Partial FCC RF Test Report

APPLICANT	:	Persimmon Kaki LLC
EQUIPMENT	:	Digital Media Receiver
MODEL NAME	:	G6A87E
FCC ID	:	2A8UX-2892
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DSS) Spread Spectrum Transmitter
TEST DATE(S)	:	Feb. 16, 2023 ~ Jul. 24, 2023

We, Sporton International Inc. (ShenZhen), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (ShenZhen), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.01

Sporton International Inc. (ShenZhen)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR2N0202-01G	Rev. 01	Initial issue of report	Jul. 27, 2023

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
-	15.247(a)(1)(i)	Number of Channels	15.247(a)(1)(i)	Not Performed	1
-	15.247(a)(1)	Hopping Channel Separation	20dB Bandwidth	Not Performed	1
-	15.247(a)(1)(i)	Dwell Time of Each Channel	15.247(a)(1)(i)	Not Performed	1
3.1	15.247(a)(1)(i)	20dB Bandwidth	≤ 500 kHz	Pass	-
3.1	-	99% Bandwidth	-	Report Only	-
3.2	15.247(b)(2)	Peak Output Power	15.247(b)(2)	Pass	-
3.3	15.247(d)	Conducted Band Edges	≤ 20dBc	Pass	-
-	15.247(d)	Conducted Hopping Mode Band Edges	≤ 20dBc	Not Performed	1
3.4	15.247(d)	Conducted Spurious Emission	≤ 20dBc	Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 12.47 dB at 240.49 MHz
3.9	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 12.76 dB at 0.596 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

Remark 1: For hopping test items, test report will be issued separately.

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

Persimmon Kaki LLC
6975 Union Park Avenue, Suite 600, Cottonwood Heights, Utah 84047

1.2 Product Feature of Equipment Under Test

Product Feature	
Equipment	Digital Media Receiver
Model Name	G6A87E
FCC ID	2A8UX-2892
SN	Conducted: P0B33R01302503S3 Conduction: G0B2JK013055002A Radiation: G0B2JK0130550029

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.3 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	902 MHz ~ 928 MHz
Number of Channels / Data Rate	129 chs for 50kbps 64 chs for 150kbps 51 chs for 250kbps
Maximum Output Power to Antenna	Data Rate 50kbps : 23.24 dBm (0.2109 W) Data Rate 150kbps : 23.28 dBm (0.2128 W) Data Rate 250kbps : 24.03 dBm (0.2529 W)
99% Occupied Bandwidth	Data Rate 50kbps : 0.086 MHz Data Rate 150kbps : 0.156 MHz Data Rate 250kbps : 0.260 MHz
Antenna Type / Gain	FPC IFA Antenna with gain 4.0 dBi
Type of Modulation	FSK

1.4 Modification of EUT

No modifications are made to the EUT during all test items.

1.5 Testing Location

Sporton International Inc. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	TH01-SZ	CN1256	421272

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	CO02-SZ; 03CH02-SZ	CN1256	421272

1.6 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH02-SZ	AUDIX	E3	6.2009-8-24a
2.	CO02-SZ	AUDIX	E3	6.2009-8-24al

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 15 Subpart C §15.247
- FCC KDB 558074 D01 15.247 Meas Guidance v05r02
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
902-928 MHz (50Kbps)	1	902.2	44	910.8	87	919.4
	2	902.4	45	911	88	919.6
	3	902.6	46	911.2	89	919.8
	4	902.8	47	911.4	90	920
	5	903	48	911.6	91	920.2
	6	903.2	49	911.8	92	920.4
	7	903.4	50	912	93	920.6
	8	903.6	51	912.2	94	920.8
	9	903.8	52	912.4	95	921
	10	904	53	912.6	96	921.2
	11	904.2	54	912.8	97	921.4
	12	904.4	55	913	98	921.6
	13	904.6	56	913.2	99	921.8
	14	904.8	57	913.4	100	922
	15	905	58	913.6	101	922.2
	16	905.2	59	913.8	102	922.4
	17	905.4	60	914	103	922.6
	18	905.6	61	914.2	104	922.8
	19	905.8	62	914.4	105	923
	20	906	63	914.6	106	923.2
	21	906.2	64	914.8	107	923.4
	22	906.4	65	915	108	923.6
	23	906.6	66	915.2	109	923.8
	24	906.8	67	915.4	110	924
	25	907	68	915.6	111	924.2
	26	907.2	69	915.8	112	924.4
	27	907.4	70	916	113	924.6
	28	907.6	71	916.2	114	924.8
	29	907.8	72	916.4	115	925
	30	908	73	916.6	116	925.2
	31	908.2	74	916.8	117	925.4
	32	908.4	75	917	118	925.6
	33	908.6	76	917.2	119	925.8
	34	908.8	77	917.4	120	926
	35	909	78	917.6	121	926.2
	36	909.2	79	917.8	122	926.4
	37	909.4	80	918	123	926.6
	38	909.6	81	918.2	124	926.8
	39	909.8	82	918.4	125	927
	40	910	83	918.6	126	927.2
	41	910.2	84	918.8	127	927.4
	42	910.4	85	919	128	927.6
	43	910.6	86	919.2	129	927.8

Note: The above EUT's information was declared by manufacturer.

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
902-928 MHz (150Kbps)	1	902.4	23	911.2	45	920
	2	902.8	24	911.6	46	920.4
	3	903.2	25	912	47	920.8
	4	903.6	26	912.4	48	921.2
	5	904	27	912.8	49	921.6
	6	904.4	28	913.2	50	922
	7	904.8	29	913.6	51	922.4
	8	905.2	30	914	52	922.8
	9	905.6	31	914.4	53	923.2
	10	906	32	914.8	54	923.6
	11	906.4	33	915.2	55	924
	12	906.8	34	915.6	56	924.4
	13	907.2	35	916	57	924.8
	14	907.6	36	916.4	58	925.2
	15	908	37	916.8	59	925.6
	16	908.4	38	917.2	60	926
	17	908.8	39	917.6	61	926.4
	18	909.2	40	918	62	926.8
	19	909.6	41	918.4	63	927.2
	20	910	42	918.8	64	927.6
	21	910.4	43	919.2		
	22	910.8	44	919.6		

Note: The above EUT's information was declared by manufacturer.

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
902-928 MHz (250Kbps)	1	902.5	18	911.0	35	919.5
	2	903.0	19	911.5	36	920.0
	3	903.5	20	912.0	37	920.5
	4	904.0	21	912.5	38	921.0
	5	904.5	22	913.0	39	921.5
	6	905.0	23	913.5	40	922.0
	7	905.5	24	914.0	41	922.5
	8	906.0	25	914.5	42	923.0
	9	906.5	26	915.0	43	923.5
	10	907.0	27	915.5	44	924.0
	11	907.5	28	916.0	45	924.5
	12	908.0	29	916.5	46	925.0
	13	908.5	30	917.0	47	925.5
	14	909.0	31	917.5	48	926.0
	15	909.5	32	918.0	49	926.5
	16	910.0	33	918.5	50	927.0
	17	910.5	34	919.0	51	927.5

Note: The above EUT's information was declared by manufacturer.

2.2 Test Mode

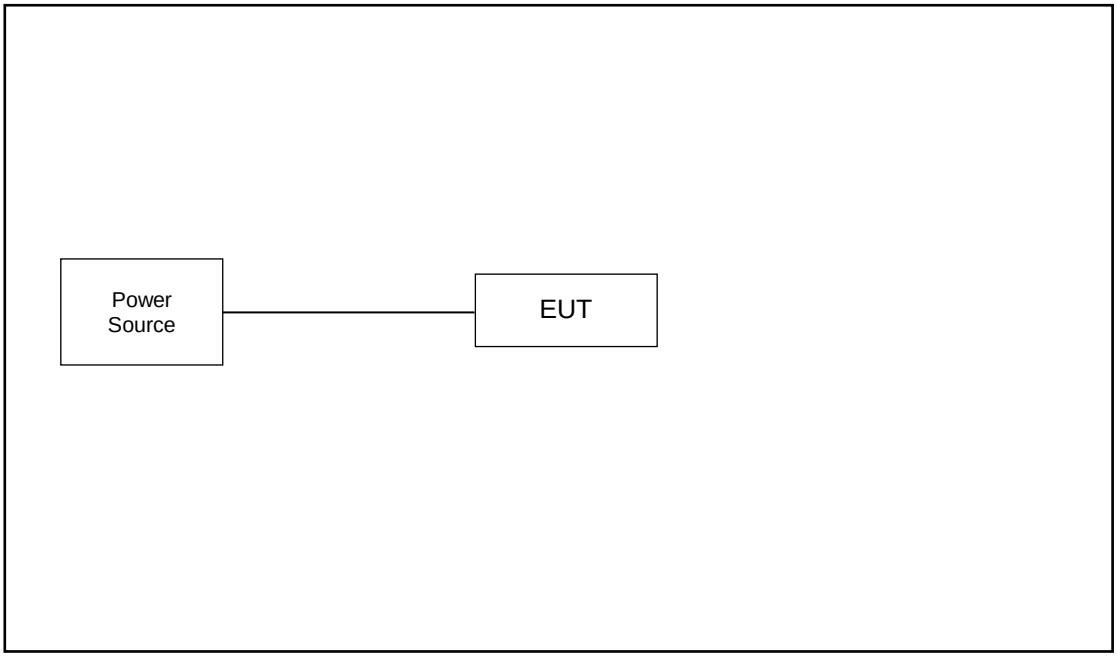
a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower) For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report,

b. AC power line Conducted Emission was tested under maximum output power.

The following summary table is showing all test modes to demonstrate in compliance with the standard.

Summary table of Test Cases			
Test Item	**Modulation / Data Rate**		
	FSK FHSS / 50kbps	**FSK FHSS / 150kbps**	**FSK FHSS / 250kbps**
Conducted Test Cases	Low: 902.2 MHz Miid: 915 MHz High: 927.8 MHz	Low: 902.4 MHz Mid: 915.2 MHz High: 927.6 MHz	Low: 902.5 MHz Mid: 915 MHz High: 927.5 MHz
Radiated Test Cases	Low: 902.2 MHz Miid: 915 MHz High: 927.8 MHz	Low: 902.4 MHz Mid: 915.2 MHz High: 927.6 MHz	Low: 902.5 MHz Mid: 915 MHz High: 927.5 MHz
AC Conducted Emission	Mode 1: Lora Tx + Bluetooth Tx + WLAN(2.4G) Tx + Zigbee Tx + USB Cable(Charging form Adapter)		

2.3 Connection Diagram of Test System



2.4 EUT Operation Test Setup

For FSK FHSS function, the engineering test program was provided and enabled to make EUT continuous transmit.

2.5 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 0.1 dB and 20dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 0.1 + 20 = 20.1 (dB)

3 Test Result

3.1 20dB and 99% Bandwidth Measurement

3.1.1 Limit of 20dB and 99% Bandwidth

The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

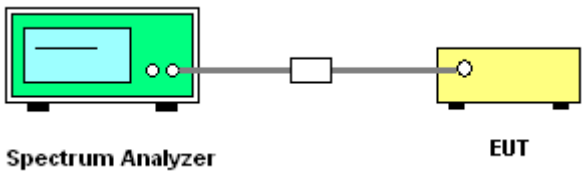
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 6.9.2 and 6.9.3.
1. 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.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement.
   Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hopping channel;
   RBW ≥ 1% of the 20 dB bandwidth; VBW ≥ RBW; Sweep = auto; Detector function = peak;
   Trace = max hold.
4. Use the following spectrum analyzer settings for 99 % Bandwidth measurement.
   Span = approximately 1.5 to 5 times the 99% bandwidth, centered on a hopping channel;
   RBW ≥ 1% of the 99% bandwidth; VBW ≥ RBW; Sweep = auto; Detector function = sample;
   Trace = max hold.
5. Measure and record the results in the test report.

3.1.4 Test Setup

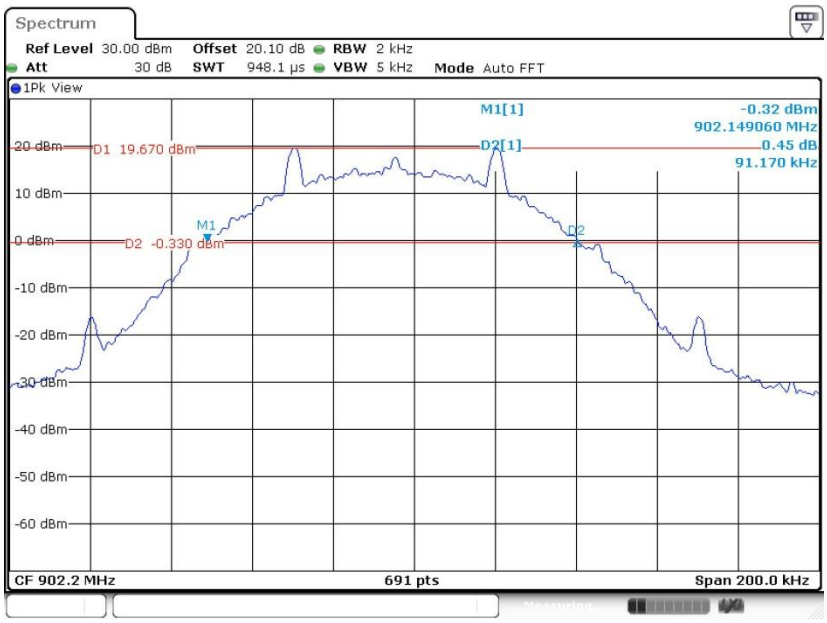


3.1.5 Test Result of 20dB Bandwidth

Please refer to Appendix A.

