



Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR241000213802

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TEST REPORT

Application No.: KSCR2410002138AT
FCC ID: 2BKBC-XFVI-A92
IC: 32848-XFVIA92
Applicant: Hong Kong Future Intelligent Technology Co., Ltd
Address of Applicant: Room 1450 14/F, Eton Tower, 8 Hysan Avenue, Causeway Bay, Hong Kong, China
Manufacturer: Hong Kong Future Intelligent Technology Co., Ltd
Address of Manufacturer: Room 1450 14/F, Eton Tower, 8 Hysan Avenue, Causeway Bay, Hong Kong, China
Factory: JIANGXIASAP ELECTRONICS CO., LTD.
Address of Factory: SOUTHEAST CORNER OF THE INTERSECTION OF CHAOYANG ROAD AND PANLONG ROAD IN GAOXIN WEST DISTRICT, JI'AN COUNTY, JIAN CITY JIANGXI PROVINCE
Equipment Under Test (EUT):
EUT Name: viaim RecDot
Model No.: XFVI-A92
HVIN: XFVI-A92-L; XFVI-A92-R
Trade Mark: viaim
Standard(s) : 47 CFR Part 15, Subpart C 15.247
RSS-247 Issue 3, August 2023
RSS-Gen Issue 5 Amendment 2 (February 2021)
Date of Receipt: 2024-10-29
Date of Test: 2024-11-06 to 2024-11-19
Date of Issue: 2024-11-20

Test Result:

Pass*

* In the configuration tested, the EUT complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



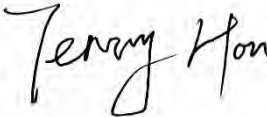
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Revision Record			
Version	Description	Date	Remark
00	Original	2024-11-20	/

Authorized for issue by:			
Tested By			
		Eric_Liu/Project Engineer	
Approved By			
		Terry Hou /Reviewer	

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2 Test Summary

Radio Spectrum Technical Requirement				
Item	FCC Requirement	IC Requirement	Method	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	RSS-Gen Clause 6.8	N/A	Customer Declaration
Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence	47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)	RSS-247 Section 5.1(a)	N/A	Customer Declaration

N/A: Not applicable

Radio Spectrum Matter Part				
Item	FCC Requirement	IC Requirement	Method	Result
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.207	RSS-Gen Section 8.8	ANSI C63.10 (2013) Section 6.2	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247(b)(1)	RSS-247 Section 5.4(b)	ANSI C63.10 (2013) Section 7.8.5	Pass
20dB Bandwidth	47 CFR Part 15, Subpart C 15.247(a)(1)	RSS-247 Section 5.1(a)	ANSI C63.10 (2013) Section 7.8.7	Pass
Carrier Frequencies Separation	47 CFR Part 15, Subpart C 15.247a(1)	RSS-247 Section 5.1(b)	ANSI C63.10 (2013) Section 7.8.2	Pass
Hopping Channel Number	47 CFR Part 15, Subpart C 15.247a(1)(iii)	RSS-247 Section 5.1(d)	ANSI C63.10 (2013) Section 7.8.3	Pass
Dwell Time	47 CFR Part 15, Subpart C 15.247a(1)(iii)	RSS-247 Section 5.1(d)	ANSI C63.10 (2013) Section 7.8.4	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247(d)	RSS-247 Section 5.5	ANSI C63.10 (2013) Section 7.8.6	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247(d)	RSS-247 Section 5.5	ANSI C63.10 (2013) Section 7.8.8	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.205 & 15.209	RSS-247 Section 3.3 & RSS-Gen Section 8.9	ANSI C63.10 (2013) Section 6.10.5	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.205 & 15.209	RSS-247 Section 3.3 & RSS-Gen Section 8.9	ANSI C63.10 (2013) Section 6.4,6.5,6.6	Pass
99% Bandwidth	-	RSS-Gen Section 6.7	ANSI C63.10 Section 6.9.3	Pass

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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 5V by adapter Charging case: Capacity: 550mAh 2.12Wh Input: DC 5V, 0.8A Output: DC 5V, 0.24A Battery: Model: MC1154D Normal Voltage: 3.85 V Rated capacity: 60mAh
Test Voltage:	AC 120V/60Hz
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.2 Dual mode
Modulation Type:	GFSK, pi/4DQPSK, 8DPSK
Number of Channels:	79
Channel Spacing:	1MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Antenna Type:	LDS Antenna
Antenna Gain:	Left: -1.29dBi; Right: 0.08dBi (Provided by the manufacturer)
SN:	Left: A92LM244300001 Right: A92RM244300001
Firmware Version:	V5.0.5.10

4.2 Power level setting using in test:

Channel	DH5	2DH5	3DH5
	Ant 1	Ant 1	Ant 1
0	2	2	2
39	2	2	2
78	2	2	2

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Notebook	LENOVO	K27	EB24537645
AC Adapter	DVE	DSA-12G-12FEU	/

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4.4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Timeout	2s
3	Duty Cycle	0.37%
4	Occupied Bandwidth	3%
5	RF Conducted Power	0.6dB
6	RF Power Density	2.9dB
7	Conducted Spurious Emissions	0.75dB
8	RF Radiated Power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
9	Radiated Spurious Emission Test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
10	Temperature Test	1°C
11	Humidity Test	3%
12	Supply Voltages	1.5%
13	Time	3%
Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

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4.5 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).
3. Sample source: sent by customer.

4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

• FCC

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

• ISED

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

• VCCI

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None



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5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
Conducted Emission at Mains Terminals						
1	EMI Test Receive	R&S	ESCI	KS301101	01/15/2024	01/14/2025
2	LISN	R&S	ENV216	KS301197	01/15/2024	01/14/2025
3	LISN	Schwarzbeck	NNLK 8129	KS301091	01/15/2024	01/14/2025
4	Pulse Limiter	R&S	ESH3-Z2	KUS1902E001	01/15/2024	01/14/2025
5	CE test Cable	Thermax	/	CZ301102	01/15/2024	01/14/2025
6	Test Software	ESE	E3_V 6.111221a	/	N.C.R	N.C.R
RF Conducted Test						
1	Spectrum Analyzer	Keysight	N9020A	KUS1911E004-2	08/01/2024	07/31/2025
2	Spectrum Analyzer	Keysight	N9020A	KUS2001M001-2	08/01/2024	07/31/2025
3	Spectrum Analyzer	Keysight	N9030B	KSEM021-1	01/15/2024	01/14/2025
4	Signal Generator	R&S	SMBV100B	KSEM032	03/19/2024	03/18/2025
5	Signal Generator	R&S	SMW200A	KSEM020-1	08/02/2024	08/01/2025
6	Signal Generator	Agilent	N5182A	KUS2001M001-1	08/01/2024	07/31/2025
7	Signal Generator	Agilent	E8257C	KS301066	08/06/2024	08/05/2025
8	Radio Communication Test Station	Anritsu	MT8000A	KSEM001-1	08/01/2024	07/31/2025
9	Radio Communication Analyzer	Anritsu	MT8821C	KSEM002-1	03/19/2024	03/18/2025
10	Universal Radio Communication Tester	R&S	CMW500	KUS1911E004-1	08/12/2024	08/11/2025
11	Switcher	TST	FY562	KUS2001M001-4	01/15/2024	01/14/2025
12	Conducted Test Cable	Thermax	RF01-RF04	CZ301111-CZ301120	01/15/2024	01/14/2025
13	Temp. / Humidity Chamber	TERCHY	MHK-120AK	KS301190	08/26/2024	08/25/2025
14	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-5	03/19/2024	03/18/2025
15	Software	BST	TST-PASS	/	NCR	NCR
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	08/06/2024	08/05/2025
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	03/19/2024	03/18/2025
4	Loop Antenna	COM-POWER	AL-130R	KUS1806E001	03/18/2023	03/17/2025
5	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E005	06/29/2023	06/28/2025
6	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E006	03/19/2024	03/18/2025
7	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	03/23/2024	08/22/2026
8	Horn-antenna(1-18GHz)	ETS-LINDGREN	3117	KS301186	04/07/2023	04/06/2025
9	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	CZ301058	01/07/2024	01/06/2026
10	Amplifier(30MHz~18GHz)	PANSHAN TECHNOLOGY	LNA:1~18G	KSEM010-1	01/15/2024	01/14/2025
11	Amplifier(18~40GHz)	PANSHAN TECHNOLOGY	LNA180400G40	KSEM038	08/12/2024	08/11/2025
12	RE Test Cable	REBES MICROWAVE	/	CZ301097	08/12/2024	08/11/2025
13	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	03/21/2024	03/20/2025
14	Software	Faratronic	EZ EMC-v 3A1	/	NCR	NCR
15	Software	ESE	E3_V 6.111221a	/	NCR	NCR

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is LDS Antenna and no consideration of replacement. The best case gain of the Left earphone antenna is -1.29dBi, Right earphone antenna is 0.08dBi.

Antenna location: Refer to internal photo.

6.2 Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence

6.2.1 Test Requirement:

47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)

6.2.2 Conclusion

Standard Requirement:

The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

Compliance for section 15.247(a)(1):

According to Technical Specification, the pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONES; i.e. the shift register is initialized with nine ones.

> Number of shift register stages: 9

> Length of pseudo-random sequence: $2^9 - 1 = 511$ bits

> Longest sequence of zeros: 8 (non-inverted signal)

Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:

Each frequency used equally on the average by each transmitter.

According to Technical Specification, the receivers are designed to have input and IF bandwidths that match the hopping channel bandwidths of any transmitters and shift frequencies in synchronization with the transmitted signals.

Compliance for section 15.247(g):

According to Technical Specification, the system transmits the packet with the pseudorandom hopping frequency with a continuous data and the short burst transmission from the Bluetooth system is also transmitted under the frequency hopping system with the pseudorandom hopping frequency system.

Compliance for section 15.247(h):

According to Technical specification, the system incorporates with an adaptive system to detect other user within the spectrum band so that it individually and independently to avoid hopping on the occupied channels.

The system is designed not have the ability to coordinated with other FHSS System in an effort to avoid the simultaneous occupancy of individual hopping frequencies by multiple transmitter.

7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

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.		
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz		

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 21.6 °C

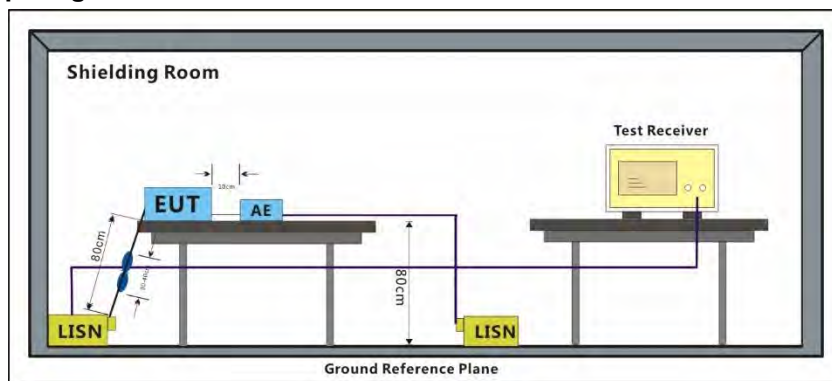
Humidity: 46.9 % RH

Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.1.3 Test Setup Diagram



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7.1.4 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: Level=Read Level+ Cable Loss+ LISN Factor

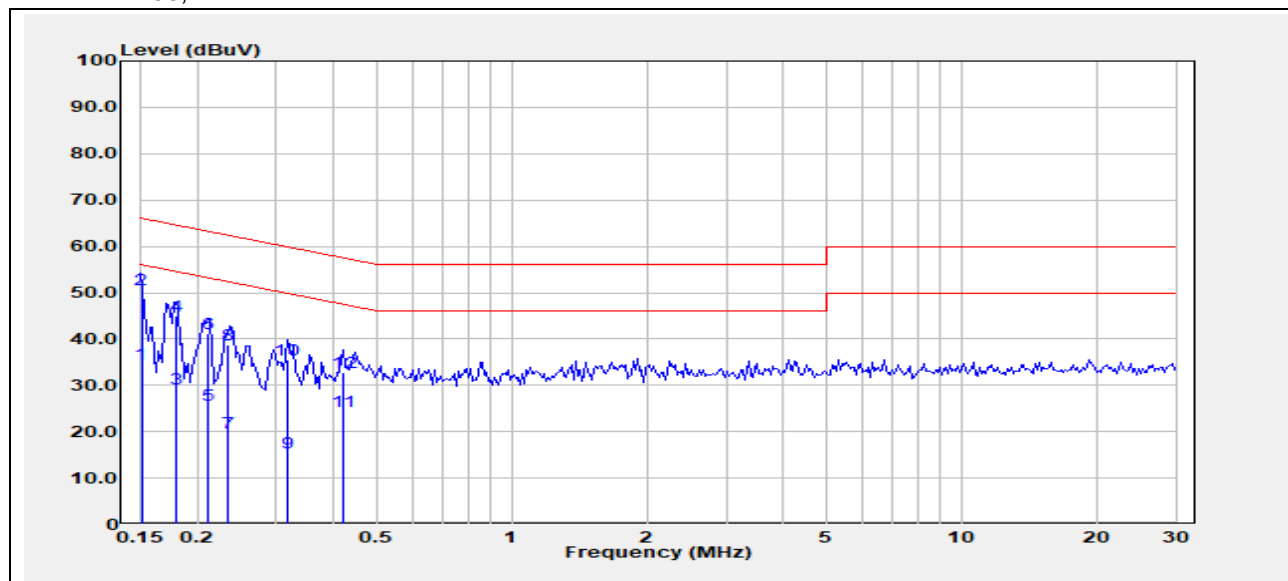
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Test Mode: 00; Line: Live line



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.1502	14.38	20.25	34.63	55.99	-21.36
2	0.1502	30.35	20.25	50.60	65.99	-15.39
3	0.1789	9.25	20.13	29.38	54.54	-25.16
4	0.1789	24.99	20.13	45.12	64.54	-19.42
5	0.2107	5.56	20.06	25.62	53.18	-27.56
6	0.2107	21.06	20.06	41.12	63.18	-22.06
7	0.2347	-0.31	20.06	19.75	52.28	-32.53
8	0.2347	18.57	20.06	38.63	62.28	-23.65
9	0.3160	-4.66	20.08	15.42	49.81	-34.39
10	0.3160	15.37	20.08	35.45	59.81	-24.36
11	0.4221	4.40	20.06	24.46	47.41	-22.95
12	0.4221	12.82	20.06	32.88	57.41	-24.53

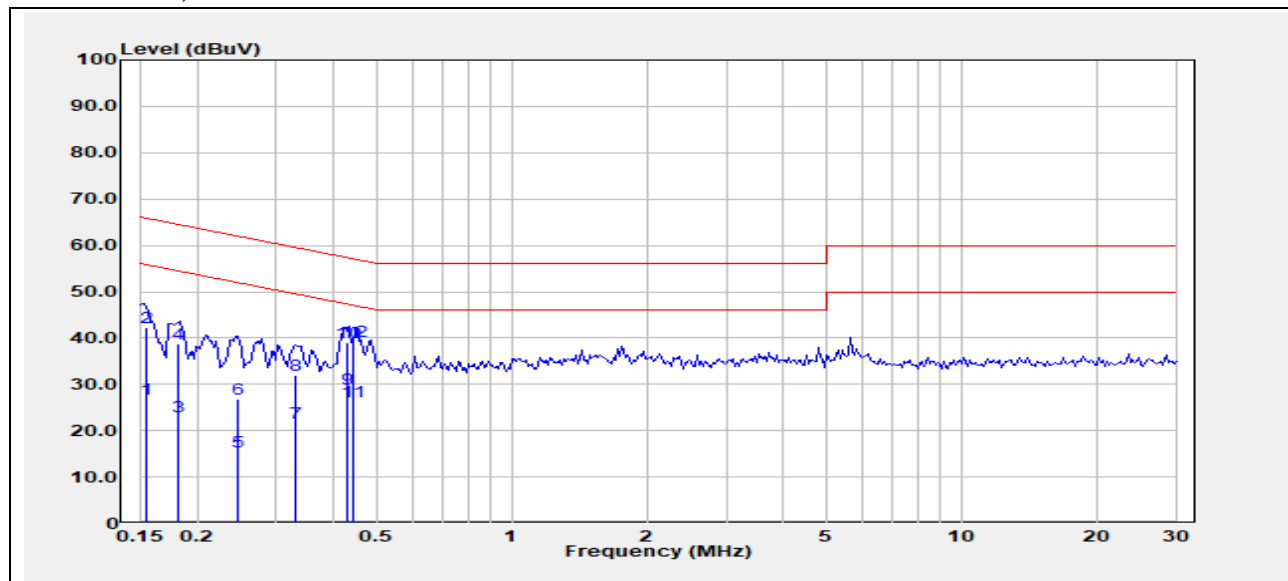
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Test Mode: 00; Line: Neutral Line



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.1541	6.57	20.18	26.75	55.77	-29.02
2	0.1541	22.13	20.18	42.31	65.77	-23.46
3	0.1817	2.83	20.14	22.97	54.41	-31.44
4	0.1817	18.59	20.14	38.73	64.41	-25.68
5	0.2473	-4.53	20.10	15.57	51.85	-36.28
6	0.2473	6.68	20.10	26.78	61.85	-35.07
7	0.3292	1.47	20.09	21.56	49.47	-27.91
8	0.3292	12.02	20.09	32.11	59.47	-27.36
9	0.4317	8.94	20.05	28.99	47.22	-18.23
10	0.4317	18.92	20.05	38.97	57.22	-18.25
11	0.4429	6.39	20.03	26.42	47.01	-20.59
12	0.4429	19.14	20.03	39.17	57.01	-17.84

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7.2 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.10.5

Measurement Distance: 3m

Limit:

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

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.3 °C

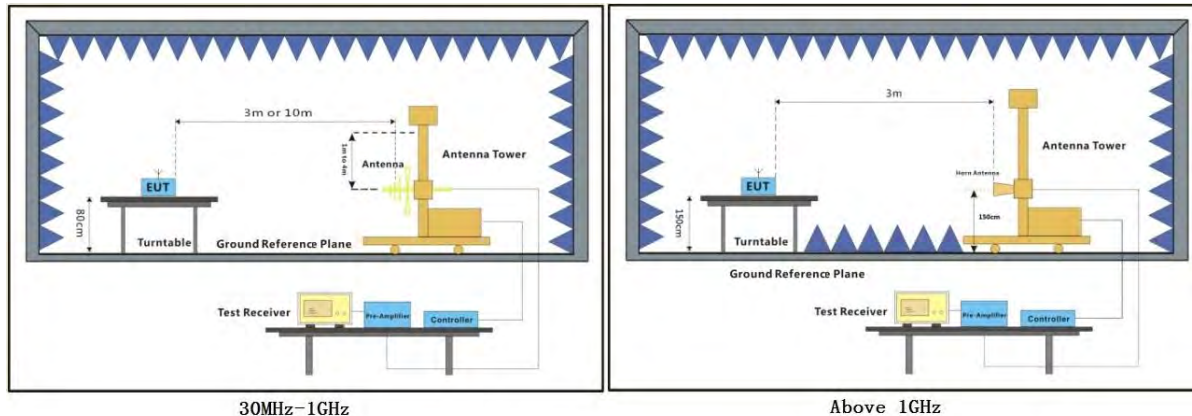
Humidity: 45.2 % RH

Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- Test the EUT in the lowest channel, the middle channel, the Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

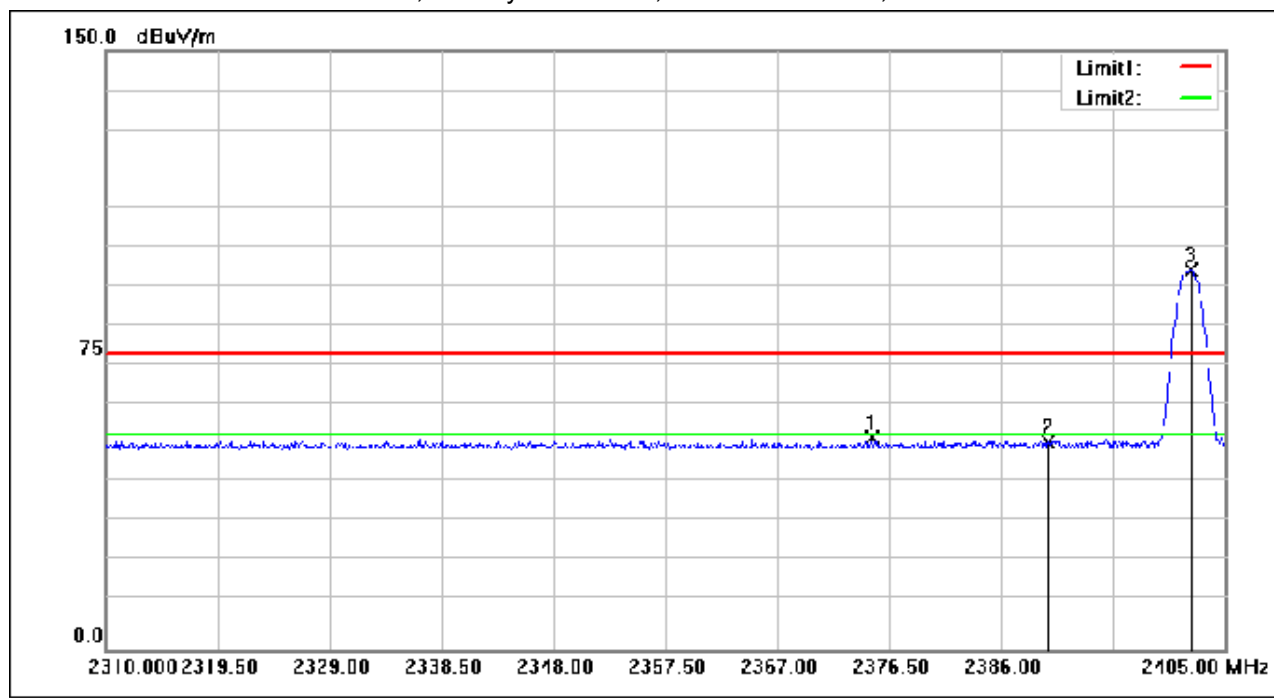
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2375.051	77.73	-24.78	52.95	74.00	-21.05	peak
2	2390.000	76.74	-24.71	52.03	74.00	-21.97	peak
3	2402.207	119.57	-24.65	94.92	74.00	20.92	peak

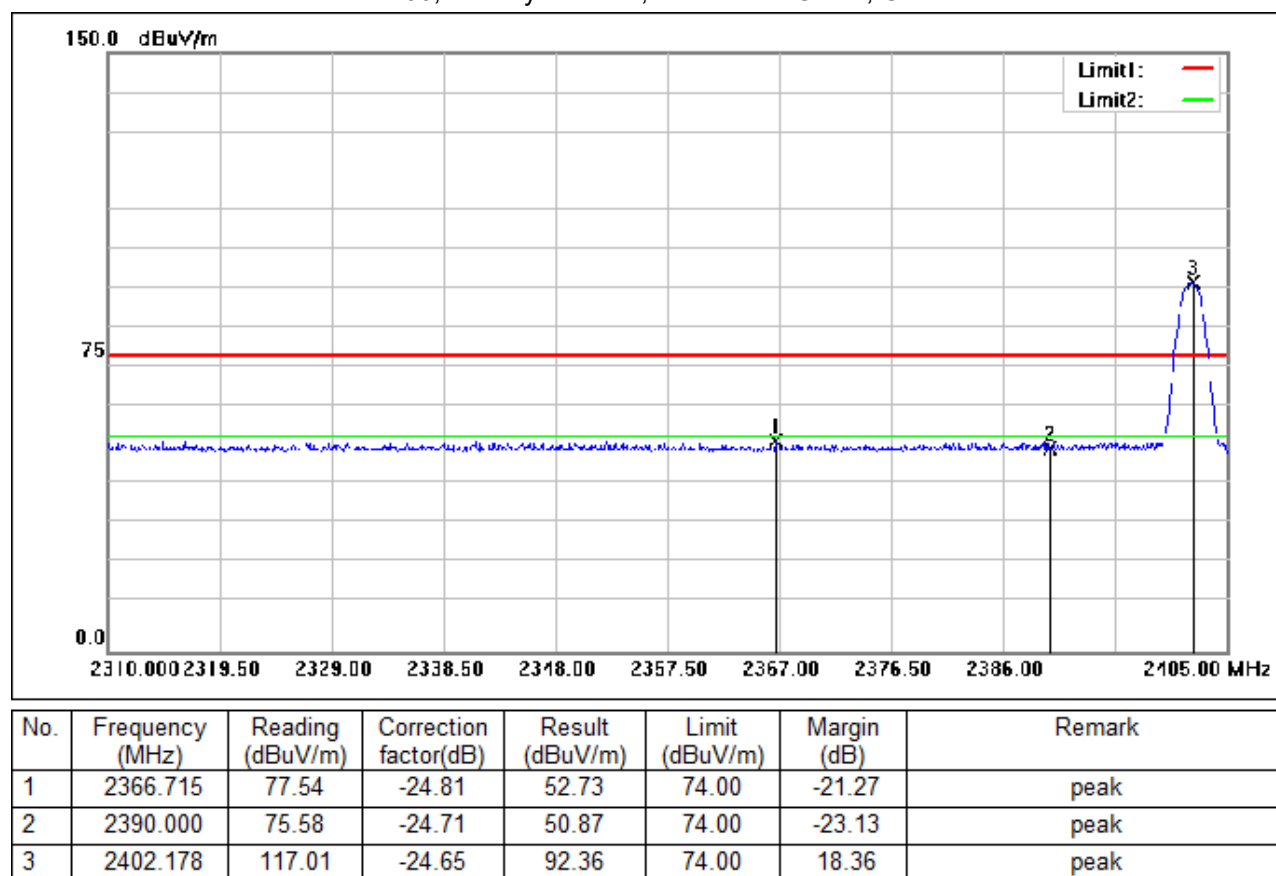
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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



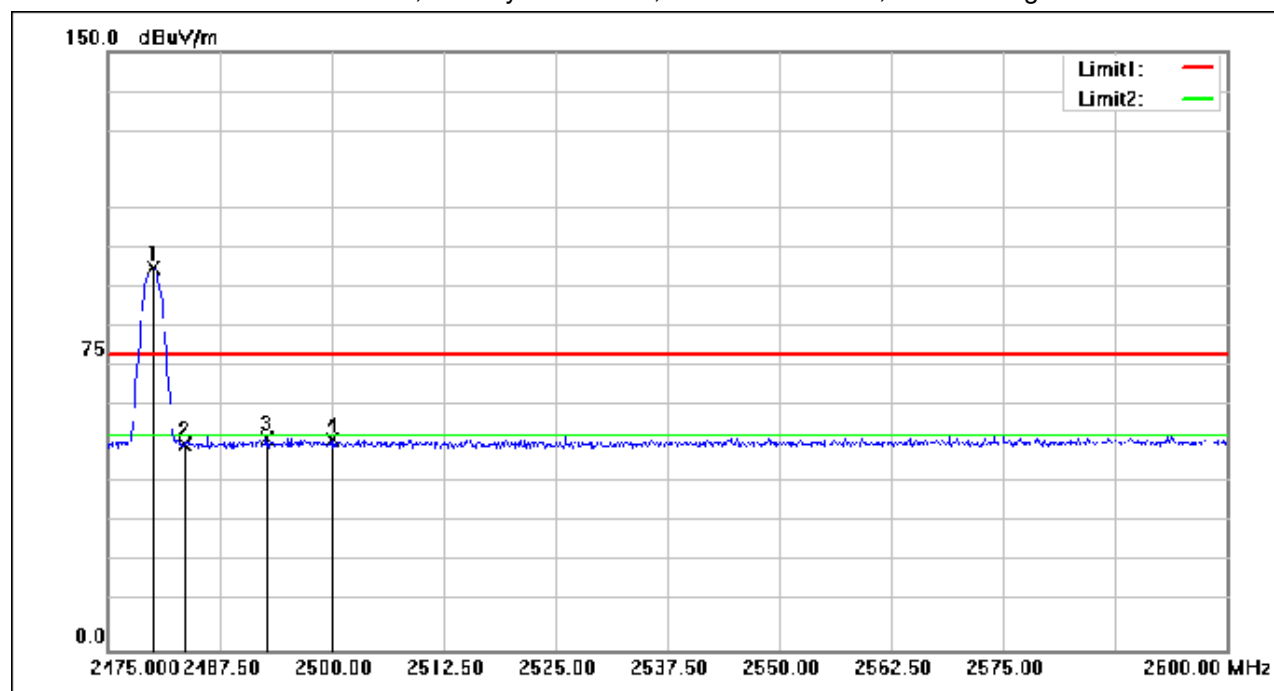
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.156	119.99	-24.28	95.71	74.00	21.71	peak
2	2483.500	75.85	-24.27	51.58	74.00	-22.42	peak
3	2492.669	77.19	-24.23	52.96	74.00	-21.04	peak
4	2500.000	76.94	-24.19	52.75	74.00	-21.25	peak

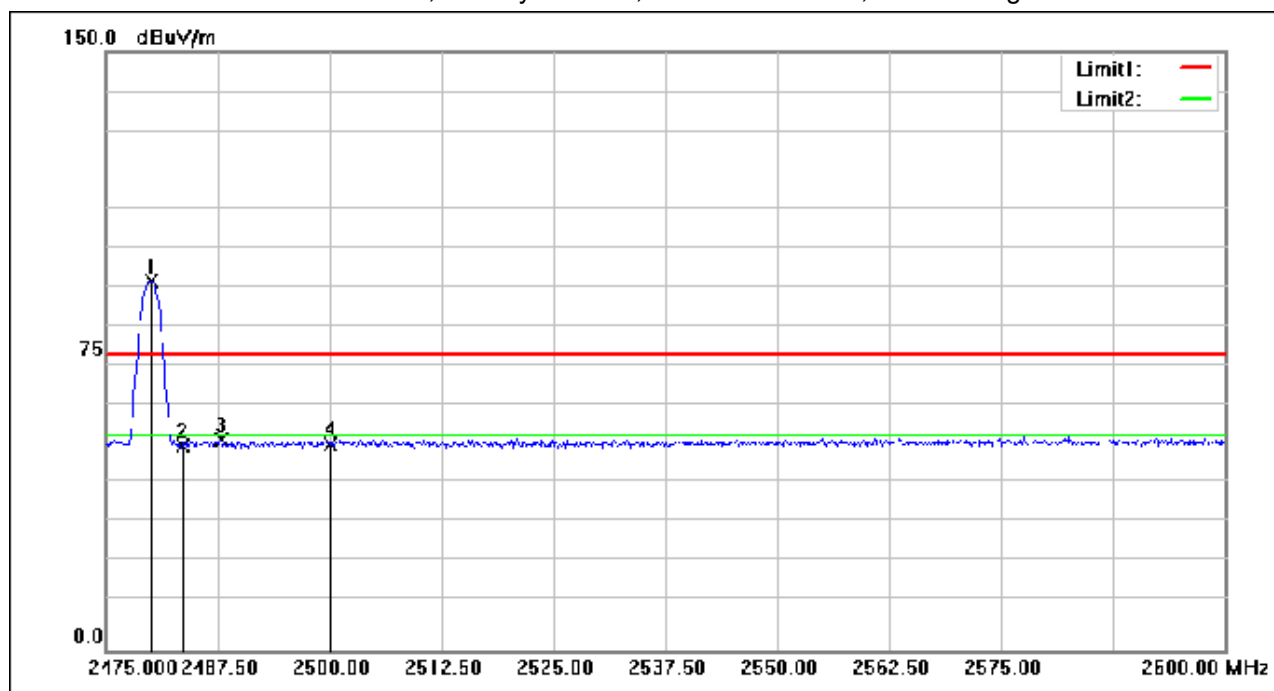
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.113	116.84	-24.28	92.56	74.00	18.56	peak
2	2483.500	75.35	-24.27	51.08	74.00	-22.92	peak
3	2487.856	76.85	-24.25	52.60	74.00	-21.40	peak
4	2500.000	75.89	-24.19	51.70	74.00	-22.30	peak

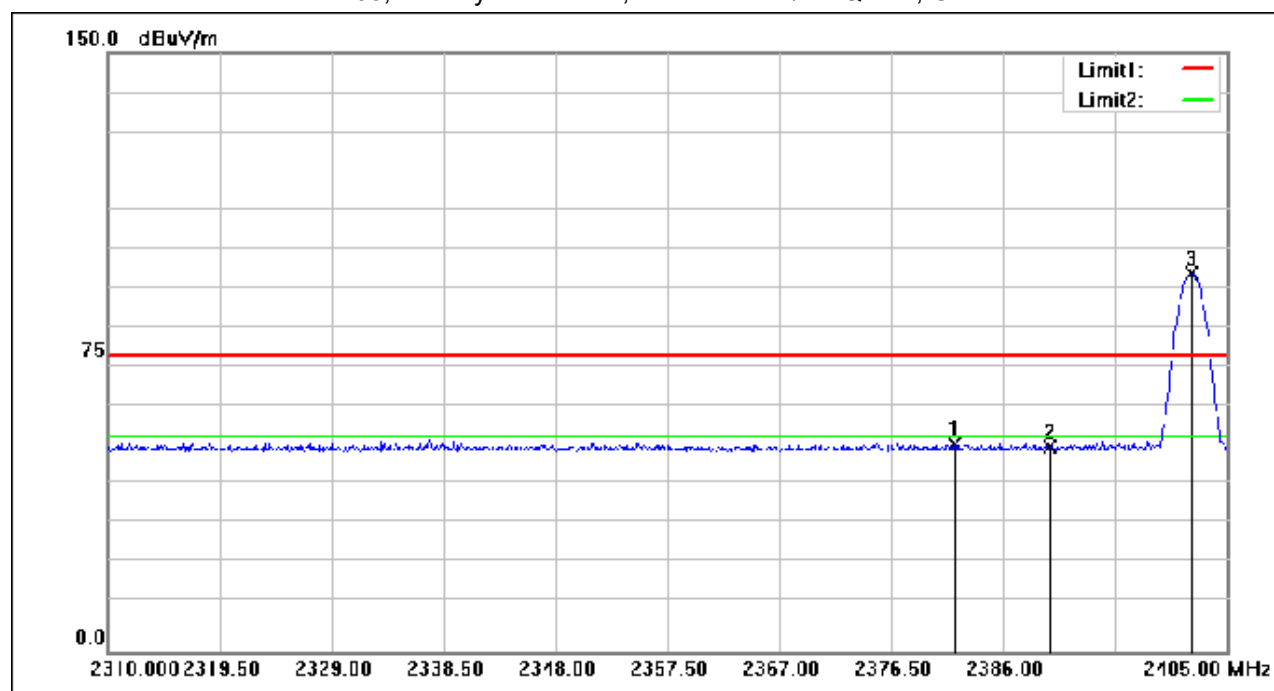
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation: $\pi/4$ DQPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2381.867	76.62	-24.74	51.88	74.00	-22.12	peak
2	2390.000	76.02	-24.71	51.31	74.00	-22.69	peak
3	2402.112	119.38	-24.65	94.73	74.00	20.73	peak

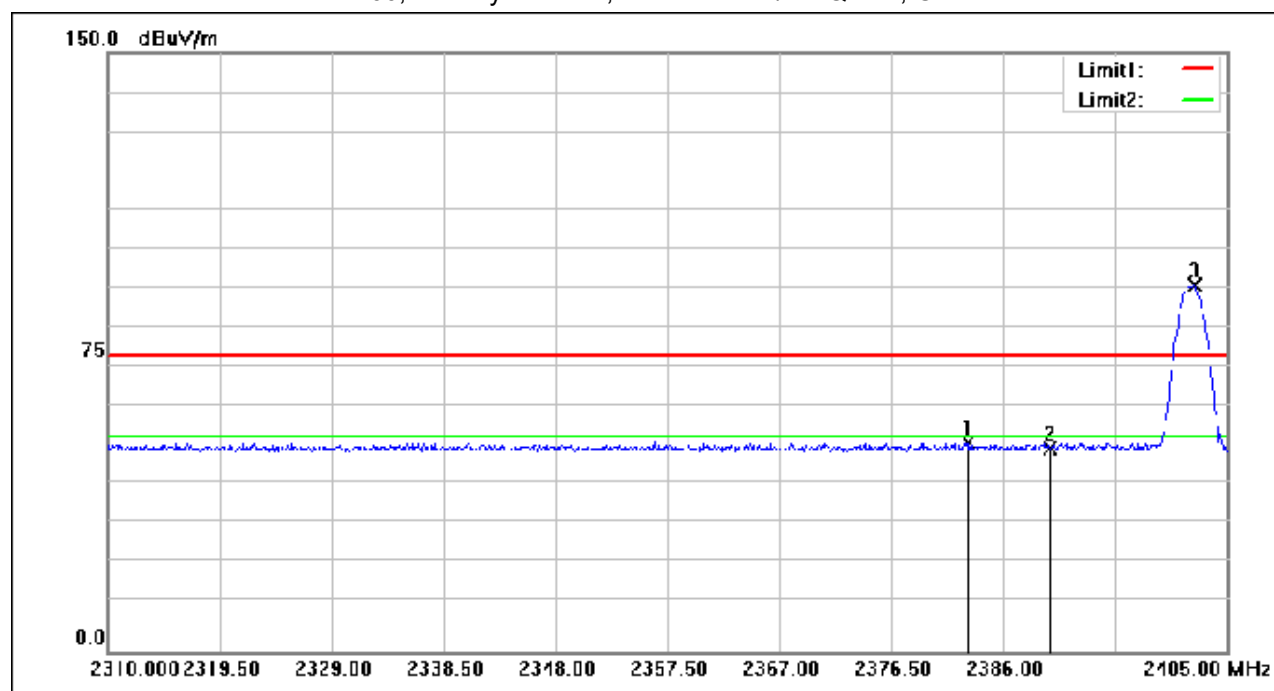
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation: $\pi/4$ DQPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.084	77.08	-24.74	52.34	74.00	-21.66	peak
2	2390.000	75.35	-24.71	50.64	74.00	-23.36	peak
3	2402.245	116.25	-24.65	91.60	74.00	17.60	peak

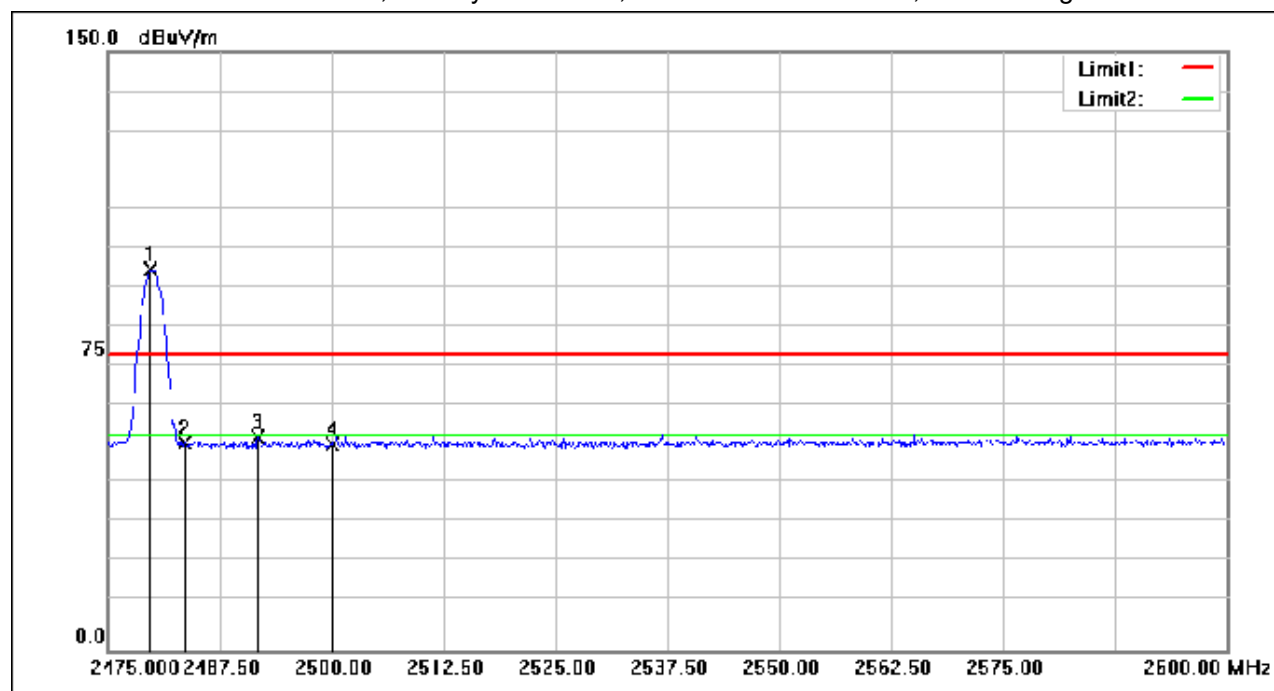
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation: $\pi/4$ DQPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2479.681	119.65	-24.28	95.37	74.00	21.37	peak
2	2483.500	76.30	-24.27	52.03	74.00	-21.97	peak
3	2491.787	77.57	-24.23	53.34	74.00	-20.66	peak
4	2500.000	75.87	-24.19	51.68	74.00	-22.32	peak

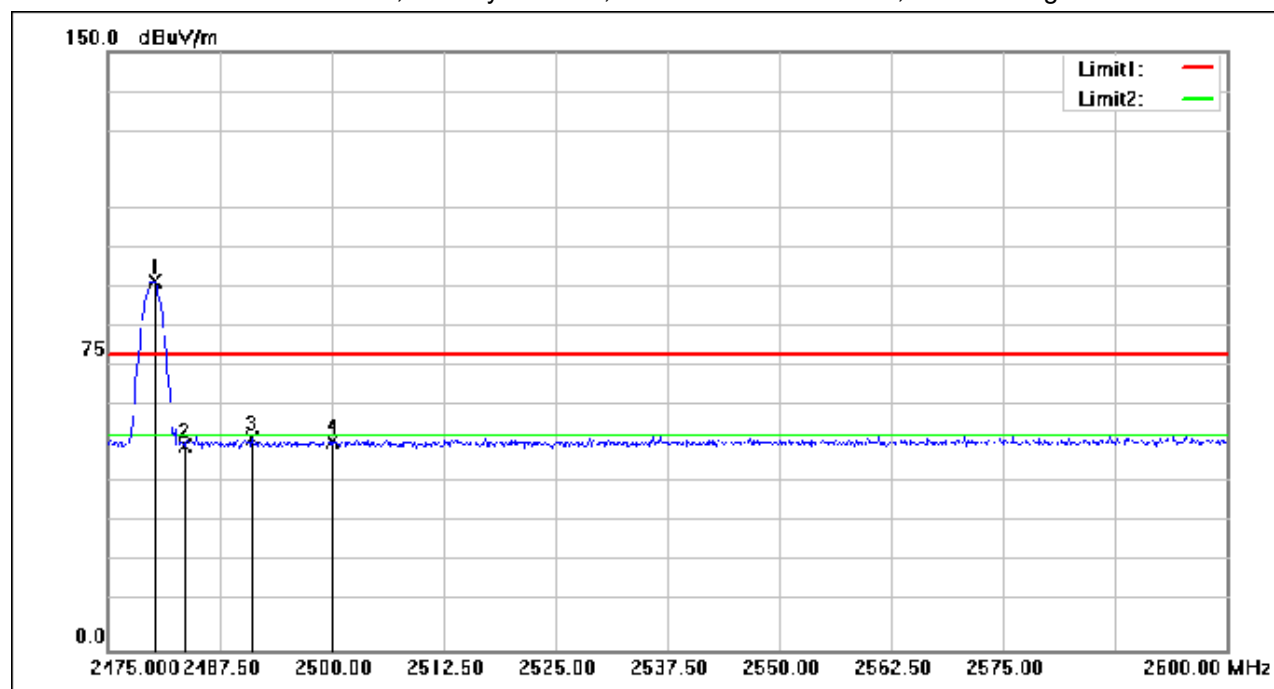
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation: $\pi/4$ DQPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.238	116.71	-24.28	92.43	74.00	18.43	peak
2	2483.500	75.33	-24.27	51.06	74.00	-22.94	peak
3	2491.050	77.12	-24.24	52.88	74.00	-21.12	peak
4	2500.000	76.51	-24.19	52.32	74.00	-21.68	peak

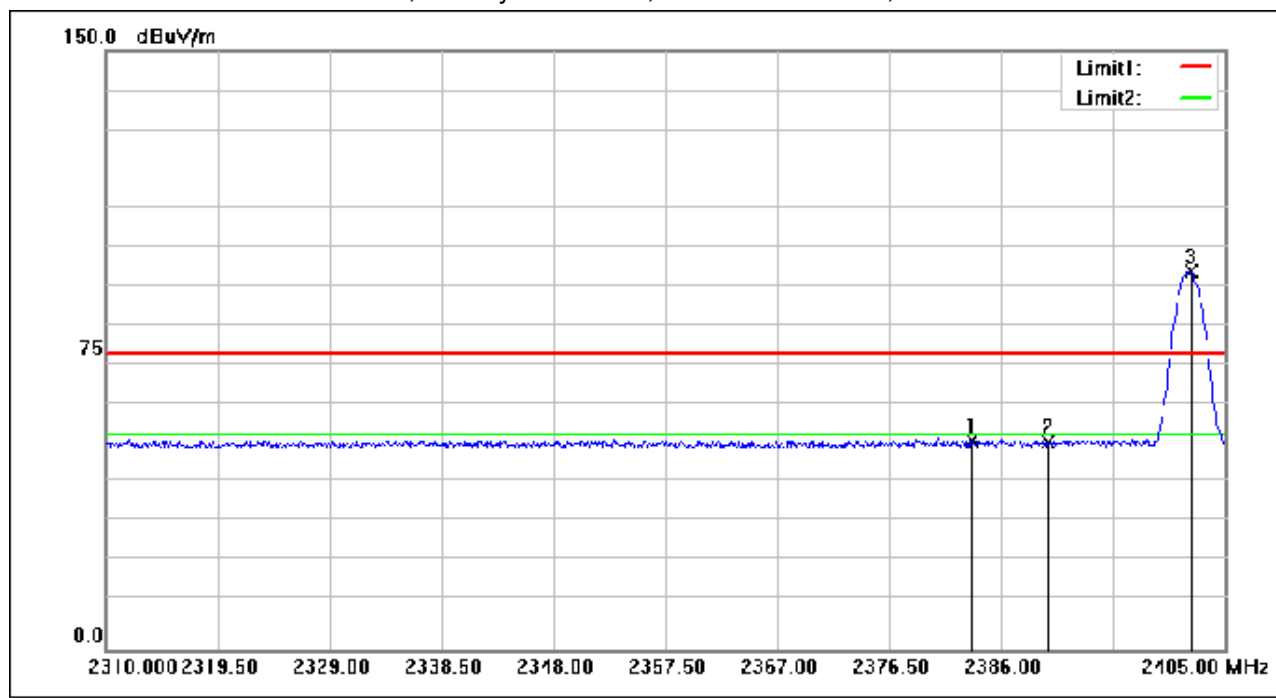
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation: 8DPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.501	77.09	-24.73	52.36	74.00	-21.64	peak
2	2390.000	76.79	-24.71	52.08	74.00	-21.92	peak
3	2402.160	119.43	-24.65	94.78	74.00	20.78	peak

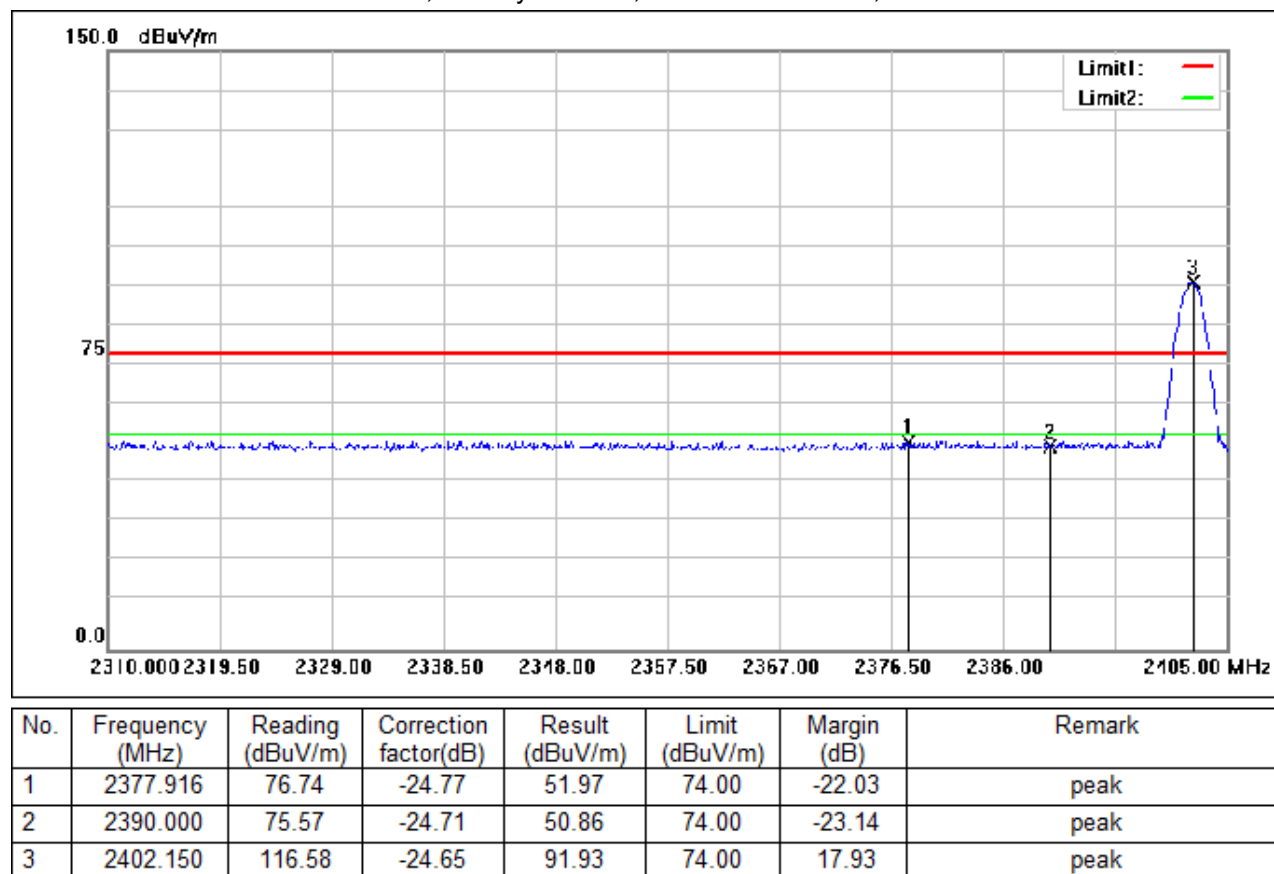
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation: 8DPSK; Channel: Low



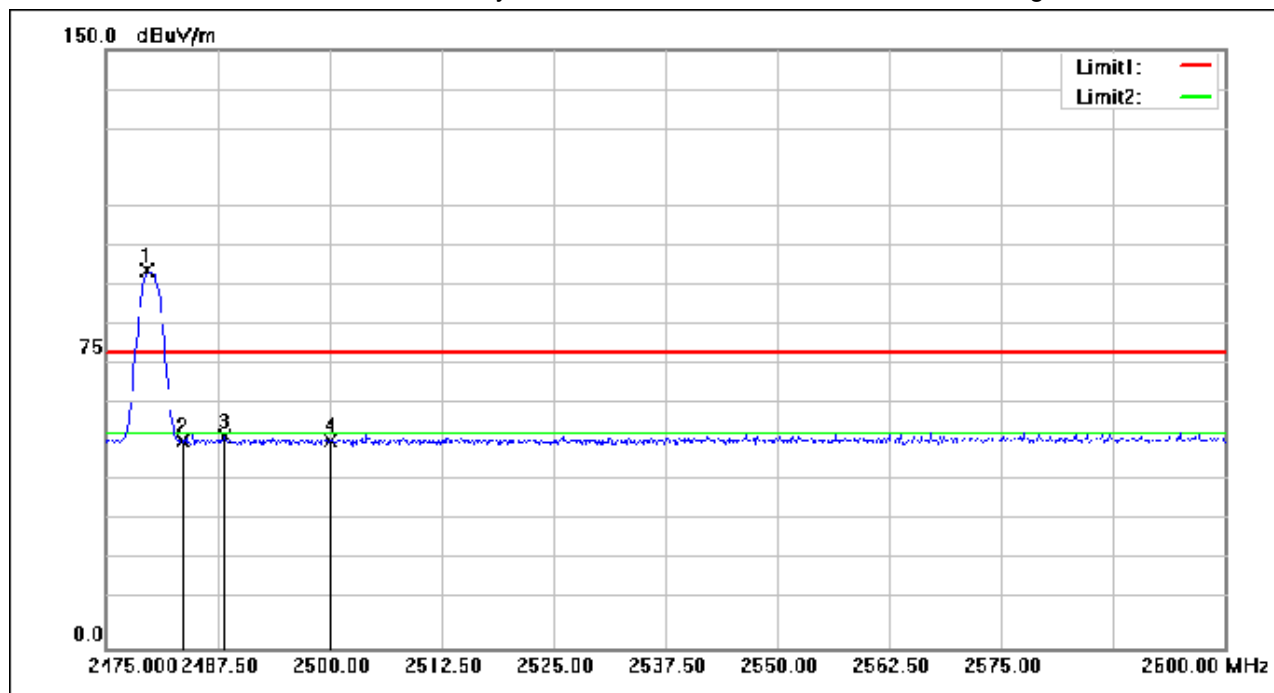
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation: 8DPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2479.700	119.11	-24.28	94.83	74.00	20.83	peak
2	2483.500	76.13	-24.27	51.86	74.00	-22.14	peak
3	2488.256	77.24	-24.25	52.99	74.00	-21.01	peak
4	2500.000	76.10	-24.19	51.91	74.00	-22.09	peak

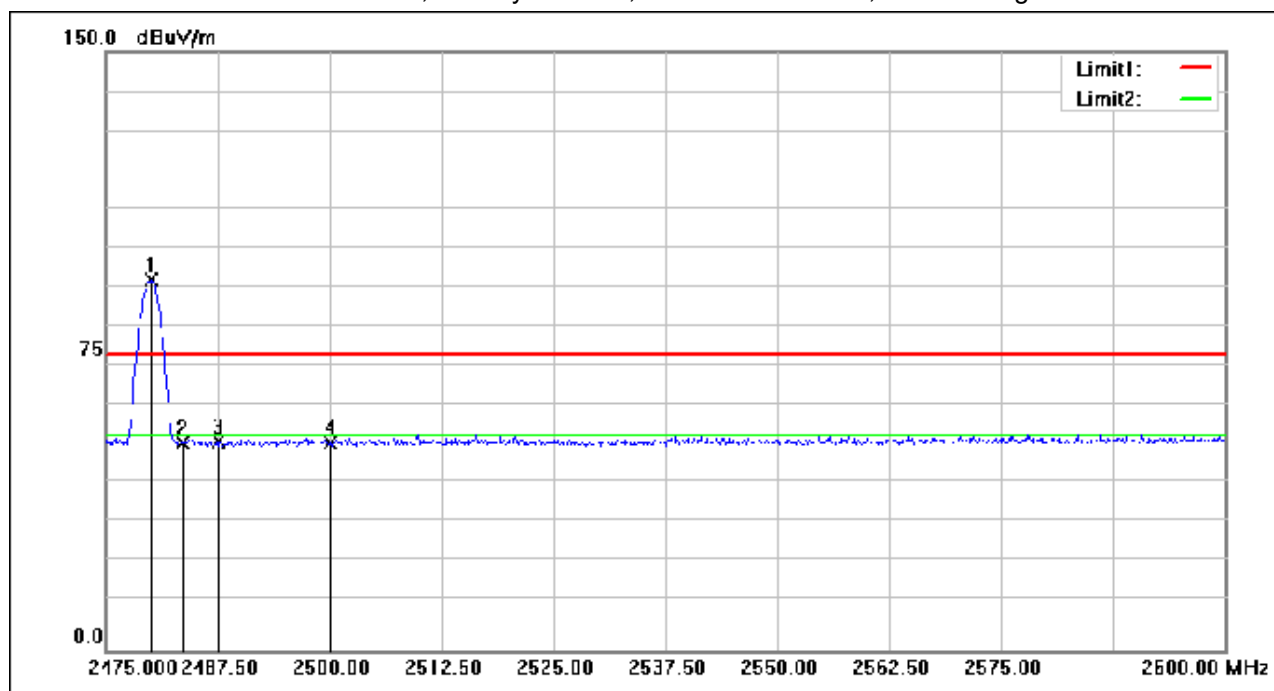
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation: 8DPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.175	116.95	-24.28	92.67	74.00	18.67	peak
2	2483.500	76.13	-24.27	51.86	74.00	-22.14	peak
3	2487.544	76.75	-24.25	52.50	74.00	-21.50	peak
4	2500.000	76.03	-24.19	51.84	74.00	-22.16	peak

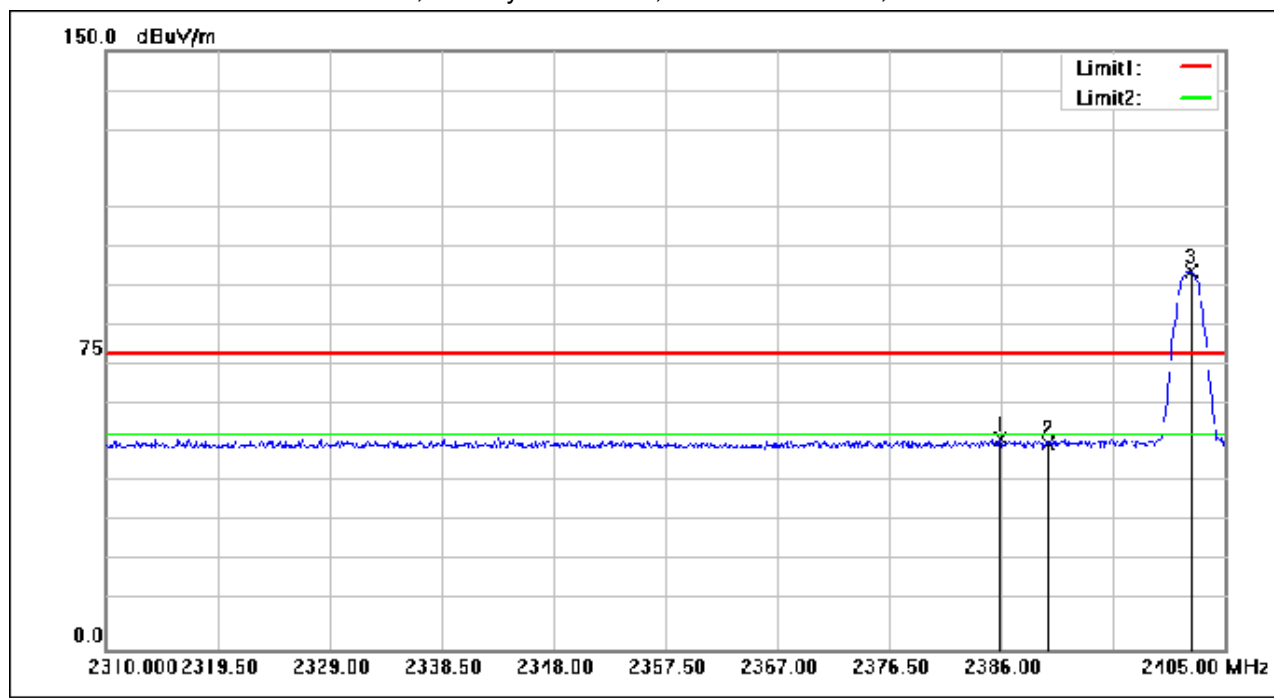
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.905	77.32	-24.72	52.60	74.00	-21.40	peak
2	2390.000	76.13	-24.71	51.42	74.00	-22.58	peak
3	2402.188	119.44	-24.65	94.79	74.00	20.79	peak

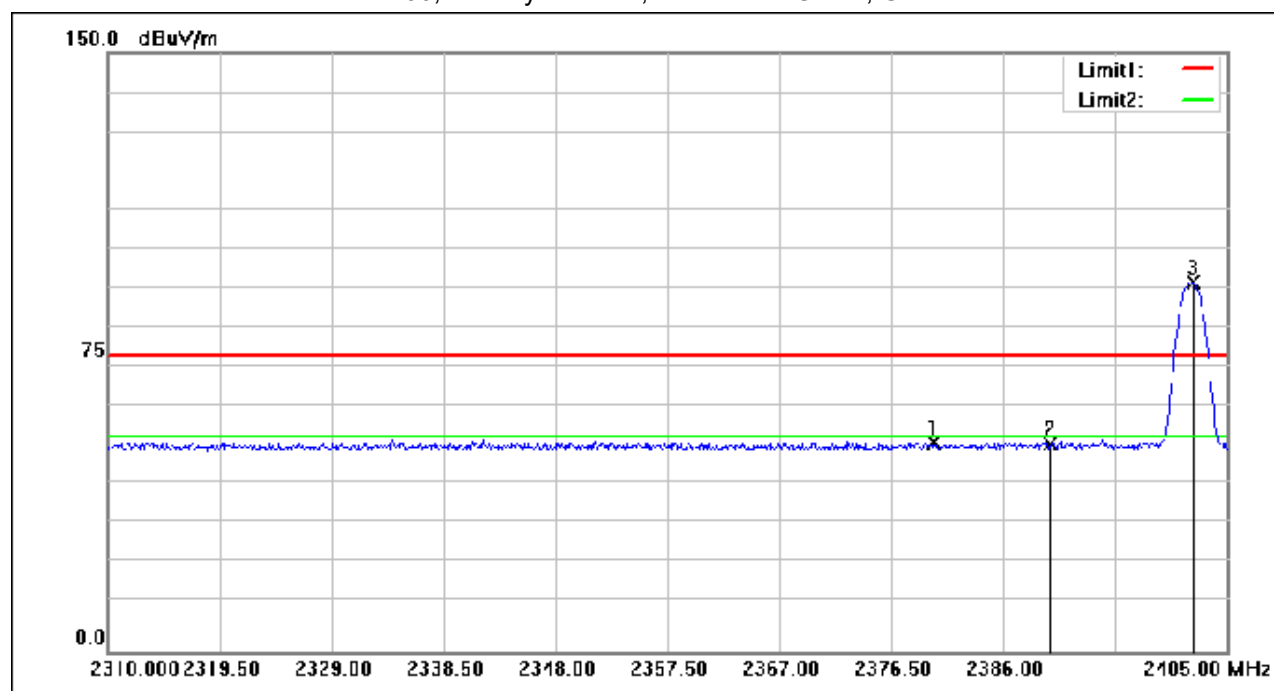
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2380.157	77.06	-24.75	52.31	74.00	-21.69	peak
2	2390.000	76.73	-24.71	52.02	74.00	-21.98	peak
3	2402.169	116.96	-24.65	92.31	74.00	18.31	peak

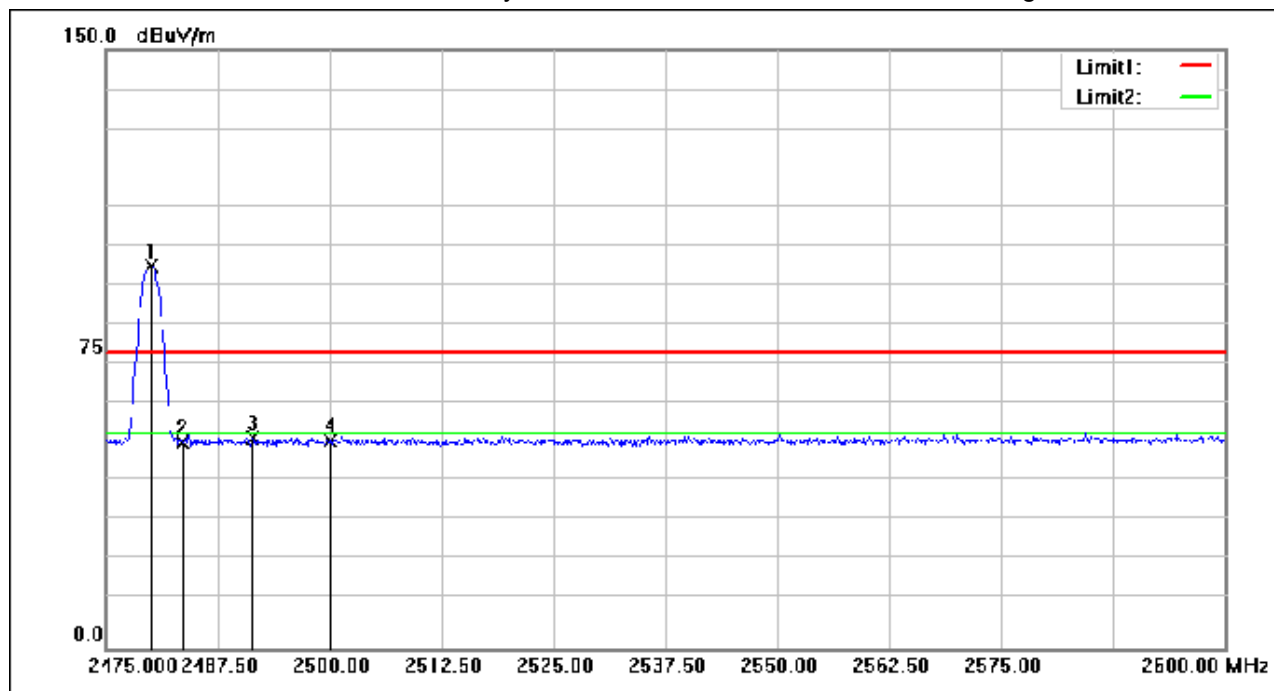
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.156	120.03	-24.28	95.75	74.00	21.75	peak
2	2483.500	75.76	-24.27	51.49	74.00	-22.51	peak
3	2491.469	76.97	-24.23	52.74	74.00	-21.26	peak
4	2500.000	76.28	-24.19	52.09	74.00	-21.91	peak

