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Dates of Tests: June 13 ,2024 ~ July 8 ,2024
 Test Report S/N: LR500112407F
 Test Site : LTA CO., LTD.

CERTIFICATION OF COMPLIANCE

FCC ID.

2AQAV-FX300WR

APPLICANT

SMARTeLock CO., LTD.

Equipment Class	:	Digital Transmission System (DTS)
Manufacturing Description	:	LOCKER LOCK
Manufacturer	:	SMARTeLock CO., LTD.
Model name	:	FX300WR
Variant Model name	:	FX300, FX300W, SL100WR, SL100, SL100W, SL300, SL300A, SL300B, SL300C
Test Device Serial No.:	:	Identical prototype
Rule Part(s)	:	FCC Part 15.247 Subpart C ; ANSI C63.10 - 2013
Frequency Range	:	2402 ~ 2480 MHz - BLE 2405 ~ 2480 MHz - Zigbee
Max. Output Power	:	Max -4.43 dBm - Conducted
Data of issue	:	July 9, 2024

This test report is issued under the authority of:

Ja-Beom Koo, Manager

The test was supervised by:

Jae-hum Yun, Test Engineer

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1. General information

1-1 Test Performed

Company name : LTA Co., Ltd.
 Address : 243, Jubug-ri, Yangji-Myeon, Youngin-Si, Kyunggi-Do, Korea. 17159
 Web site : <http://www.ltalab.com>
 E-mail : chahn@ltalab.com
 Telephone : +82-31-323-6008
 Facsimile : +82-31-323-6010

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the “General requirements for the competents of calibration and testing laboratory”.

1-2 Accredited agencies

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
KOREA				
RRA	U.S.A	KR0049	2025-03-29	RRA accredited Lab.
CANADA				
C-14948				
VCCI	JAPAN	T-12416	2026-09-10	VCCI registration
		R-14483	2026-10-15	
		G-10847	2024-12-13	
KOLAS	KOREA	KT551	2025-10-12	KOLAS accredited Lab.

2. Information about test item

2-1 Client & Manufacturer

Client Company name : SMARTeLock CO., LTD.
 Address : B402, Geumgang Penterium IT Tower, 215, Galmachiro, Jungwon gu,
 Seongnam-si, Gyeonggi-do South Korea 13217
 Tel / Fax : TEL No : +82-010-3673-7884/ FAX No : +82-031-743-7276
 Manufacturer : SMARTeLock CO., LTD.
 Address : B402, Geumgang Penterium IT Tower, 215, Galmachiro, Jungwon gu,
 Seongnam-si, Gyeonggi-do South Korea 13217
 Tel / Fax : TEL No : +82-010-3673-7884/ FAX No : +82-031-743-7276

2-2 Equipment Under Test (EUT)

Model name : FX300WR
 Serial number : Identical prototype
 Date of receipt : June 13, 2024
 EUT condition : Pre-production, not damaged
 Antenna type : Chip Antenna (Gain : 3.5 dBi)
 Frequency Range : 2402 ~ 2480 MHz - BLE
 Frequency Range : 2405 ~ 2480 MHz - Zigbee
 RF output power : Max -4.43 dBm – BLE, Conducted
 RF output power : Max -4.56 dBm – Zigbee, Conducted
 Type of Modulation : GFSK, O-QPSK
 Power Source : DC 6 V

This product uses two antennas at one oscillation, and both antennas cannot operate at the same time, but only antennas operate at one time when transmitting.

2-3 Tested frequency

	LOW	MID	HIGH
Frequency (MHz) BLE	2402	2440	2480
Frequency (MHz) Zigbee	2405	2440	2480

2-4 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
Notebook	-	MS-1736	MSI

3. Test Report

3.1 Summary of tests

FCC Part Section(s)	Parameter	Test Condition	Status (note 1)
15.247(a)	6 dB Bandwidth	Conducted	C
15.247(b)	Transmitter Peak Output Power		C
15.247(e)	Transmitter Power Spectral Density		C
15.247(d)	Band Edge & Conducted Spurious emission		C
15.209	Transmitter emission	Radiated	C
15.207	AC Conducted Emissions	Conducted	N/A
15.203	Antenna requirement	-	C

N/A : This product is only operated with DC voltage.

The above equipment was tested by LTA Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10-2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 2 and Part 15.247. The test results of this report relate only to the tested sample identified in this report.