<Data Rate 50kbps>

20 dB Bandwidth Plot on Low Channel

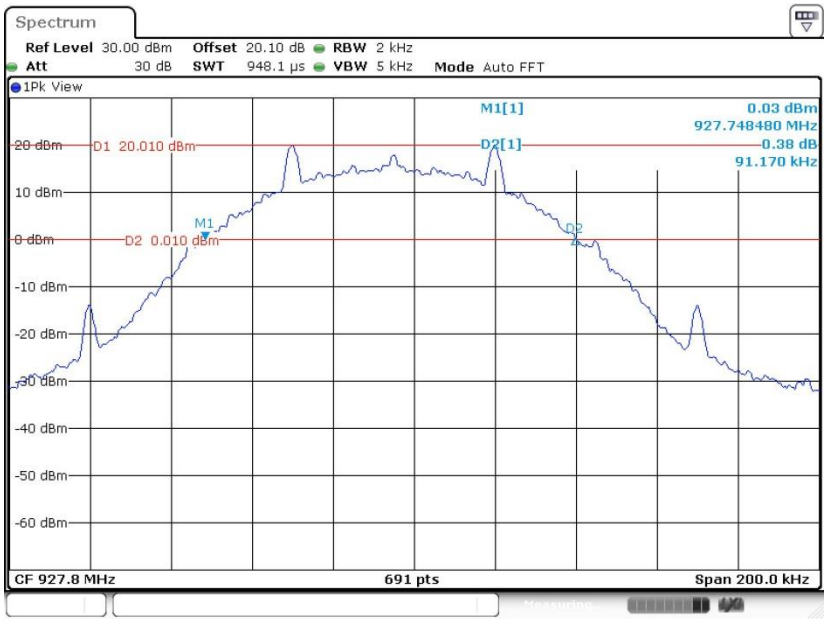


Date: 22.FEB.2023 22:07:41

20 dB Bandwidth Plot on Mid Channel

Date: 23.FEB.2023 21:54:26

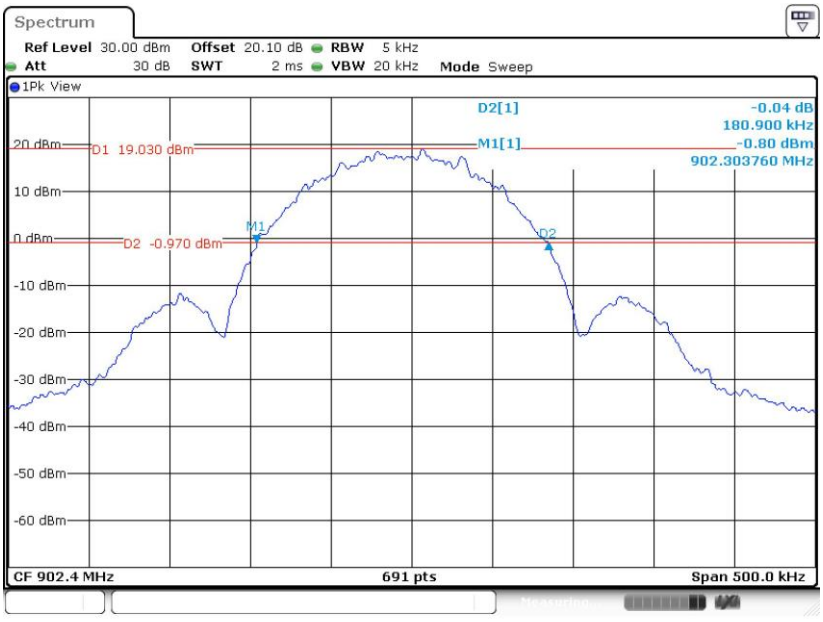
20 dB Bandwidth Plot on High Channel



Date: 23.FEB.2023 22:00:31

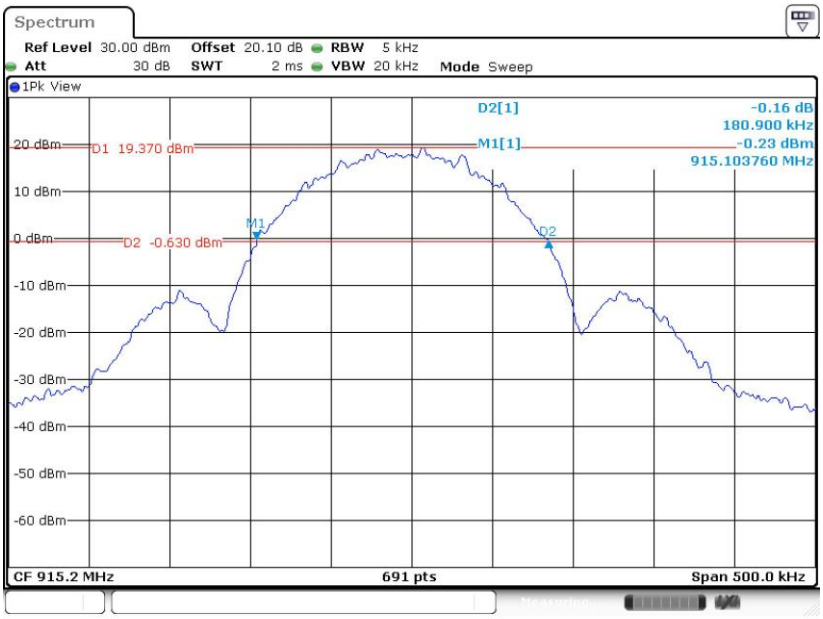
<Data Rate 150kbps>

20 dB Bandwidth Plot on Low Channel

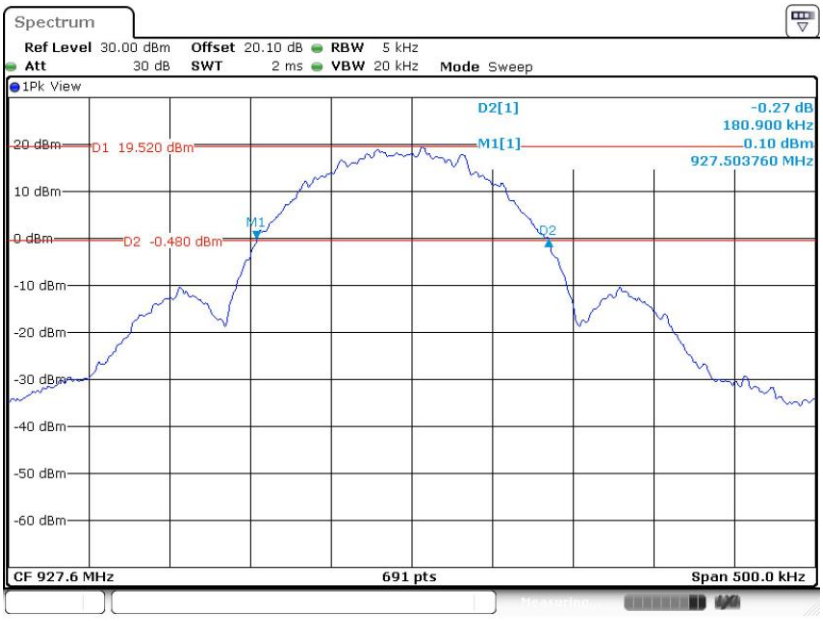


Date: 16.MAY.2023 20:38:35

20 dB Bandwidth Plot on Mid Channel

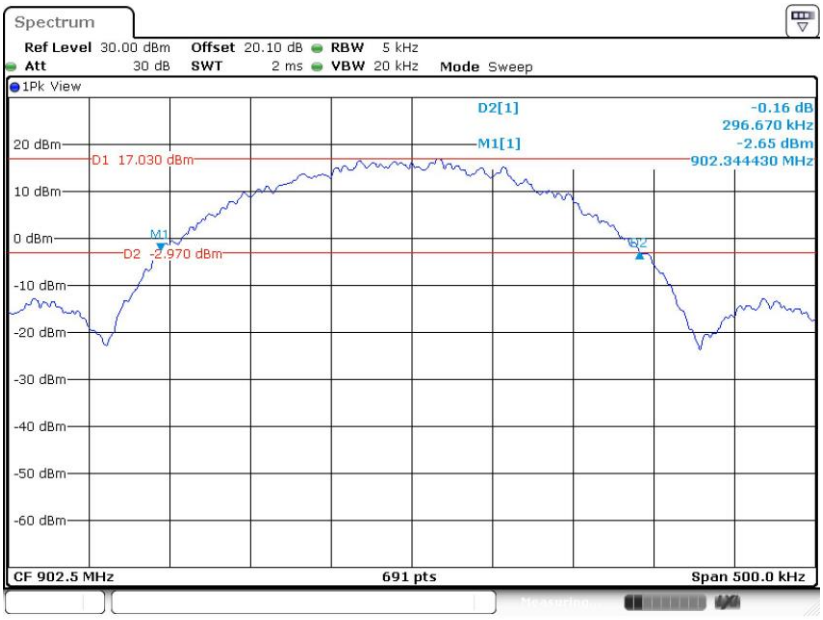


20 dB Bandwidth Plot on High Channel



<Data Rate 250kbps>

20 dB Bandwidth Plot on Low Channel



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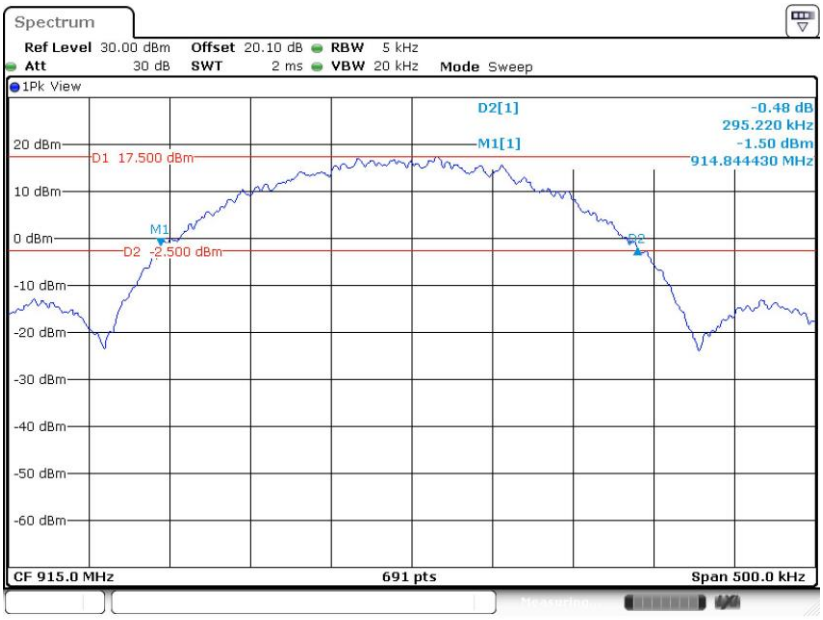
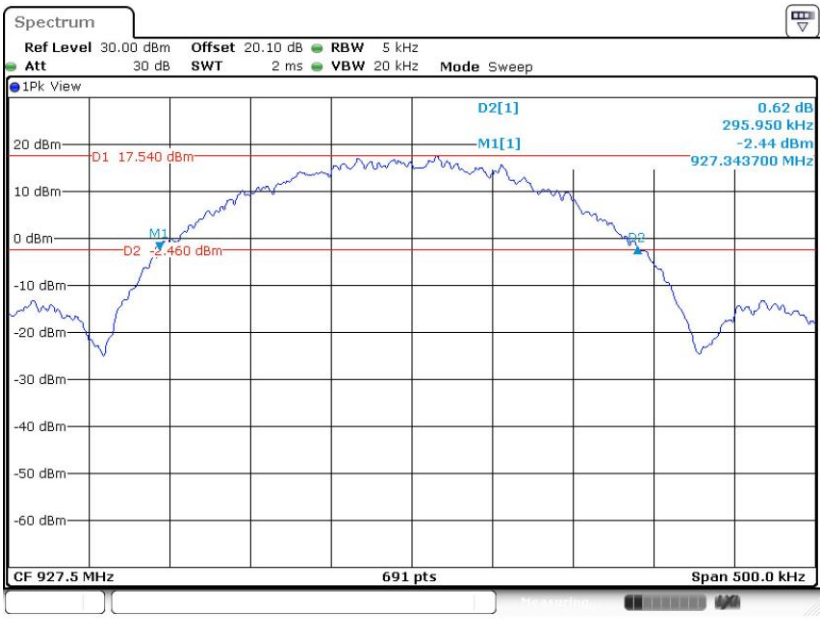
20 dB Bandwidth Plot on Mid Channel



Date: 16.MAY.2023 20:51:21

20 dB Bandwidth Plot on High Channel



3.1.6 Test Result of 99% Occupied Bandwidth

Please refer to Appendix A.

<Data Rate 50kbps>

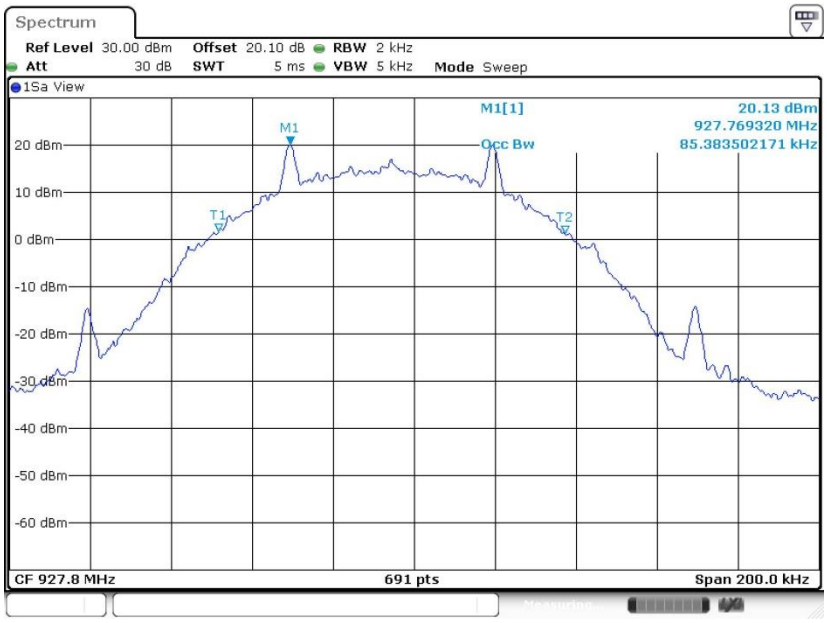
99% Occupied Bandwidth Plot on Low Channel

Date: 23.FEB.2023 21:40:12

99% Occupied Bandwidth Plot on Mid Channel

Date: 23.FEB.2023 21:55:52

99% Occupied Bandwidth Plot on High Channel



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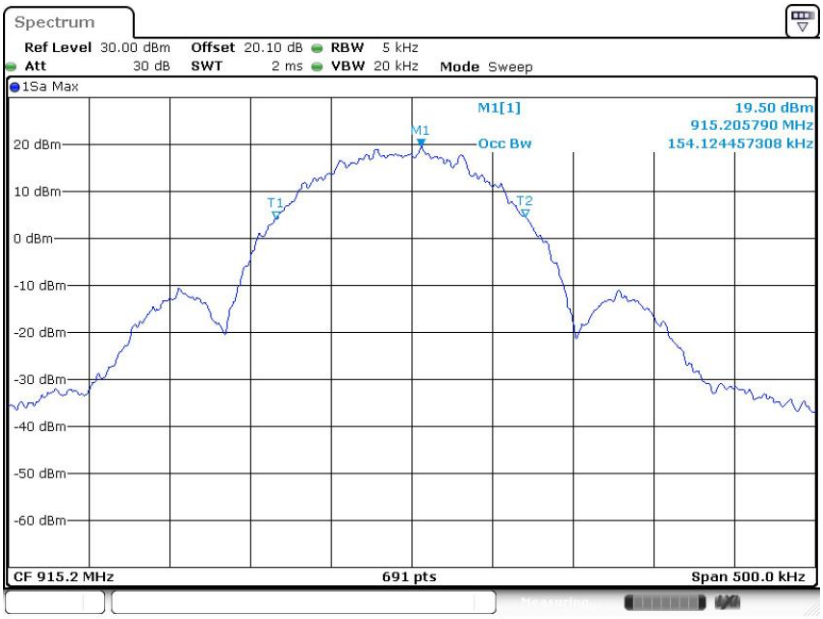
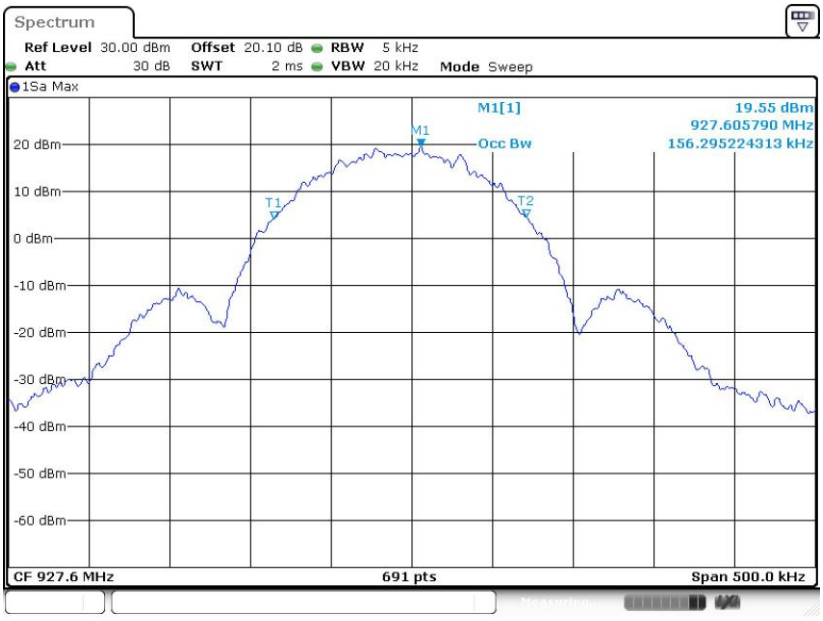
99% Occupied Bandwidth Plot on Low Channel

99% Occupied Bandwidth Plot on Mid Channel



99% Occupied Bandwidth Plot on High Channel



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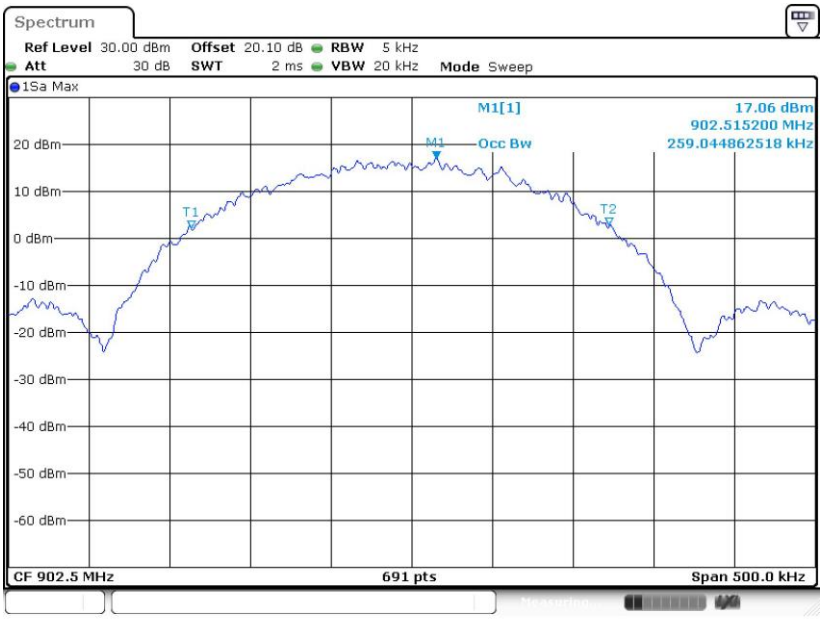
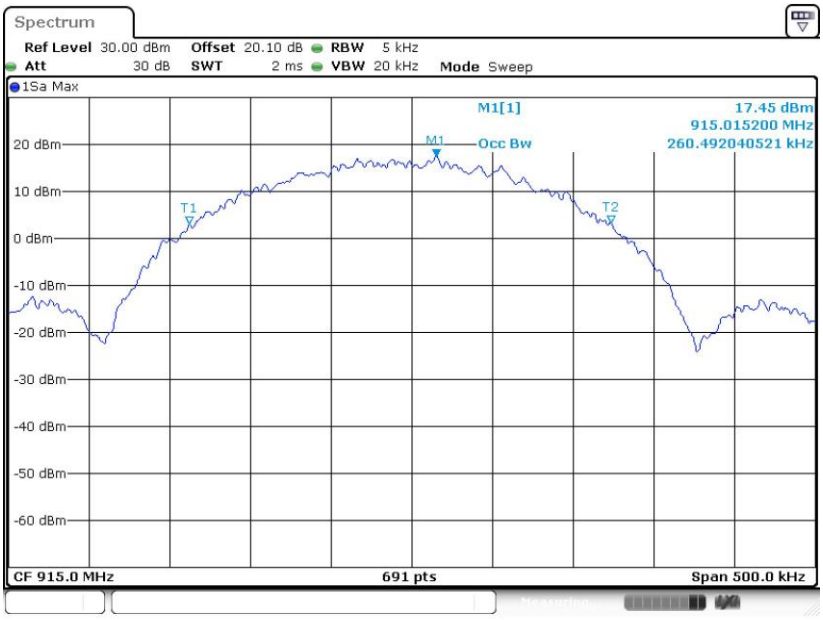
99% Occupied Bandwidth Plot on Low Channel



Date: 16.MAY.2023 20:03:50

99% Occupied Bandwidth Plot on Mid Channel



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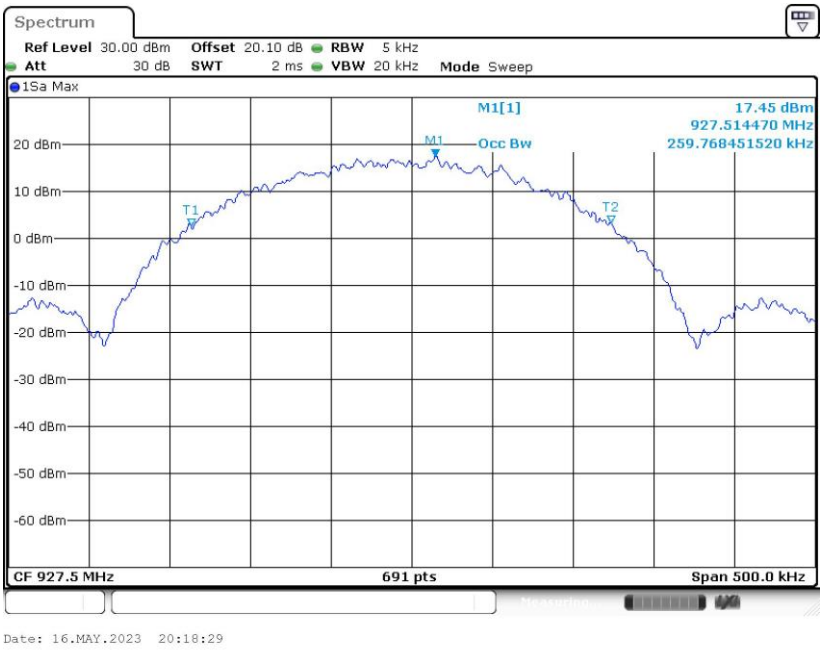
99% Occupied Bandwidth Plot on High Channel



Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

The maximum peak conducted output power of the intentional radiator shall not exceed the following: For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

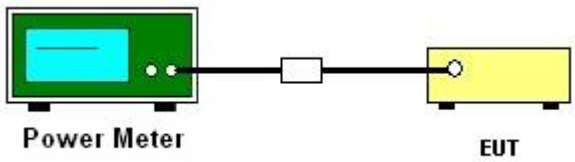
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 7.8.5.
2. The RF output of EUT was connected to the power meter 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. Measure the conducted output power with cable loss and record the results in the test report.
5. Measure and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.3 Conducted Band Edges Measurement

3.3.1 Limit of Band Edges

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

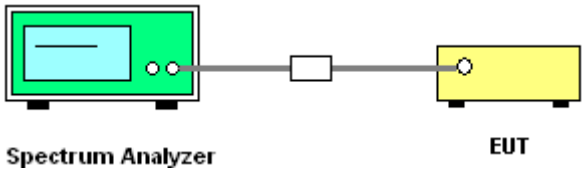
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 7.8.6.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Set RBW = 100kHz, VBW = 300kHz. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100kHz RBW. The attenuation shall be 30 dB instead of 20 dB when RMS conducted output power procedure is used.
4. Enable hopping function of the EUT and then repeat step 2. and 3.
5. Measure and record the results in the test report.