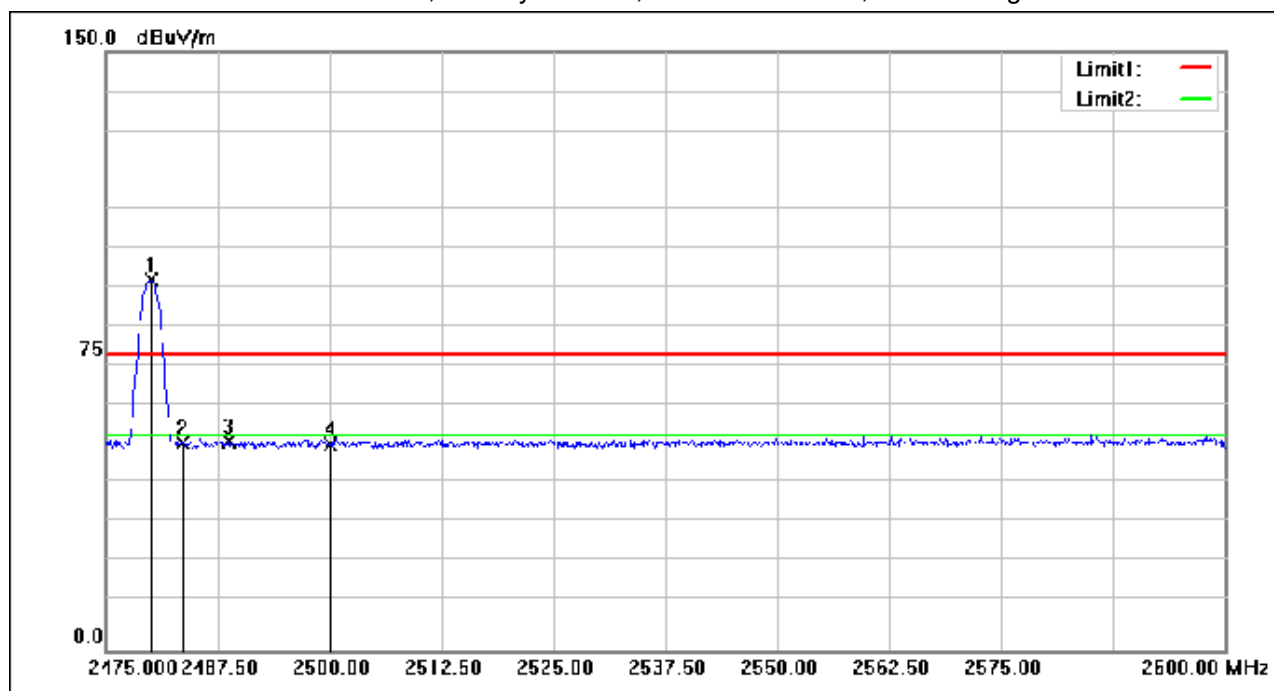
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.106	116.92	-24.28	92.64	74.00	18.64	peak
2	2483.500	76.19	-24.27	51.92	74.00	-22.08	peak
3	2488.806	76.75	-24.25	52.50	74.00	-21.50	peak
4	2500.000	75.87	-24.19	51.68	74.00	-22.32	peak

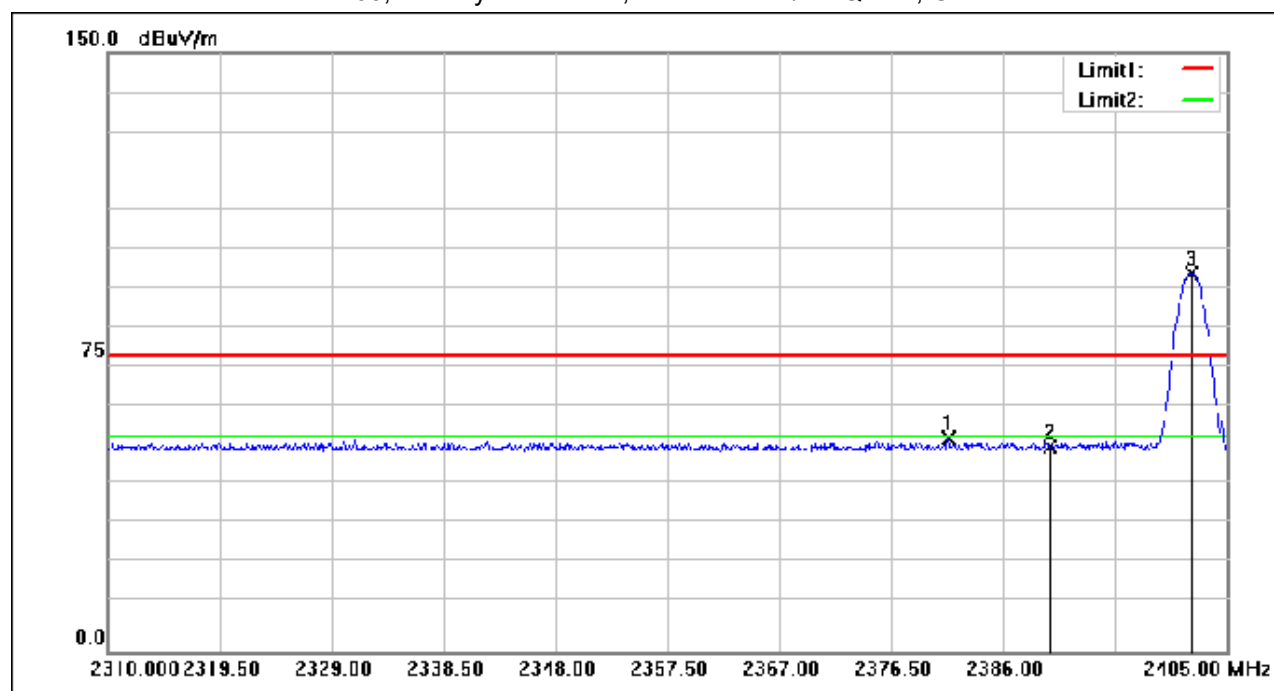
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation: $\pi/4$ DQPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2381.336	78.00	-24.74	53.26	74.00	-20.74	peak
2	2390.000	75.87	-24.71	51.16	74.00	-22.84	peak
3	2402.074	119.43	-24.65	94.78	74.00	20.78	peak

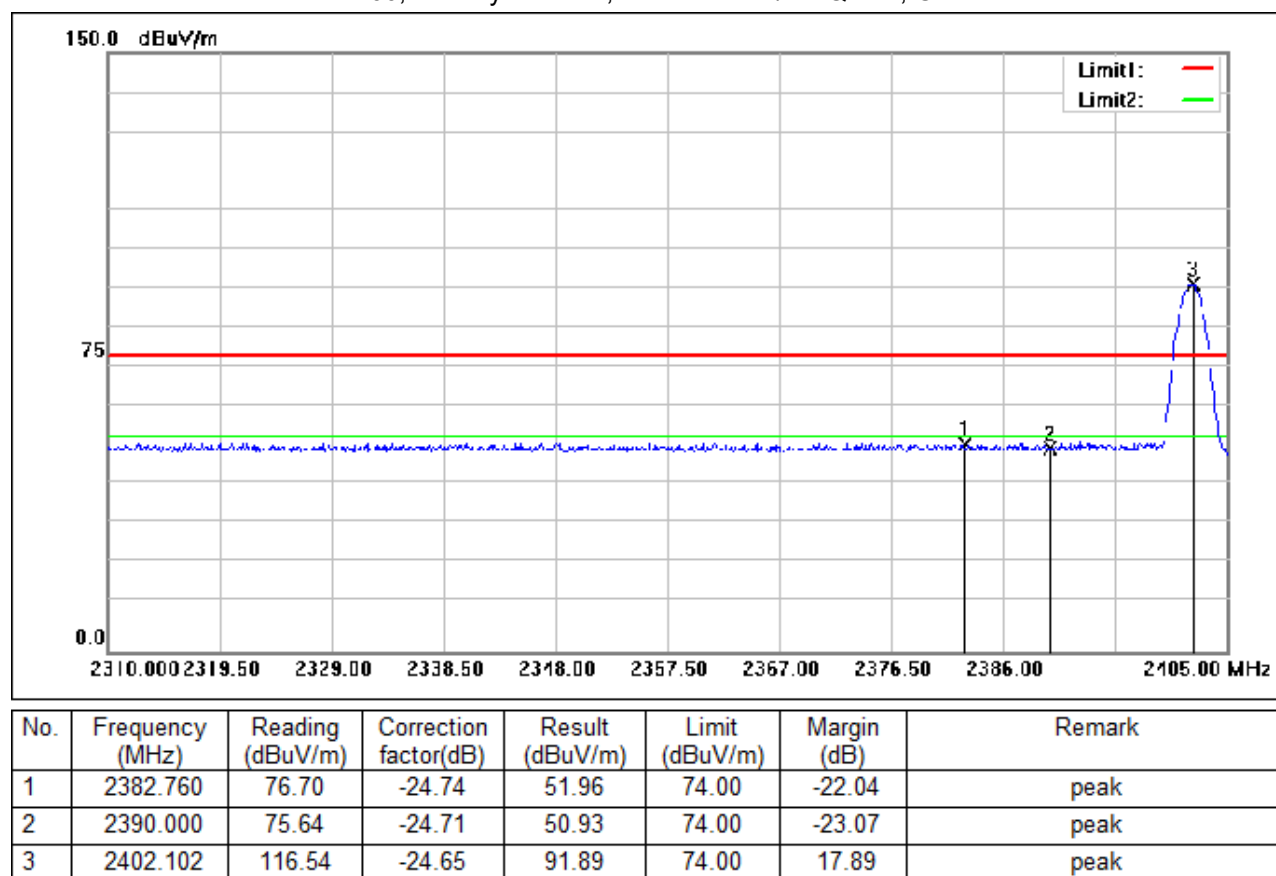
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Test Mode: 00; Polarity: Vertical; Modulation: $\pi/4$ DQPSK; Channel: Low



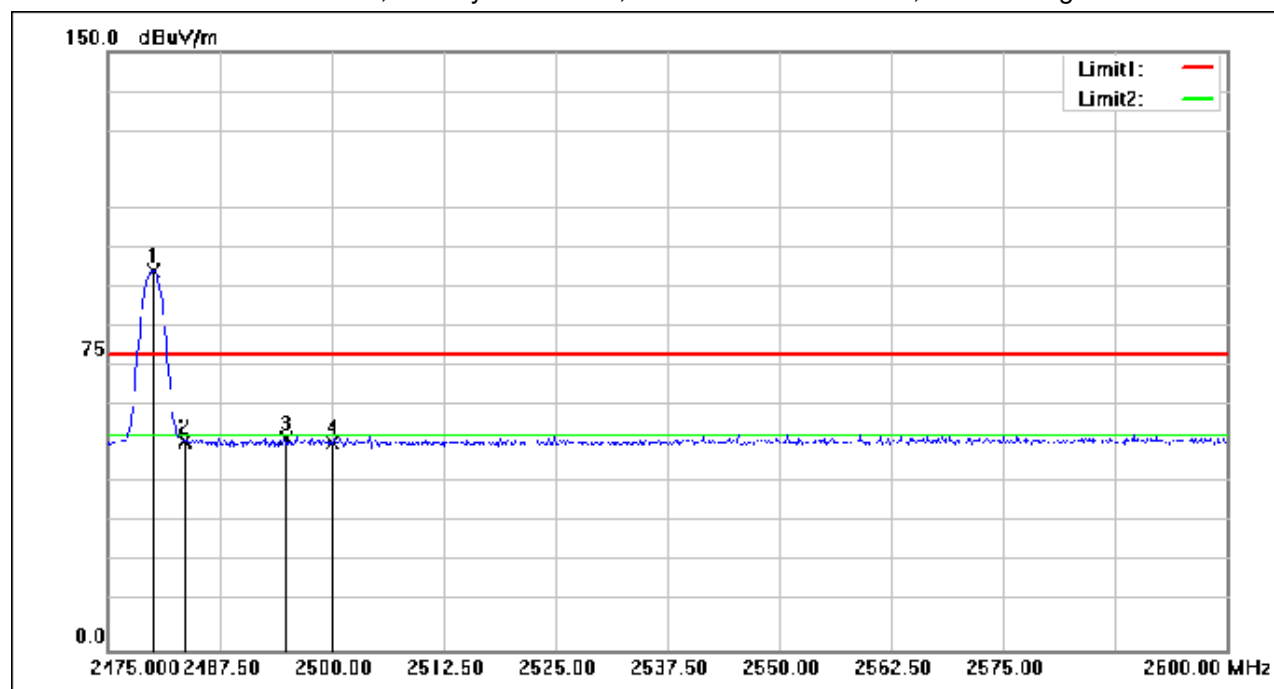
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation: $\pi/4$ DQPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.113	119.47	-24.28	95.19	74.00	21.19	peak
2	2483.500	76.58	-24.27	52.31	74.00	-21.69	peak
3	2494.856	77.26	-24.21	53.05	74.00	-20.95	peak
4	2500.000	76.10	-24.19	51.91	74.00	-22.09	peak

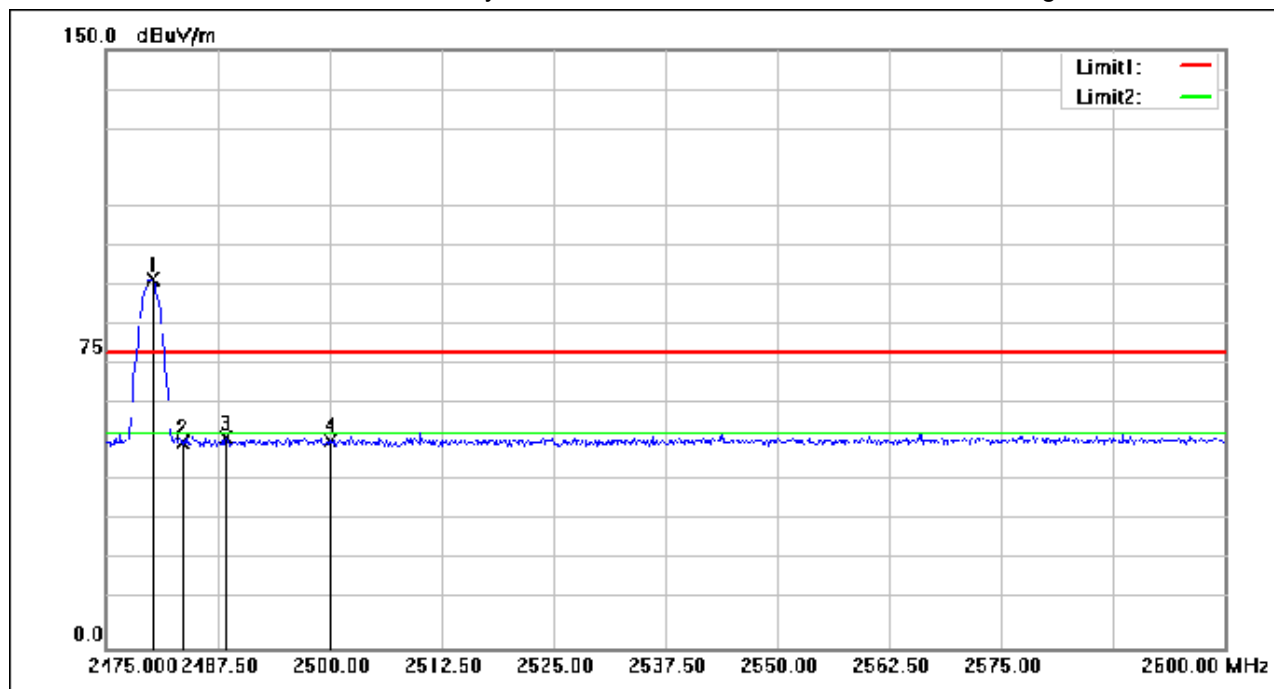
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation: $\pi/4$ DQPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.188	116.70	-24.28	92.42	74.00	18.42	peak
2	2483.500	75.77	-24.27	51.50	74.00	-22.50	peak
3	2488.494	76.86	-24.25	52.61	74.00	-21.39	peak
4	2500.000	76.17	-24.19	51.98	74.00	-22.02	peak

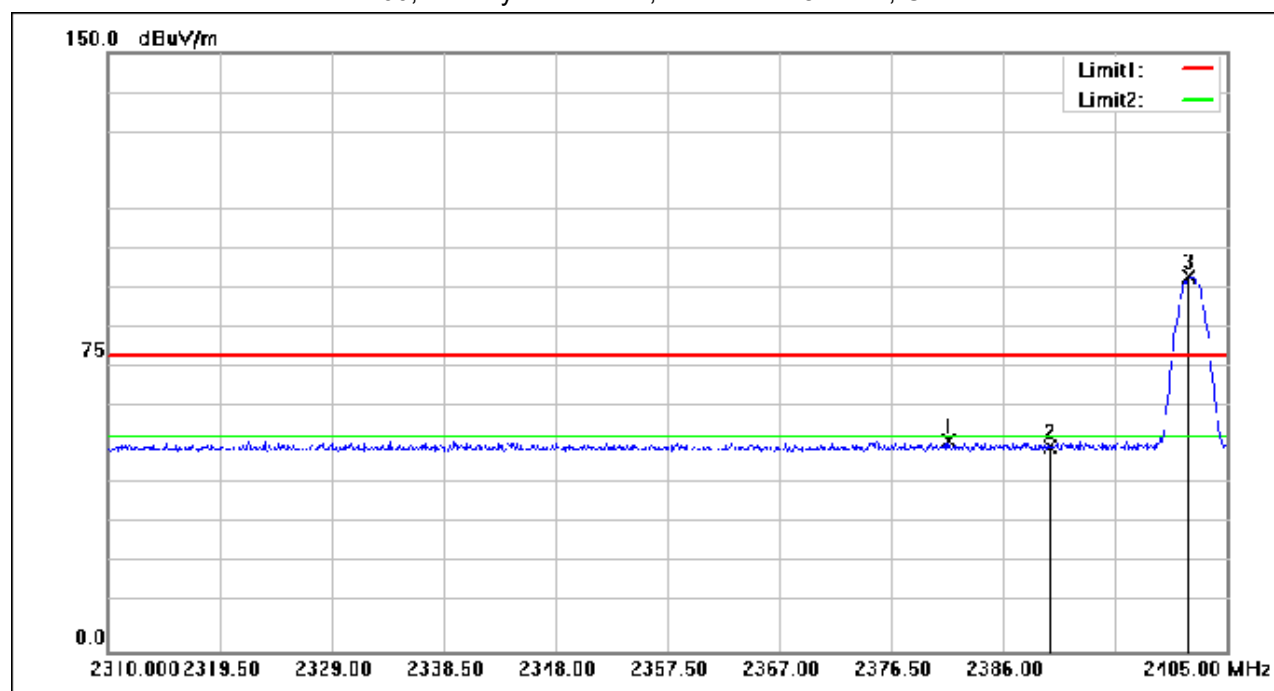
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation: 8DPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2381.430	77.31	-24.74	52.57	74.00	-21.43	peak
2	2390.000	76.05	-24.71	51.34	74.00	-22.66	peak
3	2401.818	118.54	-24.65	93.89	74.00	19.89	peak

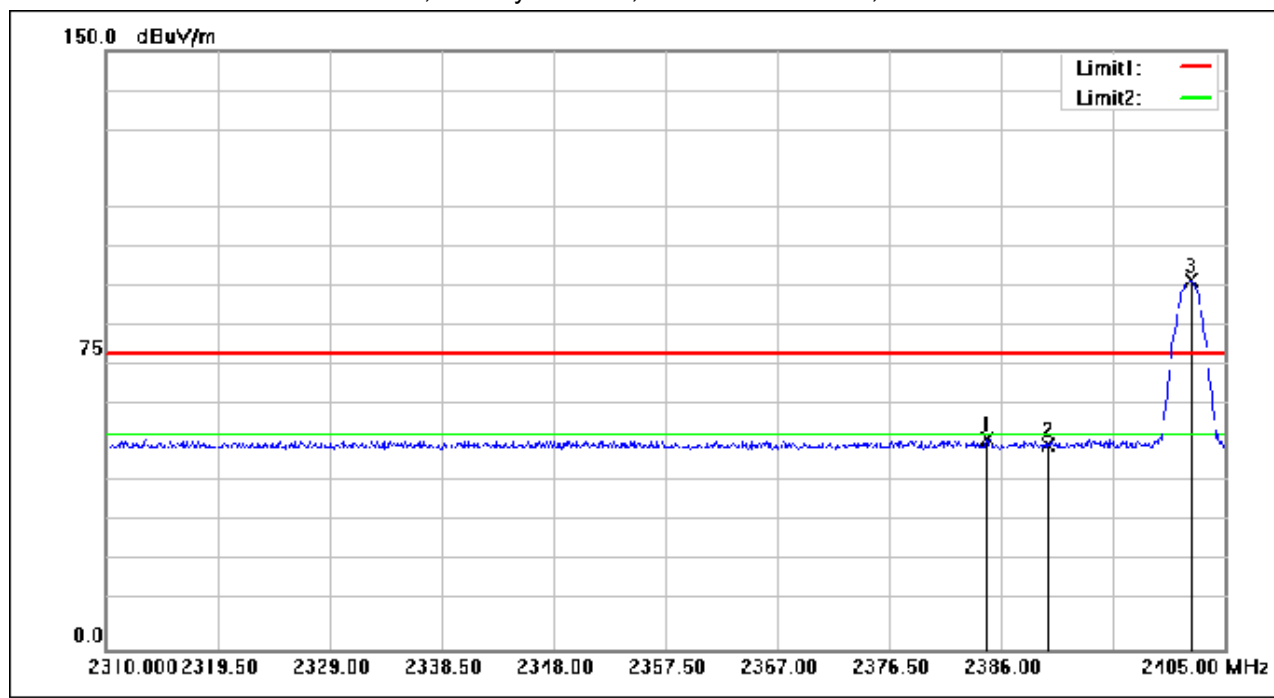
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation: 8DPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.798	77.28	-24.73	52.55	74.00	-21.45	peak
2	2390.000	75.99	-24.71	51.28	74.00	-22.72	peak
3	2402.178	116.95	-24.65	92.30	74.00	18.30	peak

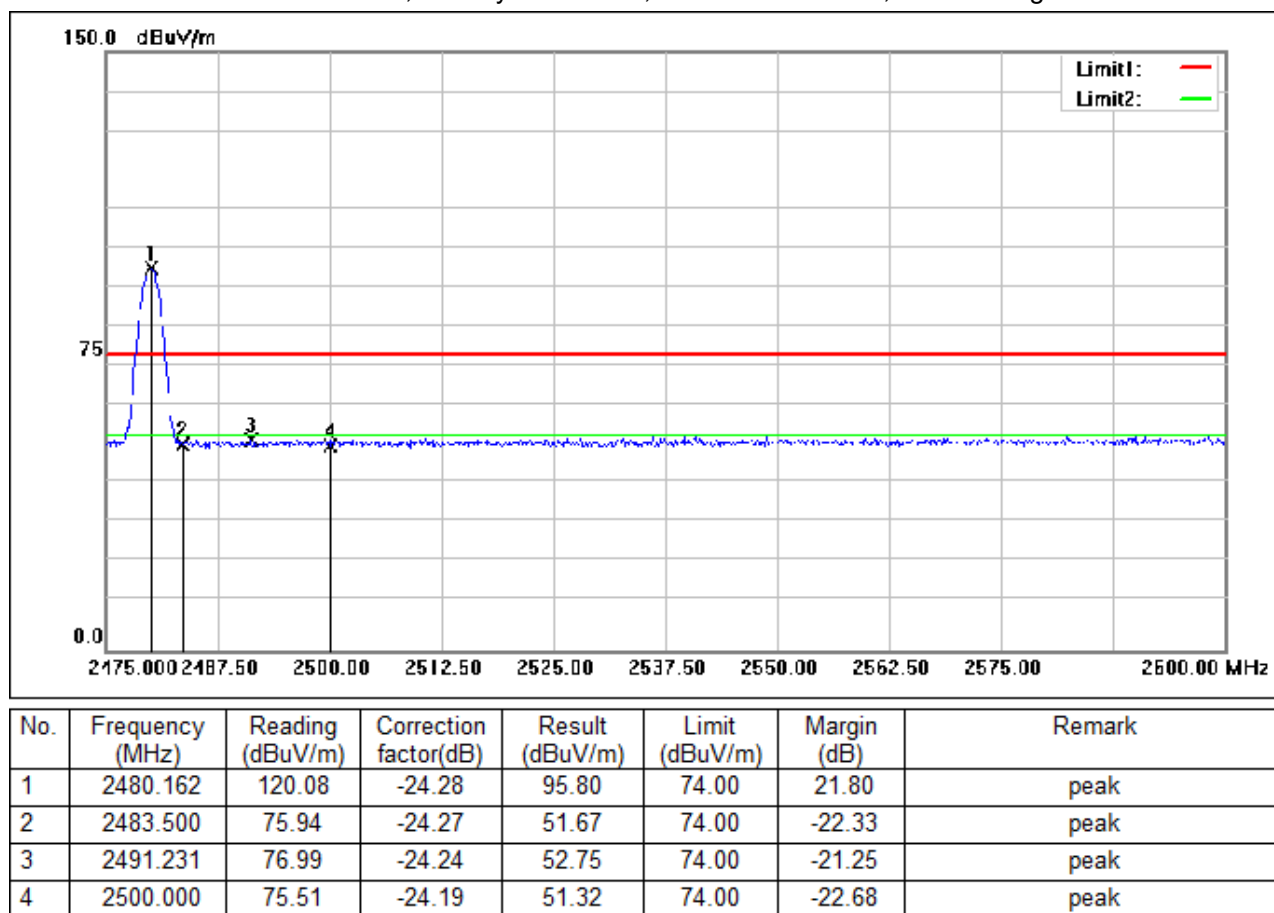
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Test Mode: 00; Polarity: Horizontal; Modulation: 8DPSK; Channel: High



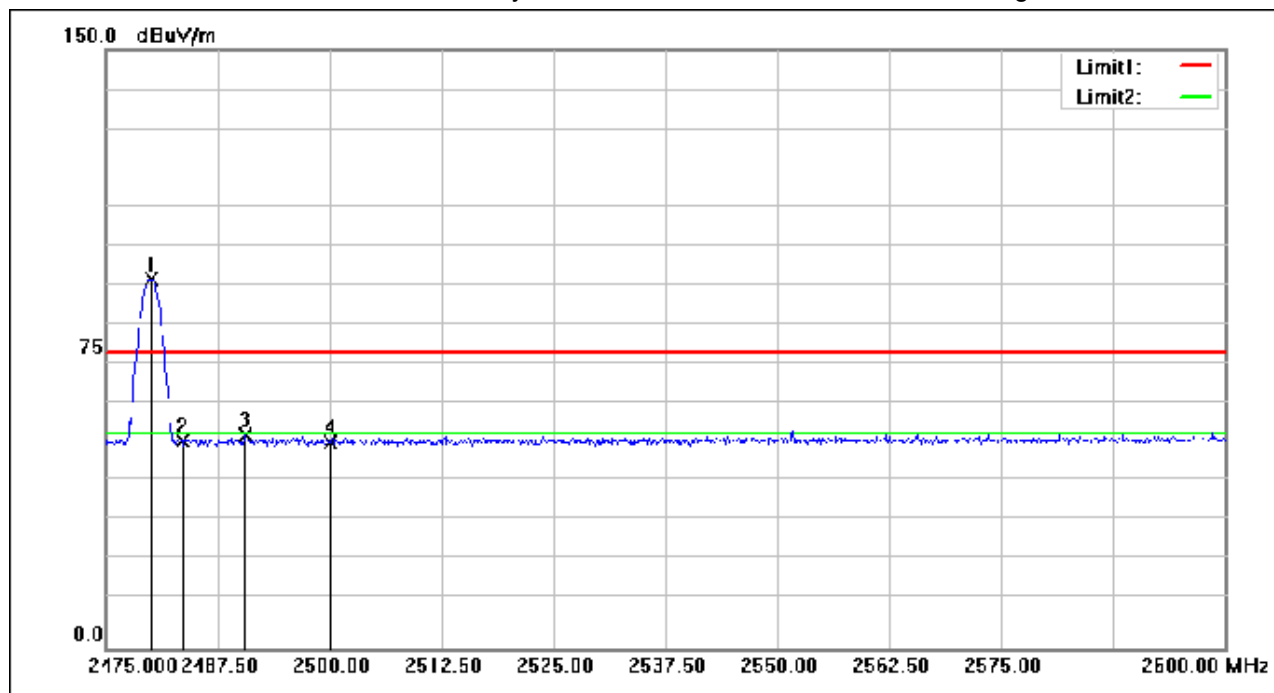
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Test Mode: 00; Polarity: Vertical; Modulation: 8DPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.113	116.80	-24.28	92.52	74.00	18.52	peak
2	2483.500	76.32	-24.27	52.05	74.00	-21.95	peak
3	2490.531	77.82	-24.24	53.58	74.00	-20.42	peak
4	2500.000	75.81	-24.19	51.62	74.00	-22.38	peak

7.3 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5

Measurement Distance: 3m

Limit:

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
960-1000	500	3

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 23.3 °C

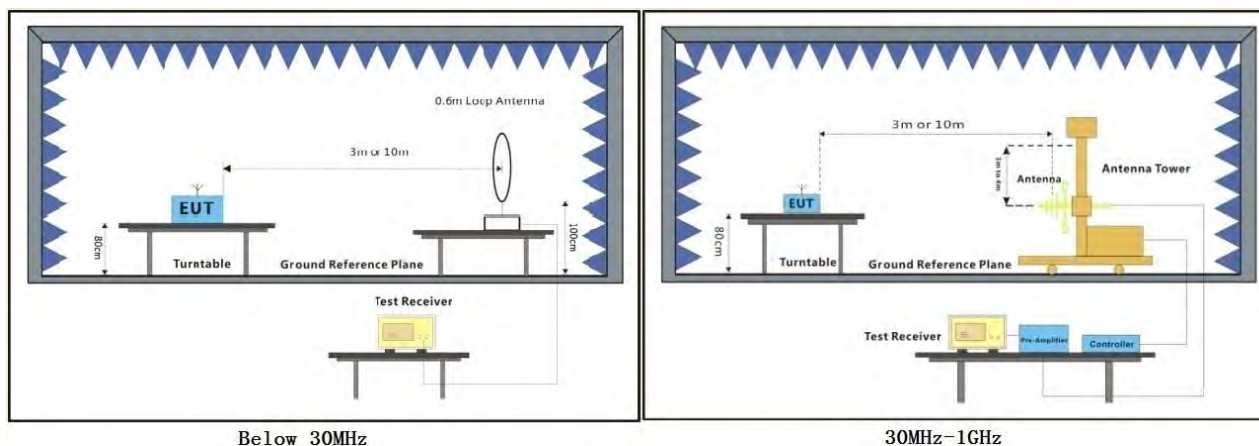
Humidity: 45.7 % RH

Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.3.3 Test Setup Diagram



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7.3.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamplifier Factor}$
2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

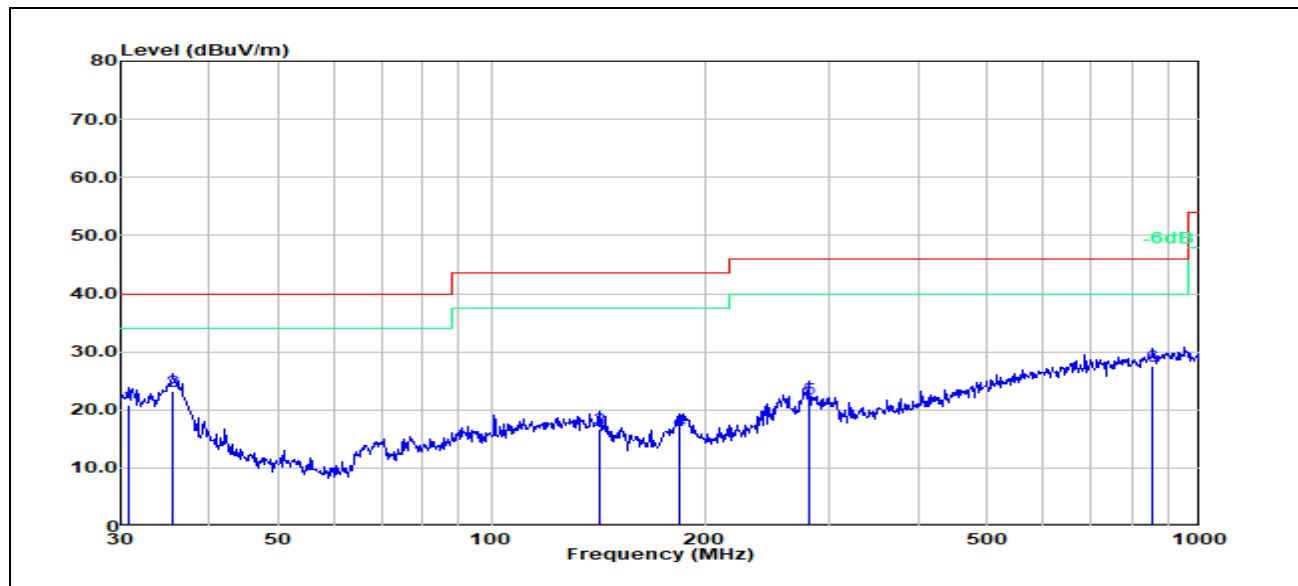
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Test Mode: 00; Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.8535	2.02	18.74	20.76	40.00	-19.24	100	12	QP
2	35.4993	7.53	15.71	23.24	40.00	-16.76	300	360	QP
3	141.8262	2.87	13.87	16.74	43.50	-26.76	100	12	QP
4	184.4898	4.24	12.16	16.40	43.50	-27.10	100	283	QP
5	280.0238	6.37	15.48	21.86	46.00	-24.14	100	0	QP
6	857.0247	2.45	25.05	27.50	46.00	-18.50	100	74	QP

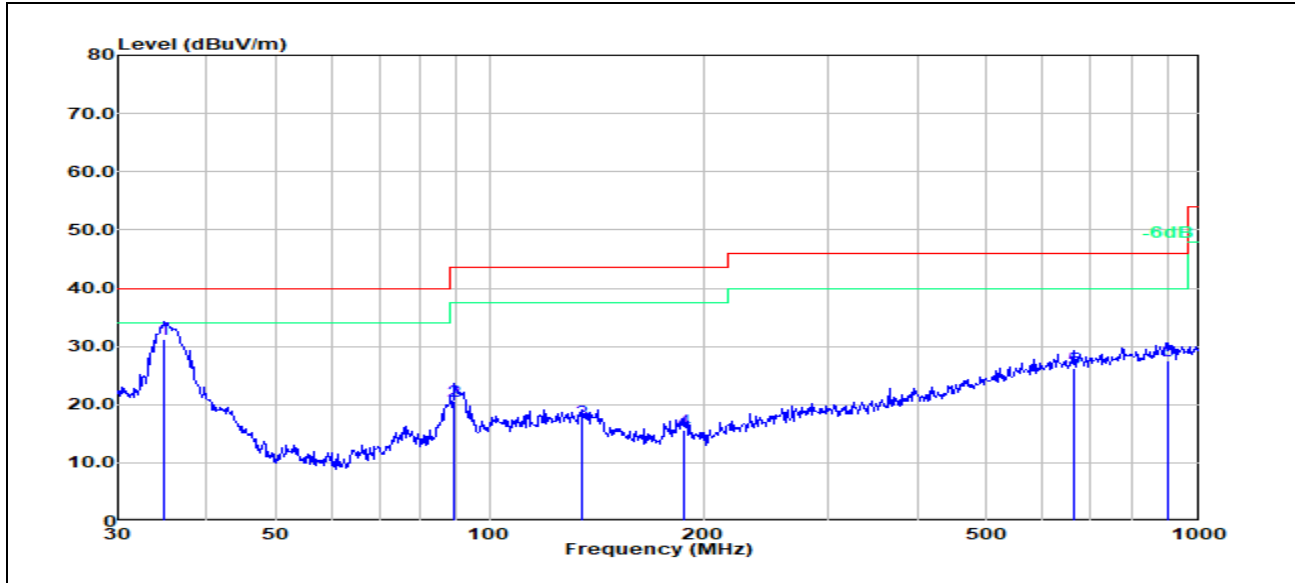
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Test Mode: 00; Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	34.8823	15.17	16.05	31.22	40.00	-8.78	100	128	QP
2	89.2764	8.91	11.71	20.62	43.50	-22.88	100	350	QP
3	134.5592	2.99	14.13	17.13	43.50	-26.37	100	107	QP
4	188.4125	3.50	12.13	15.64	43.50	-27.86	100	5	QP
5	665.8035	2.41	23.76	26.18	46.00	-19.82	100	156	QP
6	903.3094	1.87	25.69	27.56	46.00	-18.44	100	340	QP

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7.4 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.6

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 23.3 °C

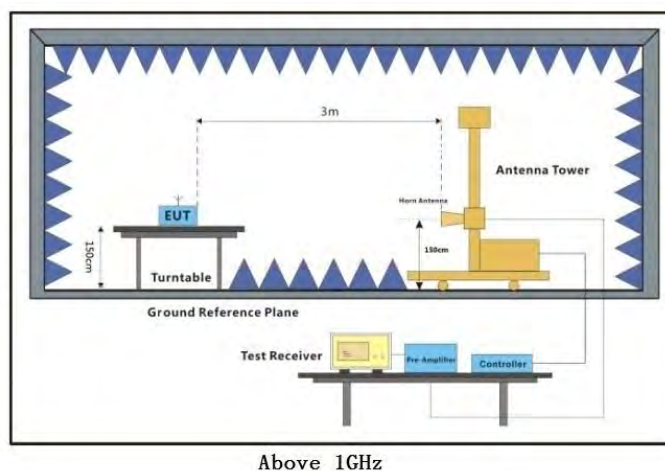
Humidity: 45.8 % RH

Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.4.3 Test Setup Diagram



Above 1GHz

7.4.4 Measurement Procedure and Data

- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamplifier Factor}$
2. Scan from 1GHz to 25GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

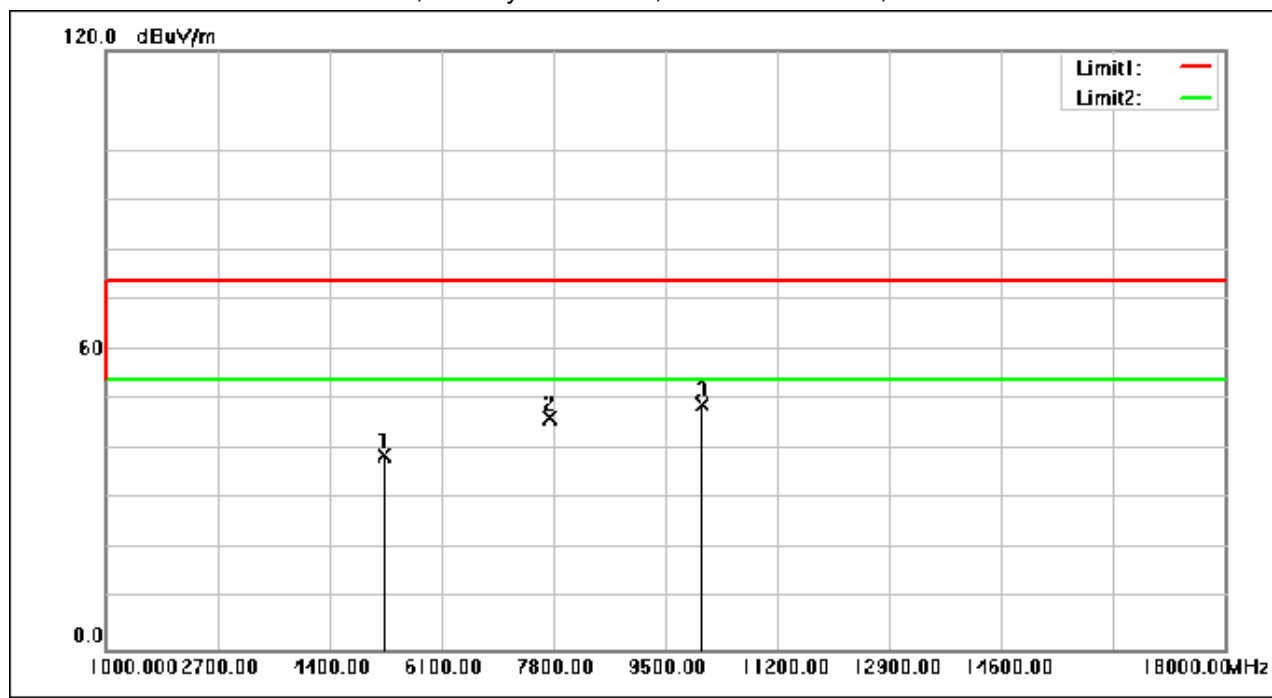
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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5216.000	57.09	-18.11	38.98	74.00	-35.02	peak
2	7737.100	57.26	-10.95	46.31	74.00	-27.69	peak
3	10067.800	56.22	-7.29	48.93	74.00	-25.07	peak

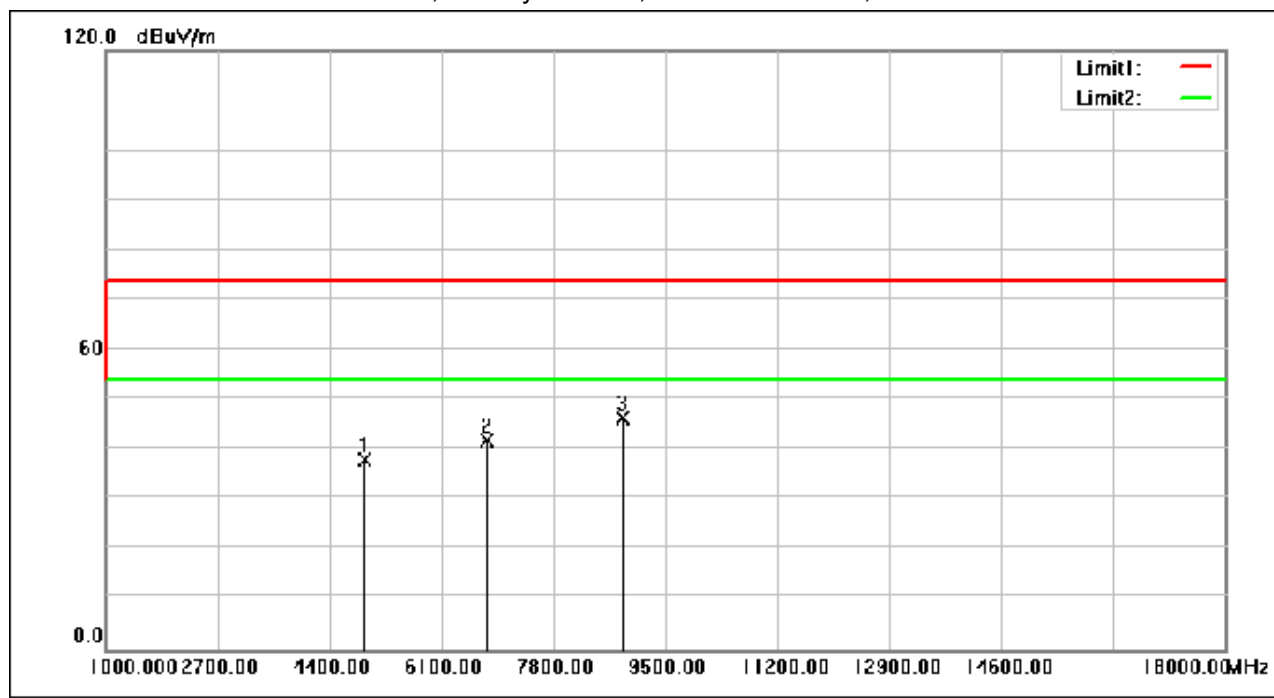
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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4941.450	56.48	-18.47	38.01	74.00	-35.99	peak
2	6804.650	53.76	-11.90	41.86	74.00	-32.14	peak
3	8856.550	55.53	-9.16	46.37	74.00	-27.63	peak

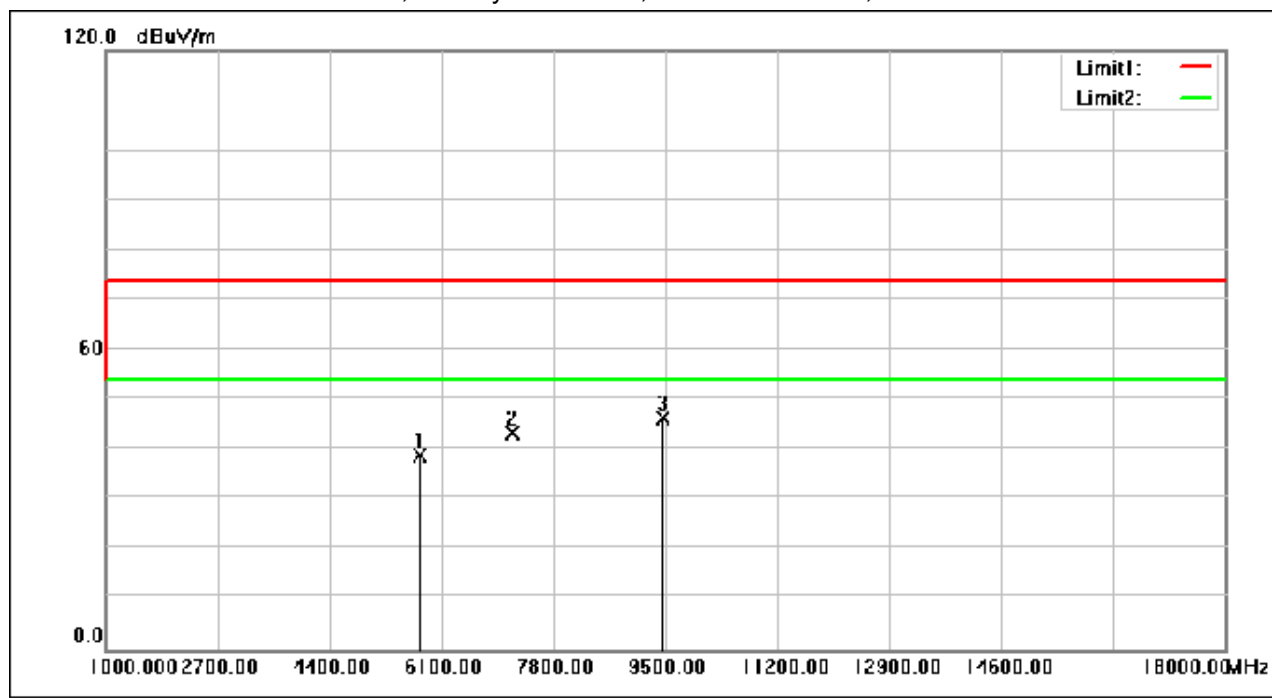
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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5760.000	55.53	-16.78	38.75	74.00	-35.25	peak
2	7172.700	54.69	-11.49	43.20	74.00	-30.80	peak
3	9480.450	54.49	-7.99	46.50	74.00	-27.50	peak

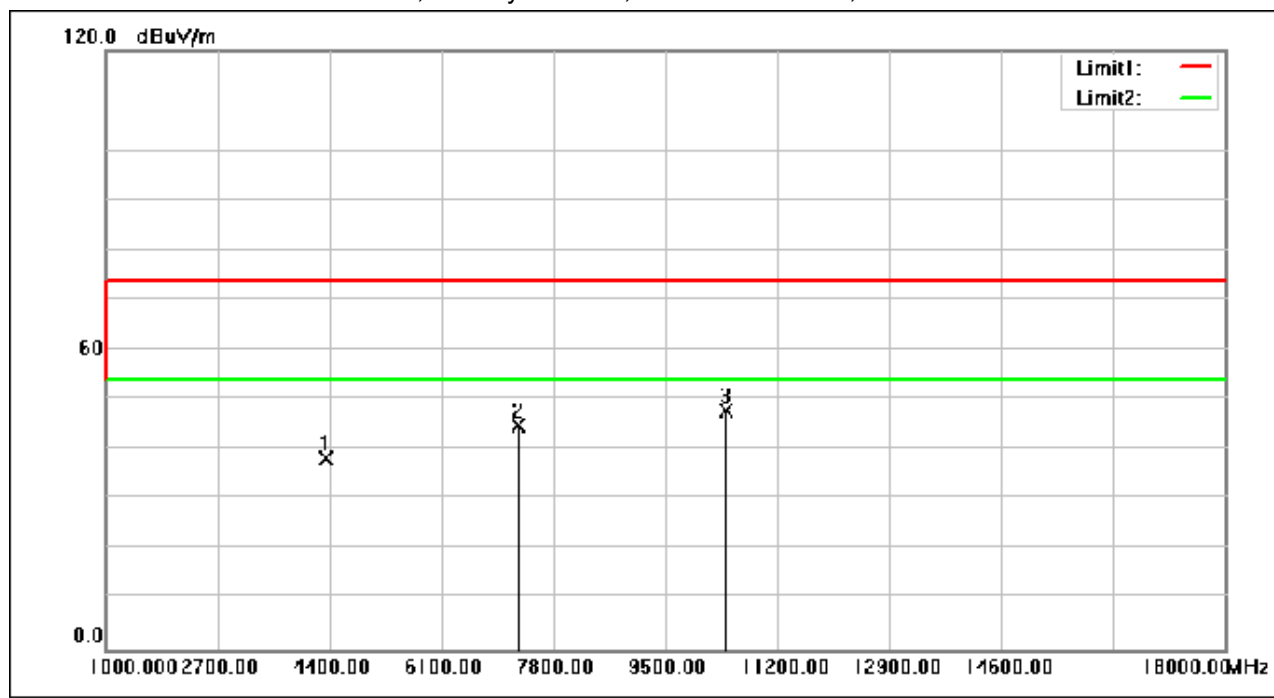
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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4346.450	57.58	-19.41	38.17	74.00	-35.83	peak
2	7279.800	56.37	-11.45	44.92	74.00	-29.08	peak
3	10426.500	55.02	-7.08	47.94	74.00	-26.06	peak

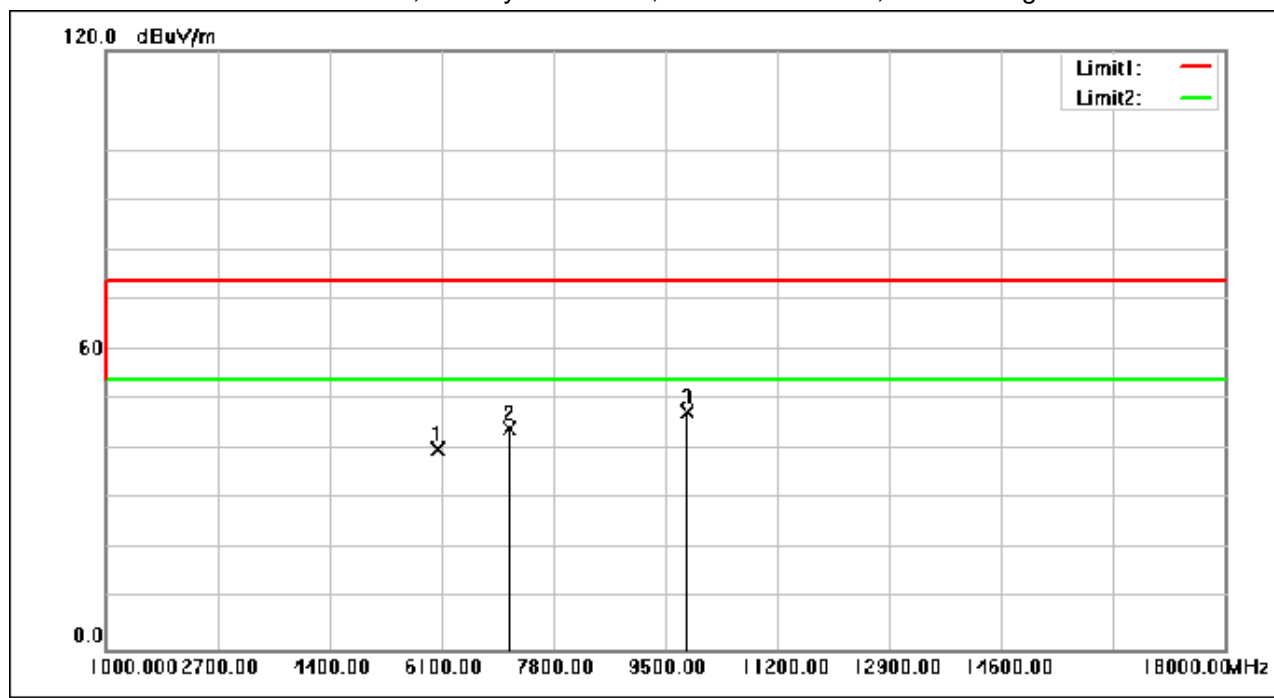
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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6040.500	55.51	-15.59	39.92	74.00	-34.08	peak
2	7142.100	55.66	-11.50	44.16	74.00	-29.84	peak
3	9834.050	54.98	-7.32	47.66	74.00	-26.34	peak

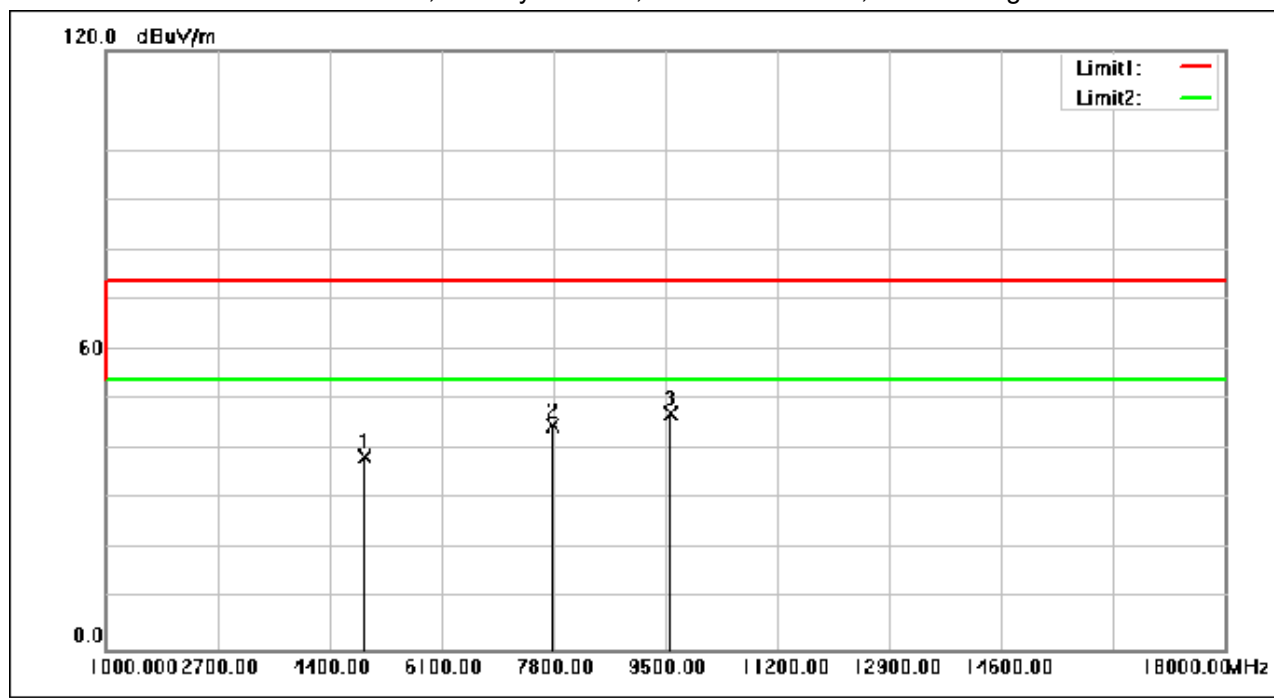
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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4929.550	56.91	-18.49	38.42	74.00	-35.58	peak
2	7784.700	55.85	-10.89	44.96	74.00	-29.04	peak
3	9573.100	55.06	-7.82	47.24	74.00	-26.76	peak

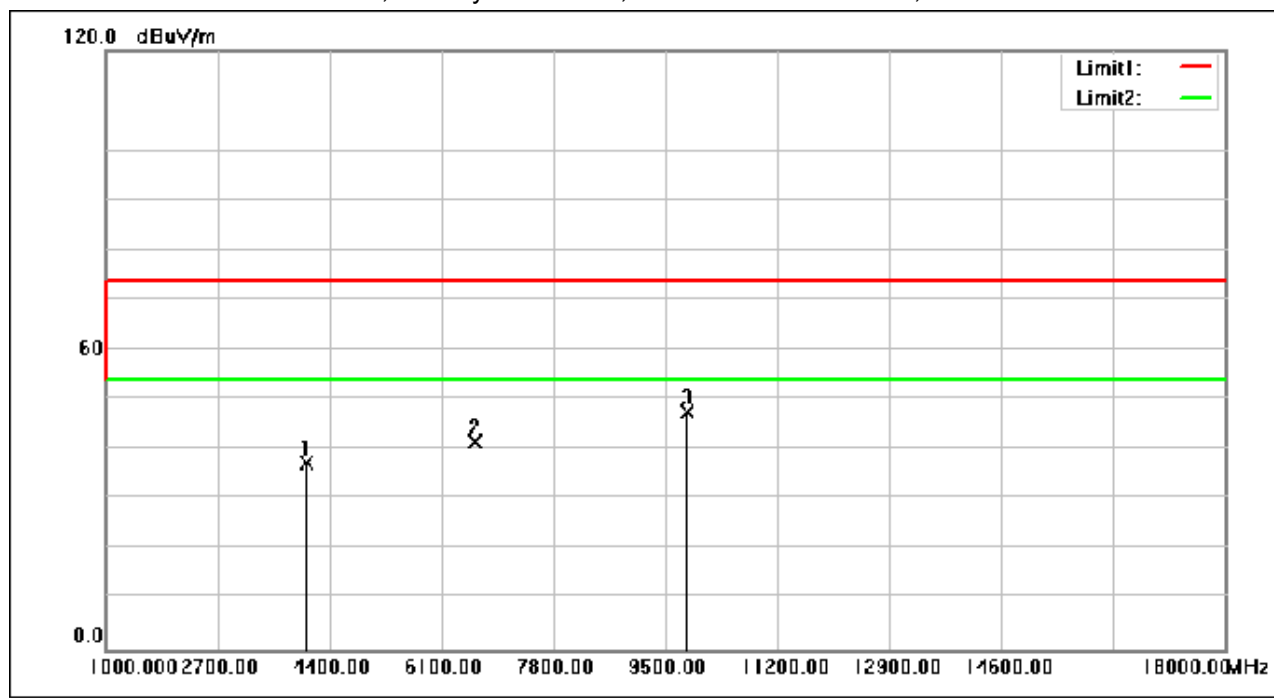
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Test Mode: 00; Polarity: Horizontal; Modulation: $\pi/4$ DQPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4055.750	57.35	-20.12	37.23	74.00	-36.77	peak
2	6625.300	53.99	-12.57	41.42	74.00	-32.58	peak
3	9823.000	54.91	-7.34	47.57	74.00	-26.43	peak

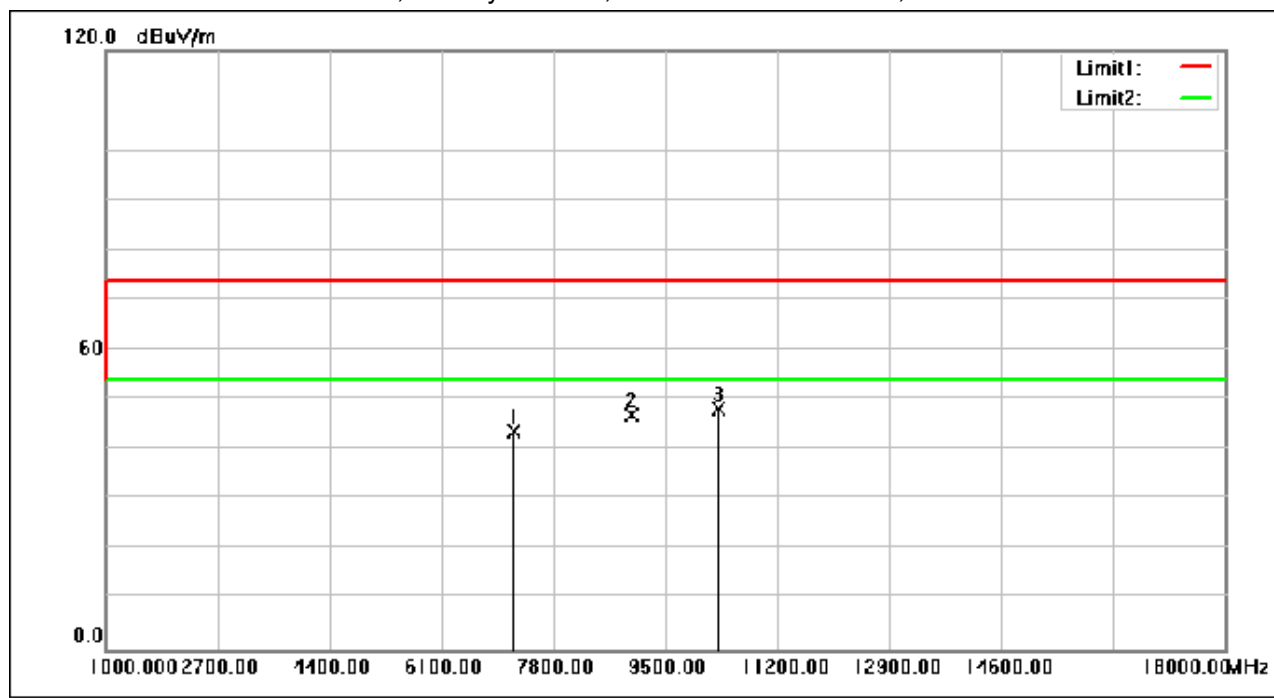
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Test Mode: 00; Polarity: Vertical; Modulation: $\pi/4$ DQPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7216.050	55.27	-11.47	43.80	74.00	-30.20	peak
2	8994.250	55.86	-8.91	46.95	74.00	-27.05	peak
3	10302.400	55.18	-7.16	48.02	74.00	-25.98	peak

