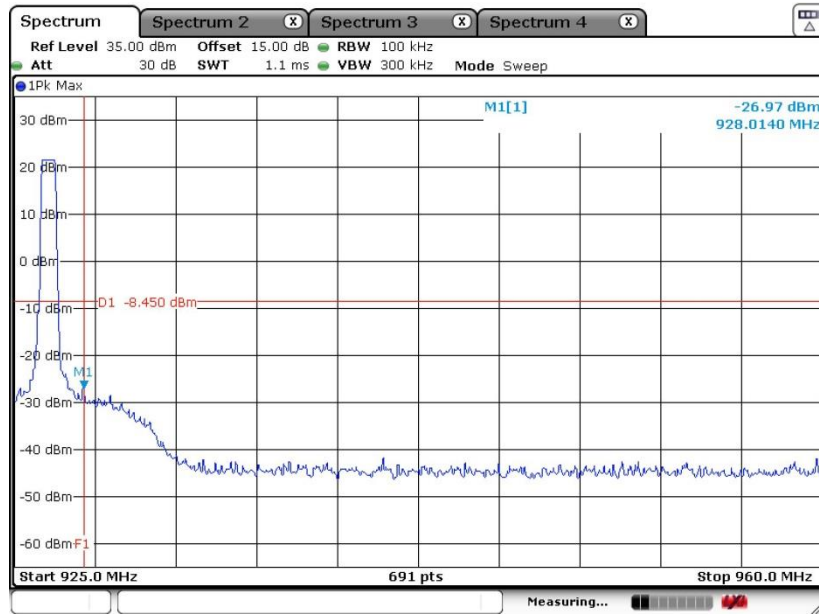
For SF11:

Low Band Edge Plot on 902.5 MHz



Date: 8 JUN.2022 05:10:43

High Band Edge Plot on 926.5 MHz



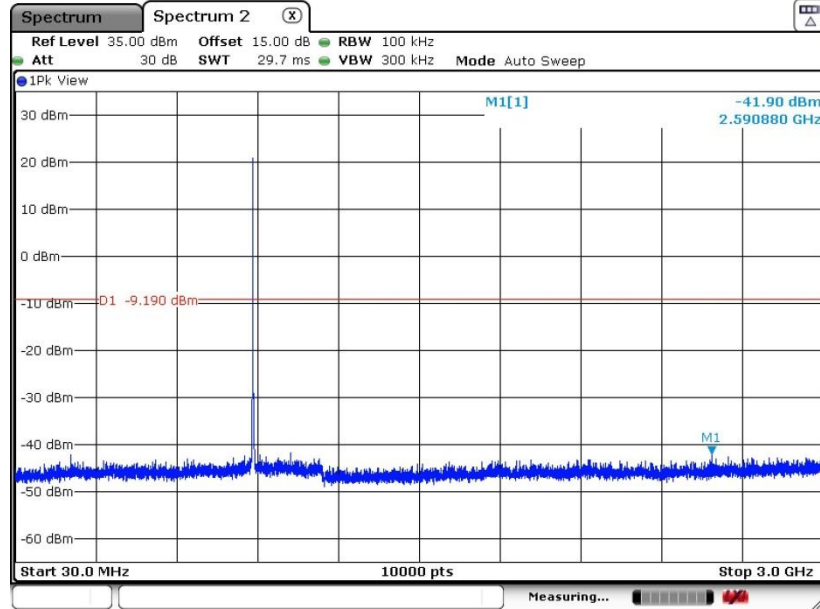
Date: 8 JUN.2022 05:25:01



3.4.6 Test Result of Conducted Spurious Emission Plots

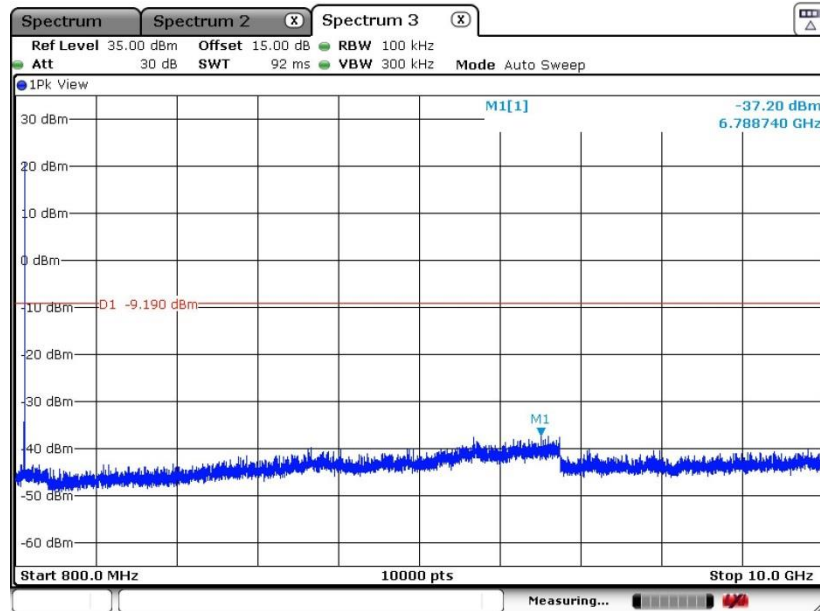
For SF5:

Conducted Spurious Emission Plot on 902.5 MHz



Date: 14.JUN.2022 21:27:50

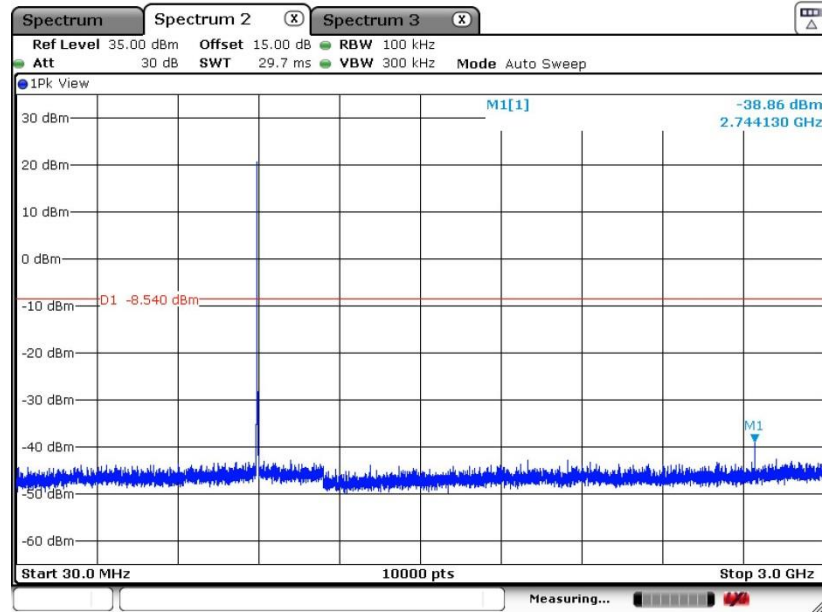
Conducted Spurious Emission Plot on 902.5 MHz



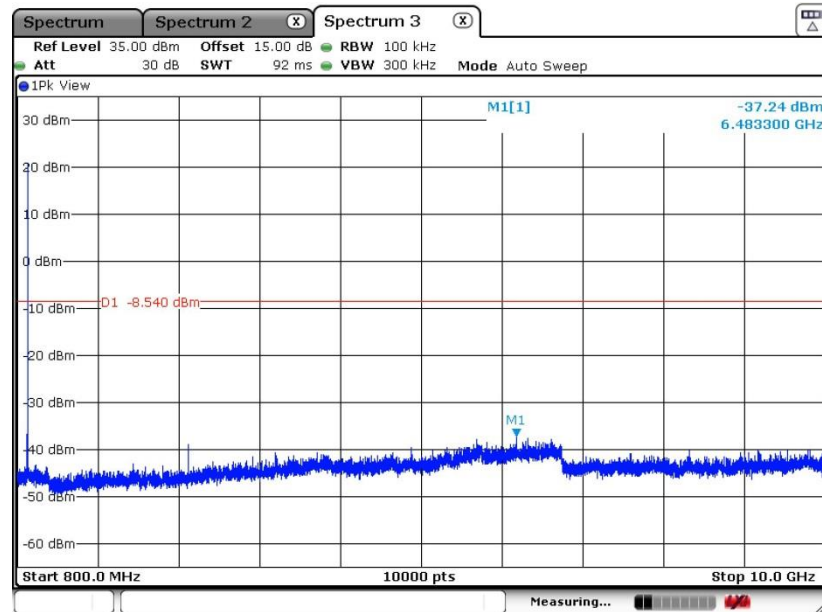
Date: 14.JUN.2022 21:35:15



Conducted Spurious Emission Plot on 914.5 MHz

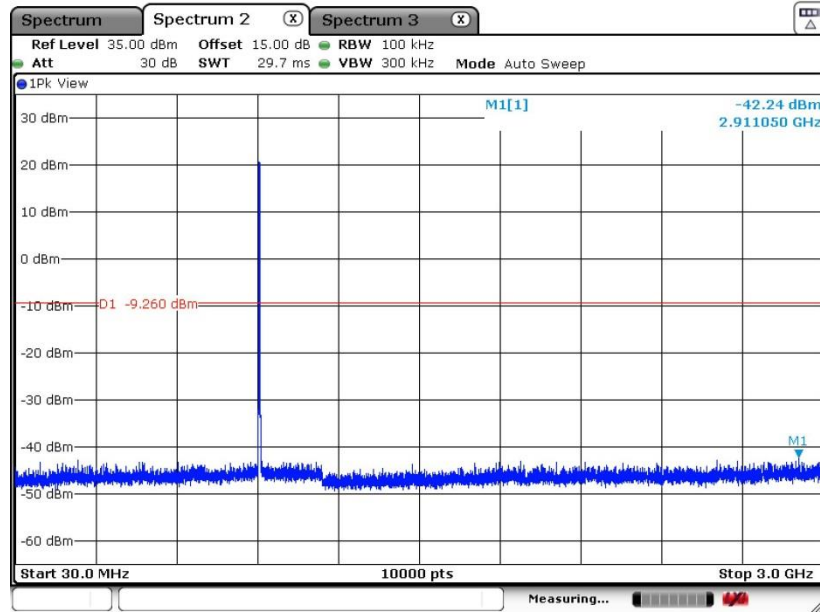


Conducted Spurious Emission Plot on 914.5 MHz

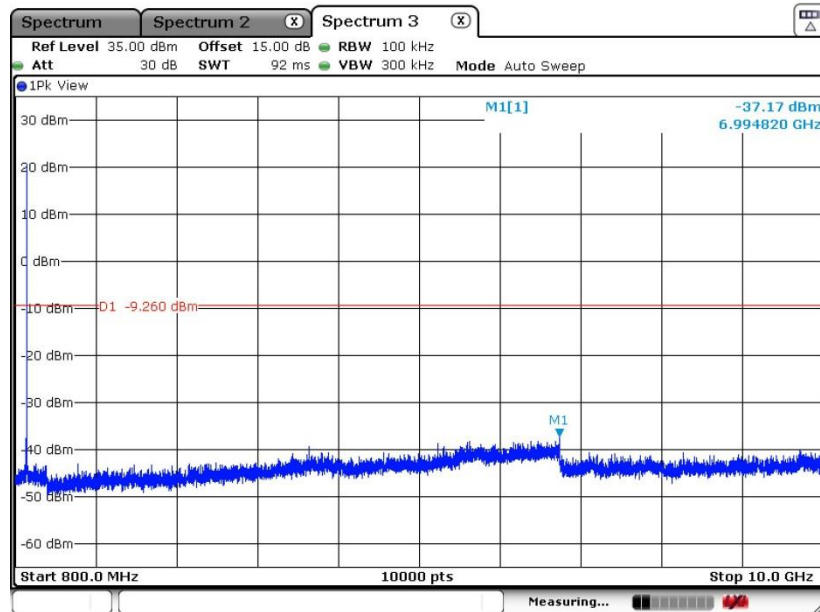




Conducted Spurious Emission Plot on 926.5 MHz



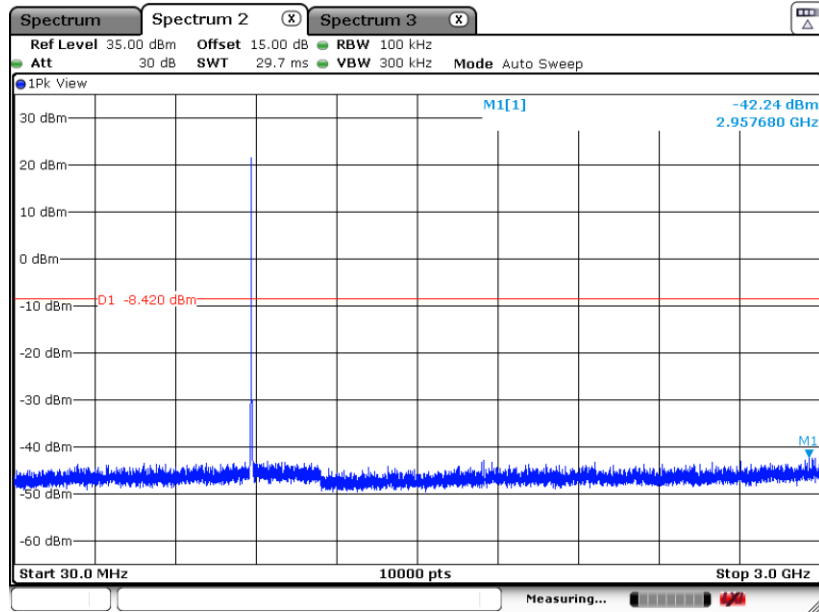
Conducted Spurious Emission Plot on 926.5 MHz