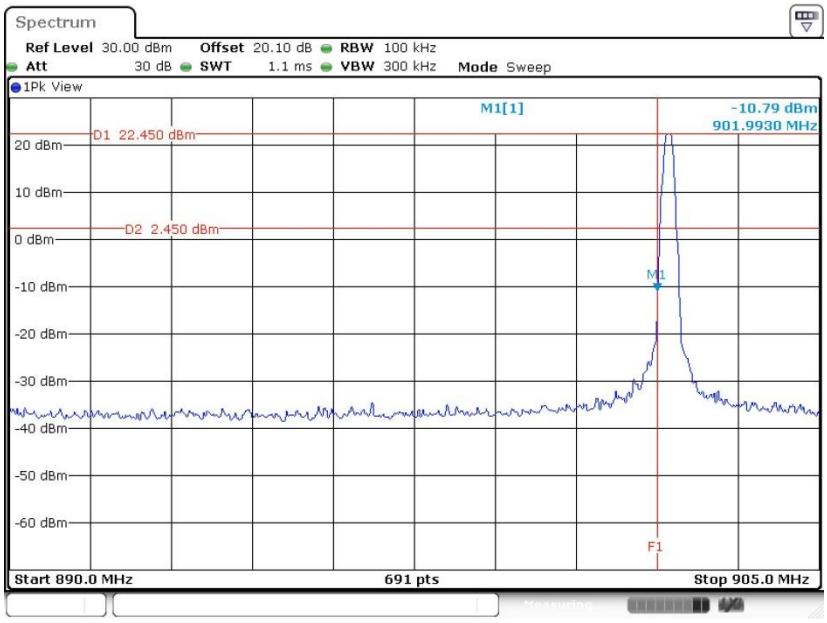
3.3.4 Test Setup



3.3.5 Test Result of Conducted Band Edges

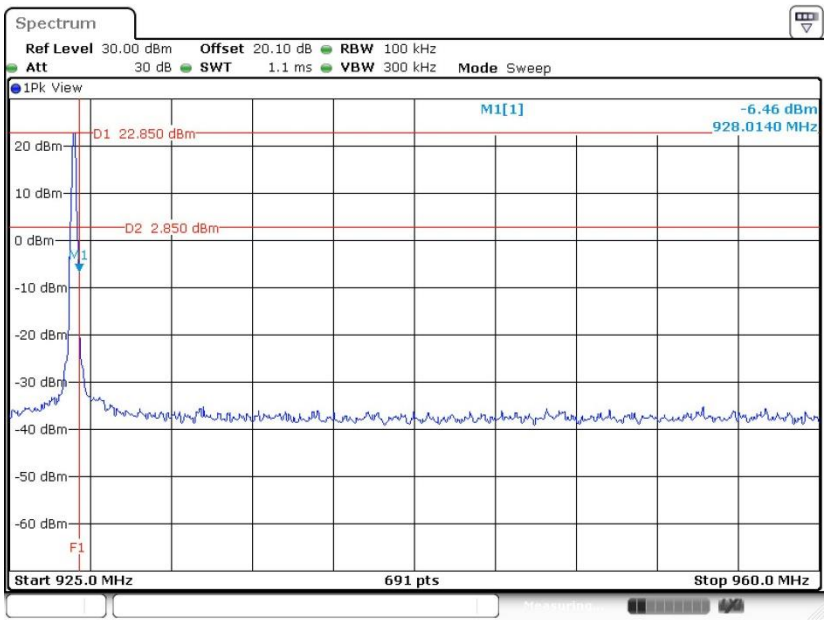
<Data Rate 50kbps>

Low Band Edge Plot



Date: 23.FEB.2023 21:38:44

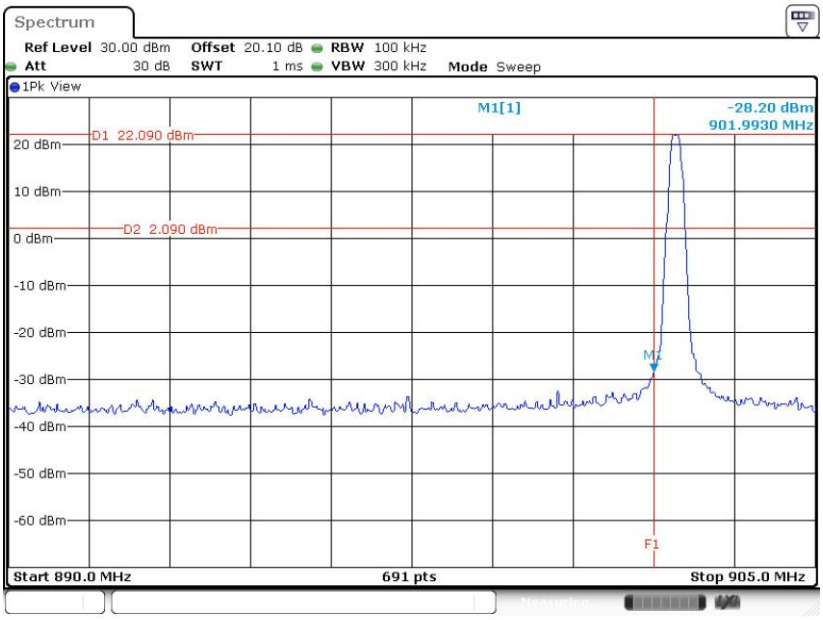
High Band Edge Plot



Date: 23.FEB.2023 22:02:41

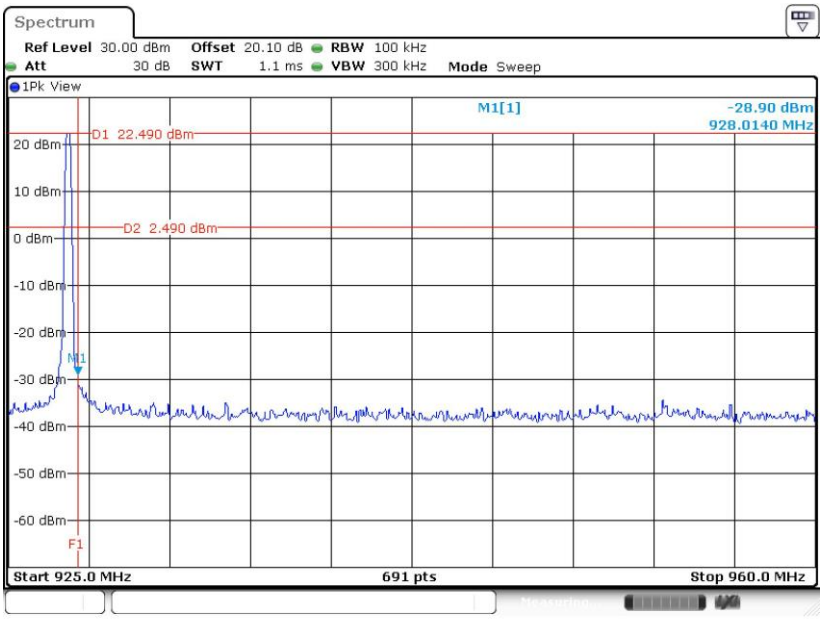
<Data Rate 150kbps>

Low Band Edge Plot



Date: 16.MAY.2023 19:19:06

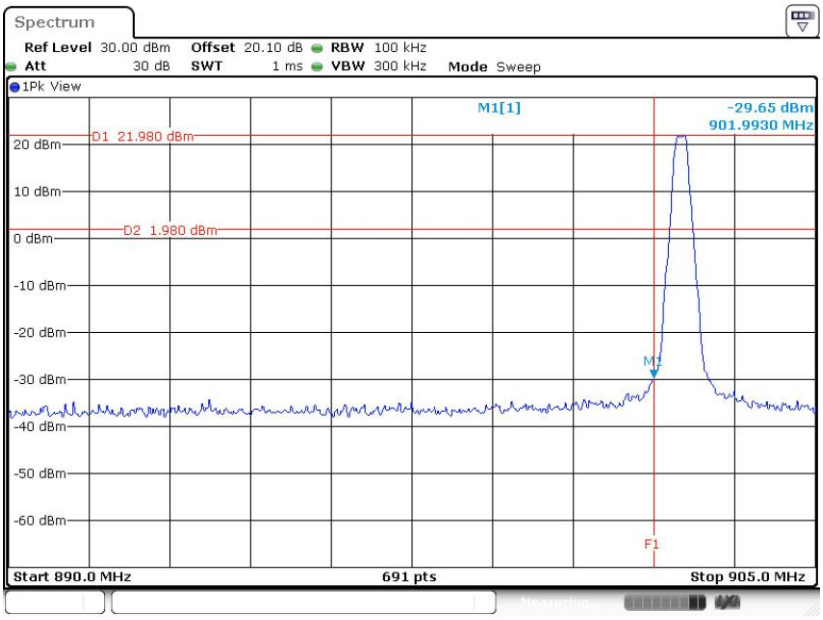
High Band Edge Plot



Date: 16.MAY.2023 19:47:00

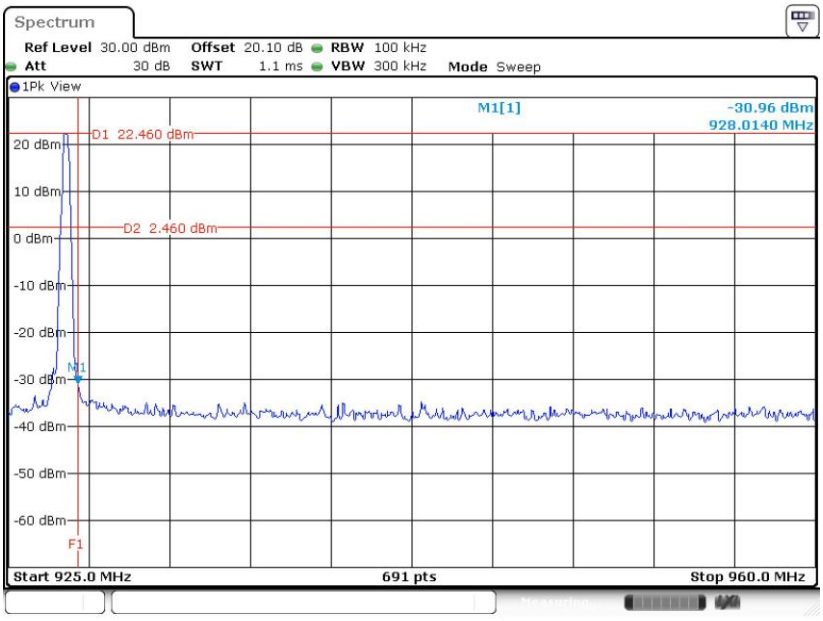
<Data Rate 250kbps>

Low Band Edge Plot



Date: 16.MAY.2023 20:02:33

High Band Edge Plot



Date: 16.MAY.2023 20:17:12

3.4 Conducted Spurious Emission Measurement

3.4.1 Limit of Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

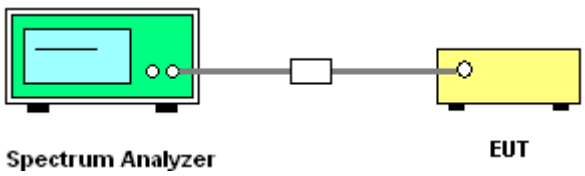
3.4.2 Measuring Instruments

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

3.4.3 Test Procedure

1. The testing follows ANSI C63.10-2013 clause 7.8.8.
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 = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.
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.