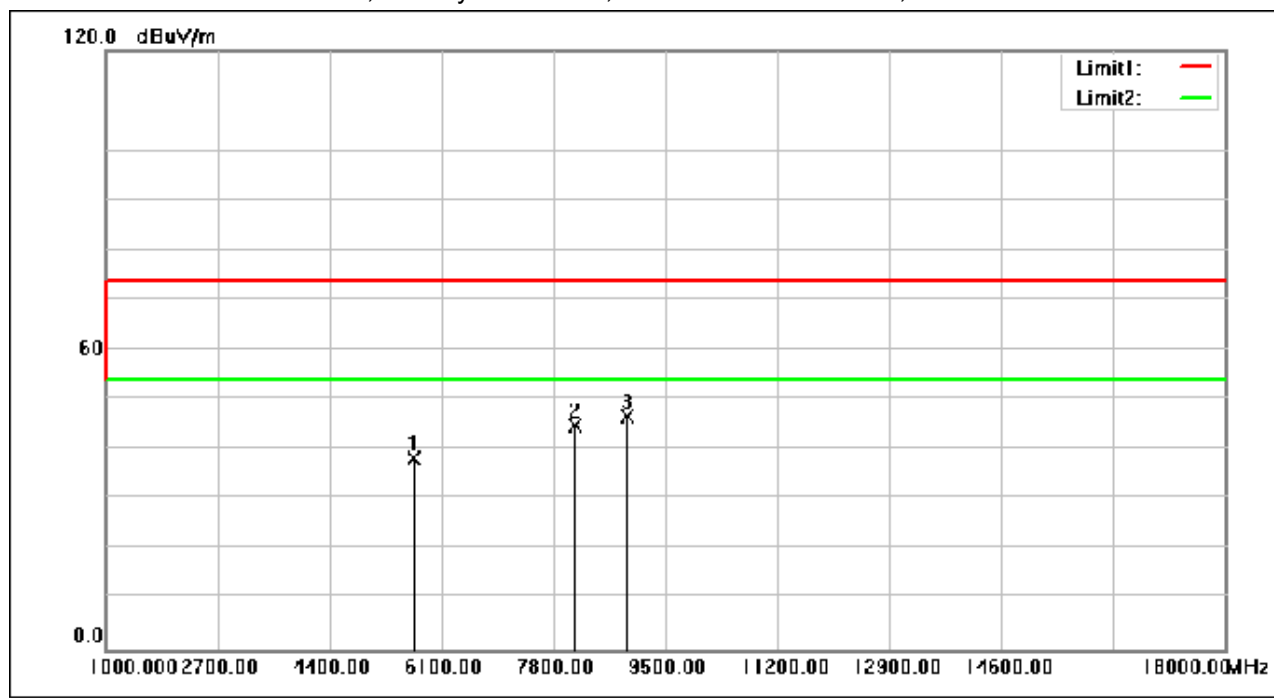
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Test Mode: 00; Polarity: Horizontal; Modulation: $\pi/4$ DQPSK; Channel: middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5682.650	55.43	-17.10	38.33	74.00	-35.67	peak
2	8136.600	55.29	-10.36	44.93	74.00	-29.07	peak
3	8936.450	55.72	-9.03	46.69	74.00	-27.31	peak

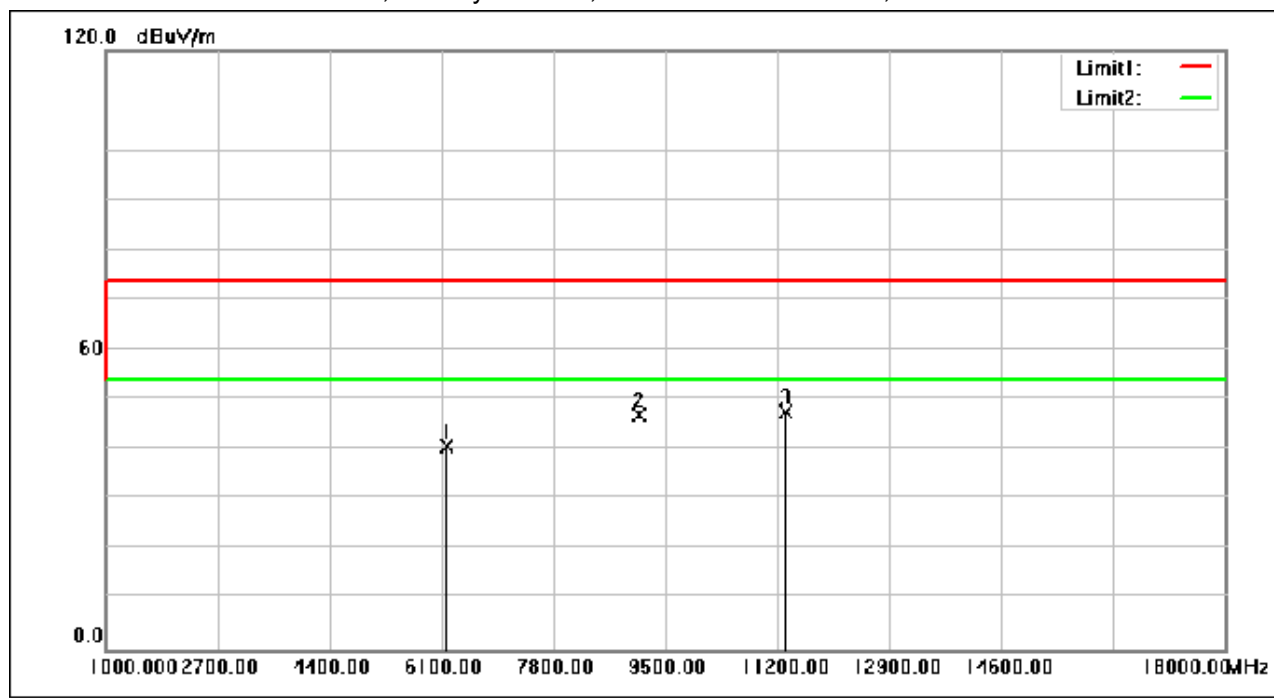
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation: $\pi/4$ DQPSK; Channel: middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6181.600	55.52	-14.89	40.63	74.00	-33.37	peak
2	9106.450	55.62	-8.70	46.92	74.00	-27.08	peak
3	11321.550	53.93	-6.50	47.43	74.00	-26.57	peak

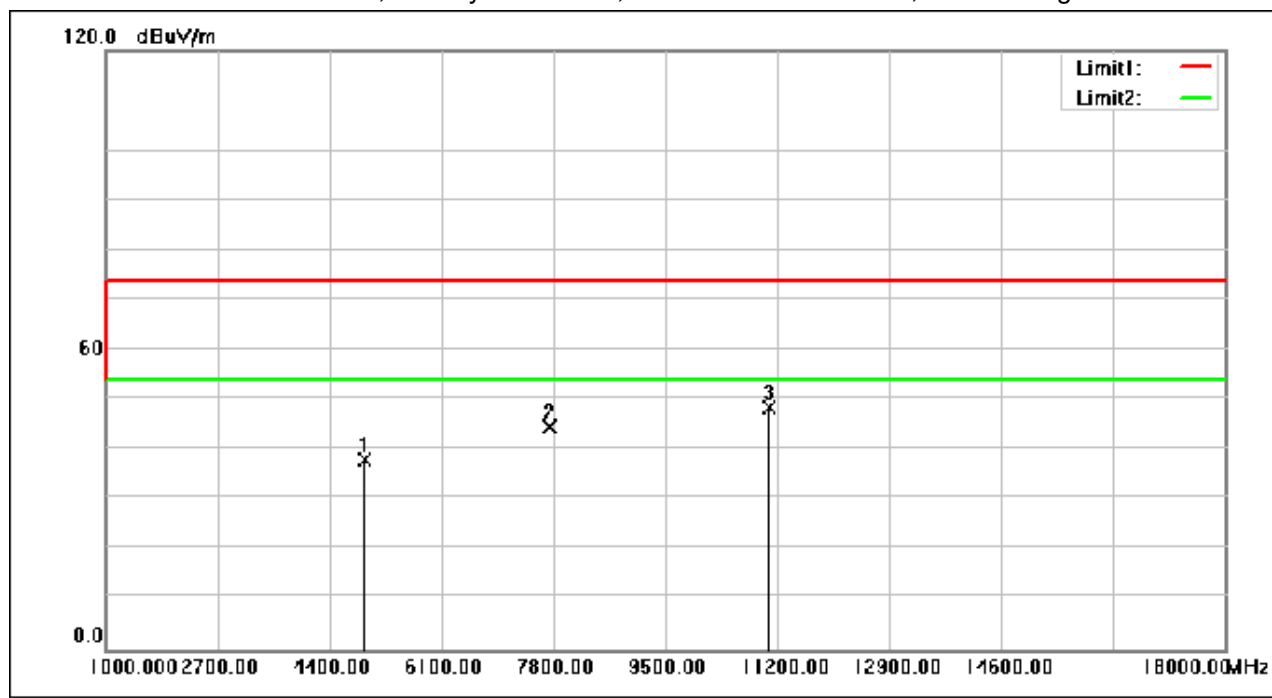
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Test Mode: 00; Polarity: Horizontal; Modulation: $\pi/4$ DQPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4934.650	56.47	-18.48	37.99	74.00	-36.01	peak
2	7760.050	55.47	-10.92	44.55	74.00	-29.45	peak
3	11070.800	55.03	-6.71	48.32	74.00	-25.68	peak

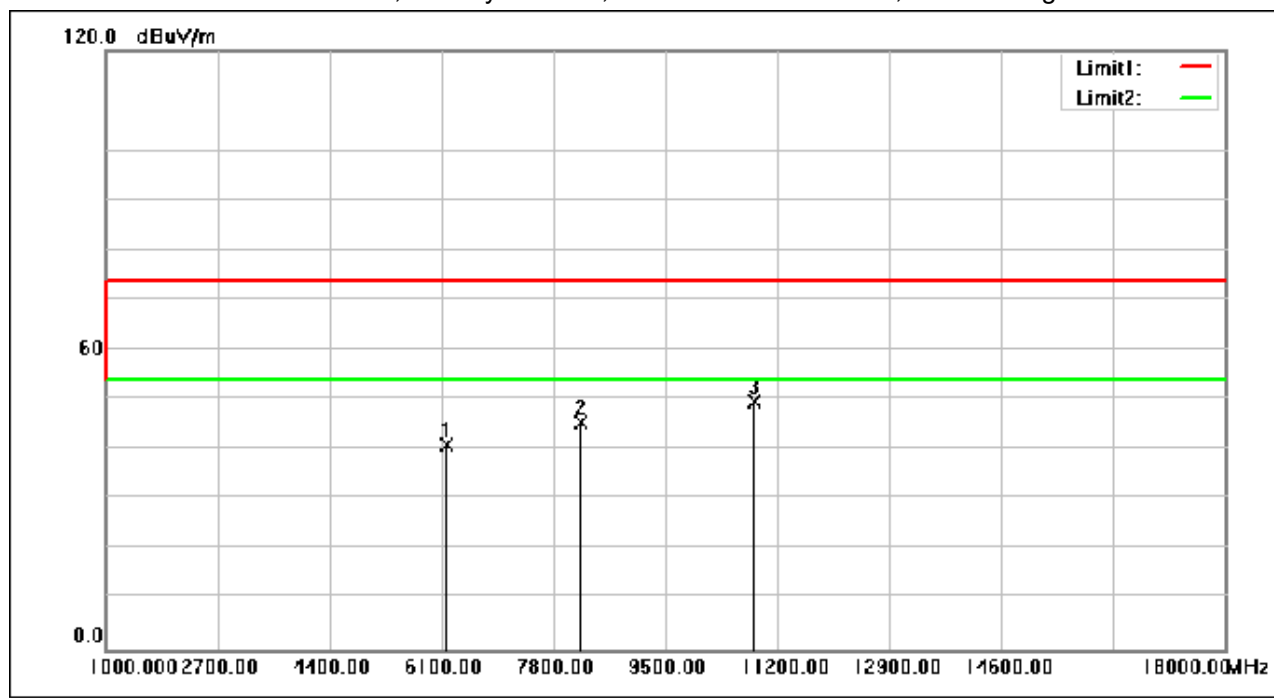
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Test Mode: 00; Polarity: Vertical; Modulation: $\pi/4$ DQPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6189.250	55.93	-14.84	41.09	74.00	-32.91	peak
2	8230.950	55.54	-10.20	45.34	74.00	-28.66	peak
3	10843.850	56.52	-6.84	49.68	74.00	-24.32	peak

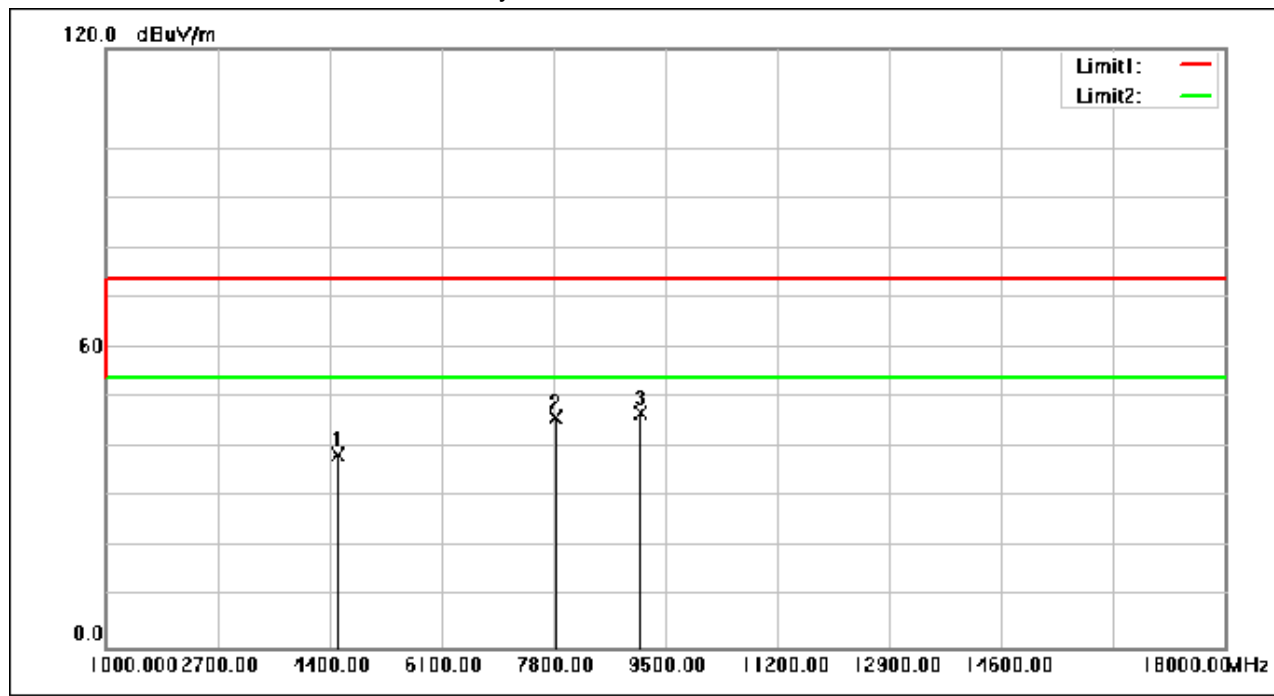
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Test Mode: 00; Polarity: Horizontal; Modulation: 8DPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4519.850	57.35	-18.90	38.45	74.00	-35.55	peak
2	7837.400	56.91	-10.82	46.09	74.00	-27.91	peak
3	9137.900	55.55	-8.63	46.92	74.00	-27.08	peak

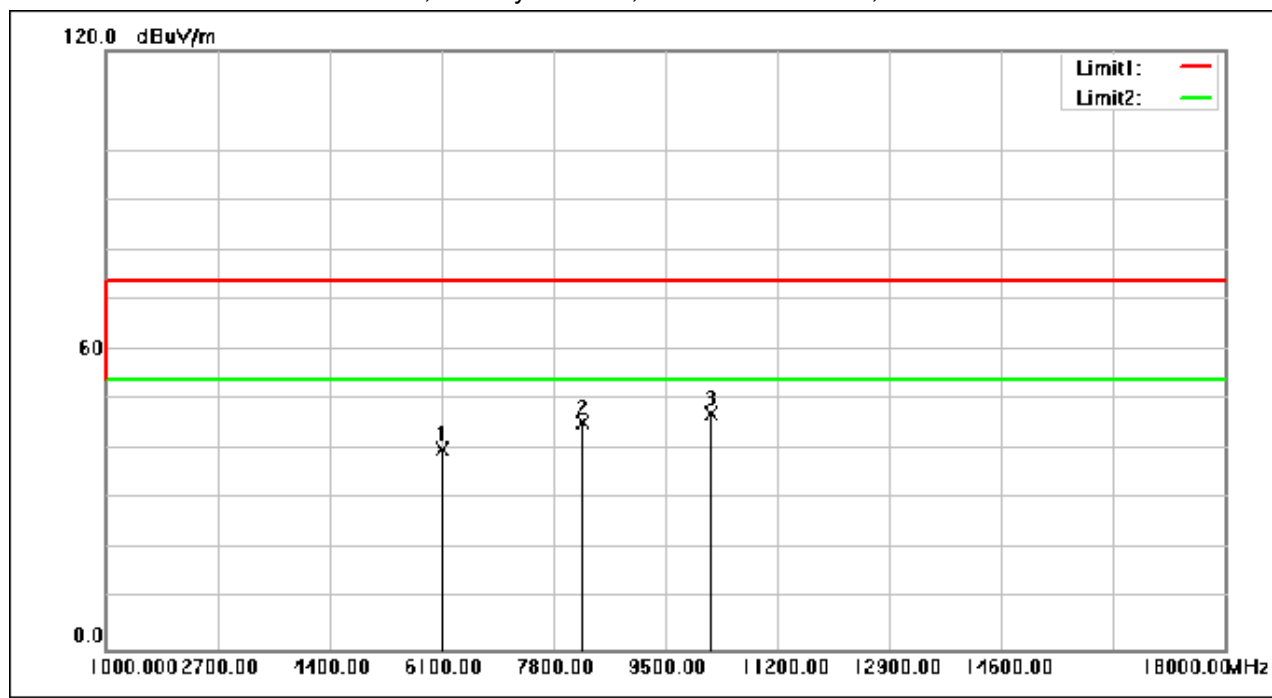
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Test Mode: 00; Polarity: Vertical; Modulation: 8DPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6107.650	55.42	-15.27	40.15	74.00	-33.85	peak
2	8244.550	55.63	-10.18	45.45	74.00	-28.55	peak
3	10203.800	54.37	-7.21	47.16	74.00	-26.84	peak

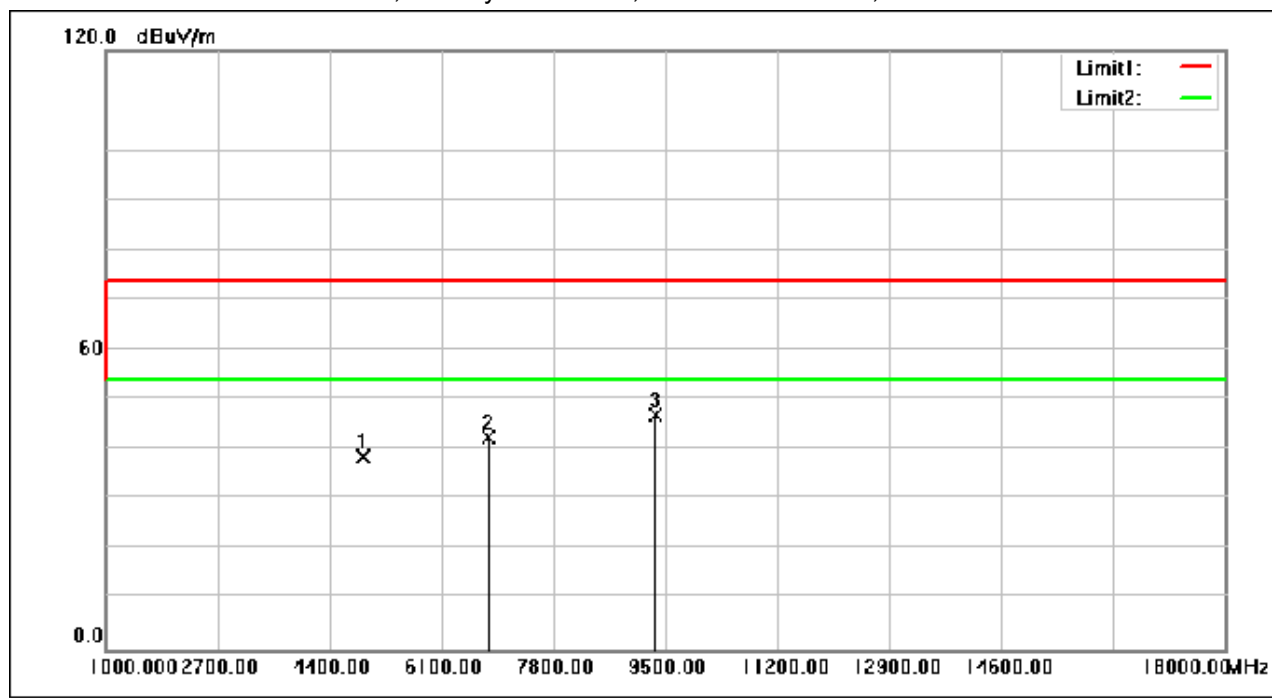
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Test Mode: 00; Polarity: Horizontal; Modulation: 8DPSK; Channel: middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4925.300	56.99	-18.49	38.50	74.00	-35.50	peak
2	6824.200	54.27	-11.87	42.40	74.00	-31.60	peak
3	9349.550	55.29	-8.23	47.06	74.00	-26.94	peak

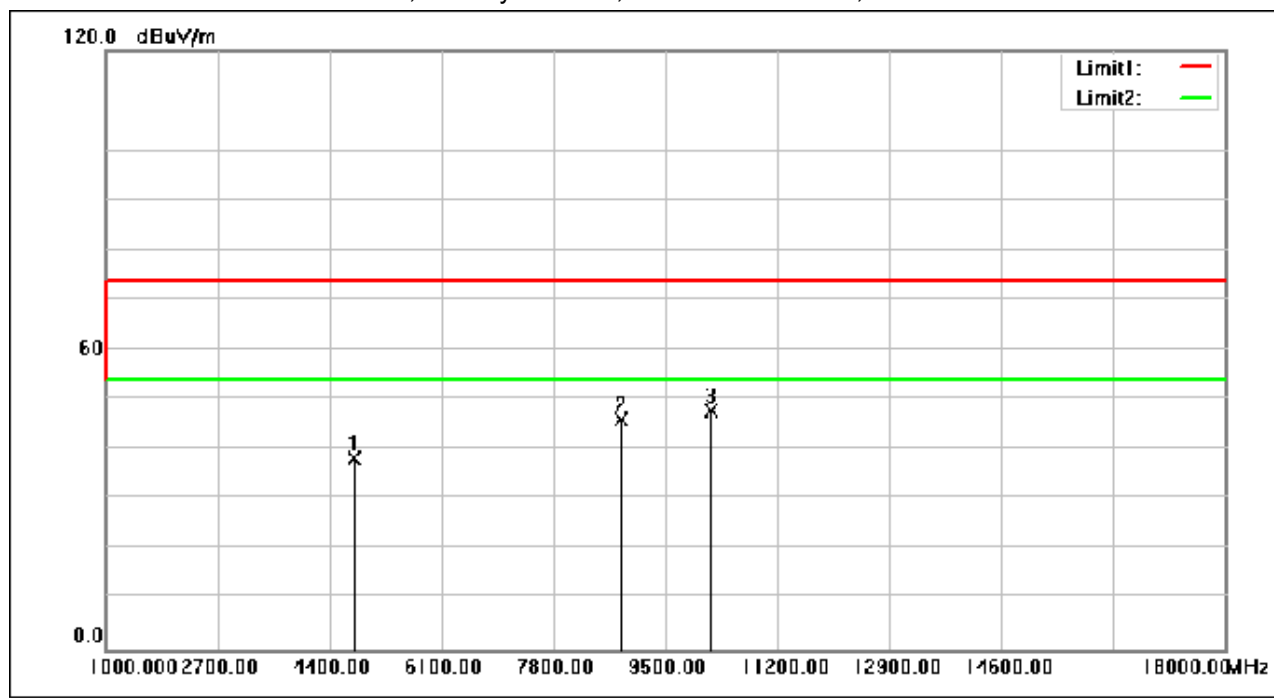
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Test Mode: 00; Polarity: Vertical; Modulation: 8DPSK; Channel: middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4789.300	56.72	-18.57	38.15	74.00	-35.85	peak
2	8824.250	55.13	-9.22	45.91	74.00	-28.09	peak
3	10185.950	55.10	-7.22	47.88	74.00	-26.12	peak

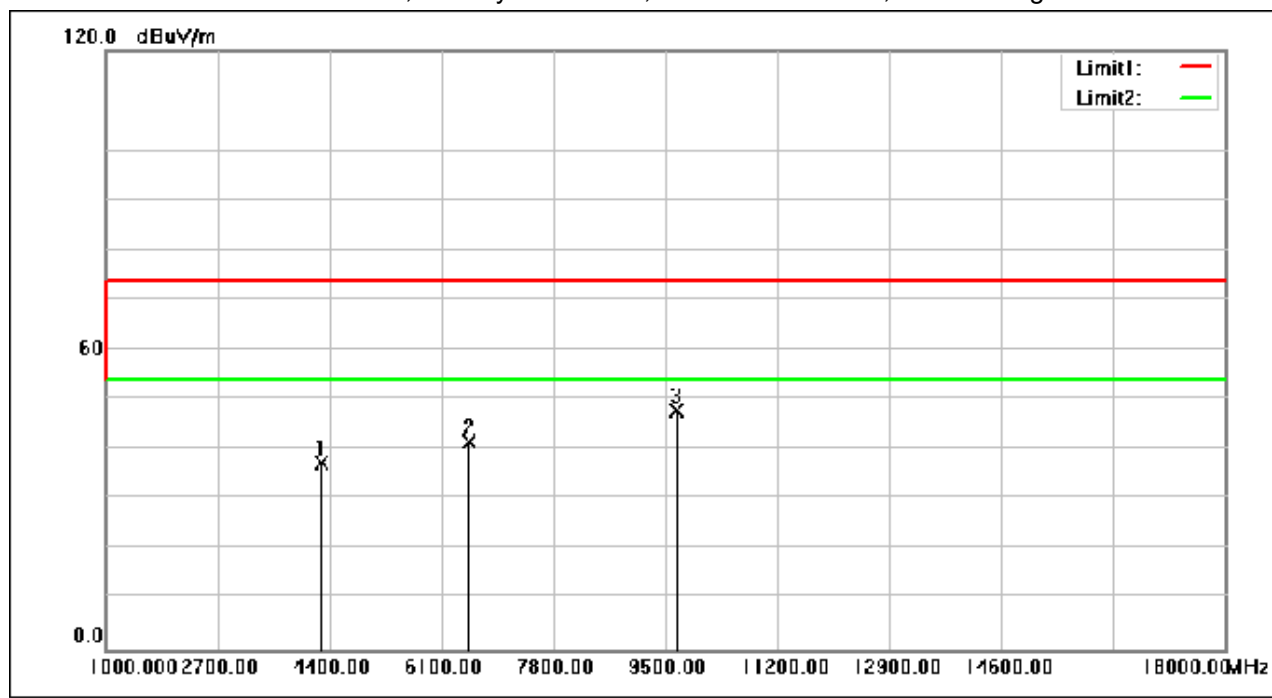
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Test Mode: 00; Polarity: Horizontal; Modulation: 8DPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4274.200	57.01	-19.62	37.39	74.00	-36.61	peak
2	6516.500	54.56	-13.14	41.42	74.00	-32.58	peak
3	9676.800	55.43	-7.62	47.81	74.00	-26.19	peak

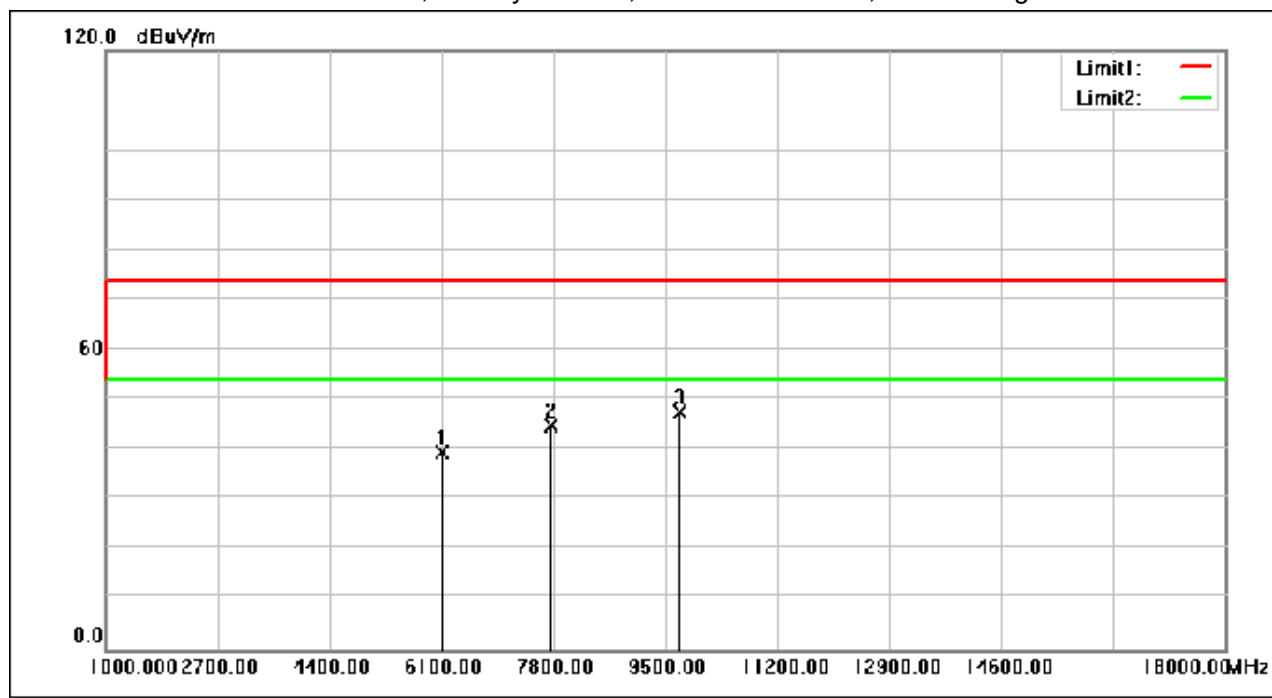
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Test Mode: 00; Polarity: Vertical; Modulation: 8DPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6122.100	54.53	-15.20	39.33	74.00	-34.67	peak
2	7780.450	55.65	-10.89	44.76	74.00	-29.24	peak
3	9726.950	55.18	-7.52	47.66	74.00	-26.34	peak

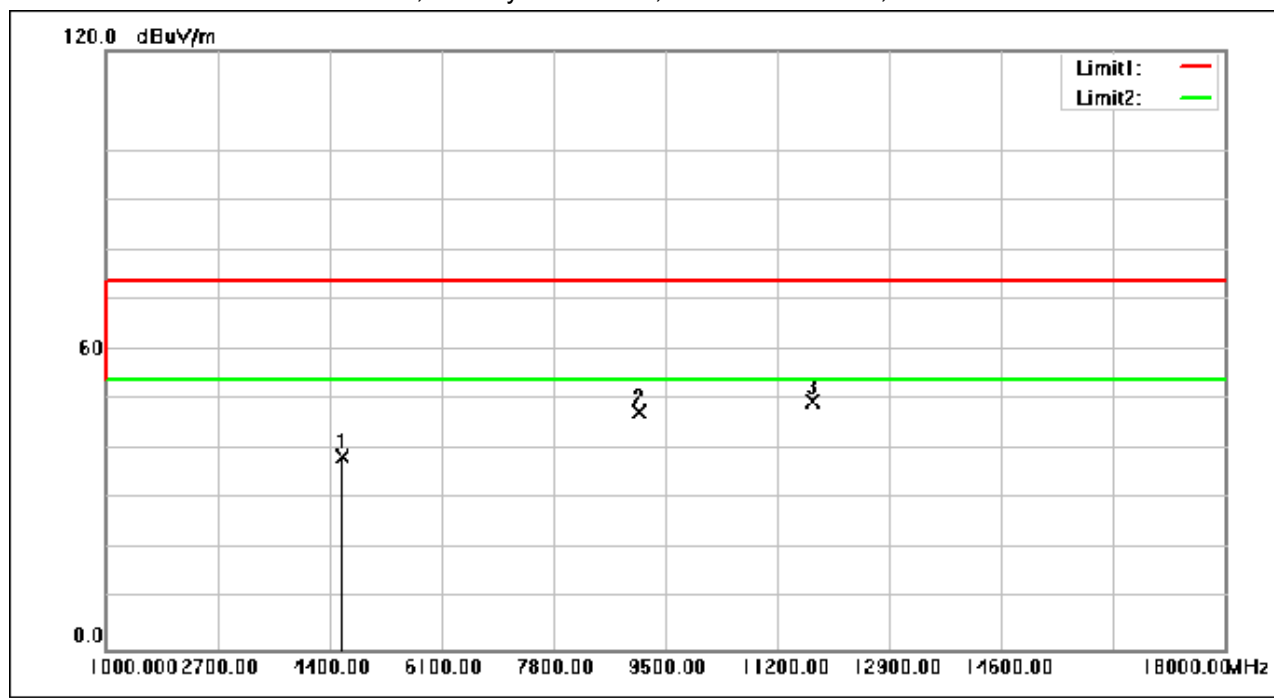
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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4602.300	57.17	-18.68	38.49	74.00	-35.51	peak
2	9103.900	56.21	-8.70	47.51	74.00	-26.49	peak
3	11728.700	55.95	-6.17	49.78	74.00	-24.22	peak

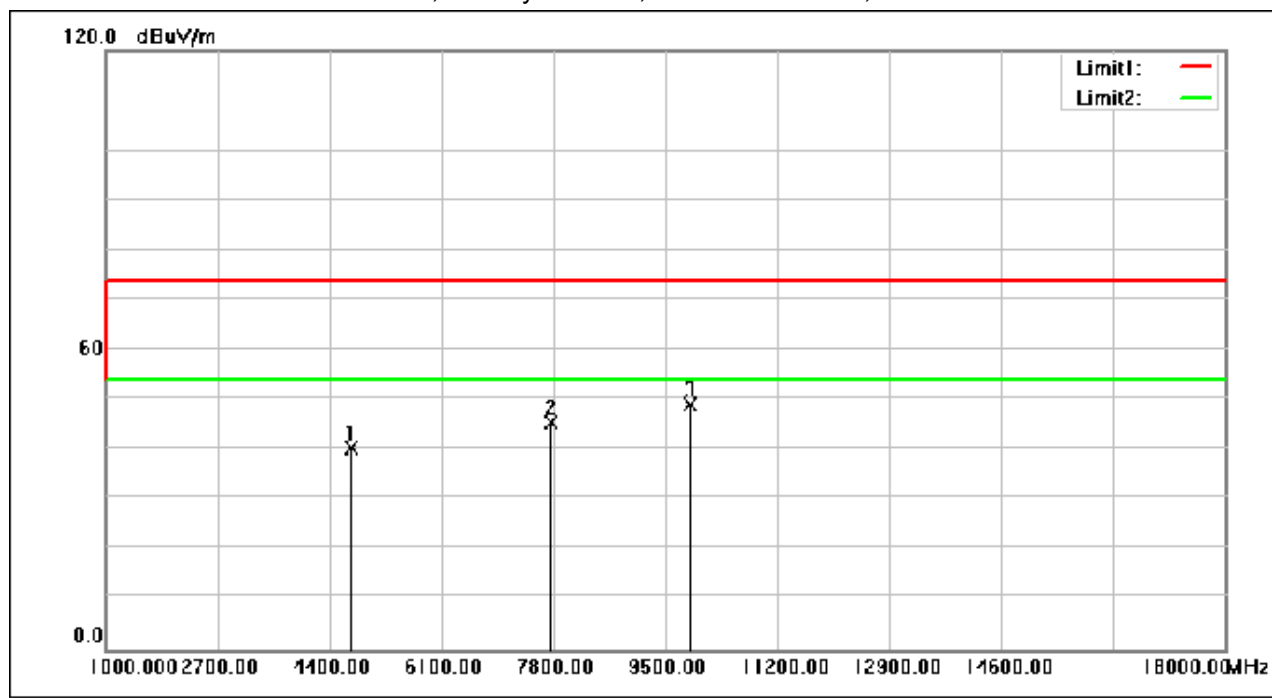
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4736.600	58.96	-18.60	40.36	74.00	-33.64	peak
2	7777.050	56.24	-10.90	45.34	74.00	-28.66	peak
3	9889.300	56.44	-7.30	49.14	74.00	-24.86	peak

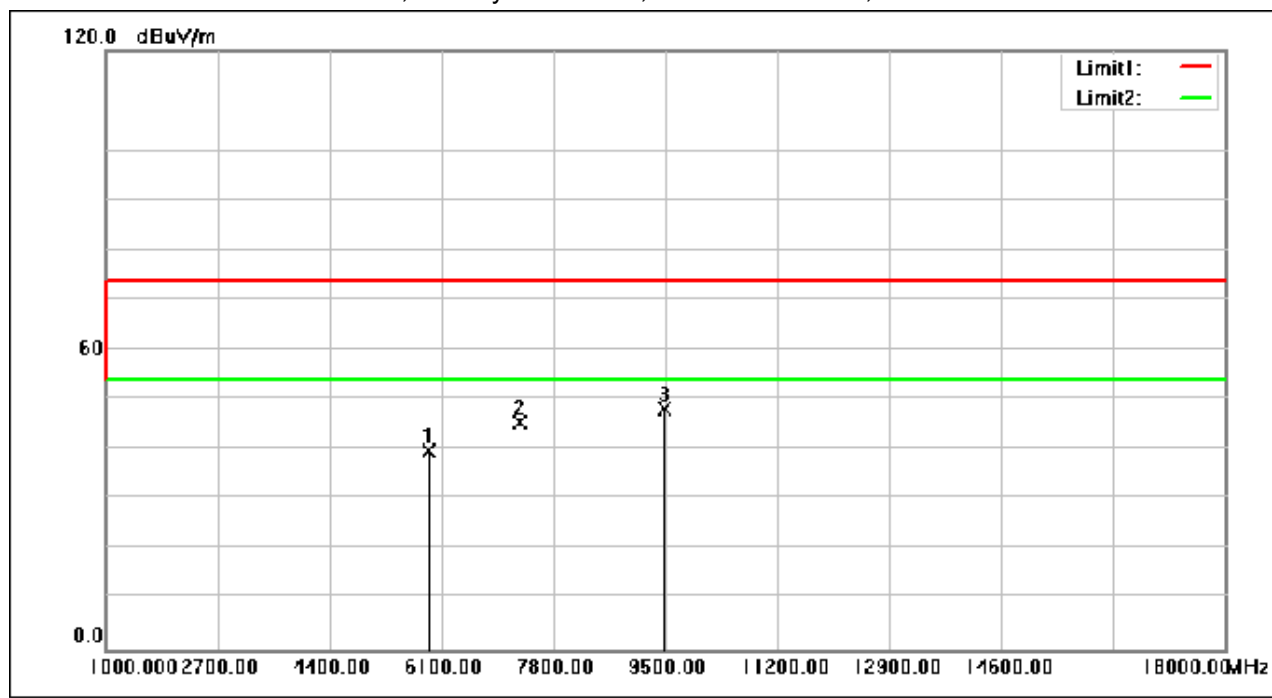
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5908.750	55.82	-16.16	39.66	74.00	-34.34	peak
2	7291.700	56.83	-11.44	45.39	74.00	-28.61	peak
3	9490.650	55.98	-7.97	48.01	74.00	-25.99	peak

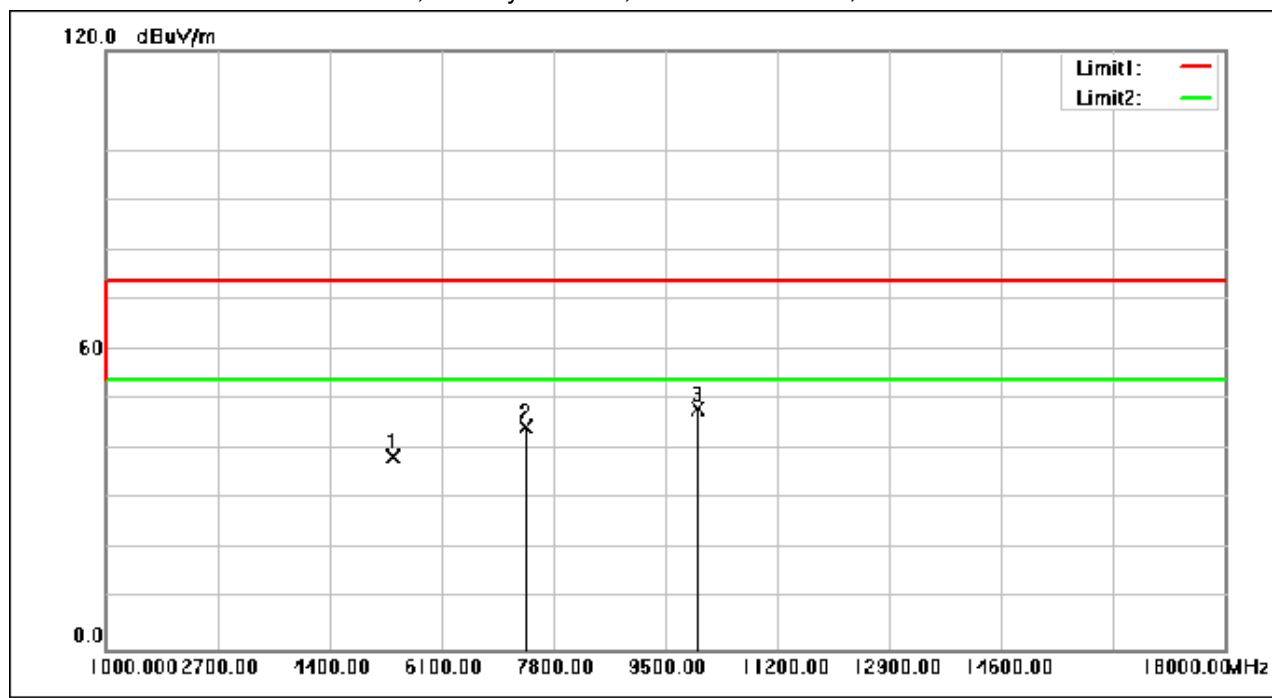
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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5363.050	56.45	-17.90	38.55	74.00	-35.45	peak
2	7376.700	56.03	-11.40	44.63	74.00	-29.37	peak
3	9989.600	55.58	-7.33	48.25	74.00	-25.75	peak

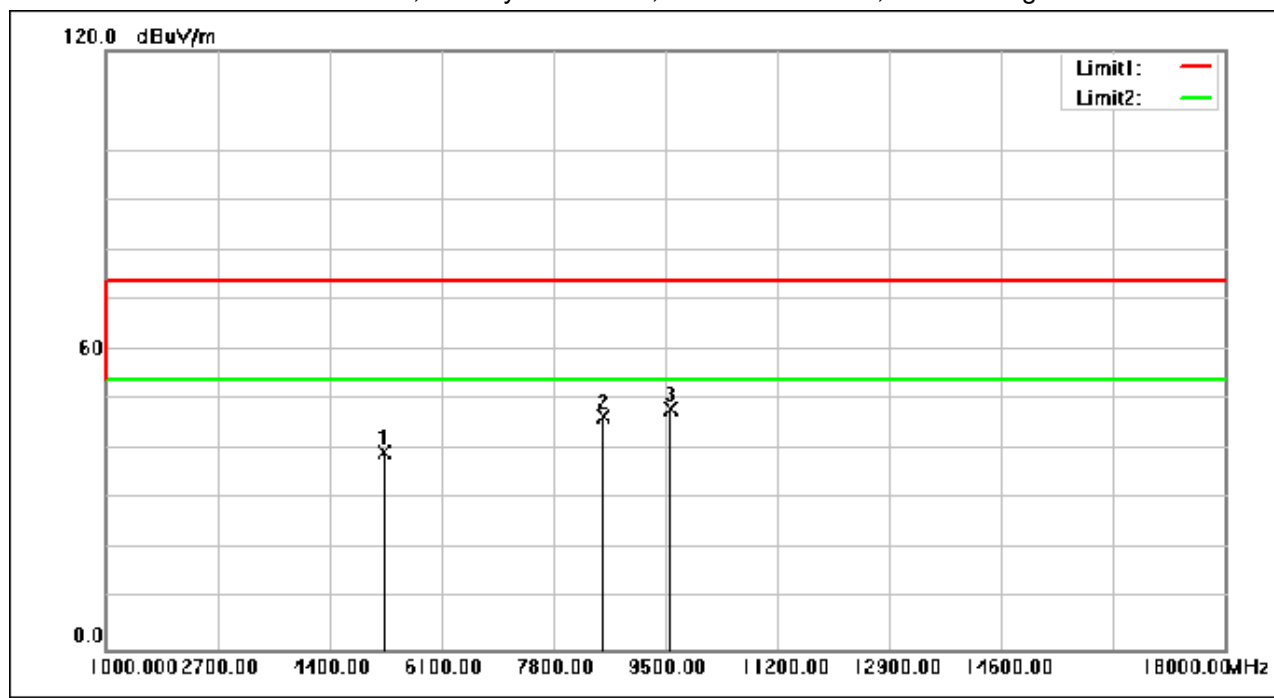
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Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5221.950	57.53	-18.11	39.42	74.00	-34.58	peak
2	8567.550	56.38	-9.64	46.74	74.00	-27.26	peak
3	9577.350	56.04	-7.81	48.23	74.00	-25.77	peak

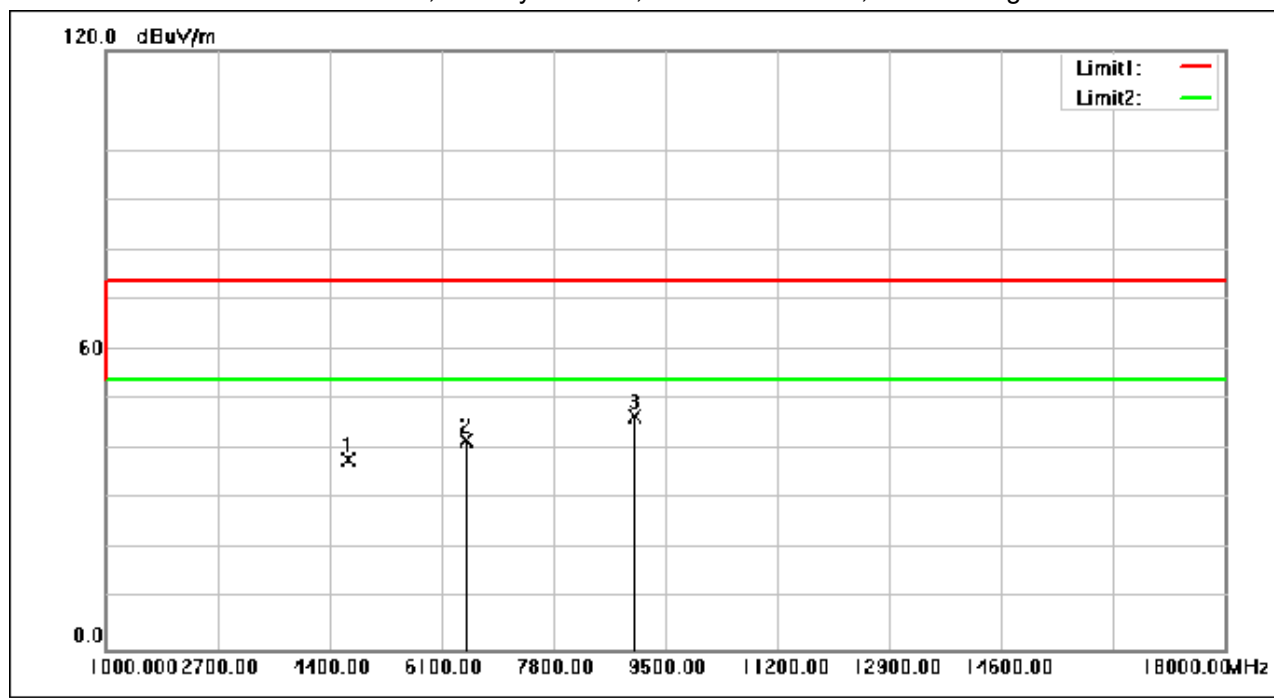
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4683.900	56.57	-18.63	37.94	74.00	-36.06	peak
2	6480.800	55.11	-13.32	41.79	74.00	-32.21	peak
3	9036.750	55.41	-8.83	46.58	74.00	-27.42	peak

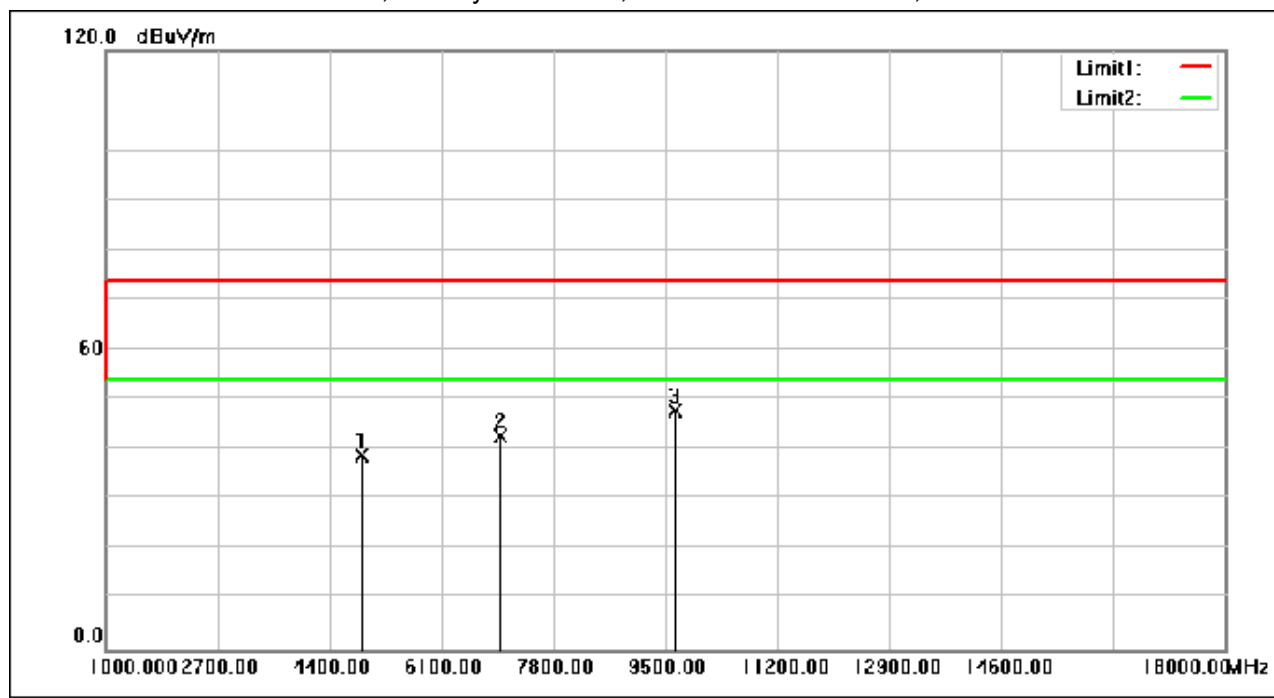
Compliance Certification Services (Kunshan) Inc.

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Test Mode: 00; Polarity: Horizontal; Modulation: $\pi/4$ DQPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4907.450	57.29	-18.50	38.79	74.00	-35.21	peak
2	7012.900	54.39	-11.56	42.83	74.00	-31.17	peak
3	9642.800	55.63	-7.68	47.95	74.00	-26.05	peak

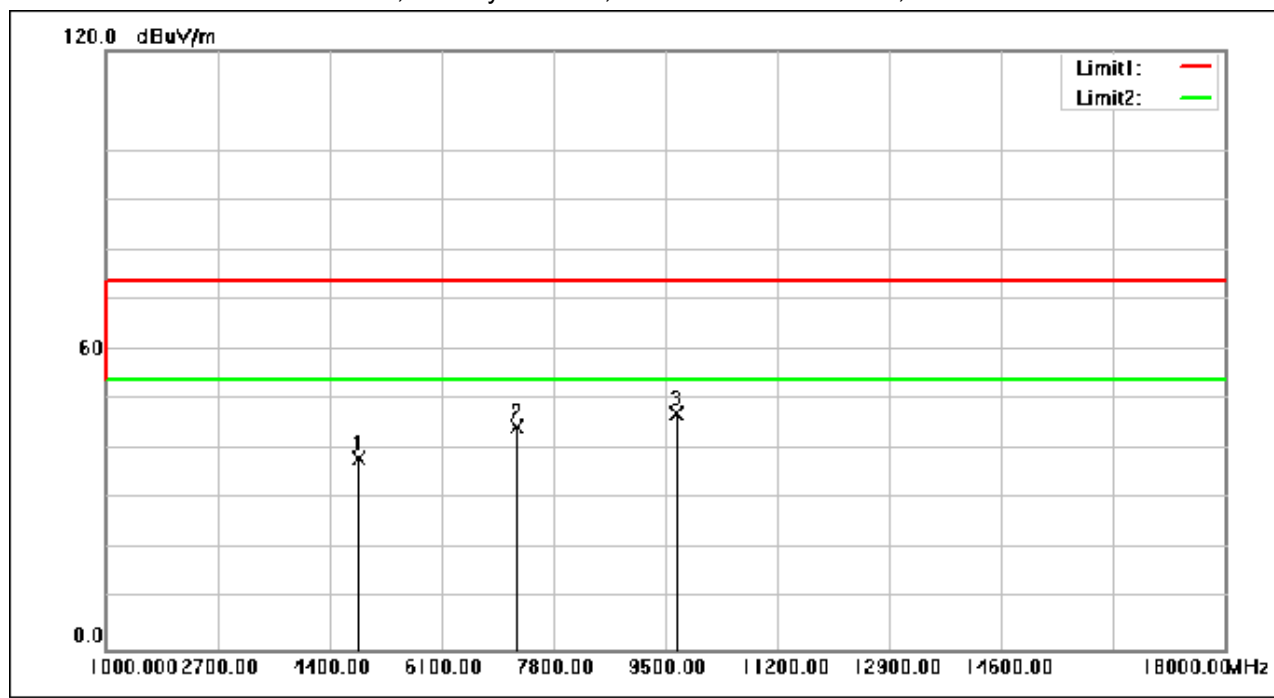
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Test Mode: 00; Polarity: Vertical; Modulation: $\pi/4$ DQPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4853.050	56.71	-18.53	38.18	74.00	-35.82	peak
2	7250.900	56.03	-11.46	44.57	74.00	-29.43	peak
3	9673.400	54.76	-7.63	47.13	74.00	-26.87	peak

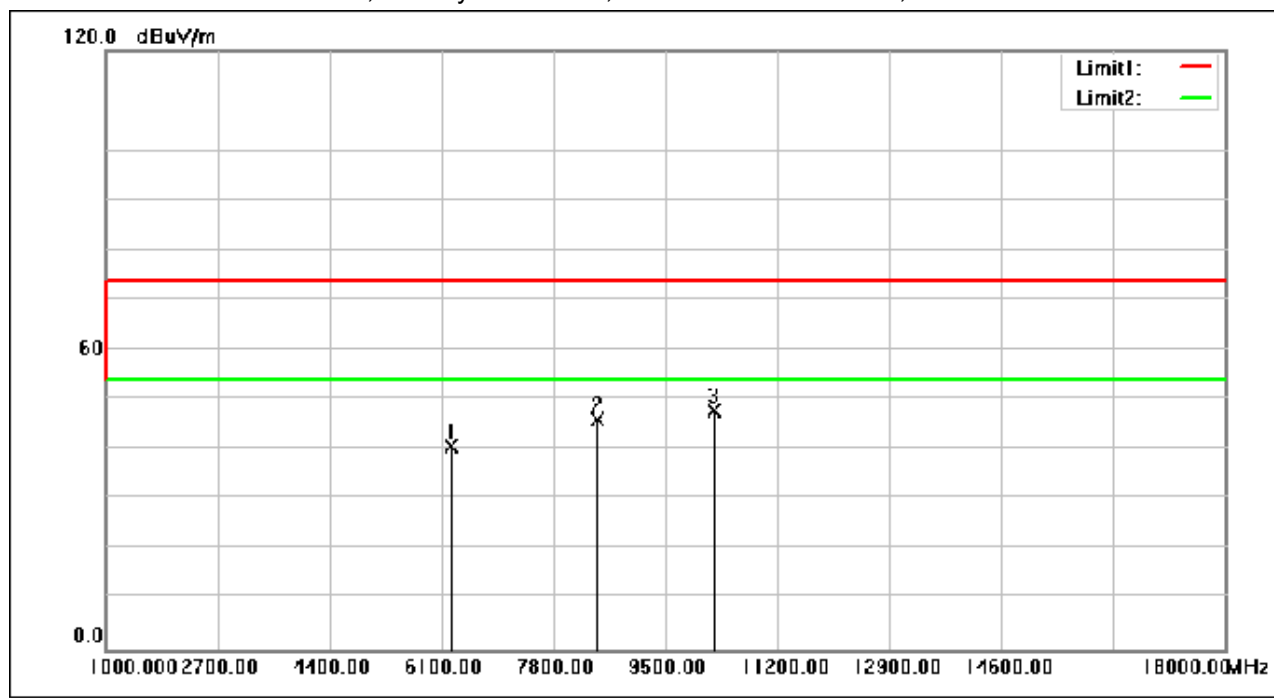
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Test Mode: 00; Polarity: Horizontal; Modulation: $\pi/4$ DQPSK; Channel: middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6253.000	55.02	-14.51	40.51	74.00	-33.49	peak
2	8478.300	55.92	-9.79	46.13	74.00	-27.87	peak
3	10234.400	55.19	-7.20	47.99	74.00	-26.01	peak

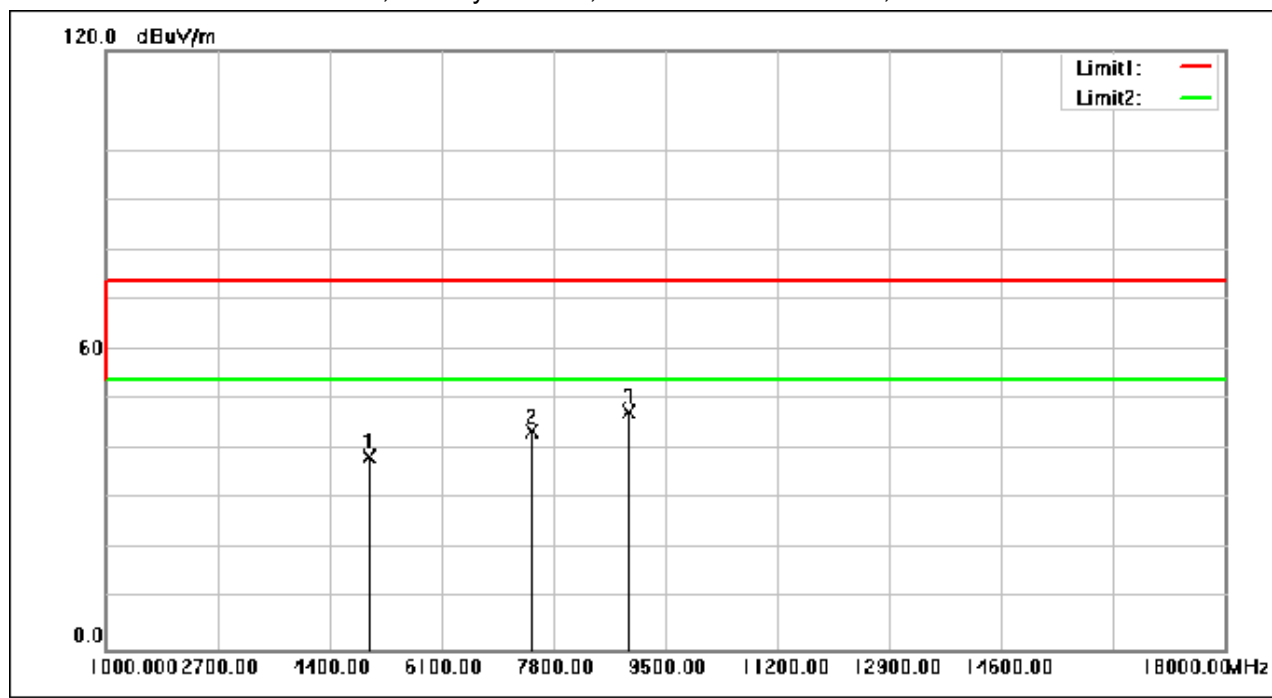
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Test Mode: 00; Polarity: Vertical; Modulation: $\pi/4$ DQPSK; Channel: middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5006.900	57.00	-18.44	38.56	74.00	-35.44	peak
2	7482.100	55.06	-11.29	43.77	74.00	-30.23	peak
3	8948.350	56.54	-9.02	47.52	74.00	-26.48	peak

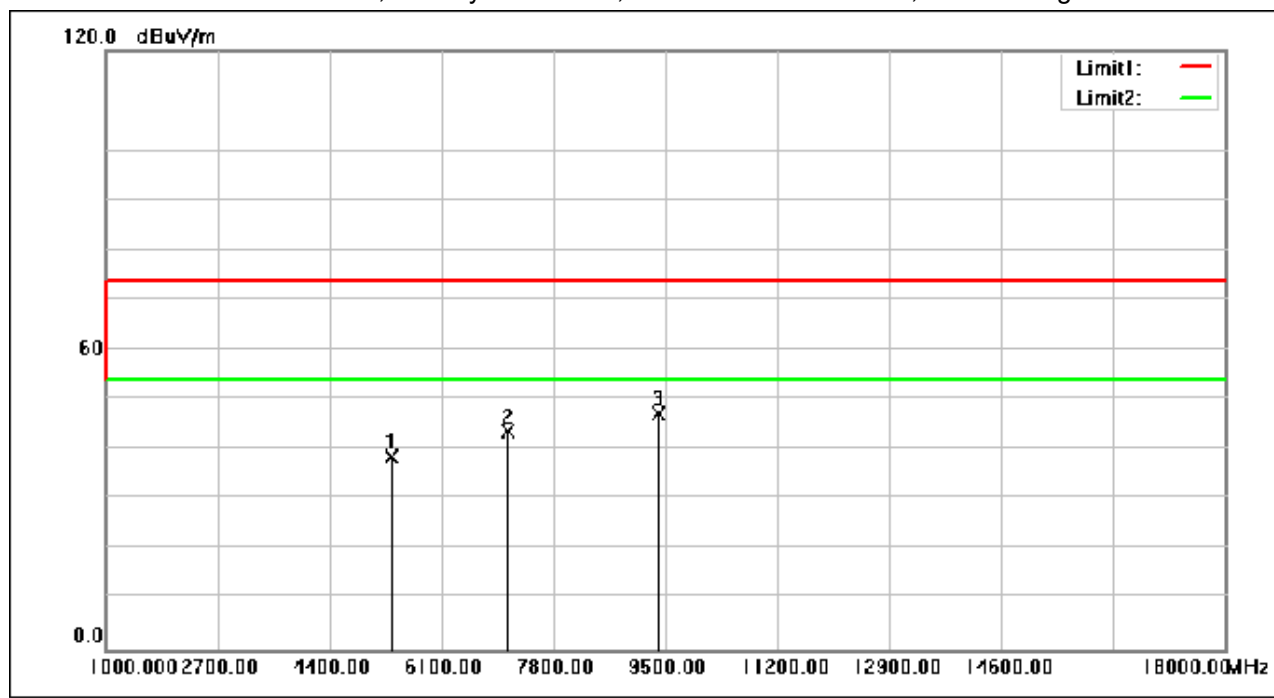
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Test Mode: 00; Polarity: Horizontal; Modulation: $\pi/4$ DQPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5345.200	56.47	-17.93	38.54	74.00	-35.46	peak
2	7114.900	55.10	-11.51	43.59	74.00	-30.41	peak
3	9408.200	55.50	-8.13	47.37	74.00	-26.63	peak