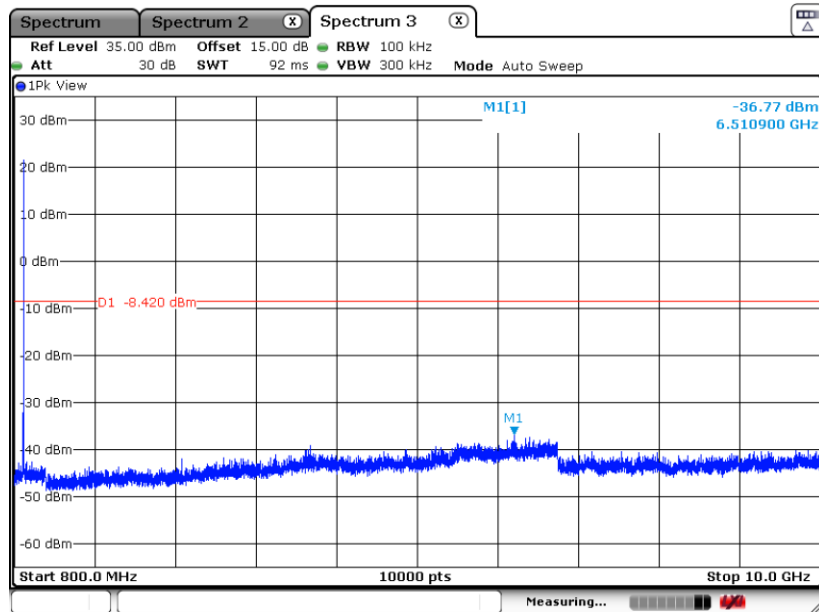


For SF7:

Conducted Spurious Emission Plot on 902.5 MHz

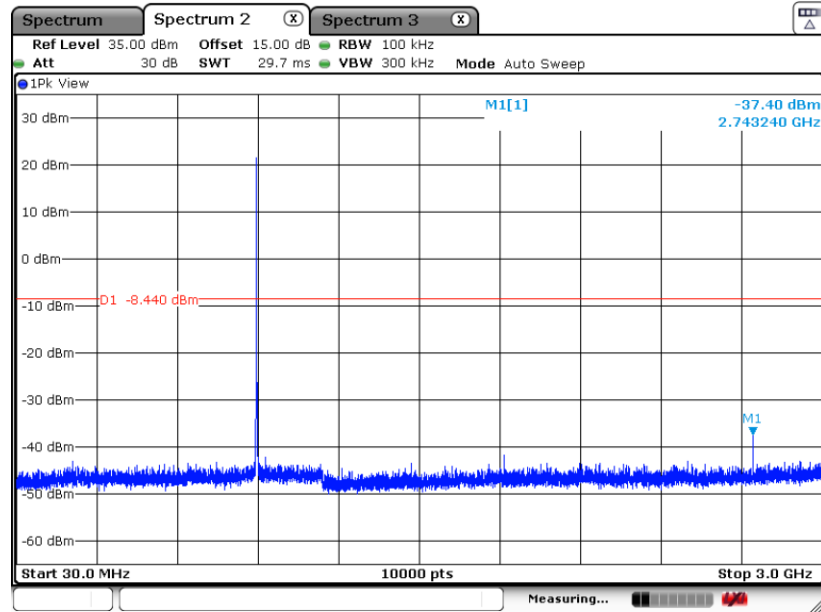


Conducted Spurious Emission Plot on 902.5 MHz



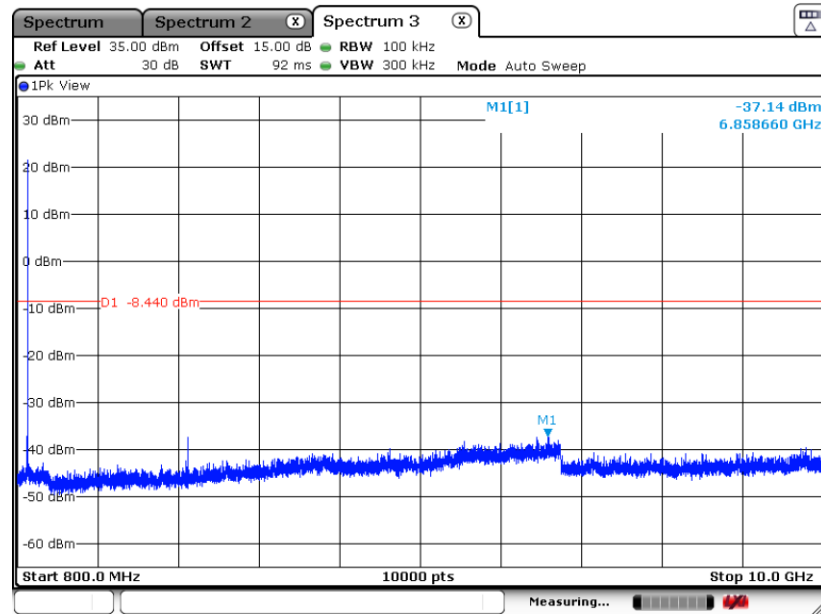


Conducted Spurious Emission Plot on 914.5 MHz



Date: 14.JUN.2022 21:48:27

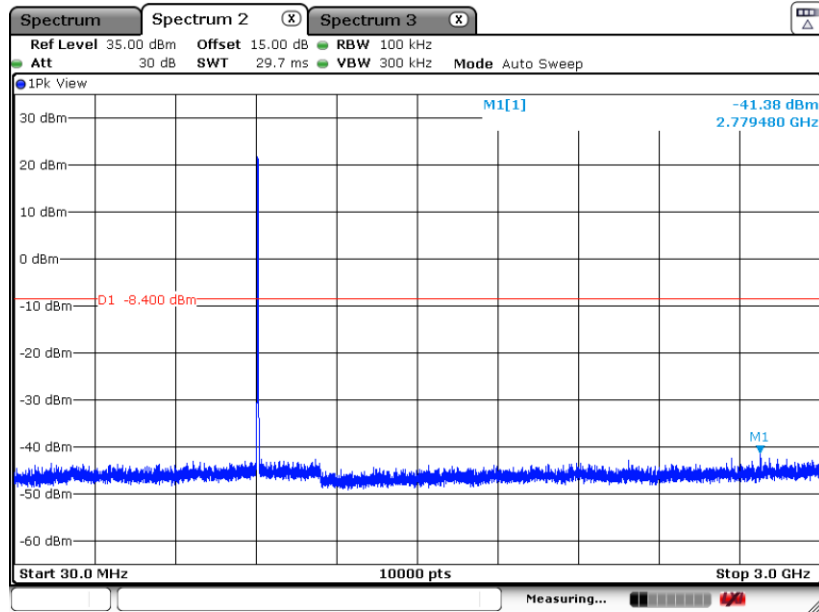
Conducted Spurious Emission Plot on 914.5 MHz



Date: 14.JUN.2022 21:49:32

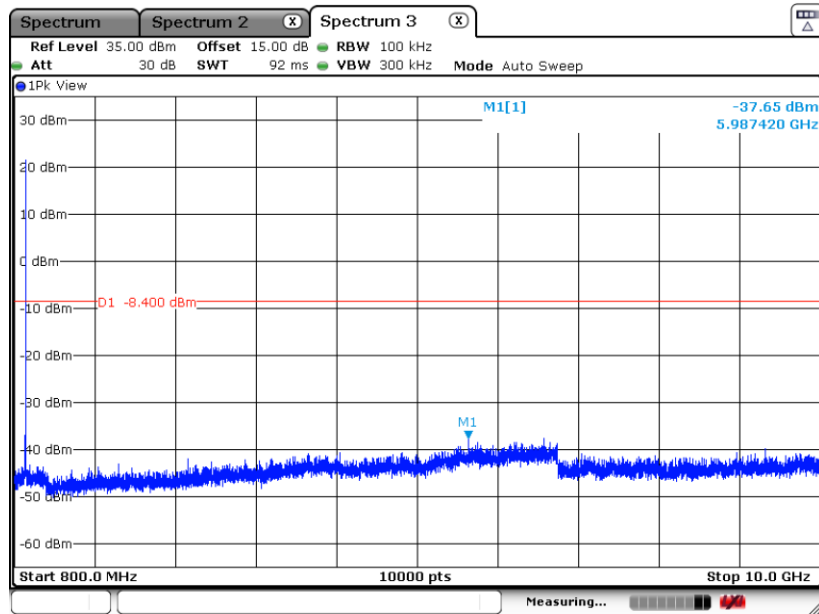


Conducted Spurious Emission Plot on 926.5 MHz



Date: 14.JUN.2022 21:51:44

Conducted Spurious Emission Plot on 926.5 MHz

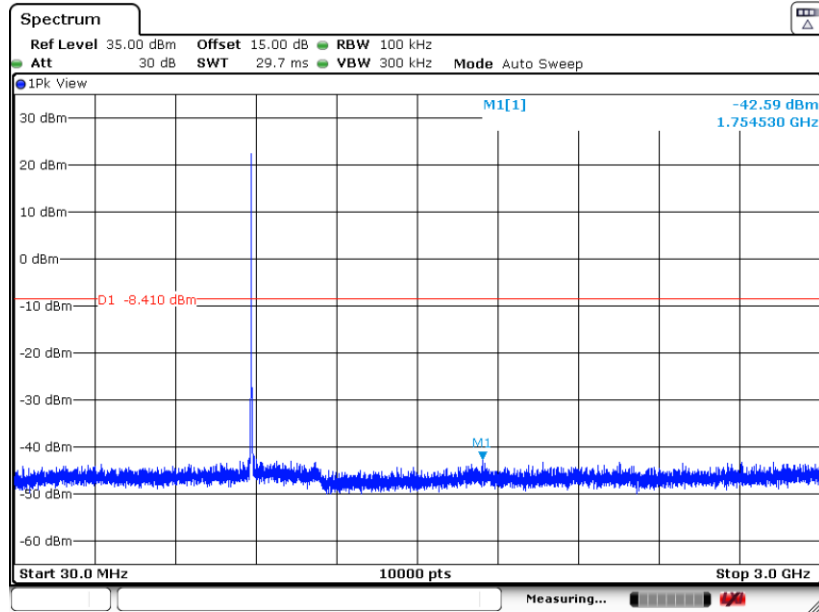


Date: 14.JUN.2022 21:50:31



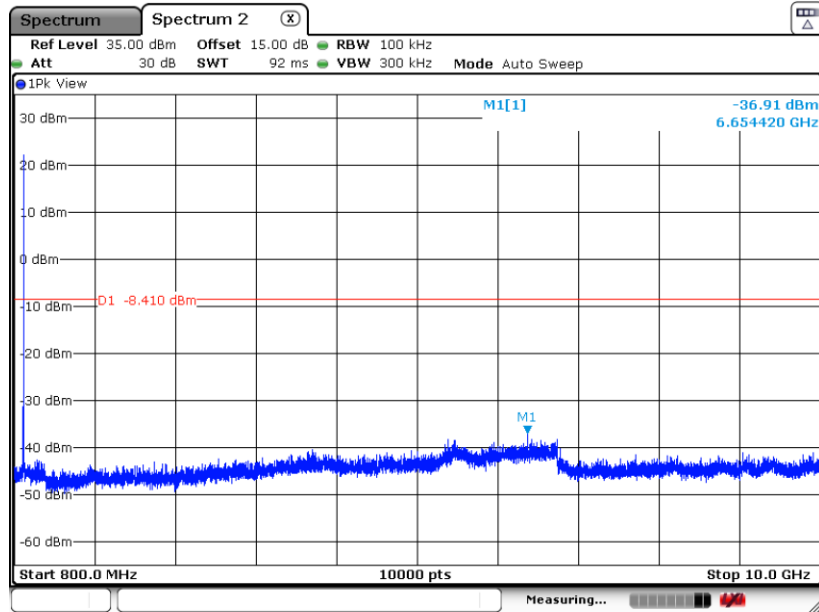
For SF8:

