Testing Laboratory
3024

Test Report No:
2450569R-RFUSV01S-A

TEST REPORT
FCC Rules&Regulations

Product Name	ICL V2
Brand Name	ICE CONNECT
Model No.	V02RCXITG
FCC ID	2AXBO-V02RCXITG
Applicant´s Name / Address	Unabiz Co Ltd Neihu District, 618 Ruiguang Road, 10th floor, Taipei, Taiwan
Manufacturer's Name / Address	Unabiz Co Ltd Neihu District, 618 Ruiguang Road, 10th floor, Taipei, Taiwan
Test Method Requested, Standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247 ANSI C63.10-2013
Verdict Summary	IN COMPLIANCE
Documented By	Amelia Wu
Approved By	Allen Lin
Date of Receipt	May 23, 2024
Date of Issue	Dec. 09, 2024
Report Version	V1.0

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Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.
In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

General Conditions

1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Dec. 09, 2024

Summary of Test Result

Report Clause	Test Items	Result (PASS/FAIL)	Remark
-	AC Power Line Conducted Emission	N/A	Note
3	20dB Bandwidth	PASS	-
4	Carrier Frequency Separation	PASS	-
5	Maximum Conducted Output Power	PASS	-
6	Number of Hopping Frequency	PASS	-
7	Dwell Time	PASS	-
8	Antenna Port Conducted Emission	PASS	-
9	Transmitter Radiated Spurious Emission	PASS	-
Note: The EUT was powered by DC 3.6V (battery). It's not necessary to apply to AC Power Line Conducted Emission test.			

Comments and Explanations
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Comments and Remarks

The product specification and testing instructions for the EUT declared in the report are provided by the manufacturer who will take all responsibilities for the accuracy.

1. General Information

1.1. EUT Description

Frequency Range	902 ~ 928 MHz
Operating Frequency	902.3 ~ 914.9 MHz
Channel Spacing	200 kHz
Channel Bandwidth	125 kHz
Channel Number	64 Channels
Type of Modulation	LoRa-CSS

Accessories Information					
No.	Equipment Name	Brand Name	Model No.	Rating	Remark
1	Battery (Blue)	Sunmoon	ER14505-2CW-S	DC 3.6V, 5.2Ah, 18.72wh	Non-rechargeable
2	EVE Battery (Black)	EVE	F1080B-LF	DC 3.6V, 5.4Ah	Non-rechargeable (Second Source)
No.	Equipment Name	Brand Name	Model No.	Description	
3	CT Clamp	Thousand Hundred Industrial CO.,LTD.	CT241100ML16	-	
4	Temperature sensor	HUIZHOU JIN YUAN XIANG ELECTRONIC CO., LTD.	JYX-JGX18B20-GK -HT2050-240219C	-	

Antenna Information				
Ant.	Brand Name	Model No.	Type	Gain (dBi)
1	ARISTOTLE	RFA-S89-T355-2.5M-R2	PIFA	2.15

Working Frequency of Each Channel (125kHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	902.3	12	904.7	24	907.1	36	909.5
01	902.5	13	904.9	25	907.3	37	909.7
02	902.7	14	905.1	26	907.5	38	909.9
03	902.9	15	905.3	27	907.7	39	910.1
04	903.1	16	905.5	28	907.9	40	910.3
05	903.3	17	905.7	29	908.1	41	910.5
06	903.5	18	905.9	30	908.3	42	910.7
07	903.7	19	906.1	31	908.5	43	910.9
08	903.9	20	906.3	32	908.7	44	911.1
09	904.1	21	906.5	33	908.9	45	911.3
10	904.3	22	906.7	34	909.1	46	911.5
11	904.5	23	906.9	35	909.3	47	911.7

Working Frequency of Each Channel (125kHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
48	911.9	52	912.7	56	913.5	60	914.3
49	912.1	53	912.9	57	913.7	61	914.5
50	912.3	54	913.1	58	913.9	62	914.7
51	912.5	55	913.3	59	914.1	63	914.9

1.2. EUT Information

EUT Power Type	From Battery			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point

1.3. Testing Applied Standards

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

- 47 CFR FCC Part 15
  ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- KDB 558074 D01 v05r02
- KDB 414788 D01 v01r01

1.4. Testing Location Information

Testing Location Information		
Test Laboratory：DEKRA Testing and Certification Co., Ltd.		
	1 (TAF: 3024)	ADD: No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. TEL: +886-3-582-8001 FAX: +886-3-582-8958 Test site Designation No. TW3024 with FCC. Conformity Assessment Body Identifier (CABID) TW3024 with ISED.
	2 (TAF: 3024)	ADD: No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. TEL: +886-3-582-8001 FAX: +886-3-582-8958 Test site Designation No. TW3024 with FCC. Conformity Assessment Body Identifier (CABID) TW3024 with ISED.
Test site number for address 1 includes HC-SR02. Test site number for address 2 includes HC-CB02, HC-CB03, HC-CB04, HC-SR10 and HC-SR12.		

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted Emission	HC-SR12	Max Chang	23 / 62	2024/10/22
Radiated Emission	HC-CB02	Scott Chang	21.1~22.1 / 55~61	2024/10/25~2024/10/26

1.5. Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2).

Test item	Uncertainty
20dB Bandwidth	± 282.55 Hz
Carrier Frequency Separation	± 282.55 Hz
Maximum Conducted Output Power	± 1.16 dB
Number of Hopping Frequency	N/A
Dwell Time	± 19.555 msec
Antenna Port Conducted Emission	± 2.47 dB
Transmitter Radiated Spurious Emission	± 3.52 dB below 1 GHz ± 3.56 dB above 1 GHz

1.6. List of Test Equipment

HC-SR12

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Cal. Date	Next Cal. Date
High Speed Peak Power Meter Dual Input	Anritsu	ML2496A	1602004	0.3-40 GHz	2023/10/25	2024/10/24
Pulse Power Sensor	Anritsu	MA2411B	1531043	0.3-40 GHz	2023/10/25	2024/10/24
Signal & Spectrum Analyzer	R&S	FSV40	101869	10Hz-40GHz	2024/06/20	2025/06/19

HC-CB02

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Cal. Date	Next Cal. Date
Signal and Spectrum Analyzer	R&S	FSVA40	101435	10 Hz-40 GHz	2024/05/17	2025/05/16
Trilog Broadband Antenna	Schwarzbeck	VULB 9168	1272	30 MHz-2 GHz	2024/04/29	2025/04/28
Double Ridged Horn Antenna	RF SPIN	DRH18-E	211211A18EN	1G-18GHz	2023/11/09	2024/11/08
Horn Antenna	Schwarzbeck	BBHA 9170	203	18G-40GHz	2024/02/02	2025/02/01
Pre-Amplifier	EMCI	EMC01820I	980365	30M-8 GHz,20 dB	2024/04/02	2025/04/01
Pre-Amplifier	EMEC	EM01G18GA	060741	1G-18 GHz,50 dB	2024/04/23	2025/04/22
Pre-Amplifier	DEKRA	AP-400C	201801231	18G-40 GHz,48 dB	2024/10/15	2025/10/14
EMI Test Receiver	R&S	ESR7	102260	10 Hz-7 GHz	2023/11/27	2024/11/26
Magnetic Loop Antenna	Teseq	HLA 6121	44287	0.01-30 MHz	2024/10/17	2025/10/16
Coaxial Cable	Huber+Suhner	SF104	HC-CB02	30 MHz-18 GHz, 13m	2024/08/13	2025/08/12
Coaxial Cable	Huber+Suhner ,Rosnol	SF102_UP0264	HC-CB02-1	18-40 GHz, 3 m	2024/08/13	2025/08/12
Radiated Software	Audix	e3 V9	HC-CB02_1	N/A	N/A	N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2. Test Configuration of EUT

2.1. Test Condition

EUT Operational Condition	
Testing Voltage	DC 3.6V

2.2. Test Frequency Mode

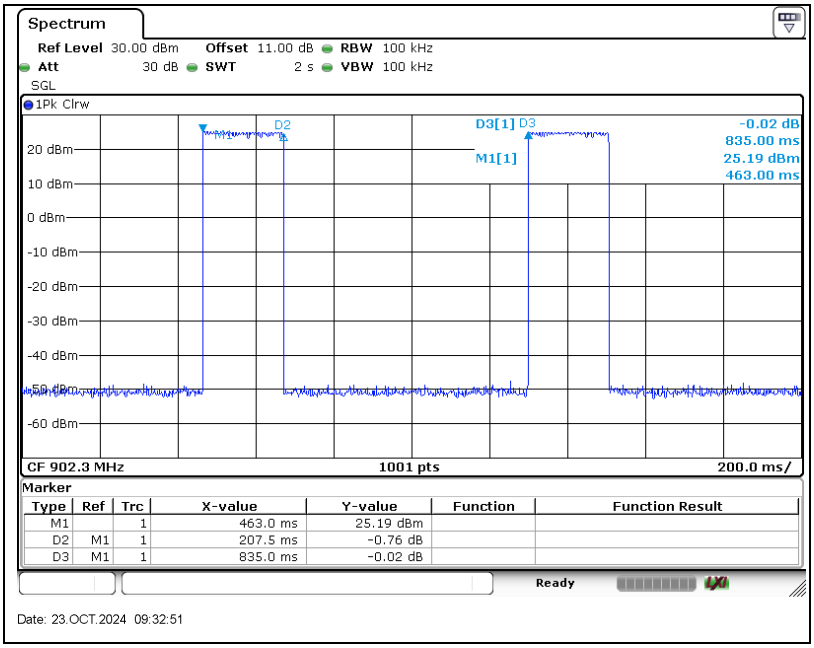
Test Software Version	TeraTerm 4.106

Modulation	Frequency (MHz)	Power Setting
CSS (125kHz)	902.3	10
	908.5	8
	914.9	10

2.3. Duty Cycle

Modulation	On Times (ms)	On+Off Times (ms)	Duty Cycle (%)	Duty Factor (dB)
CSS (125kHz)	0.207	0.835	24.79	-12.11

Note: If the duty cycle correction factor lower than -20dB, the Max. duty cycle correction factor is -20dB.