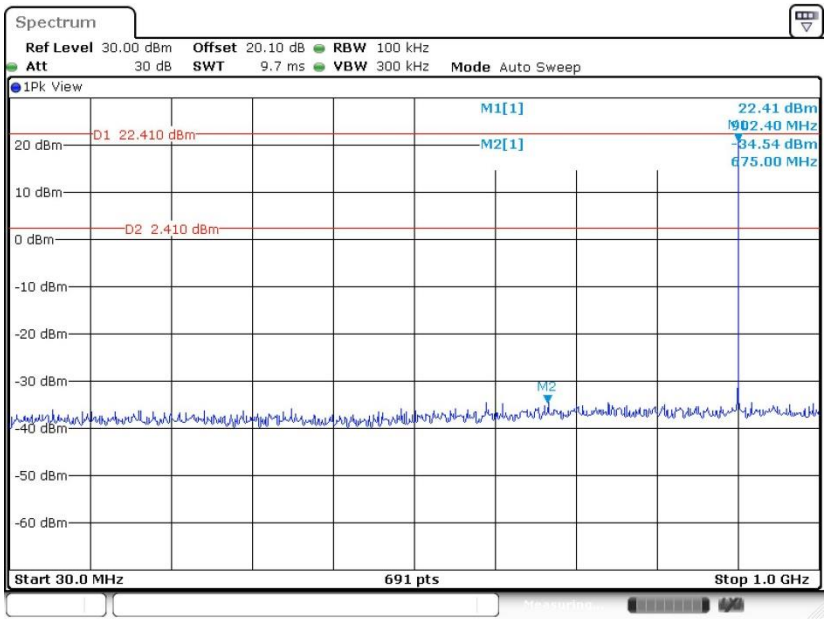
3.4.4 Test Setup



3.4.5 Test Result of Conducted Spurious Emission

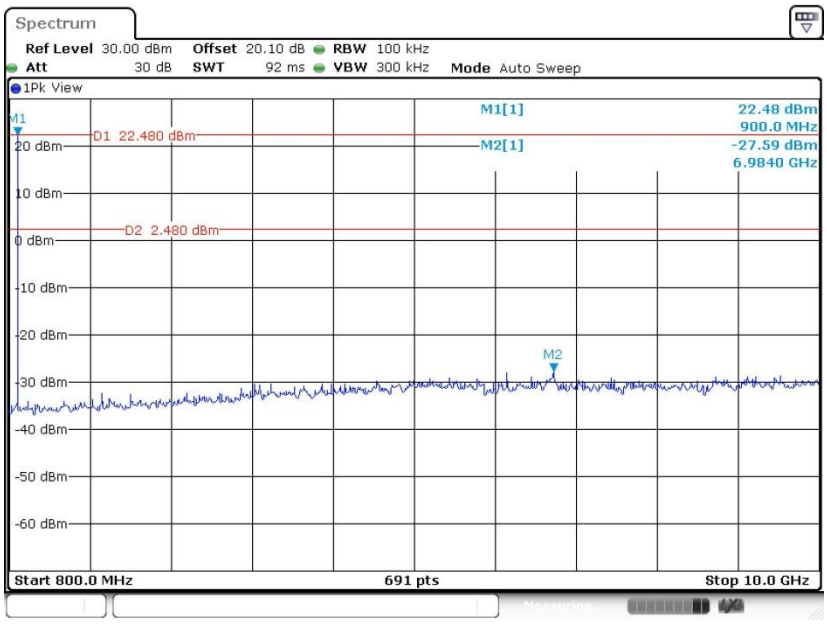
<Data Rate 50kbps>

Low CH CSE Plot between 30MHz ~ 1 GHz



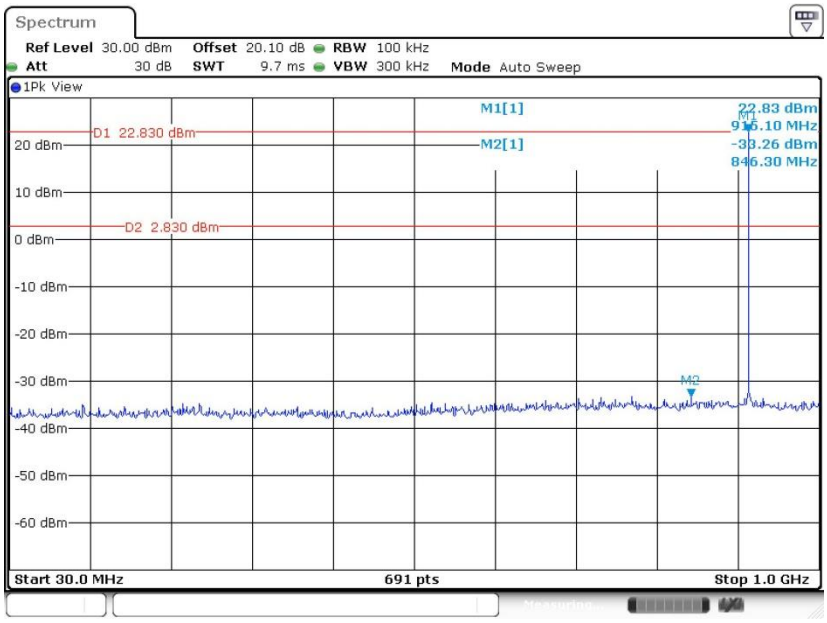
Date: 23.FEB.2023 22:46:01

Low CH CSE Plot between 800 MHz ~ 10 GHz



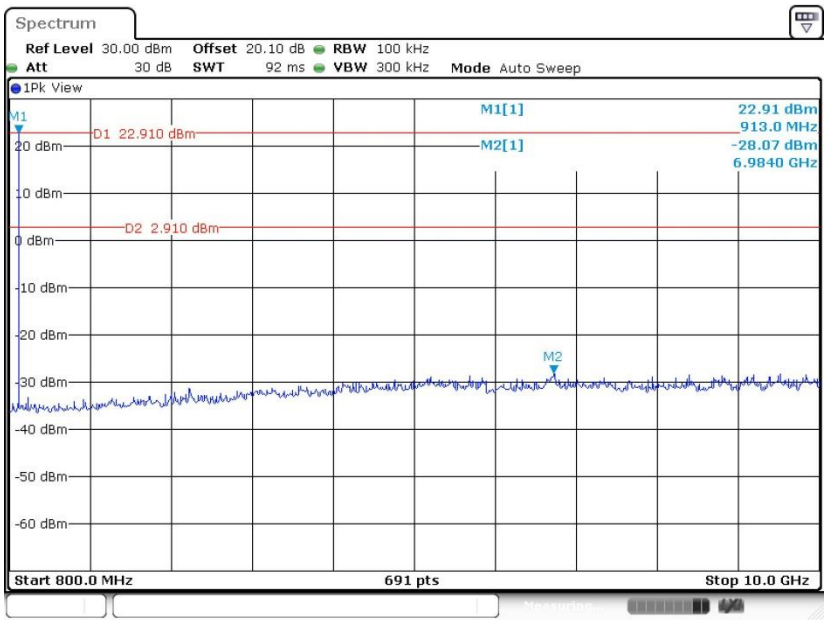
Date: 23.FEB.2023 22:46:32

Mid CH CSE Plot between 30MHz ~ 1 GHz



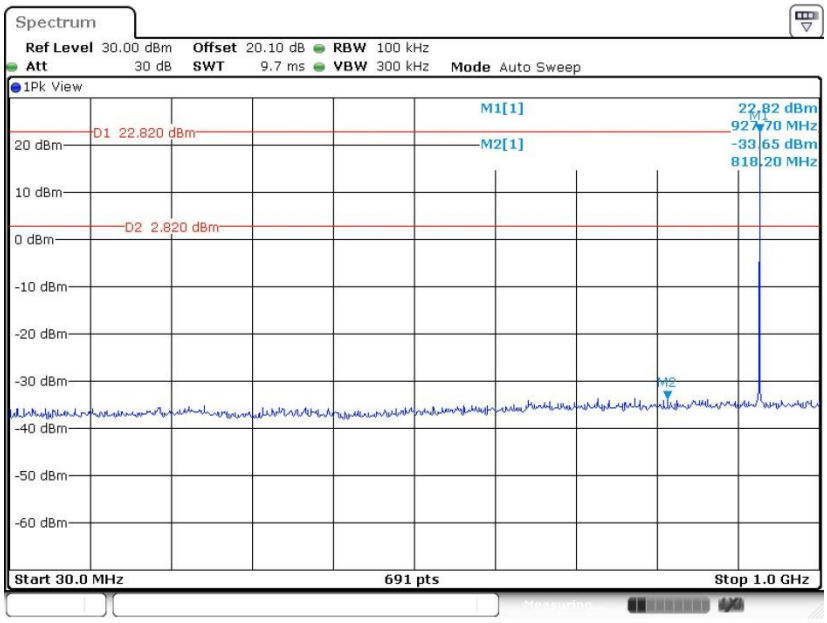
Date: 23.FEB.2023 21:56:34

Mid CH CSE Plot between 800 MHz ~ 10 GHz



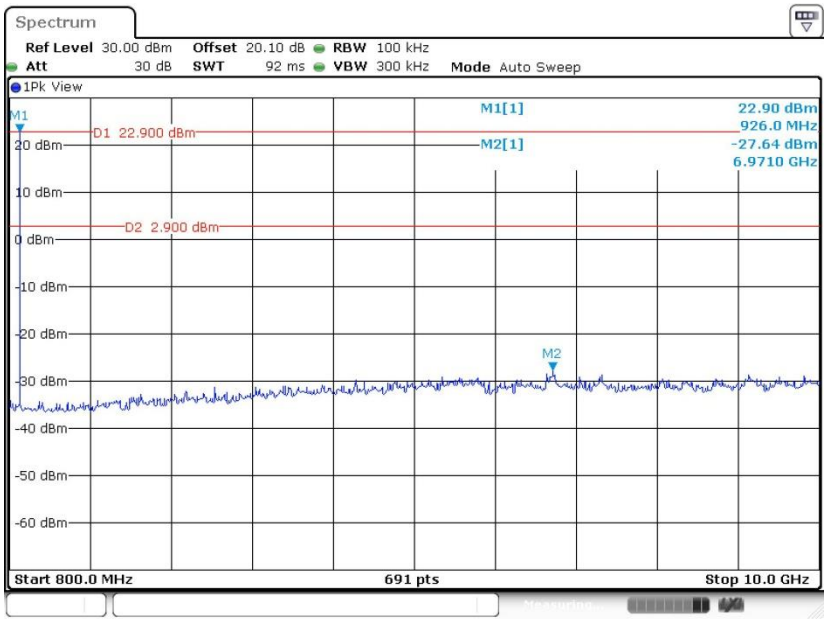
Date: 23.FEB.2023 21:57:11

High CH CSE Plot between 30MHz ~ 1 GHz



Date: 23.FEB.2023 22:04:42

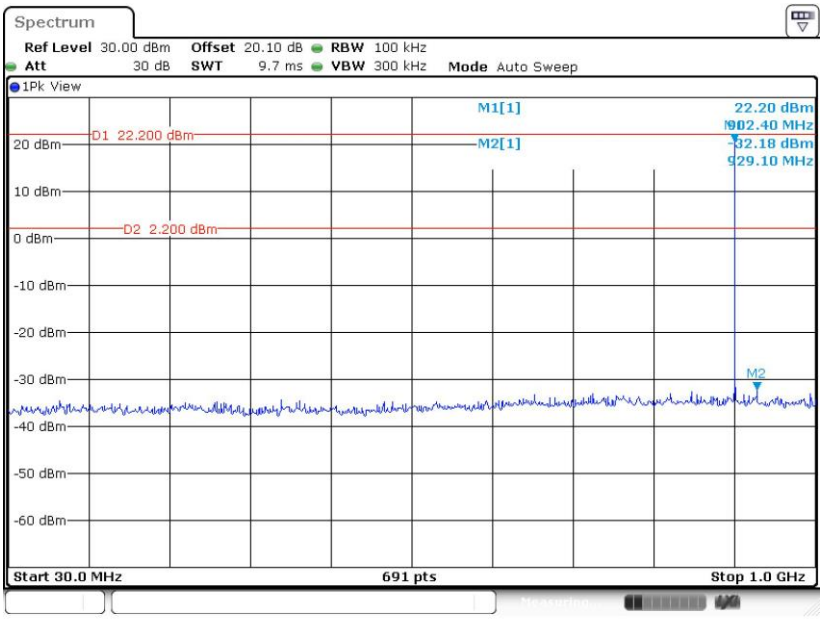
High CH CSE Plot between 800 MHz ~ 10 GHz



Date: 23.FEB.2023 22:05:33

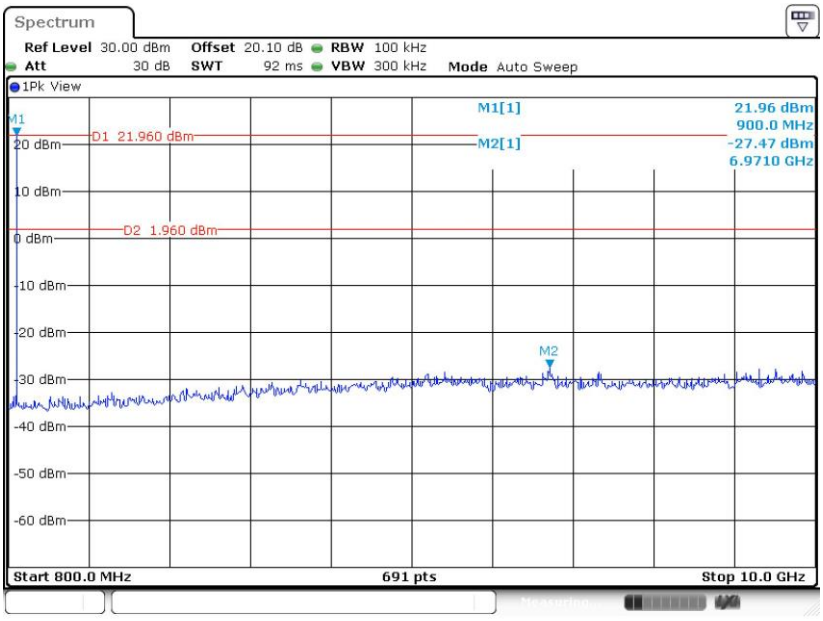
<Data Rate 150kbps>

Low CH CSE Plot between 30MHz ~ 1 GHz



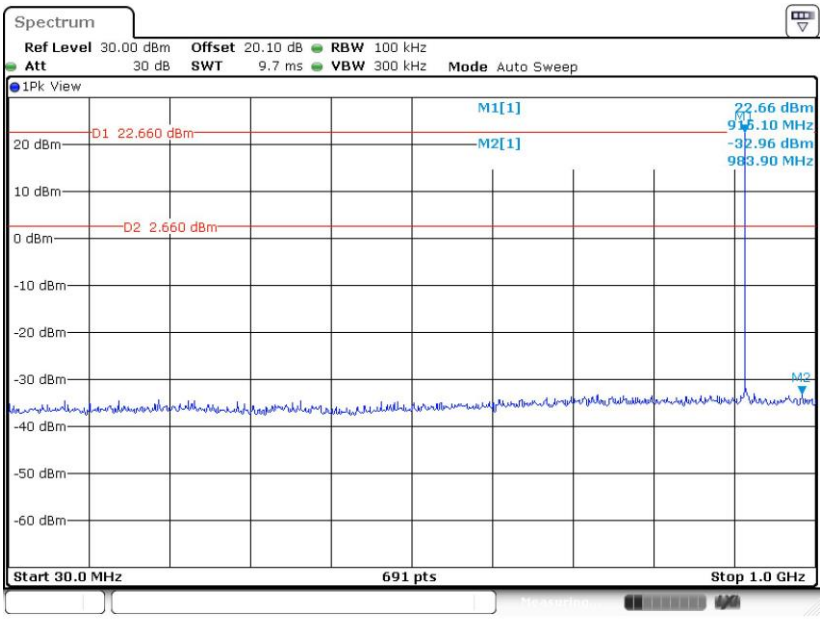
Date: 16.MAY.2023 19:23:34

Low CH CSE Plot between 800 MHz ~ 10 GHz



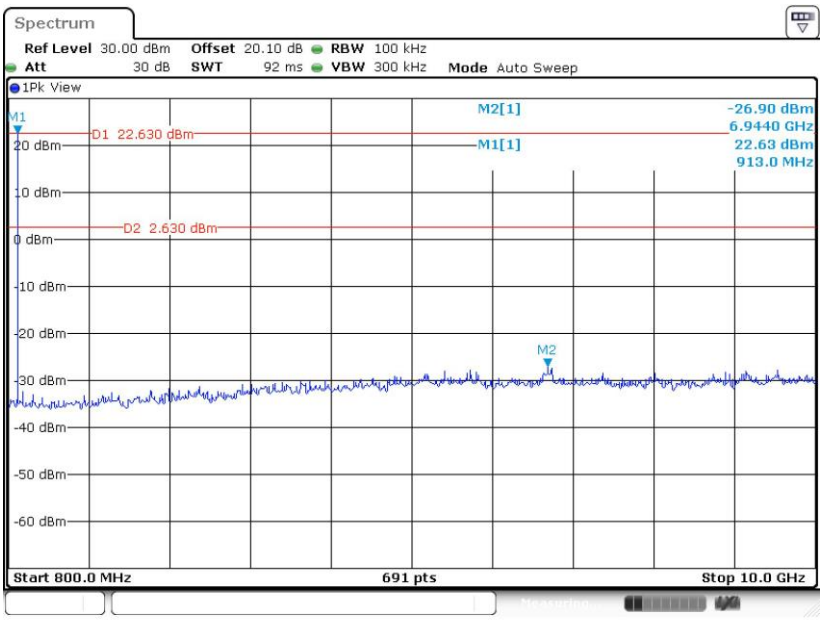
Date: 16.MAY.2023 19:24:08

Mid CH CSE Plot between 30MHz ~ 1 GHz



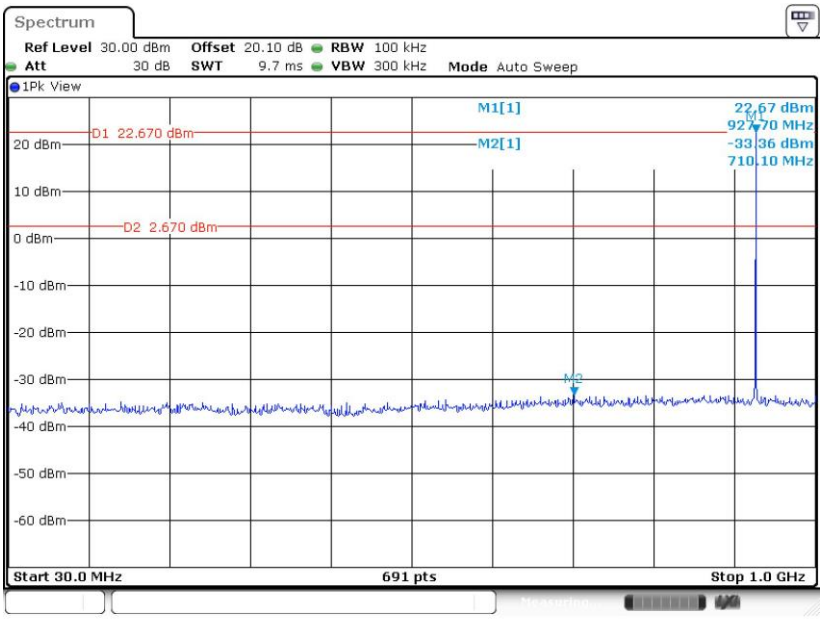
Date: 16.MAY.2023 19:36:37

Mid CH CSE Plot between 800 MHz ~ 10 GHz



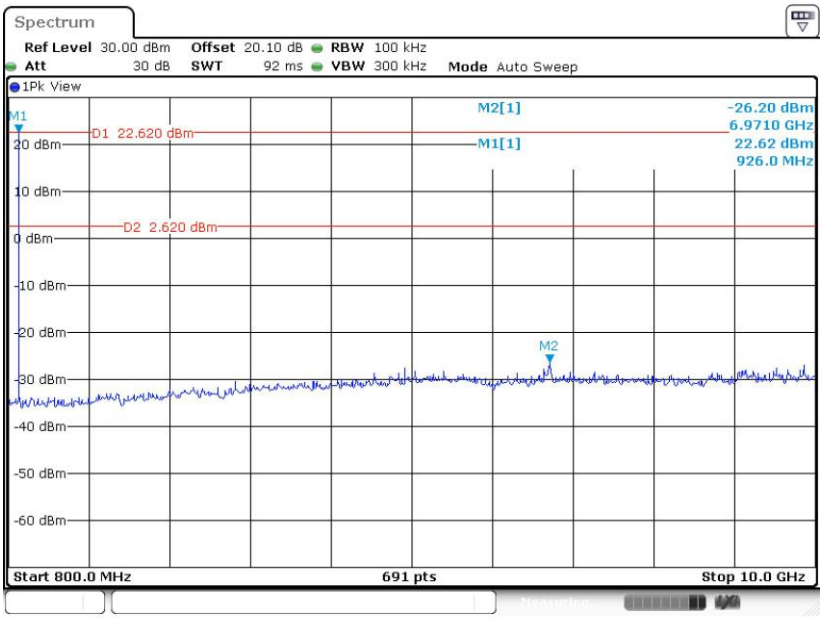
Date: 16.MAY.2023 19:37:56

High CH CSE Plot between 30MHz ~ 1 GHz



Date: 16.MAY.2023 19:48:50

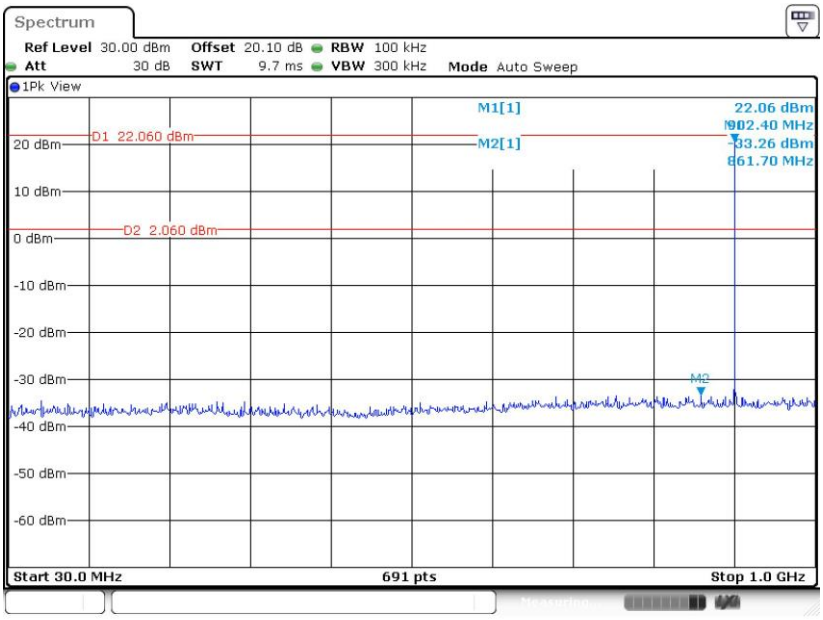
High CH CSE Plot between 800 MHz ~ 10 GHz