Conducted Spurious Emission Plot on 902.5 MHz



Date: 14 JUN 2022 21:52:09

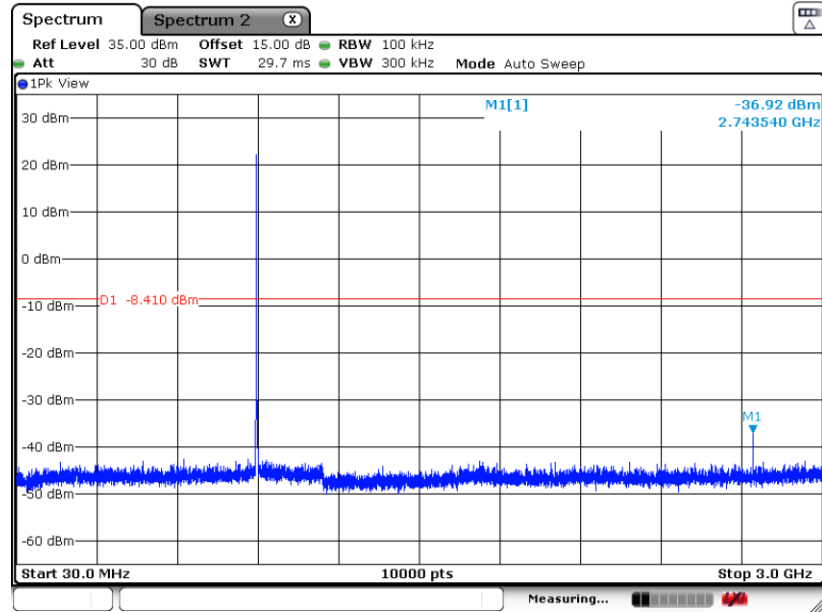
Conducted Spurious Emission Plot on 902.5 MHz



Date: 14 JUN 2022 21:54:07

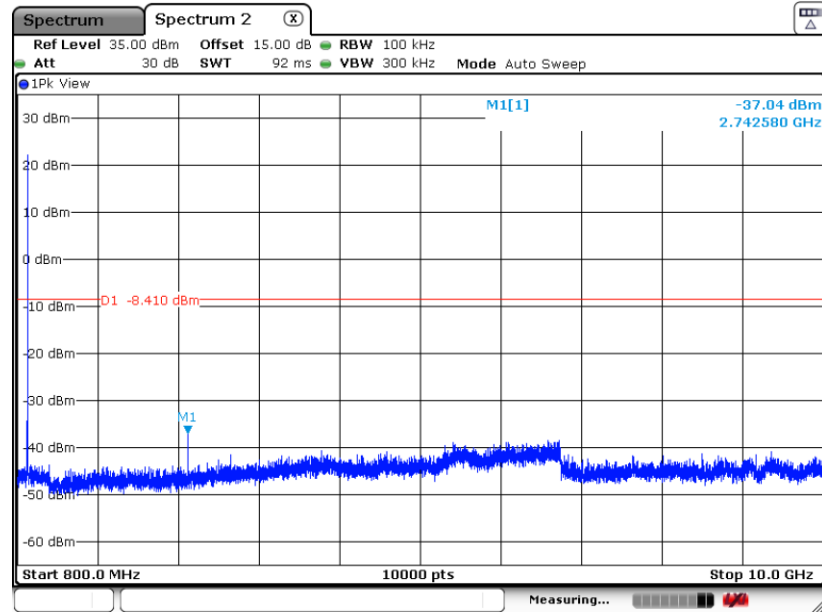


Conducted Spurious Emission Plot on 914.5 MHz



Date: 14.JUN.2022 21:55:18

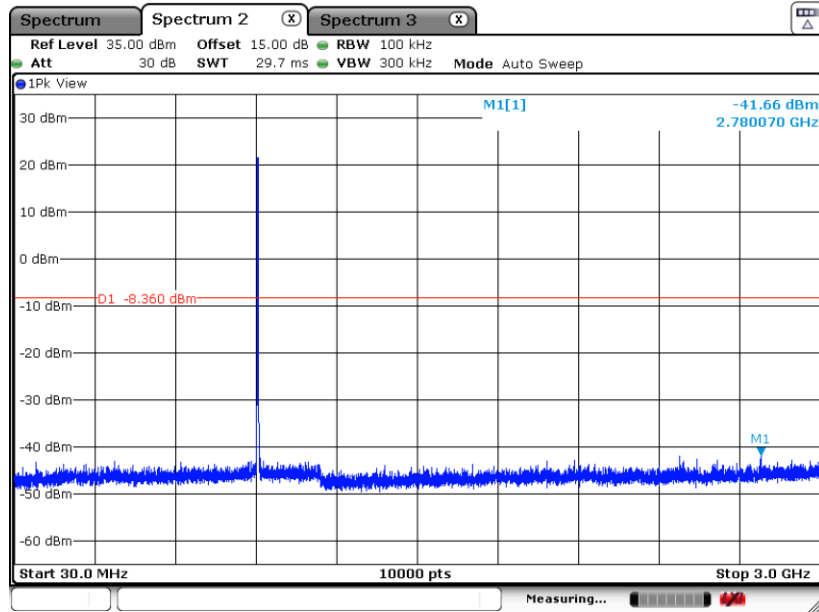
Conducted Spurious Emission Plot on 914.5 MHz



Date: 14.JUN.2022 21:56:00

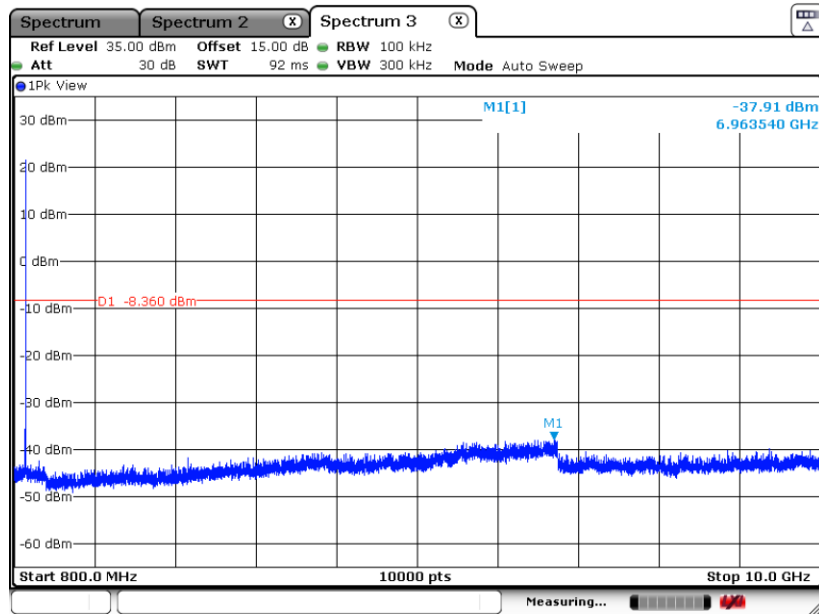


Conducted Spurious Emission Plot on 926.5 MHz



Date: 14.JUN.2022 21:56:18

Conducted Spurious Emission Plot on 926.5 MHz

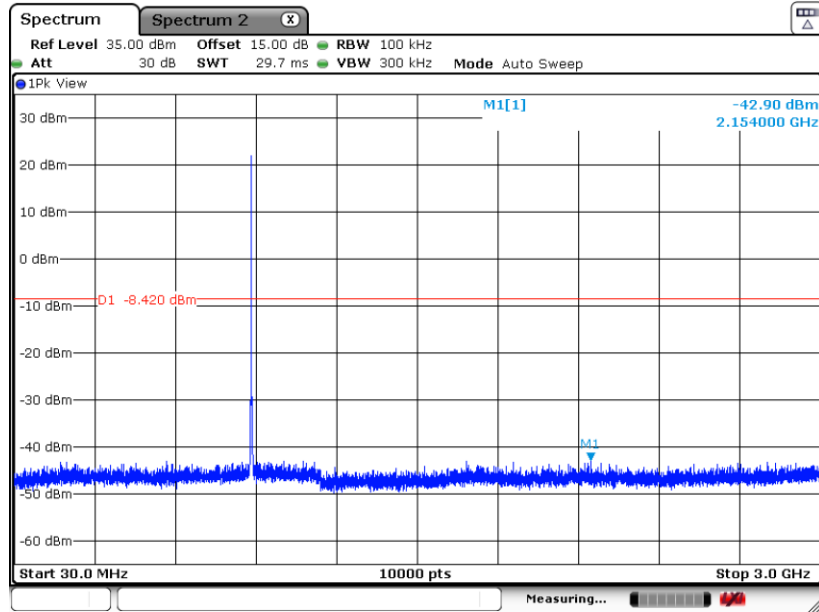


Date: 14.JUN.2022 21:55:35



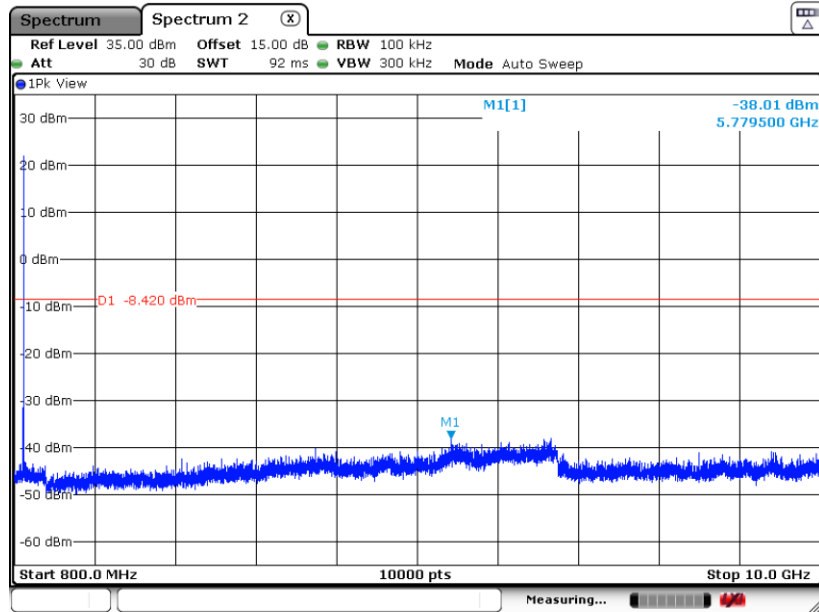
For SF9:

Conducted Spurious Emission Plot on 902.5 MHz



Date: 14 JUN 2022 22:02:01

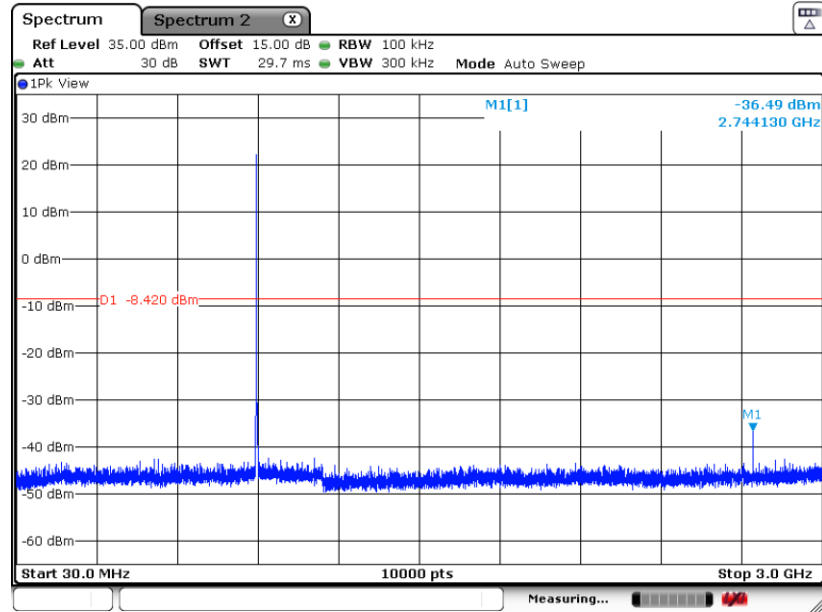
Conducted Spurious Emission Plot on 902.5 MHz