2.4. The Worst Case Measurement Configuration

Tests Item	20dB Bandwidth Carrier Frequency Separation Maximum Conducted Output Power Number of Hopping Frequency Dwell Time Antenna Port Conducted Emission
Test Condition	Conducted measurement at transmit chains

Tests Item	Transmitter Radiated Spurious Emission
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Transmit
Operating Mode > 1GHz	Transmit
The EUT was performed at X axis, Y axis and Z axis position for adiated spurious emission test. The worst case was found at Y axis, so the measurement will follow this same test configuration.	

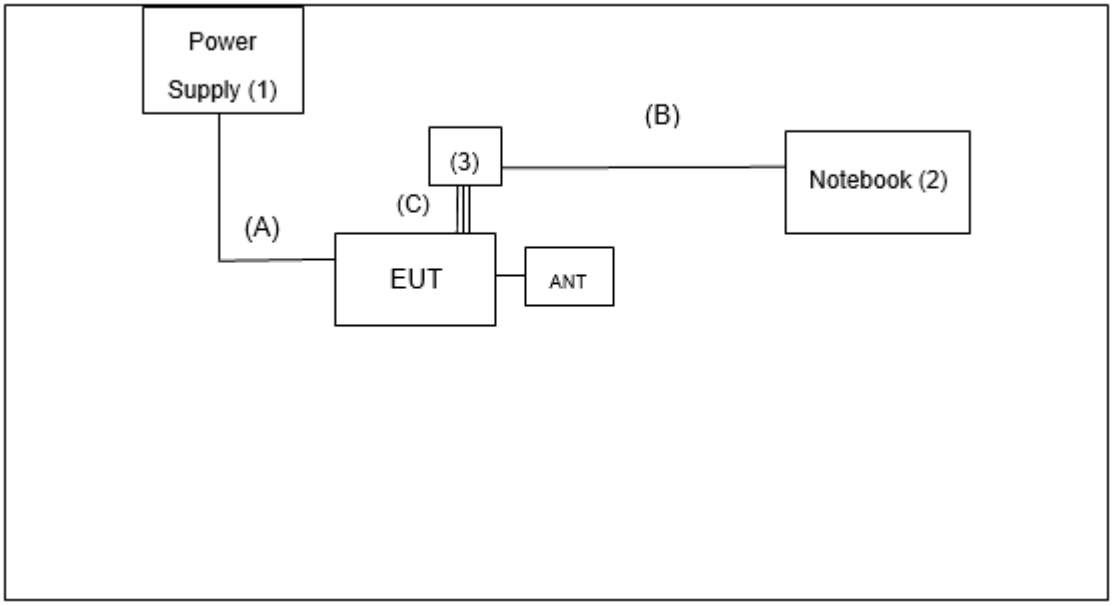
Note:
1. Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

2.5. Tested System Details

No.	Equipment	Brand Name	Model No.	Serial No.
1	Power Supply	Topward	6303D	809497
2	Notebook	Lenovo	Lenovo Ideapad 110 15IBR	PF01EUZD
3	USB to TTL FT232RL +3PIN Cable	N/A	N/A	N/A

2.6. Configuration of Tested System

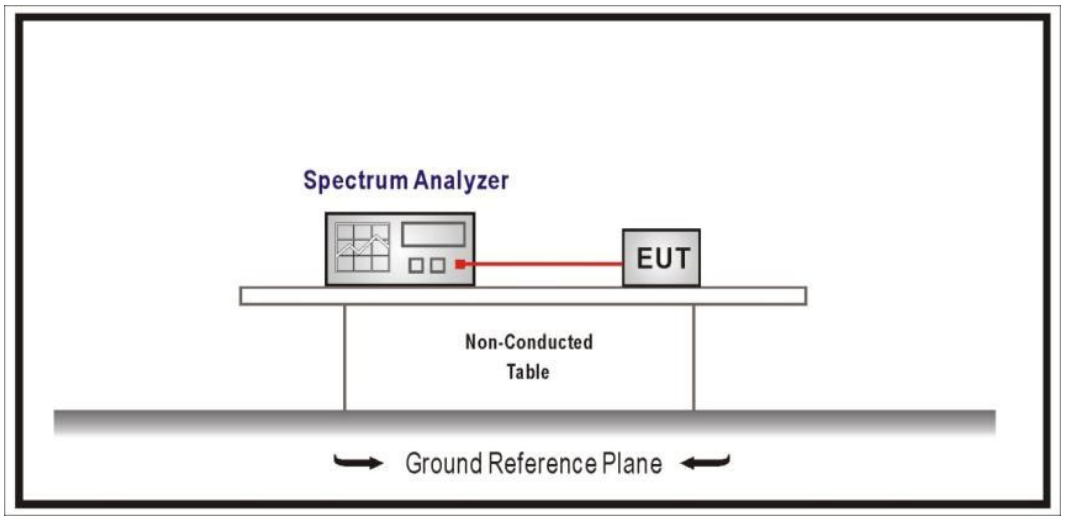
Connection Diagram



Signal Cable Type		Signal cable Description
A	DC Cable*2	Non-Shielded, 1.82m
B	USB to Mini B Cable*1	Non-Shielded, 1m
C	3PIN Cable*3	Non-Shielded, 0.4m

3. 20dB Bandwidth

3.1. Test Setup



3.2. Test Limit

N/A

3.3. Test Procedures

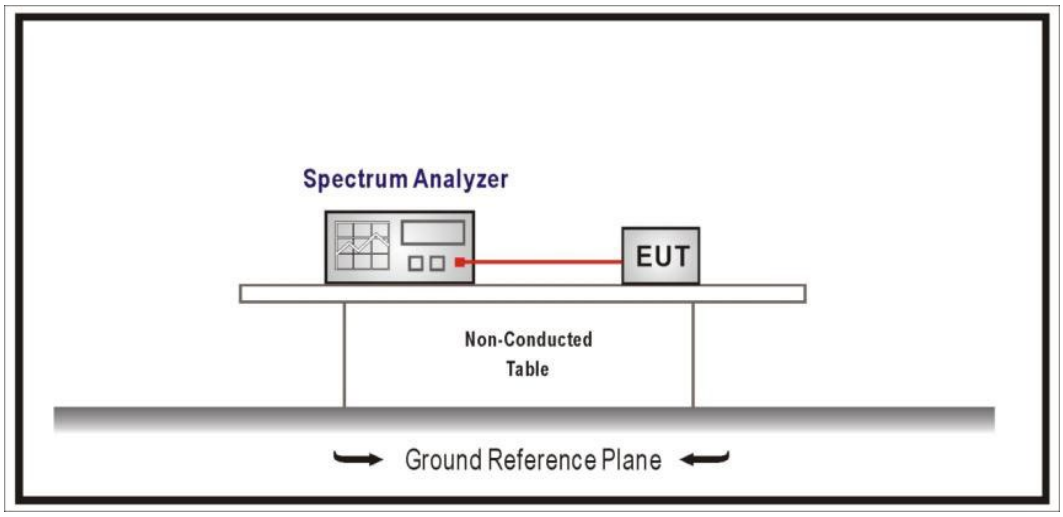
The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of KDB 558074.

3.4. Test Result of 20dB Bandwidth

Refer as Appendix A

4. Carrier Frequency Separation

4.1. Test Setup



4.2. Test 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 Maximum Conducted Output Power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly 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.

4.3. Test Procedures

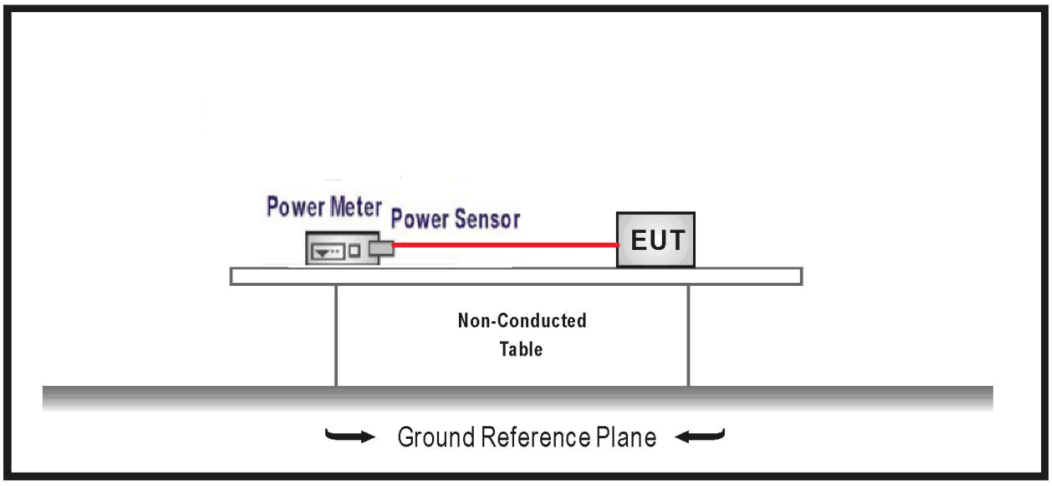
The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of KDB 558074.