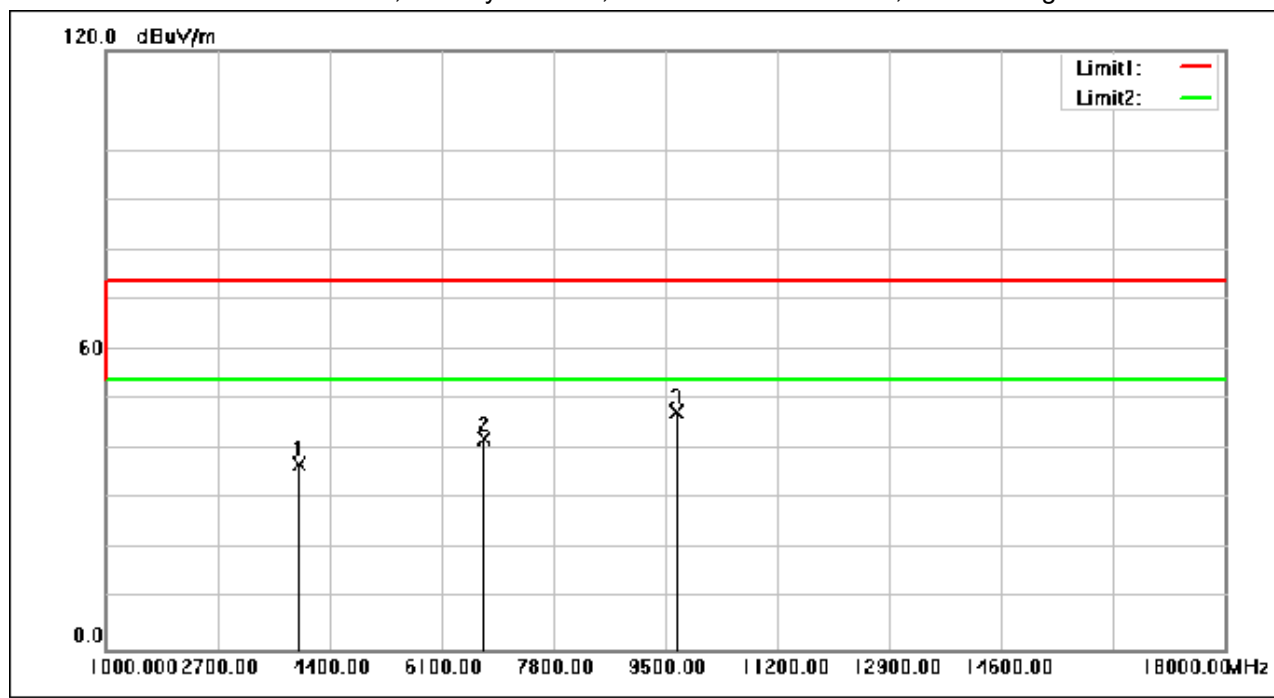
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Test Mode: 00; Polarity: Vertical; Modulation: $\pi/4$ DQPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3948.650	57.43	-20.37	37.06	74.00	-36.94	peak
2	6751.100	54.09	-11.99	42.10	74.00	-31.90	peak
3	9670.000	55.12	-7.64	47.48	74.00	-26.52	peak

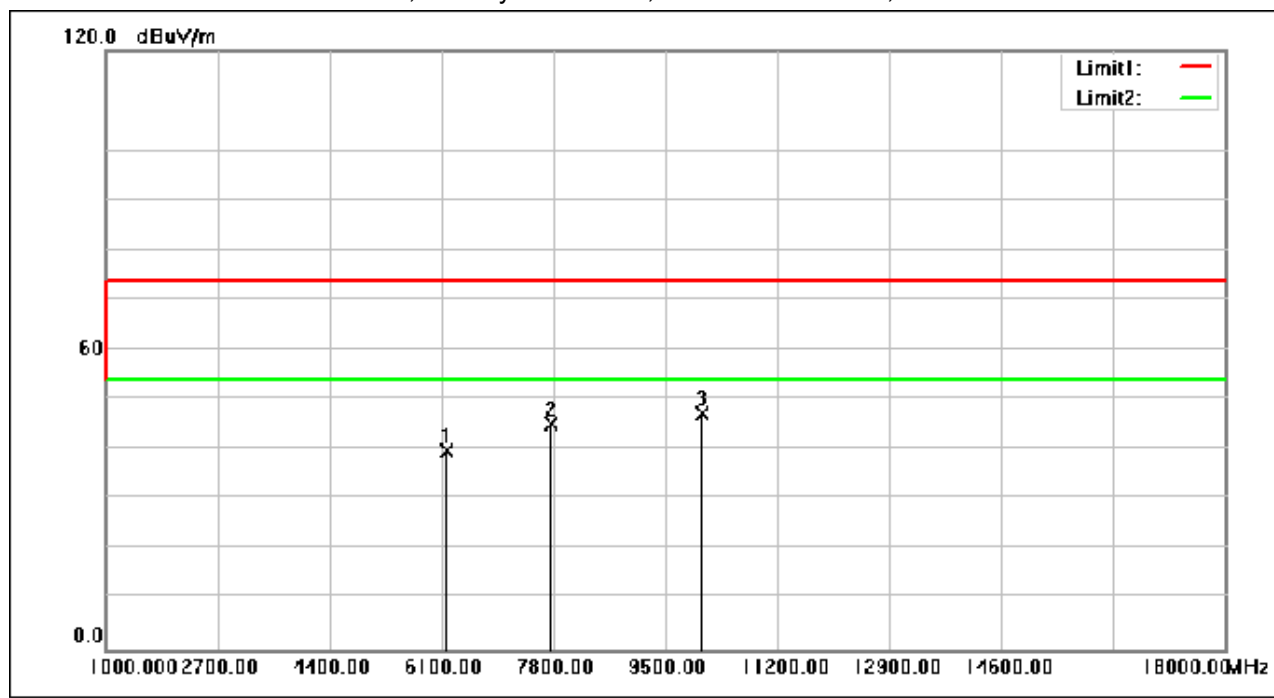
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Test Mode: 00; Polarity: Horizontal; Modulation: 8DPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6186.700	54.65	-14.85	39.80	74.00	-34.20	peak
2	7771.100	56.19	-10.90	45.29	74.00	-28.71	peak
3	10066.100	54.50	-7.29	47.21	74.00	-26.79	peak

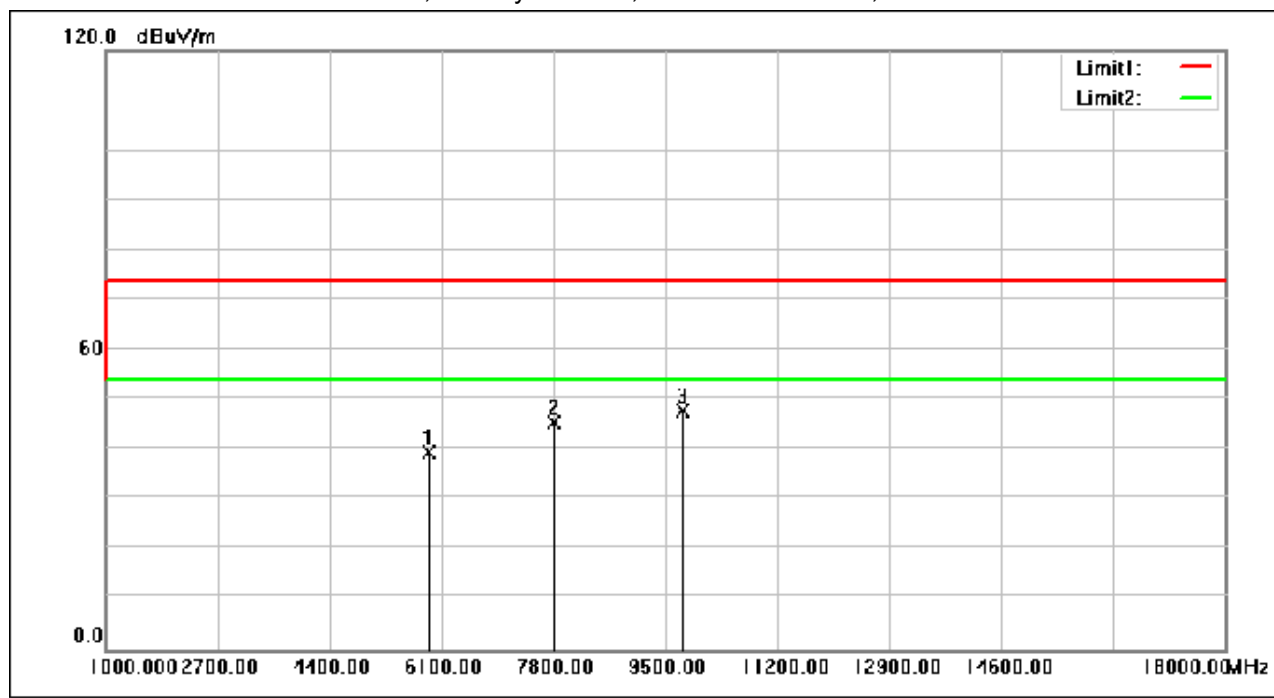
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Test Mode: 00; Polarity: Vertical; Modulation: 8DPSK; Channel: Low



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5912.150	55.53	-16.14	39.39	74.00	-34.61	peak
2	7832.300	56.17	-10.83	45.34	74.00	-28.66	peak
3	9771.150	55.27	-7.44	47.83	74.00	-26.17	peak

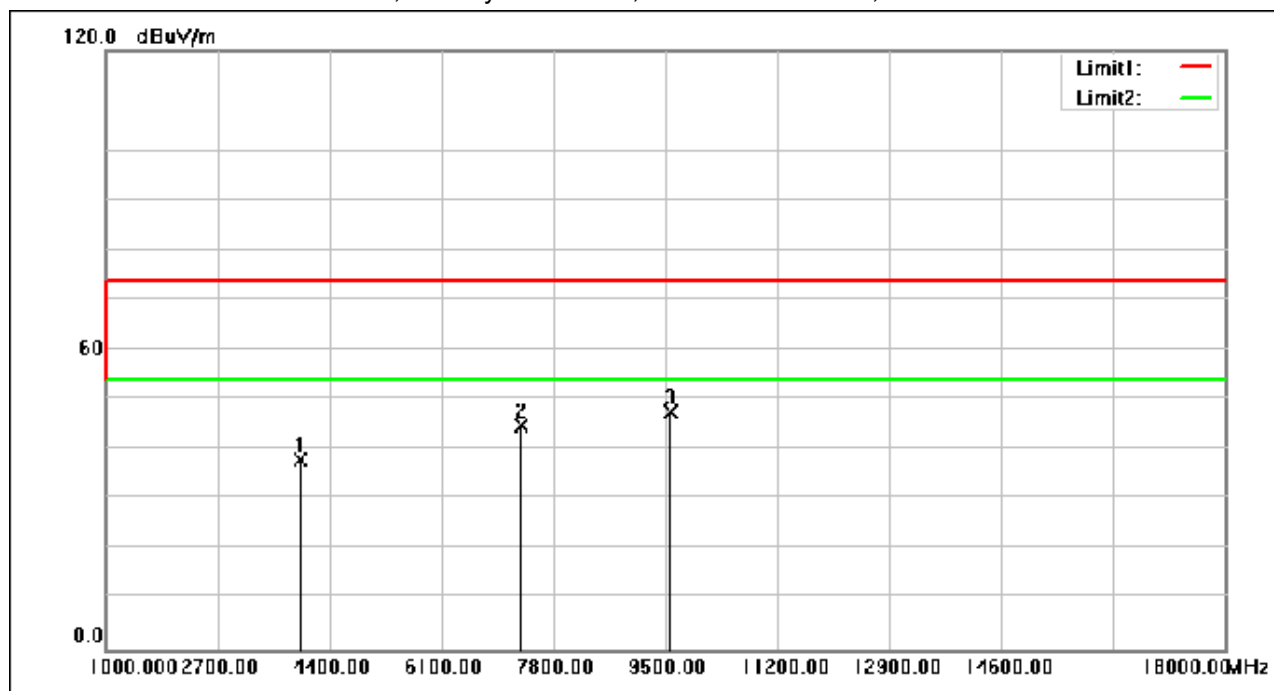
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Test Mode: 00; Polarity: Horizontal; Modulation: 8DPSK; Channel: middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3973.300	58.29	-20.30	37.99	74.00	-36.01	peak
2	7318.050	56.15	-11.42	44.73	74.00	-29.27	peak
3	9583.300	55.29	-7.80	47.49	74.00	-26.51	peak

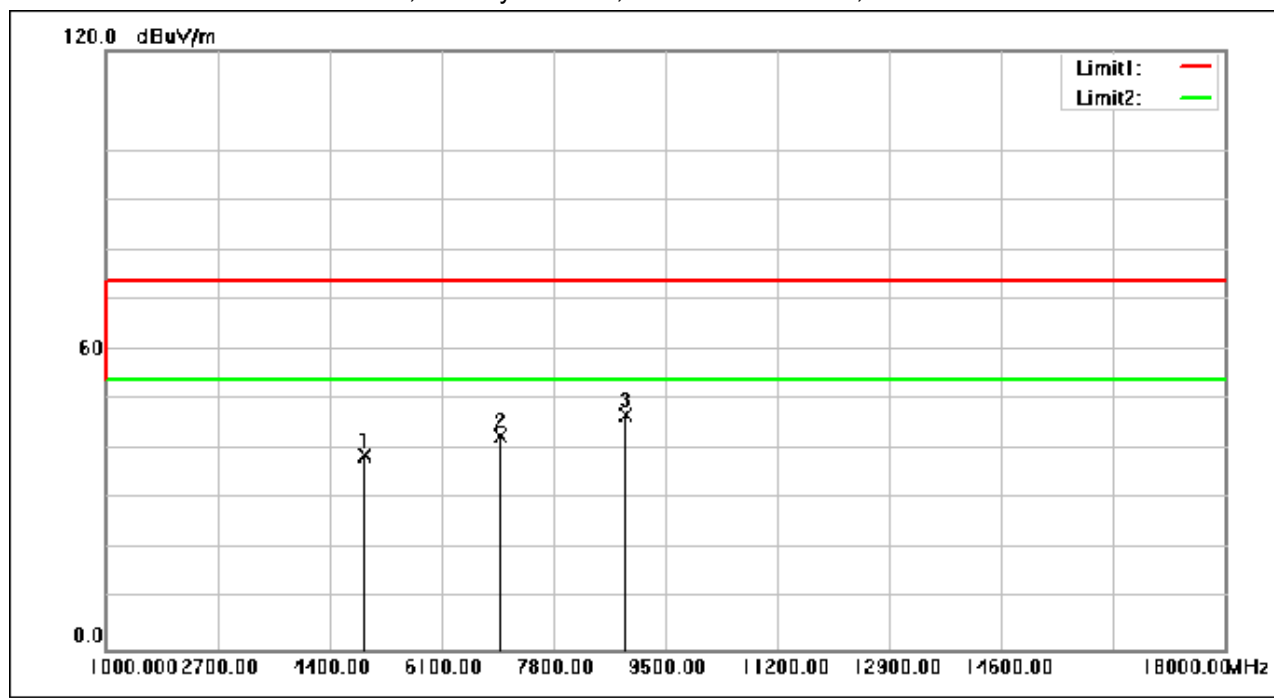
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Test Mode: 00; Polarity: Vertical; Modulation: 8DPSK; Channel: middle



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4927.850	57.32	-18.49	38.83	74.00	-35.17	peak
2	7000.150	54.34	-11.57	42.77	74.00	-31.23	peak
3	8895.650	56.14	-9.10	47.04	74.00	-26.96	peak

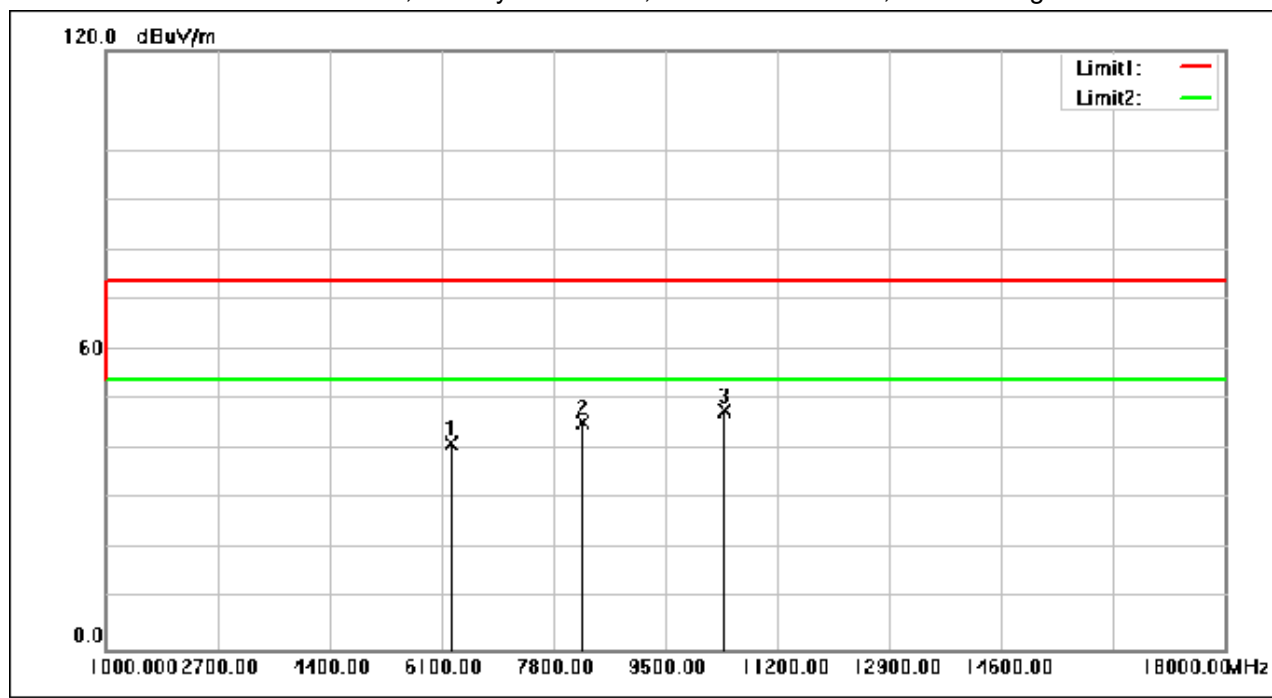
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Test Mode: 00; Polarity: Horizontal; Modulation: 8DPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6253.850	55.67	-14.51	41.16	74.00	-32.84	peak
2	8253.900	55.47	-10.16	45.31	74.00	-28.69	peak
3	10410.350	54.83	-7.09	47.74	74.00	-26.26	peak

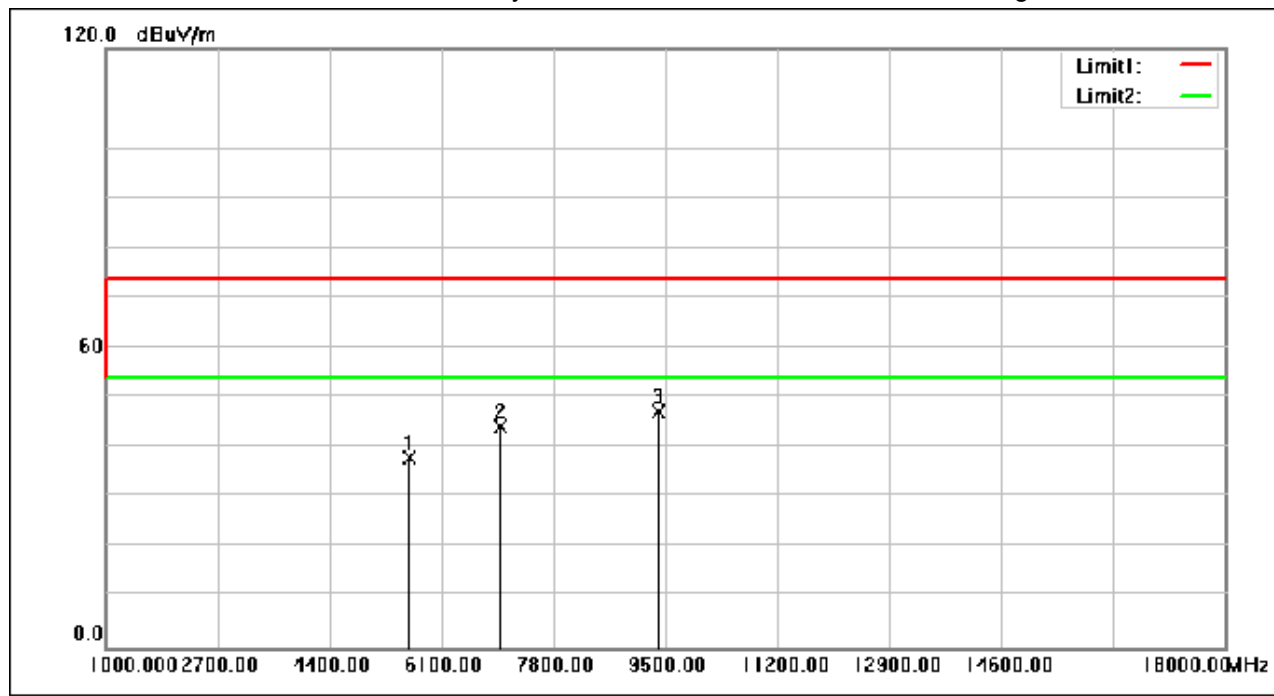
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Test Mode: 00; Polarity: Vertical; Modulation: 8DPSK; Channel: High



No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5618.050	55.24	-17.36	37.88	74.00	-36.12	peak
2	7009.500	55.86	-11.56	44.30	74.00	-29.70	peak
3	9398.000	55.52	-8.15	47.37	74.00	-26.63	peak

7.5 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(1)

Test Method: ANSI C63.10 (2013) Section 7.8.5

Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq$ hopping channels < 50
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C

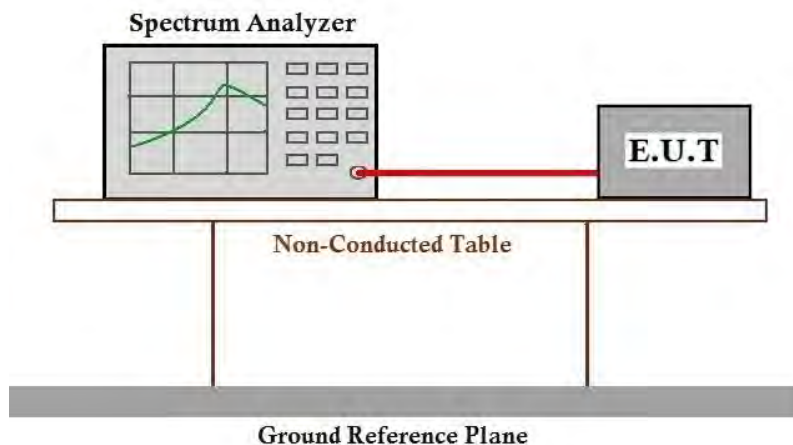
Humidity: 50.1 % RH

Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram





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7.5.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details



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7.6 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.247(a)(1)

Test Method: ANSI C63.10 (2013) Section 7.8.7

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C

Humidity: 50.1 % RH

Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.6.3 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.7 Carrier Frequencies Separation

Test Requirement 47 CFR Part 15, Subpart C 15.247a(1)

Test Method: ANSI C63.10 (2013) Section 7.8.2

Limit:

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C

Humidity: 50.1 % RH

Atmospheric Pressure: 1010 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.7.3 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.8 Hopping Channel Number

Test Requirement 47 CFR Part 15, Subpart C 15.247a(1)(iii)

Test Method: ANSI C63.10 (2013) Section 7.8.3

Limit:

Frequency range(MHz)	Number of hopping channels (minimum)
902-928	50 for 20dB bandwidth <250kHz
	25 for 20dB bandwidth ≥250kHz
2400-2483.5	15
5725-5850	75

7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C

Humidity: 50.1 % RH

Atmospheric Pressure: 1010 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.8.3 Measurement Procedure and Data

Please Refer to Appendix for Details

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7.9 Dwell Time

Test Requirement 47 CFR Part 15, Subpart C 15.247a(1)(iii)

Test Method: ANSI C63.10 (2013) Section 7.8.4

Limit:

Frequency(MHz)	Limit
902-928	0.4S within a 20S period(20dB bandwidth<250kHz)
	0.4S within a 10S period(20dB bandwidth≥250kHz)
2400-2483.5	0.4S within a period of 0.4S multiplied by the number of hopping channels
5725-5850	0.4S within a 30S period

7.9.1 E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C

Humidity: 50.1 % RH

Atmospheric Pressure: 1010 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.9.3 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.10 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 7.8.6

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.10.1 E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C

Humidity: 50.1 % RH

Atmospheric Pressure: 1010 mbar

7.10.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.10.3 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.11 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 7.8.8

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.11.1 E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C

Humidity: 50.1 % RH

Atmospheric Pressure: 1010 mbar

7.11.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.11.3 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.12 99% Bandwidth

Test Requirement RSS-Gen Section 6.7
Test Method: ANSI C63.10 (2013) Section 6.9.3

7.12.1 E.U.T. Operation

Operating Environment:
Temperature: 21.7 °C Humidity: 50.1 % RH Atmospheric Pressure: 1010 mbar

7.12.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_Hop mode_Keep the EUT in frequency hopping mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.12.3 Measurement Procedure and Data

Please Refer to Appendix for Details



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8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2410002138AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2410002138AT

10 Appendix

Left:

1. Duty Cycle

1.1 Test Result

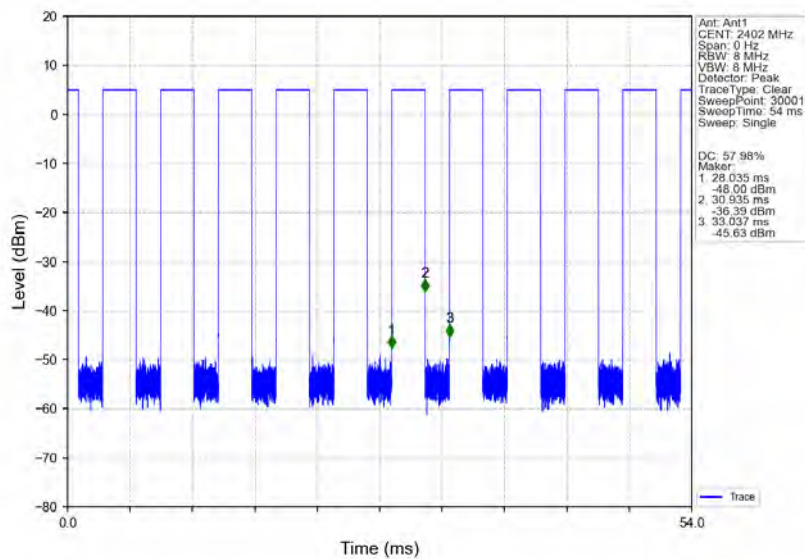
1.1.1 Ant1

Ant1								
Mode	TX Type	Frequency (MHz)	Packet Type	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
GFSK	SISO	2402	DH5	2.900	5.002	57.98	2.37	0.03
		2441	DH5	2.898	4.999	57.97	2.37	0.04
		2480	DH5	2.887	4.998	57.76	2.38	0.04
Pi/4DQPSK	SISO	2402	2DH5	2.893	4.999	57.87	2.38	0.02
		2441	2DH5	2.905	5.002	58.08	2.36	0.06
		2480	2DH5	2.893	4.999	57.87	2.38	0.02
8DPSK	SISO	2402	3DH5	2.905	4.998	58.12	2.36	0.04
		2441	3DH5	2.905	5.000	58.10	2.36	0.04
		2480	3DH5	2.905	5.000	58.10	2.36	0.04

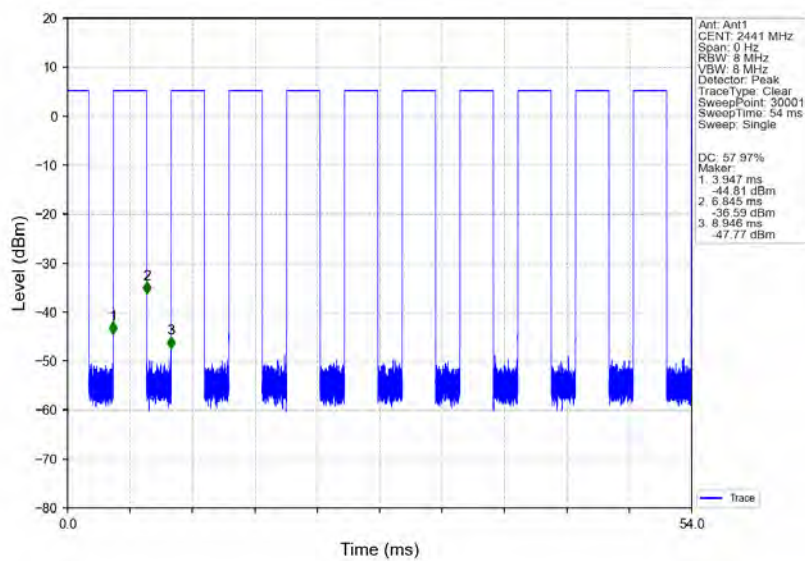
1.2 Test Graph

1.2.1 Ant1

GFSK_DH5_LCH_2402MHz_Ant1_NTNV



GFSK_DH5_MCH_2441MHz_Ant1_NTNV



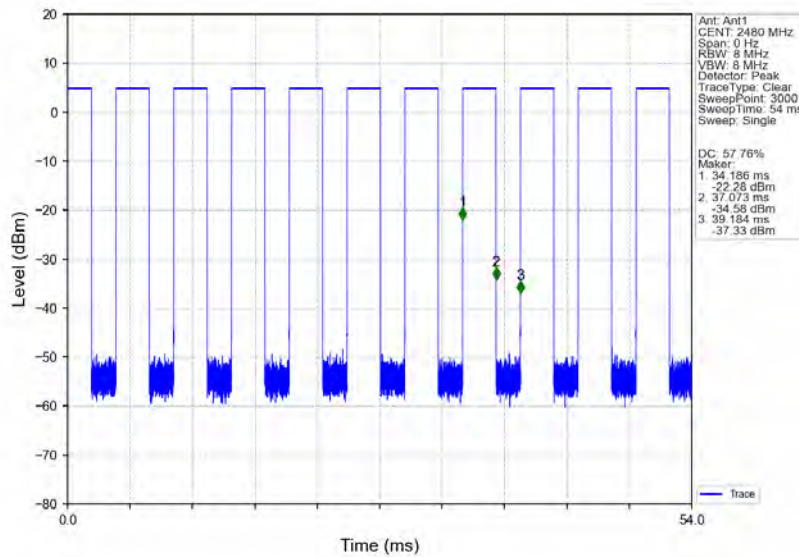
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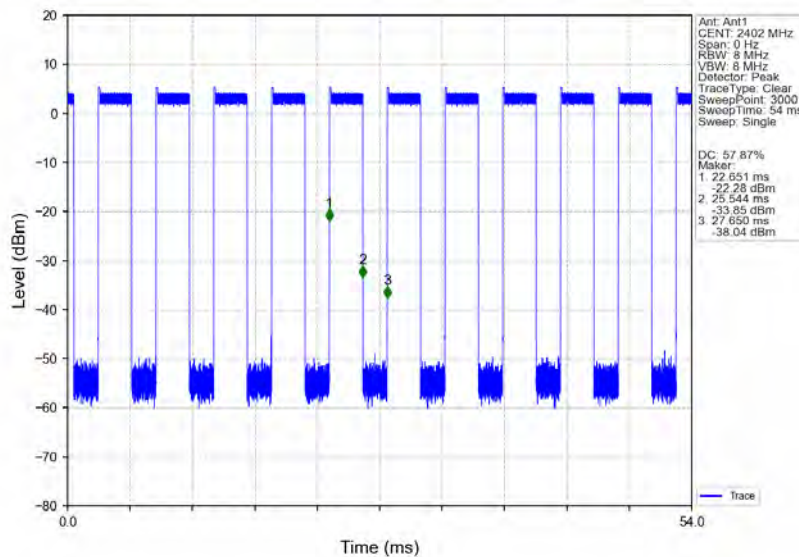
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GFSK DH5 HCH 2480MHz Ant1 NTNV



Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTNV



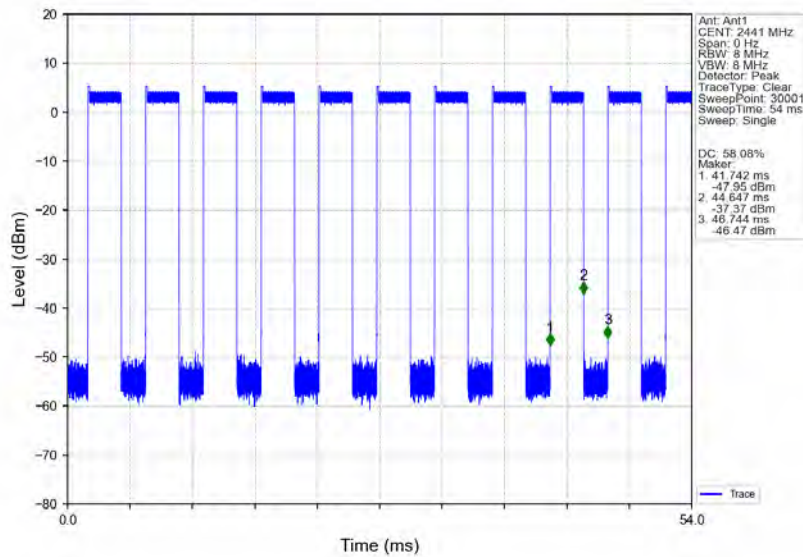
Compliance Certification Services (Kunshan) Inc.

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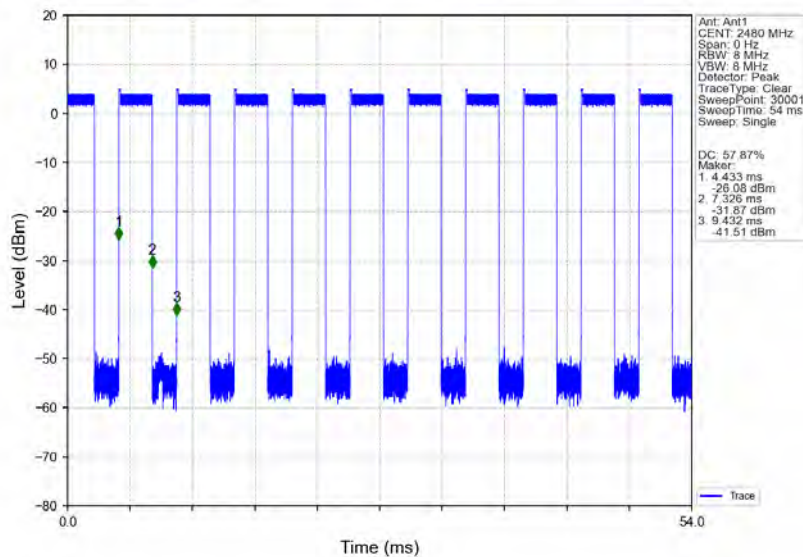
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Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTN



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN



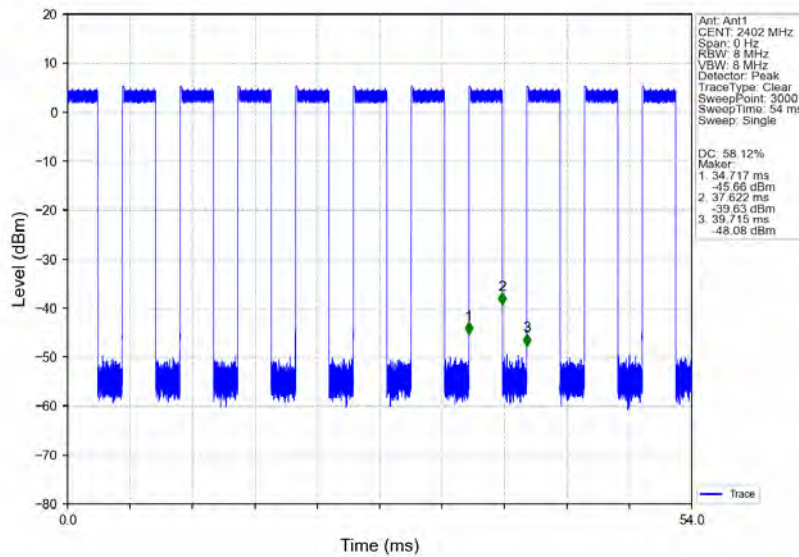
Compliance Certification Services (Kunshan) Inc.

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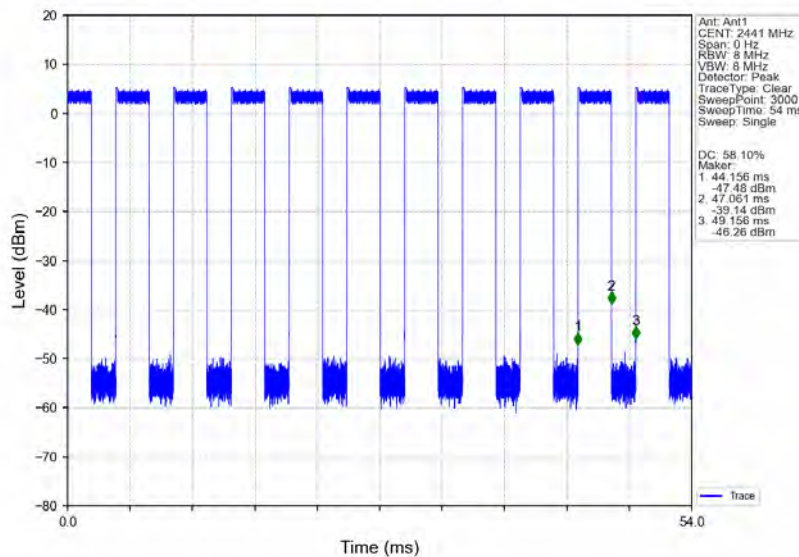
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8DPSK 3DH5 LCH 2402MHz Ant1 NTN



8DPSK 3DH5 MCH 2441MHz Ant1 NTN



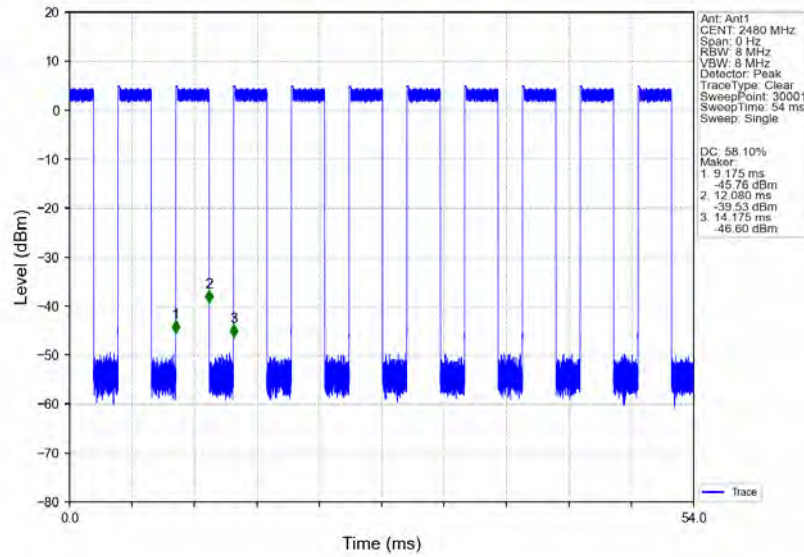
Compliance Certification Services (Kunshan) Inc.

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8DPSK 3DH5 HCH 2480MHz Ant1 NTV



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2. Bandwidth**2.1 Test Result****2.1.1 OBW**

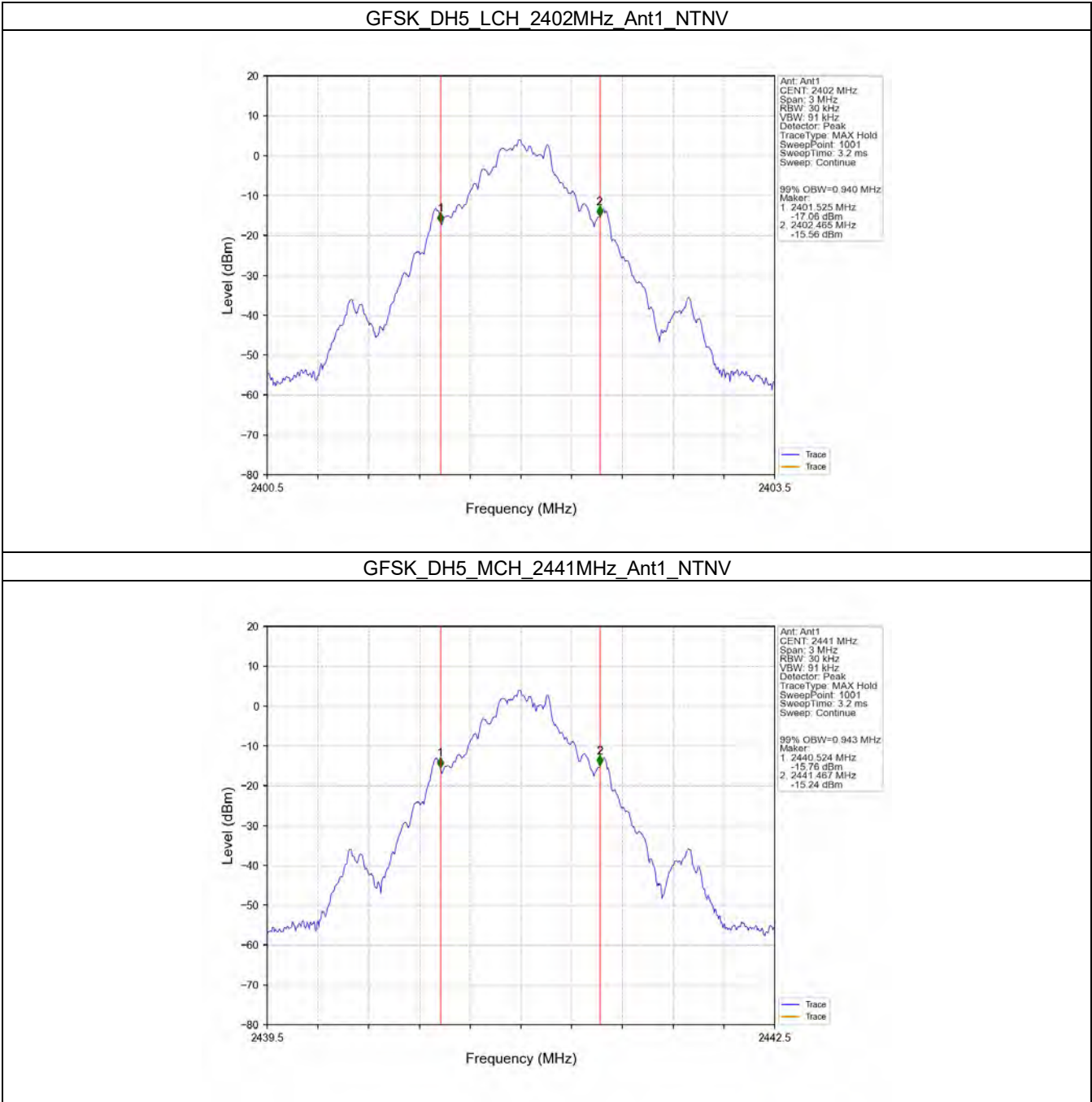
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.940	/	Pass
		2441	DH5	1	0.943	/	Pass
		2480	DH5	1	0.938	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.120	/	Pass
		2441	2DH5	1	1.121	/	Pass
		2480	2DH5	1	1.120	/	Pass
8DPSK	SISO	2402	3DH5	1	1.133	/	Pass
		2441	3DH5	1	1.133	/	Pass
		2480	3DH5	1	1.134	/	Pass

2.1.2 20dB BW

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	1.041	/	Pass
		2441	DH5	1	1.030	/	Pass
		2480	DH5	1	1.046	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.196	/	Pass
		2441	2DH5	1	1.197	/	Pass
		2480	2DH5	1	1.197	/	Pass
8DPSK	SISO	2402	3DH5	1	1.210	/	Pass
		2441	3DH5	1	1.210	/	Pass
		2480	3DH5	1	1.209	/	Pass

2.2 Test Graph

2.2.1 OBW



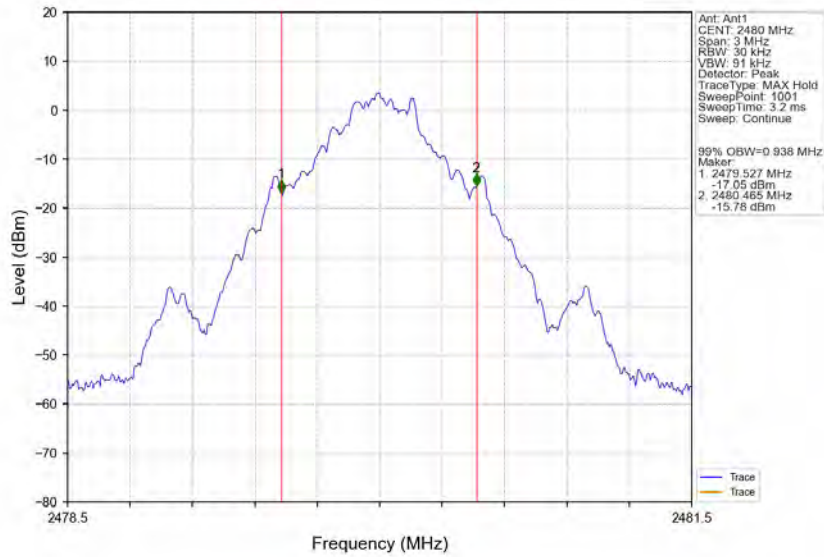
Compliance Certification Services (Kunshan) Inc.

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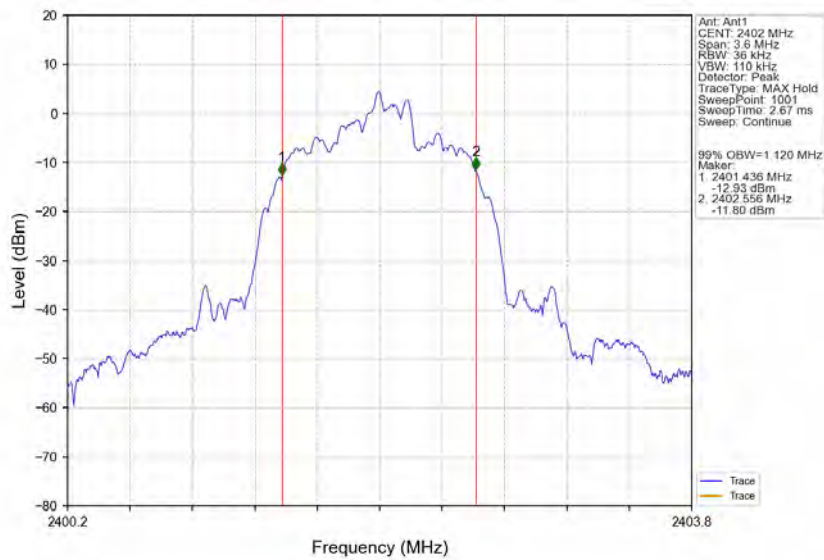
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GFSK DH5 HCH 2480MHz Ant1 NTNV



Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTNV



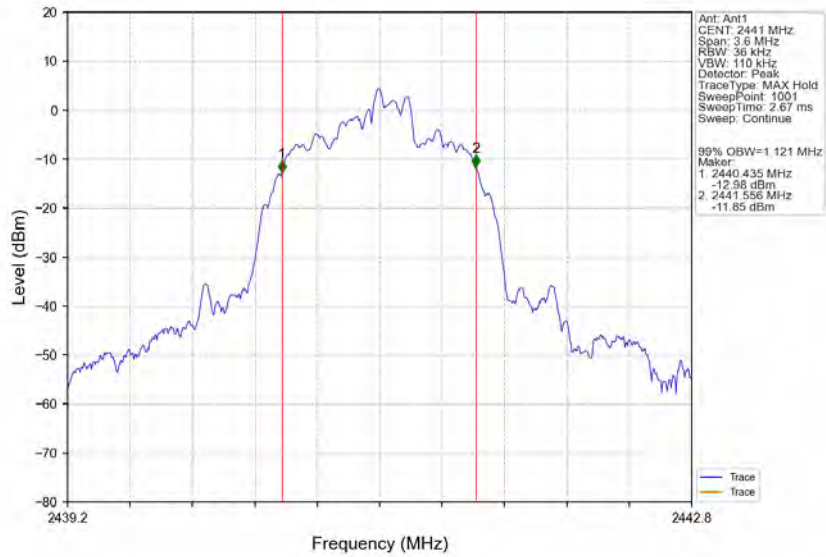
Compliance Certification Services (Kunshan) Inc.

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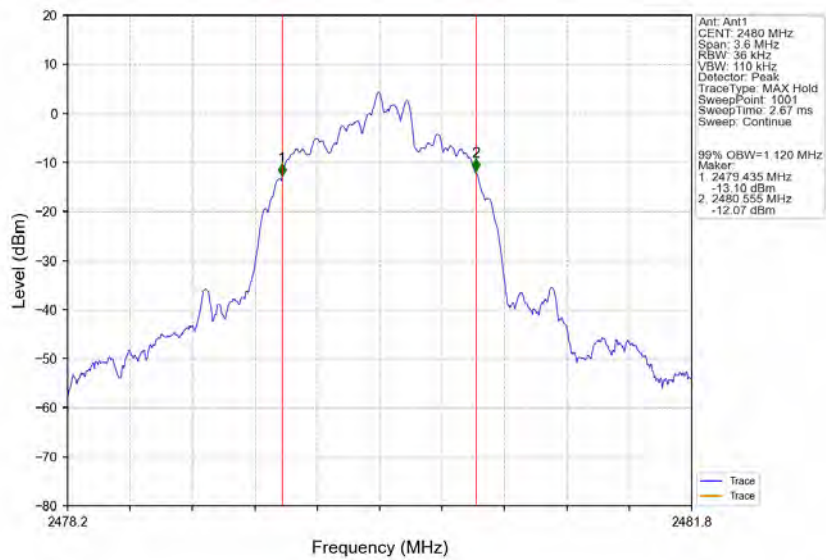
Report No.: KSCR241000213802

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Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTNV



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTNV



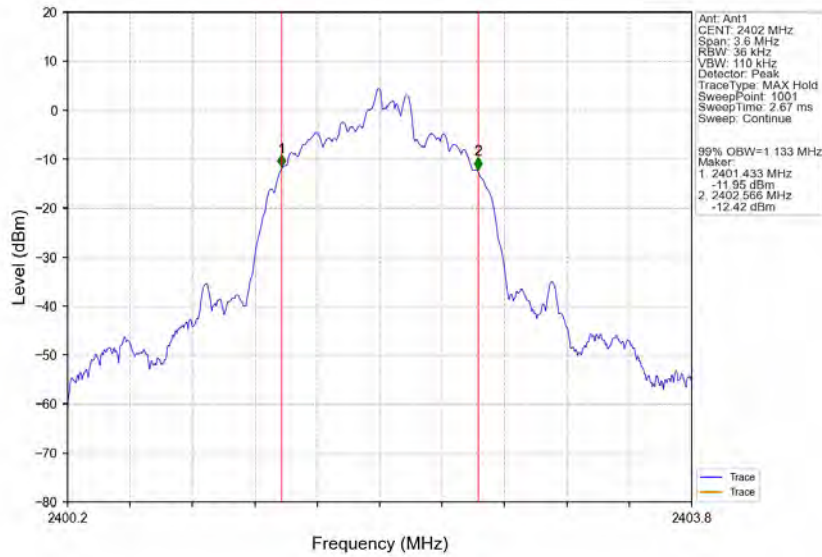
Compliance Certification Services (Kunshan) Inc.

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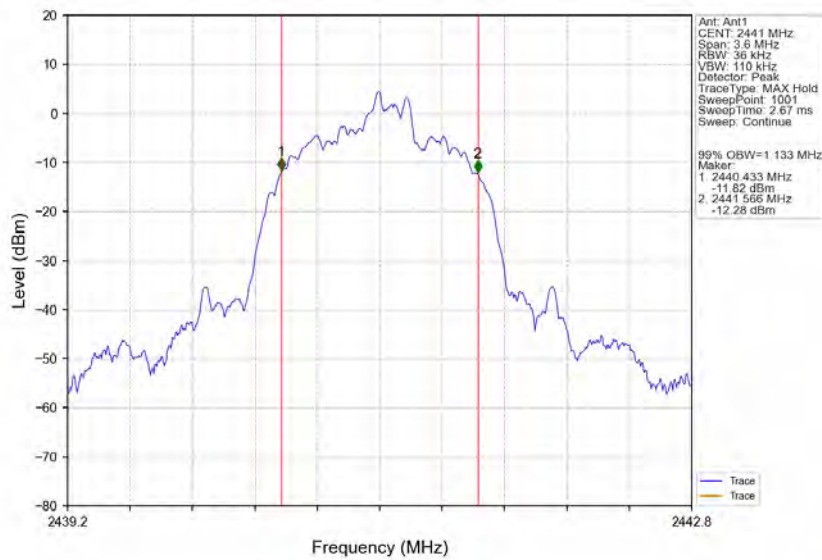
Report No.: KSCR241000213802

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8DPSK 3DH5 LCH 2402MHz Ant1 NTNV



8DPSK 3DH5 MCH 2441MHz Ant1 NTNV



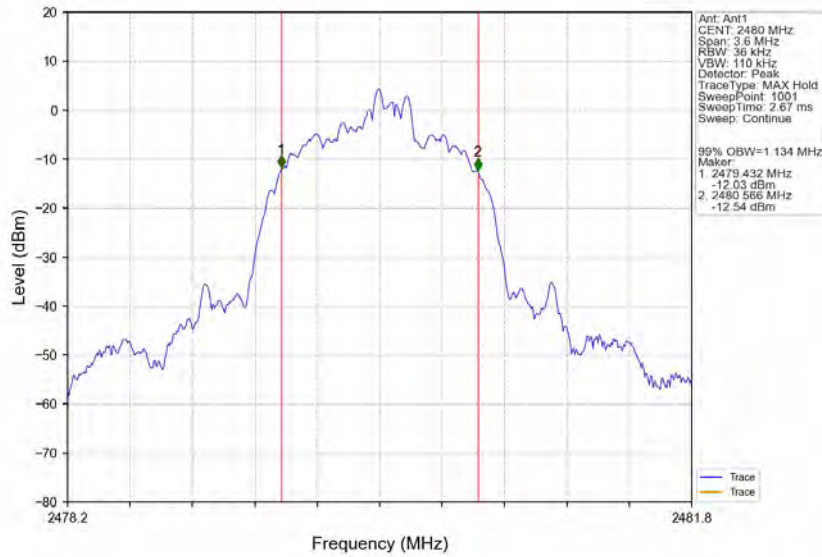
Compliance Certification Services (Kunshan) Inc.

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8DPSK 3DH5 HCH 2480MHz Ant1 NTNV



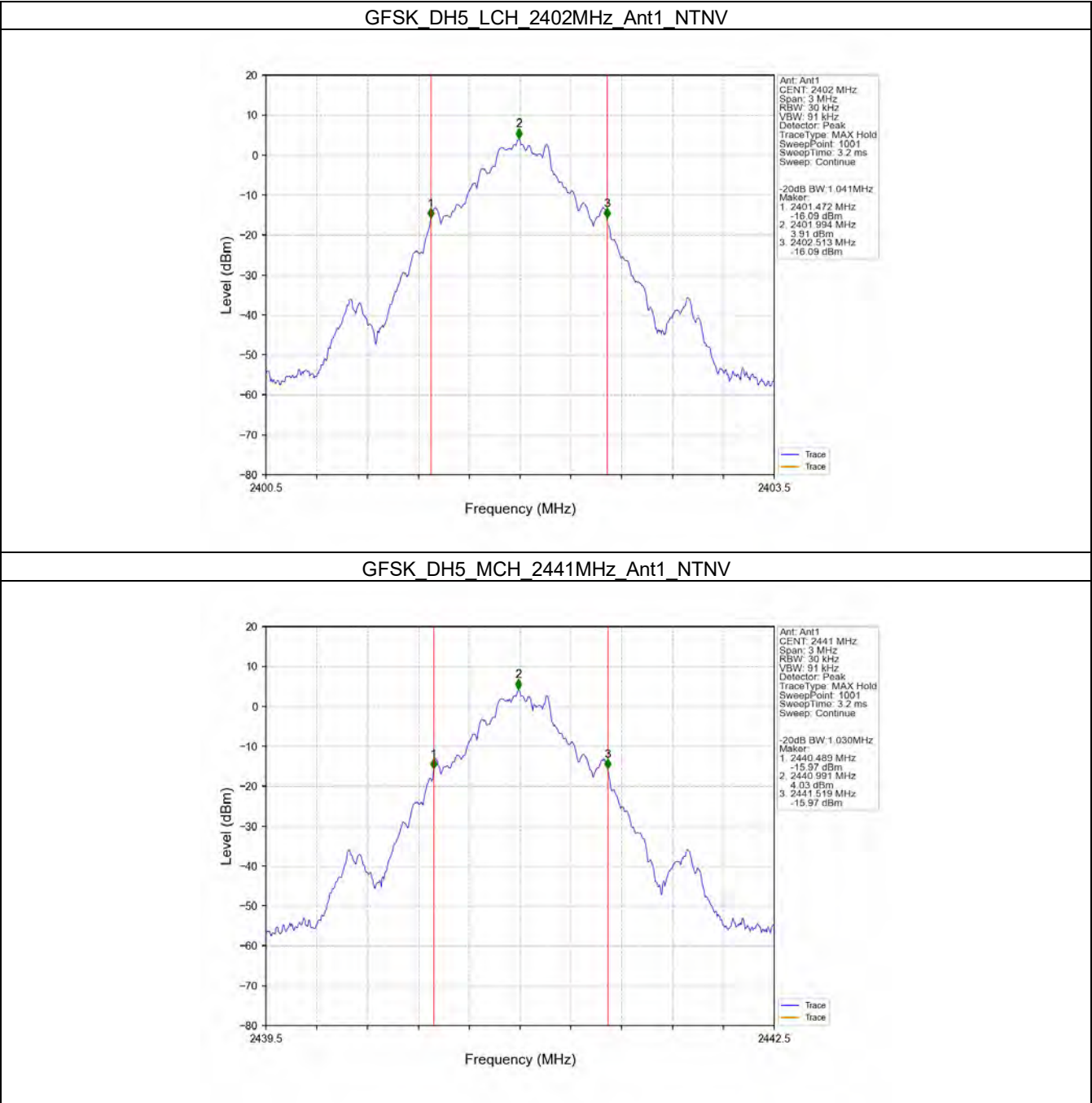
Compliance Certification Services (Kunshan) Inc.

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2.2.2 20dB BW



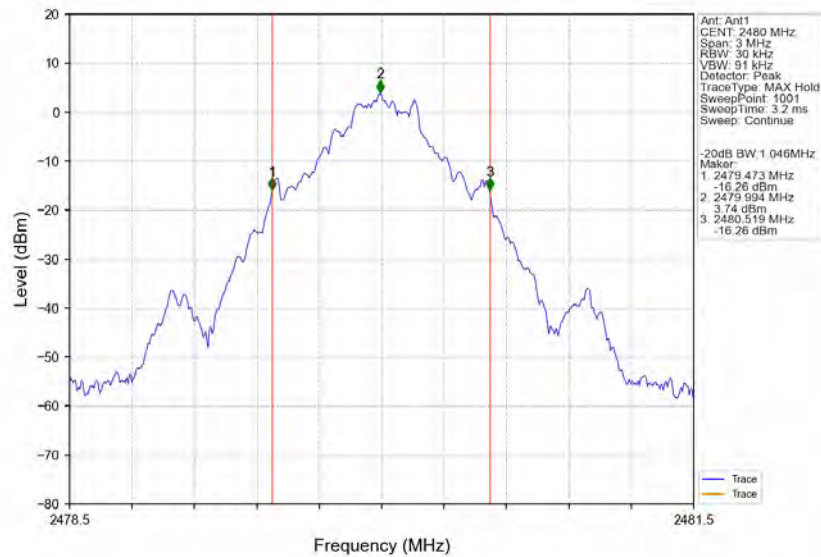
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

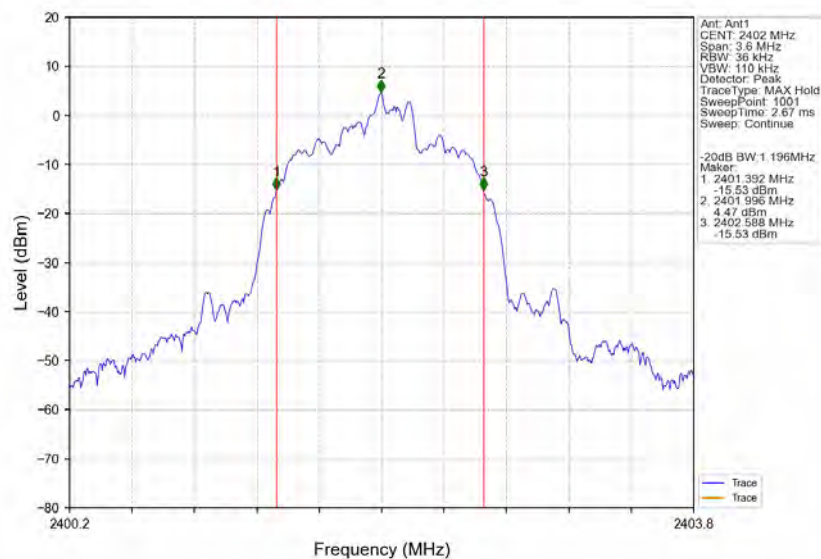
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GFSK DH5 HCH 2480MHz Ant1 NTNV



Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTNV



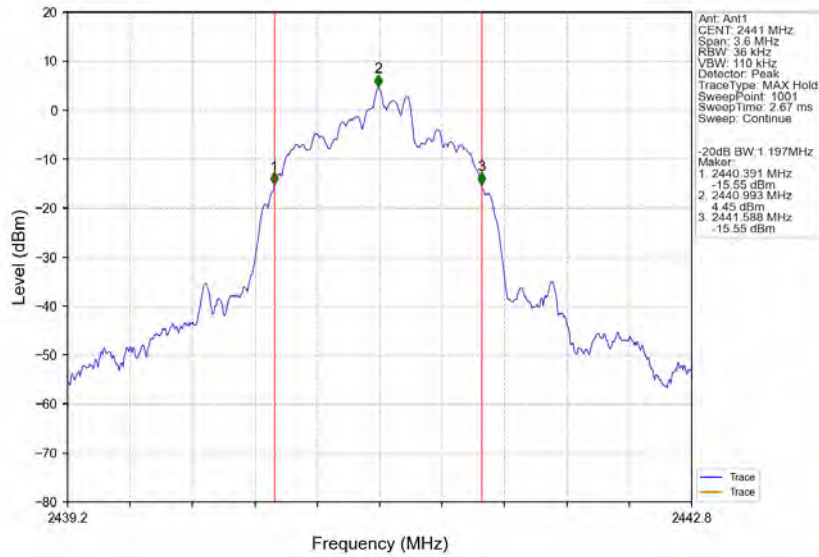
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

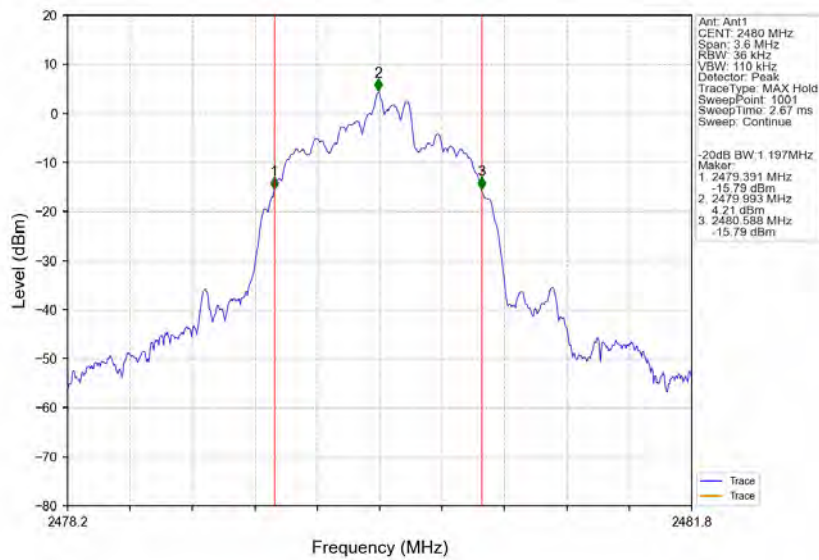
Report No.: KSCR241000213802

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Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTN



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN



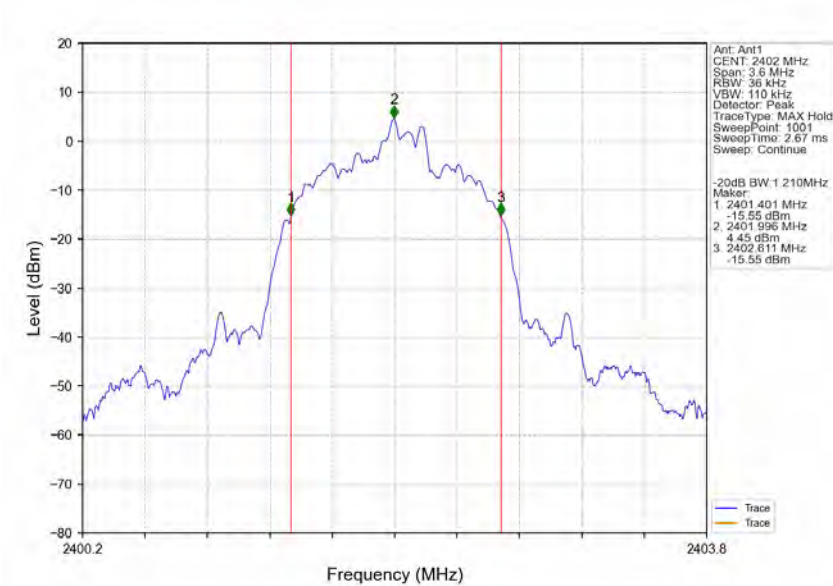
Compliance Certification Services (Kunshan) Inc.