The tests were performed according to the method of measurements prescribed in KDB No.558074.

→ Antenna Requirement

SMART eLOCK Co. LTD. FCC ID: 2AQAV-FX300WR unit complies with the requirement of §15.203.
The antenna type is Chip Antenna

3.2 Technical Characteristics Test

3.2.1 6 dB Bandwidth

Procedure:

The bandwidth at 6 dB below the highest in-band spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 6 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz

Span = 3 X RBW

VBW = 3 X RBW

Sweep = auto

Trace = max hold

Detector function = peak

Measurement Data : **Complies**

Mode - BLE

Frequency (MHz)	Test Results	
	Measured Bandwidth (MHz)	Result
2402	0.803	Complies
2440	0.803	Complies
2480	0.810	Complies

Mode - Zigbee

Frequency (MHz)	Test Results	
	Measured Bandwidth (MHz)	Result
2405	1.621	Complies
2440	1.679	Complies
2480	1.635	Complies

- See next pages for actual measured spectrum plots.

Minimum Standard:

6 dB Bandwidth \geq 500 kHz

Measurement Setup

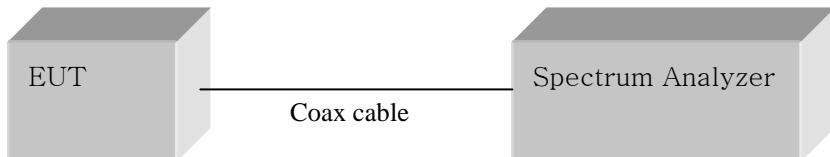
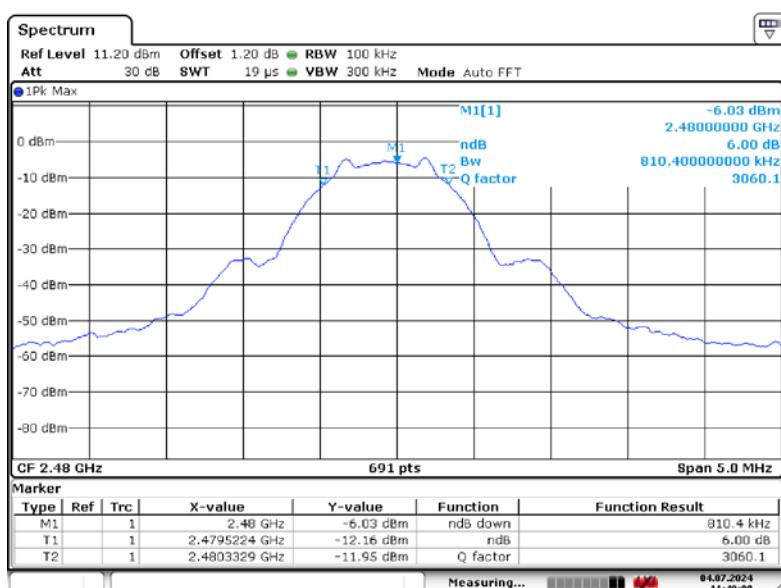
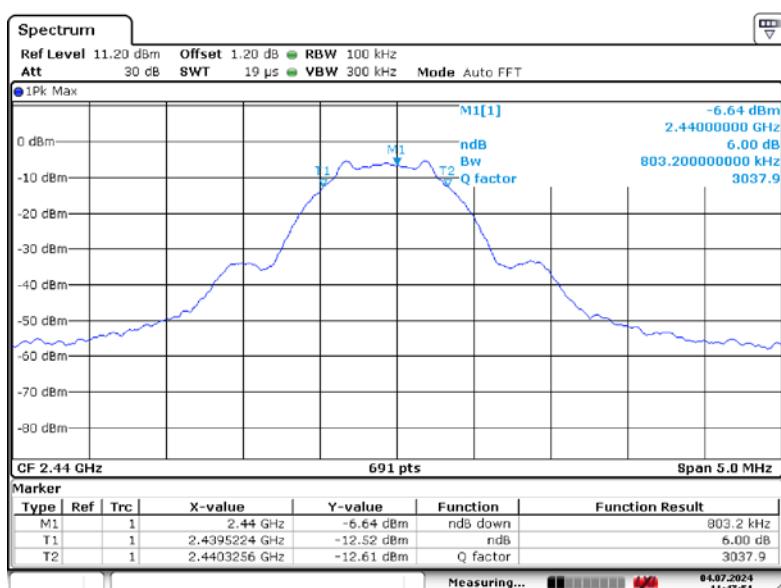
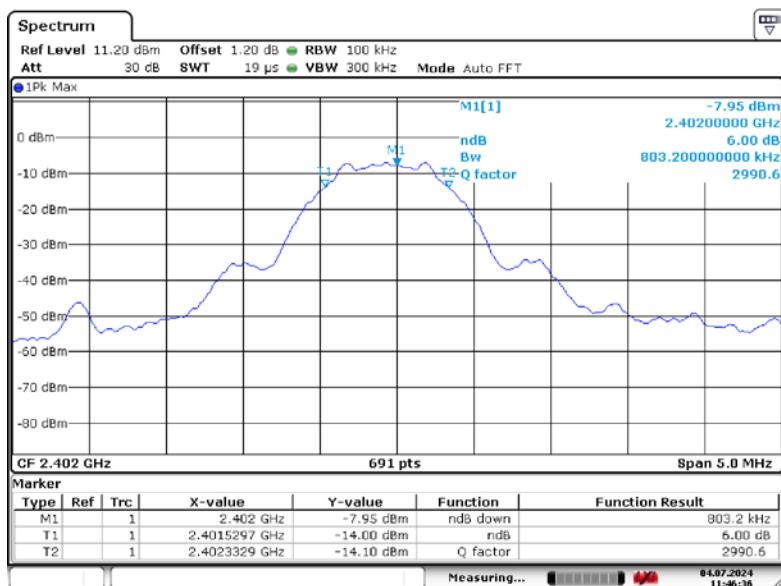
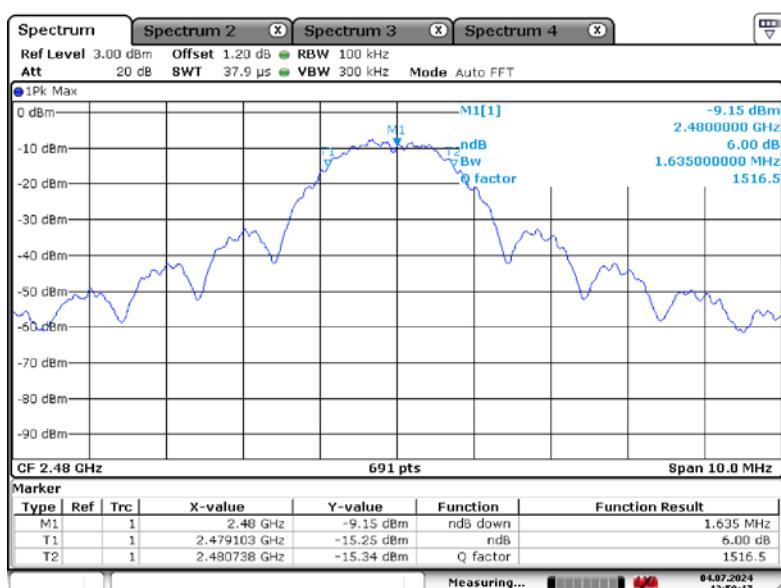
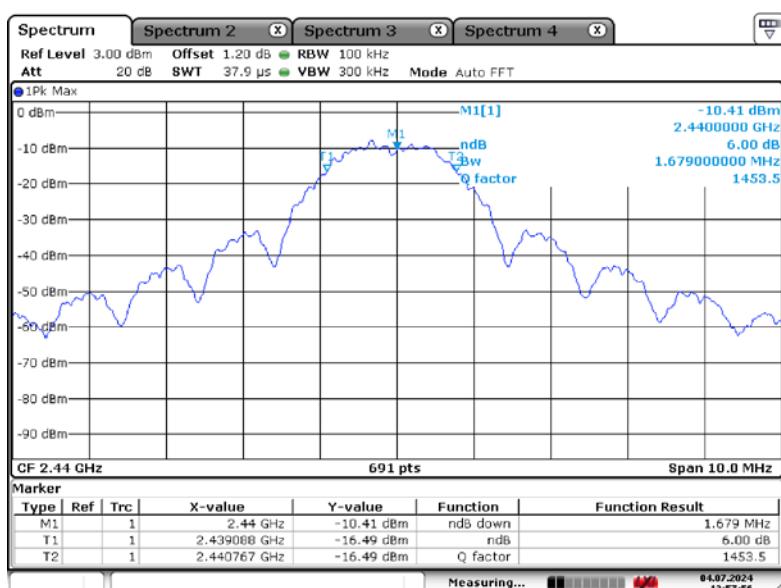
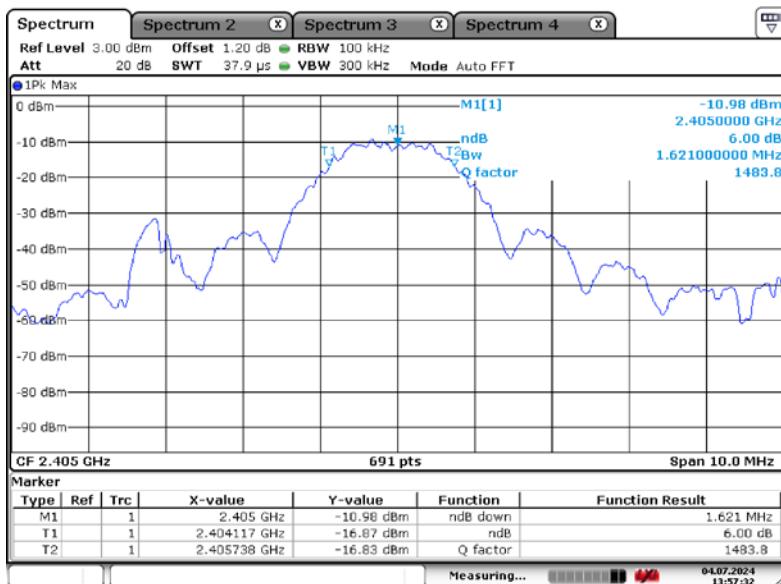