Date: 14 JUN 2022 22:01:37

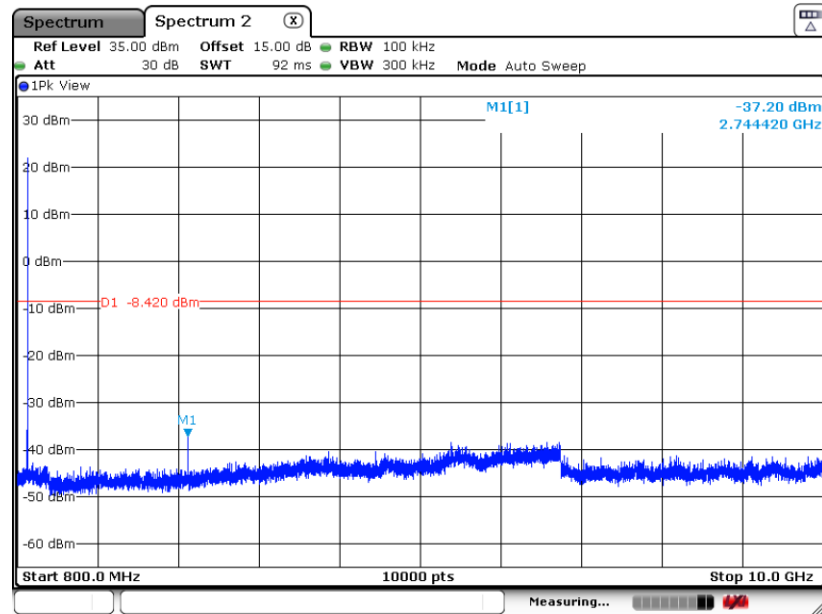


Conducted Spurious Emission Plot on 914.5 MHz



Date: 14 JUN.2022 21:59:07

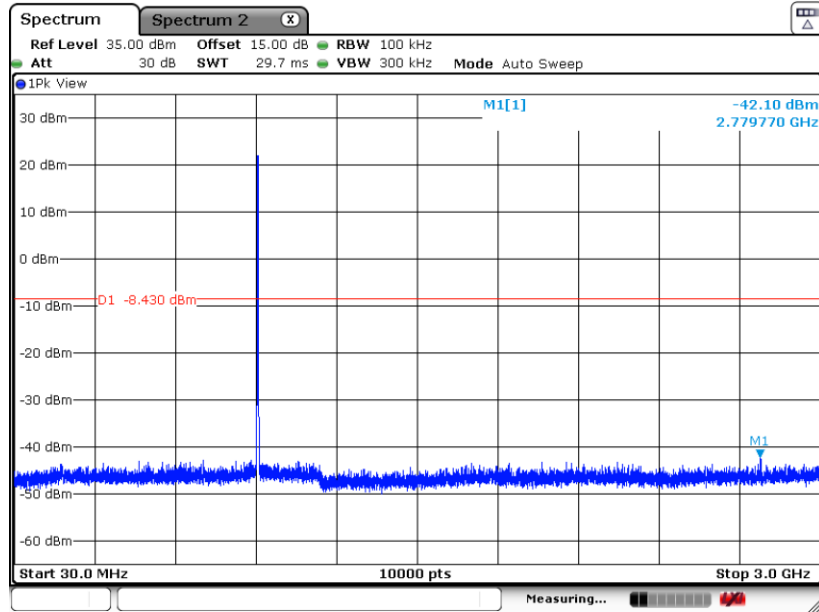
Conducted Spurious Emission Plot on 914.5 MHz



Date: 14 JUN.2022 22:05:05

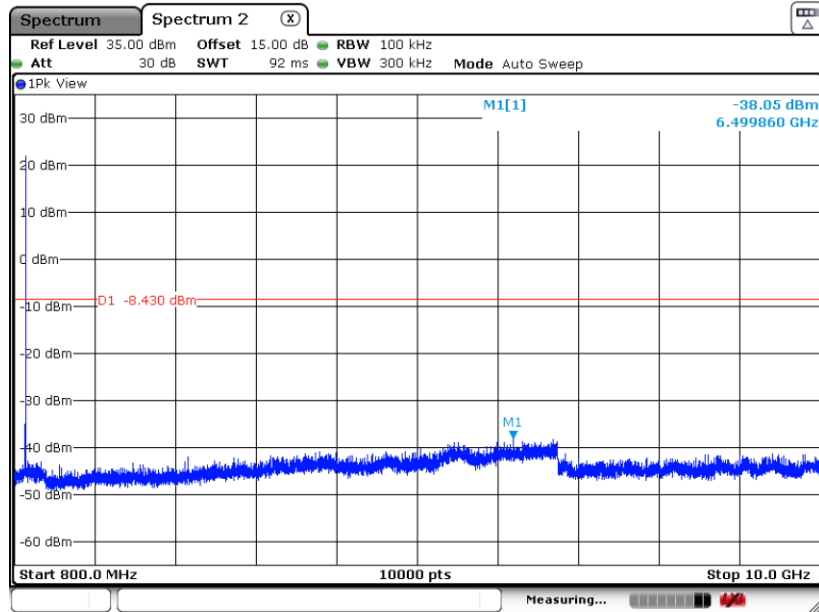


Conducted Spurious Emission Plot on 926.5 MHz



Date: 14 JUN 2022 22:03:11

Conducted Spurious Emission Plot on 926.5 MHz

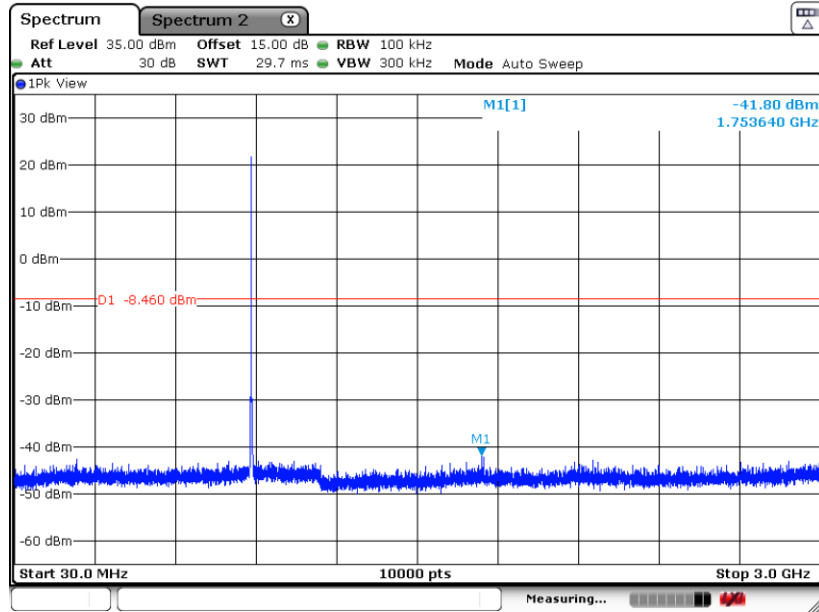


Date: 14 JUN 2022 22:03:46



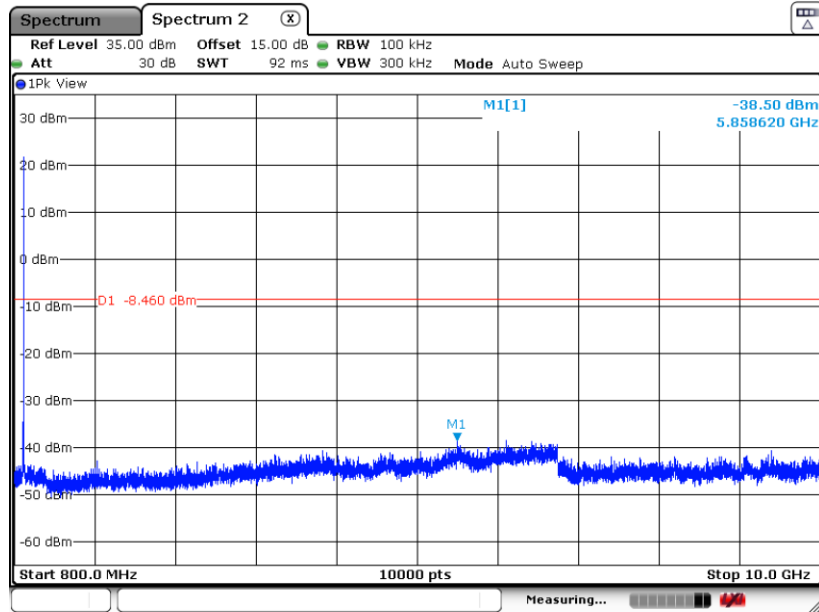
For SF10:

Conducted Spurious Emission Plot on 902.5 MHz



Date: 14 JUN 2022 22:09:22

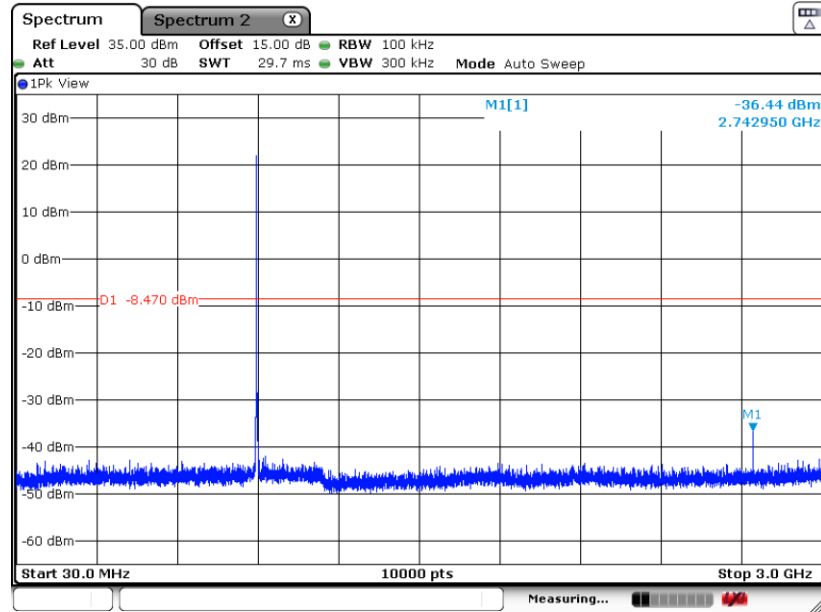
Conducted Spurious Emission Plot on 902.5 MHz



Date: 14 JUN 2022 22:09:54

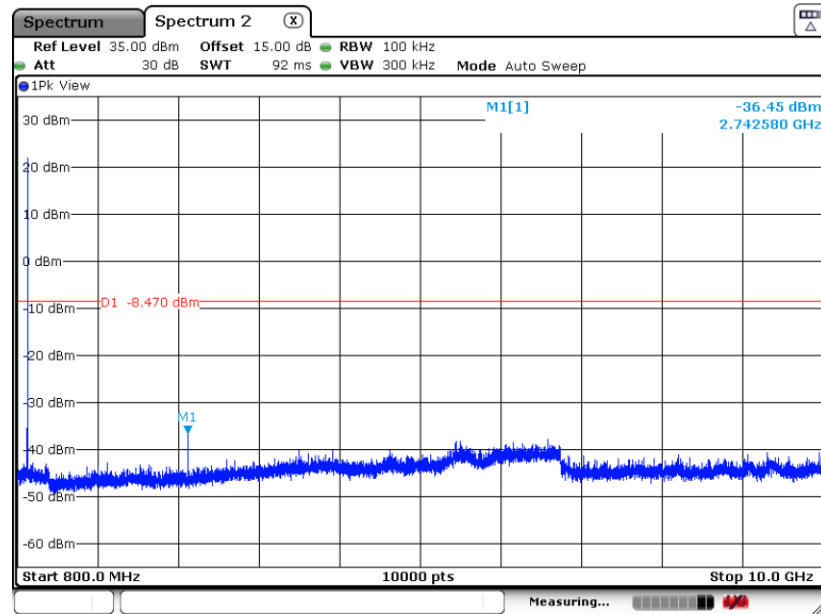


Conducted Spurious Emission Plot on 914.5 MHz



Date: 14 JUN 2022 22:08:31

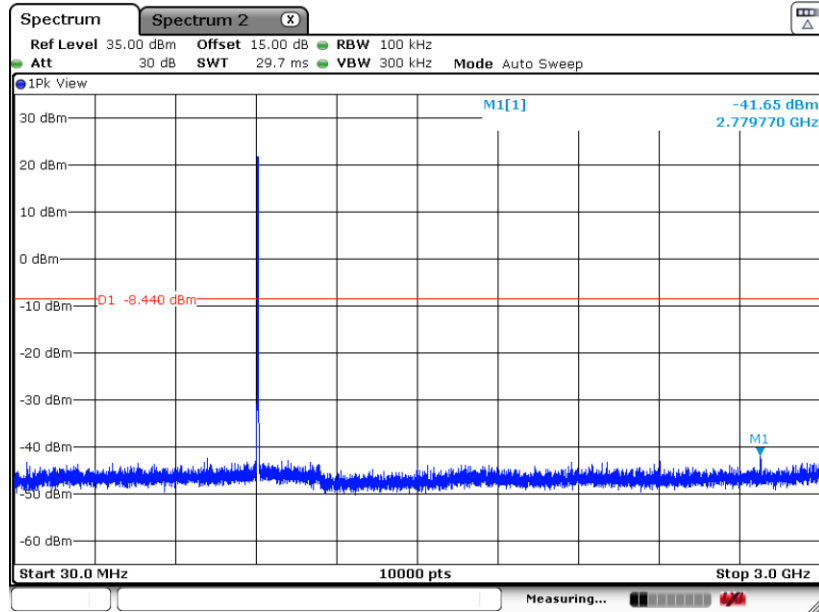
Conducted Spurious Emission Plot on 914.5 MHz