4.4. Test Result of Carrier Frequency Separation

Refer as Appendix B

5. Maximum Conducted Output Power

5.1. Test Setup



5.2. Test Limit

For frequency hopping systems operating in the 902 ~ 928 MHz band:

1. Number of Hopping Frequencies ≥50: 1 watt (30dBm)
2. 50 > Number of Hopping Frequencies ≥25: 0.25 watt (23.98dBm)

For frequency hopping systems operating in the 2400 ~ 2483.5 MHz band:

1. Number of Hopping Frequencies ≥75: 1 watt (30dBm)
2. 75 > Number of Hopping Frequencies ≥15: 0.125 watts (20.97dBm)

For frequency hopping systems operating in the 5725 ~ 5850 MHz band:

Number of Hopping Frequencies ≥75: 1 watt (30dBm)

5.3. Test Procedures

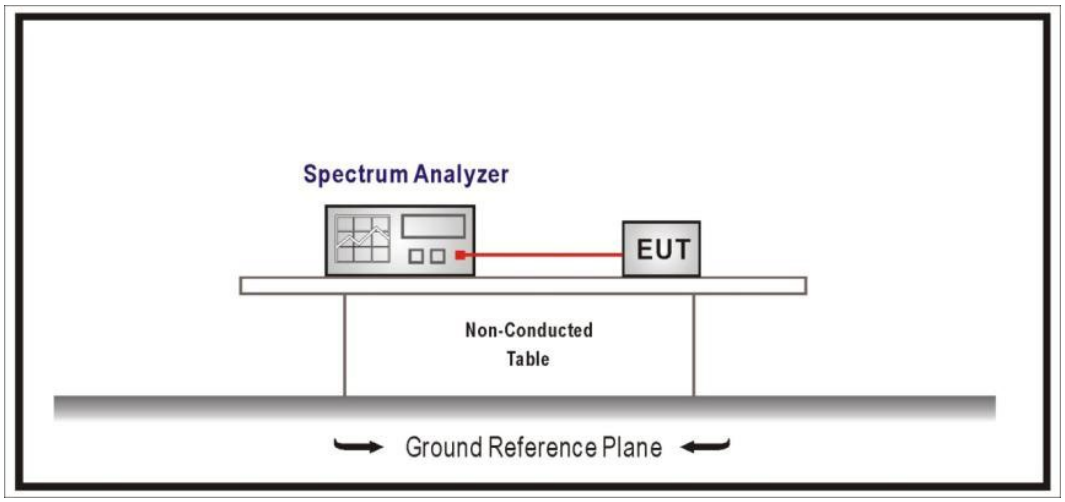
The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of KDB 558074.

5.4. Test Result of Maximum Conducted Output Power

Refer as Appendix C

6. Number of Hopping Frequency

6.1. Test Setup



6.2. Test Limit

For frequency hopping systems operating in the 902 ~ 928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Frequency hopping systems in the 2400 ~ 2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Frequency hopping systems operating in the 5725 ~ 5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

6.3. Test Procedure

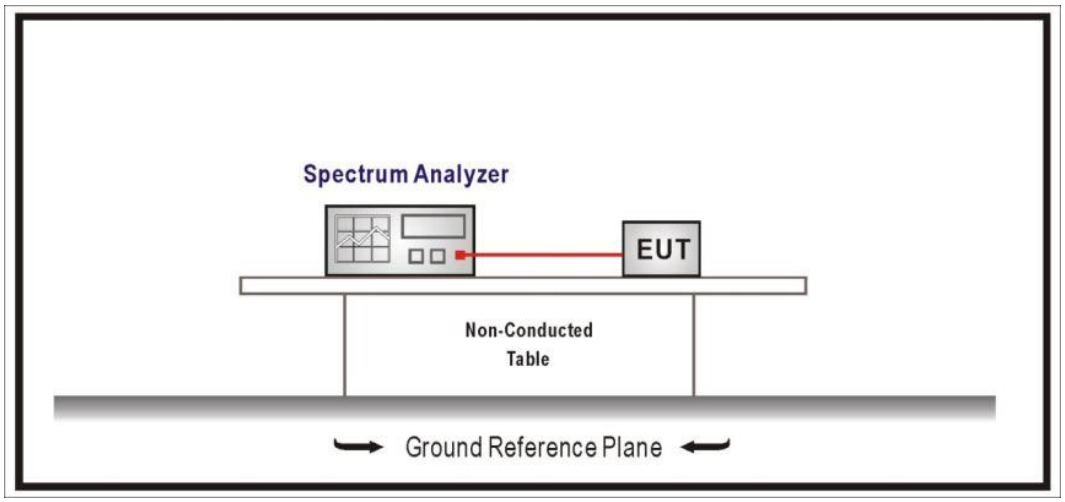
The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of KDB 558074.

6.4. Test Result of Number of Hopping Frequency

Refer as Appendix D

7. Dwell Time

7.1. Test Setup



7.2. Test Limit

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

For frequency hopping systems operating in the 2400-2483.5 MHz bands. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

For frequency hopping systems operating in the 5725-5850 MHz bands. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

7.3. Test Procedure

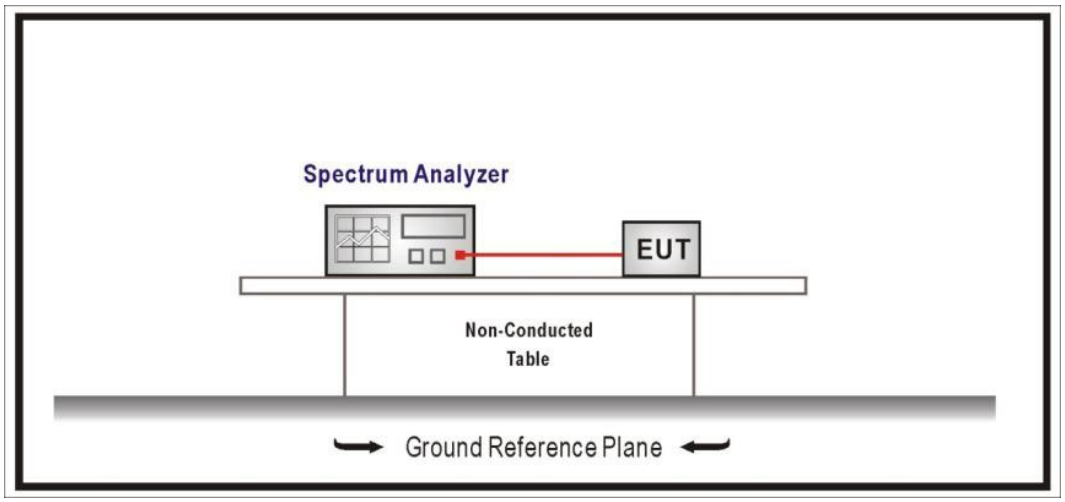
The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of KDB 558074.

7.4. Test Result of Dwell Time

Refer as Appendix E

8. Antenna Port Conducted Emission

8.1. Test Setup



8.2. Test Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the radio frequency power that is produced 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 measurement, provided the transmitter demonstrates compliance with the peak conducted power limit.

8.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of KDB 558074.

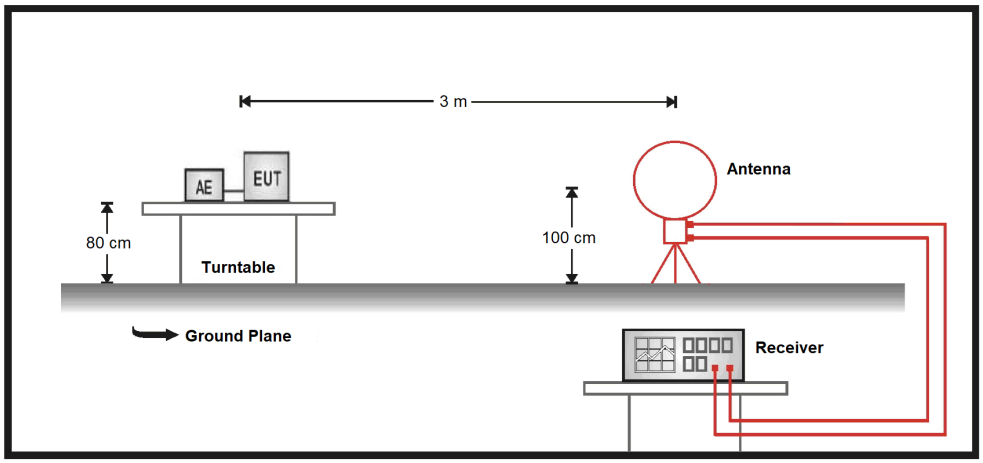
8.4. Test Result of Antenna Port Conducted Emission

Refer as Appendix F

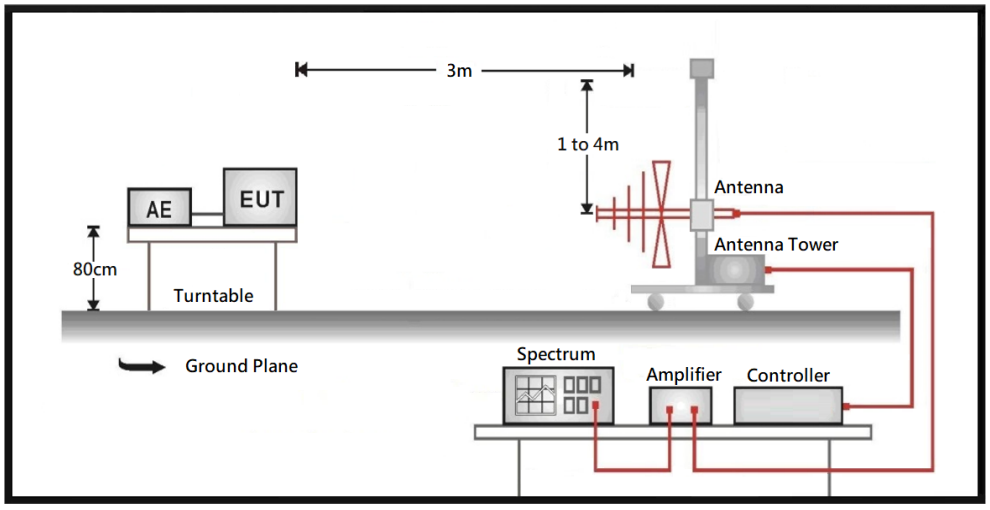
9. Transmitter Radiated Spurious Emission