Figure 1: Measurement setup for the carrier frequency separation

Mode - BLE



Mode - Zigbee



3.2.2 Peak Output Power Measurement

Procedure:

The following procedure can be used when the maximum available RBW of the instrument is less than the DTS bandwidth :

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW \geq DTS Bandwidth Span \geq 3 X RBW

VBW = 3 X RBW Sweep = auto

Detector function = peak

Measurement Data : Complies

Mode - BLE

Frequency (MHz)	Test Results	
	Measured data (dBm)	Result
2402	-6.96	Complies
2440	-5.13	Complies
2480	-4.43	Complies

Mode - Zigbee

Frequency (MHz)	Test Results	
	Measured data (dBm)	Result
2405	-6.87	Complies
2440	-5.26	Complies
2480	-4.56	Complies

- See next pages for actual measured spectrum plots.

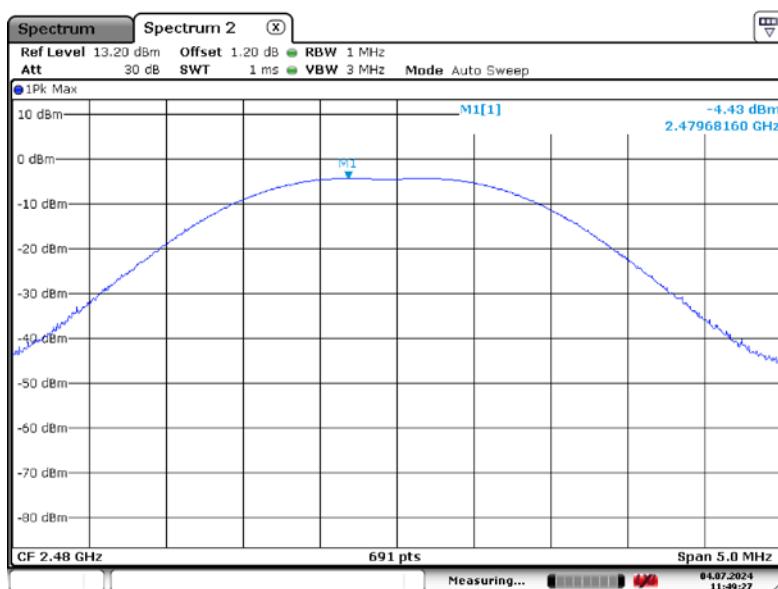
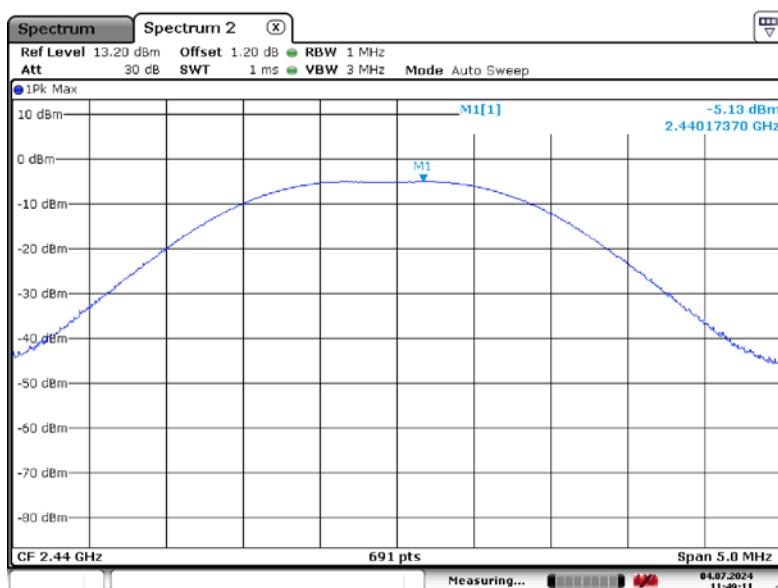
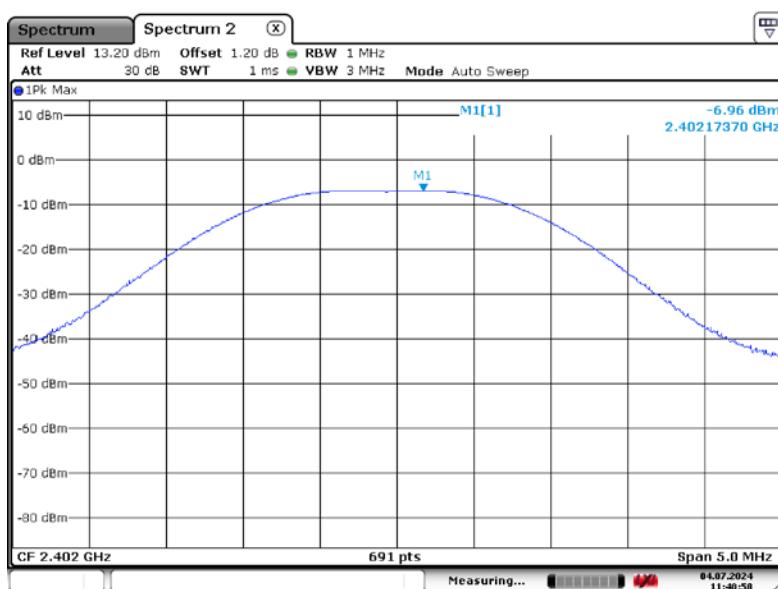
Minimum Standard:

Peak output power	$\leq 1 \text{ W}(30 \text{ dBm})$
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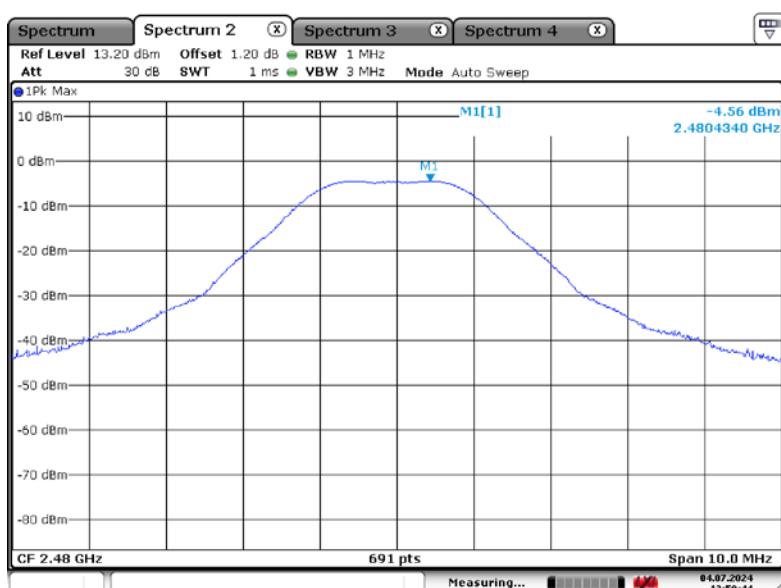
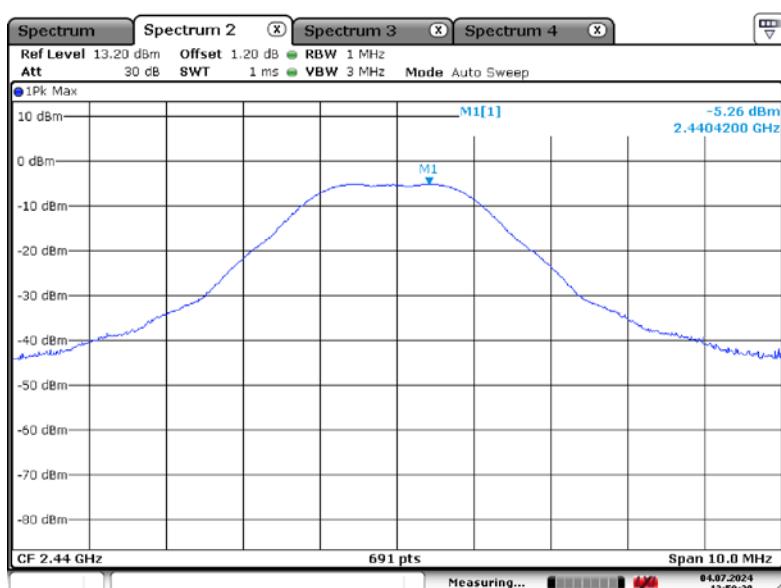
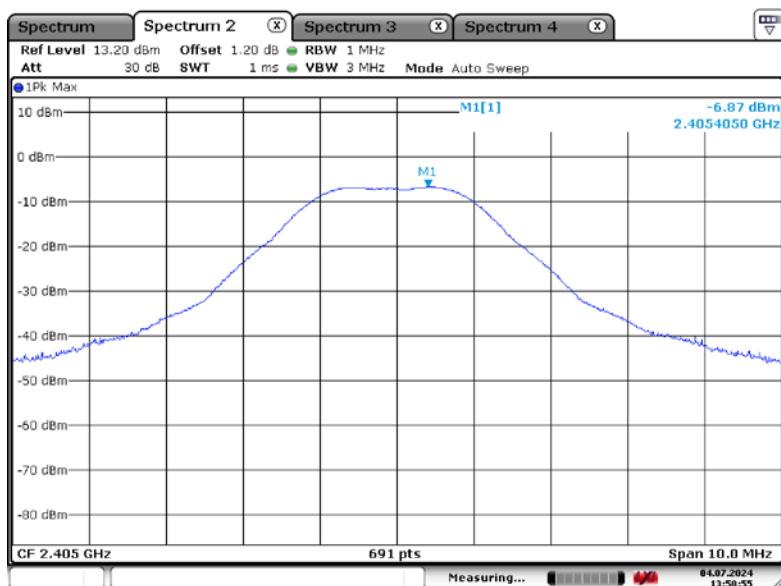
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

Mode - BLE



Mode - Zigbee



3.2.3 Power Spectral Density

Procedure:

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance.

The spectrum analyzer is set to:

RBW = 3 kHz (3 kHz \leq RBW \leq 100 kHz)	Span \geq 1.5 times the DTS bandwidth
VBW = 3 X RBW	Sweep = auto
Detector function = peak	Trace = max hold

Measurement Data : **Complies**

Mode - BLE

Frequency (MHz)	Test Results	
	dBm / 3 kHz BW	Result
2402	-20.58	Complies
2440	-19.47	Complies
2480	-18.43	Complies

Mode - Zigbee

Frequency (MHz)	Test Results	
	dBm / 3 kHz BW	Result
2405	-21.43	Complies
2440	-20.05	Complies
2480	-19.06	Complies

- See next pages for actual measured spectrum plots.