Date: 14 JUN 2022 22:07:59

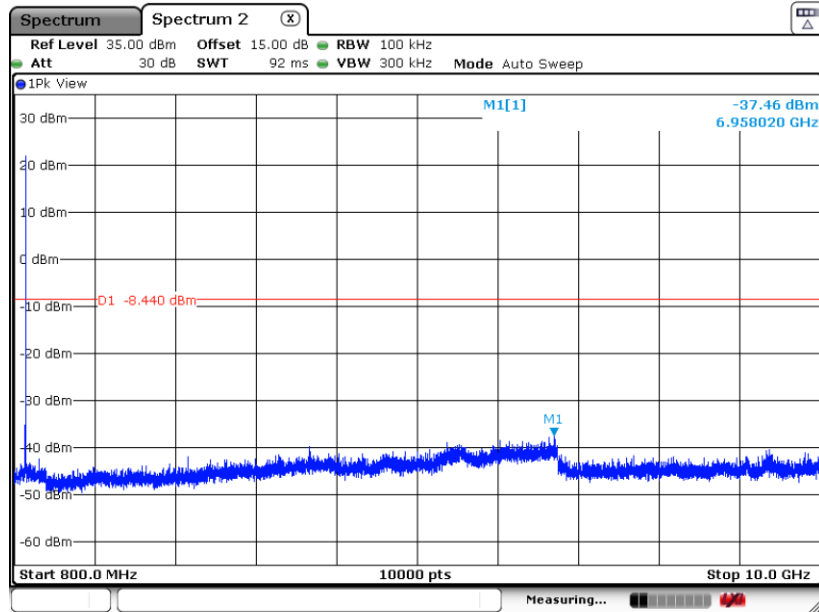


Conducted Spurious Emission Plot on 926.5 MHz



Date: 14 JUN 2022 22:11:35

Conducted Spurious Emission Plot on 926.5 MHz

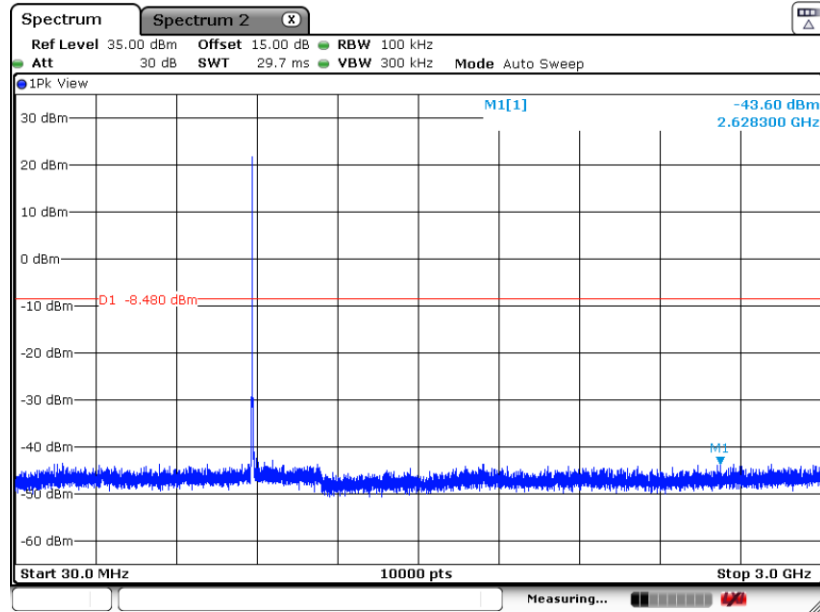


Date: 14 JUN 2022 22:11:08



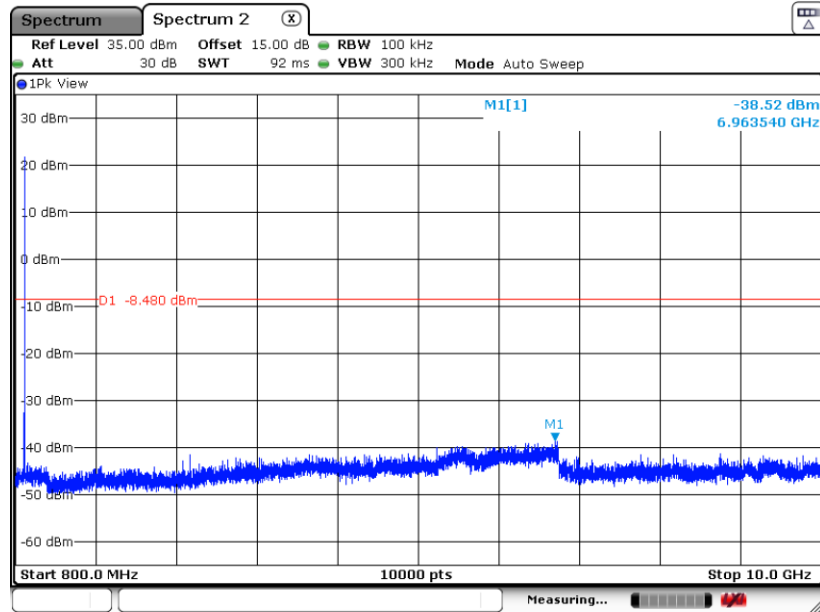
For SF11:

Conducted Spurious Emission Plot on 902.5 MHz



Date: 14 JUN 2022 22:17:23

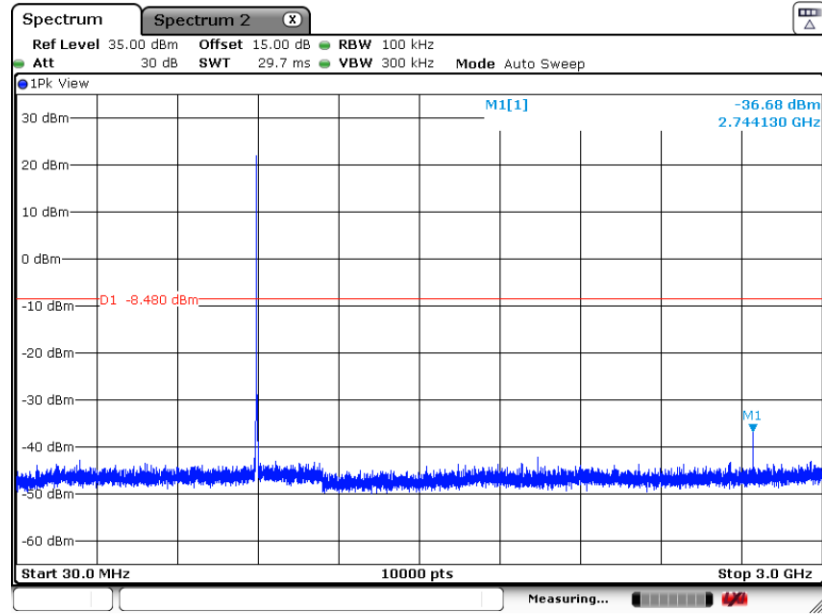
Conducted Spurious Emission Plot on 902.5 MHz



Date: 14 JUN 2022 22:17:49

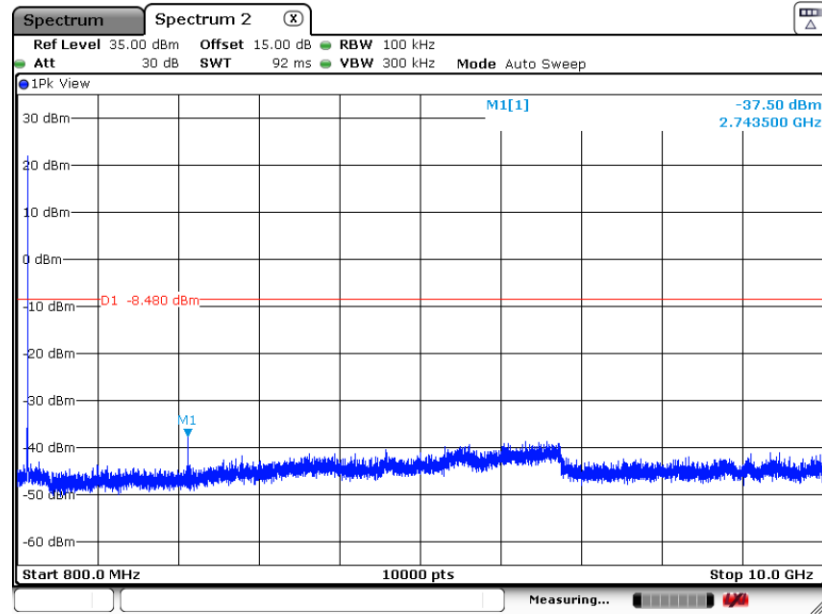


Conducted Spurious Emission Plot on 914.5 MHz



Date: 14 JUN.2022 22:15:38

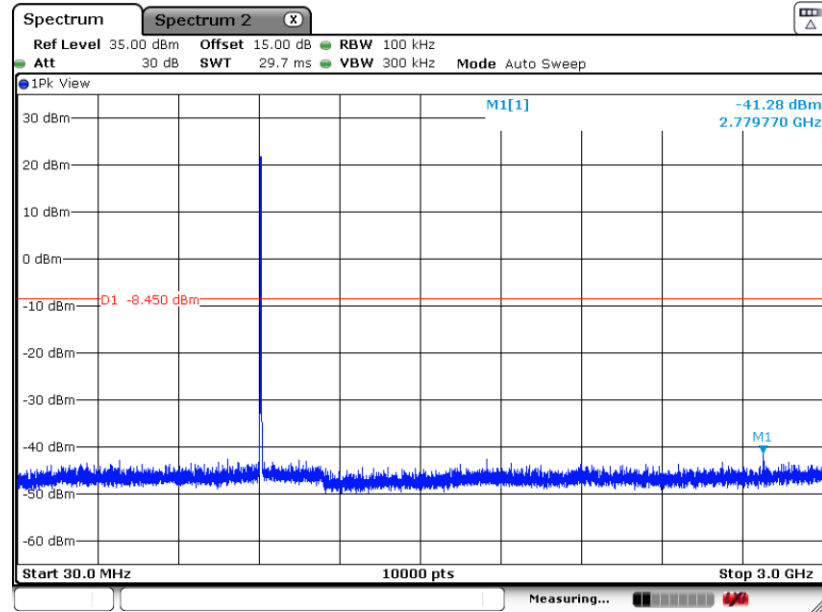
Conducted Spurious Emission Plot on 914.5 MHz