9.1. Test Setup

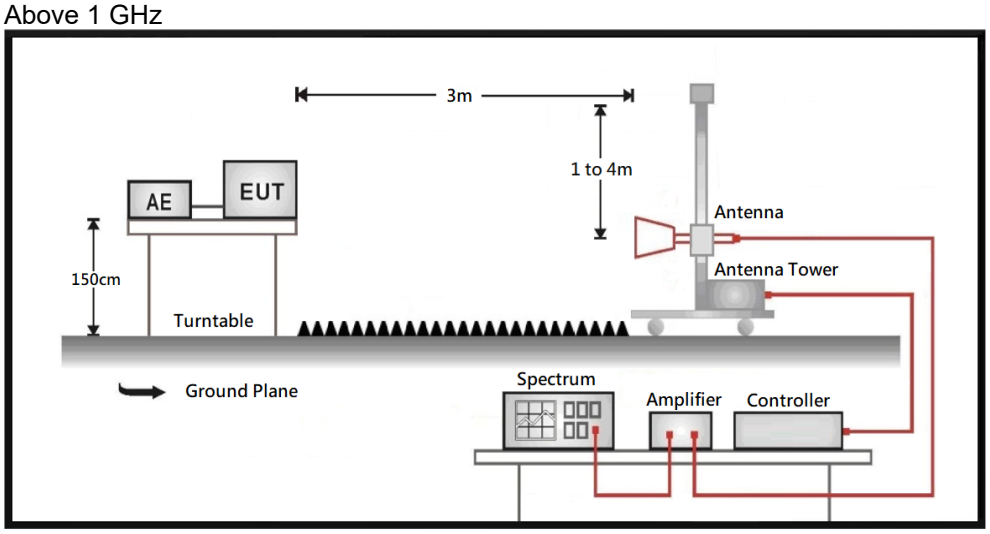
9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



Above 1 GHz



9.2. Test Limit

Frequency (MHz)	Field strength (uV/m)	Field strength (dBuV/m)	Measurement distance (m)
0.009 – 0.490	2400/F(kHz)	20 log (2400/F(kHz))	300
0.490 – 1.705	24000/F(kHz)	20 log (24000/F(kHz))	30
1.705 - 30	30	29.5	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

Remarks:

1. Field strength (dBuV/m) = 20 log Field strength (uV/m)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

9.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of KDB 558074.

The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

On any frequency or frequencies form 9 kHz(inculde The the lowest oscillator frequency generated within the device up to the 10th harmonic) to 1000 MHz, the limit shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limit shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

The bandwidth below 1 GHz setting on the field strength meter is 120 kHz and above 1 GHz is 1 MHz.

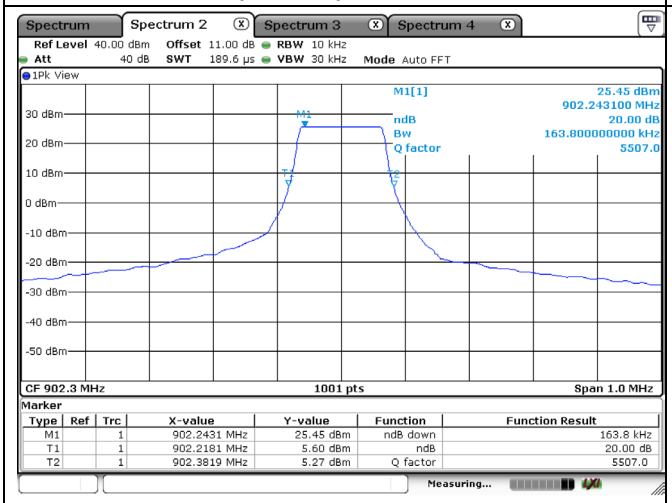
9.4. Test Result of Transmitter Radiated Spurious Emission

Refer as Appendix G

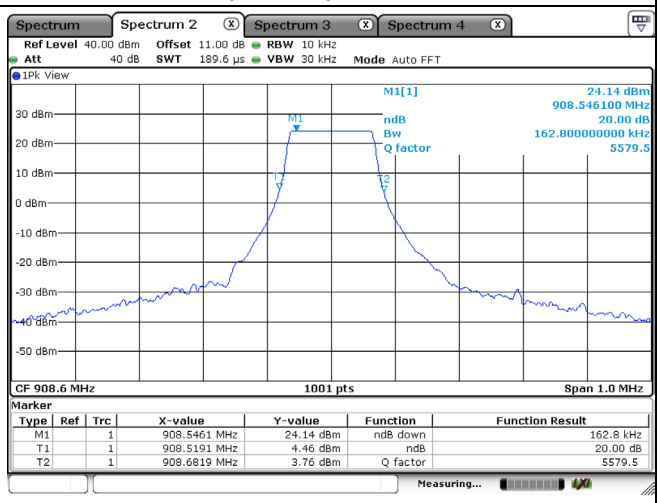
Appendix A. Test Result of 20dB Bandwidth

Modulation	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)
CSS (125kHz)	902.3	0.163	-
	908.5	0.162	-
	914.9	0.162	-

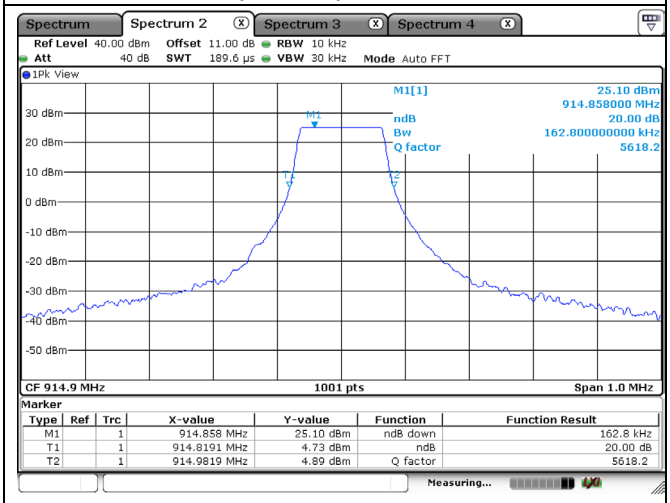
CSS (125kHz) / 902.3 MHz



CSS (125kHz) / 908.5 MHz



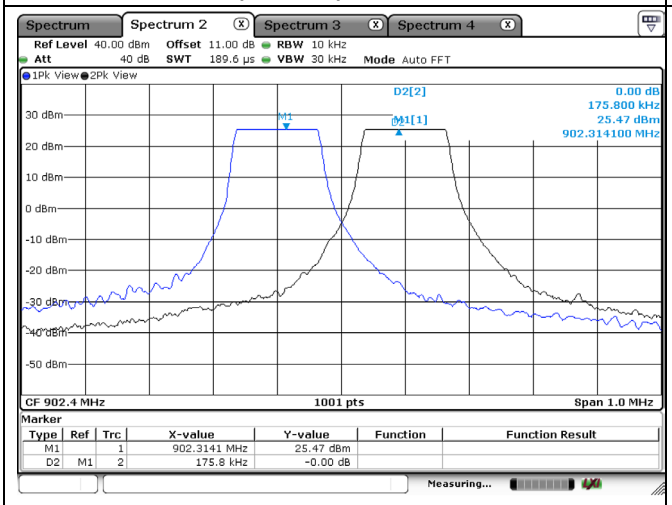
CSS (125kHz) / 914.9 MHz



Appendix B. Test Result of Carrier Frequency Separation

Modulation	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
CSS (125kHz)	902.3	0.175	0.163	Pass
	908.5	0.175	0.162	Pass
	914.9	0.175	0.162	Pass

CSS (125kHz) / 902.3 MHz



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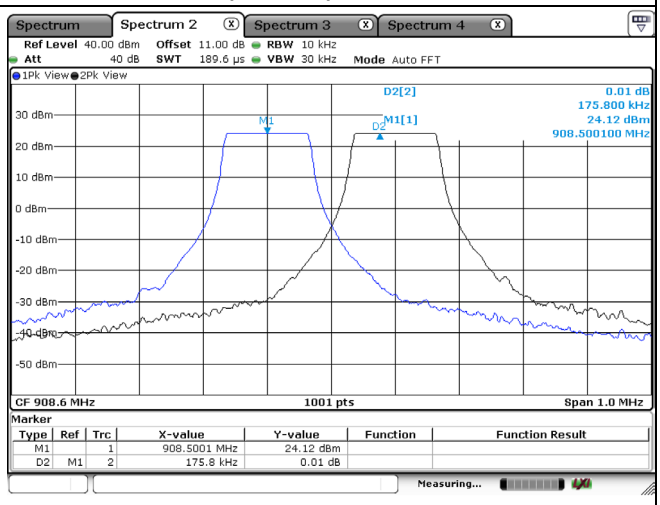
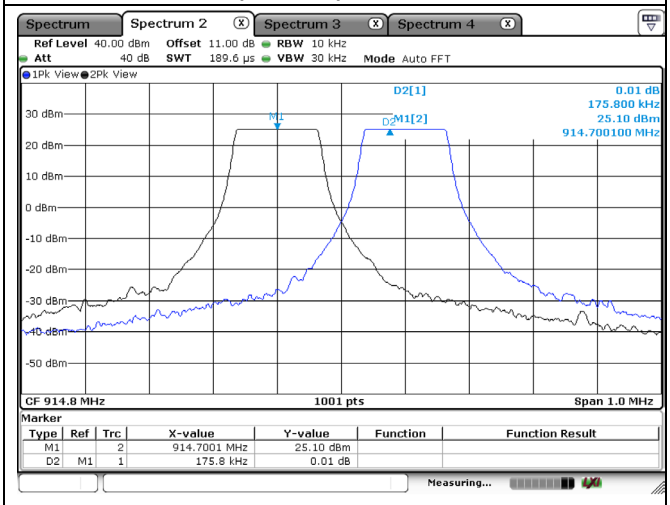
CSS (125kHz) / 908.5 MHz