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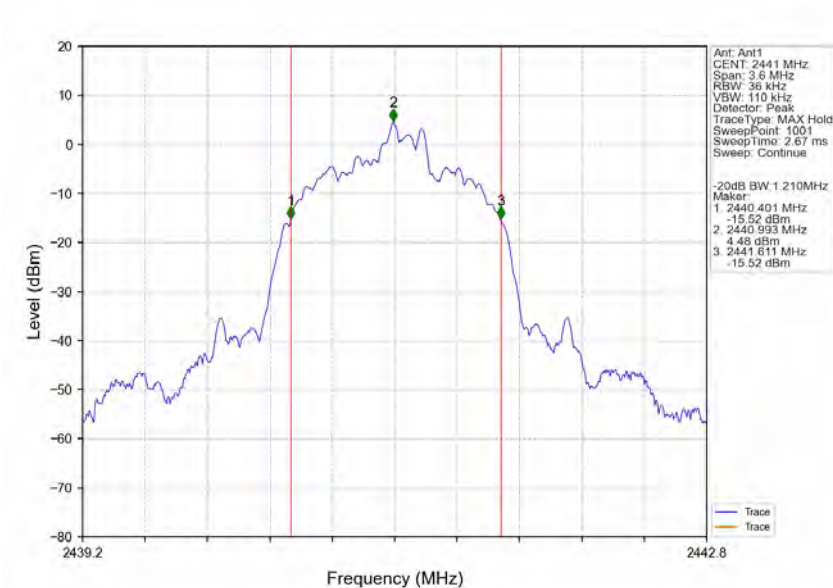
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8DPSK 3DH5 LCH 2402MHz Ant1 NTN



8DPSK 3DH5 MCH 2441MHz Ant1 NTN



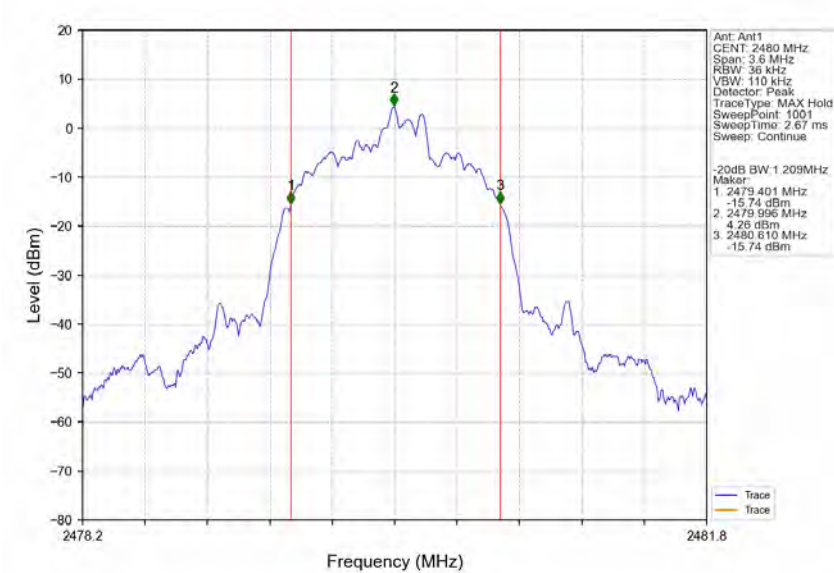
Compliance Certification Services (Kunshan) Inc.

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8DPSK 3DH5 HCH 2480MHz Ant1 NTNV

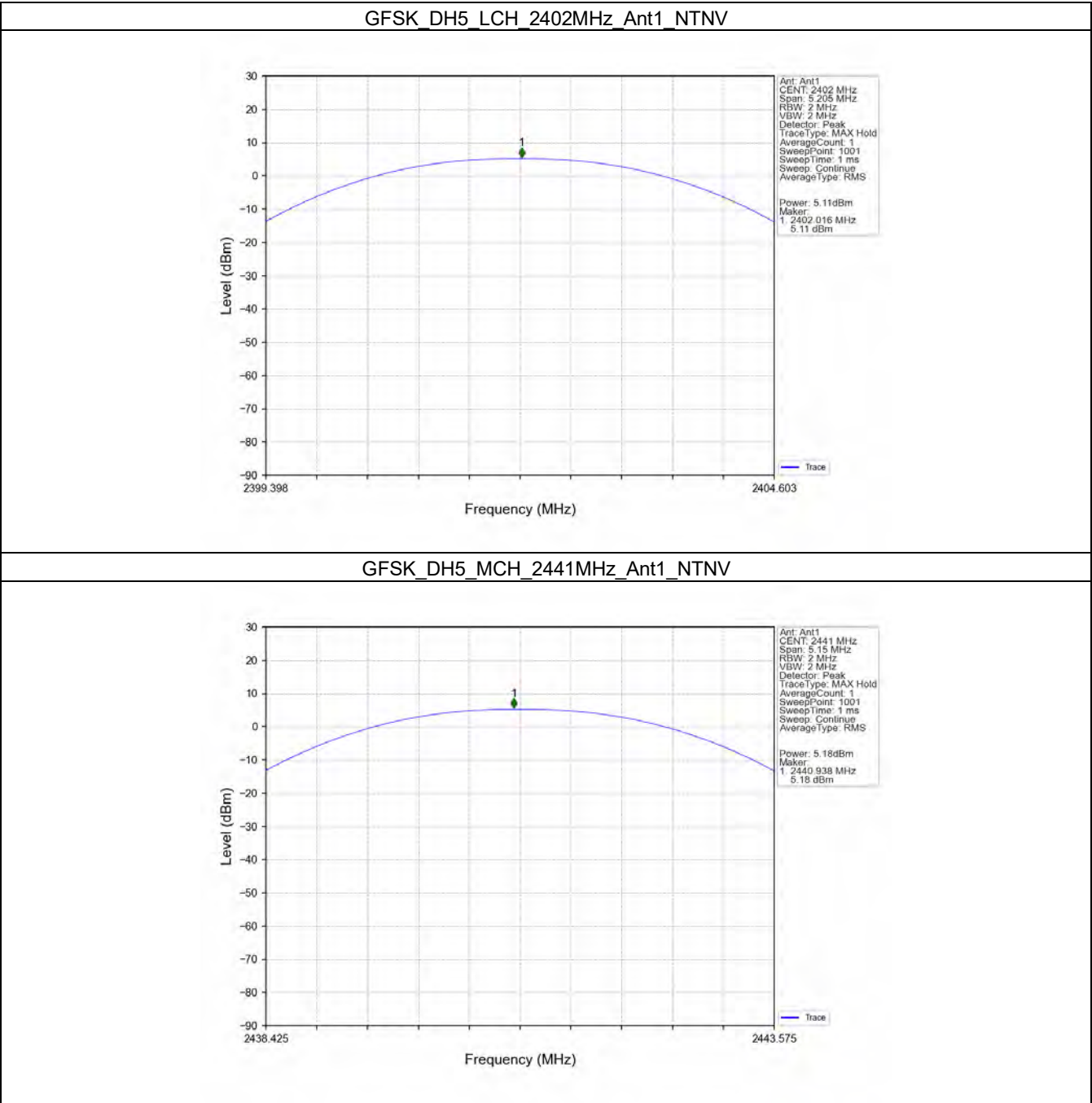


Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	5.11	<=20.97	Pass
		2441	DH5	5.18	<=20.97	Pass
		2480	DH5	4.92	<=20.97	Pass
Pi/4DQPSK	SISO	2402	2DH5	5.10	<=20.97	Pass
		2441	2DH5	5.17	<=20.97	Pass
		2480	2DH5	4.94	<=20.97	Pass
8DPSK	SISO	2402	3DH5	5.11	<=20.97	Pass
		2441	3DH5	5.19	<=20.97	Pass
		2480	3DH5	4.96	<=20.97	Pass

Note1: Antenna Gain: Ant1: -1.29dBi;

3.2 Test Graph

3.2.1 Power



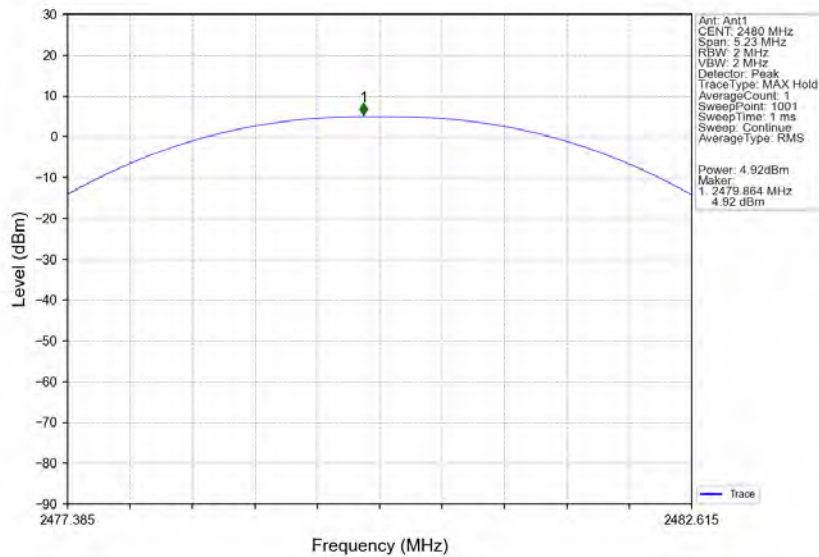
Compliance Certification Services (Kunshan) Inc.

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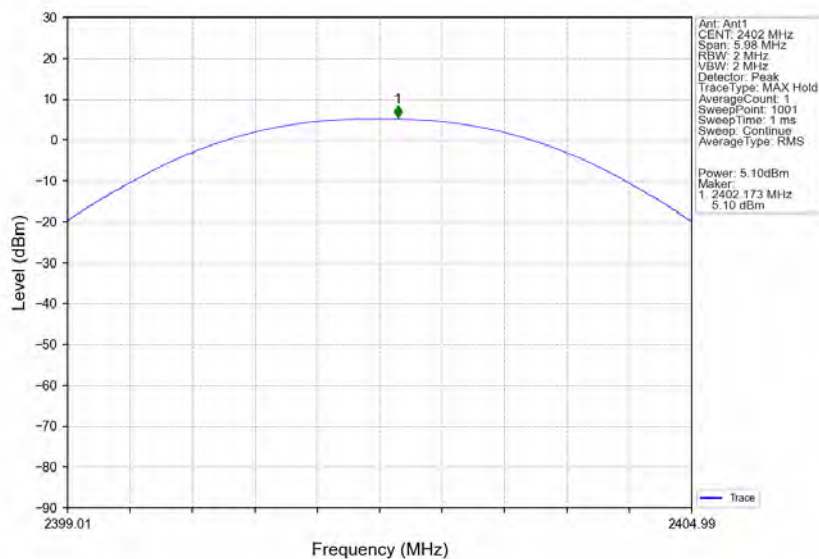
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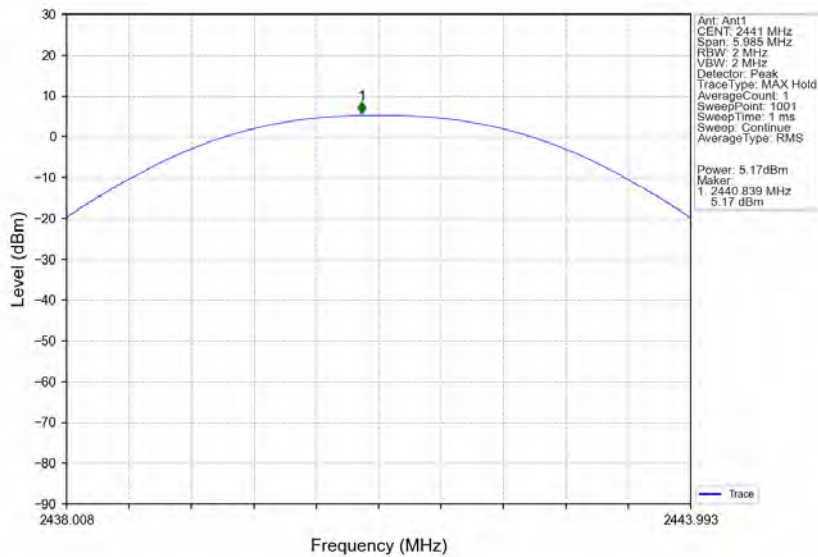
GFSK DH5 HCH 2480MHz Ant1 NTNV



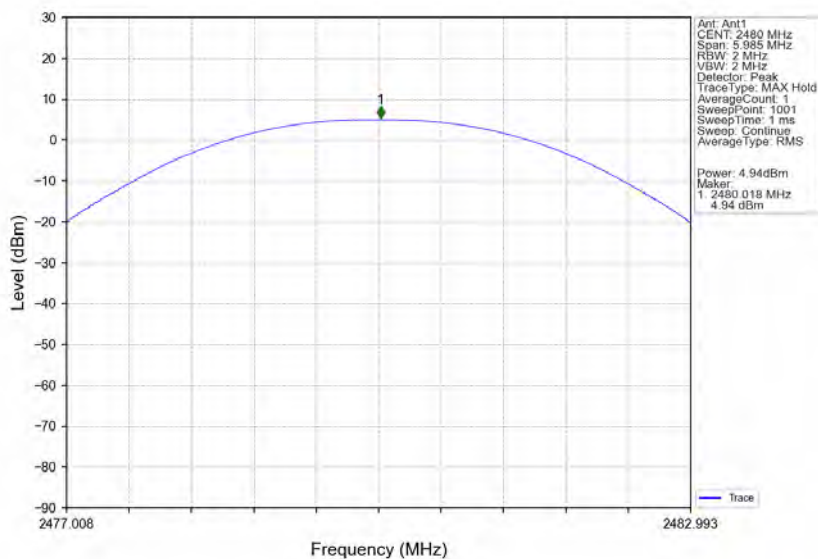
Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTNV



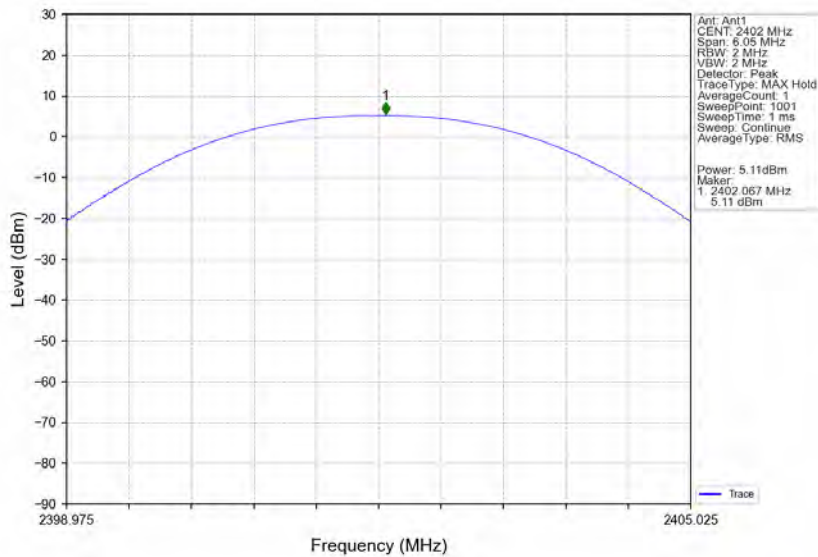
Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTNV



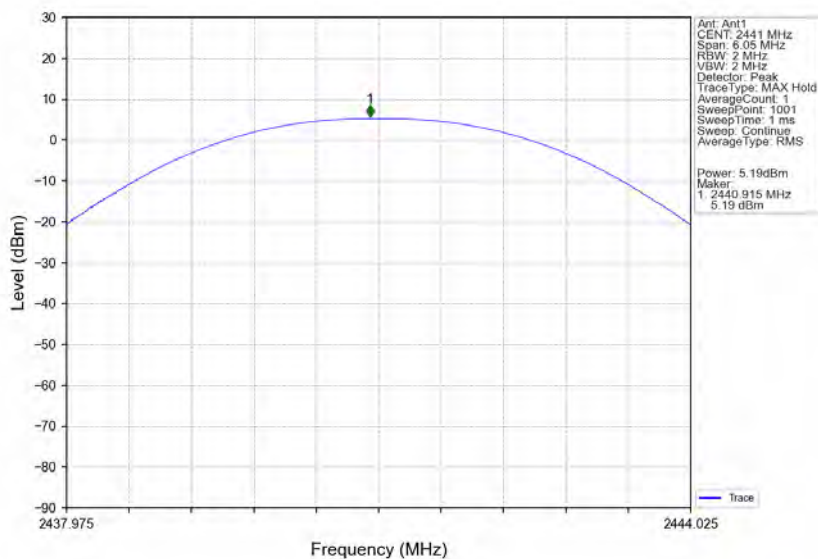
Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTNV



8DPSK 3DH5 LCH 2402MHz Ant1 NTNV



8DPSK 3DH5 MCH 2441MHz Ant1 NTNV



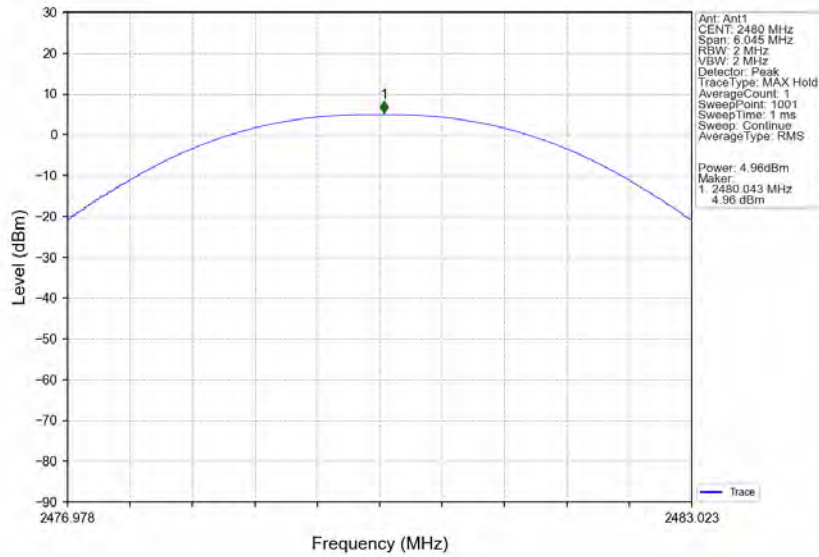
Compliance Certification Services (Kunshan) Inc.

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8DPSK 3DH5 HCH 2480MHz Ant1 NTV





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4. Carrier Frequency Separation

4.1 Test Result

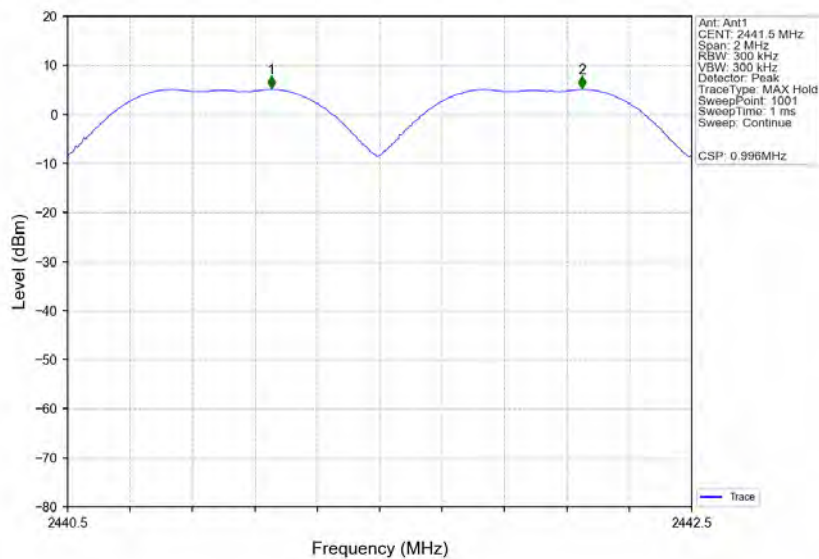
4.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	0.996	1.046	>=0.697	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.006	1.197	>=0.798	Pass
8DPSK	SISO	HOPP	3DH5	1.001	1.210	>=0.807	Pass

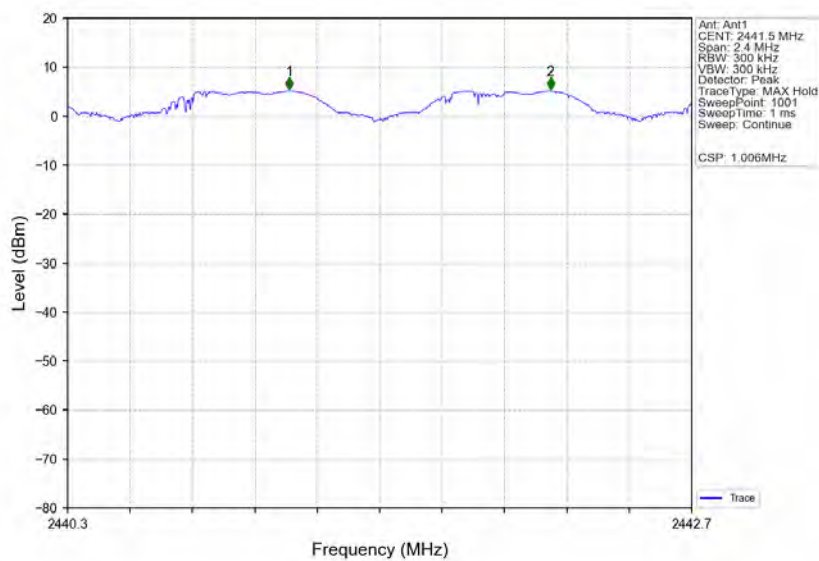
4.2 Test Graph

4.2.1 Ant1

GFSK_DH5_HOPP_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



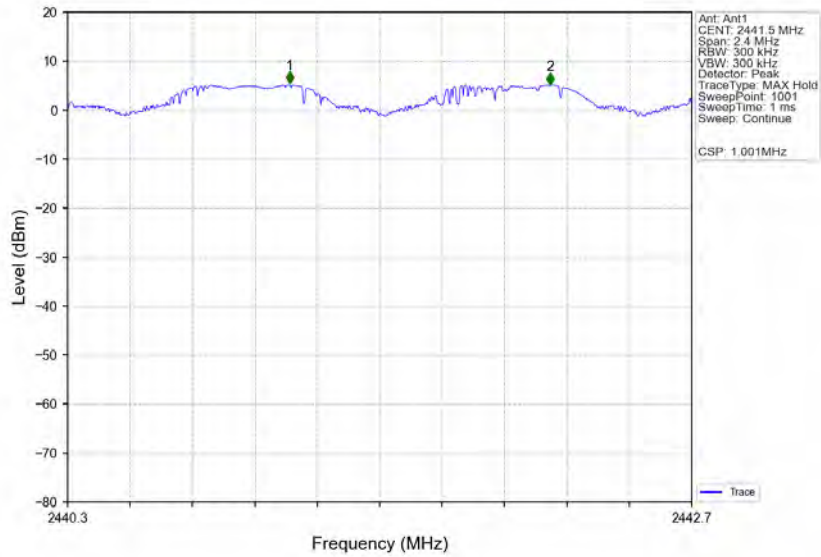
Compliance Certification Services (Kunshan) Inc.

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8DPSK 3DH5 HOPP Ant1 NTN



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5. Number of Hopping Frequencies

5.1 Test Result

5.1.1 HoppNum

Mode	TX Type	Frequency (MHz)	Packet Type	Num of Hopping Frequencies		Verdict
				ANT1	Limit	
GFSK	SISO	HOPP	DH5	79	≥ 15	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	79	≥ 15	Pass
8DPSK	SISO	HOPP	3DH5	79	≥ 15	Pass

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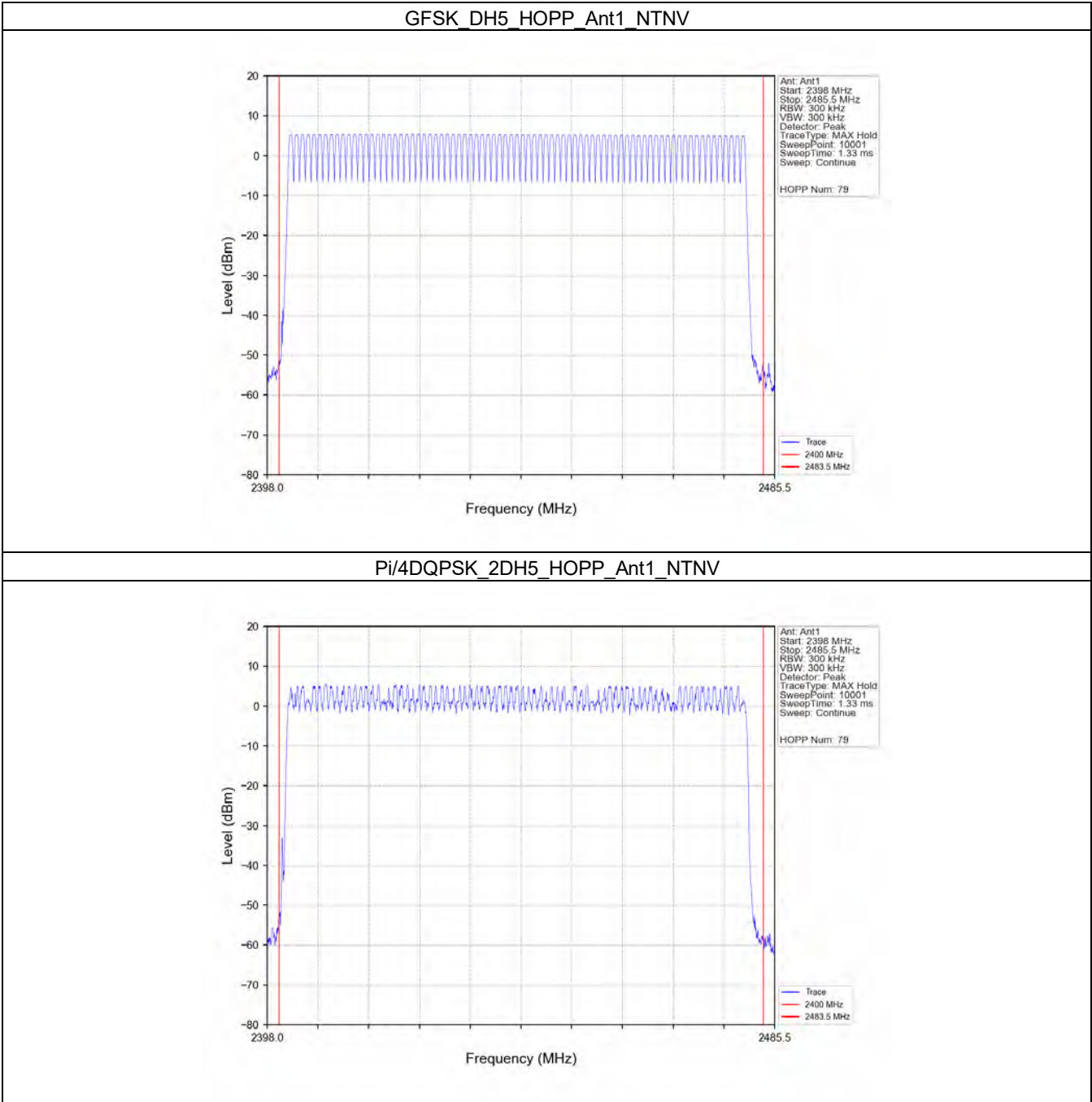
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5.2 Test Graph

5.2.1 HoppNum

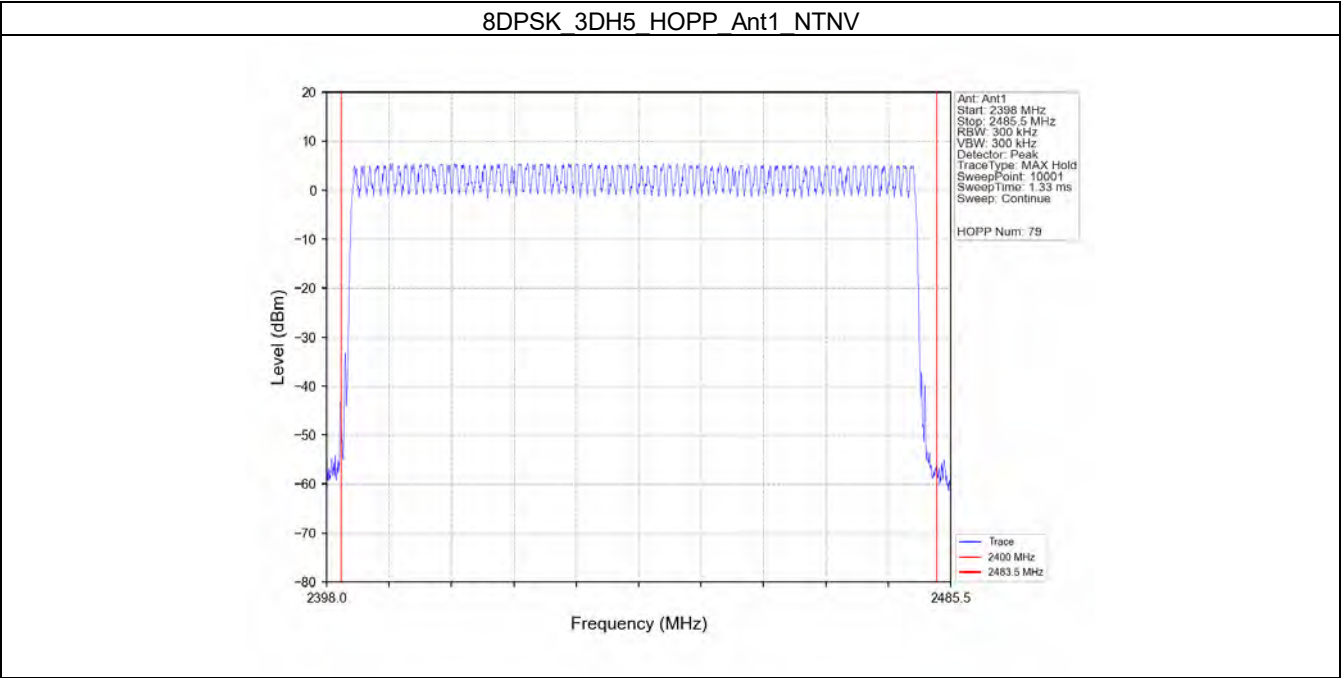


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6. Time of Occupancy (Dwell Time)

6.1 Test Result

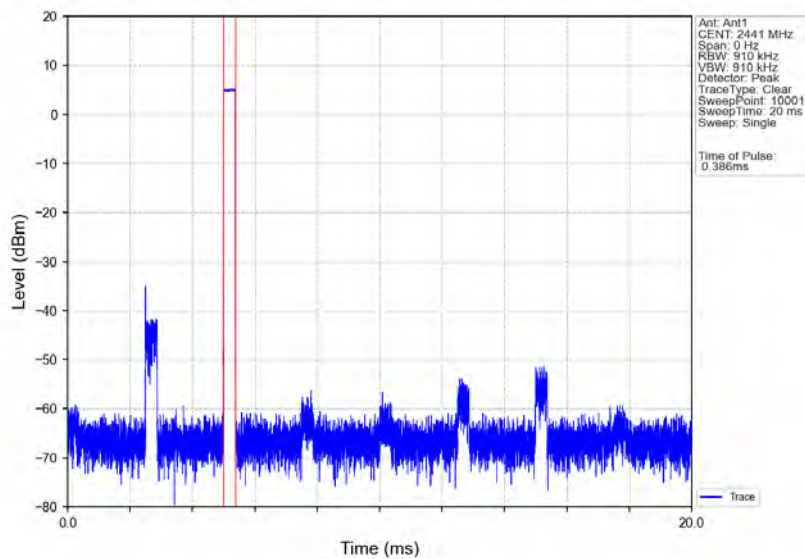
6.1.1 Ant1

Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.386	31.600	151	58.286	<=400	Pass
			DH3	1.654	31.600	111	183.594	<=400	Pass
			DH5	2.896	31.600	78	225.888	<=400	Pass
Pi/4DQPSK	SISO	HOPP	2DH1	0.392	31.600	151	59.192	<=400	Pass
			2DH3	1.654	31.600	112	185.248	<=400	Pass
			2DH5	2.902	31.600	81	235.062	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.392	31.600	150	58.800	<=400	Pass
			3DH3	1.656	31.600	95	157.320	<=400	Pass
			3DH5	2.894	31.600	79	228.626	<=400	Pass

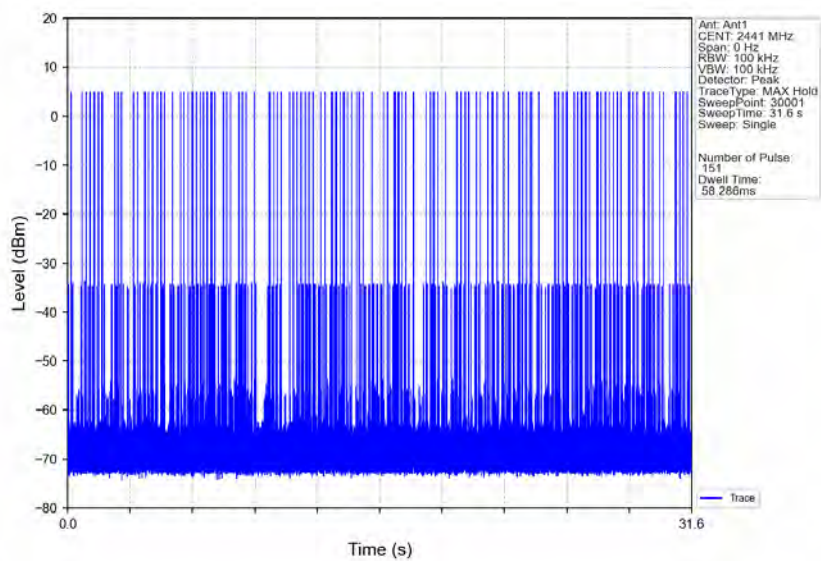
6.2 Test Graph

6.2.1 Ant1

GFSK_DH1_HOPP_Ant1_NTNV



GFSK_DH1_HOPP_Ant1_NTNV



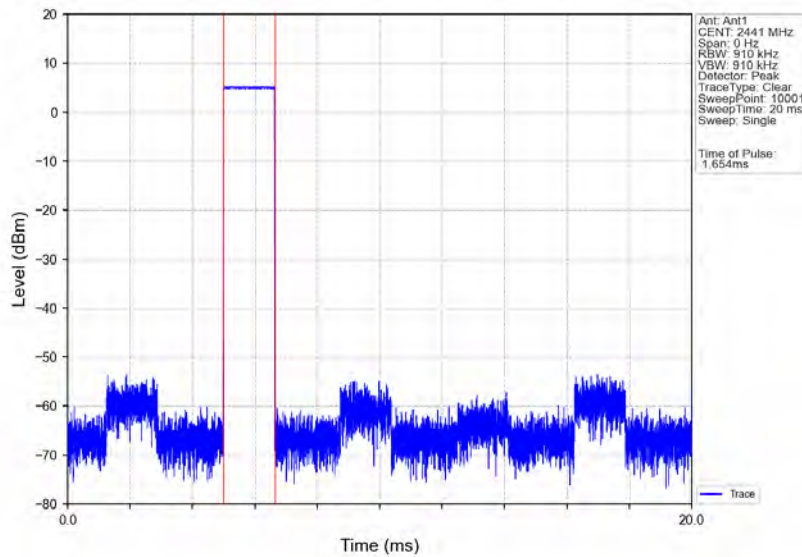
Compliance Certification Services (Kunshan) Inc.

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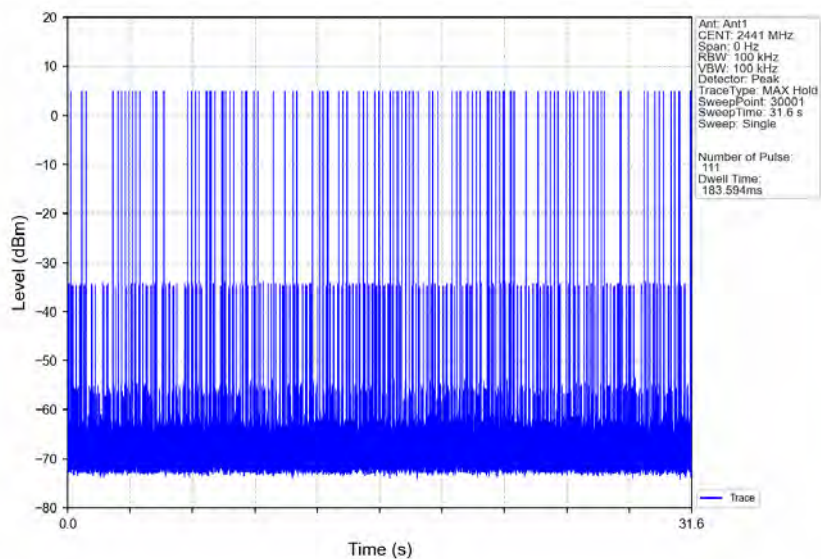
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GFSK DH3 HOPP Ant1 NTNV



GFSK_DH3_HOPP_Ant1_NTNV



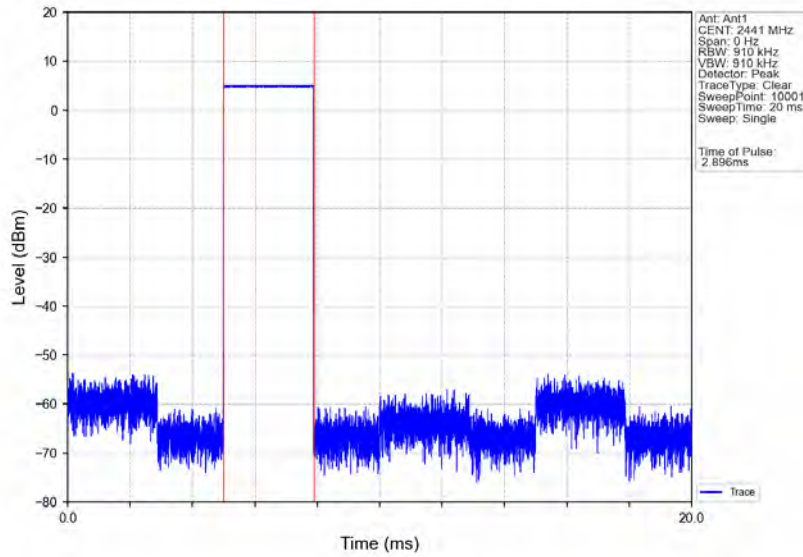
Compliance Certification Services (Kunshan) Inc.

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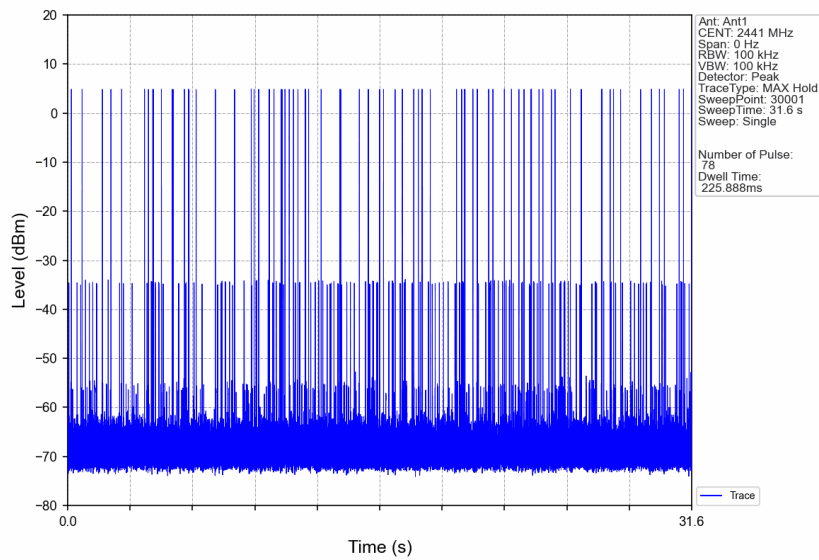
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GFSK DH5 HOPP Ant1 NTNV



GFSK DH5 HOPP Ant1 NTNV



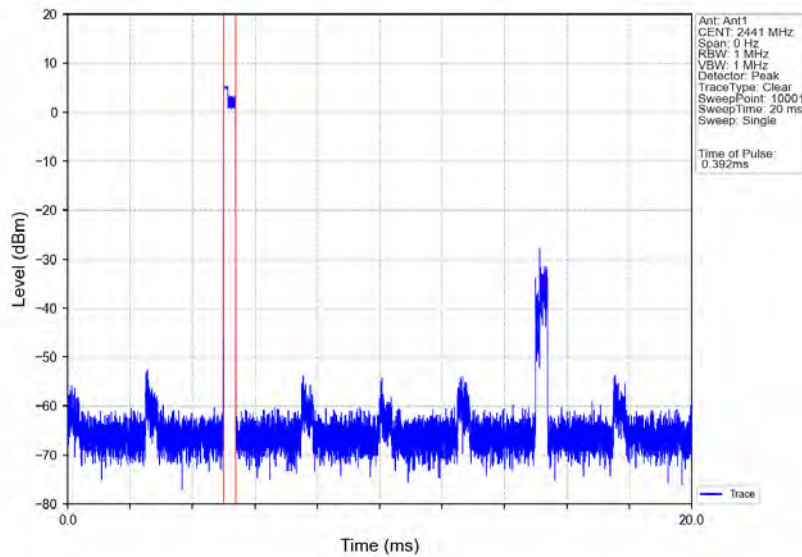
Compliance Certification Services (Kunshan) Inc.

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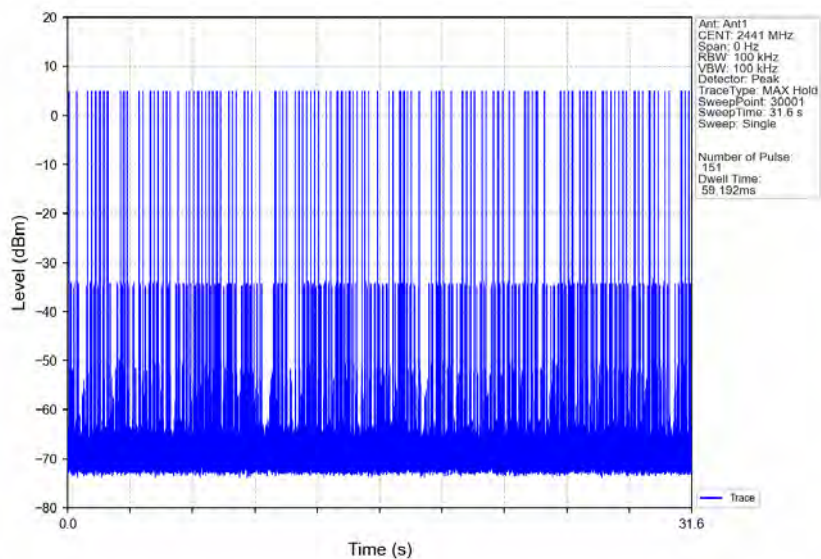
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Pi/4DQPSK 2DH1 HOPP Ant1 NTNV



Pi/4DQPSK 2DH1 HOPP Ant1 NTNV



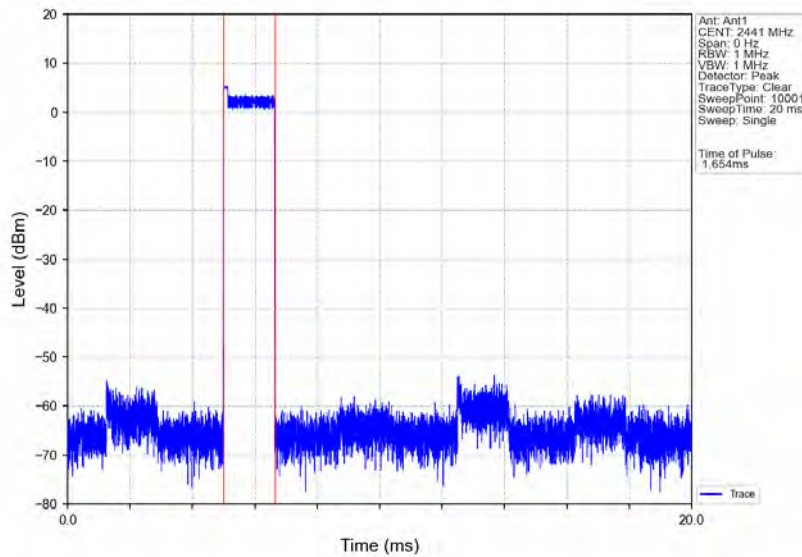
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

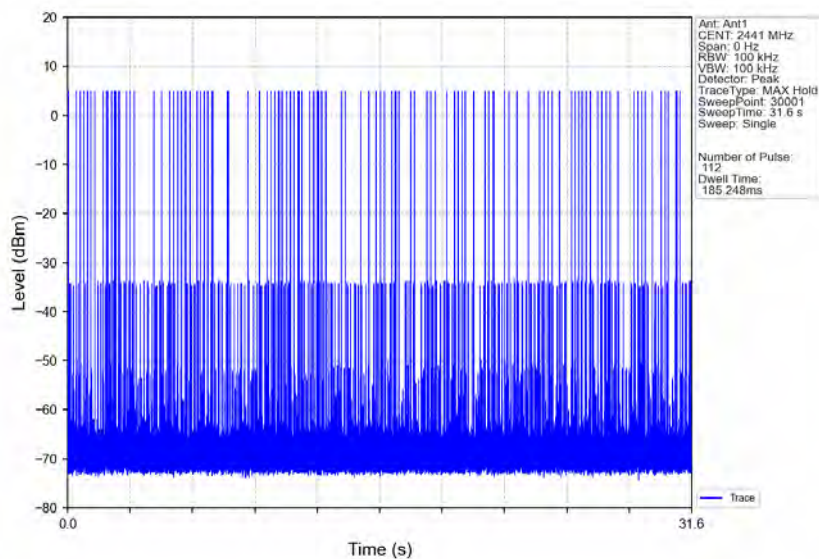
Report No.: KSC241000213802

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Pi/4DQPSK 2DH3 HOPP Ant1 NTN



Pi/4DQPSK 2DH3 HOPP Ant1 NTN



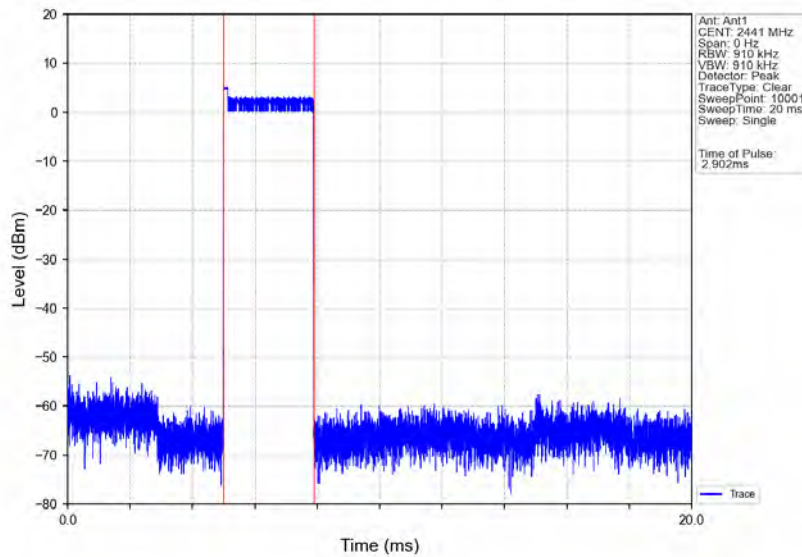
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

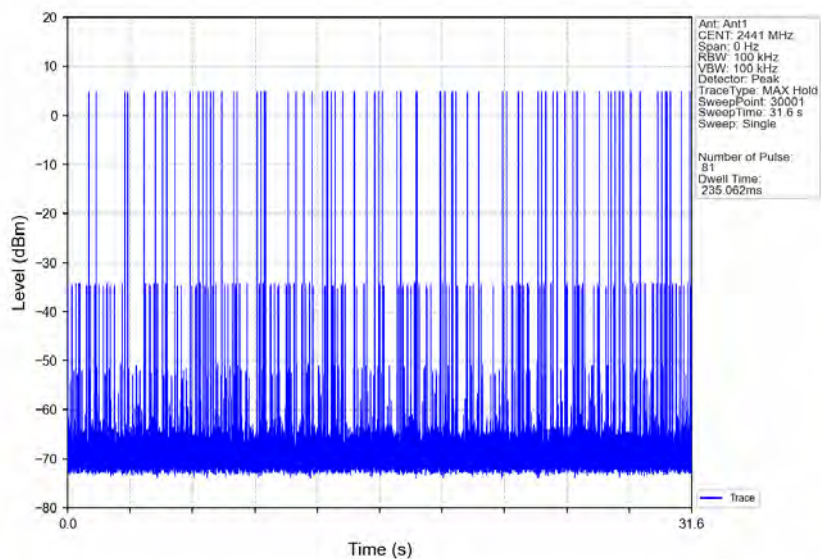
Report No.: KSCR241000213802

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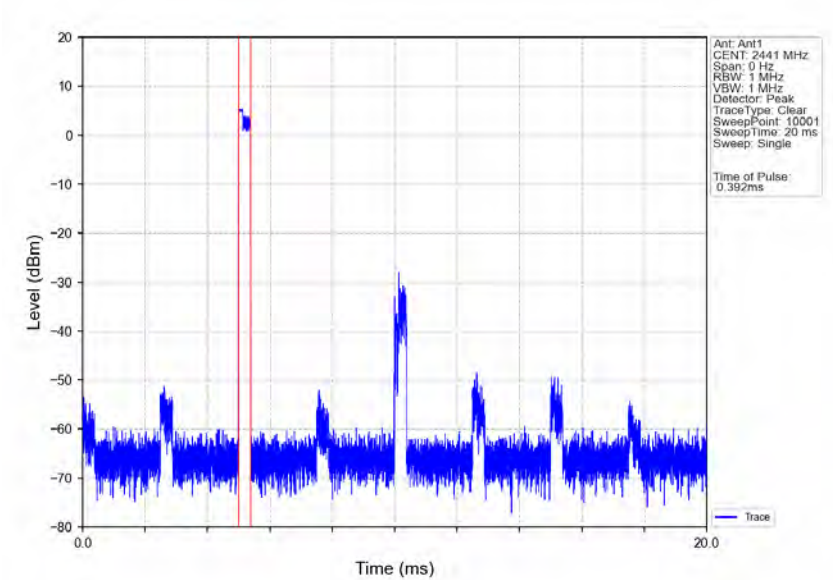
Pi/4DQPSK 2DH5 HOPP Ant1 NTN



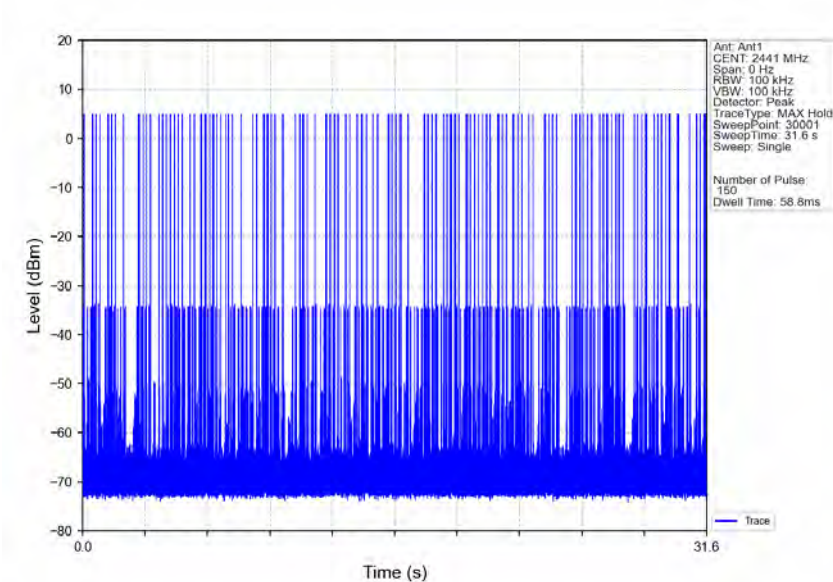
Pi/4DQPSK 2DH5 HOPP Ant1 NTN



8DPSK 3DH1 HOPP Ant1 NTN



8DPSK 3DH1 HOPP Ant1 NTN



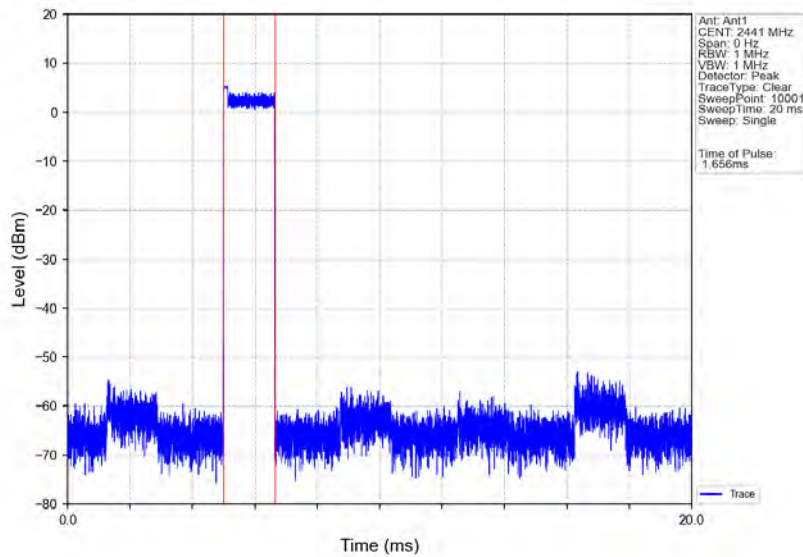
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

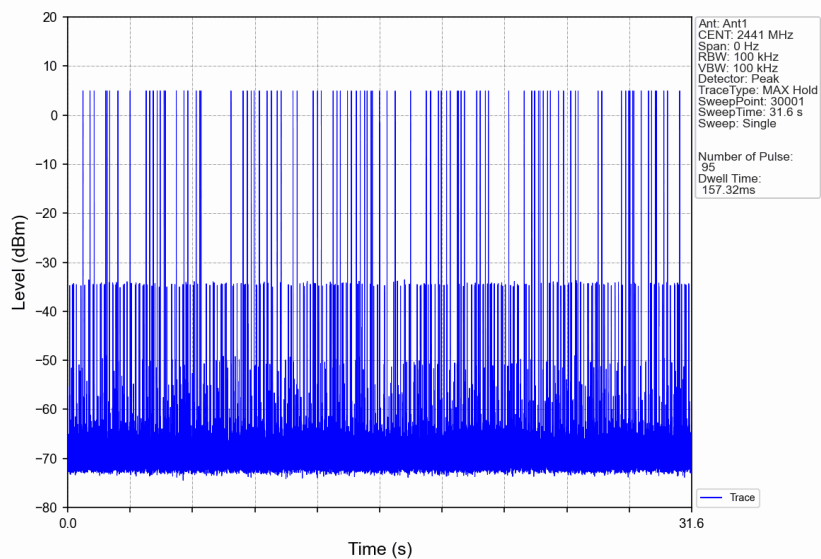
Report No.: KSC241000213802

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8DPSK 3DH3 HOPP Ant1 NTN



8DPSK 3DH3 HOPP Ant1 NTN



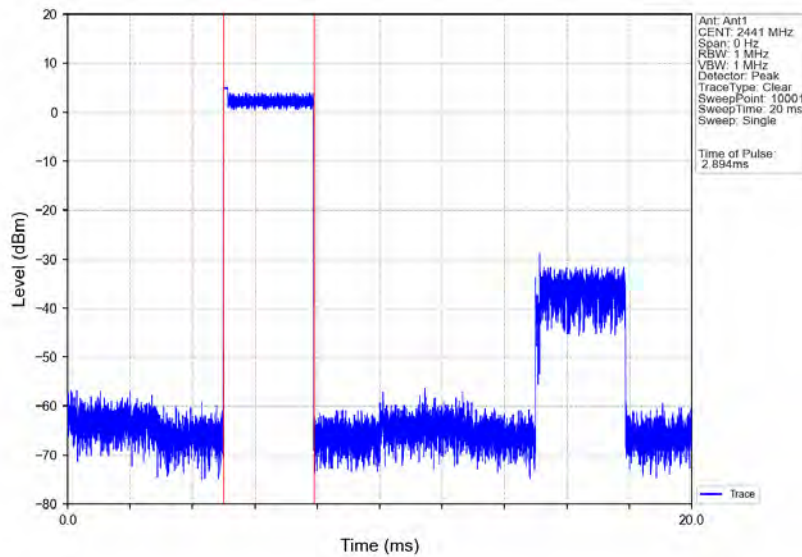
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

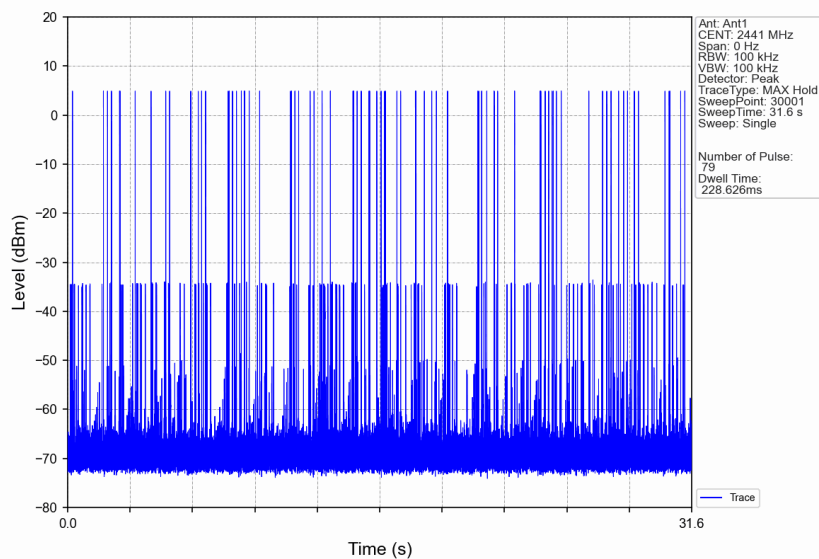
Report No.: KSC241000213802

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8DPSK 3DH5 HOPP Ant1 NTN



8DPSK 3DH5 HOPP Ant1 NTN



Compliance Certification Services (Kunshan) Inc.