Date: 16.MAY.2023 19:50:19

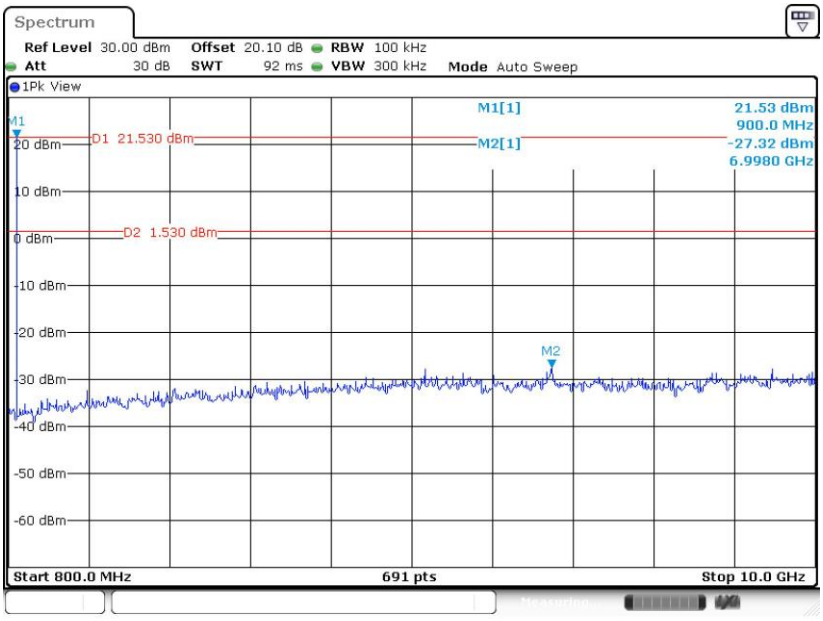
<Data Rate 250kbps>

Low CH CSE Plot between 30MHz ~ 1 GHz



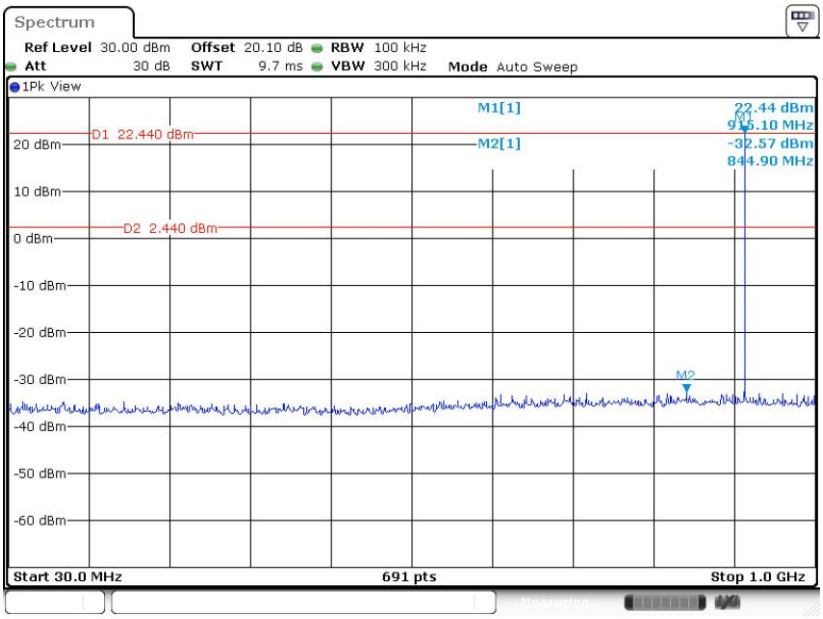
Date: 16.MAY.2023 20:06:15

Low CH CSE Plot between 800 MHz ~ 10 GHz



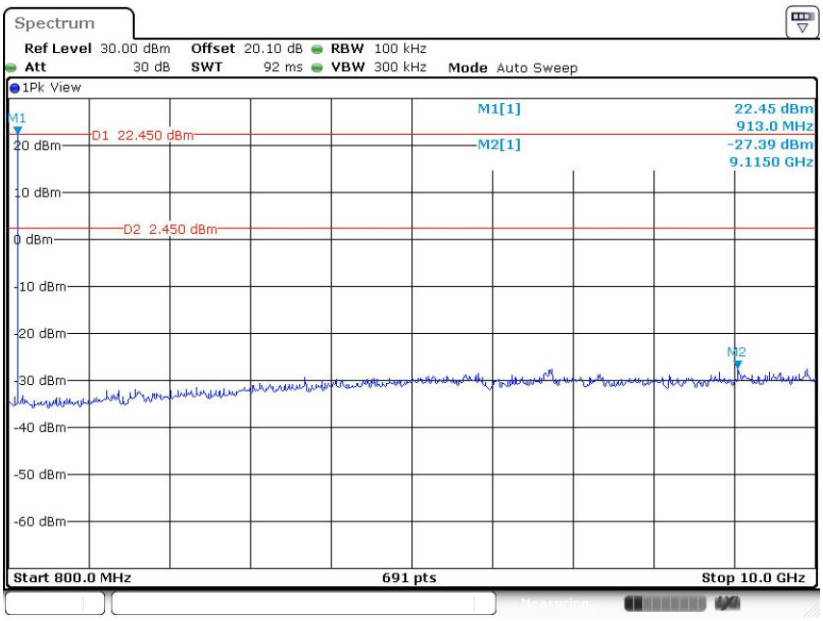
Date: 16.MAY.2023 20:06:45

Mid CH CSE Plot between 30MHz ~ 1 GHz



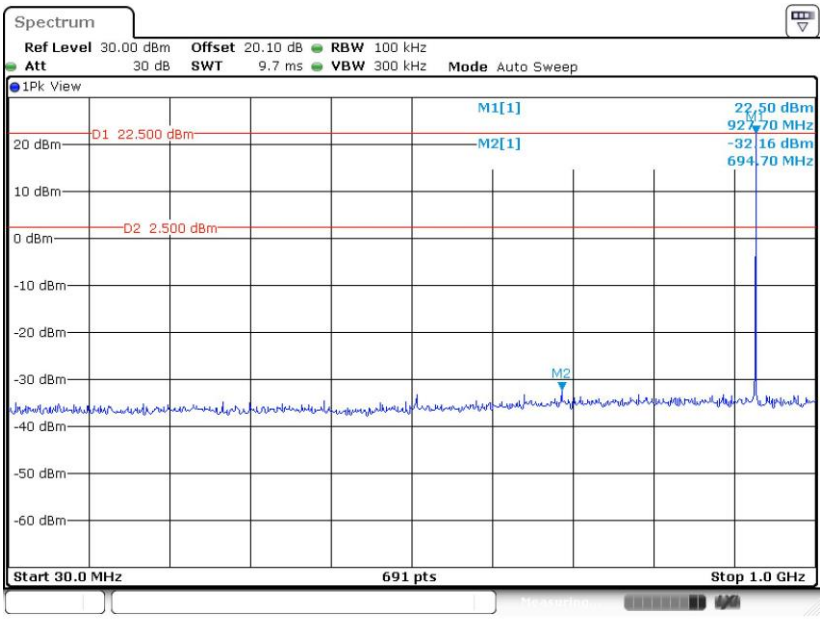
Date: 16.MAY.2023 20:13:02

Mid CH CSE Plot between 800 MHz ~ 10 GHz



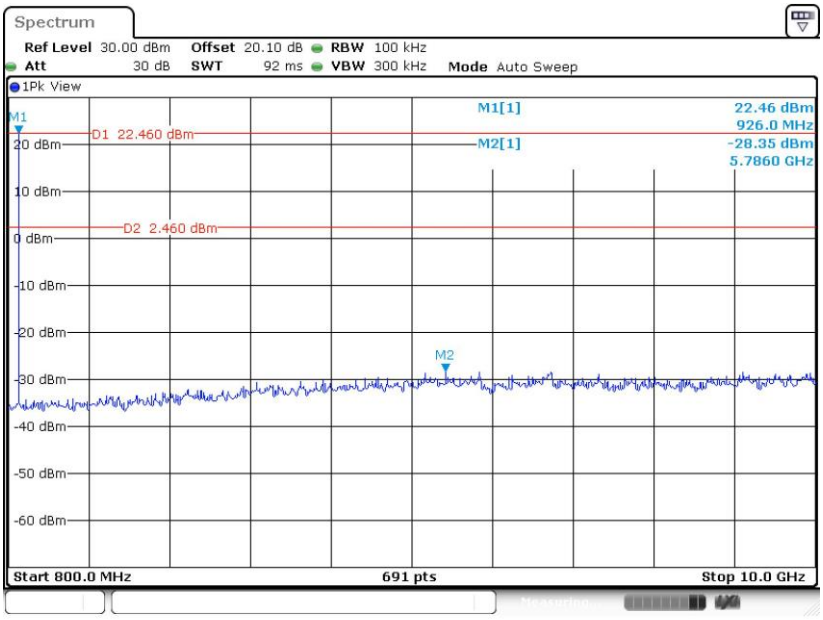
Date: 16.MAY.2023 20:13:32

High CH CSE Plot between 30MHz ~ 1 GHz



Date: 16.MAY.2023 20:23:08

High CH CSE Plot between 800 MHz ~ 10 GHz



Date: 16.MAY.2023 20:23:41

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. 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

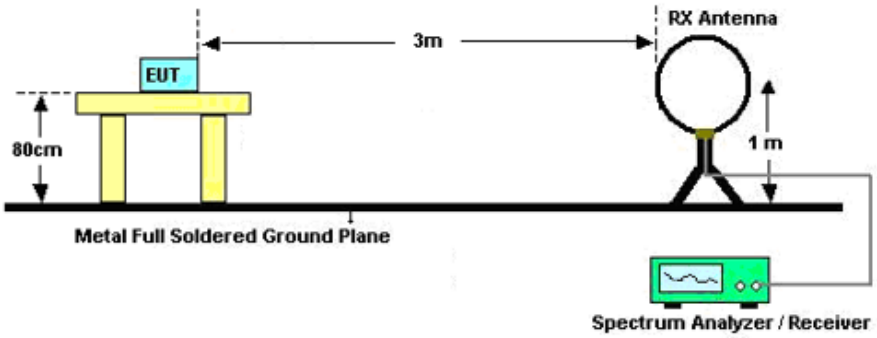
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

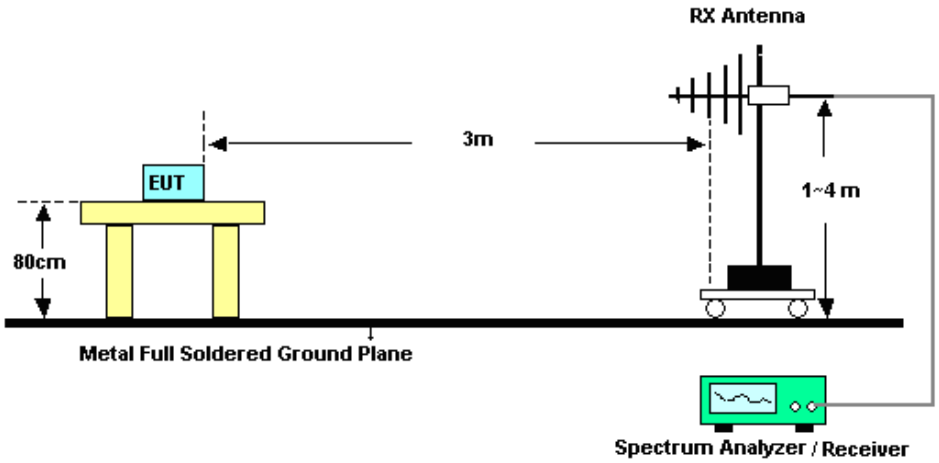
1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. For each suspected emission, 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 to comply with the guidelines.
4. Set to the maximum power setting and enable the EUT transmit continuously.
5. 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, RBW=1MHz for f>1GHz ; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold for peak
6. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
7. 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.
8. 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.

3.5.4 Test Setup

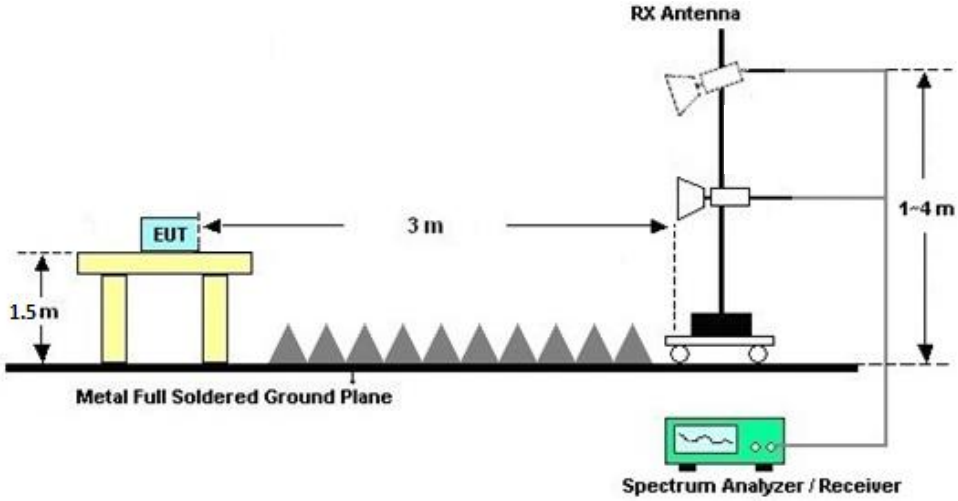
For radiated emissions below 30MHz



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&D.

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

Please refer to Appendix C&D.

3.5.8 Duty cycle

Mode	Duty Cycle
FSK 50kbps	100%
FSK 150kbps	100%
FSK 250kbps	100%

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.

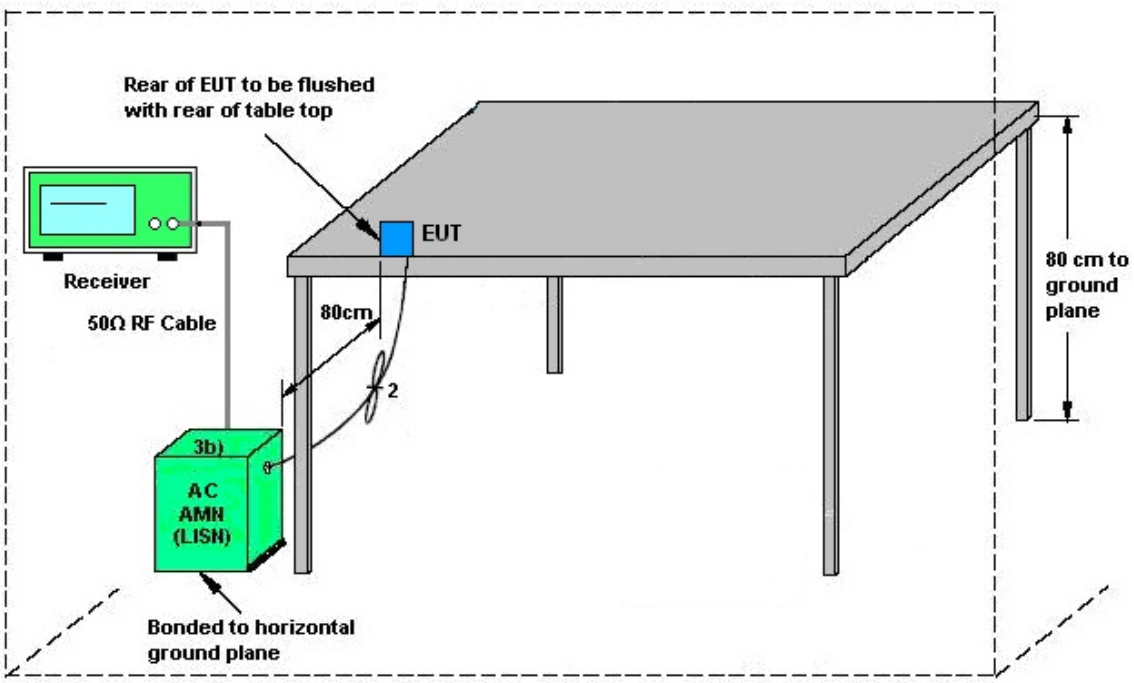
3.6.2 Measuring Instruments

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



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

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	101078	10Hz~40GHz	Apr. 07, 2022	Feb. 22, 2023~ May 16, 2023	Apr. 06, 2023	Conducted (TH01-SZ)
Pulse Power Senor	Anritsu	MA2411B	1339473	30MHz~40GHz	Dec. 27, 2022	Feb. 22, 2023~ May 16, 2023	Dec. 26, 2023	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1542004	50MHz Bandwidth	Dec. 27, 2022	Feb. 22, 2023~ May 16, 2023	Dec. 26, 2023	Conducted (TH01-SZ)
Attenuator	MICROWAV	EMVE2214-10	2	30MHz-26.5GHz	Feb. 22, 2023	Feb. 22, 2023~ May 16, 2023	Feb. 22, 2024	Conducted (TH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2022	Feb. 16, 2023~ Jul. 24, 2023	Jul. 06, 2023	Radiation (03CH02-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2023		Jul. 06, 2024	Radiation (03CH02-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	Feb. 16, 2023~ Jul. 24, 2023	Jul. 27, 2024	Radiation (03CH02-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Sep. 28, 2021	Feb. 16, 2023~ Jul. 24, 2023	Sep. 27, 2023	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 07, 2022	Feb. 16, 2023~ Jul. 24, 2023	Jul. 06, 2023	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 07, 2023		Jul. 06, 2024	Radiation (03CH02-SZ)
LF Amplifier	Burgeon	BPA-530	102211	0.01~3000Mhz	Oct. 19, 2022	Feb. 16, 2023~ Jul. 24, 2023	Oct. 18, 2023	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 19, 2022	Feb. 16, 2023~ Jul. 24, 2023	Oct. 18, 2023	Radiation (03CH02-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 19, 2022	Feb. 16, 2023~ Jul. 24, 2023	Oct. 18, 2023	Radiation (03CH02-SZ)
AC Power Source	Chroma	61601	616010003043	N/A	Nov. 10, 2022	Feb. 16, 2023~ Jul. 24, 2023	Nov. 09, 2023	Radiation (03CH02-SZ)
Turn Table	Chaintek	T-200	N/A	0~360 degree	NCR	Feb. 16, 2023~ Jul. 24, 2023	NCR	Radiation (03CH02-SZ)
Antenna Mast	Chaintek	MBS-400	N/A	1 m~4 m	NCR	Feb. 16, 2023~ Jul. 24, 2023	NCR	Radiation (03CH02-SZ)
EMI Receiver	R&S	ESR7	102297	9kHz~7GHz;	Jul. 06, 2022	Feb. 16, 2023	Jul. 05, 2023	Conduction (CO02-SZ)
AC LISN	R&S	ENV216	101499	9kHz~30MHz	Jul. 06, 2022	Feb. 16, 2023	Jul. 05, 2023	Conduction (CO02-SZ)
AC Power Source	CHROMA	61601	616010002470	100Vac~250Vac	Nov. 10, 2022	Feb. 16, 2023	Nov. 09, 2023	Conduction (CO02-SZ)