Date: 22.OCT.2024 17:10:34

CSS (125kHz) / 914.9 MHz



Date: 22.OCT.2024 17:08:11

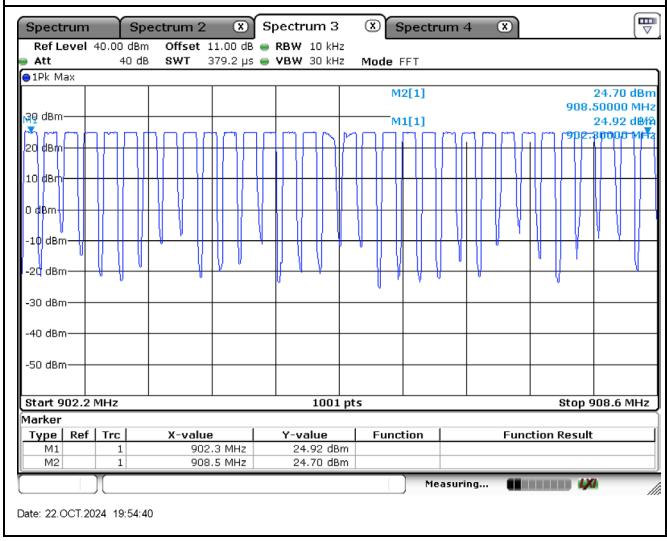
Appendix C. Test Result of Maximum Conducted Output Power

Modulation	Frequency (MHz)	Maximum Conducted Peak Output Power (dBm)	Limit (dBm)	Result
CSS (125kHz)	902.3	24.45	30.00	Pass
	908.5	23.27	30.00	Pass
	914.9	24.06	30.00	Pass

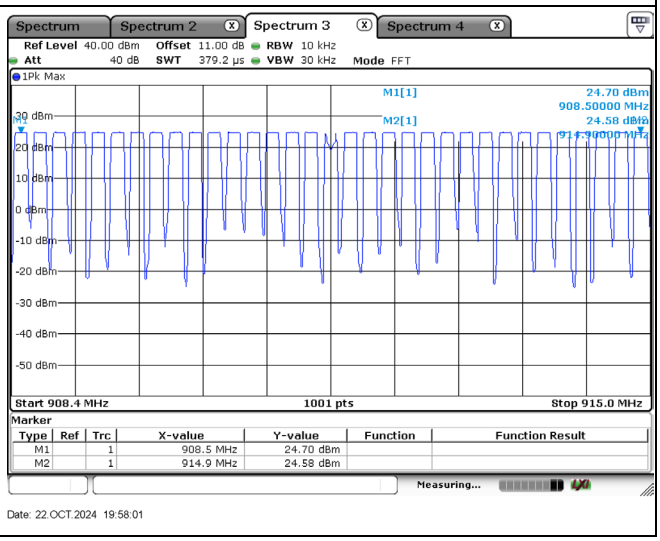
Appendix D. Test Result of Number of Hopping Frequency

Frequency Range (MHz)	Measure Level (Channels)	Limit (Channels)
902.2 ~ 915	64	≧ 50

902.2 ~ 908.6 MHz



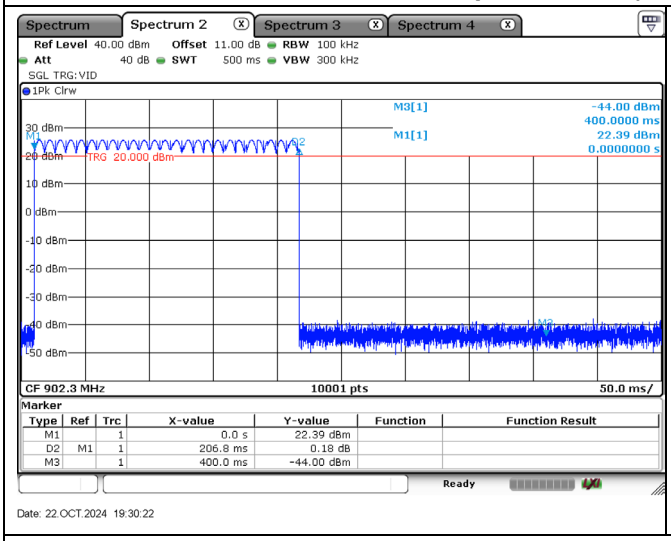
908.4 ~ 915 MHz

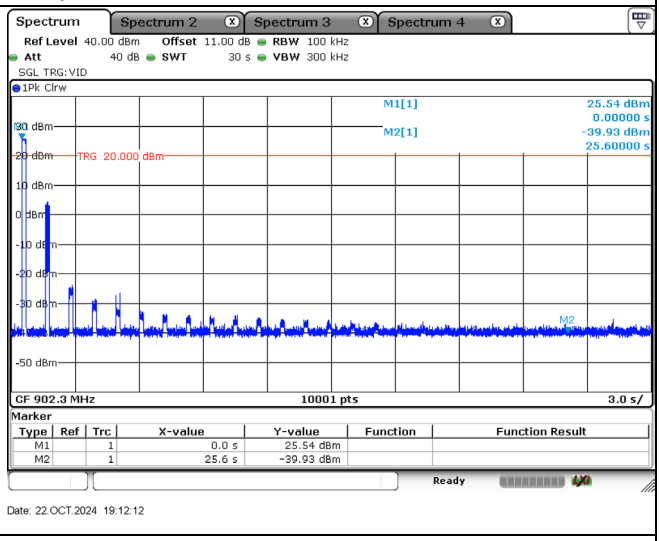


Appendix E. Test Result of Dwell Time

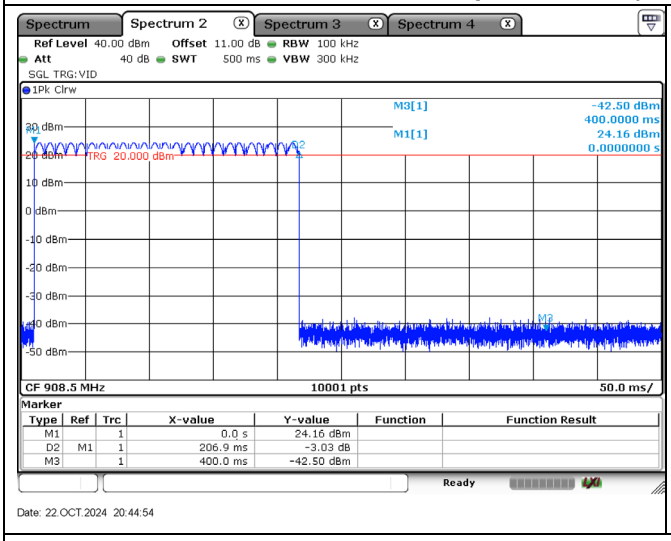
Modulation	On Times (ms)	Hoppint No. of 20	Dwell Time (s)		Result
			Result	Limit	
CSS (125kHz)	206.800	1.000	0.207	0.4	Pass
	206.900	1.000	0.207	0.4	Pass
	206.900	1.000	0.207	0.4	Pass