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7. Unwanted Emissions In Non-restricted Frequency Bands

7.1 Test Result

7.1.1 Ref

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	4.97
		2441	DH5	1	4.93
		2480	DH5	1	4.68
Pi/4DQPSK	SISO	2402	2DH5	1	4.84
		2441	2DH5	1	4.92
		2480	2DH5	1	4.67
8DPSK	SISO	2402	3DH5	1	5.00
		2441	3DH5	1	5.05
		2480	3DH5	1	4.81

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

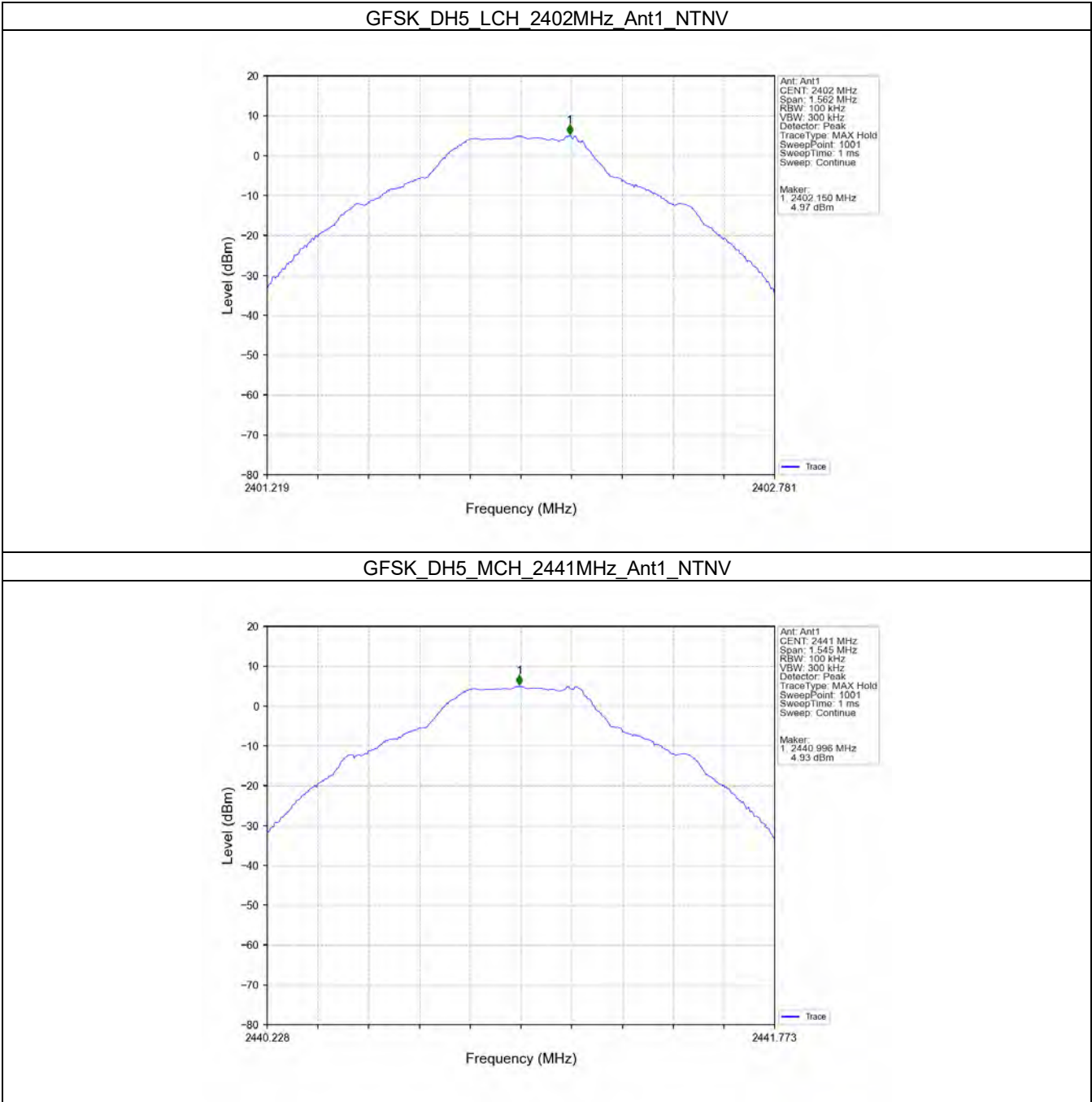
7.1.2 CSE

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	4.97	-15.03	Pass
		2441	DH5	1	4.97	-15.03	Pass
		2480	DH5	1	4.97	-15.03	Pass
		HOPP	DH5	1	4.97	-15.03	Pass
					4.97	-15.03	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	4.92	-15.08	Pass
		2441	2DH5	1	4.92	-15.08	Pass
		2480	2DH5	1	4.92	-15.08	Pass
		HOPP	2DH5	1	4.92	-15.08	Pass
					4.92	-15.08	Pass
8DPSK	SISO	2402	3DH5	1	5.05	-14.95	Pass
		2441	3DH5	1	5.05	-14.95	Pass
		2480	3DH5	1	5.05	-14.95	Pass
		HOPP	3DH5	1	5.05	-14.95	Pass
					5.05	-14.95	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

7.2 Test Graph

7.2.1 Ref



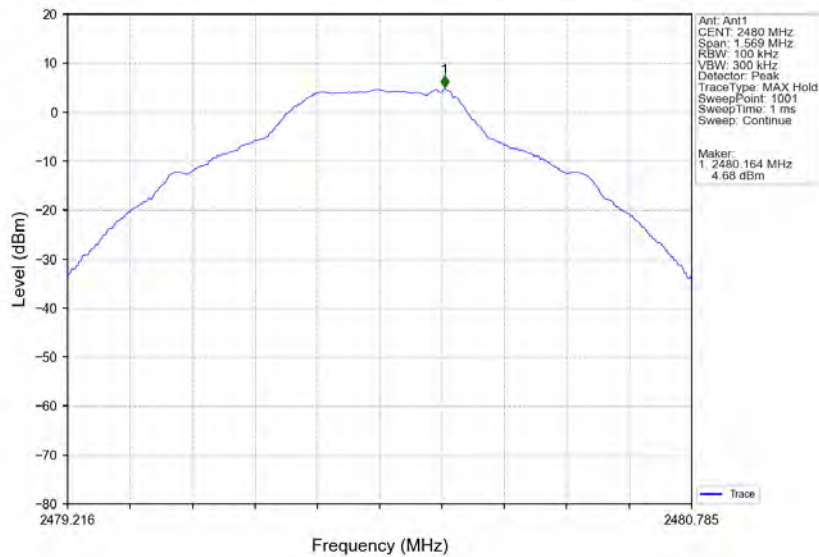
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

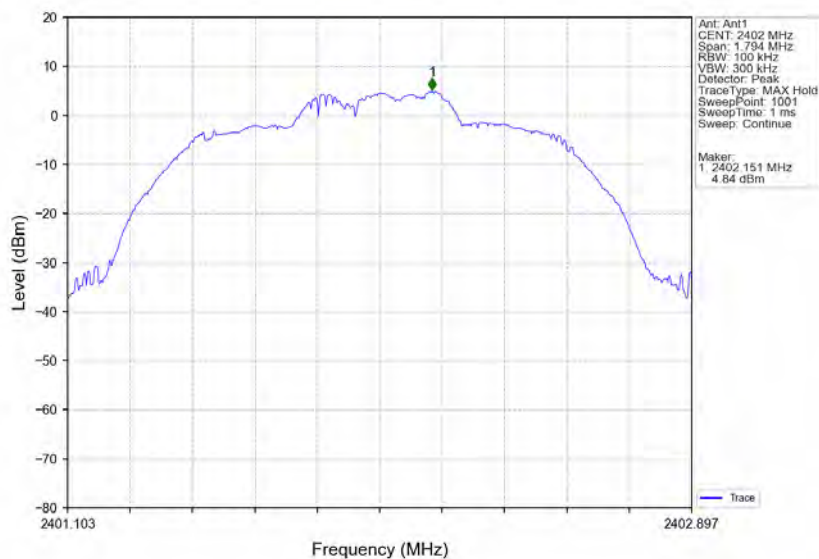
Report No.: KSC241000213802

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GFSK DH5 HCH 2480MHz Ant1 NTV



Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTV



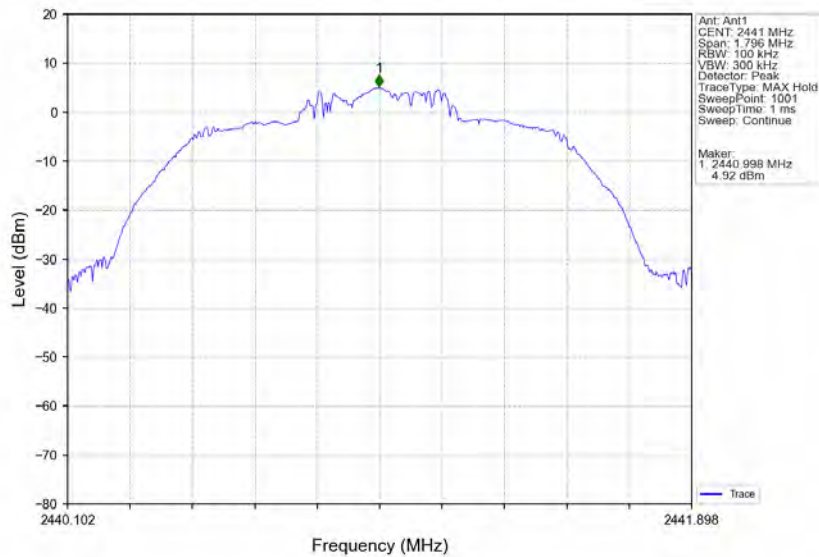
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

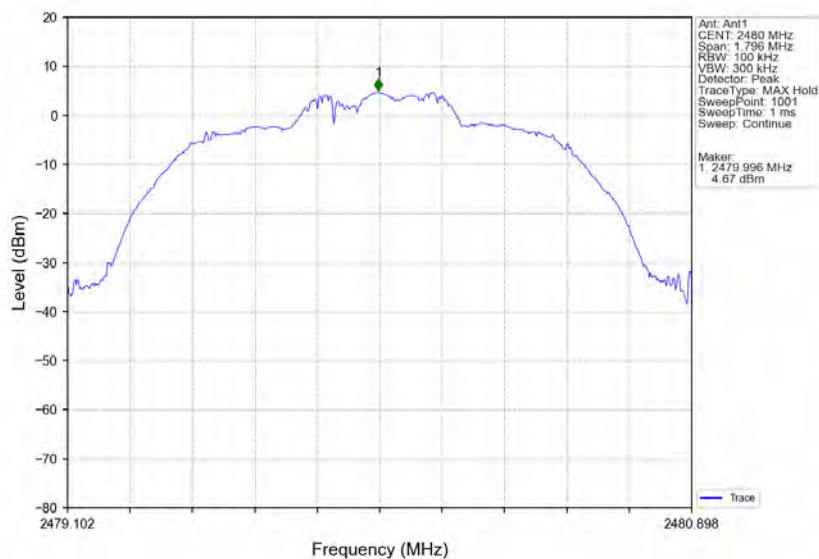
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Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTNV



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTNV



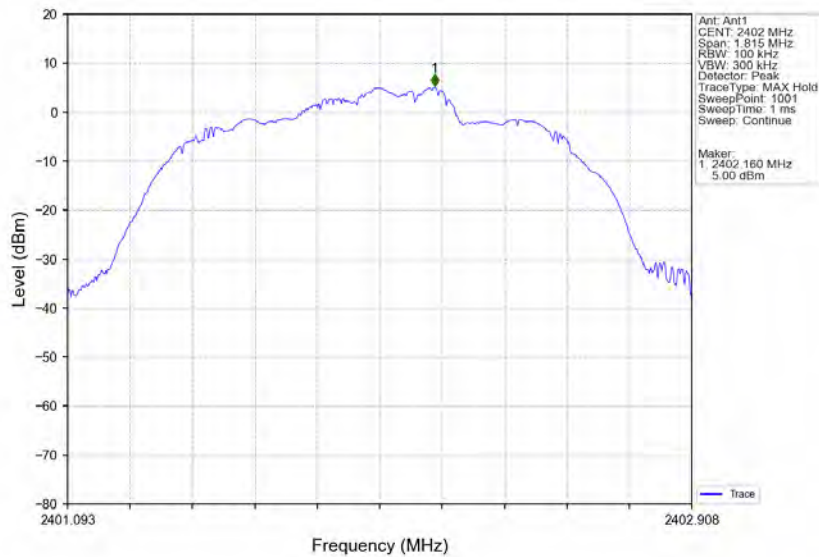
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

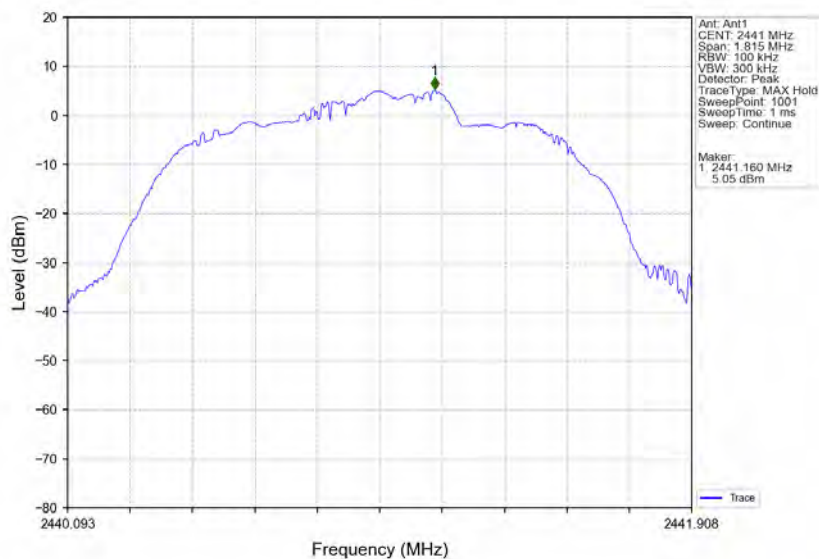
Report No.: KSC241000213802

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8DPSK 3DH5 LCH 2402MHz Ant1 NTN



8DPSK 3DH5 MCH 2441MHz Ant1 NTN



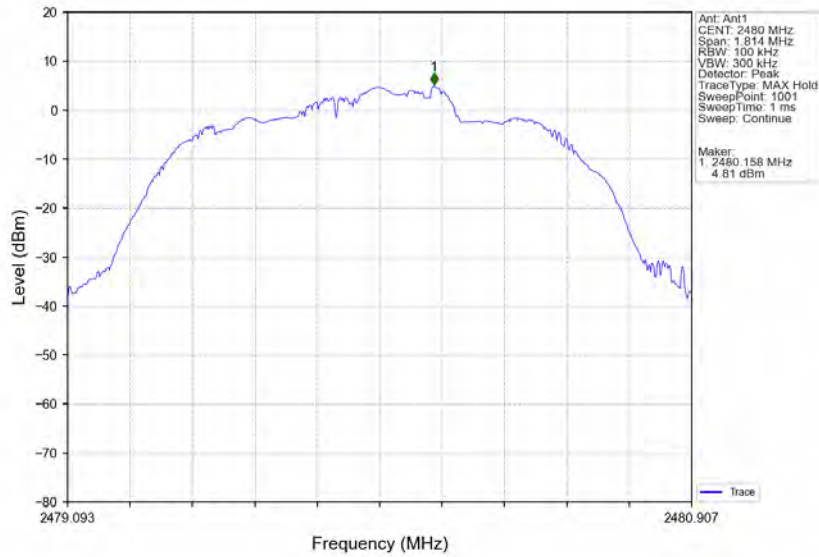
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

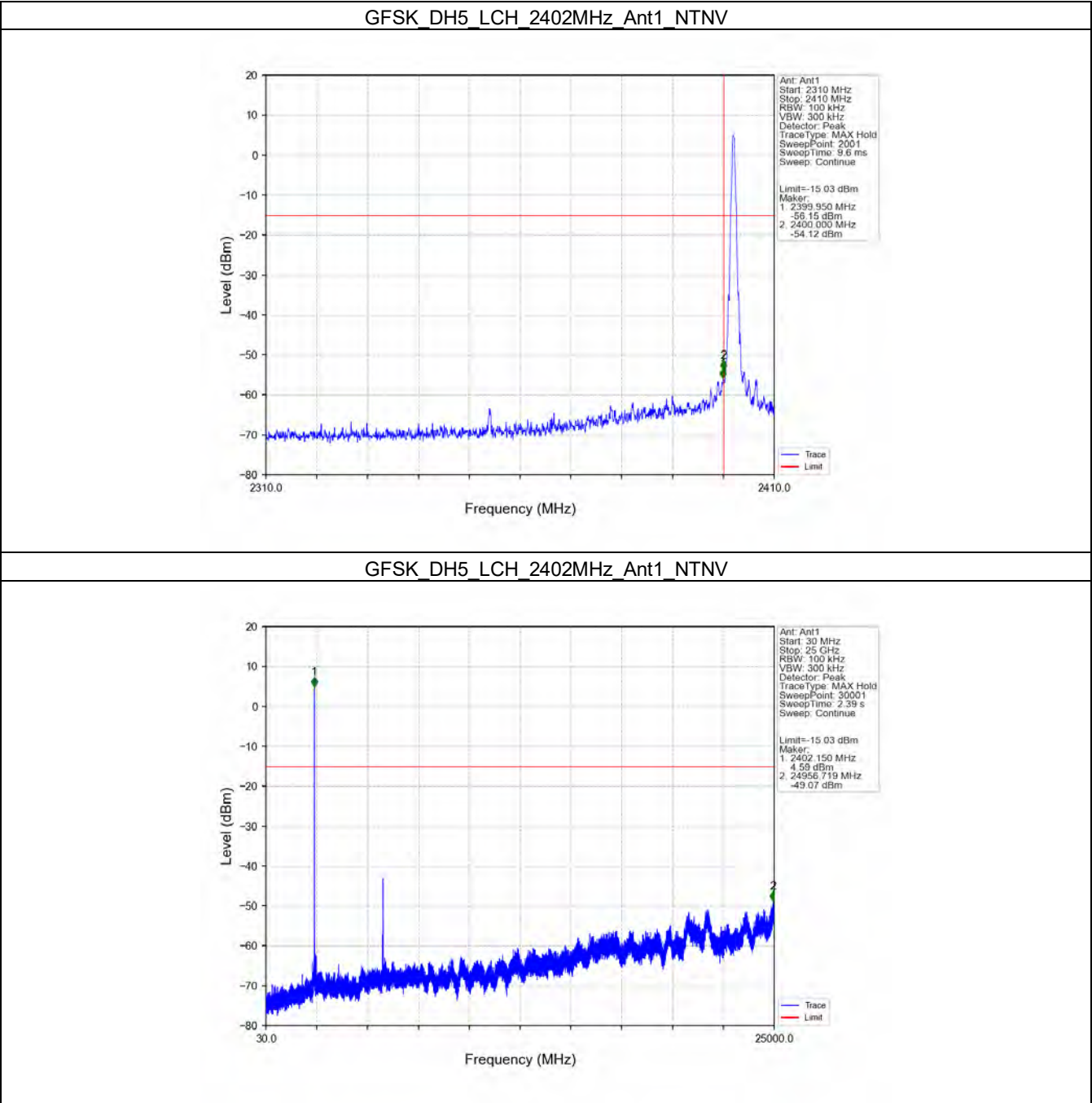
Report No.: KSCR241000213802

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8DPSK 3DH5 HCH 2480MHz Ant1 NTNV



7.2.2 CSE



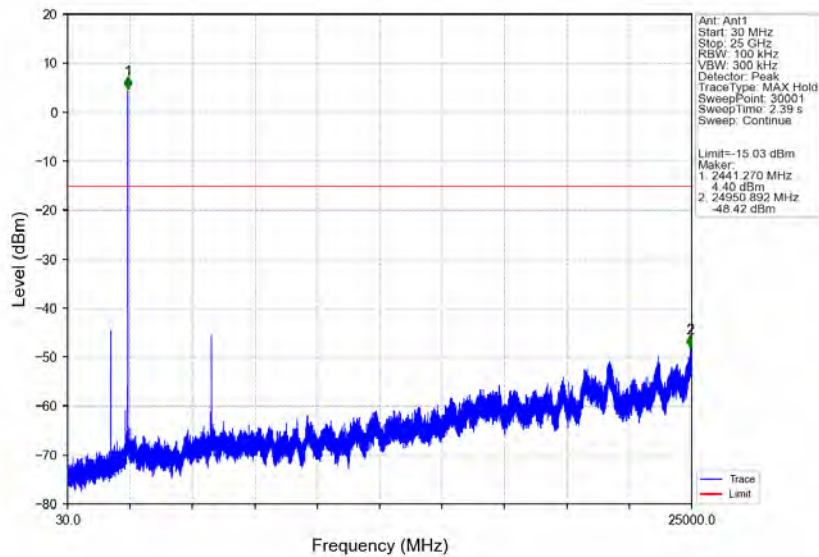
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

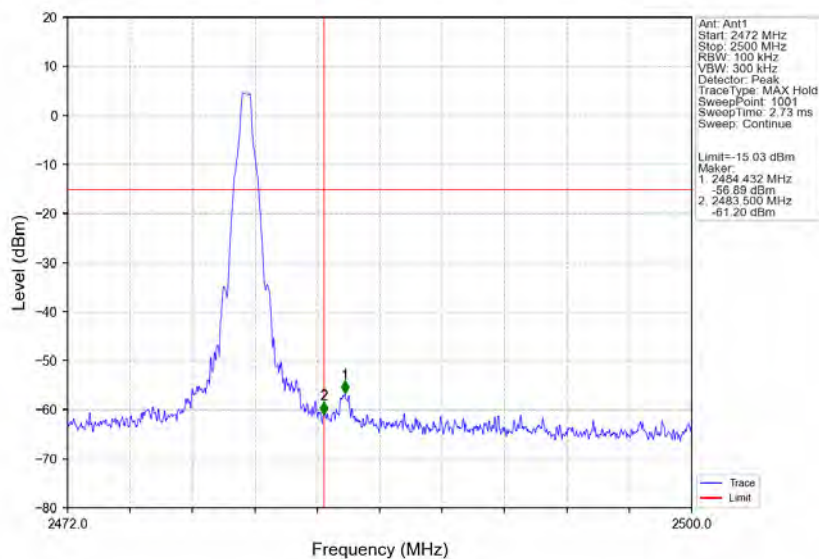
Report No.: KSCR241000213802

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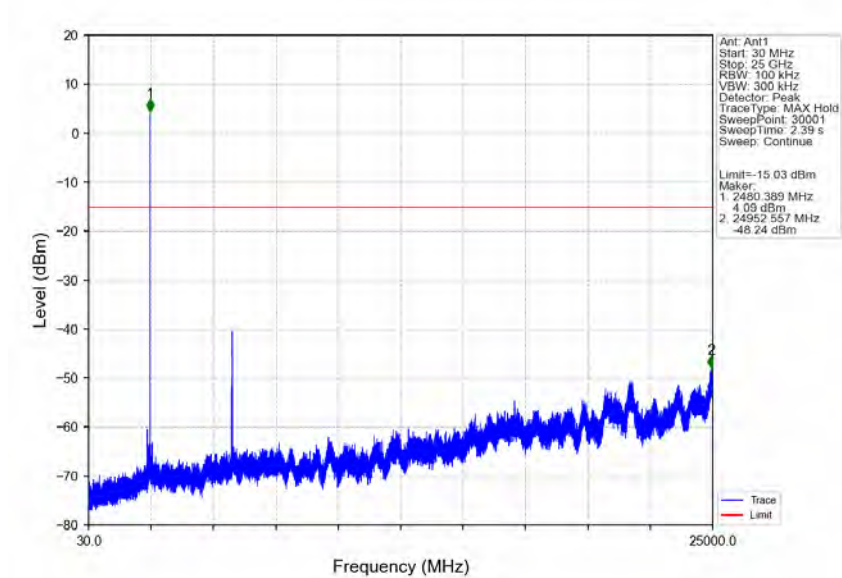
GFSK DH5 MCH 2441MHz Ant1 NTNV



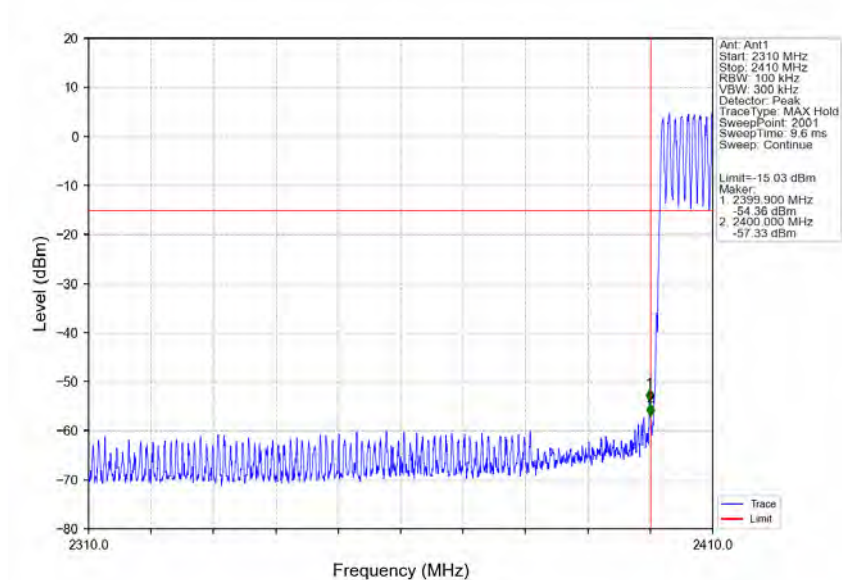
GFSK DH5 HCH 2480MHz Ant1 NTNV



GFSK DH5 HCH 2480MHz Ant1 NTNV



GFSK DH5 HOPP Ant1 NTNV



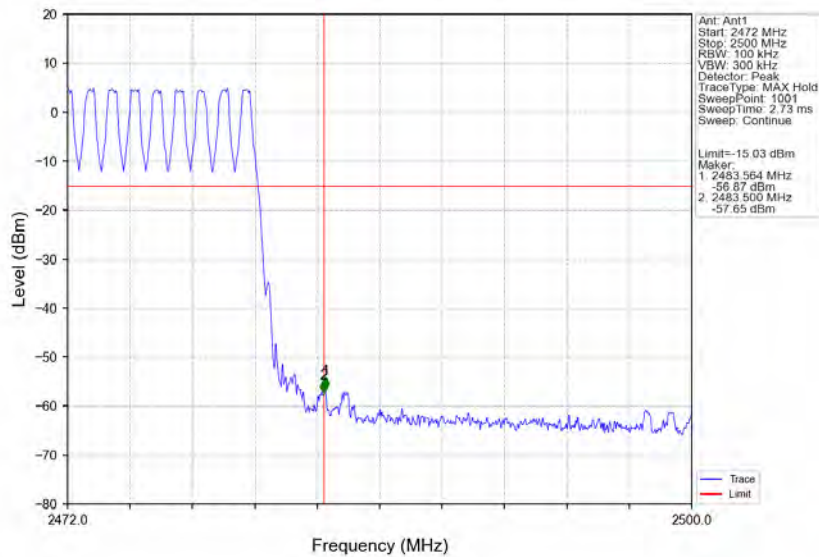
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

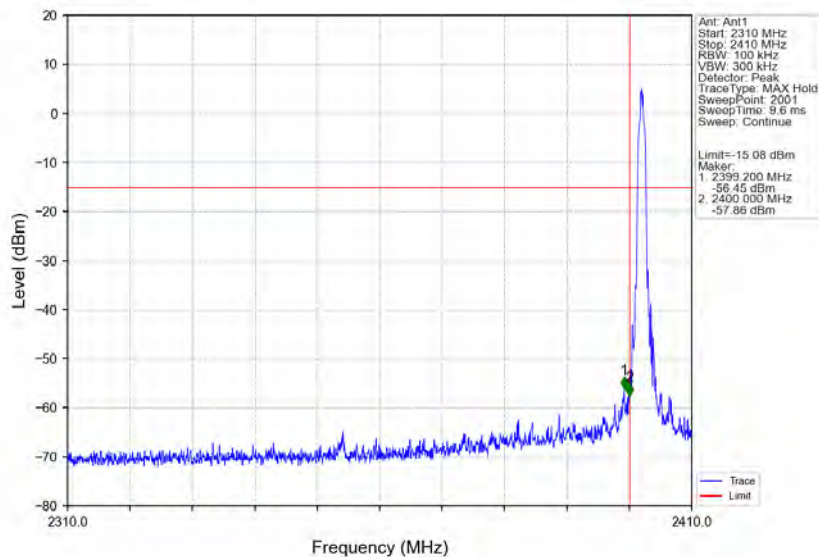
Report No.: KSC241000213802

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GFSK DH5 HOPP Ant1 NTN



Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1 NTN



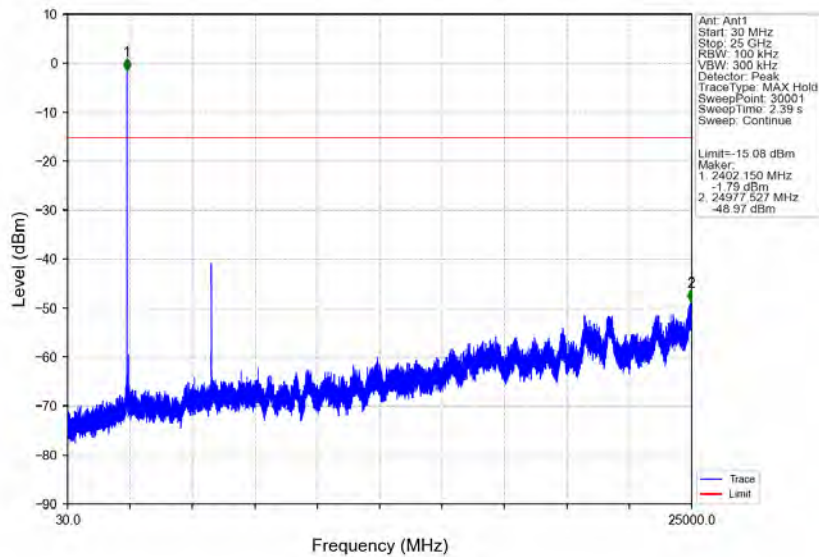
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

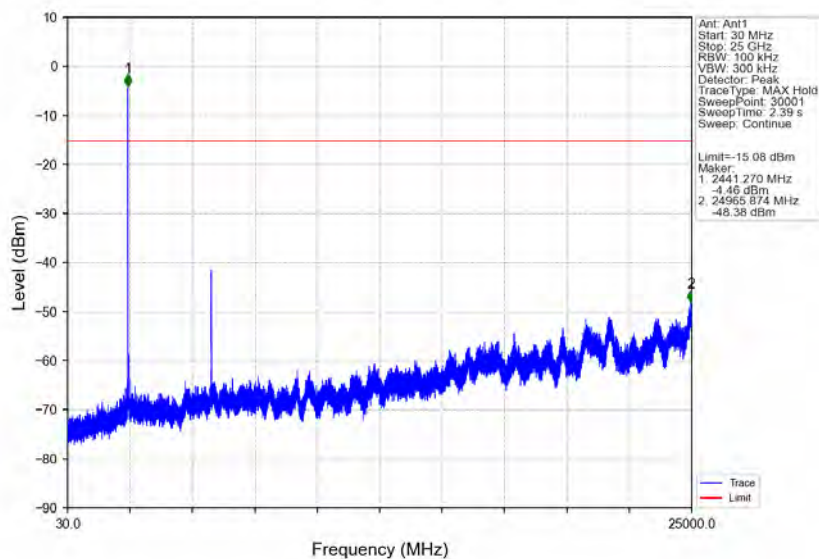
Report No.: KSCR241000213802

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Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTN



Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTN



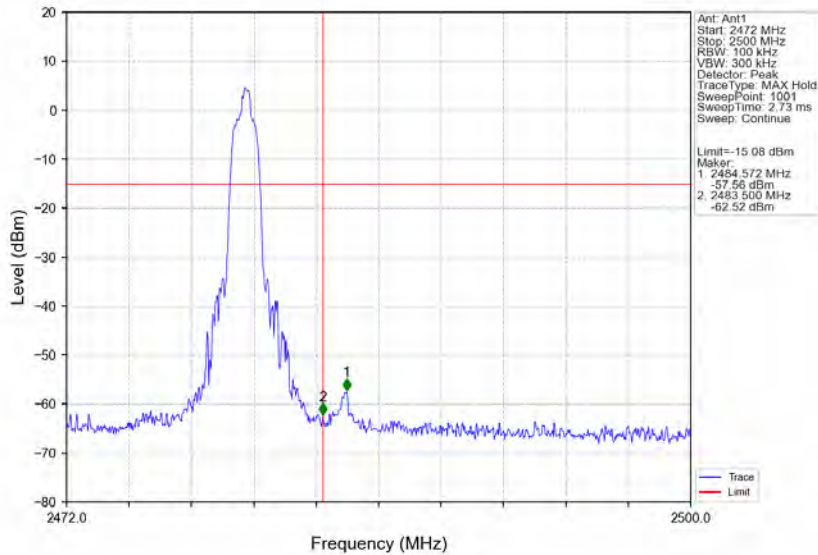
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

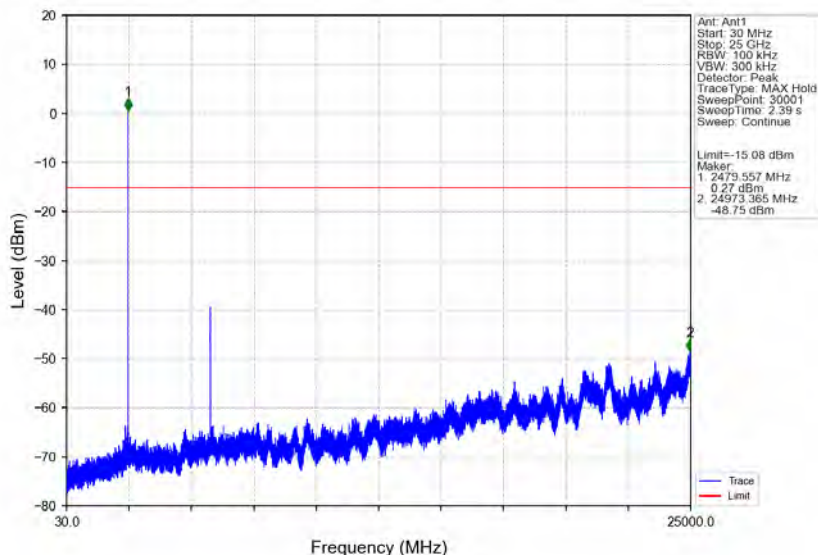
Report No.: KSCR241000213802

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Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN



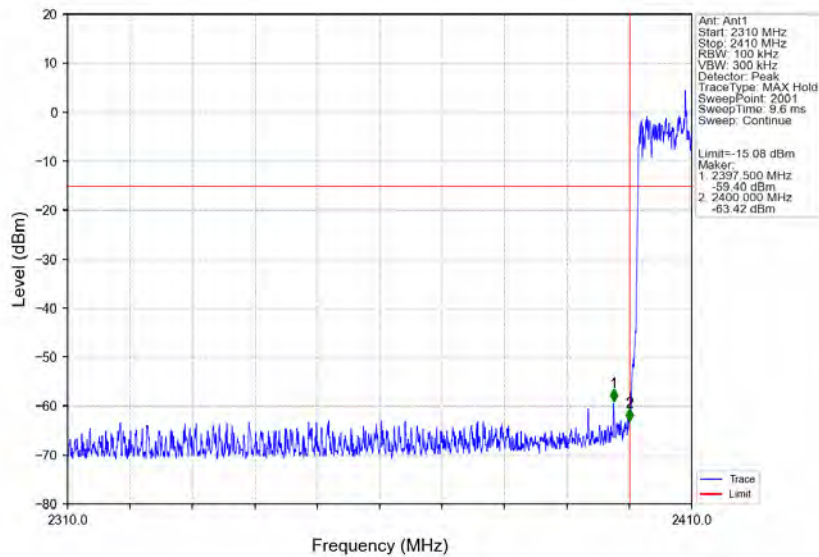
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

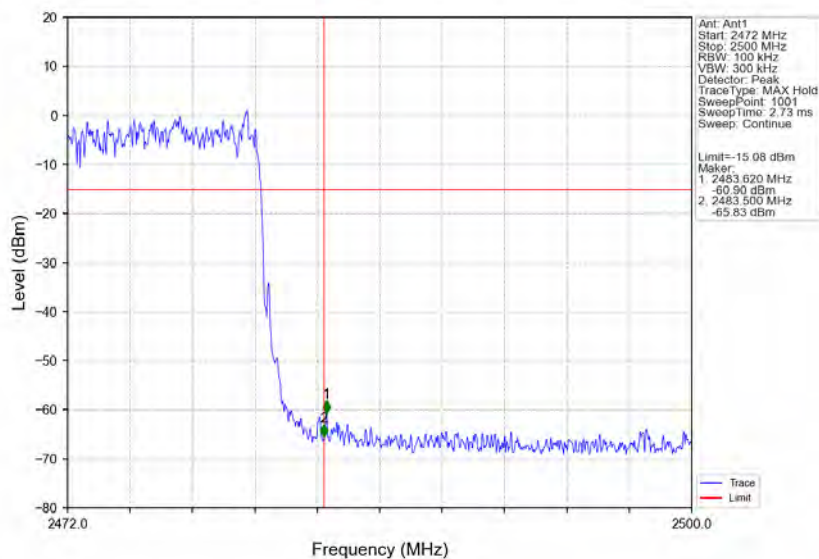
Report No.: KSCR241000213802

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Pi/4DQPSK 2DH5 HOPP Ant1 NTN



Pi/4DQPSK 2DH5 HOPP Ant1 NTN



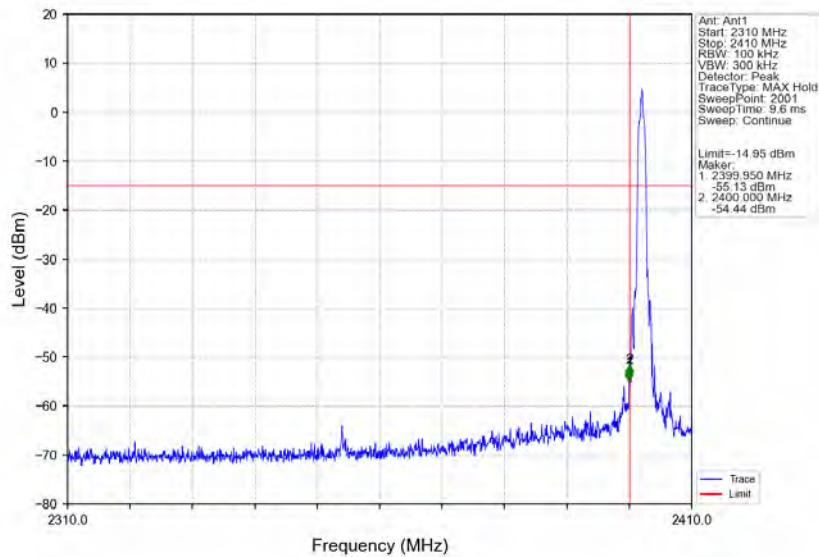
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

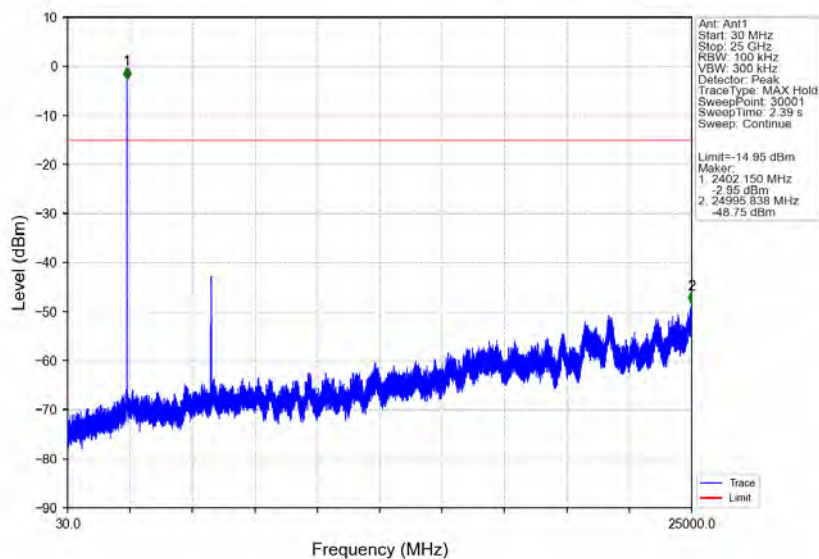
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8DPSK 3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



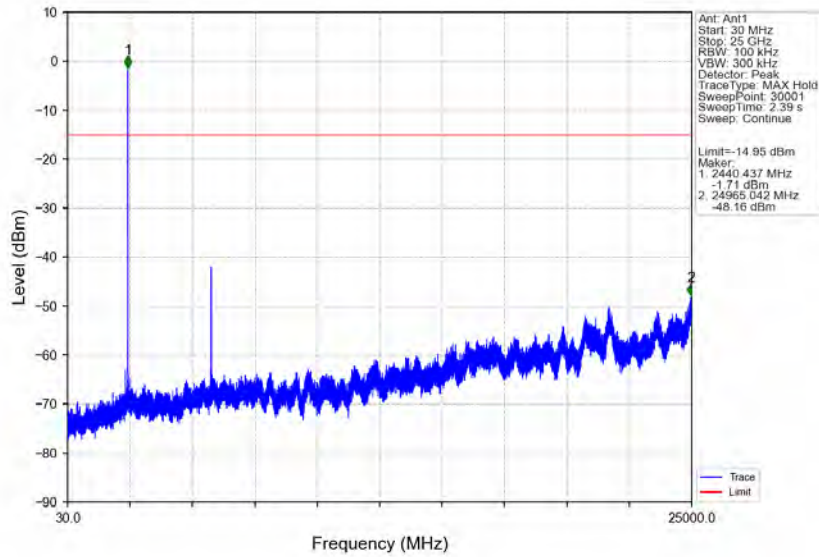
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

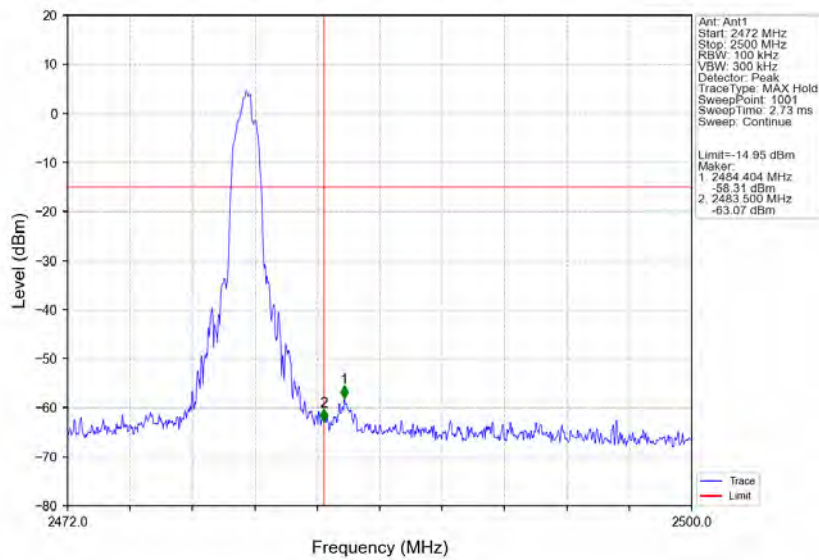
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8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV



8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



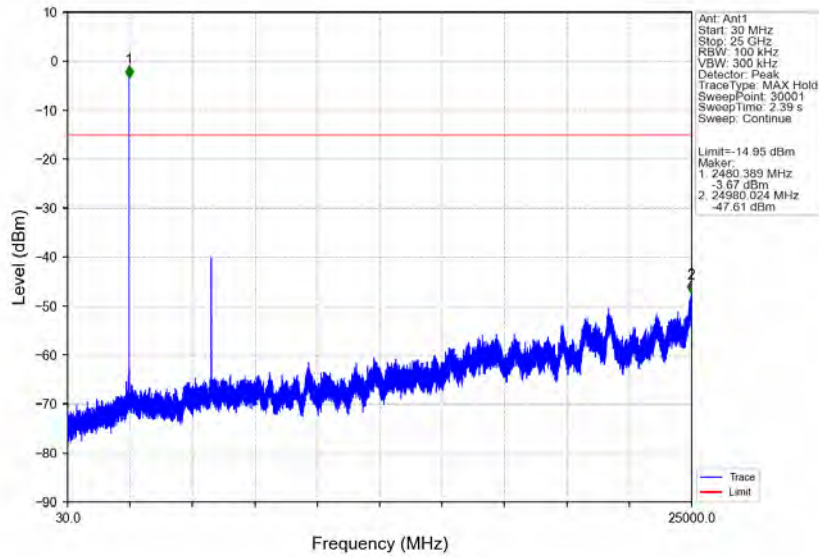
Compliance Certification Services (Kunshan) Inc.

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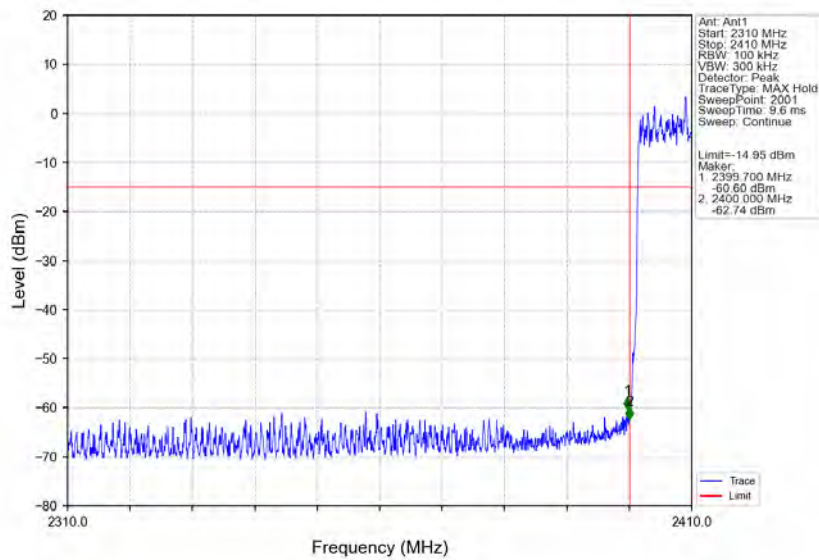
Report No.: KSCR241000213802

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8DPSK 3DH5 HCH 2480MHz Ant1 NTN



8DPSK 3DH5 HOPP Ant1 NTN

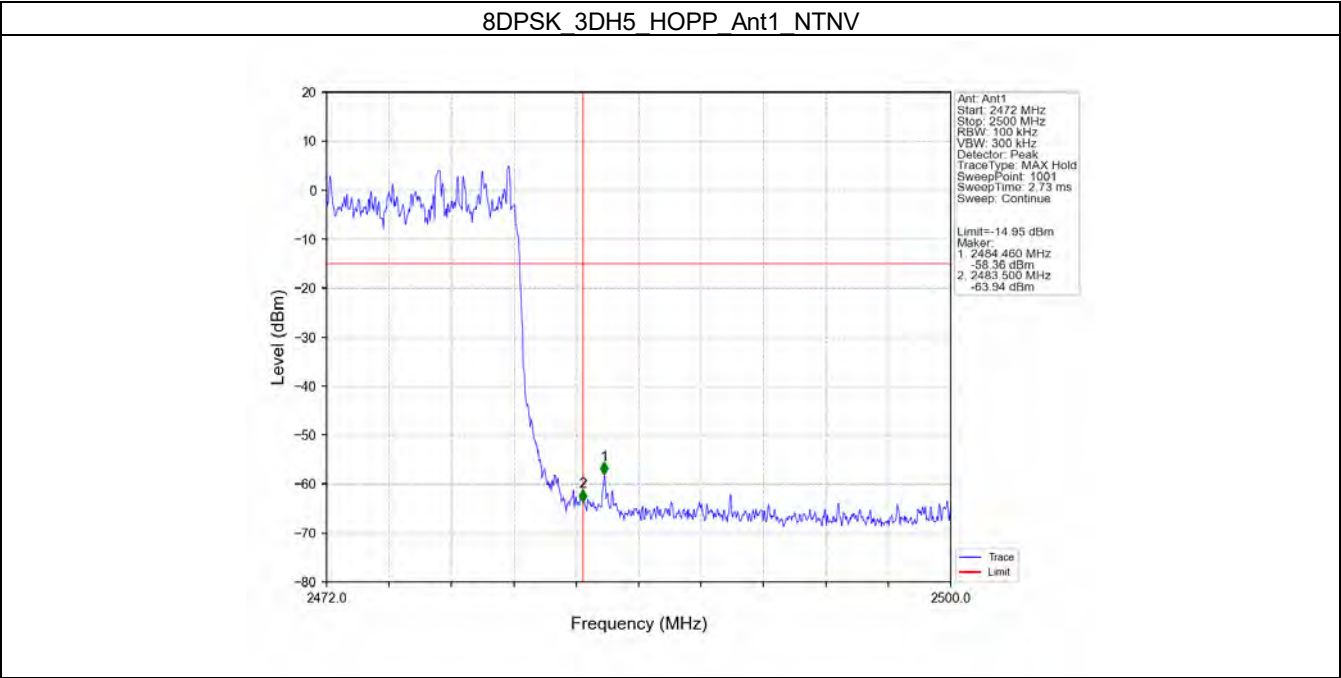


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Right:

1. Duty Cycle

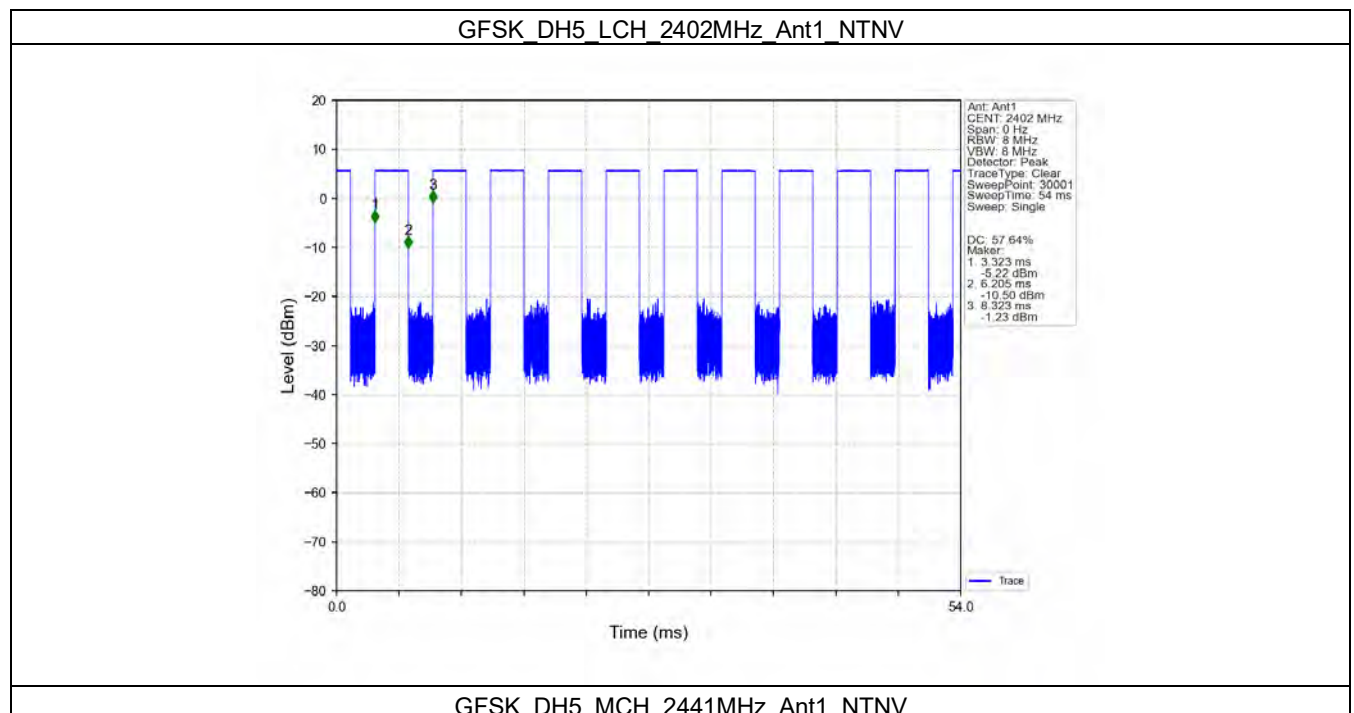
1.1 Test Result

1.1.1 Ant1

Ant1								
Mode	Tx Type	Frequency (MHz)	Packet Type	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
GFSK	SISO	2402	DH5	2.882	5.000	57.64	2.39	0.04
		2441	DH5	2.882	5.000	57.64	2.39	0.04
		2480	DH5	2.881	5.000	57.62	2.39	0.04
Pi/4DQPSK	SISO	2402	2DH5	2.887	5.001	57.73	2.39	0.04
		2441	2DH5	2.887	5.000	57.74	2.39	0.04
		2480	2DH5	2.885	4.998	57.72	2.39	0.05
8DPSK	SISO	2402	3DH5	2.887	4.998	57.76	2.38	0.04
		2441	3DH5	2.889	5.001	57.77	2.38	0.02
		2480	3DH5	2.891	5.000	57.82	2.38	0.04

1.2 Test Graph

1.2.1 Ant1

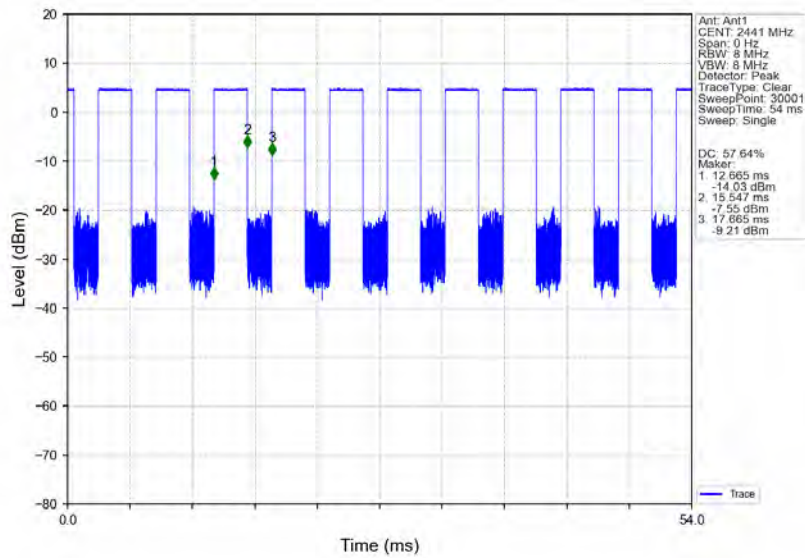


Compliance Certification Services (Kunshan) Inc.

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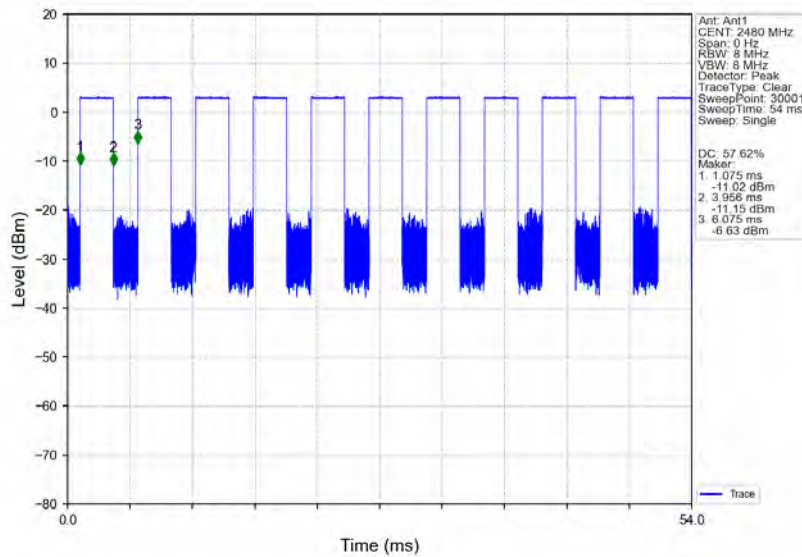
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

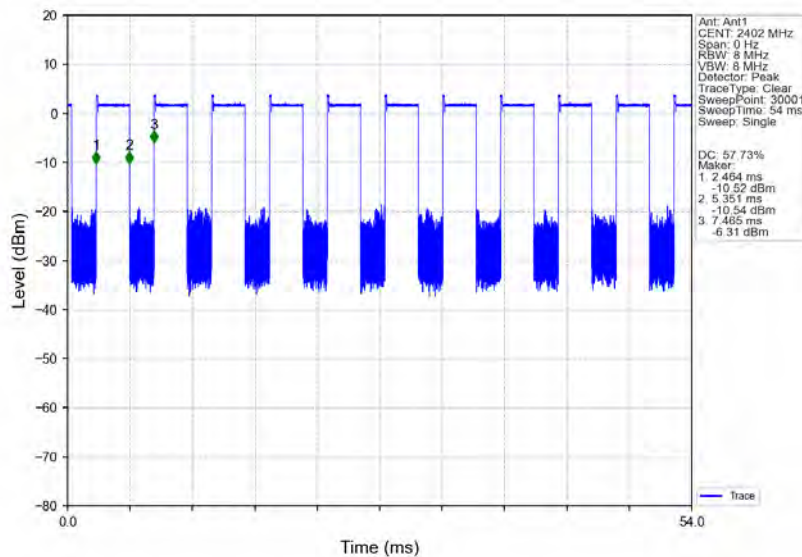
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GFSK DH5 HCH 2480MHz Ant1 NTNV



Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTNV



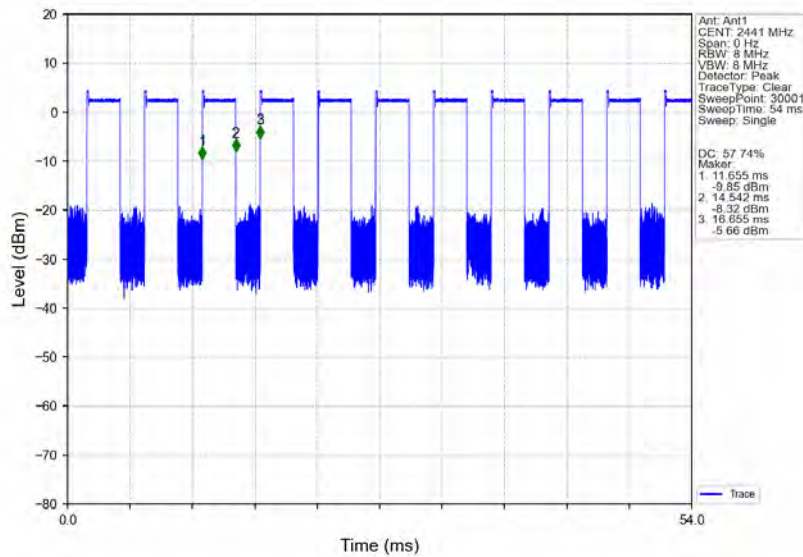
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

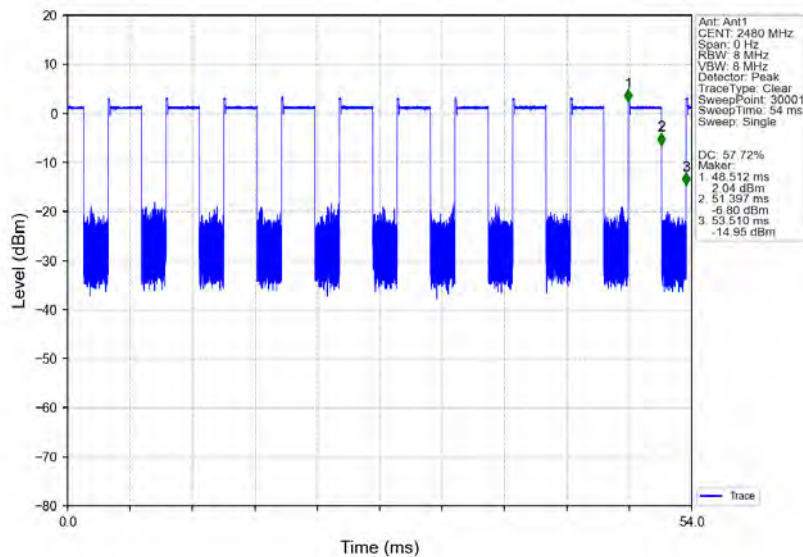
Report No.: KSCR241000213802

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Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTN



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN



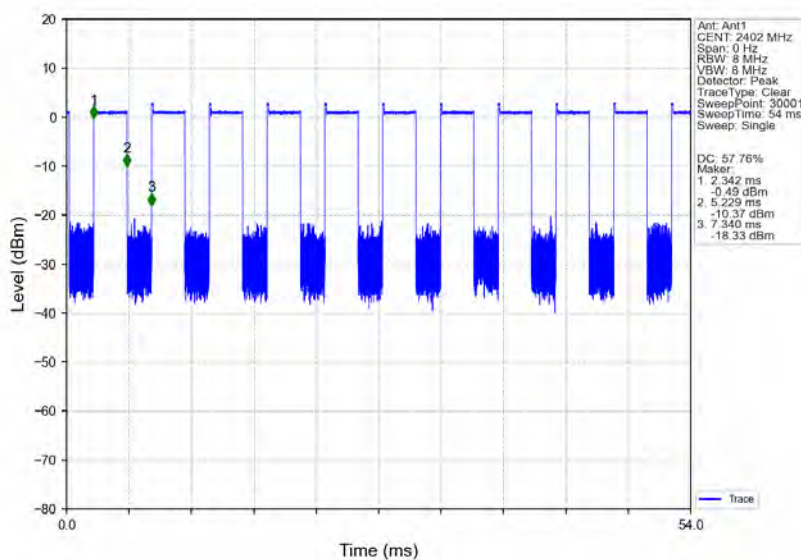
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

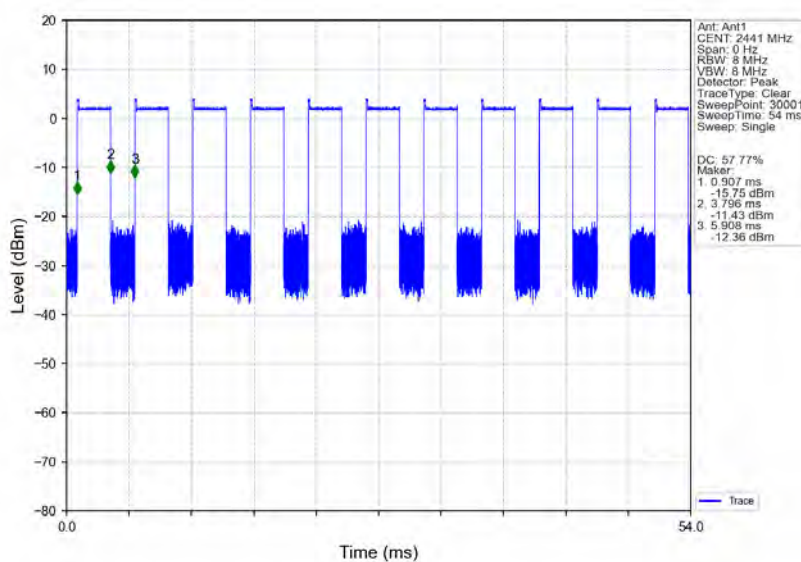
Report No.: KSCR241000213802

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8DPSK 3DH5 LCH 2402MHz Ant1 NTN



8DPSK 3DH5 MCH 2441MHz Ant1 NTN



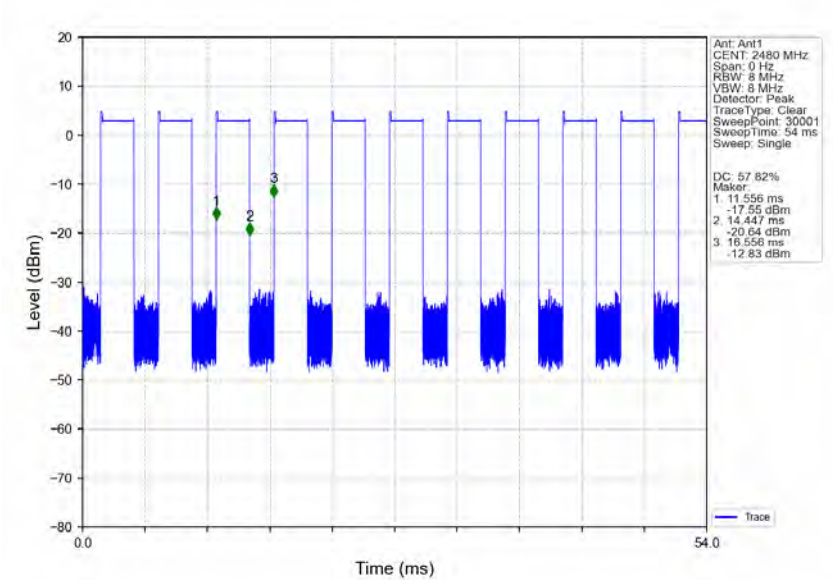
Compliance Certification Services (Kunshan) Inc.