Date: 14 JUN.2022 22:15:12

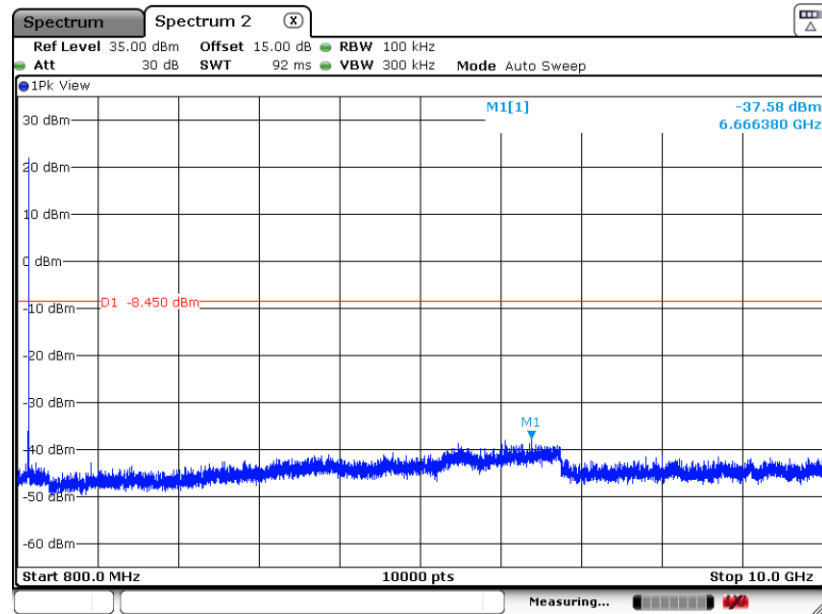


Conducted Spurious Emission Plot on 926.5 MHz



Date: 14 JUN 2022 22:13:32

Conducted Spurious Emission Plot on 926.5 MHz



Date: 14 JUN 2022 22:14:06



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

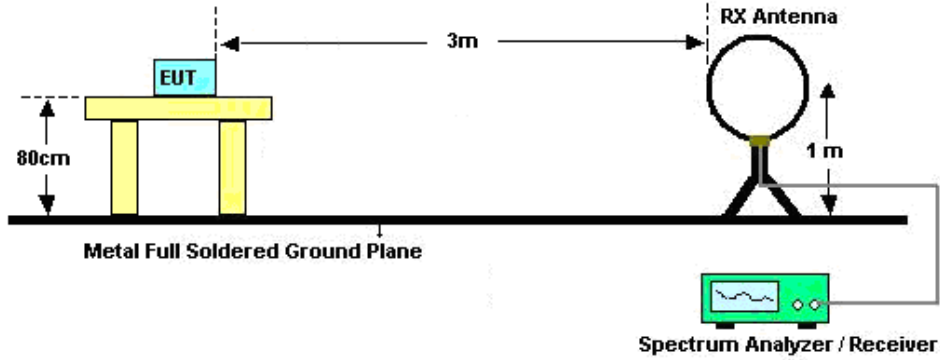


3.5.3 Test Procedures

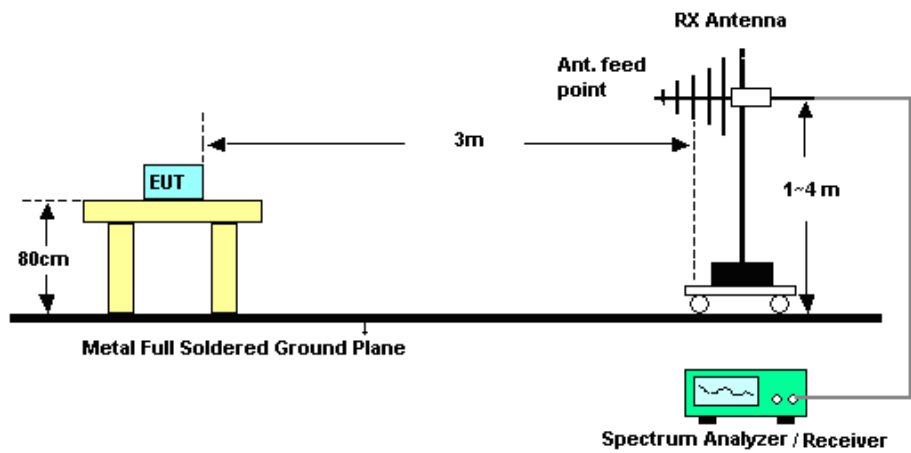
1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; $VBW \geq RBW$; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.
For average measurement:
 - $VBW = 10$ Hz, when duty cycle is no less than 98 percent.
 - $VBW \geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

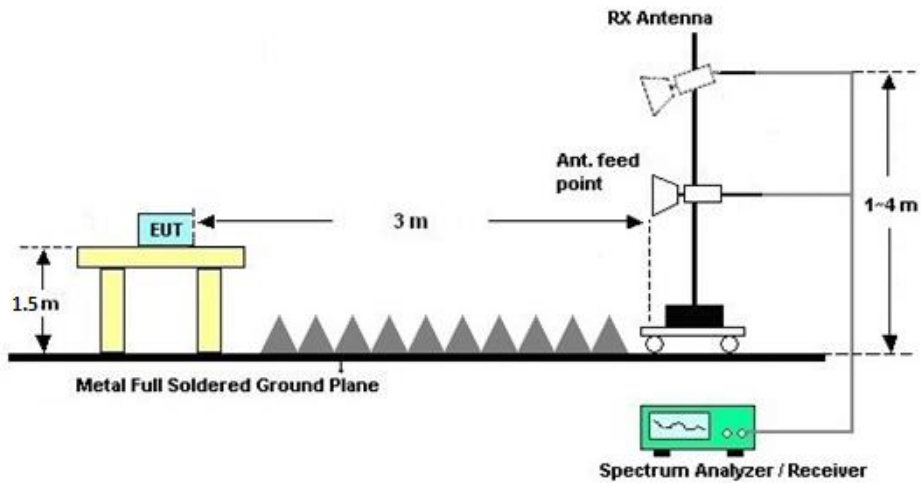
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.5.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.5.7 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C.



3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

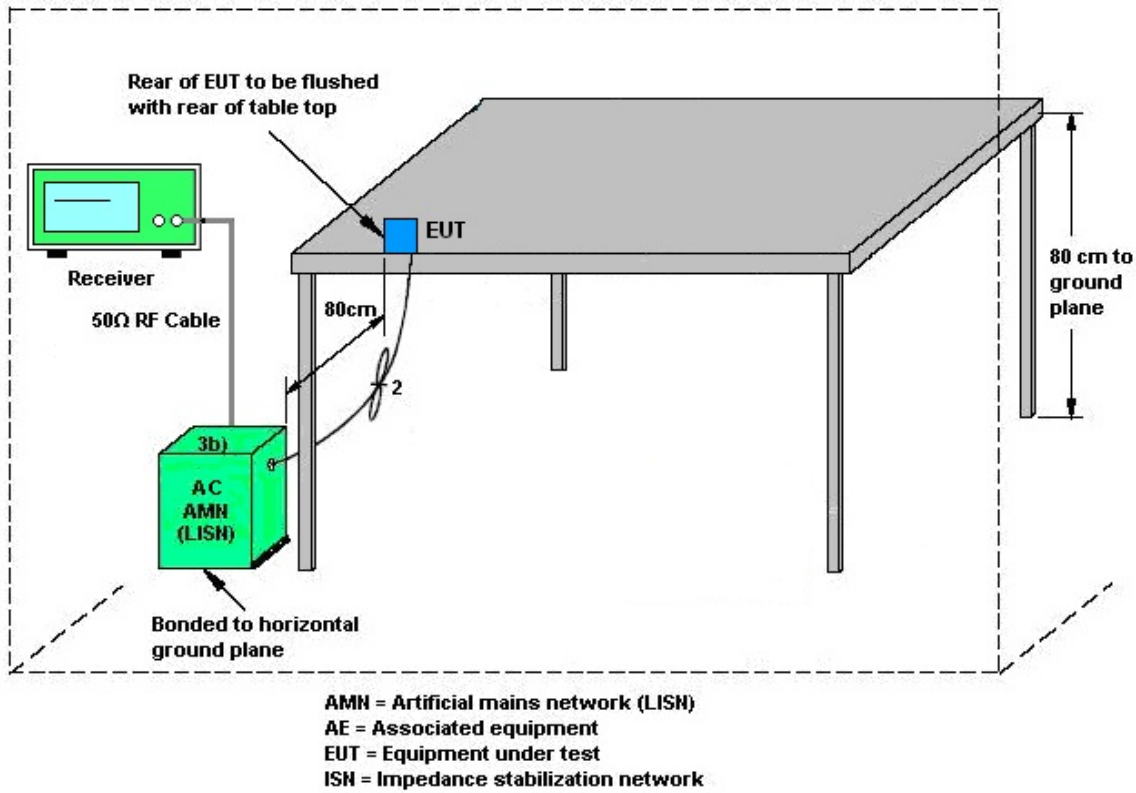
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 14, 2021	Jan. 02, 2022~ Jun. 14, 2022	Oct. 13, 2022	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 06, 2021	Jan. 02, 2022~ Jun. 14, 2022	Jan. 05, 2022	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 05, 2022		Jan. 04, 2023	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 06, 2021	Jan. 02, 2022~ Jun. 14, 2022	Jan. 05, 2022	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 05, 2022		Jan. 04, 2023	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz;Max 30dBm	Oct. 16, 2021	Jun. 24, 2022	Oct. 15, 2022	Radiation (03CH06-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY60242126	10Hz~44GHz	Oct. 26, 2021	Jun. 24, 2022	Oct. 25, 2022	Radiation (03CH06-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Jun. 24, 2022	Oct. 29, 2022	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	49921	30MHz~1GHz	May 24, 2022	Jun. 24, 2022	May 23, 2023	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00240138	1GHz~18GHz	Jul. 19, 2021	Jun. 24, 2022	Jul. 18, 2022	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	380827	9KHz ~1GHZ	Jul. 30, 2021	Jun. 24, 2022	Jul. 29, 2022	Radiation (03CH06-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Jun. 24, 2022	Jan. 04, 2023	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY53270319	500MHz~26.5GHz	Oct. 14, 2021	Jun. 24, 2022	Oct. 13, 2022	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jun. 24, 2022	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jun. 24, 2022	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jun. 24, 2022	NCR	Radiation (03CH06-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 20, 2022	Jun. 11, 2022	Apr. 19, 2023	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 14, 2021	Jun. 11, 2022	Oct. 13, 2022	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Apr. 20, 2022	Jun. 11, 2022	Apr. 19, 2023	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 14, 2021	Jun. 11, 2022	Oct. 13, 2022	Conduction (CO01-KS)

NCR: No Calibration Required



5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	±0.56 dB
Conducted Emissions	±0.92 dB
Occupied Channel Bandwidth	±0.03 %
Conducted Power Spectral Density	±0.54 dB

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.94dB
---	--------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB
---	-------



Appendix A. Conducted Test Results

Test Engineer:	Alan He	Temperature:	20~26	°C
Test Date:	2022/1/2~2022/6/14	Relative Humidity:	40~51	%

LoRa-DTS-Spreading Factor 5**TEST RESULTS DATA**
6dB and 99% Occupied Bandwidth

Mod.	Channel	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
SF5	1	902.5Mhz	0.518	0.596	0.50	Pass
SF5	16	914.5Mhz	0.538	0.605	0.50	Pass
SF5	31	926.5Mhz	0.533	0.593	0.50	Pass

TEST RESULTS DATA
Average Power Table

Mod.	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
SF5	1	902.5Mhz	0.22	19.97
SF5	16	914.5Mhz	0.22	19.93
SF5	31	926.5Mhz	0.22	19.80

TEST RESULTS DATA
Peak Power Density

Mod.	Channel	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
SF5	1	902.5Mhz	19.66	6.22	0.95	8.00	Pass
SF5	16	914.5Mhz	19.75	6.02	0.95	8.00	Pass
SF5	31	926.5Mhz	19.65	6.47	0.95	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

LoRa-DTS-Spreading Factor 7**TEST RESULTS DATA**
6dB and 99% Occupied Bandwidth

Mod.	Channel	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
SF7	1	902.5Mhz	0.530	0.622	0.50	Pass
SF7	16	914.5Mhz	0.533	0.622	0.50	Pass
SF7	31	926.5Mhz	0.521	0.622	0.50	Pass

TEST RESULTS DATA
Average Power Table

Mod.	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
SF7	1	902.5Mhz	0.04	21.29
SF7	16	914.5Mhz	0.04	21.34
SF7	31	926.5Mhz	0.04	21.25

TEST RESULTS DATA
Peak Power Density

Mod.	Channel	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
SF7	1	902.5Mhz	21.58	2.17	0.95	8.00	Pass
SF7	16	914.5Mhz	21.56	1.90	0.95	8.00	Pass
SF7	31	926.5Mhz	21.60	2.19	0.95	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 20dBc limit.