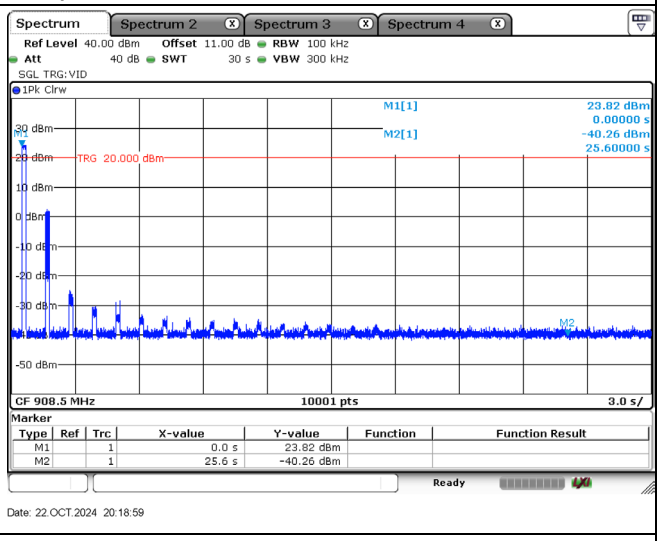
Hop rate / CSS (125kHz) / 902.3 MHz



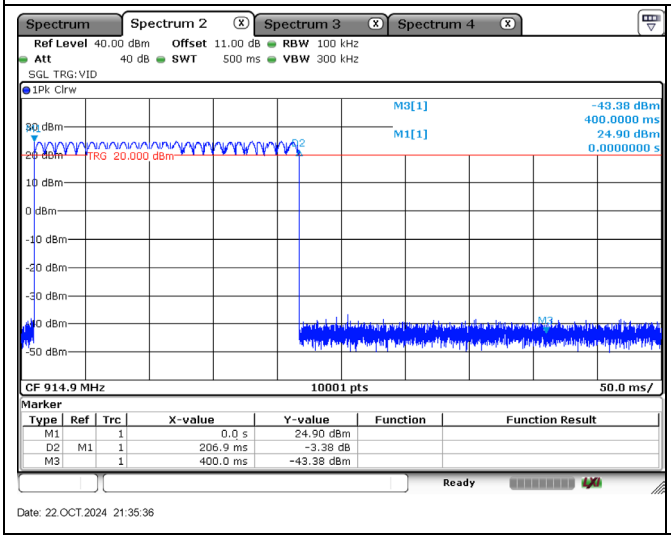


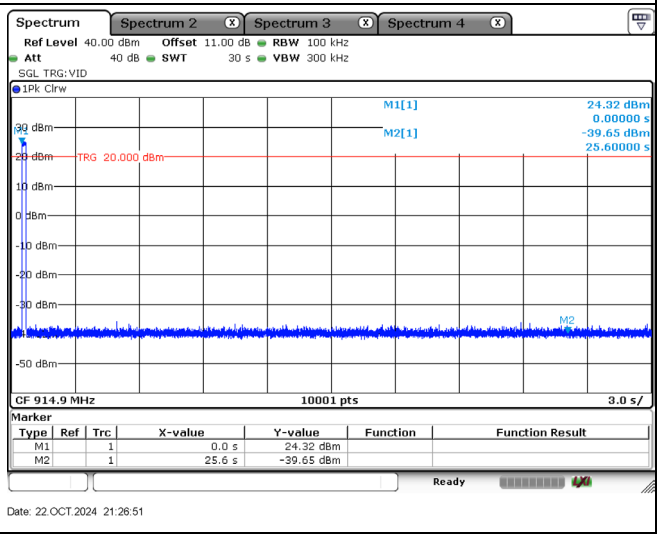
Hop rate / CSS (125kHz) / 908.5 MHz





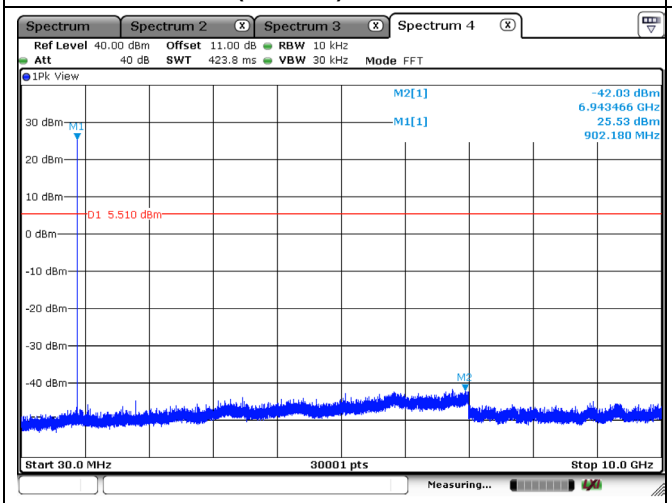
Hop rate / CSS (125kHz) / 914.9 MHz



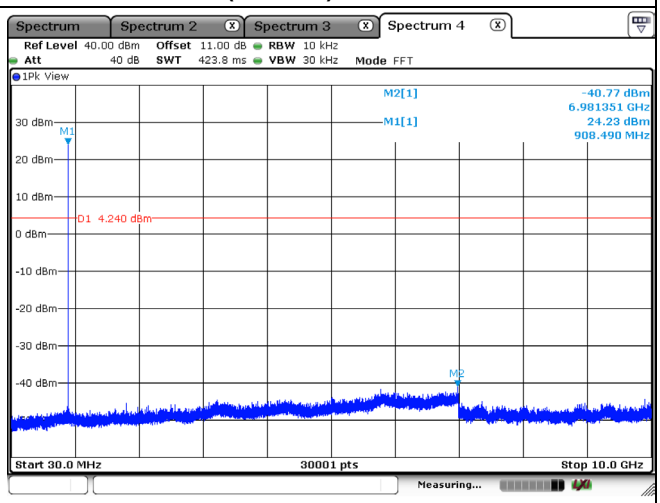


Appendix F. Test Result of Antenna Port Conducted Emission

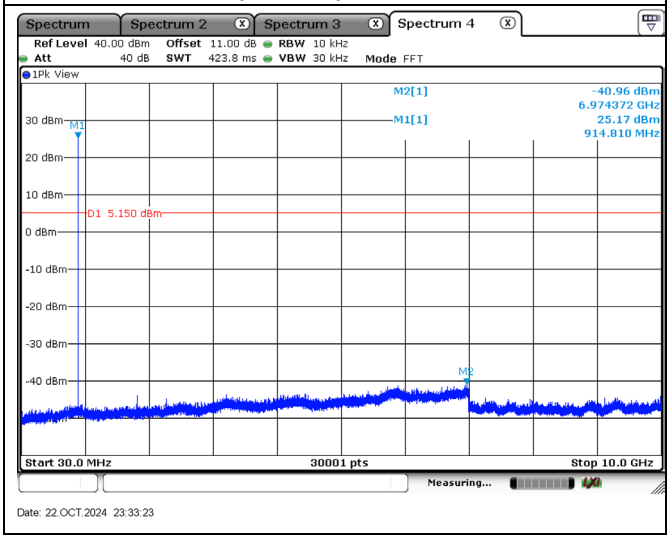
CSS (125kHz) / 902.3 MHz



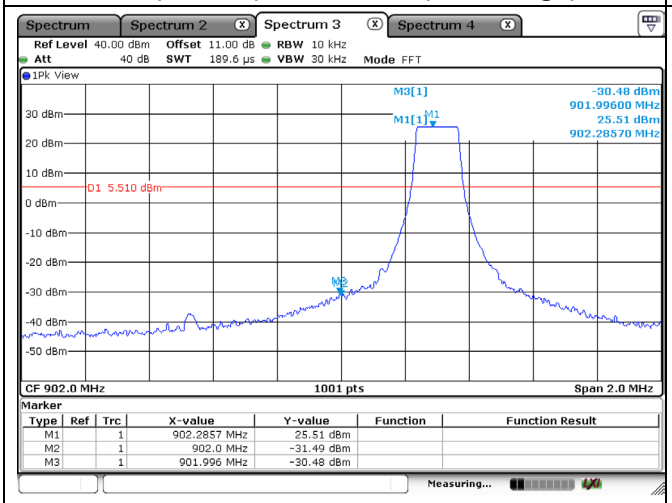
CSS (125kHz) / 908.5 MHz



CSS (125kHz) / 914.9 MHz

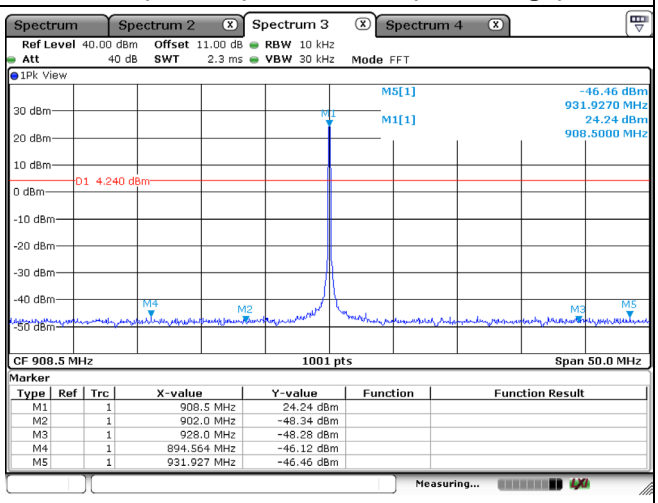


CSS (125kHz) / 902.3 MHz (Band Edge)



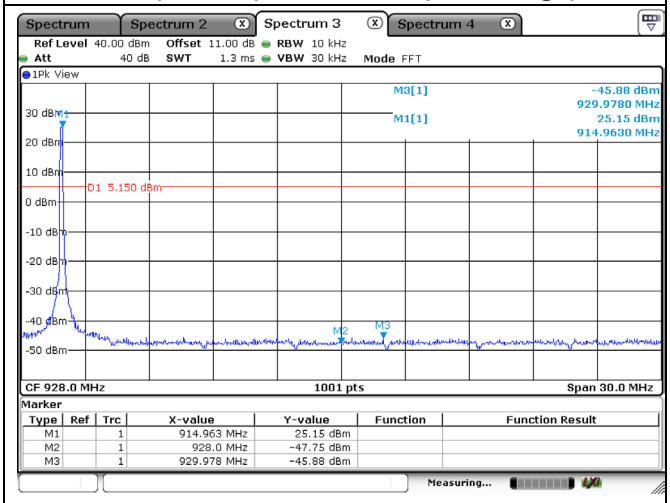
Date: 22.OCT.2024 23:05:11

CSS (125kHz) / 908.5 MHz (Band Edge)