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	±1.34 dB
Conducted Emissions	±1.34 dB
Occupied Channel Bandwidth	±0.13 %

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.7dB

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

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

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.1dB

Appendix A. Conducted Test Results

Test Engineer:	Chen Ran	**Temperature:**	20~26°C
Test Date:	2023/2/22~2023/5/16	**Relative Humidity:**	40~51%

FSK-FHSS-50Kbps

TEST RESULTS DATA
20dB and 99% Occupied Bandwidth

Mod.	Data Rate	NTX	CH.	Freq. (MHz)	20db BW (MHz)	99% Bandwidth (MHz)
FSK	50kbps	1	1	902.2	0.091	0.085
FSK	50kbps	1	65	915	0.091	0.086
FSK	50kbps	1	129	927.8	0.091	0.085

TEST RESULTS DATA
Peak Power Table

mode	Freq. (MHz)	NTX	Peak Power (dBm)	Power Limit (dBm)	Test Result
FSK50	902.2	1	23.15	30.00	Pass
	915	1	**23.24**	30.00	Pass
	927.8	1	**23.24**	30.00	Pass

Setting
-4
-3
-2

FSK-FHSS-150Kbps

TEST RESULTS DATA
20dB and 99% Occupied Bandwidth

Mod.	Data Rate	NTX	Freq. (MHz)	20db BW (MHz)	99% Bandwidth (MHz)
FSK	150kbps	1	902.4	0.181	0.155
FSK	150kbps	1	915.2	0.181	0.154
FSK	150kbps	1	927.6	0.181	0.156

TEST RESULTS DATA
Peak Power Table

mode	Freq. (MHz)	NTX	Peak Power (dBm)	Power Limit (dBm)	Test Result
FSK150	902.4	1	23.17	30.00	Pass
	915.2	1	23.23	30.00	Pass
	927.6	1	**23.28**	30.00	Pass

Setting
-4
-3
-2

FSK-FHSS-250Kbps

TEST RESULTS DATA
20dB and 99% Occupied Bandwidth

Mod.	Data Rate	NTX	Freq. (MHz)	20db BW (MHz)	99% Bandwidth (MHz)
FSK	250kbps	1	902.5	0.297	0.259
FSK	250kbps	1	915	0.295	0.260
FSK	250kbps	1	927.5	0.296	0.260

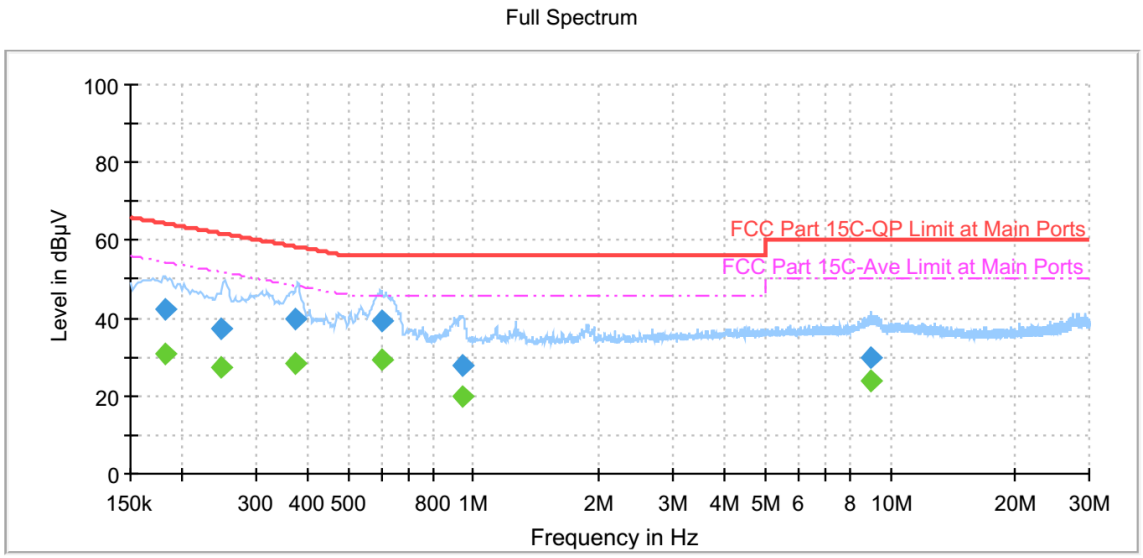
TEST RESULTS DATA
Peak Power Table

mode	Freq. (MHz)	NTX	Peak Power (dBm)	Power Limit (dBm)	Test Result
FSK250	902.5	1	**24.03**	30.00	Pass
	915	1	23.24	30.00	Pass
	927.5	1	23.29	30.00	Pass

Setting
-4
-3
-2

Appendix B. AC Conducted Emission Test Results

Test Engineer :	Tao Zhang	**Temperature :**	22~25℃
		Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line

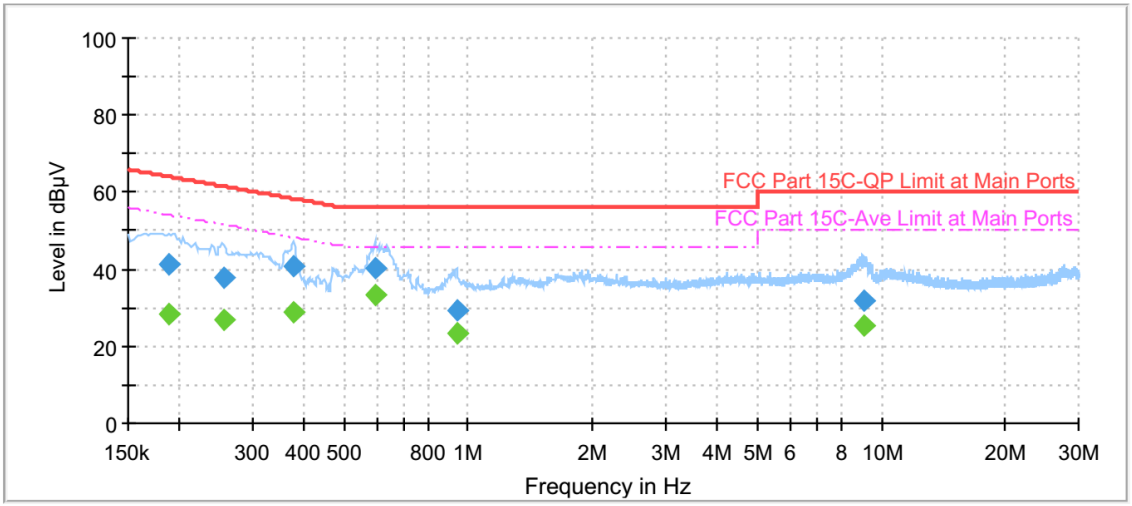


Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.182850	42.09	---	64.36	22.27	L1	OFF	19.7
0.182850	---	30.80	54.36	23.55	L1	OFF	19.7
0.249000	37.34	---	61.79	24.45	L1	OFF	19.7
0.249000	---	27.12	51.79	24.67	L1	OFF	19.7
0.375000	39.72	---	58.39	18.67	L1	OFF	19.7
0.375000	---	28.56	48.39	19.82	L1	OFF	19.7
0.602250	39.31	---	56.00	16.69	L1	OFF	19.8
0.602250	---	29.43	46.00	16.57	L1	OFF	19.8
0.939660	27.66	---	56.00	28.34	L1	OFF	19.8
0.939660	---	19.75	46.00	26.25	L1	OFF	19.8
8.963250	29.70	---	60.00	30.30	L1	OFF	20.0
8.963250	---	24.11	50.00	25.89	L1	OFF	20.0

Test Engineer :	Tao Zhang	**Temperature :**	22~25℃
		Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.188250	41.15	---	64.11	22.97	N	OFF	19.7
0.188250	---	28.49	54.11	25.63	N	OFF	19.7
0.255750	37.91	---	61.57	23.66	N	OFF	19.7
0.255750	---	26.74	51.57	24.82	N	OFF	19.7
0.377340	41.04	---	58.34	17.30	N	OFF	19.7
0.377340	---	28.82	48.34	19.51	N	OFF	19.7
0.596220	40.30	---	56.00	15.70	N	OFF	19.7
0.596220	---	33.24	46.00	12.76	N	OFF	19.7
0.939570	29.26	---	56.00	26.74	N	OFF	19.7
0.939570	---	23.42	46.00	22.58	N	OFF	19.7
9.060000	31.82	---	60.00	28.18	N	OFF	20.0
9.060000	---	25.43	50.00	24.57	N	OFF	20.0

Appendix C. Radiated Spurious Emission

902~928MHz

FSK 50kbps (Band Edge @ 3m)

	Note	Frequency	Level	Margin	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)
902.2MHz		899.12	45.74	-45.47	91.21	47.29	26.6	3.15	31.3	-	-	P	H
		902.2	111.21	-	-	112.74	26.61	3.15	31.29	-	-	P	H
		937.92	40.98	-50.23	91.21	42.03	26.87	3.23	31.15	-	-	P	H
		900.09	46.78	-41.36	88.14	48.33	26.6	3.15	31.3	-	-	P	V
		902.2	108.14	-	-	109.67	26.61	3.15	31.29	-	-	P	V
		942.77	43.2	-44.94	88.14	44.2	26.9	3.24	31.14	-	-	P	V
915MHz		858.38	43.17	-49.32	92.49	45.59	26.43	3.11	31.96	-	-	P	H
		915	112.49	-	-	113.85	26.7	3.18	31.24	-	-	P	H
		930.16	42.07	-50.42	92.49	43.22	26.81	3.22	31.18	-	-	P	H
		863.23	39.24	-50.35	89.59	41.54	26.45	3.11	31.86	-	-	P	V
		915	109.59	-	-	110.95	26.7	3.18	31.24	-	-	P	V
		955.38	39.72	-49.87	89.59	40.6	26.99	3.27	31.14	-	-	P	V
927.8MHz		888.45	41.67	-51.57	93.24	43.47	26.55	3.14	31.49	-	-	P	H
		927.8	113.24	-	-	114.42	26.8	3.21	31.19	-	-	P	H
		930.16	50.73	-42.51	93.24	51.88	26.81	3.22	31.18	-	-	P	H
		859.35	39.34	-51	90.34	41.75	26.44	3.11	31.96	-	-	P	V
		927.8	110.34	-	-	111.52	26.8	3.21	31.19	-	-	P	V
		930.16	47.07	-43.27	90.34	48.22	26.81	3.22	31.18	-	-	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 20dB.												

FSK 50kbps (Harmonic @ 3m)

	Note	Frequency	Level	Margin	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)
902.2MHz		1804.4	38.07	-53.14	91.21	59.91	30.72	5.42	57.98	-	-	P	H
		2706.6	41.2	-32.8	74	59.26	32.8	6.92	57.78	-	-	P	H
		1804.4	38.37	-49.77	88.14	60.21	30.72	5.42	57.98	-	-	P	V
		2706.6	40.81	-33.19	74	58.87	32.8	6.92	57.78	-	-	P	V
915MHz		1830	41.07	-51.42	92.49	62.61	30.97	5.42	57.93	-	-	P	H
		2745	44.64	-29.36	74	62.48	32.9	7.01	57.75	-	-	P	H
		3660	41.11	-32.89	74	57.36	33.62	8.14	58.01	-	-	P	H
		1830	40.38	-49.21	89.59	61.92	30.97	5.42	57.93	-	-	P	V
		2745	43.98	-30.02	74	61.82	32.9	7.01	57.75	-	-	P	V
		3660	40.94	-33.06	74	57.19	33.62	8.14	58.01	-	-	P	V
927.8MHz		1855.6	40.49	-52.75	93.24	61.83	31.09	5.48	57.91	-	-	P	H
		2783.4	47.68	-26.32	74	65.34	32.97	7.1	57.73	-	-	P	H
		3711.2	40.71	-33.29	74	56.74	33.67	8.25	57.95	-	-	P	H
		1855.6	42.17	-48.17	90.34	63.51	31.09	5.48	57.91	-	-	P	V
		2783.4	45.63	-28.37	74	63.29	32.97	7.1	57.73	-	-	P	V
		3711.2	40.76	-33.24	74	56.79	33.67	8.25	57.95	-	-	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 20dB.												

FSK 150kbps (Band Edge @ 3m)

	Note	Frequency	Level	Margin	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)
902.4MHz		898.15	48.72	-42.08	90.8	50.33	26.59	3.15	31.35	-	-	P	H
		902.4	110.8	-	-	112.33	26.61	3.15	31.29	-	-	P	H
		946.65	41.67	-49.13	90.8	42.6	26.93	3.25	31.11	-	-	P	H
		900.09	45.2	-42.86	88.06	46.75	26.6	3.15	31.3	-	-	P	V
		902.4	108.06	-	-	109.59	26.61	3.15	31.29	-	-	P	V
		942.77	39.06	-49	88.06	40.06	26.9	3.24	31.14	-	-	P	V
915.2MHz		892.33	41.98	-50.74	92.72	43.71	26.57	3.14	31.44	-	-	P	H
		915.2	112.72	-	-	114.07	26.71	3.18	31.24	-	-	P	H
		941.8	42.26	-50.46	92.72	43.27	26.89	3.24	31.14	-	-	P	H
		894.27	39.76	-49.83	89.59	41.43	26.58	3.14	31.39	-	-	P	V
		915.2	109.59	-	-	110.94	26.71	3.18	31.24	-	-	P	V
		957.32	39.98	-49.61	89.59	40.85	27	3.27	31.14	-	-	P	V
927.6MHz		899.12	41.62	-51.62	93.29	43.17	26.6	3.15	31.3	-	-	P	H
		927.6	113.29	-	-	114.48	26.79	3.21	31.19	-	-	P	H
		930.16	50.66	-42.63	93.29	51.81	26.81	3.22	31.18	-	-	P	H
		866.14	40.56	-49.69	90.25	42.8	26.46	3.12	31.82	-	-	P	V
		927.6	110.25	-	-	111.44	26.79	3.21	31.19	-	-	P	V
		930.16	48.24	-42.01	90.25	49.39	26.81	3.22	31.18	-	-	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 20dB.												

FSK 150kbps (Harmonic @ 3m)

	Note	Frequency	Level	Margin	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)
902.4MHz		1804.8	38.15	-52.65	90.8	59.99	30.72	5.42	57.98	-	-	P	H
		2707.2	40.96	-33.04	74	59.02	32.8	6.92	57.78	-	-	P	H
		1804.8	37.97	-50.09	88.06	59.81	30.72	5.42	57.98	-	-	P	V
		2707.2	40.97	-33.03	74	59.03	32.8	6.92	57.78	-	-	P	V
915.2MHz		1830.4	40.88	-51.84	92.72	62.42	30.97	5.42	57.93	-	-	P	H
		2745.6	45.72	-28.28	74	63.56	32.9	7.01	57.75	-	-	P	H
		1830.4	41.09	-48.50	89.59	62.63	30.97	5.42	57.93	-	-	P	V
		2745.6	44.58	-29.42	74	62.42	32.9	7.01	57.75	-	-	P	V
927.6MHz		1855.2	40.69	-52.6	93.29	62.03	31.09	5.48	57.91	-	-	P	H
		2782.8	47.38	-26.62	74	65.04	32.97	7.1	57.73	-	-	P	H
		1855.2	41.86	-48.39	90.25	63.2	31.09	5.48	57.91	-	-	P	V
		2782.8	46.71	-27.29	74	64.37	32.97	7.1	57.73	-	-	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 20dB.												