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8DPSK 3DH5 HCH 2480MHz Ant1 NTNV



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2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.961	/	Pass
		2441	DH5	1	0.963	/	Pass
		2480	DH5	1	0.961	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.141	/	Pass
		2441	2DH5	1	1.139	/	Pass
		2480	2DH5	1	1.141	/	Pass
8DPSK	SISO	2402	3DH5	1	1.140	/	Pass
		2441	3DH5	1	1.141	/	Pass
		2480	3DH5	1	1.139	/	Pass

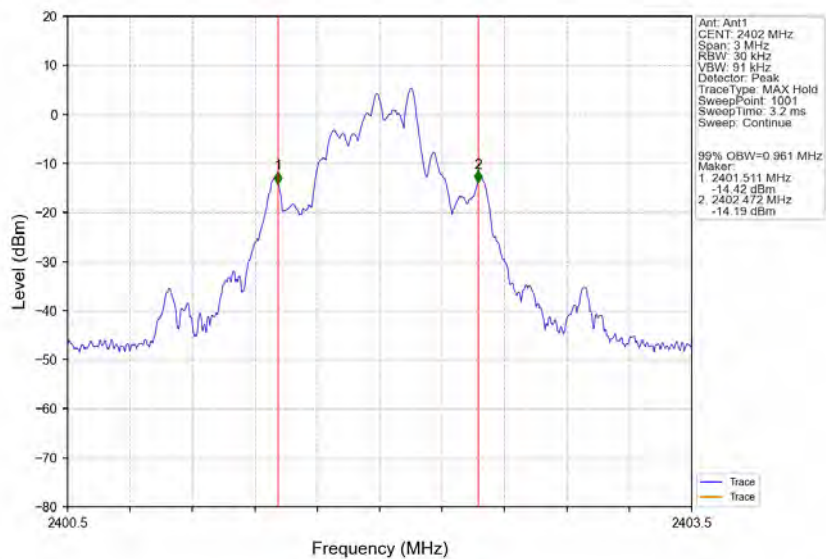
2.1.2 20dB BW

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	1.033	/	Pass
		2441	DH5	1	1.036	/	Pass
		2480	DH5	1	1.036	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.211	/	Pass
		2441	2DH5	1	1.207	/	Pass
		2480	2DH5	1	1.214	/	Pass
8DPSK	SISO	2402	3DH5	1	1.210	/	Pass
		2441	3DH5	1	1.212	/	Pass
		2480	3DH5	1	1.212	/	Pass

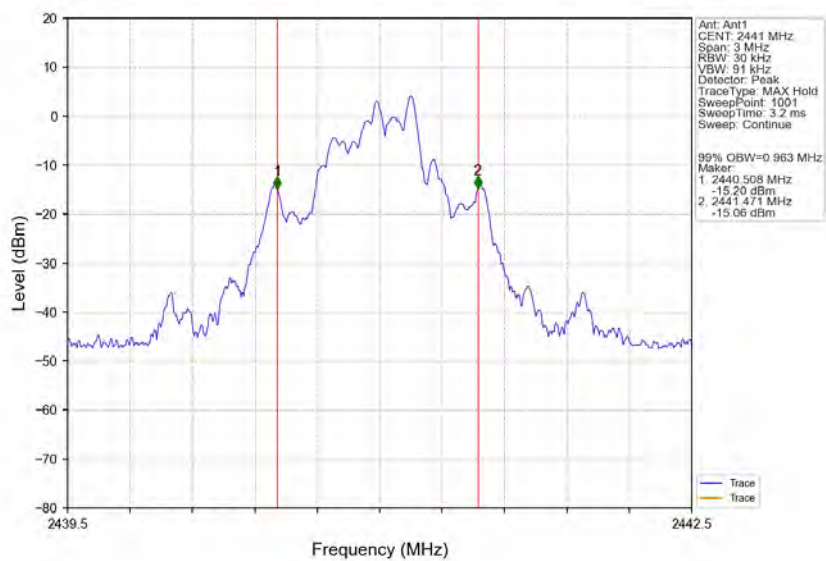
2.2 Test Graph

2.2.1 OBW

GFSK_DH5_LCH_2402MHz_Ant1_NTNV



GFSK_DH5_MCH_2441MHz_Ant1_NTNV



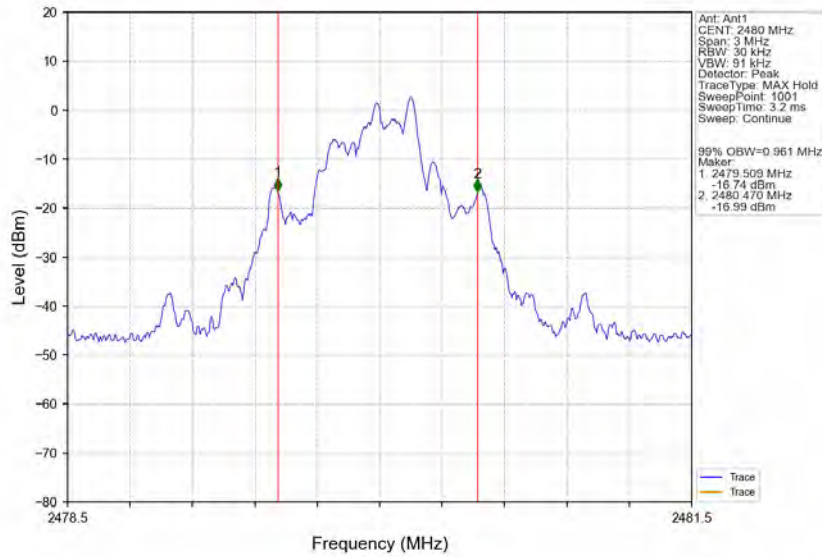
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

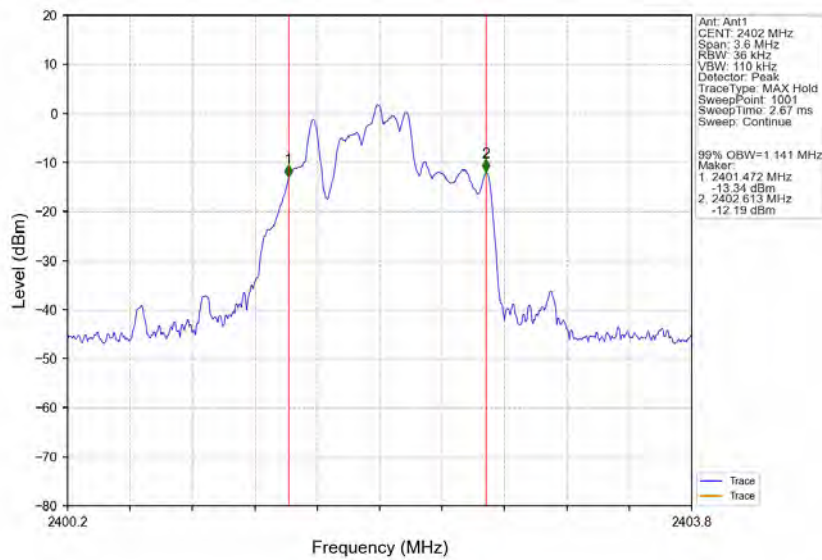
Report No.: KSCR241000213802

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GFSK DH5 HCH 2480MHz Ant1 NTN



Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTN



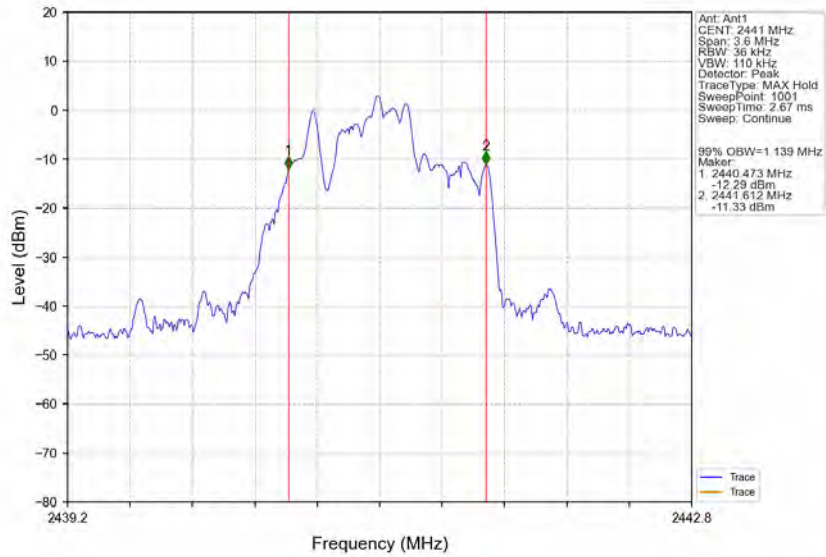
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

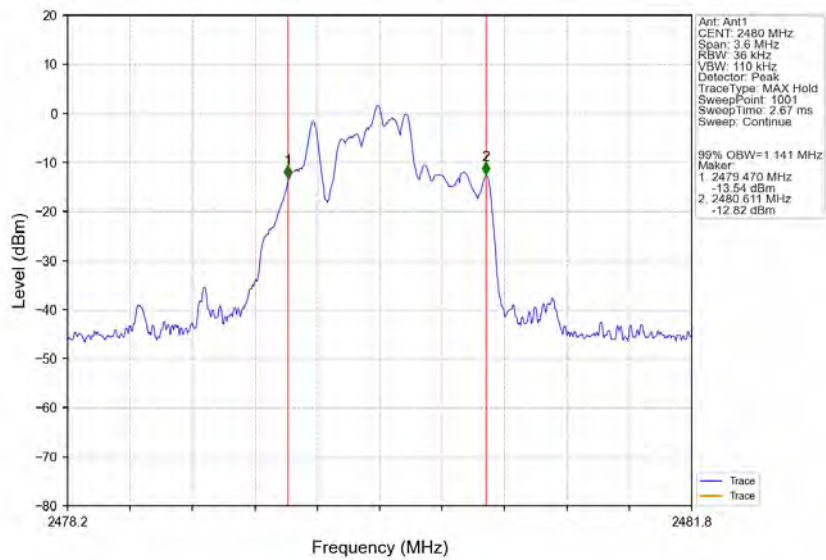
Report No.: KSCR241000213802

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Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTNV



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTNV



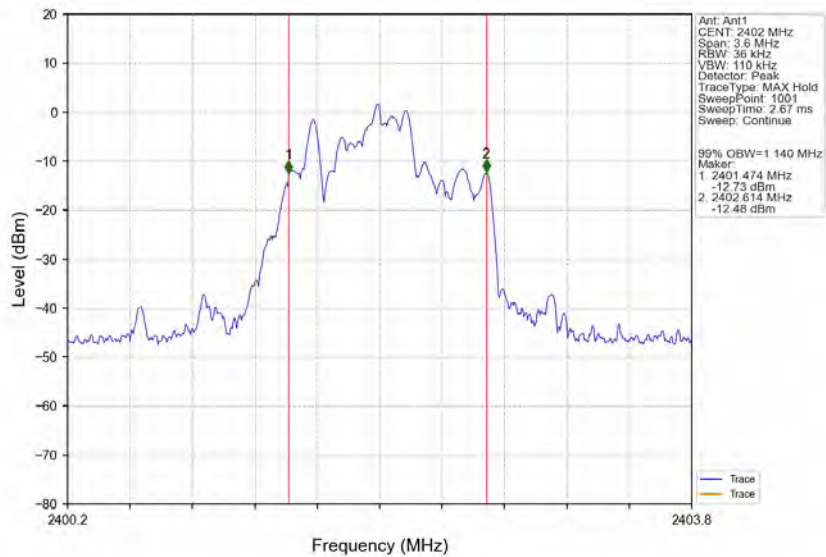
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

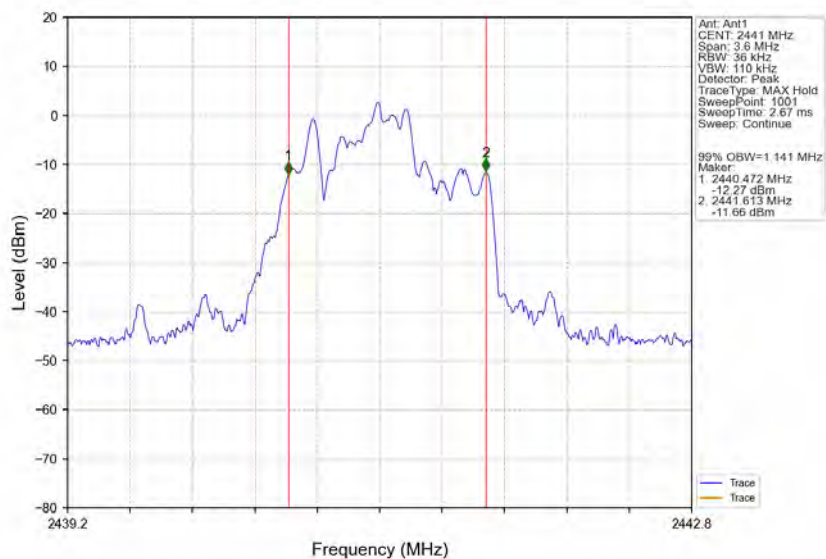
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8DPSK 3DH5 LCH 2402MHz Ant1 NTN



8DPSK 3DH5 MCH 2441MHz Ant1 NTN



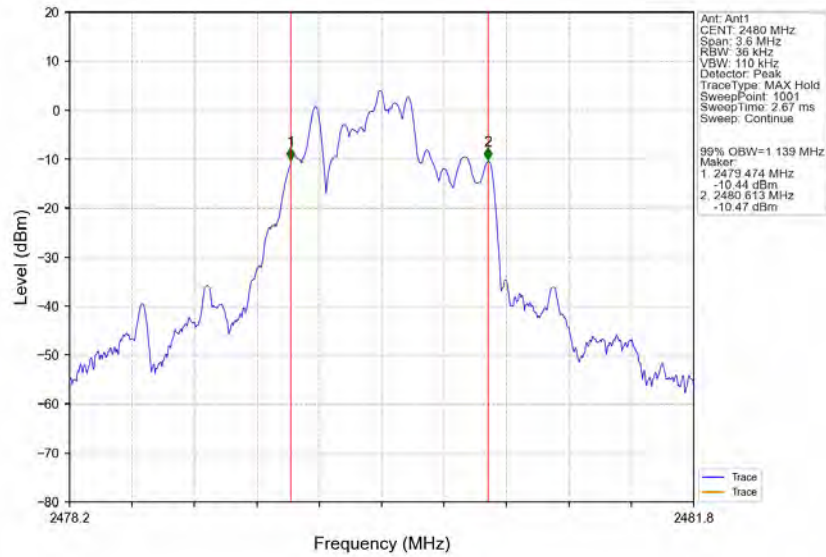
Compliance Certification Services (Kunshan) Inc.

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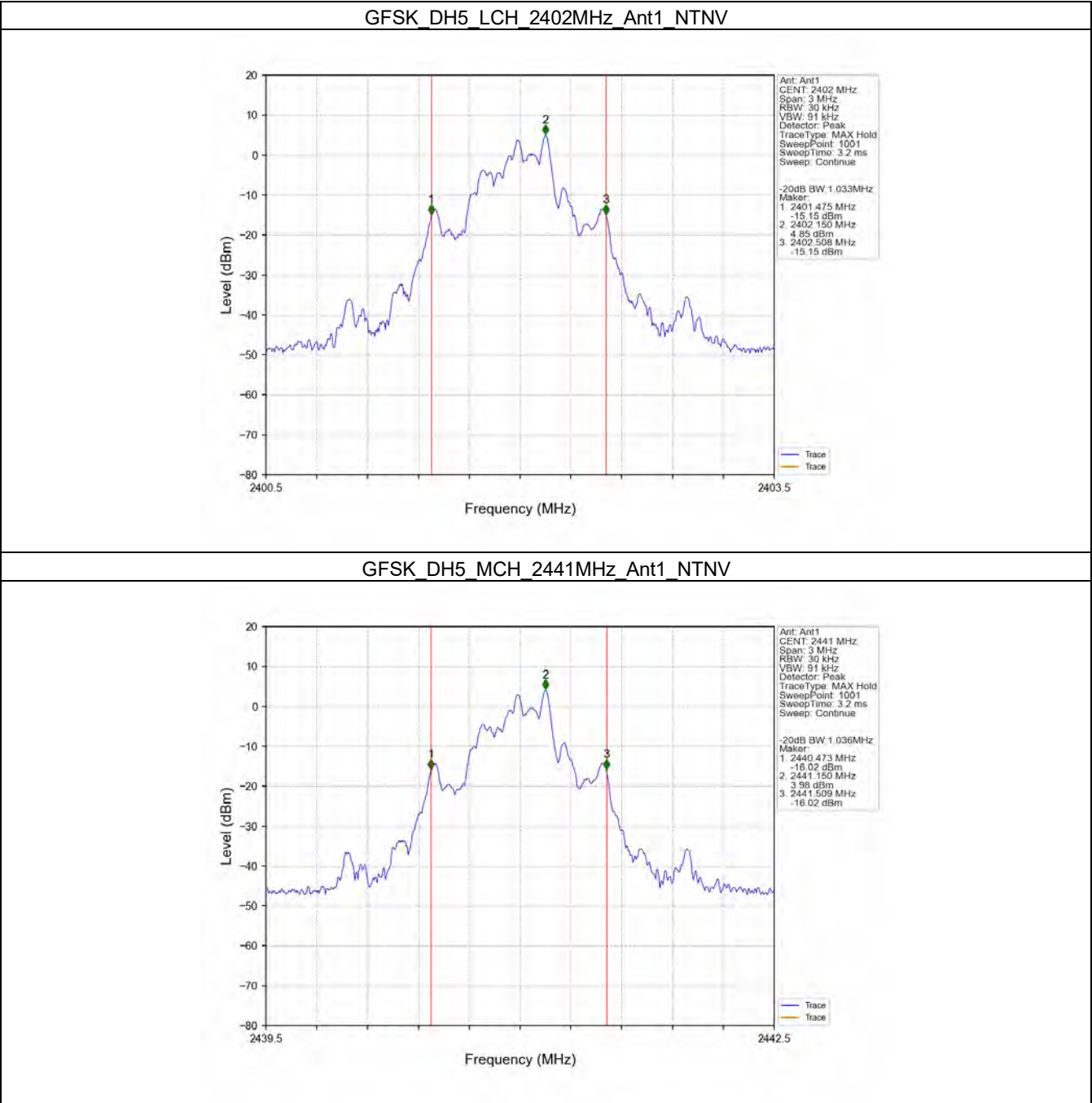
Report No.: KSCRM241000213802

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8DPSK 3DH5 HCH 2480MHz Ant1 NTV



2.2.2 20dB BW



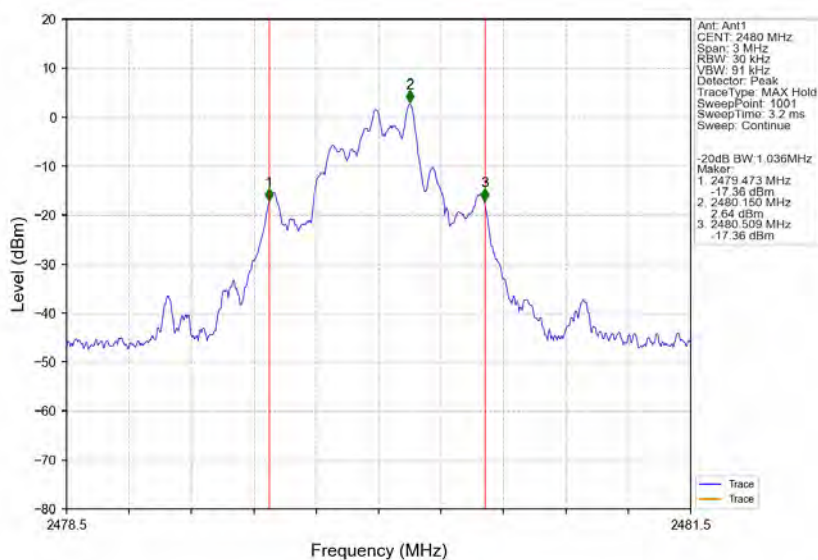
Compliance Certification Services (Kunshan) Inc.

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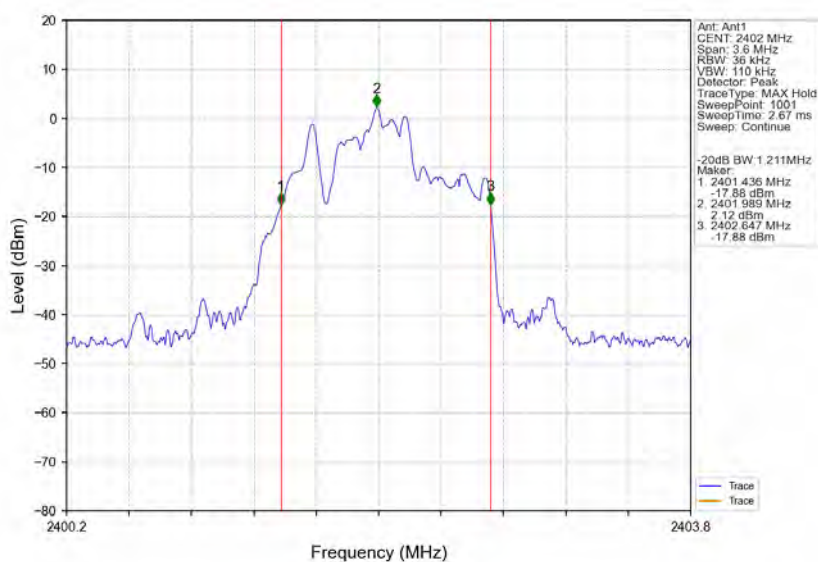
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GFSK DH5 HCH 2480MHz Ant1 NTNV



Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTNV



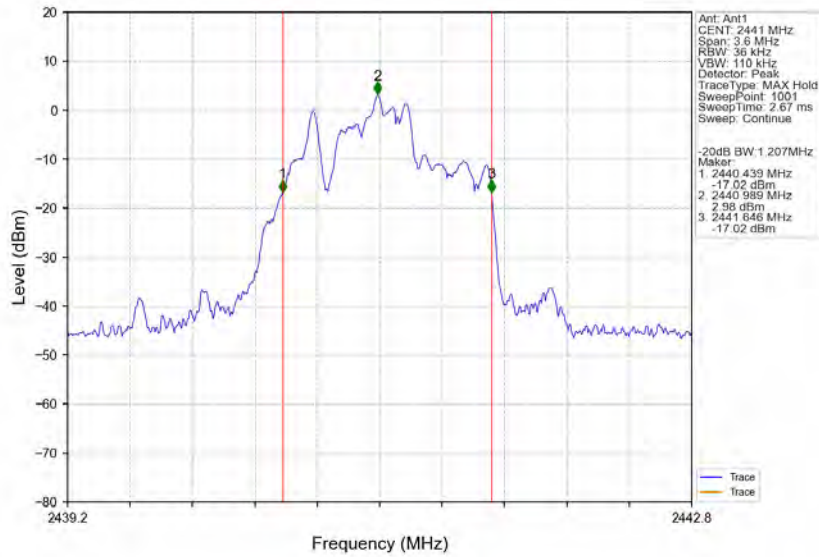
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

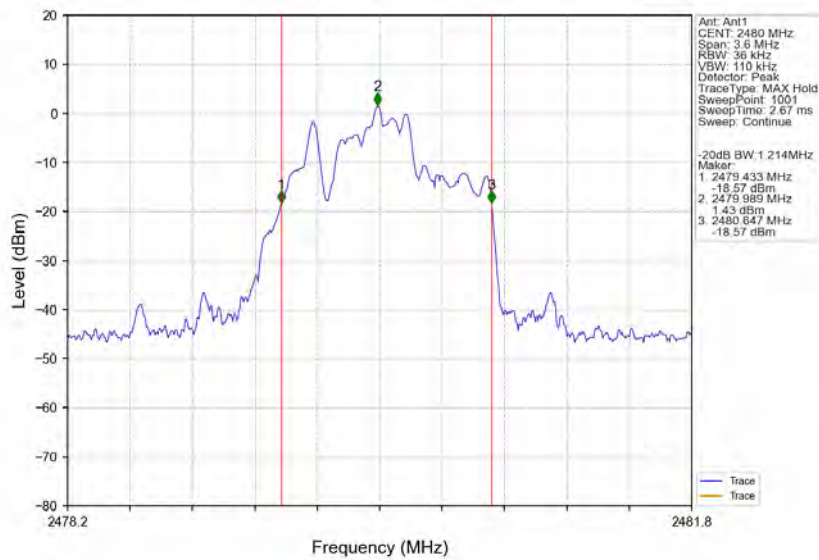
Report No.: KSCR241000213802

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Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTN



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN



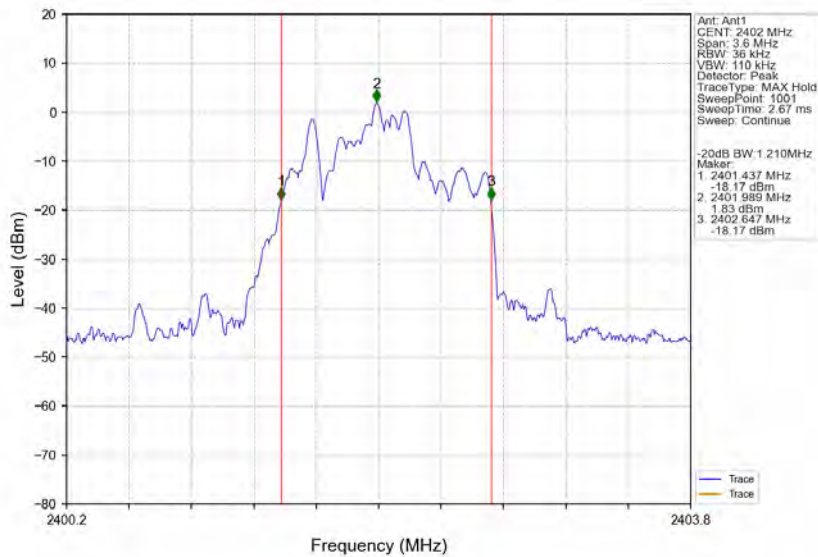
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

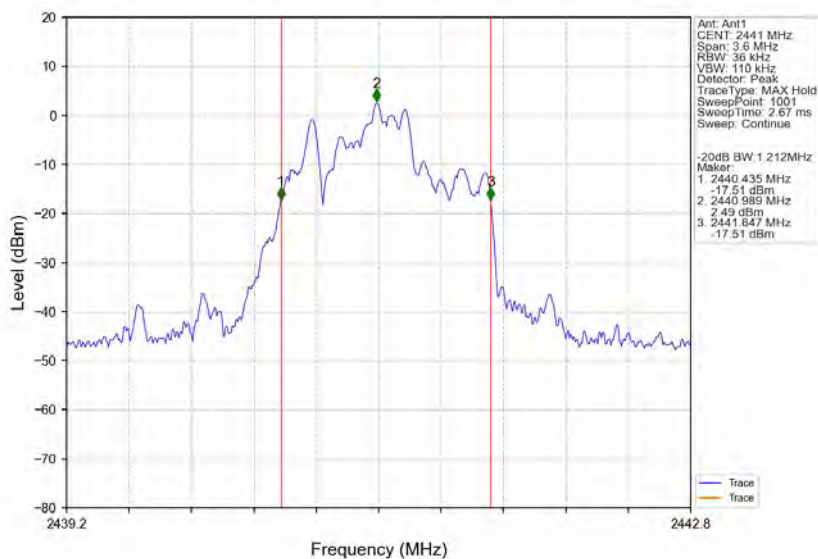
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8DPSK 3DH5 LCH 2402MHz Ant1 NTN



8DPSK 3DH5 MCH 2441MHz Ant1 NTN



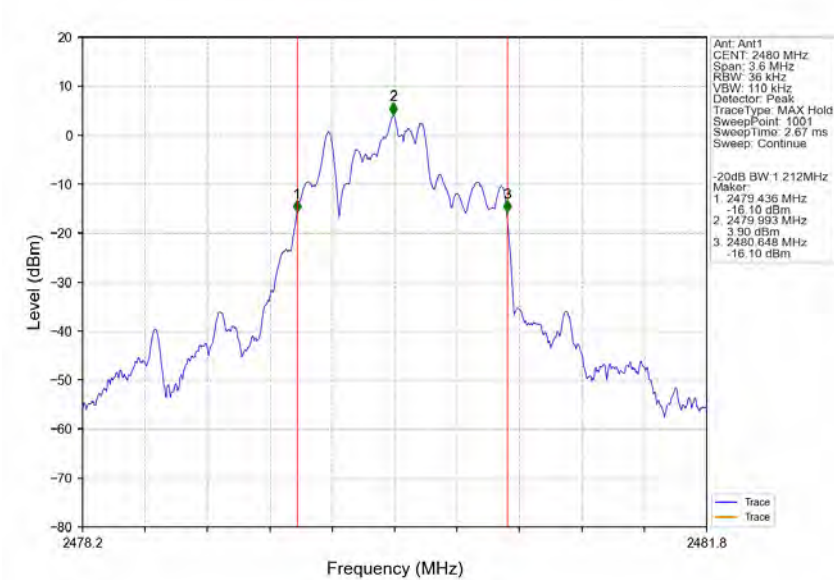
Compliance Certification Services (Kunshan) Inc.

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8DPSK 3DH5 HCH 2480MHz Ant1 NTNV

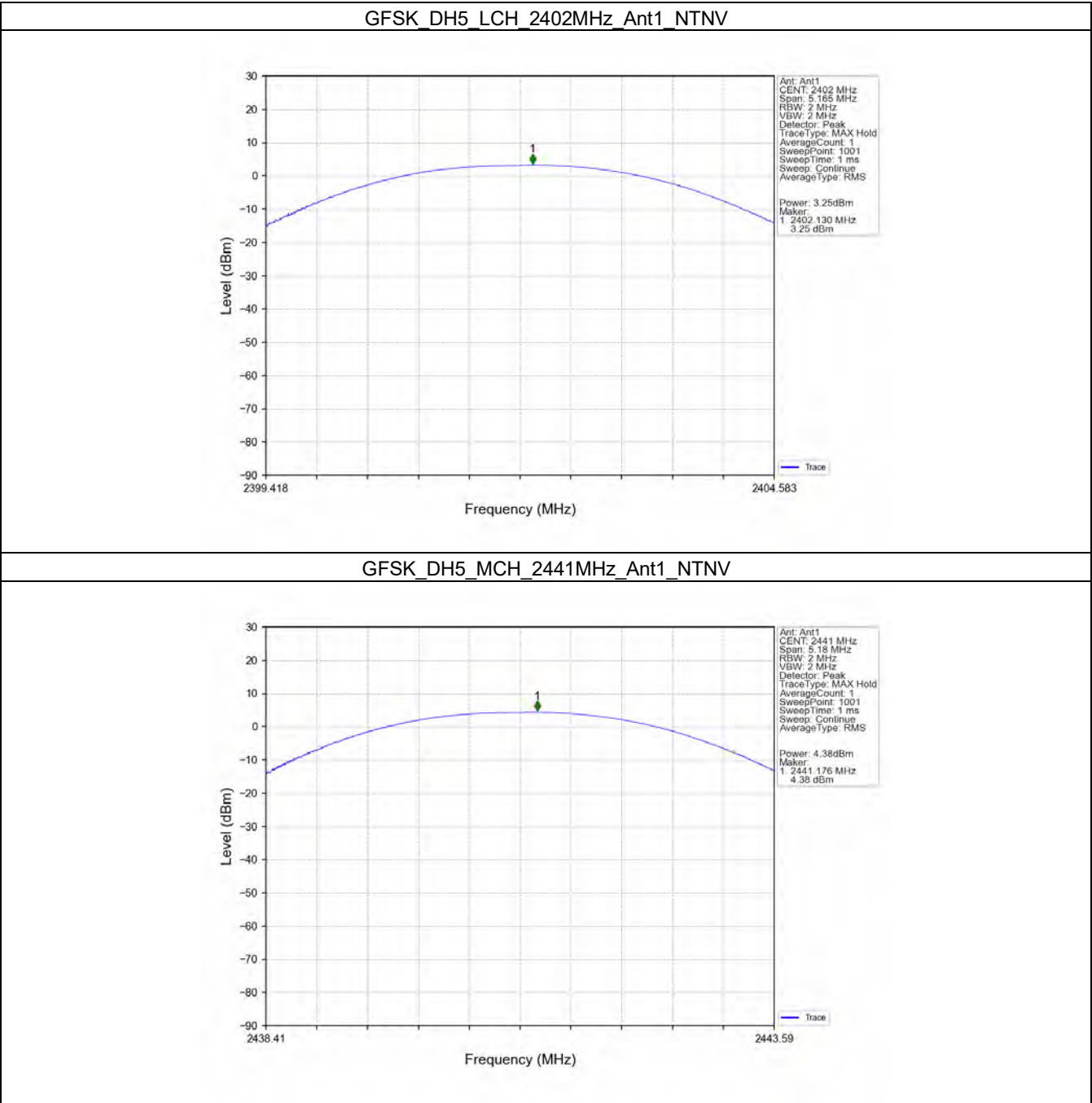


Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	3.25	<=20.97	Pass
		2441	DH5	4.38	<=20.97	Pass
		2480	DH5	2.80	<=20.97	Pass
Pi/4DQPSK	SISO	2402	2DH5	2.81	<=20.97	Pass
		2441	2DH5	3.37	<=20.97	Pass
		2480	2DH5	2.58	<=20.97	Pass
8DPSK	SISO	2402	3DH5	2.74	<=20.97	Pass
		2441	3DH5	6.07	<=20.97	Pass
		2480	3DH5	4.40	<=20.97	Pass

Note1: Antenna Gain: Ant1: 0.08dBi;

3.2 Test Graph

3.2.1 Power



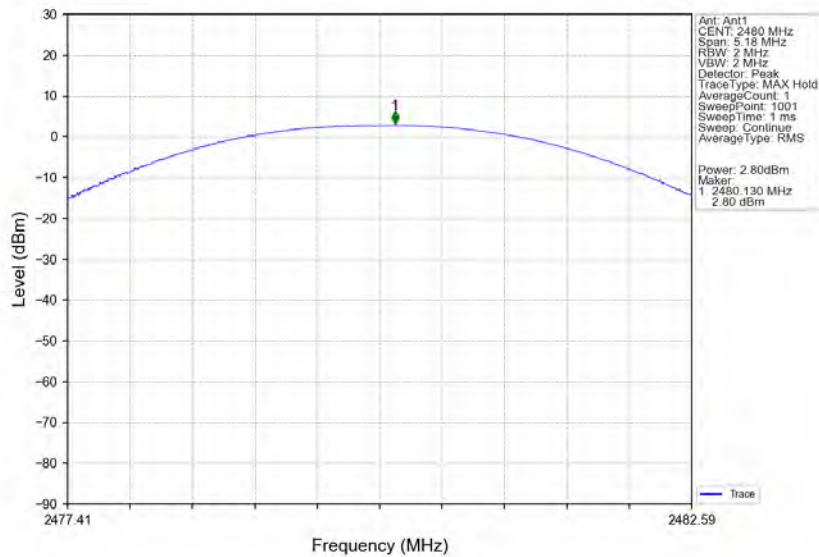
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

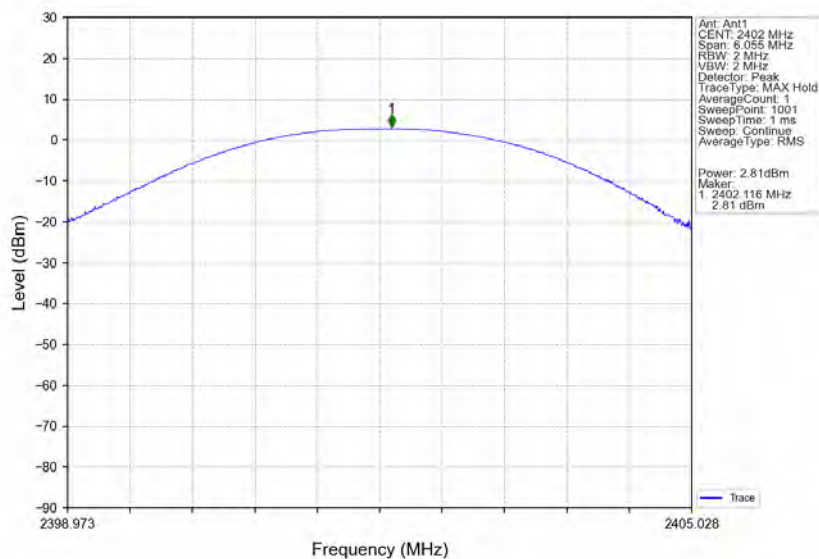
Report No.: KSCR241000213802

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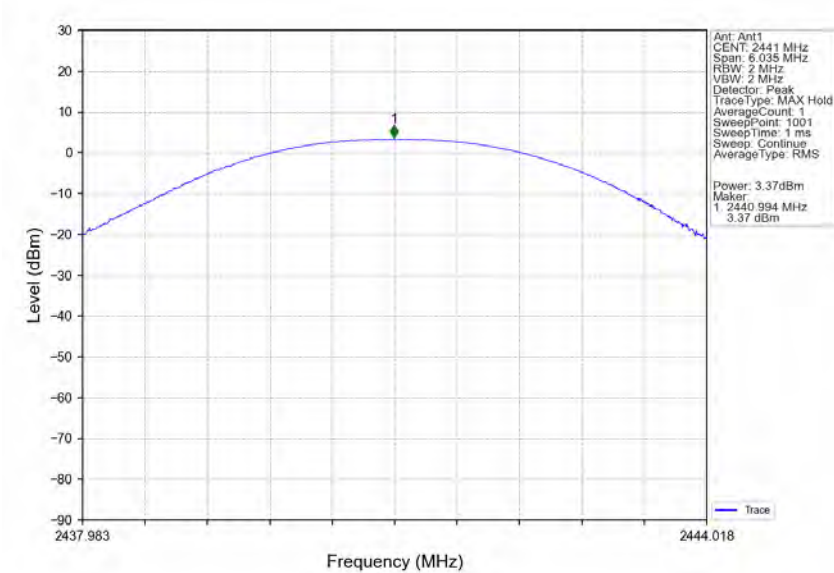
GFSK DH5 HCH 2480MHz Ant1 NTNV



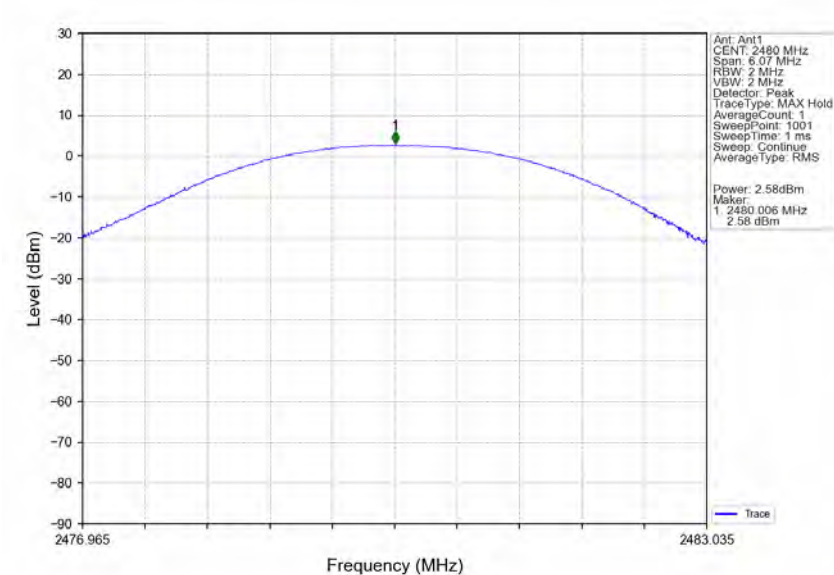
Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTNV



Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTN



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN



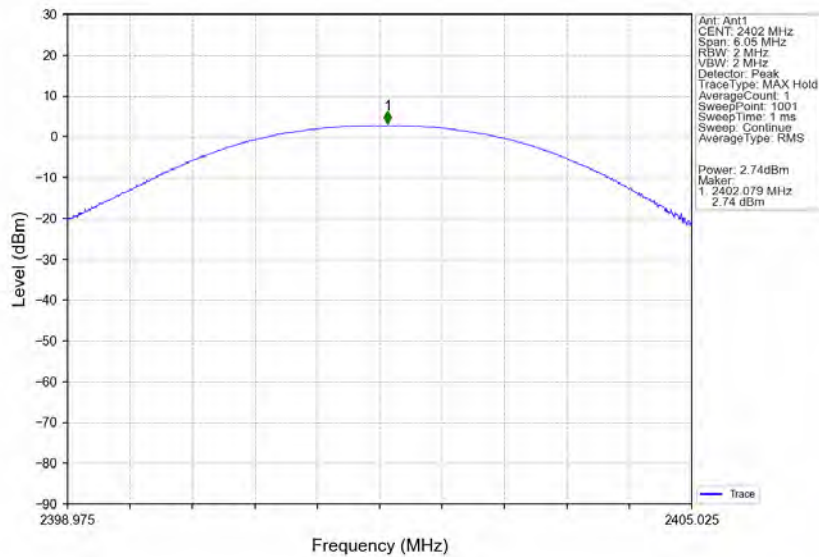
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

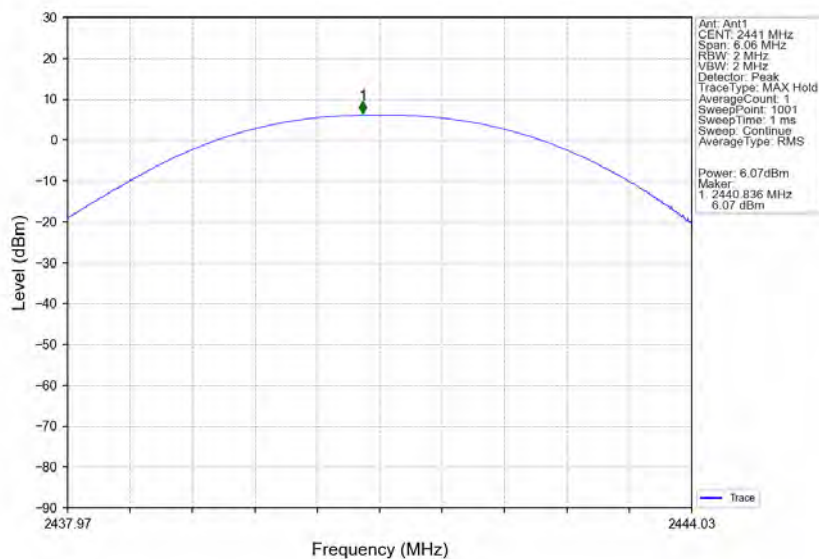
Report No.: KSCR241000213802

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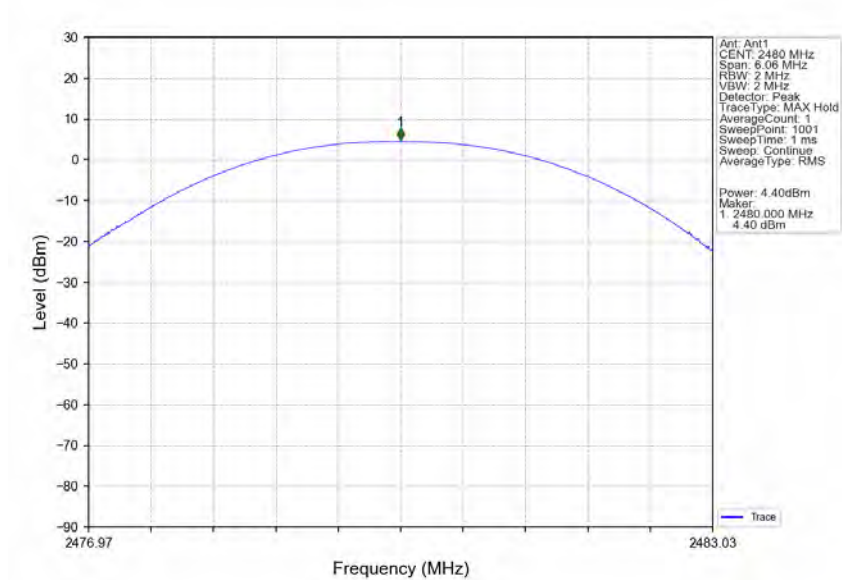
8DPSK 3DH5 LCH 2402MHz Ant1 NTNV



8DPSK 3DH5 MCH 2441MHz Ant1 NTNV



8DPSK 3DH5 HCH 2480MHz Ant1 NTNV





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4. Carrier Frequency Separation

4.1 Test Result

4.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	0.992	1.036	>=0.691	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.022	1.214	>=0.809	Pass
8DPSK	SISO	HOPP	3DH5	1.008	1.212	>=0.808	Pass

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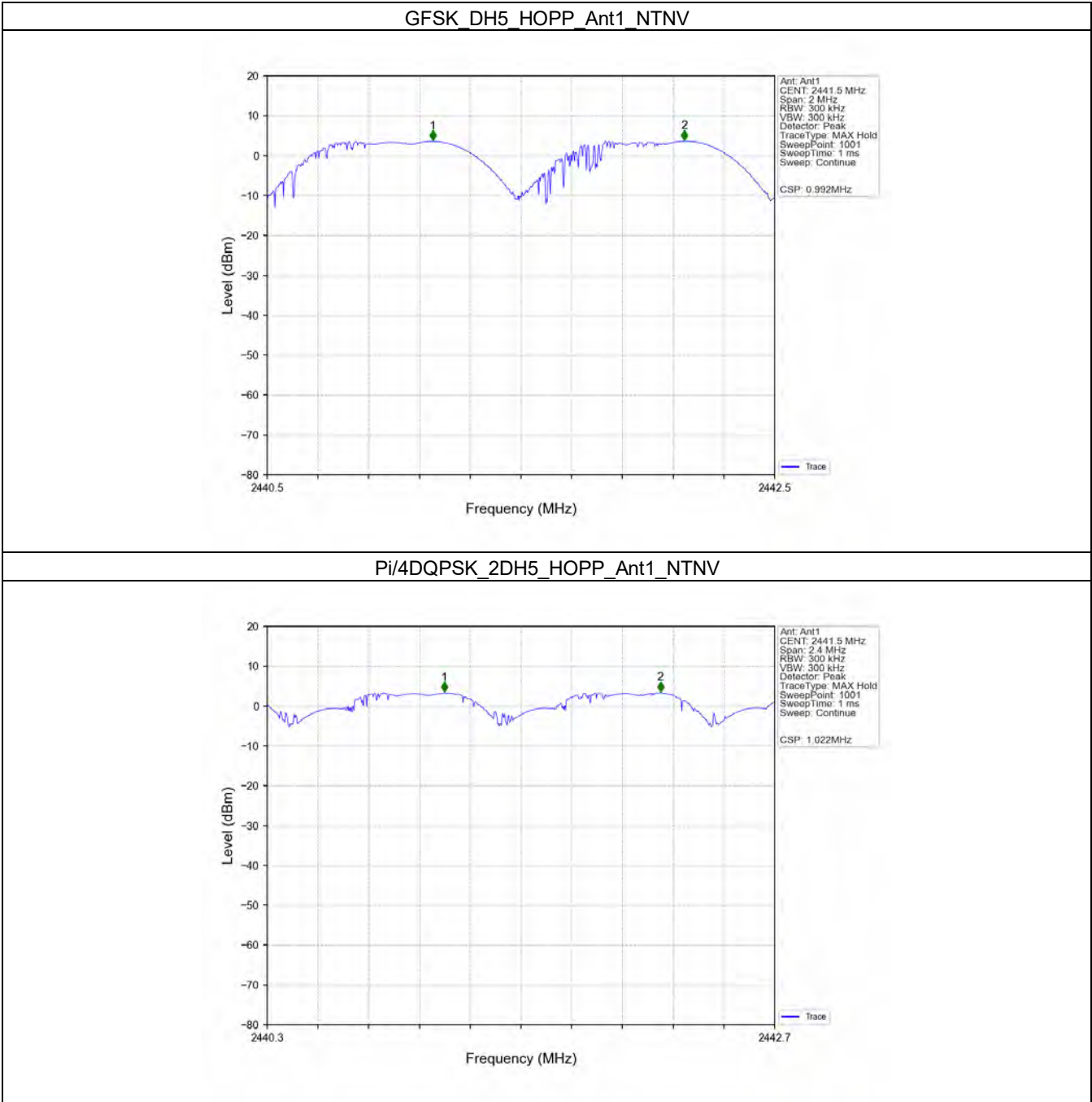
CCSEM-TRF-001 Rev. 02 Sep 01, 2023

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4.2 Test Graph

4.2.1 Ant1



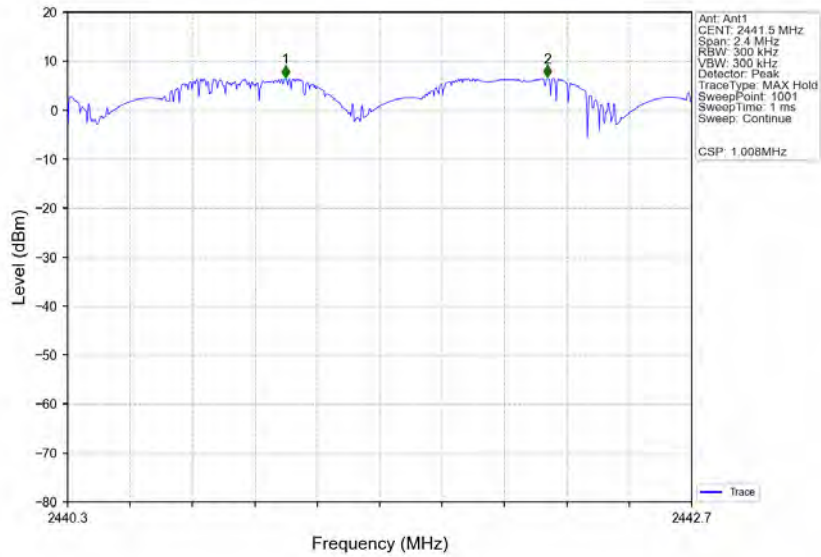
Compliance Certification Services (Kunshan) Inc.

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8DPSK 3DH5 HOPP Ant1 NTN



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5. Number of Hopping Frequencies

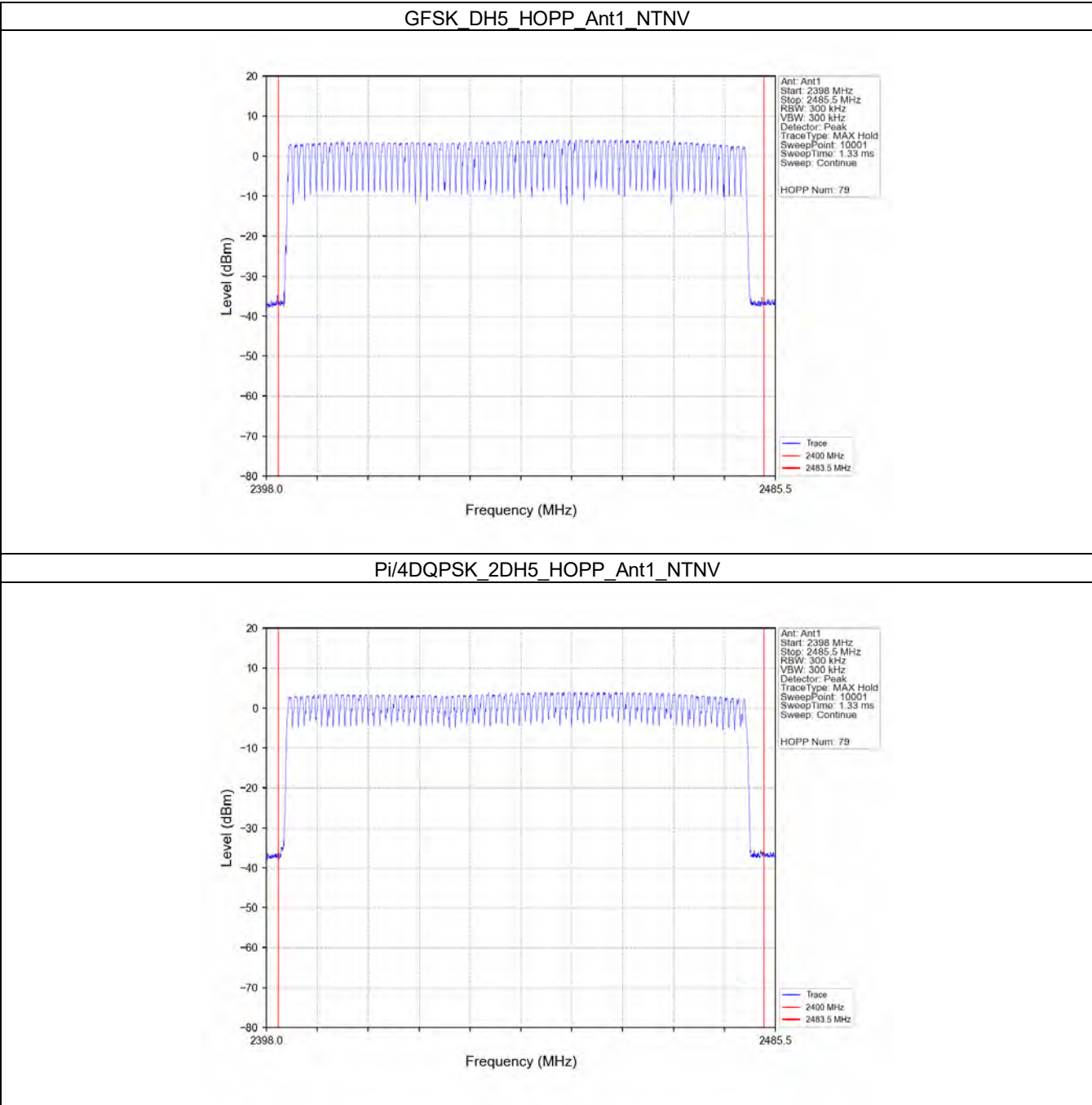
5.1 Test Result

5.1.1 HoppNum

Mode	TX Type	Frequency (MHz)	Packet Type	Num of Hopping Frequencies		Verdict
				ANT1	Limit	
GFSK	SISO	HOPP	DH5	79	≥ 15	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	79	≥ 15	Pass
8DPSK	SISO	HOPP	3DH5	79	≥ 15	Pass

5.2 Test Graph

5.2.1 HoppNum



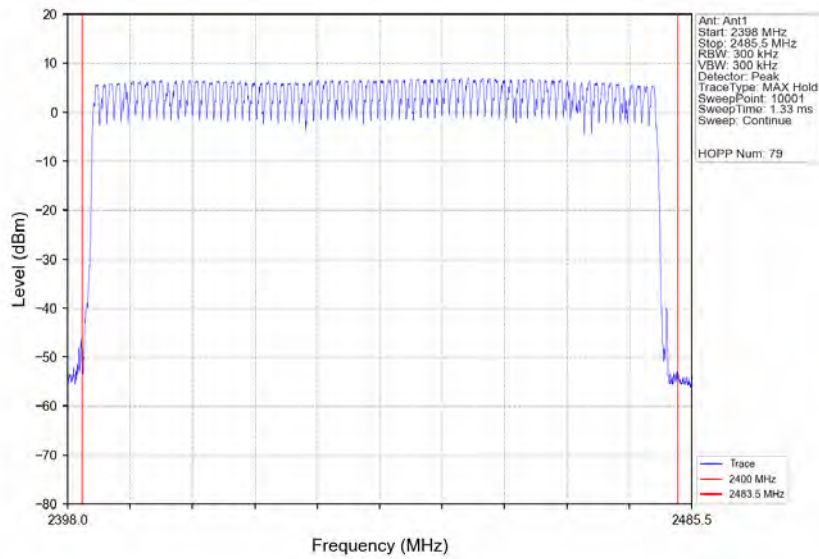
Compliance Certification Services (Kunshan) Inc.

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8DPSK 3DH5 HOPP Ant1 NTN



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6. Time of Occupancy (Dwell Time)

6.1 Test Result

6.1.1 Ant1

Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.384	31.600	164	62.976	<=400	Pass
			DH3	1.638	31.600	107	175.266	<=400	Pass
			DH5	2.888	31.600	79	228.152	<=400	Pass
Pi/4DQPSK	SISO	HOPP	2DH1	0.392	31.600	152	59.584	<=400	Pass
			2DH3	1.646	31.600	119	195.874	<=400	Pass
			2DH5	2.892	31.600	85	245.820	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.404	31.600	150	60.600	<=400	Pass
			3DH3	1.656	31.600	92	152.352	<=400	Pass
			3DH5	2.898	31.600	89	257.922	<=400	Pass

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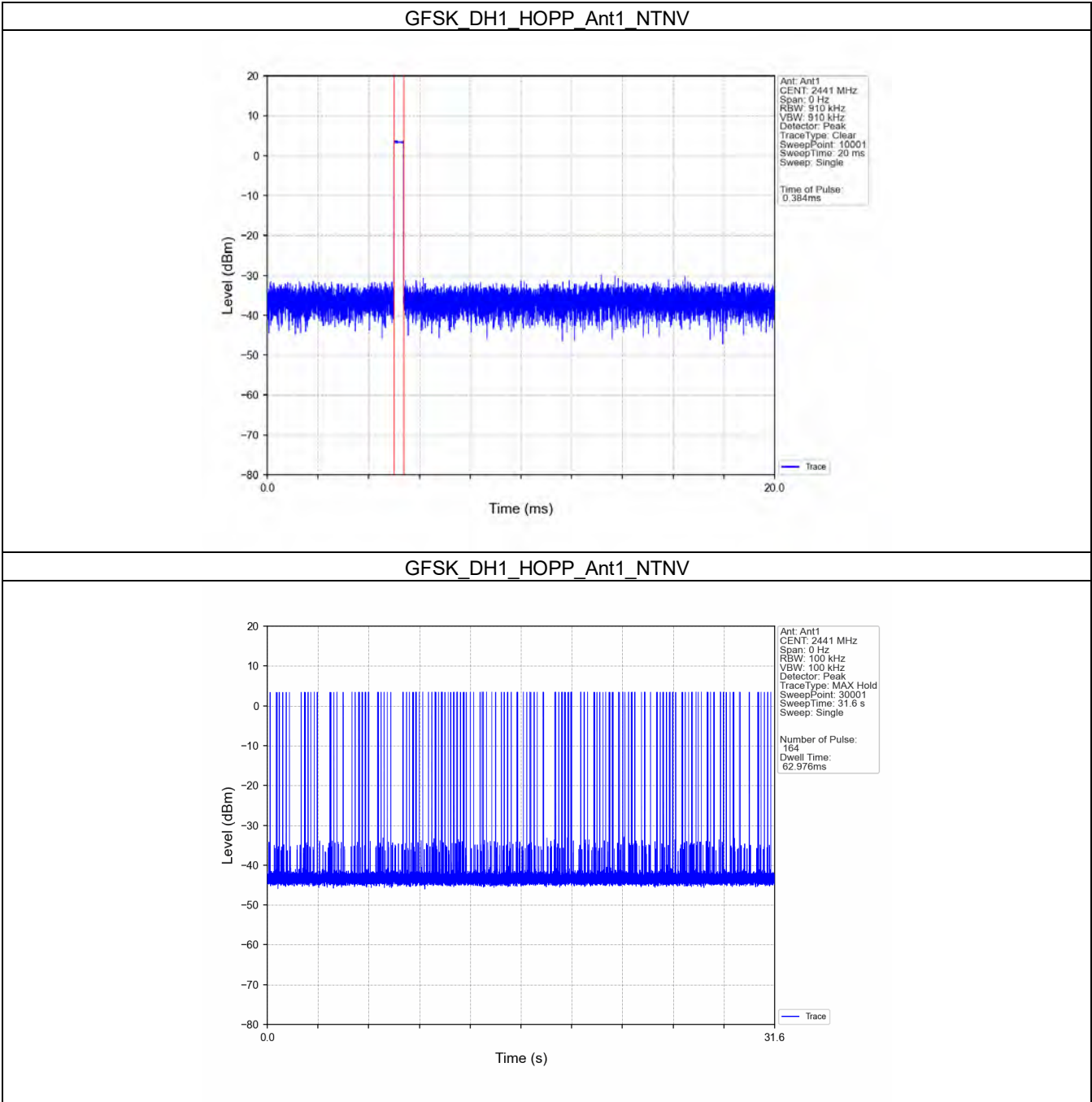
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6.2 Test Graph

6.2.1 Ant1



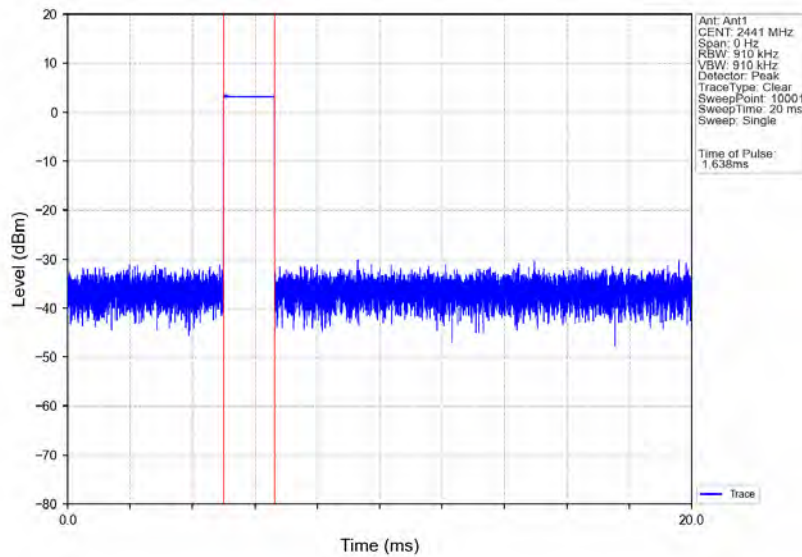
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

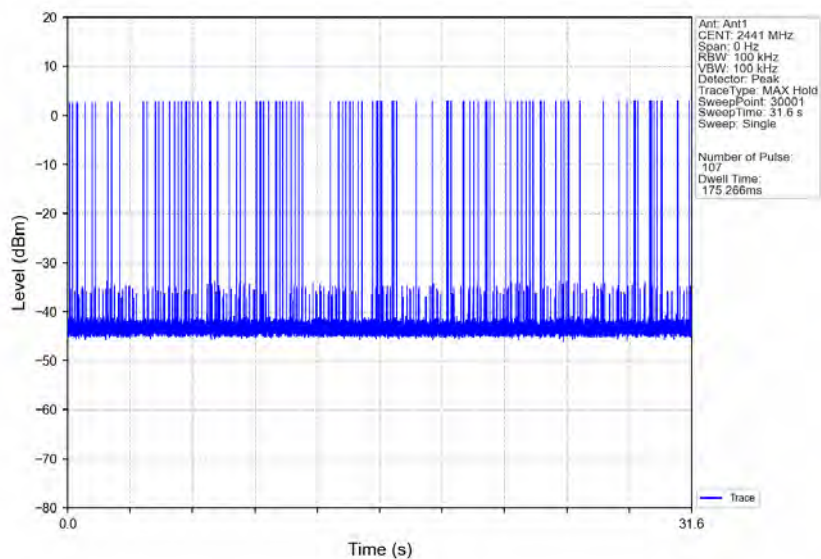
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GFSK DH3 HOPP Ant1 NTNV



GFSK_DH3_HOPP_Ant1_NTNV



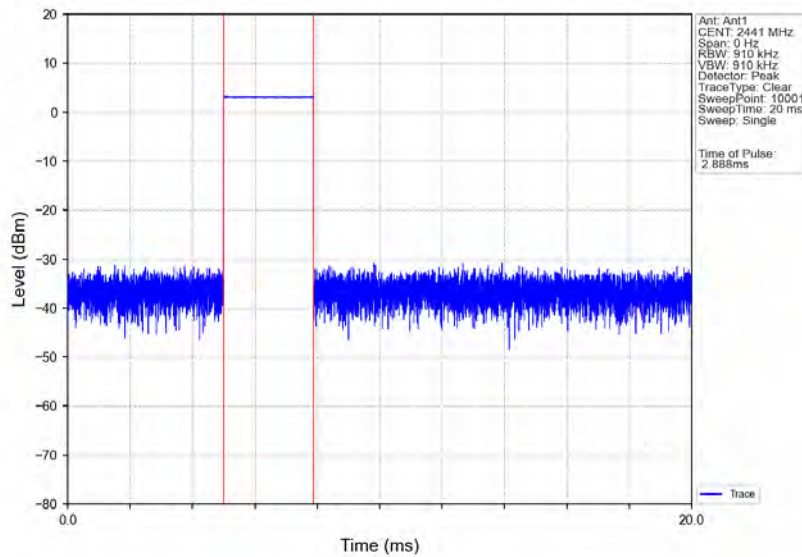
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

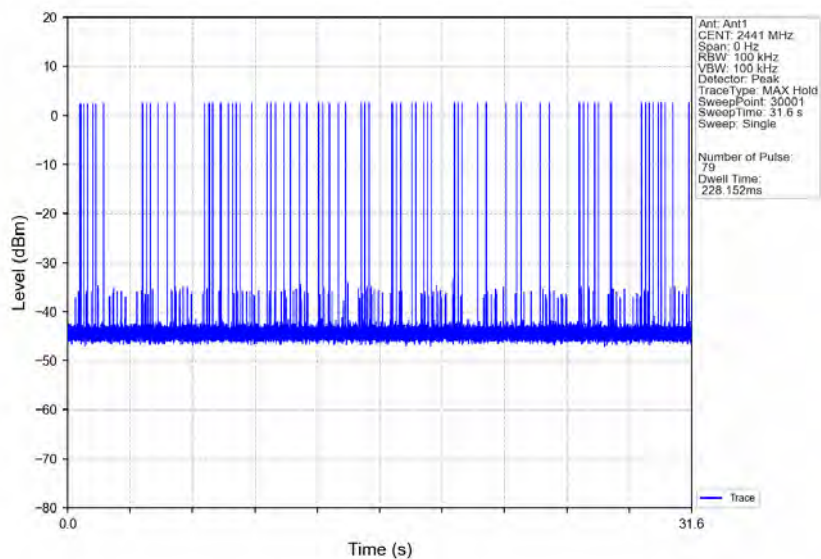
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GFSK DH5 HOPP Ant1 NTNV



GFSK DH5 HOPP Ant1 NTNV



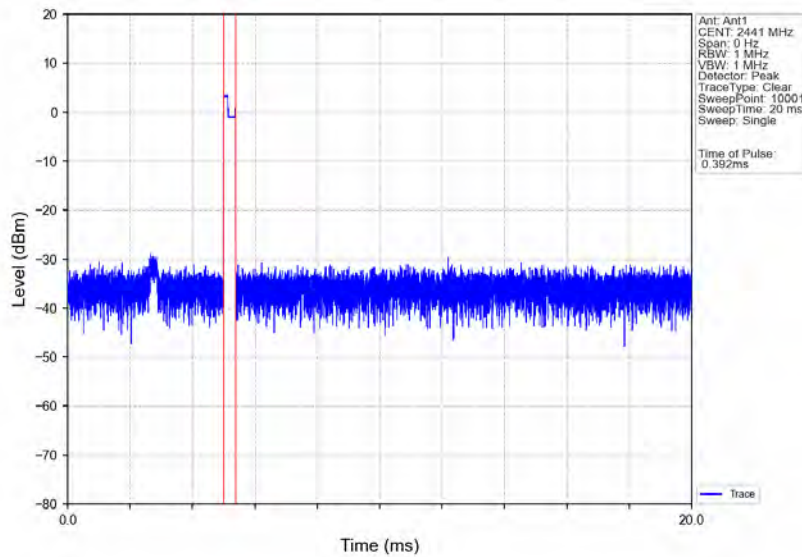
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

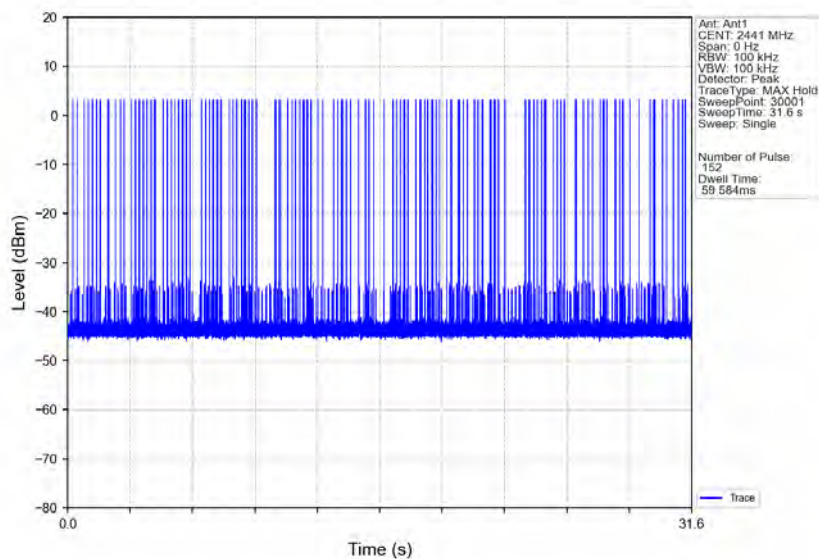
Report No.: KSC241000213802

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Pi/4DQPSK 2DH1 HOPP Ant1 NTN