LoRa-DTS-Spreading Factor 8**TEST RESULTS DATA**
6dB and 99% Occupied Bandwidth

Mod.	Channel	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
SF8	1	902.5Mhz	0.527	0.631	0.50	Pass
SF8	16	914.5Mhz	0.535	0.634	0.50	Pass
SF8	31	926.5Mhz	0.527	0.631	0.50	Pass

TEST RESULTS DATA
Average Power Table

Mod.	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
SF8	1	902.5Mhz	0.19	21.35
SF8	16	914.5Mhz	0.19	21.37
SF8	31	926.5Mhz	0.19	21.36

TEST RESULTS DATA
Peak Power Density

Mod.	Channel	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
SF8	1	902.5Mhz	21.59	1.33	0.95	8.00	Pass
SF8	16	914.5Mhz	21.59	1.06	0.95	8.00	Pass
SF8	31	926.5Mhz	21.64	1.37	0.95	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 20dBc limit.

LoRa-DTS-Spreading Factor 9**TEST RESULTS DATA**
6dB and 99% Occupied Bandwidth

Mod.	Channel	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
SF9	1	902.5Mhz	0.533	0.634	0.50	Pass
SF9	16	914.5Mhz	0.538	0.634	0.50	Pass
SF9	31	926.5Mhz	0.533	0.634	0.50	Pass

TEST RESULTS DATA
Average Power Table

Mod.	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
SF9	1	902.5Mhz	0.21	21.26
SF9	16	914.5Mhz	0.21	21.31
SF9	31	926.5Mhz	0.21	21.29

TEST RESULTS DATA
Peak Power Density

Mod.	Channel	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
SF9	1	902.5Mhz	21.58	1.03	0.95	8.00	Pass
SF9	16	914.5Mhz	21.58	0.91	0.95	8.00	Pass
SF9	31	926.5Mhz	21.57	1.05	0.95	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 20dBc limit.

LoRa-DTS-Spreading Factor 10**TEST RESULTS DATA**
6dB and 99% Occupied Bandwidth

Mod.	Channel	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
SF10	1	902.5Mhz	0.535	0.640	0.50	Pass
SF10	16	914.5Mhz	0.538	0.640	0.50	Pass
SF10	31	926.5Mhz	0.535	0.640	0.50	Pass

TEST RESULTS DATA
Average Power Table

Mod.	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
SF10	1	902.5Mhz	0.22	21.28
SF10	16	914.5Mhz	0.22	21.33
SF10	31	926.5Mhz	0.22	21.31

TEST RESULTS DATA
Peak Power Density

Mod.	Channel	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
SF10	1	902.5Mhz	21.54	0.95	0.95	8.00	Pass
SF10	16	914.5Mhz	21.53	0.67	0.95	8.00	Pass
SF10	31	926.5Mhz	21.56	0.96	0.95	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 20dBc limit.

LoRa-DTS-Spreading Factor 11**TEST RESULTS DATA**
6dB and 99% Occupied Bandwidth

Mod.	Channel	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
SF11	1	902.5Mhz	0.533	0.640	0.50	Pass
SF11	16	914.5Mhz	0.538	0.640	0.50	Pass
SF11	31	926.5Mhz	0.538	0.640	0.50	Pass

TEST RESULTS DATA
Average Power Table

Mod.	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
SF11	1	902.5Mhz	0.21	21.33
SF11	16	914.5Mhz	0.21	21.31
SF11	31	926.5Mhz	0.21	21.26

TEST RESULTS DATA
Peak Power Density

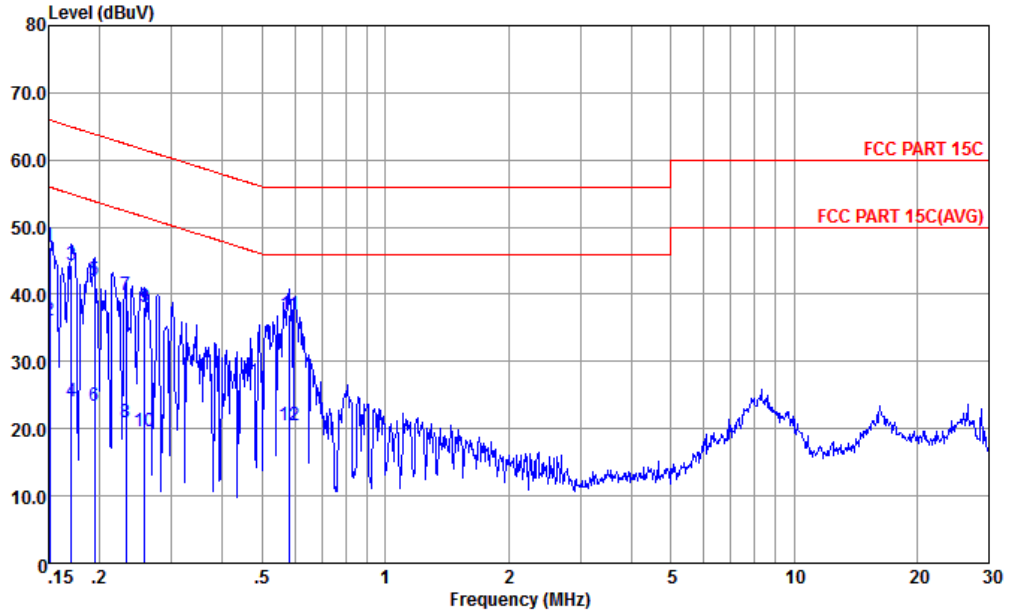
Mod.	Channel	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
SF11	1	902.5Mhz	21.52	0.75	0.95	8.00	Pass
SF11	16	914.5Mhz	21.52	0.56	0.95	8.00	Pass
SF11	31	926.5Mhz	21.55	0.98	0.95	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 20dBc limit.



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Amos Zhang	Temperature :	24.2~25.6°C
		Relative Humidity :	37~39%
Test Voltage :	120Vac / 60Hz	Phase :	Line

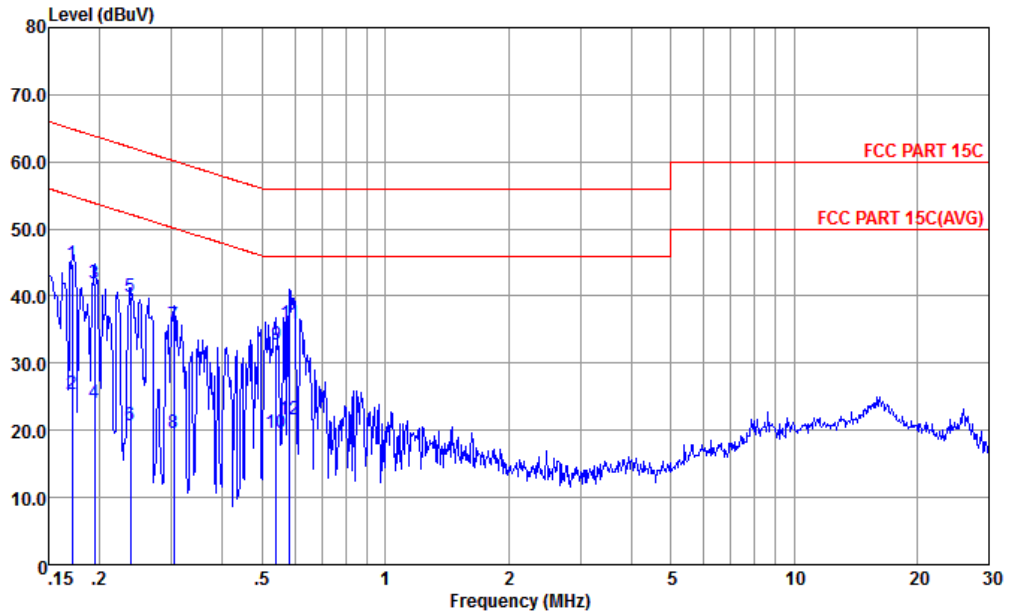


Site : CO01-KS
 Condition : FCC PART 15C LISN-060105-L LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1 *	0.151	47.10	-18.86	65.96	36.60	0.02	10.48	QP
2	0.151	36.10	-19.86	55.96	25.60	0.02	10.48	Average
3	0.170	44.36	-20.58	64.94	33.90	0.03	10.43	QP
4	0.170	23.96	-30.98	54.94	13.50	0.03	10.43	Average
5	0.194	42.21	-21.63	63.84	31.80	0.04	10.37	QP
6	0.194	23.31	-30.53	53.84	12.90	0.04	10.37	Average
7	0.232	39.90	-22.49	62.39	29.51	0.05	10.34	QP
8	0.232	20.90	-31.49	52.39	10.51	0.05	10.34	Average
9	0.258	38.19	-23.32	61.51	27.80	0.06	10.33	QP
10	0.258	19.69	-31.82	51.51	9.30	0.06	10.33	Average
11	0.582	36.94	-19.06	56.00	26.60	0.10	10.24	QP
12	0.582	20.54	-25.46	46.00	10.20	0.10	10.24	Average



Test Engineer :	Amos Zhang	Temperature :	24.2~25.6°C
		Relative Humidity :	37~39%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Site : CO01-KS
 Condition : FCC PART 15C LISN-060105-N NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.171	44.73	-20.17	64.90	34.19	0.11	10.43	QP
2	0.171	25.33	-29.57	54.90	14.79	0.11	10.43	Average
3	0.194	41.98	-21.86	63.84	31.51	0.10	10.37	QP
4	0.194	24.08	-29.76	53.84	13.61	0.10	10.37	Average
5	0.238	39.94	-22.23	62.17	29.50	0.10	10.34	QP
6	0.238	20.74	-31.43	52.17	10.30	0.10	10.34	Average
7	0.303	35.61	-24.54	60.15	25.20	0.10	10.31	QP
8	0.303	19.71	-30.44	50.15	9.30	0.10	10.31	Average
9	0.541	32.85	-23.15	56.00	22.50	0.11	10.24	QP
10	0.541	19.65	-26.35	46.00	9.30	0.11	10.24	Average
11 *	0.582	35.95	-20.05	56.00	25.60	0.11	10.24	QP
12	0.582	21.55	-24.45	46.00	11.20	0.11	10.24	Average

Note:

1. Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
2. Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)



Appendix C. Radiated Spurious Emission

902~928MHz

LORA DTS SF=5 (Band Edge @ 3m)

	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
902.5MHz		903	114.44	-	-	112.26	29.21	4.39	31.42	100	180	P	H
		960.23	36.55	-17.45	54	32.56	30.92	4.53	31.46	100	180	P	H
		902.03	115.58	-	-	113.44	29.17	4.39	31.42	110	54	P	V
		981.57	41.27	-12.73	54	36.72	30.75	4.58	30.78	110	54	P	V
914.5MHz		914.64	114.33	-	-	111.77	29.66	4.42	31.52	120	141	P	H
		960.23	37.96	-16.04	54	33.97	30.92	4.53	31.46	100	360	P	H
		914.64	115.88	-	-	113.32	29.66	4.42	31.52	184	110	P	V
		960.23	38.47	-15.53	54	34.48	30.92	4.53	31.46	300	121	P	V
926.5MHz		926.28	115.66	-	-	112.71	30.11	4.45	31.61	100	180	P	H
		960.23	39.2	-14.8	54	35.21	30.92	4.53	31.46	100	180	P	H
		926.28	114.97	-	-	112.02	30.11	4.45	31.61	120	180	P	V
		960.23	40.07	-13.93	54	36.08	30.92	4.53	31.46	120	180	P	V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. Non-restricted band limit is 100kHz-PSD down 30dB. 												