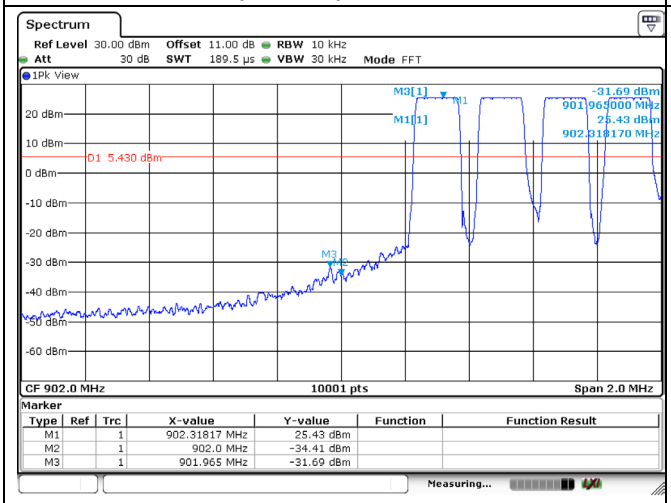
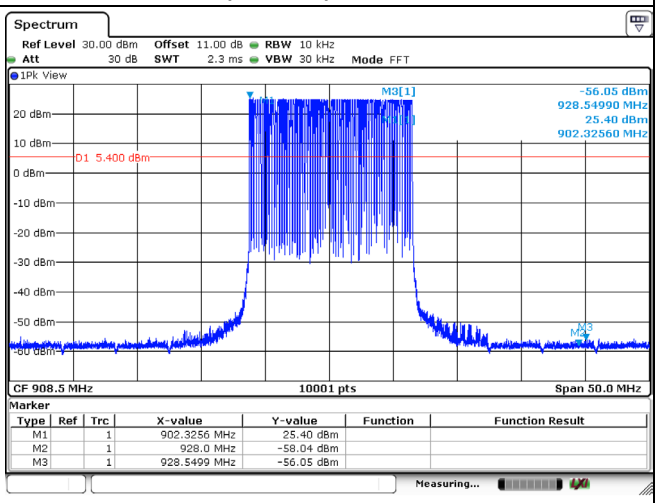
Date: 22.OCT.2024 23:41:50

CSS (125kHz) / 914.9 MHz (Band Edge)



Date: 22.OCT.2024 23:16:20

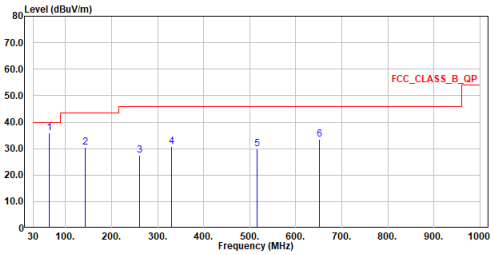
Hopping Band Edge

CSS (125kHz) / 902.3 MHz	CSS (125kHz) / 914.9 MHz
	

Appendix G. Test Result of Transmitter Radiated Spurious Emission

30 MHz ~ 1 GHz

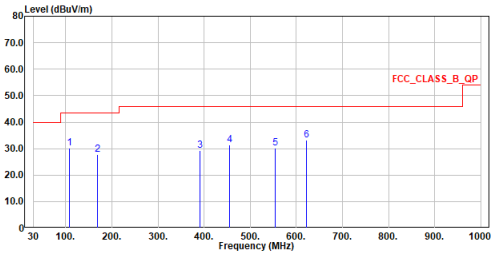
Site :HC-CB02
Condition :3m Horizontal
Mode :LF_LoRa_125k_TX_908.5MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	64.338	36.07	40.00	-3.93	39.27	-3.20	QP
2	142.326	30.42	43.50	-13.08	33.43	-3.01	QP
3	261.248	27.40	46.00	-18.60	30.64	-3.24	QP
4	330.797	30.91	46.00	-15.09	31.95	-1.04	QP
5	515.970	29.90	46.00	-16.10	26.58	3.32	QP
6	650.509	33.55	46.00	-12.45	27.33	6.22	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.
5. The other emission levels were very low against the limit.

Site :HC-CB02
Condition :3m Vertical
Mode :LF_LoRa_125k_TX_908.5MHz
Test by :Scott Chang

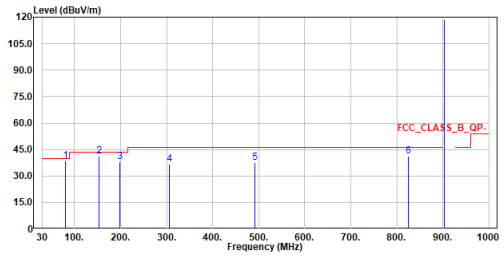


No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	107.988	30.32	43.50	-13.18	36.32	-6.00	QP
2	168.031	27.89	43.50	-15.61	30.86	-2.97	QP
3	390.452	29.19	46.00	-16.81	28.70	0.49	QP
4	455.927	31.49	46.00	-14.51	29.26	2.23	QP
5	554.770	30.32	46.00	-15.68	26.30	4.02	QP
6	621.894	33.22	46.00	-12.78	27.44	5.78	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.
5. The other emission levels were very low against the limit.

Above 1 GHz

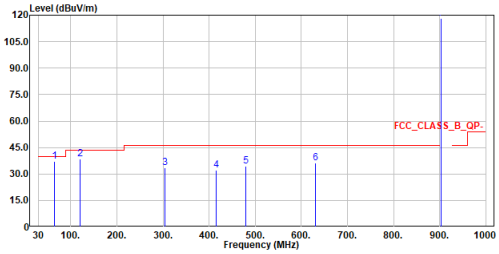
Site :HC-CB02
Condition :3m Horizontal
Mode :LF_LoRa_125k_TX_902.3MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	80.537	38.34	40.00	-1.66	45.47	-7.13	QP
2	152.802	41.14	43.50	-2.36	43.90	-2.76	QP
3	197.519	37.93	43.50	-5.57	43.90	-5.97	QP
4	305.480	36.52	46.00	-9.48	38.44	-1.92	QP
5	491.914	37.60	46.00	-8.40	34.77	2.83	QP
6	825.303	41.12	46.00	-4.88	32.23	8.89	QP
7	902.321	118.68	------	------	108.98	9.70	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.
5. The other emission levels were very low against the limit.

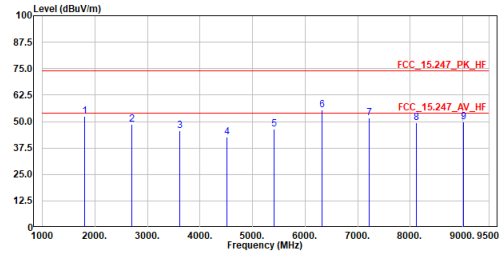
Site :HC-CB02
Condition :3m Vertical
Mode :LF_LoRa_125k_TX_902.3MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	64.047	36.98	40.00	-3.02	40.12	-3.14	QP
2	120.113	38.31	43.50	-5.19	43.49	-5.18	QP
3	303.540	33.59	46.00	-12.41	35.57	-1.98	QP
4	414.508	32.06	46.00	-13.94	31.12	0.94	QP
5	479.983	34.46	46.00	-11.54	31.87	2.59	QP
6	630.818	36.22	46.00	-9.78	30.37	5.85	QP
7	902.321	118.03	------	------	108.33	9.70	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.
5. The other emission levels were very low against the limit.

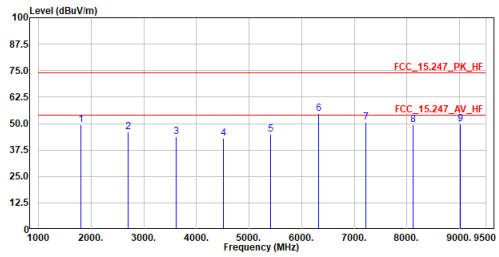
Site :HC-CB02
Condition :3m ,Horizontal
Mode :LoRa_125k_TX_902.3MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	1804.600	52.30	74.00	-21.70	78.04	-25.74	Peak
2	2706.900	48.59	74.00	-25.41	71.09	-22.50	Peak
3	3609.200	45.62	74.00	-28.38	65.09	-19.47	Peak
4	4511.500	42.82	74.00	-31.18	58.74	-15.92	Peak
5	5413.800	46.32	74.00	-27.68	60.21	-13.89	Peak
6	6316.100	55.40	74.00	-18.60	65.81	-10.41	Peak
7	7218.400	51.53	74.00	-22.47	59.51	-7.98	Peak
8	8120.700	49.40	74.00	-24.60	56.48	-7.08	Peak
9	9023.000	49.63	74.00	-24.37	54.78	-5.15	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
5. The other emission levels were very low against the limit.

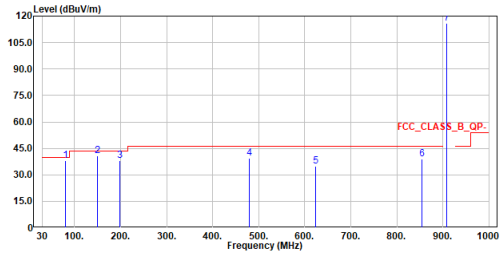
Site :HC-CB02
Condition :3m ,Vertical
Mode :LoRa_125k_TX_902.3MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	1804.600	49.31	74.00	-24.69	75.05	-25.74	Peak
2	2706.900	45.97	74.00	-28.03	68.47	-22.50	Peak
3	3609.200	43.82	74.00	-30.18	63.29	-19.47	Peak
4	4511.500	43.15	74.00	-30.85	59.07	-15.92	Peak
5	5413.800	45.05	74.00	-28.95	58.94	-13.89	Peak
6	6316.100	54.53	74.00	-19.47	64.94	-10.41	Peak
7	7218.400	50.54	74.00	-23.46	58.52	-7.98	Peak
8	8120.700	49.49	74.00	-24.51	56.57	-7.08	Peak
9	9023.000	49.98	74.00	-24.02	55.13	-5.15	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
5. The other emission levels were very low against the limit.