Pi/4DQPSK 2DH1 HOPP Ant1 NTN



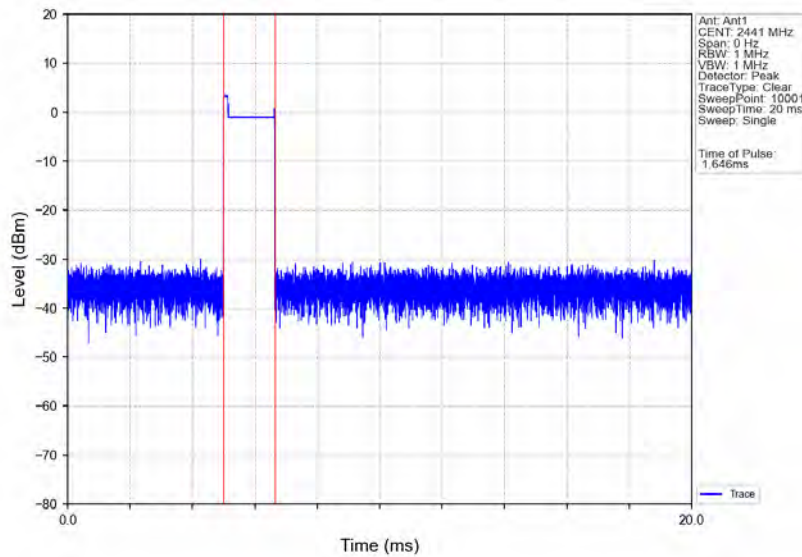
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

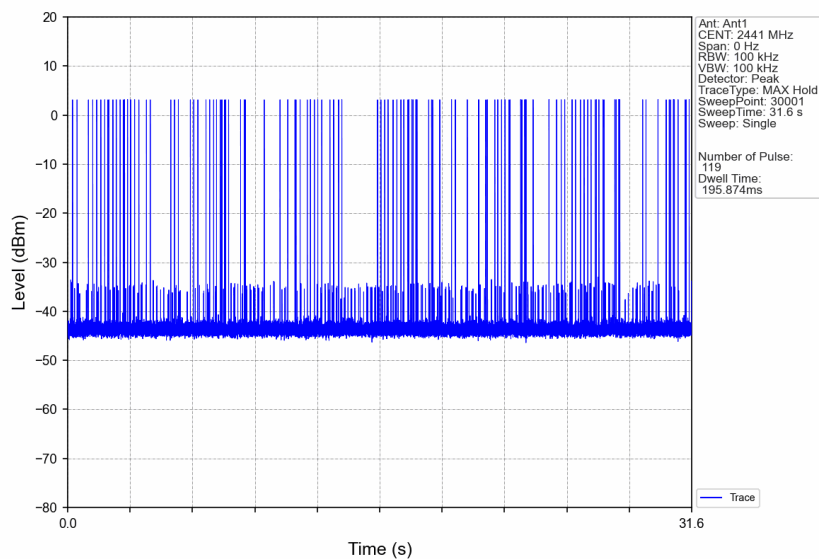
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Pi/4DQPSK 2DH3 HOPP Ant1 NTN



Pi/4DQPSK 2DH3 HOPP Ant1 NTN



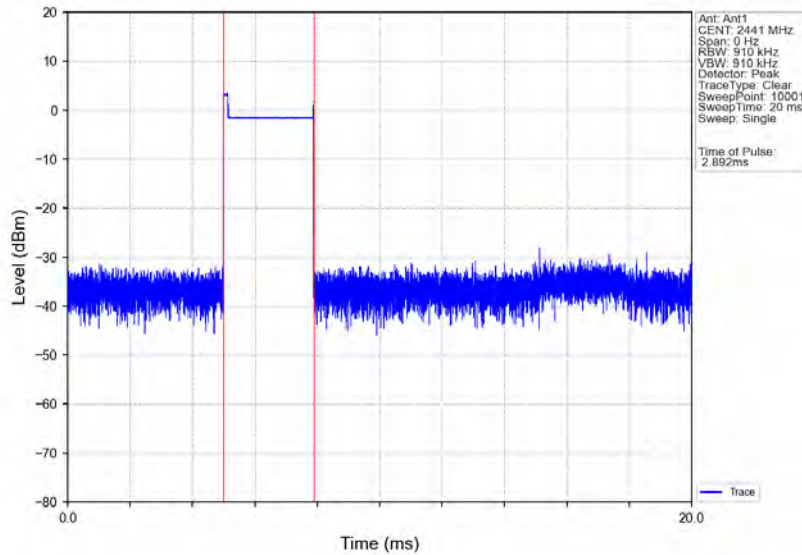
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

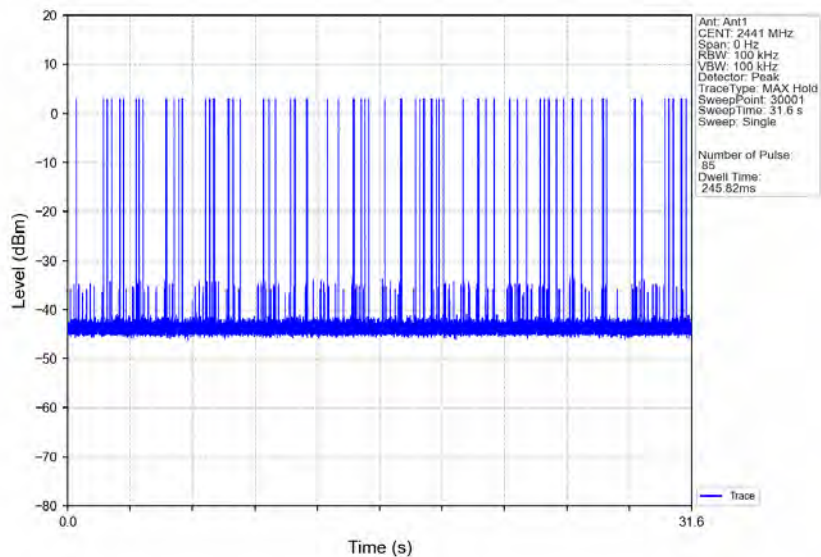
Report No.: KSC241000213802

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Pi/4DQPSK 2DH5 HOPP Ant1 NTN



Pi/4DQPSK 2DH5 HOPP Ant1 NTN



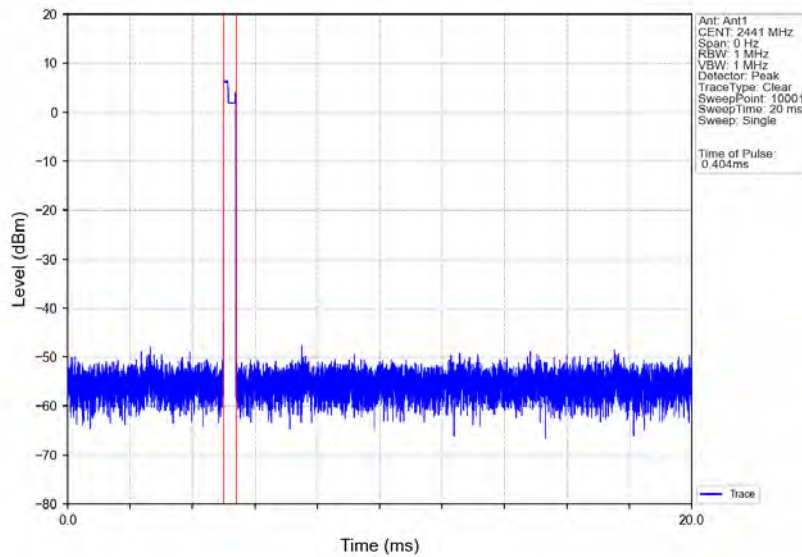
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

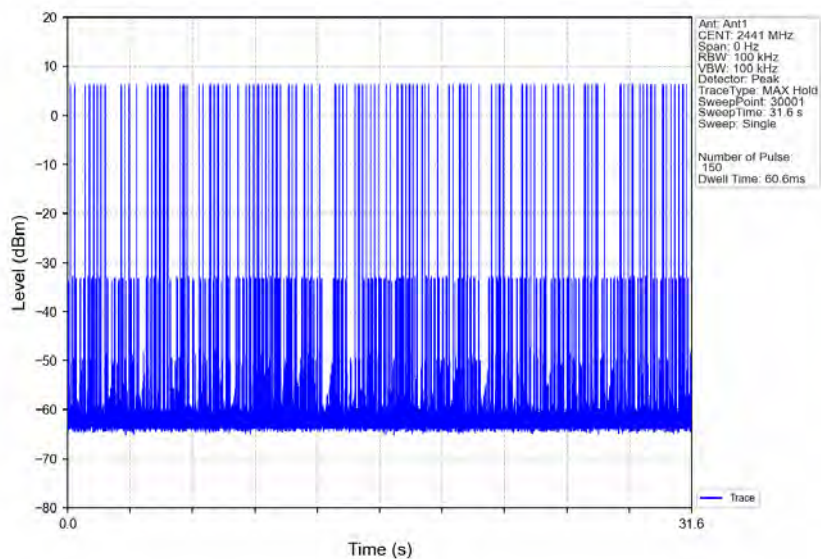
Report No.: KSC241000213802

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8DPSK 3DH1 HOPP Ant1 NTN



8DPSK 3DH1 HOPP Ant1 NTN



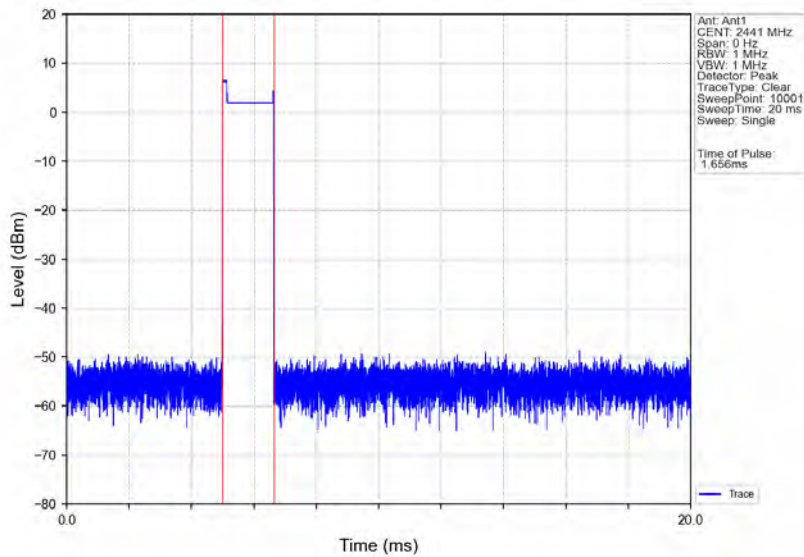
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

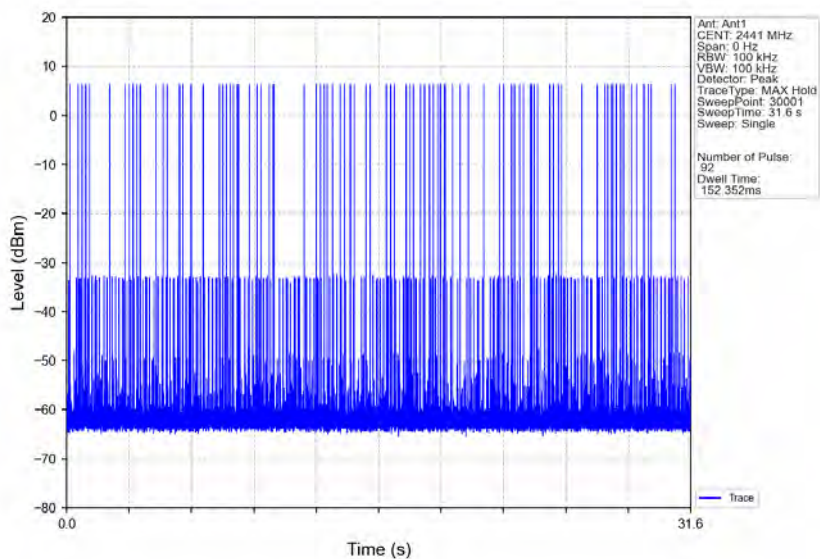
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8DPSK 3DH3 HOPP Ant1 NTN



8DPSK 3DH3 HOPP Ant1 NTN



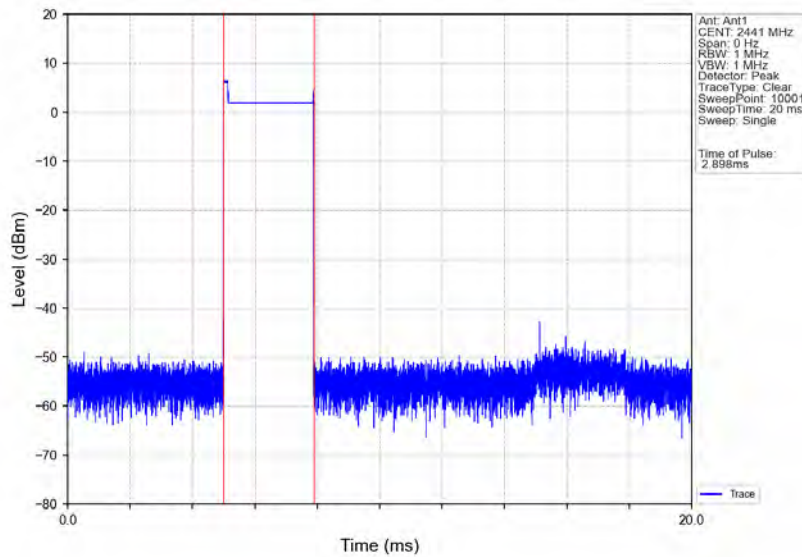
Compliance Certification Services (Kunshan) Inc.

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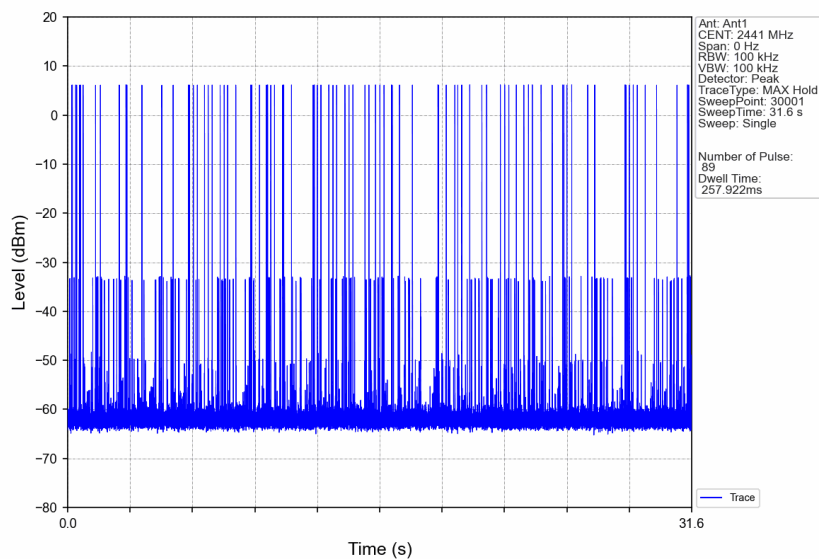
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8DPSK 3DH5 HOPP Ant1 NTN



8DPSK 3DH5 HOPP Ant1 NTN



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7. Unwanted Emissions In Non-restricted Frequency Bands

7.1 Test Result

7.1.1 Ref

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	3.32
		2441	DH5	1	4.02
		2480	DH5	1	2.60
Pi/4DQPSK	SISO	2402	2DH5	1	2.13
		2441	2DH5	1	3.32
		2480	2DH5	1	2.02
8DPSK	SISO	2402	3DH5	1	2.36
		2441	3DH5	1	6.03
		2480	3DH5	1	4.23

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

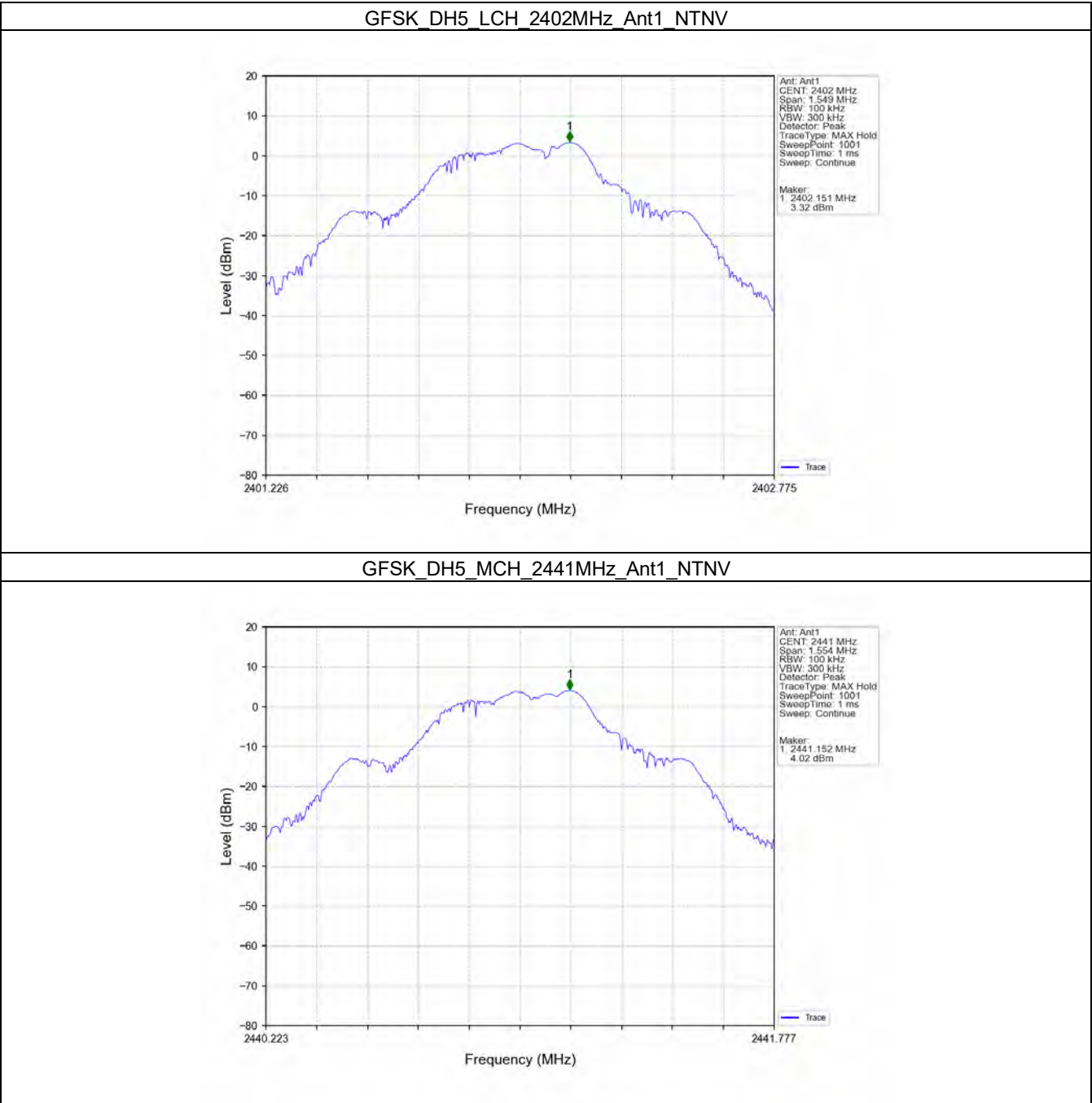
7.1.2 CSE

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	4.02	-15.98	Pass
		2441	DH5	1	4.02	-15.98	Pass
		2480	DH5	1	4.02	-15.98	Pass
		HOPP	DH5	1	4.02	-15.98	Pass
					4.02	-15.98	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	3.32	-16.68	Pass
		2441	2DH5	1	3.32	-16.68	Pass
		2480	2DH5	1	3.32	-16.68	Pass
		HOPP	2DH5	1	3.32	-16.68	Pass
					3.32	-16.68	Pass
8DPSK	SISO	2402	3DH5	1	6.03	-13.97	Pass
		2441	3DH5	1	6.03	-13.97	Pass
		2480	3DH5	1	6.03	-13.97	Pass
		HOPP	3DH5	1	6.03	-13.97	Pass
					6.03	-13.97	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

7.2 Test Graph

7.2.1 Ref



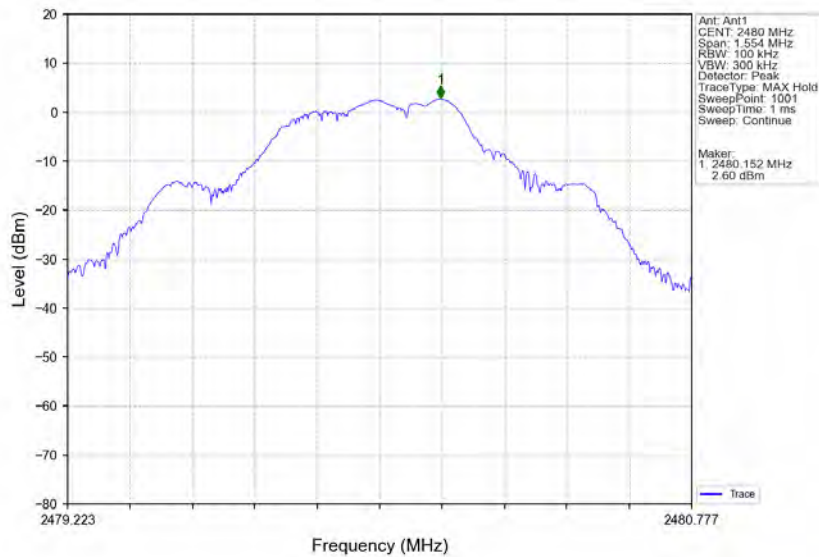
Compliance Certification Services (Kunshan) Inc.

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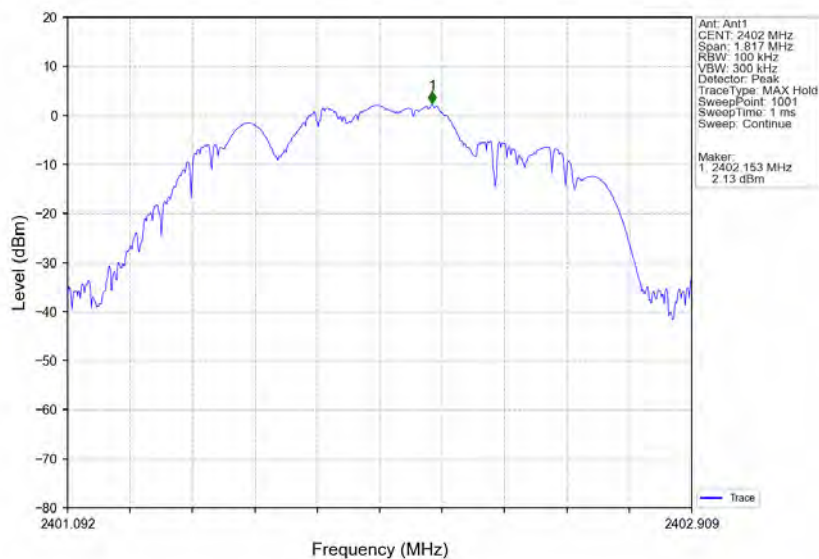
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GFSK DH5 HCH 2480MHz Ant1 NTV



Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTV



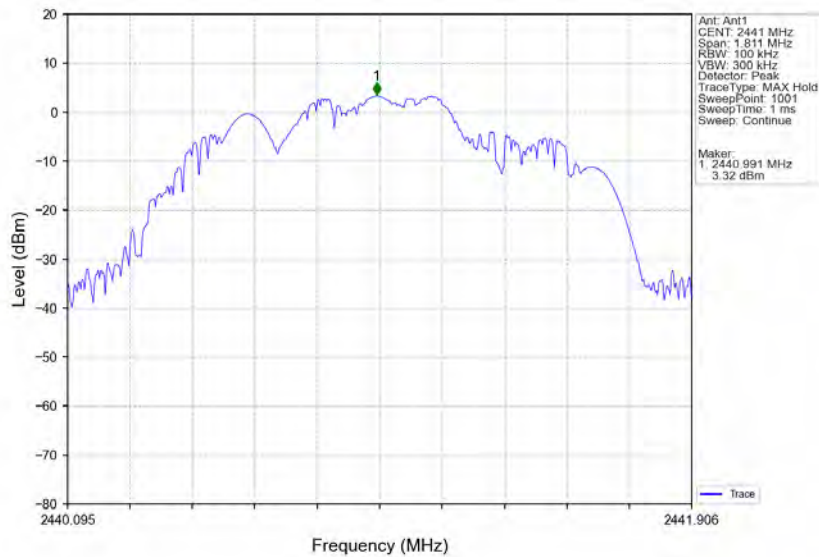
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

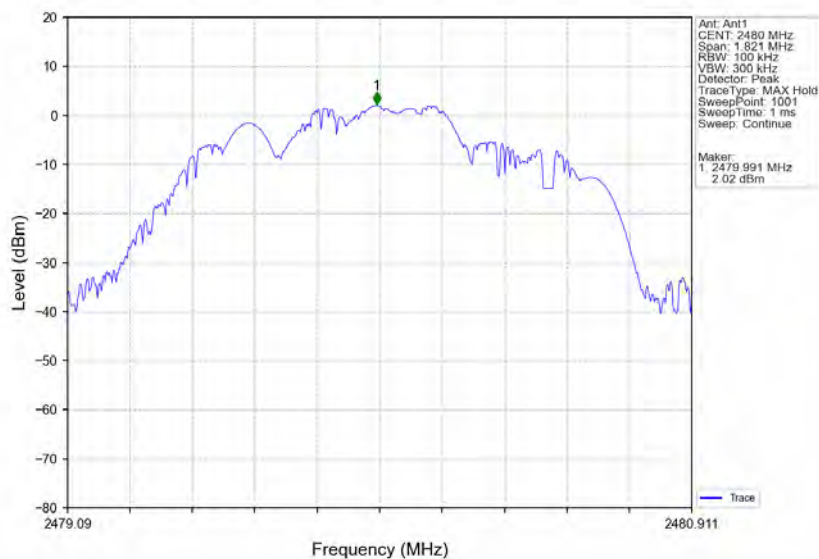
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Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTNV



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTNV



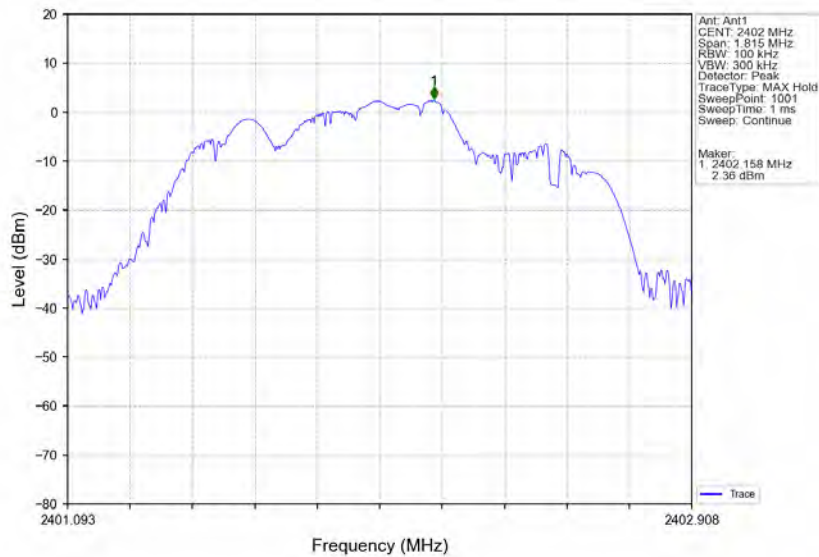
Compliance Certification Services (Kunshan) Inc.

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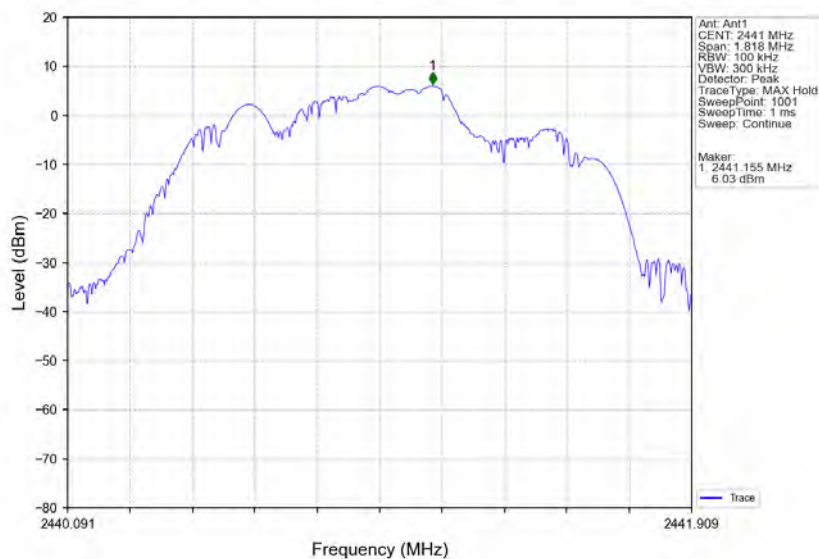
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8DPSK 3DH5 LCH 2402MHz Ant1 NTN



8DPSK 3DH5 MCH 2441MHz Ant1 NTN



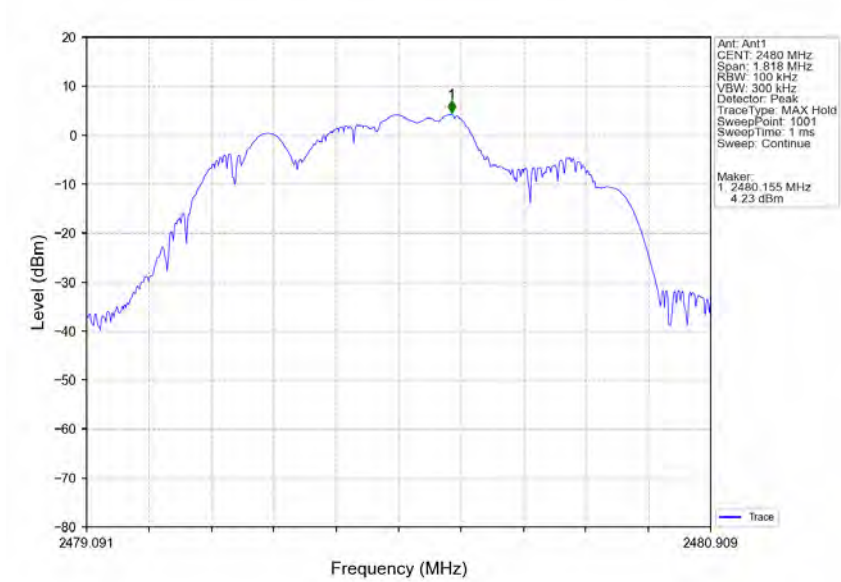
Compliance Certification Services (Kunshan) Inc.

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8DPSK 3DH5 HCH 2480MHz Ant1 NTN



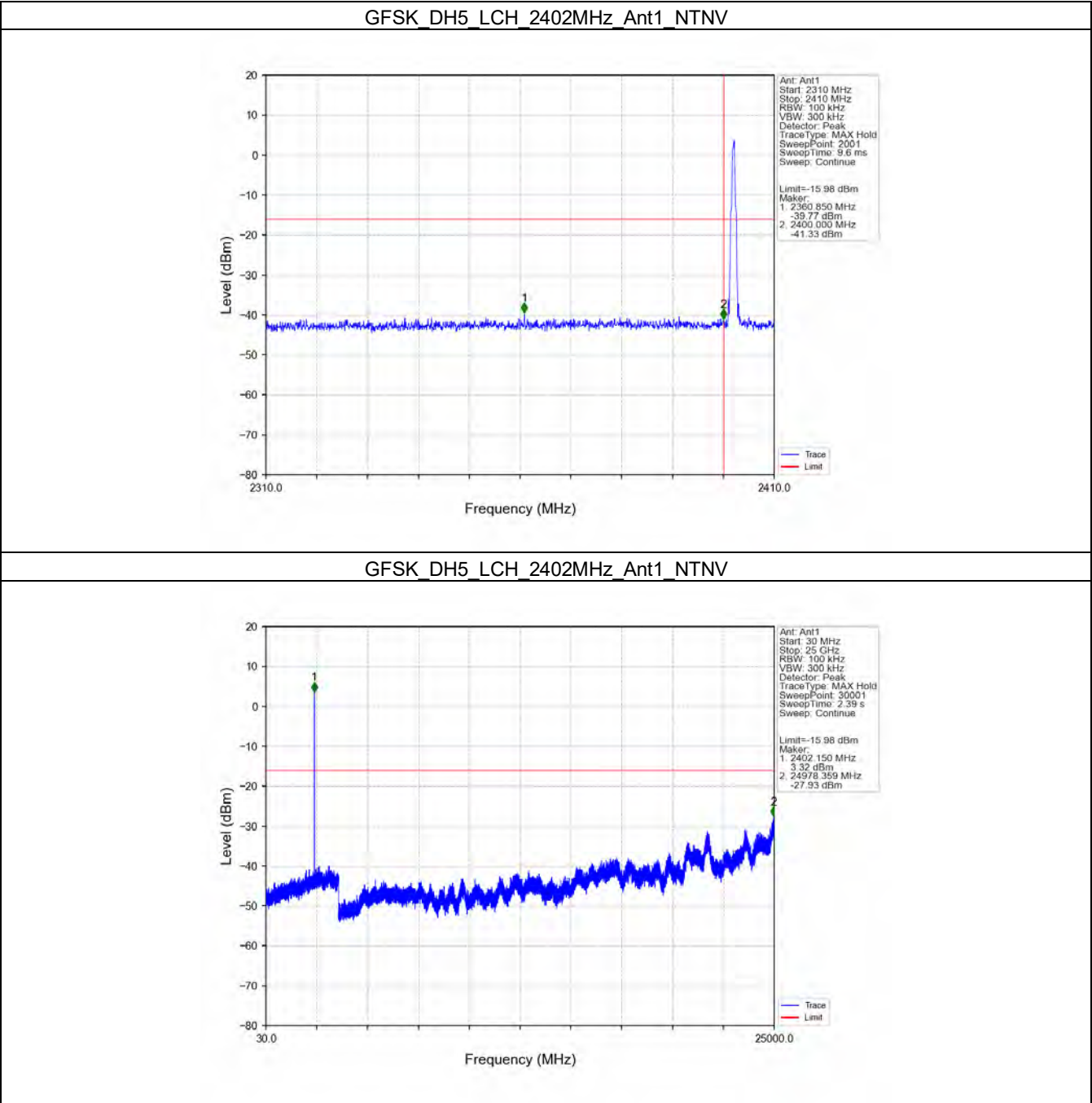
Compliance Certification Services (Kunshan) Inc.

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7.2.2 CSE



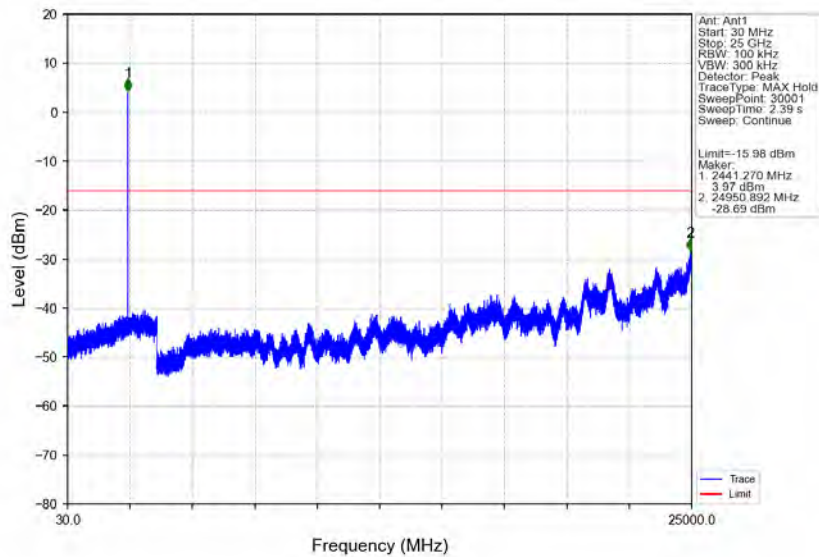
Compliance Certification Services (Kunshan) Inc.

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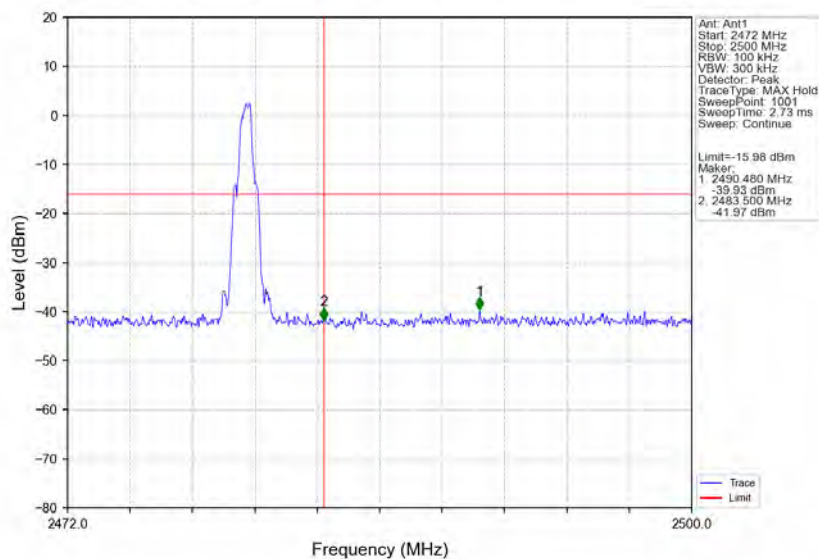
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GFSK DH5 MCH 2441MHz Ant1 NTNV



GFSK DH5 HCH 2480MHz Ant1 NTNV



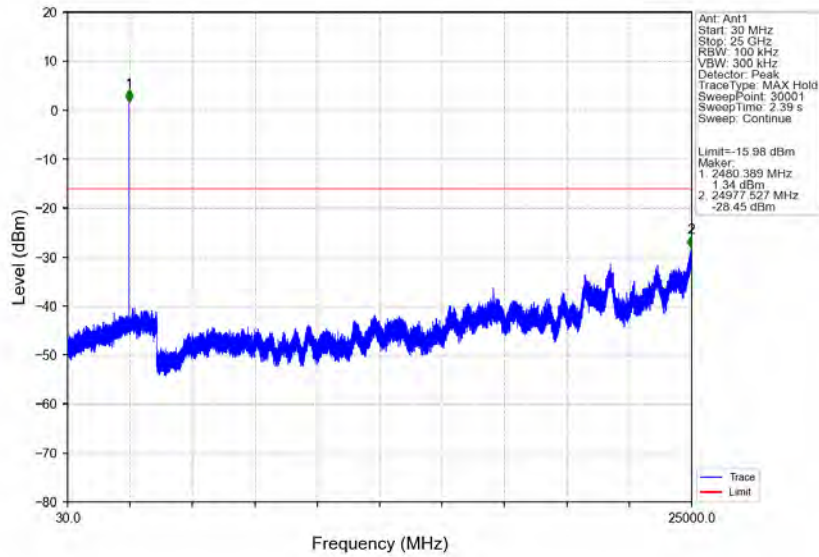
Compliance Certification Services (Kunshan) Inc.

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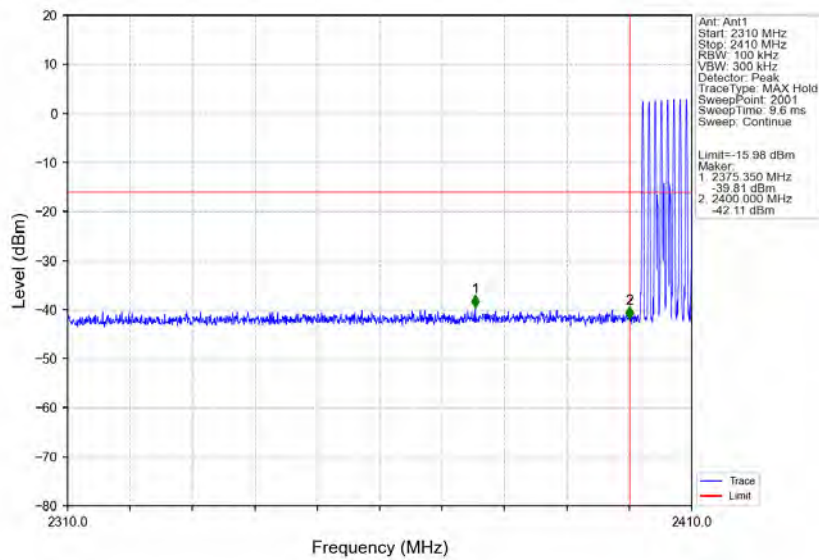
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GFSK DH5 HCH 2480MHz Ant1 NTNV



GFSK DH5 HOPP Ant1 NTNV



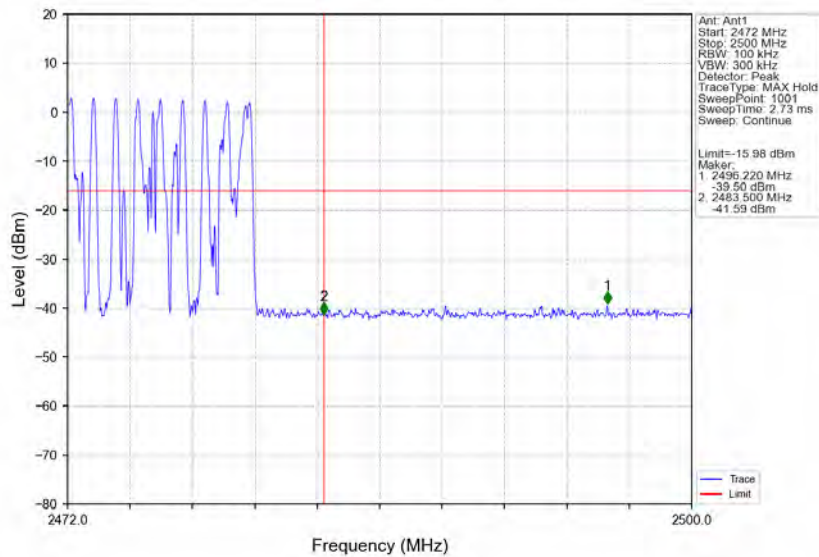
Compliance Certification Services (Kunshan) Inc.

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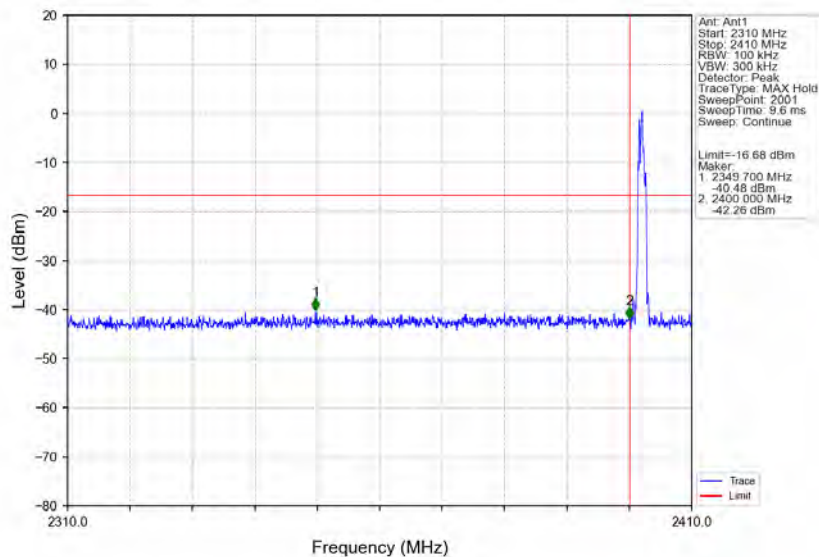
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GFSK DH5 HOPP Ant1 NTN



Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1 NTN



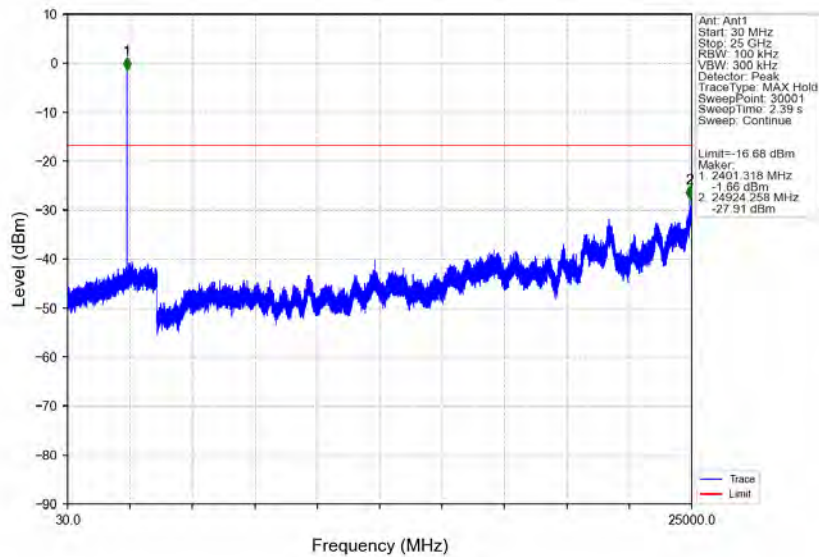
Compliance Certification Services (Kunshan) Inc.

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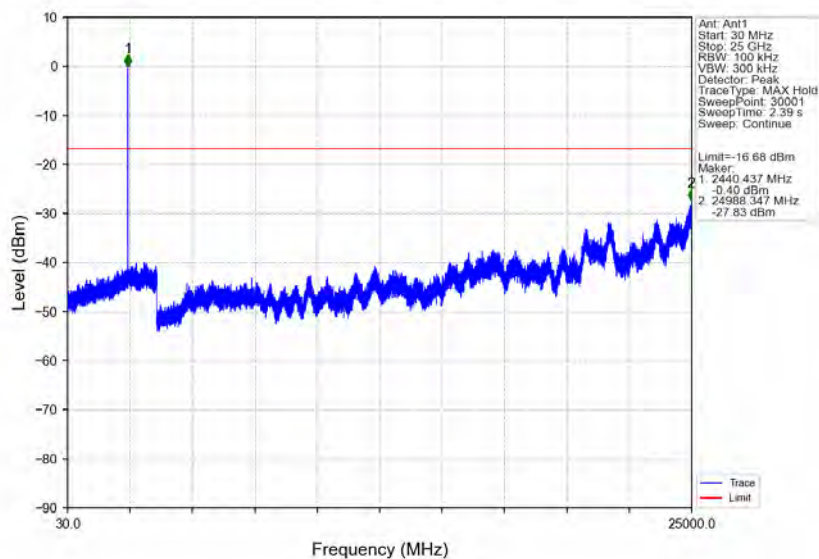
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Pi/4DQPSK 2DH5 LCH 2402MHz Ant1 NTN



Pi/4DQPSK 2DH5 MCH 2441MHz Ant1 NTN



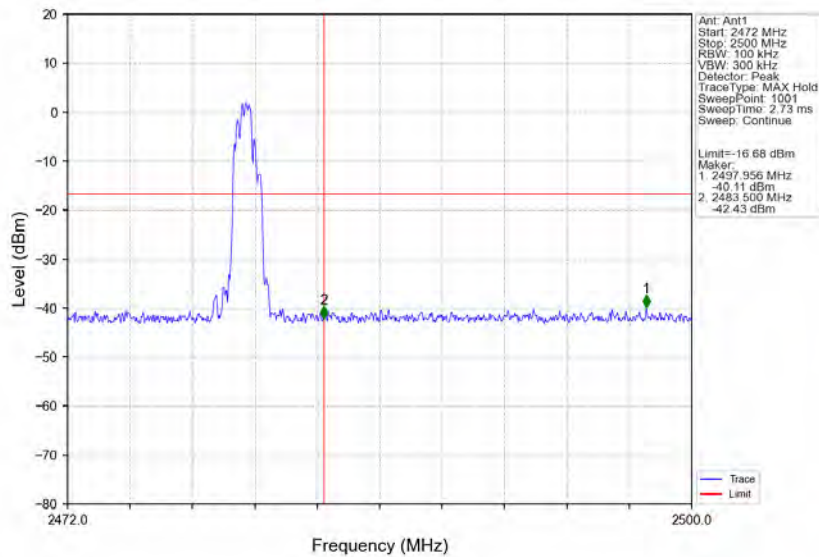
Compliance Certification Services (Kunshan) Inc.

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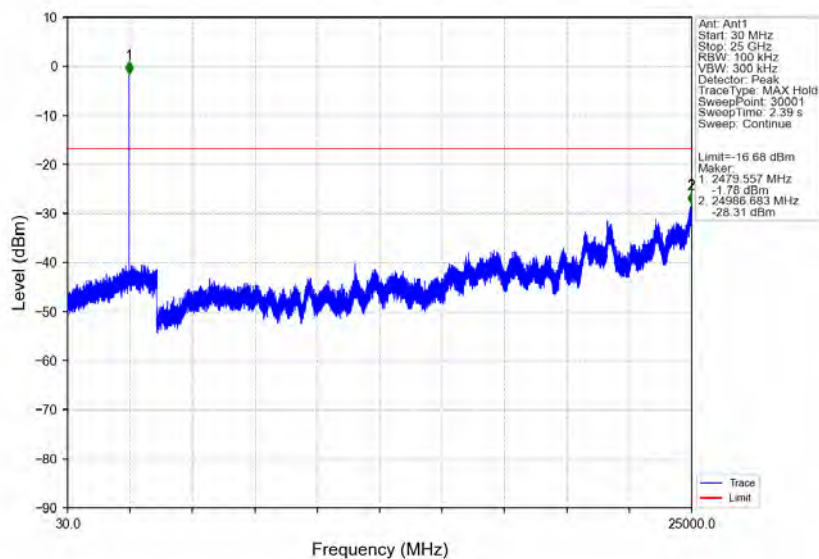
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Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN



Pi/4DQPSK 2DH5 HCH 2480MHz Ant1 NTN



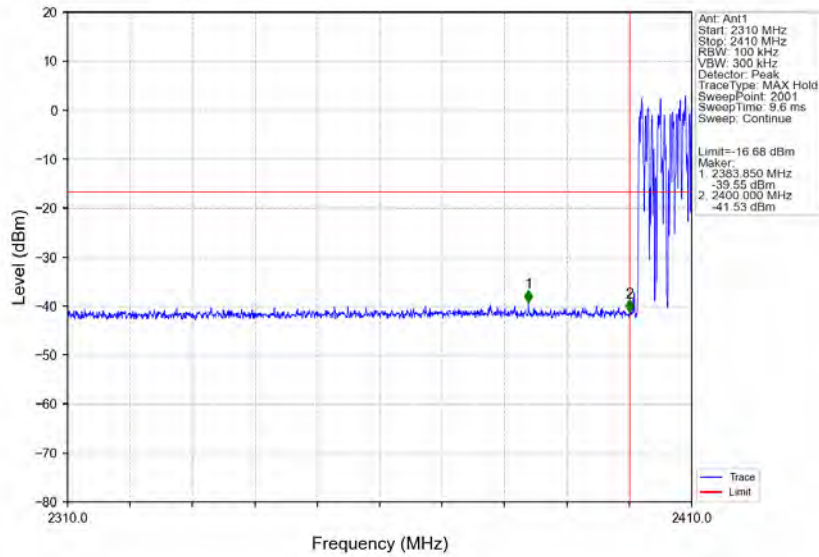
Compliance Certification Services (Kunshan) Inc.

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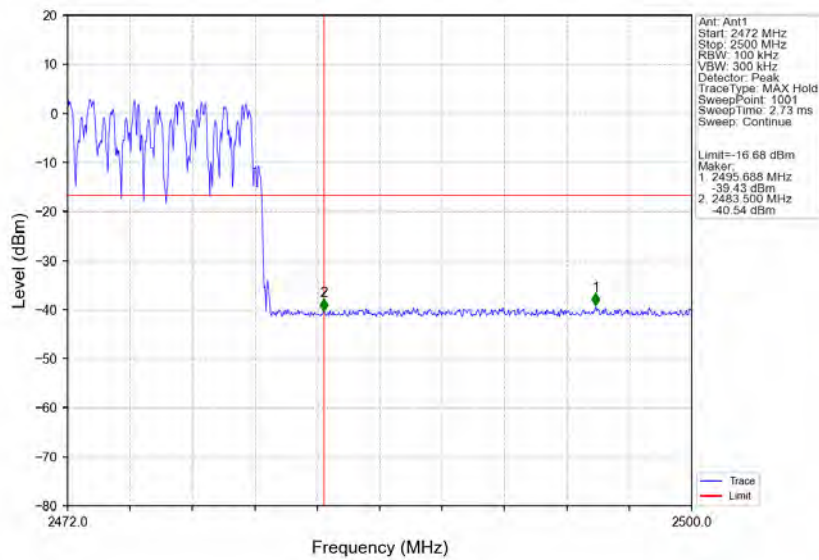
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Pi/4DQPSK 2DH5 HOPP Ant1 NTN



Pi/4DQPSK 2DH5 HOPP Ant1 NTN



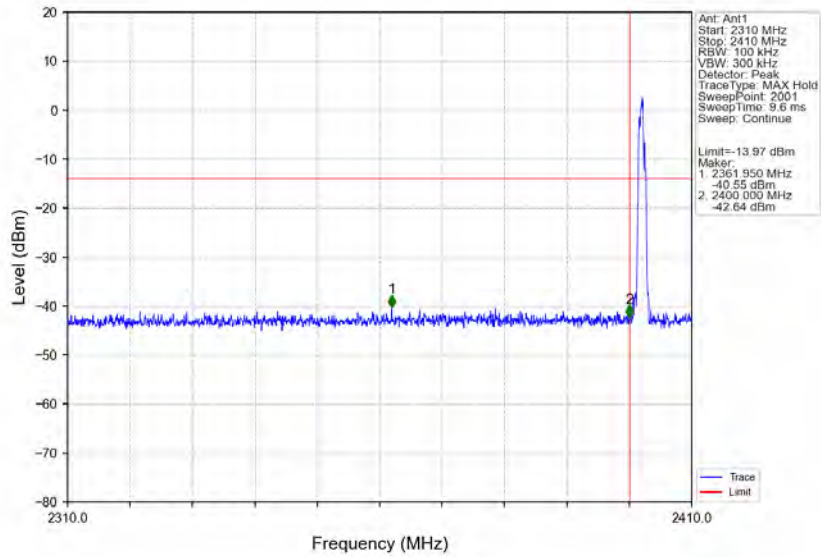
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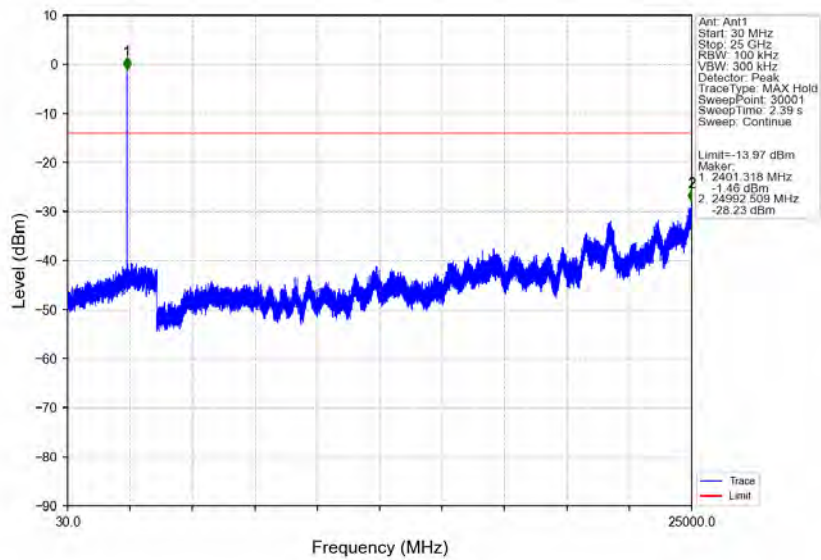
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8DPSK 3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



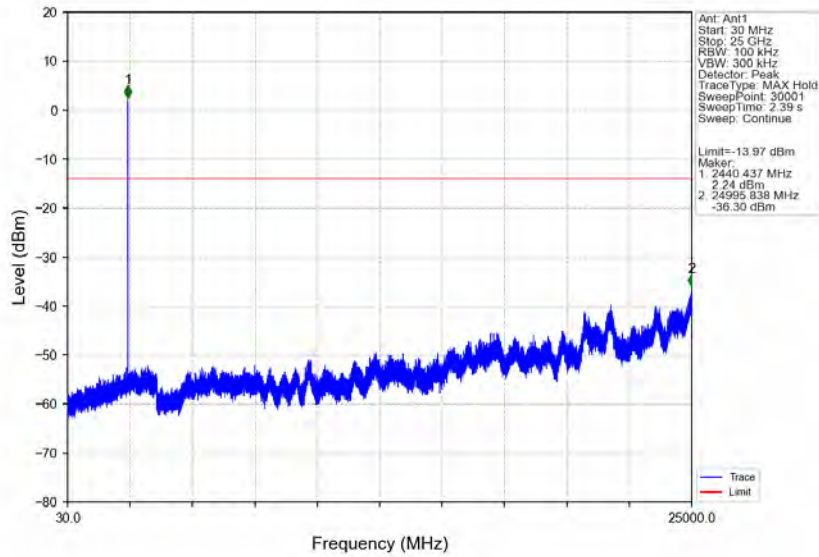
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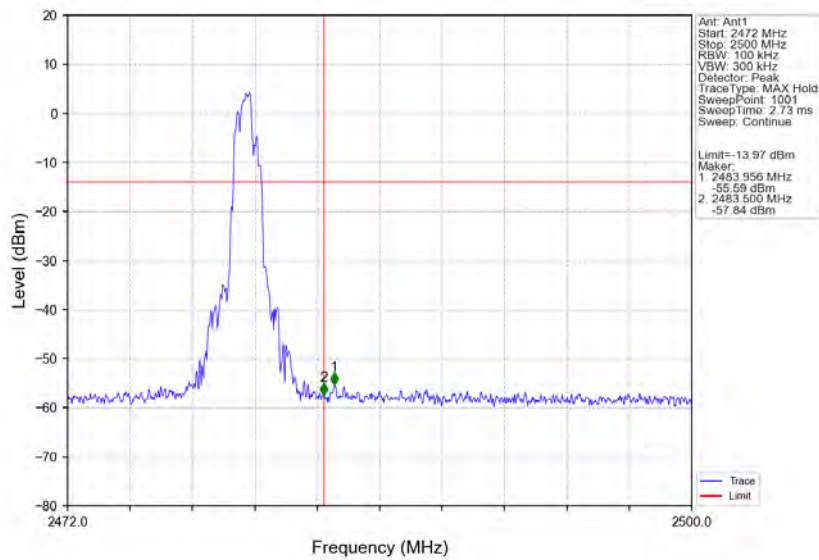
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8DPSK 3DH5 MCH 2441MHz Ant1 NTNV



8DPSK 3DH5 HCH 2480MHz Ant1 NTNV



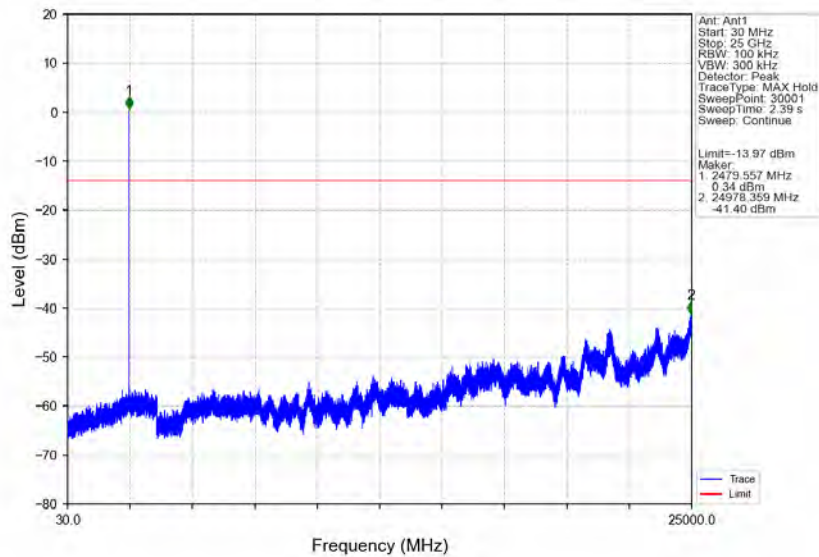
Compliance Certification Services (Kunshan) Inc.

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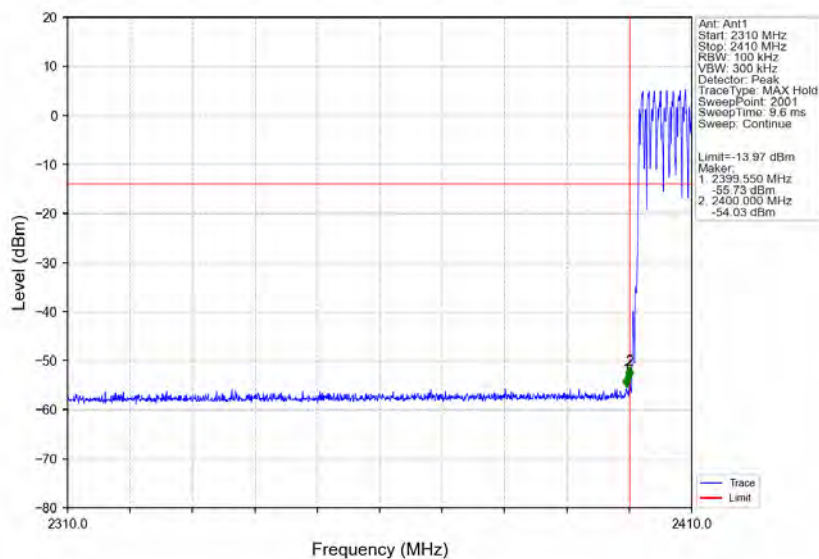
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8DPSK 3DH5 HCH 2480MHz Ant1 NTN



8DPSK 3DH5 HOPP Ant1 NTN

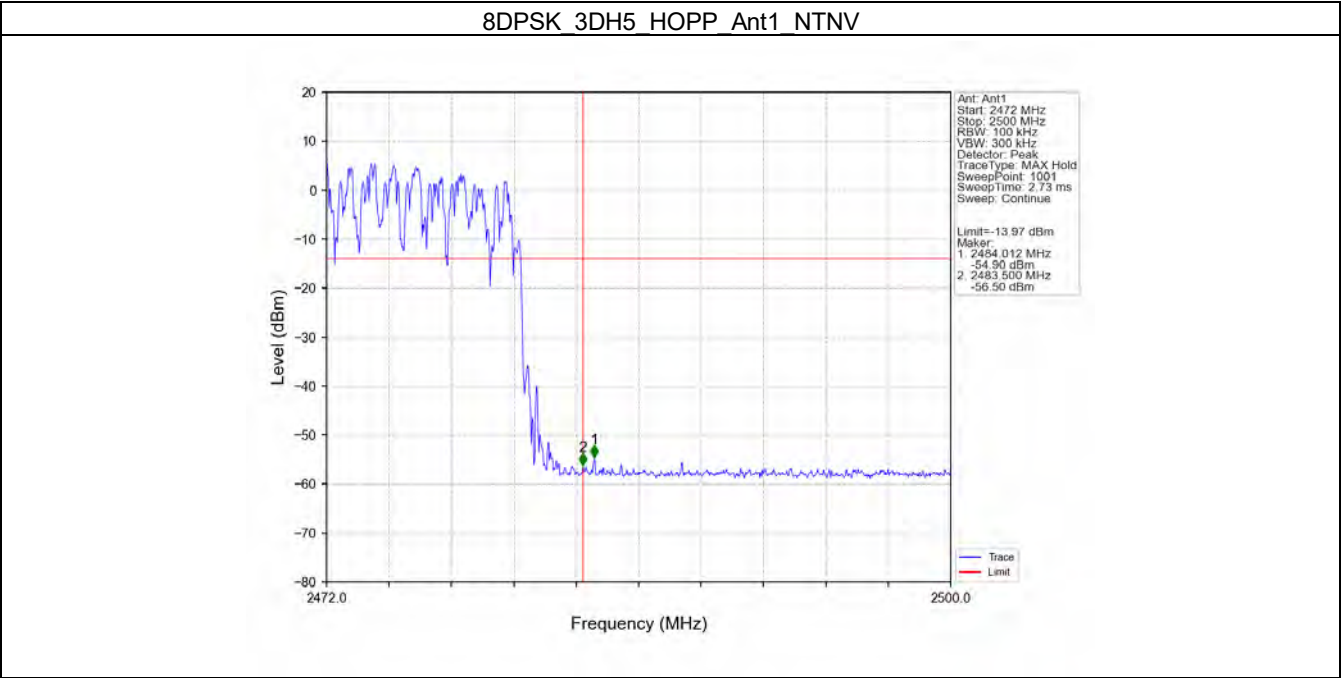


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- End of the Report -