LORA DTS SF=5 (Harmonic @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		1801	41.71	-42.73	84.44	66.86	30.7	5.72	61.57	300	0	P	H
		2710	41.72	-32.28	74	63.84	32.33	7.07	61.52	300	0	P	H
		1805	43.6	-41.98	85.58	68.75	30.7	5.72	61.57	100	0	P	V
		2710	42.4	-31.6	74	64.52	32.33	7.07	61.52	100	0	P	V
914.5MHz		1828	42.1	-42.23	84.33	67.07	30.77	5.77	61.51	300	0	P	H
		2746	41.29	-32.71	74	63.44	32.3	7.11	61.56	300	0	P	H
		1828	42.05	-43.83	85.88	67.02	30.77	5.77	61.51	100	0	P	V
		2746	41.76	-32.24	74	63.91	32.3	7.11	61.56	100	0	P	V
926.5MHz		1855	40.82	-44.84	85.66	65.7	30.8	5.79	61.47	300	0	P	H
		2782	40.96	-33.04	74	63.17	32.23	7.16	61.6	300	0	P	H
		1855	41.41	-43.56	84.97	66.29	30.8	5.79	61.47	100	0	P	V
		2782	39.41	-34.59	74	61.62	32.23	7.16	61.6	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



LORA DTS SF=7 (Band Edge @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		903	115.82	-	-	113.64	29.21	4.39	31.42	150	160	P	H
		960.23	38.35	-15.65	54	34.36	30.92	4.53	31.46	150	160	P	H
		903	115.83	-	-	113.65	29.21	4.39	31.42	200	180	P	V
		960.23	39.35	-14.65	54	35.36	30.92	4.53	31.46	200	180	P	V
914.5MHz		914.64	115.52	-	-	112.96	29.66	4.42	31.52	100	360	P	H
		960.23	39.18	-14.82	54	35.19	30.92	4.53	31.46	100	360	P	H
		914.64	115.91	-	-	113.35	29.66	4.42	31.52	300	0	P	V
		960.23	42.44	-11.56	54	38.45	30.92	4.53	31.46	300	0	P	V
926.5MHz		926.28	115.68	-	-	112.73	30.11	4.45	31.61	100	180	P	H
		960.23	40.31	-13.69	54	36.32	30.92	4.53	31.46	100	180	P	H
		926.28	116.14	-	-	113.19	30.11	4.45	31.61	150	360	P	V
		985.45	44.03	-9.97	54	39.38	30.72	4.59	30.66	150	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



LORA DTS SF=7 (Harmonic @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		1801	42.93	-42.89	85.82	68.08	30.7	5.72	61.57	300	0	P	H
		2710	41.8	-32.2	74	63.92	32.33	7.07	61.52	300	0	P	H
		1801	43.59	-42.24	85.83	68.74	30.7	5.72	61.57	100	0	P	V
		2710	41.91	-32.09	74	64.03	32.33	7.07	61.52	100	0	P	V
914.5MHz		1828	41.73	-43.79	85.52	66.7	30.77	5.77	61.51	300	0	P	H
		2746	40.8	-33.2	74	62.95	32.3	7.11	61.56	300	0	P	H
		1828	43.22	-42.69	85.91	68.19	30.77	5.77	61.51	100	0	P	V
		2746	42.5	-31.5	74	64.65	32.3	7.11	61.56	100	0	P	V
926.5MHz		1855	42.16	-43.52	85.68	67.04	30.8	5.79	61.47	300	0	P	H
		2782	39.64	-34.36	74	61.85	32.23	7.16	61.6	300	0	P	H
		1855	41.76	-44.38	86.14	66.64	30.8	5.79	61.47	100	0	P	V
		2782	39.94	-34.06	74	62.15	32.23	7.16	61.6	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



LORA DTS SF=8 (Band Edge @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		902.03	115.6	-	-	113.46	29.17	4.39	31.42	121	10	P	H
		960.23	38.97	-15.03	54	34.98	30.92	4.53	31.46	121	10	P	H
		902.03	115.74	-	-	113.6	29.17	4.39	31.42	120	180	P	V
		960.23	40.85	-13.15	54	36.86	30.92	4.53	31.46	120	180	P	V
914.5MHz		914.64	115.42	-	-	112.86	29.66	4.42	31.52	100	360	P	H
		979.63	40.57	-13.43	54	36.09	30.76	4.57	30.85	100	360	P	H
		914.64	109.59	-	-	107.03	29.66	4.42	31.52	200	0	P	V
		972.84	40.09	-13.91	54	35.77	30.82	4.56	31.06	200	0	P	V
926.5MHz		926.28	115.55	-	-	112.6	30.11	4.45	31.61	100	180	P	H
		986.42	40.52	-13.48	54	35.85	30.71	4.59	30.63	100	180	P	H
		926.28	116.05	-	-	113.1	30.11	4.45	31.61	150	180	P	V
		968.96	43.71	-10.29	54	39.49	30.85	4.55	31.18	150	180	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



LORA DTS SF=8 (Harmonic @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		1801	42.09	-43.51	85.6	67.24	30.7	5.72	61.57	300	0	P	H
		2710	41.38	-32.62	74	63.5	32.33	7.07	61.52	300	0	P	H
		1801	43.58	-42.16	85.74	68.73	30.7	5.72	61.57	100	0	P	V
		2710	42.27	-31.73	74	64.39	32.33	7.07	61.52	100	0	P	V
914.5MHz		1829	41.44	-43.98	85.42	66.41	30.77	5.77	61.51	300	0	P	H
		2746	41.78	-32.22	74	63.93	32.3	7.11	61.56	300	0	P	H
		1828	41.4	-38.19	79.59	66.37	30.77	5.77	61.51	100	0	P	V
		2746	42.83	-31.17	74	64.98	32.3	7.11	61.56	100	0	P	V
926.5MHz		1855	41.19	-44.36	85.55	66.07	30.8	5.79	61.47	300	0	P	H
		2779.5	39.87	-34.13	74	62.08	32.23	7.16	61.6	300	0	P	H
		1853	40.47	-45.58	86.05	65.35	30.8	5.79	61.47	100	0	P	V
		2782	39.58	-34.42	74	61.79	32.23	7.16	61.6	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



LORA DTS SF=9 (Band Edge @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		902.03	115.41	-	-	113.27	29.17	4.39	31.42	100	360	P	H
		960.23	37.98	-16.02	54	33.99	30.92	4.53	31.46	100	360	P	H
		903	115.21	-	-	113.03	29.21	4.39	31.42	300	0	P	V
		960.23	40.42	-13.58	54	36.43	30.92	4.53	31.46	300	0	P	V
914.5MHz		914.64	115.56	-	-	113	29.66	4.42	31.52	100	120	P	H
		984.48	39.86	-14.14	54	35.24	30.72	4.59	30.69	100	120	P	H
		914.64	115.51	-	-	112.95	29.66	4.42	31.52	180	200	P	V
		984.48	43.32	-10.68	54	38.7	30.72	4.59	30.69	180	200	P	V
926.5MHz		926.28	115.14	-	-	112.19	30.11	4.45	31.61	100	0	P	H
		960.23	39.18	-14.82	54	35.19	30.92	4.53	31.46	100	0	P	H
		926.28	115.96	-	-	113.01	30.11	4.45	31.61	100	260	P	V
		960.23	40.18	-13.82	54	36.19	30.92	4.53	31.46	100	260	P	V
Remark	<ol style="list-style-type: none"> 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB. 												



LORA DTS SF=9 (Harmonic @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		1801	41.43	-43.98	85.41	66.58	30.7	5.72	61.57	300	0	P	H
		2710	42	-32	74	64.12	32.33	7.07	61.52	300	0	P	H
		1801	41.85	-43.36	85.21	67	30.7	5.72	61.57	100	0	P	V
		2710	41.96	-32.04	74	64.08	32.33	7.07	61.52	100	0	P	V
914.5MHz		1828	42.08	-43.48	85.56	67.05	30.77	5.77	61.51	300	0	P	H
		2746	42.03	-31.97	74	64.18	32.3	7.11	61.56	300	0	P	H
		1828	41.15	-44.36	85.51	66.12	30.77	5.77	61.51	100	0	P	V
		2746	41.71	-32.29	74	63.86	32.3	7.11	61.56	100	0	P	V
926.5MHz		1855	41.44	-43.7	85.14	66.32	30.8	5.79	61.47	300	0	P	H
		2782	40.06	-33.94	74	62.27	32.23	7.16	61.6	300	0	P	H
		1855	39.94	-46.02	85.96	64.82	30.8	5.79	61.47	100	0	P	V
		2782	40.18	-33.82	74	62.39	32.23	7.16	61.6	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



LORA DTS SF=10 (Band Edge @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		903	115.8	-	-	113.62	29.21	4.39	31.42	100	155	P	H
		960.23	39.69	-14.31	54	35.7	30.92	4.53	31.46	100	155	P	H
		903	115.16	-	-	112.98	29.21	4.39	31.42	100	180	P	V
		970.9	42.35	-11.65	54	38.08	30.83	4.56	31.12	100	180	P	V
914.5MHz		914.64	115.6	-	-	113.04	29.66	4.42	31.52	300	120	P	H
		960.23	40.38	-13.62	54	36.39	30.92	4.53	31.46	300	120	P	H
		914.64	115.62	-	-	113.06	29.66	4.42	31.52	150	0	P	V
		960.23	39.89	-14.11	54	35.9	30.92	4.53	31.46	150	0	P	V
926.5MHz		926.28	115.37	-	-	112.42	30.11	4.45	31.61	100	0	P	H
		960.23	39.67	-14.33	54	35.68	30.92	4.53	31.46	100	0	P	H
		926.28	115.86	-	-	112.91	30.11	4.45	31.61	100	0	P	V
		960.23	42.42	-11.58	54	38.43	30.92	4.53	31.46	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



LORA DTS SF=10 (Harmonic @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		1801	41.45	-44.35	85.8	66.6	30.7	5.72	61.57	300	0	P	H
		2710	42.67	-31.33	74	64.79	32.33	7.07	61.52	300	0	P	H
		1801	40.99	-44.17	85.16	66.14	30.7	5.72	61.57	100	0	P	V
		2710	43.02	-30.98	74	65.14	32.33	7.07	61.52	100	0	P	V
914.5MHz		1828	41.75	-43.85	85.6	66.72	30.77	5.77	61.51	300	0	P	H
		2746	41.36	-32.64	74	63.51	32.3	7.11	61.56	300	0	P	H
		1828	41.02	-44.59	85.61	65.99	30.77	5.77	61.51	100	0	P	V
		2746	41.53	-32.47	74	63.68	32.3	7.11	61.56	100	0	P	V
926.5MHz		1855	42.4	-42.97	85.37	67.28	30.8	5.79	61.47	300	0	P	H
		2779.5	40.37	-33.63	74	62.58	32.23	7.16	61.6	300	0	P	H
		1853	41.42	-43.94	85.36	66.3	30.8	5.79	61.47	100	0	P	V
		2782	39.63	-34.37	74	61.84	32.23	7.16	61.6	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



LORA DTS SF=11 (Band Edge @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		903	115.64	-	-	113.46	29.21	4.39	31.42	120	140	P	H
		975.75	39.58	-14.42	54	35.19	30.79	4.57	30.97	120	140	P	H
		902.03	115.59	-	-	113.45	29.17	4.39	31.42	100	18	P	V
		990.3	41.65	-12.35	54	36.88	30.68	4.6	30.51	100	18	P	V
914.5MHz		914.64	115.03	-	-	112.47	29.66	4.42	31.52	300	0	P	H
		984.48	40.73	-13.27	54	36.11	30.72	4.59	30.69	300	0	P	H
		914.64	115.45	-	-	112.89	29.66	4.42	31.52	150	180	P	V
		977.69	43.05	-10.95	54	38.61	30.78	4.57	30.91	150	180	P	V
926.5MHz		926.28	114.57	-	-	111.62	30.11	4.45	31.61	100	360	P	H
		979.63	40.42	-13.58	54	35.94	30.76	4.57	30.85	100	360	P	H
		926.28	115.6	-	-	112.65	30.11	4.45	31.61	300	0	P	V
		979.63	42.93	-11.07	54	38.45	30.76	4.57	30.85	300	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



LORA DTS SF=11 (Harmonic @ 3m)

	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
902.5MHz		1801	42.03	-43.61	85.64	67.18	30.7	5.72	61.57	300	0	P	H
		2710	42.39	-31.61	74	64.51	32.33	7.07	61.52	300	0	P	H
		1801	42.04	-43.55	85.59	67.19	30.7	5.72	61.57	100	0	P	V
		2710	42.07	-31.93	74	64.19	32.33	7.07	61.52	100	0	P	V
914.5MHz		1828	41.31	-43.72	85.03	66.28	30.77	5.77	61.51	300	0	P	H
		2746	41.33	-32.67	74	63.48	32.3	7.11	61.56	300	0	P	H
		1828	41.38	-44.07	85.45	66.35	30.77	5.77	61.51	100	0	P	V
		2746	42.26	-31.74	74	64.41	32.3	7.11	61.56	100	0	P	V
926.5MHz		1855	42.18	-42.39	84.57	67.06	30.8	5.79	61.47	300	0	P	H
		2782	39.41	-34.59	74	61.62	32.23	7.16	61.6	300	0	P	H
		1855	41.78	-43.82	85.6	66.66	30.8	5.79	61.47	100	0	P	V
		2782	39.81	-34.19	74	62.02	32.23	7.16	61.6	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. Non-restricted band limit is 100kHz-PSD down 30dB.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical



A calculation example for radiated spurious emission is shown as below:

BLE	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BLE CH 00 2402MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =
Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
= 55.45 (dBμV/m)
2. Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 55.45(dBμV/m) – 74(dBμV/m)
= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
= 43.54 (dBμV/m)
2. Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 43.54(dBμV/m) – 54(dBμV/m)
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.