FSK 250kbps (Band Edge @ 3m)

	Note	Frequency	Level	Margin	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		900.09	47.39	-43.42	90.81	48.94	26.6	3.15	31.3	-	-	P	H
		902.5	110.81	-	-	112.34	26.61	3.15	31.29	-	-	P	H
		932.1	40.91	-49.9	90.81	42.04	26.82	3.22	31.17	-	-	P	H
		900.09	43.57	-44.46	88.03	45.12	26.6	3.15	31.3	-	-	P	V
		902.5	108.03	-	-	109.56	26.61	3.15	31.29	-	-	P	V
		958.29	38.68	-49.35	88.03	39.54	27.01	3.28	31.15	-	-	P	V
915.0MHz		866.14	42.12	-50.39	92.51	44.36	26.46	3.12	31.82	-	-	P	H
		915	112.51	-	-	113.87	26.7	3.18	31.24	-	-	P	H
		934.04	41.95	-50.56	92.51	43.05	26.84	3.23	31.17	-	-	P	H
		875.84	38.76	-50.57	89.33	40.81	26.5	3.13	31.68	-	-	P	V
		915	109.33	-	-	110.69	26.7	3.18	31.24	-	-	P	V
		955.38	40.28	-49.05	89.33	41.16	26.99	3.27	31.14	-	-	P	V
927.5MHz		866.14	42.92	-50.09	93.01	45.16	26.46	3.12	31.82	-	-	P	H
		927.5	113.01	-	-	114.2	26.79	3.21	31.19	-	-	P	H
		929.19	53.61	-39.4	93.01	54.78	26.8	3.21	31.18	-	-	P	H
		864.2	39.86	-50.31	90.17	42.15	26.46	3.11	31.86	-	-	P	V
		927.5	110.17	-	-	111.36	26.79	3.21	31.19	-	-	P	V
		929.19	51.23	-38.94	90.17	52.4	26.8	3.21	31.18	-	-	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 20dB.												

FSK 250kbps (Harmonic @ 3m)

	Note	Frequency	Level	Margin	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	37.08	-53.73	90.81	58.92	30.72	5.42	57.98	-	-	P	H
		2707.5	41.5	-32.5	74	59.56	32.8	6.92	57.78	-	-	P	H
		3610	40.34	-33.66	74	56.72	33.6	8.08	58.06	-	-	P	H
		1805	38.05	-49.98	88.03	59.89	30.72	5.42	57.98	-	-	P	V
		2707.5	40.89	-33.11	74	58.95	32.8	6.92	57.78	-	-	P	V
		3610	41.31	-32.69	74	57.69	33.6	8.08	58.06	-	-	P	V
915.0MHz		1830	43.14	-49.37	92.51	64.68	30.97	5.42	57.93	-	-	P	H
		2745	47.05	-26.95	74	64.89	32.9	7.01	57.75	-	-	P	H
		3660	41.69	-32.31	74	57.94	33.62	8.14	58.01	-	-	P	H
		1830	43.41	-45.92	89.33	64.95	30.97	5.42	57.93	-	-	P	V
		2745	45.59	-28.41	74	63.43	32.9	7.01	57.75	-	-	P	V
		3660	42.06	-31.94	74	58.31	33.62	8.14	58.01	-	-	P	V
927.5MHz		1855	43.39	-49.62	93.01	64.73	31.09	5.48	57.91	-	-	P	H
		2782.5	48.49	-25.51	74	66.15	32.97	7.1	57.73	-	-	P	H
		3710	42.43	-31.57	74	58.52	33.67	8.19	57.95	-	-	P	H
		1855	42.88	-47.29	90.17	64.22	31.09	5.48	57.91	-	-	P	V
		2782.5	45.6	-28.4	74	63.26	32.97	7.1	57.73	-	-	P	V
		3710	43.3	-30.7	74	59.39	33.67	8.19	57.95	-	-	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 20dB.												

FSK 250kbps (Below 1GHz @ 3m)

	Note	Frequency	Level	Margin	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)
927.5MHz		113.42	28.04	-15.46	43.5	41.43	17.6	1.13	32.12	-	-	P	H
		240.49	33.53	-12.47	46	46.38	17.5	1.61	31.96	-	-	P	H
	*	927.5	113.01	–	–	114.2	26.79	3.21	31.19	-	-	P	H
		113.42	26.09	-17.41	43.5	39.48	17.6	1.13	32.12	-	-	P	V
		240.49	26.45	-19.55	46	39.3	17.5	1.61	31.96	-	-	P	V
	*	927.5	110.17	–	–	111.36	26.79	3.21	31.19	-	-	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 20dB.												

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	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

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)

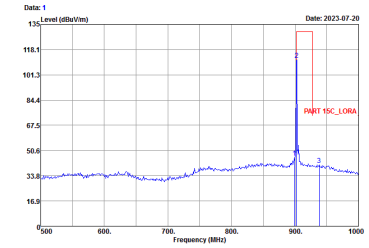
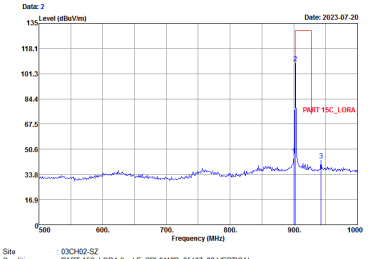
Both peak and average measured complies with the limit line, so test result is "PASS".

`Appendix D. Radiated Spurious Emission Plots

Note symbol

-L	**Low channel location**
-R	**High channel location**

FSK 50kbps FHSS 50kbps (Band Edge @ 3m)

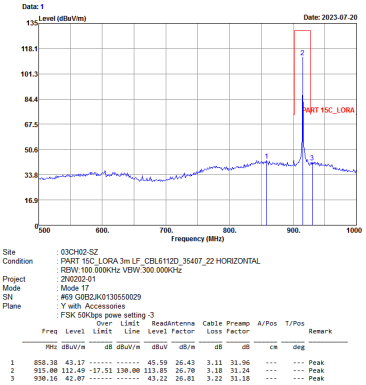
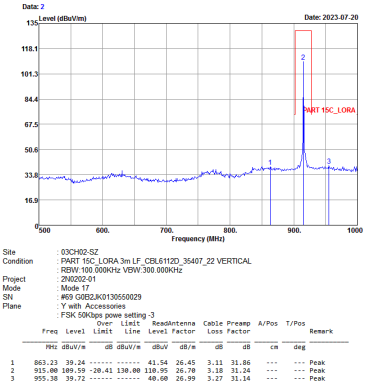
LoRa	902~928MHz Band Edge @ 3m	
	FSK 50kbps FHSS 50kbps CH01 902.2	
	Horizontal	Vertical
Peak		

Site : 03CH02-SZ
Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 HORIZONTAL
: RBW:100.000KHz VBW:300.000KHz
Project : ZN0202-01
Mode : Mode 16
SN : #69 G0B2JK0130550029
Plane : Y with Accessories
: FSK 50Kbps powe setting -4

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos Factor	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	899.12	45.74	------	------	47.29	26.60	3.15	31.30	---	---	Peak
2	902.20	111.21	-18.79	130.00	112.74	26.61	3.15	31.29	---	---	Peak
3	937.92	40.98	------	------	42.03	26.87	3.23	31.15	---	---	Peak

Site : 03CH02-SZ
Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 VERTICAL
: RBW:100.000KHz VBW:300.000KHz
Project : ZN0202-01
Mode : Mode 16
SN : #69 G0B2JK0130550029
Plane : Y with Accessories
: FSK 50Kbps powe setting -4

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos Factor	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	900.09	46.70	------	------	48.33	26.60	3.15	31.30	---	---	Peak
2	902.20	108.14	-21.86	130.00	109.67	26.61	3.15	31.29	---	---	Peak
3	942.77	43.20	------	------	44.20	26.90	3.24	31.14	---	---	Peak

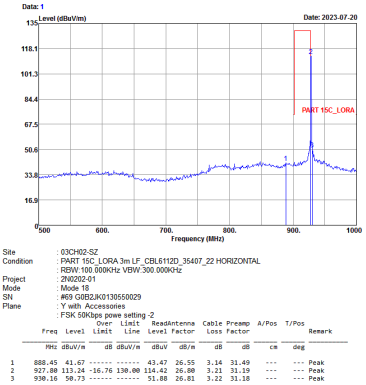
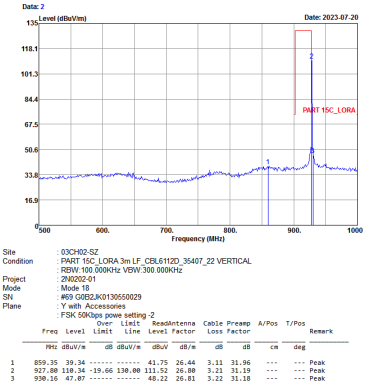
LoRa	902~928MHz Band Edge @ 3m	
	FSK 50kbps FHSS 50kbps CH65 915	
	Horizontal	Vertical
Peak		

Site : 03CH02-SZ
Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 HORIZONTAL
: RBW:100.000KHz VBW:300.000KHz
Project : ZN0202-01
Mode : Mode 17
SN : #69 G0B2JK0130550029
Plane : Y with Accessories
: FSK 50Kbps powe setting -3

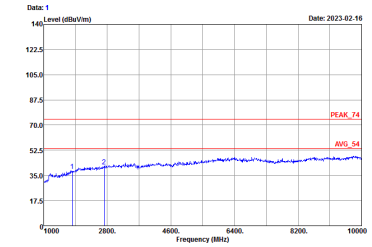
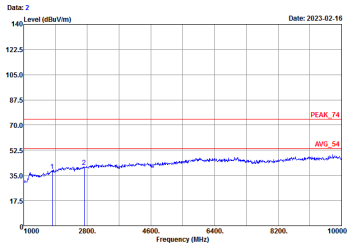
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	858.38	43.17	------	------	45.59	26.43	3.11	---	---	Peak
2	915.00	112.49	-17.51	130.00	113.85	26.70	3.18	---	---	Peak
3	930.16	42.07	------	------	43.22	26.81	3.22	---	---	Peak

Site : 03CH02-SZ
Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 VERTICAL
: RBW:100.000KHz VBW:300.000KHz
Project : ZN0202-01
Mode : Mode 17
SN : #69 G0B2JK0130550029
Plane : Y with Accessories
: FSK 50Kbps powe setting -3

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	863.23	39.24	------	------	41.54	26.45	3.11	---	---	Peak
2	915.00	109.59	-20.41	130.00	110.95	26.70	3.18	---	---	Peak
3	955.38	39.72	------	------	40.60	26.99	3.27	---	---	Peak

LoRa	902~928MHz Band Edge @ 3m	
	FSK 50kbps FHSS 50kbps CH129 927.8	
	Horizontal	Vertical
Peak	 Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 HORIZONTAL : RBW:100.000KHz VBW:300.000KHz Project : ZN0202-01 Mode : Mode 18 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 50Kbps powe setting -2 Freq Level Over Limit Limit Line ReadAntenna Level Cable Factor Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 888.45 41.67 ------ ------ 43.47 26.55 3.14 31.49 --- --- Peak 2 927.80 113.24 -16.76 130.00 114.42 26.80 3.21 31.19 --- --- Peak 3 930.16 50.73 ------ ------ 51.88 26.81 3.22 31.18 --- --- Peak	 Site : 03CH02-SZ Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 VERTICAL : RBW:100.000KHz VBW:300.000KHz Project : ZN0202-01 Mode : Mode 18 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 50Kbps powe setting -2 Freq Level Over Limit Limit Line ReadAntenna Level Cable Factor Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 859.35 39.34 ------ ------ 41.75 26.44 3.11 31.96 --- --- Peak 2 927.80 110.34 -19.66 130.00 111.52 26.80 3.21 31.19 --- --- Peak 3 930.16 47.07 ------ ------ 48.22 26.81 3.22 31.18 --- --- Peak

FSK 50kbps FHSS 50kbps (Harmonic @ 3m)

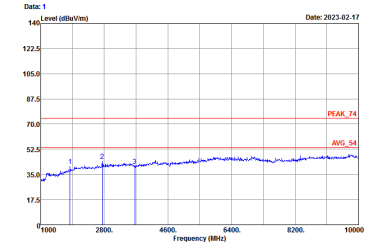
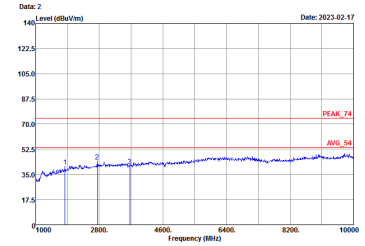
LoRa	902~928MHz Harmonic @ 3m	
	FSK 50kbps FHSS 50kbps CH01 902.2	
	Horizontal	Vertical
Peak		

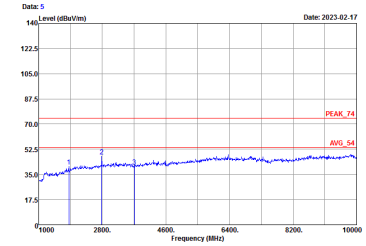
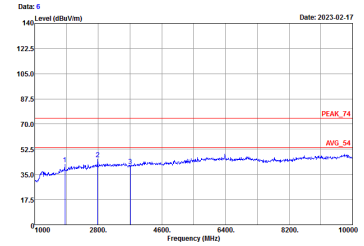
Site : 03CH02-SZ
Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL
Project : 2N0202-01
Mode : Mode 16
SN : #69 GB82JK0130550029
Plane : Y with Accessories
: FSK 50kHz powe setting 4

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos Factor	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	1804.40	38.07	-35.93	74.00	59.91	30.72	5.42	57.98	---	--- Peak
2	2706.60	41.20	-32.80	74.00	59.26	32.80	6.92	57.78	---	--- Peak

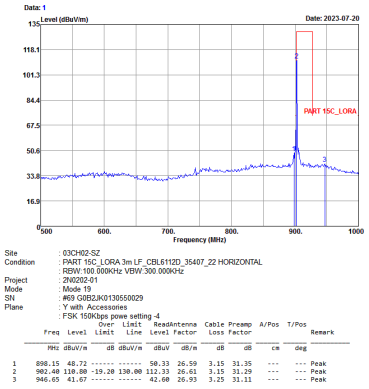
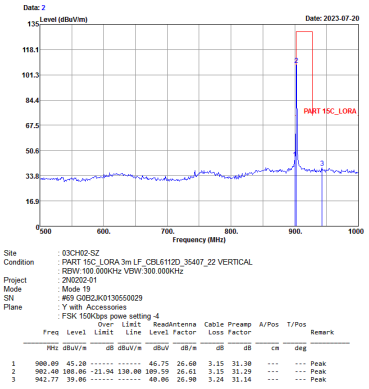
Site : 03CH02-SZ
Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL
Project : 2N0202-01
Mode : Mode 16
SN : #69 GB82JK0130550029
Plane : Y with Accessories
: FSK 50kHz powe setting 4

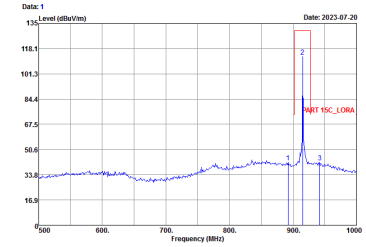
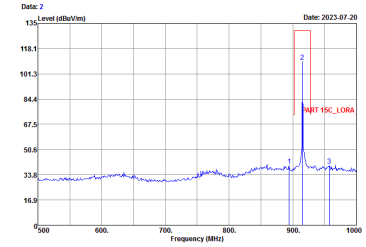
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos Factor	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	1804.40	38.37	-35.63	74.00	60.21	30.72	5.42	57.98	---	--- Peak
2	2706.60	40.81	-33.19	74.00	58.87	32.80	6.92	57.78	---	--- Peak

LoRa	902~928MHz Harmonic @ 3m	
	FSK 50kbps FHSS 50kbps CH65 915	
	Horizontal	Vertical
Peak	 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 17 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 50kHz powe setting -3 Freq / Level / Over Limit / Limit Line / ReadAntenna Level / Cable Loss / Preamp Factor / A/Pos / T/Pos / Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 1830.00 41.07 -32.93 74.00 62.61 30.97 5.42 57.93 --- --- Peak 2 2745.00 44.64 -29.36 74.00 62.48 32.90 7.01 57.75 --- --- Peak 3 3660.00 41.11 -32.89 74.00 57.36 33.62 8.14 58.01 --- --- Peak	 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 17 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 50kHz powe setting -3 Freq / Level / Over Limit / Limit Line / ReadAntenna Level / Cable Loss / Preamp Factor / A/Pos / T/Pos / Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 1830.00 40.38 -33.62 74.00 61.92 30.97 5.42 57.93 --- --- Peak 2 2745.00 43.98 -30.02 74.00 61.82 32.90 7.01 57.75 --- --- Peak 3 3660.00 40.94 -33.06 74.00 57.19 33.62 8.14 58.01 --- --- Peak

LoRa	902~928MHz Harmonic @ 3m	
	FSK 50kbps FHSS 50kbps CH129 927.8	
	Horizontal	Vertical
Peak	 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 18 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 50kHz powe setting -2 Freq / Level / Over Limit / Limit Line / ReadAntenna Level / Cable Loss / Preamp Factor / A/Pos / T/Pos / Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 1855.60 40.49 -33.51 74.00 61.83 31.09 5.48 57.91 --- --- Peak 2 2783.40 47.68 -26.32 74.00 65.34 32.97 7.10 57.73 --- --- Peak 3 3711.20 40.71 -33.29 74.00 56.74 33.67 8.25 57.95 --- --- Peak	 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 18 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 50kHz powe setting -2 Freq / Level / Over Limit / Limit Line / ReadAntenna Level / Cable Loss / Preamp Factor / A/Pos / T/Pos / Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 1855.60 42.17 -31.83 74.00 63.51 31.09 5.48 57.91 --- --- Peak 2 2783.40 45.63 -28.37 74.00 63.29 32.97 7.10 57.73 --- --- Peak 3 3711.20 40.76 -33.24 74.00 56.79 33.67 8.25 57.95 --- --- Peak