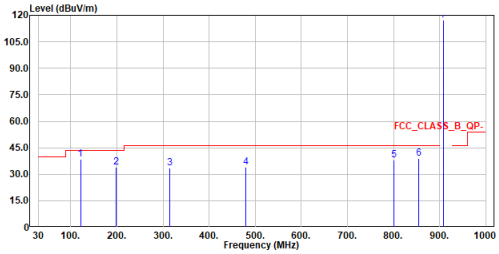
Site :HC-CB02
Condition :3m Horizontal
Mode :LF_LoRa_125k_TX_908.5MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	80.537	38.23	40.00	-1.77	45.36	-7.13	QP
2	149.213	40.89	43.50	-2.61	43.65	-2.76	QP
3	197.810	37.93	43.50	-5.57	43.87	-5.94	QP
4	479.983	39.35	46.00	-6.65	36.76	2.59	QP
5	623.543	34.78	46.00	-11.22	29.03	5.75	QP
6	855.179	39.12	46.00	-6.88	29.84	9.28	QP
7	908.529	116.10	------	------	106.27	9.83	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.
5. The other emission levels were very low against the limit.

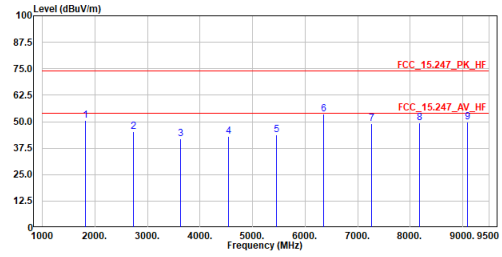
Site :HC-CB02
Condition :3m Vertical
Mode :LF_LoRa_125k_TX_908.5MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	120.889	38.58	43.50	-4.92	43.85	-5.27	QP
2	198.489	33.74	43.50	-9.76	39.70	-5.96	QP
3	314.598	33.37	46.00	-12.63	34.89	-1.52	QP
4	479.983	33.78	46.00	-12.22	31.19	2.59	QP
5	799.986	38.04	46.00	-7.96	29.52	8.52	QP
6	855.179	39.00	46.00	-7.00	29.72	9.28	QP
7	908.529	117.22	------	------	107.39	9.83	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.
5. The other emission levels were very low against the limit.

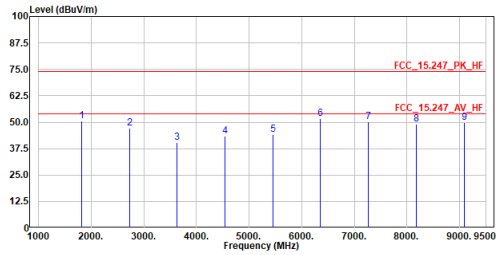
Site :HC-CB02
Condition :3m ,Horizontal
Mode :LoRa_125k_TX_908.5MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	1817.000	50.55	74.00	-23.45	76.24	-25.69	Peak
2	2725.500	45.22	74.00	-28.78	67.64	-22.42	Peak
3	3634.000	41.71	74.00	-32.29	61.07	-19.36	Peak
4	4542.500	42.91	74.00	-31.09	58.70	-15.79	Peak
5	5451.000	43.71	74.00	-30.29	57.59	-13.88	Peak
6	6359.500	53.69	74.00	-20.31	63.84	-10.15	Peak
7	7268.000	48.99	74.00	-25.01	56.92	-7.93	Peak
8	8176.500	49.25	74.00	-24.75	56.19	-6.94	Peak
9	9085.000	49.73	74.00	-24.27	54.84	-5.11	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
5. The other emission levels were very low against the limit.

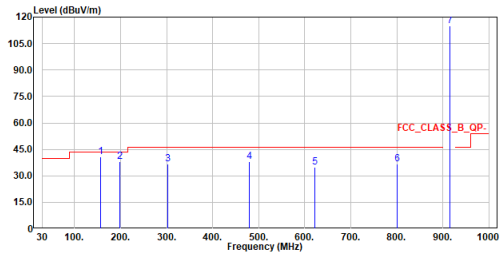
Site :HC-CB02
Condition :3m ,Vertical
Mode :LoRa_125k_TX_908.5MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	1817.000	50.71	74.00	-23.29	76.40	-25.69	Peak
2	2725.500	46.99	74.00	-27.01	69.41	-22.42	Peak
3	3634.000	40.48	74.00	-33.52	59.84	-19.36	Peak
4	4542.500	43.48	74.00	-30.52	59.27	-15.79	Peak
5	5451.000	43.98	74.00	-30.02	57.86	-13.88	Peak
6	6359.500	51.58	74.00	-22.42	61.73	-10.15	Peak
7	7268.000	50.11	74.00	-23.89	58.04	-7.93	Peak
8	8176.500	49.06	74.00	-24.94	56.00	-6.94	Peak
9	9085.000	49.85	74.00	-24.15	54.96	-5.11	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
5. The other emission levels were very low against the limit.

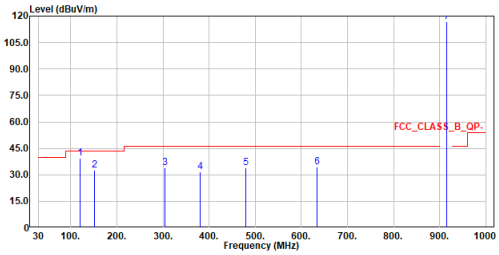
Site :HC-CB02
Condition :3m Horizontal
Mode :LF_LoRa_125k_TX_914.9MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	156.100	40.89	43.50	-2.61	43.49	-2.60	QP
2	197.422	38.12	43.50	-5.38	44.10	-5.98	QP
3	302.667	36.65	46.00	-9.35	38.65	-2.00	QP
4	479.983	38.02	46.00	-7.98	35.43	2.59	QP
5	622.088	35.07	46.00	-10.93	29.29	5.78	QP
6	799.986	36.68	46.00	-9.32	28.16	8.52	QP
7	914.543	115.24	------	------	105.30	9.94	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since
the emission levels are very low against the limit.
5. The other emission levels were very low against the limit.

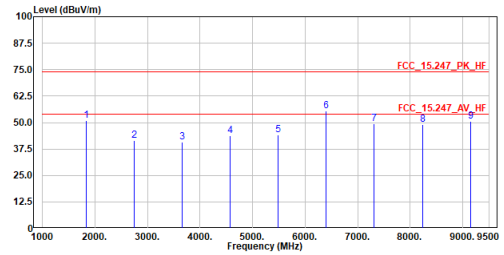
Site :HC-CB02
Condition :3m Vertical
Mode :LF_LoRa_125k_TX_914.9MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	120.113	39.58	43.50	-3.92	44.76	-5.18	QP
2	151.153	32.56	43.50	-10.94	35.24	-2.68	QP
3	303.249	33.78	46.00	-12.22	35.77	-1.99	QP
4	380.752	31.65	46.00	-14.35	31.39	0.26	QP
5	479.983	34.01	46.00	-11.99	31.42	2.59	QP
6	634.407	34.59	46.00	-11.41	28.73	5.86	QP
7	914.543	116.85	------	------	106.91	9.94	QP

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since
the emission levels are very low against the limit.
5. The other emission levels were very low against the limit.

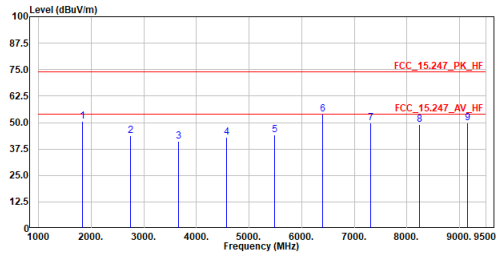
Site :HC-CB02
Condition :3m ,Horizontal
Mode :LoRa_125k_TX_914.9MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	1829.800	51.08	74.00	-22.92	76.71	-25.63	Peak
2	2744.700	41.63	74.00	-32.37	63.99	-22.36	Peak
3	3659.600	40.82	74.00	-33.18	60.06	-19.24	Peak
4	4574.500	43.82	74.00	-30.18	59.48	-15.66	Peak
5	5489.400	44.29	74.00	-29.71	58.17	-13.88	Peak
6	6404.300	55.63	74.00	-18.37	65.51	-9.88	Peak
7	7319.200	49.58	74.00	-24.42	57.44	-7.86	Peak
8	8234.100	48.90	74.00	-25.10	55.71	-6.81	Peak
9	9149.000	50.69	74.00	-23.31	55.74	-5.05	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The peak result complies with AVG limit, AVG result is deemed
to comply with AVG limit.
5. The other emission levels were very low against the limit.

Site :HC-CB02
Condition :3m ,Vertical
Mode :LoRa_125k_TX_914.9MHz
Test by :Scott Chang



No.	Frequency	Level	Limit Line	Over Limit	Read Level	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	1829.800	50.58	74.00	-23.42	76.21	-25.63	Peak
2	2744.700	43.74	74.00	-30.26	66.10	-22.36	Peak
3	3659.600	41.05	74.00	-32.95	60.29	-19.24	Peak
4	4574.500	42.99	74.00	-31.01	58.65	-15.66	Peak
5	5489.400	44.24	74.00	-29.76	58.12	-13.88	Peak
6	6404.300	54.12	74.00	-19.88	64.00	-9.88	Peak
7	7319.200	49.82	74.00	-24.18	57.68	-7.86	Peak
8	8234.100	48.92	74.00	-25.08	55.73	-6.81	Peak
9	9149.000	49.68	74.00	-24.32	54.73	-5.05	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The peak result complies with AVG limit, AVG result is deemed
to comply with AVG limit.
5. The other emission levels were very low against the limit.