FSK 150kbps FHSS 150kbps (Band Edge @ 3m)

LoRa	902~928MHz Band Edge @ 3m	
	FSK 150kbps FHSS 150kbps CH01 902.4	
	Horizontal	Vertical
Peak		

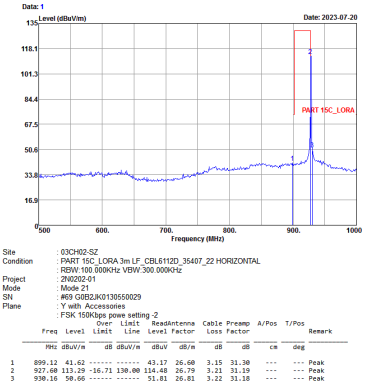
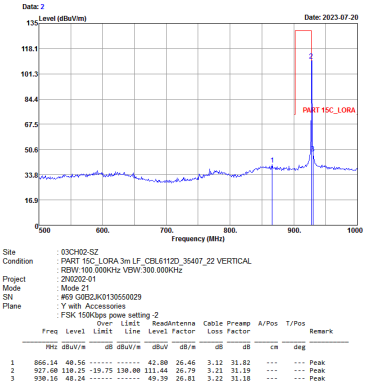
LoRa	902~928MHz Band Edge @ 3m	
	FSK 150kbps FHSS 150kbps CH33 915.2	
	Horizontal	Vertical
Peak		

Site : 03CH02-SZ
Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 HORIZONTAL
: RBW:100.000KHz VBW:300.000KHz
Project : ZN0202-01
Mode : Mode 20
SN : #69 G0B2JK0130550029
Plane : Y with Accessories
: FSK 150Kbps powe setting -3

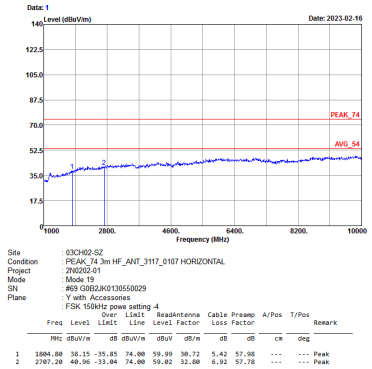
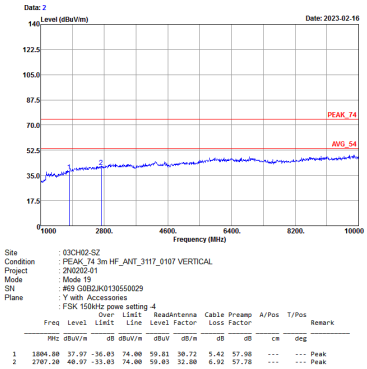
	Freq	Level	Over Limit Line	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	892.33	41.98	------	------	43.71	26.57	3.14	31.44	---	--- Peak
2	915.20	112.72	-17.28	130.00	114.07	26.71	3.18	31.24	---	--- Peak
3	941.80	42.26	------	------	43.27	26.89	3.24	31.14	---	--- Peak

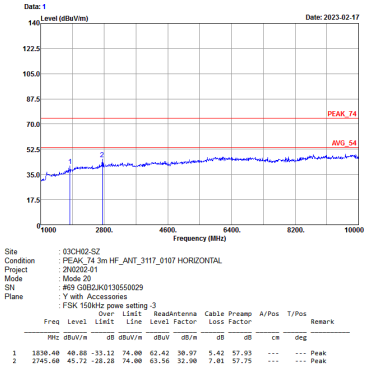
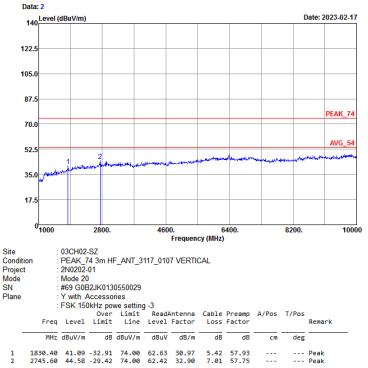
Site : 03CH02-SZ
Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 VERTICAL
: RBW:100.000KHz VBW:300.000KHz
Project : ZN0202-01
Mode : Mode 20
SN : #69 G0B2JK0130550029
Plane : Y with Accessories
: FSK 150Kbps powe setting -3

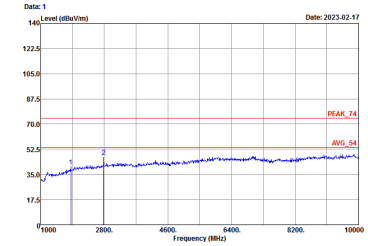
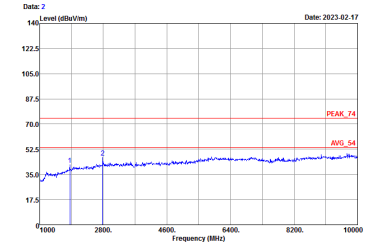
	Freq	Level	Over Limit Line	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	894.27	39.76	------	------	41.43	26.58	3.14	31.39	---	--- Peak
2	915.20	109.59	-20.41	130.00	110.94	26.71	3.18	31.24	---	--- Peak
3	957.32	39.98	------	------	40.85	27.00	3.27	31.14	---	--- Peak

LoRa	902~928MHz Band Edge @ 3m	
	FSK 150kbps FHSS 150kbps CH64 927.6	
	Horizontal	Vertical
Peak		

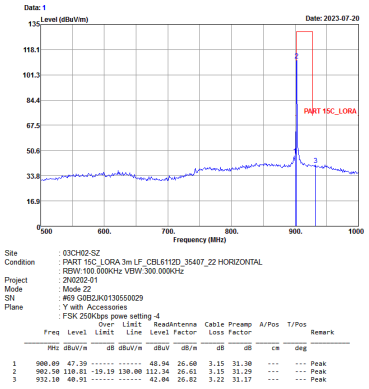
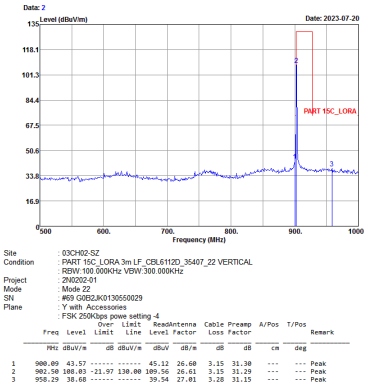
FSK 150kbps FHSS 150kbps (Harmonic @ 3m)

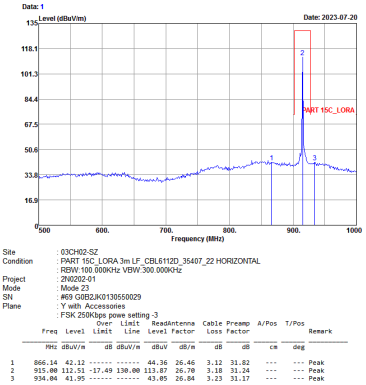
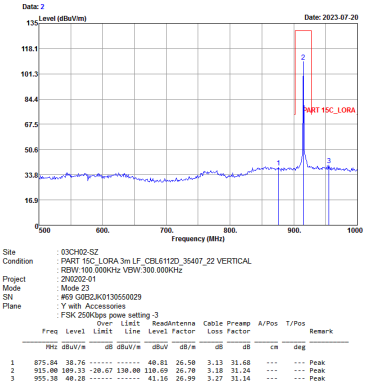
LoRa	902~928MHz Harmonic @ 3m	
	FSK 150kbps FHSS 150kbps CH01 902.4	
	Horizontal	Vertical
Peak		

LoRa	902~928MHz Harmonic @ 3m	
	FSK 150kbps FHSS 150kbps CH33 915.2	
	Horizontal	Vertical
Peak	 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 20 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 150kHz powe setting -3 Freq Level Over Limit Limit Line ReadAntenna Level Cable Factor Preamp Factor A/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 1830.40 40.88 -33.12 74.00 62.42 30.97 5.42 57.93 --- --- Peak 2 2745.60 45.72 -28.28 74.00 63.56 32.90 7.01 57.75 --- --- Peak	 Site : 03CH03-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 20 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 150kHz powe setting -3 Freq Level Over Limit Limit Line ReadAntenna Level Cable Factor Preamp Factor A/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 1830.40 41.09 -32.91 74.00 62.63 30.97 5.42 57.93 --- --- Peak 2 2745.60 44.58 -29.42 74.00 62.42 32.90 7.01 57.75 --- --- Peak

LoRa	902~928MHz Harmonic @ 3m	
	FSK 150kbps FHSS 150kbps CH64 927.6	
	Horizontal	Vertical
Peak	 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 21 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 150kHz powe setting -2 Freq Level Over Limit Limit ReadAntenna Level Cable Factor Preamp Loss Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 1855.20 40.69 -33.31 74.00 62.03 31.09 5.48 57.91 --- --- Peak 2 2782.80 47.38 -26.62 74.00 65.04 32.97 7.10 57.73 --- --- Peak	 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 21 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 150kHz powe setting -2 Freq Level Over Limit Limit ReadAntenna Level Cable Factor Preamp Loss Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 1855.20 41.86 -32.14 74.00 63.20 31.09 5.48 57.91 --- --- Peak 2 2782.80 46.71 -27.29 74.00 64.37 32.97 7.10 57.73 --- --- Peak

FSK 250kbps FHSS 250kbps (Band Edge @ 3m)

LoRa	902~928MHz Band Edge @ 3m	
	FSK 250kbps FHSS 250kbps CH01 902.5	
	Horizontal	Vertical
Peak		

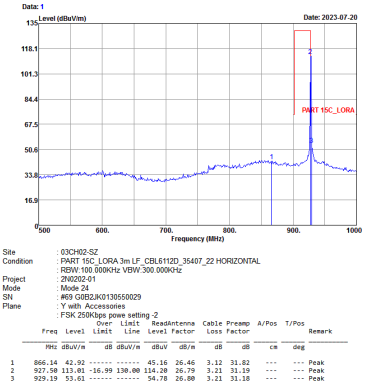
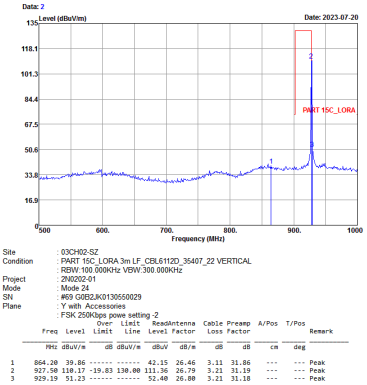
LoRa	902~928MHz Band Edge @ 3m	
	FSK 250kbps FHSS 250kbps CH26 915	
	Horizontal	Vertical
Peak		

Site : 03CH02-SZ
Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 HORIZONTAL
: RBW:100.000KHz VBW:300.000KHz
Project : ZN0202-01
Mode : Mode 23
SN : #69 G0B2JK0130550029
Plane : Y with Accessories
: FSK 250Kbps powe setting -3

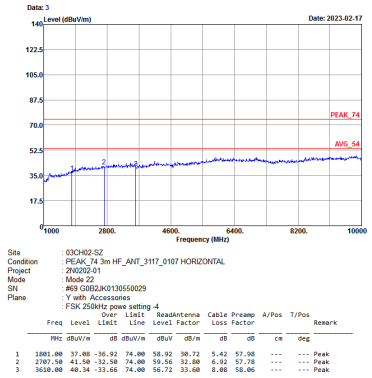
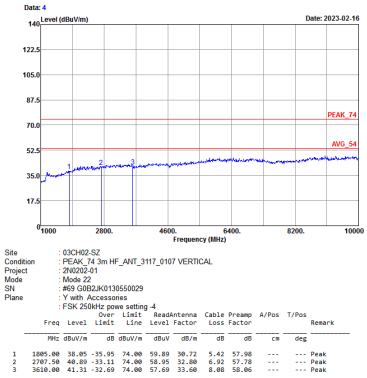
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	866.14	42.12	------	------	44.36	26.46	3.12	31.82	---	--- Peak
2	915.00	112.51	-17.49	130.00	113.87	26.70	3.18	31.24	---	--- Peak
3	934.04	41.95	------	------	43.05	26.84	3.23	31.17	---	--- Peak

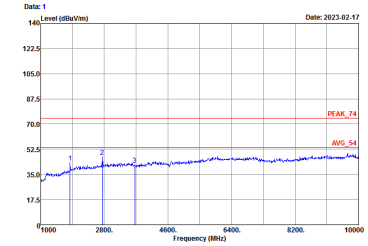
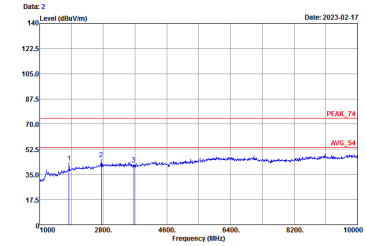
Site : 03CH02-SZ
Condition : PART 15C_LORA 3m LF_CBL6112D_35407_22 VERTICAL
: RBW:100.000KHz VBW:300.000KHz
Project : ZN0202-01
Mode : Mode 23
SN : #69 G0B2JK0130550029
Plane : Y with Accessories
: FSK 250Kbps powe setting -3

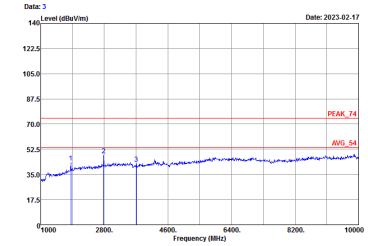
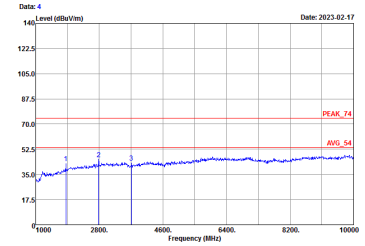
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	875.84	38.76	------	------	40.81	26.50	3.13	31.68	---	--- Peak
2	915.00	109.33	-20.67	130.00	110.69	26.70	3.18	31.24	---	--- Peak
3	955.38	40.28	------	------	41.16	26.99	3.27	31.14	---	--- Peak

LoRa	902~928MHz Band Edge @ 3m	
	FSK 250kbps FHSS 250kbps CH51 927.5	
	Horizontal	Vertical
Peak		

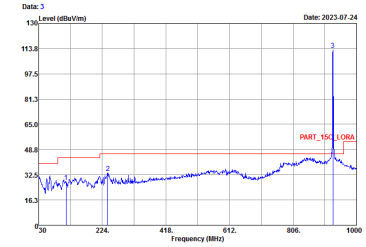
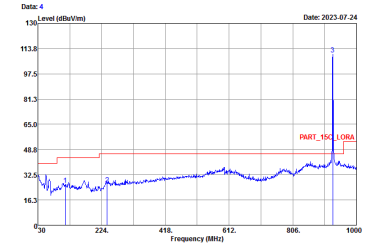
FSK 250kbps FHSS 250kbps (Harmonic @ 3m)

LoRa	902~928MHz Harmonic @ 3m	
	FSK 250kbps FHSS 250kbps CH01 902.5	
	Horizontal	Vertical
Peak		

LoRa	902~928MHz Harmonic @ 3m	
	FSK 250kbps FHSS 250kbps CH26 915	
	Horizontal	Vertical
Peak		

LoRa	902~928MHz Harmonic @ 3m	
	FSK 250kbps FHSS 250kbps CH51 927.5	
	Horizontal	Vertical
Peak	 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL Project : 2N0202-01 Mode : Mode 24 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 250kHz powe setting -2 Freq Level Over Limit Limit ReadAntenna Level Cable Factor Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 1855.00 43.39 -30.61 74.00 64.73 31.09 5.48 57.91 --- --- Peak 2 2782.50 48.49 -25.51 74.00 66.15 32.97 7.10 57.73 --- --- Peak 3 3710.00 42.43 -31.57 74.00 58.52 33.67 8.19 57.95 --- --- Peak	 Site : 03CH02-SZ Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL Project : 2N0202-01 Mode : Mode 24 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 250kHz powe setting -2 Freq Level Over Limit Limit ReadAntenna Level Cable Factor Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 1855.00 42.88 -31.12 74.00 64.22 31.09 5.48 57.91 --- --- Peak 2 2782.50 45.60 -28.40 74.00 63.26 32.97 7.10 57.73 --- --- Peak 3 3710.00 43.30 -30.70 74.00 59.39 33.67 8.19 57.95 --- --- Peak

FSK 250kbps (Below 1GHz @ 3m)

LoRa	902~928 Below 1GHz @ 3m	
ANT	FSK 250kbps FHSS 250kbps CH51 927.5	
	Horizontal	Vertical
Peak	 Site : 03CH02-SZ Condition : PART_15C_LORA 3m LF_CBL6112D_35407_22 HORIZONTAL Project : ZN0202-01 Mode : Mode 24 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 250Kbps powe setting -2 Freq / Level / Over Limit / Limit Line / ReadAntenna Level / Cable Factor / Preamp Loss / A/Pos / T/Pos / Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 113.42 28.04 -15.46 43.50 41.43 17.60 1.13 32.12 --- --- Peak 2 240.49 33.53 -12.47 46.00 46.38 17.50 1.61 31.96 --- --- Peak 3 * 927.50 113.01 67.01 46.00 114.20 26.79 3.21 31.19 --- --- Peak	 Site : 03CH02-SZ Condition : PART_15C_LORA 3m LF_CBL6112D_35407_22 VERTICAL Project : ZN0202-01 Mode : Mode 24 SN : #69 G0B2JK0130550029 Plane : Y with Accessories : FSK 250Kbps powe setting -2 Freq / Level / Over Limit / Limit Line / ReadAntenna Level / Cable Factor / Preamp Loss / A/Pos / T/Pos / Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 113.42 26.09 -17.41 43.50 39.48 17.60 1.13 32.12 --- --- Peak 2 240.49 26.45 -19.55 46.00 39.30 17.50 1.61 31.96 --- --- Peak 3 * 927.50 110.17 64.17 46.00 111.36 26.79 3.21 31.19 --- --- Peak