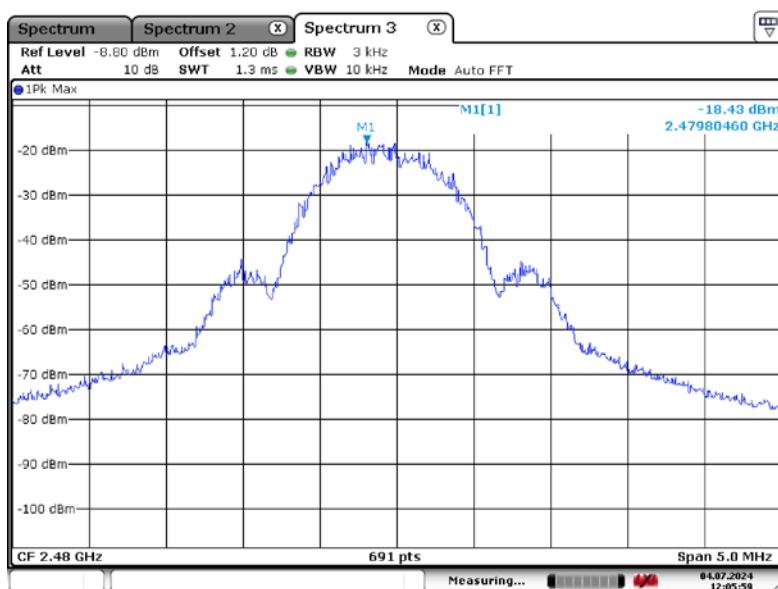
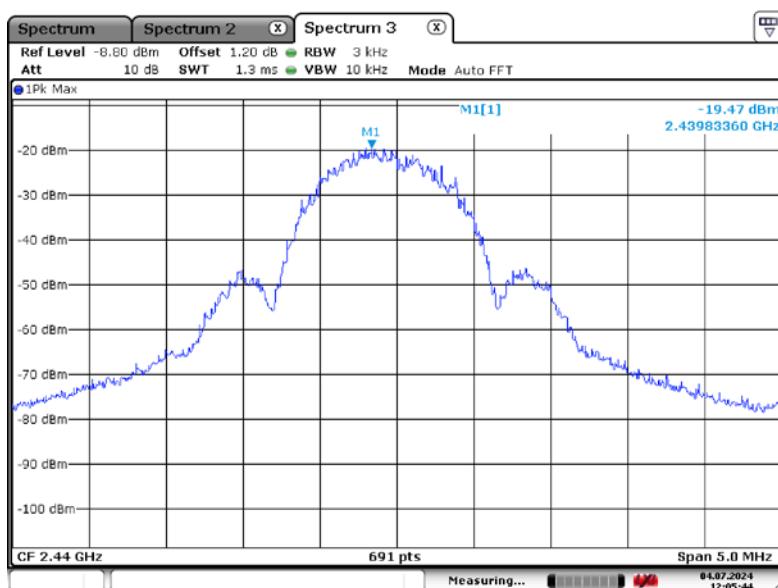
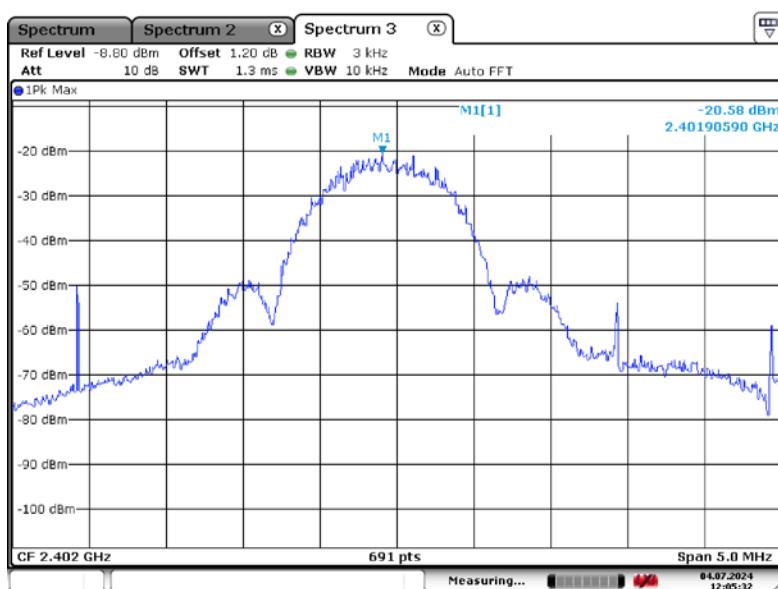
Minimum Standard:

Power Spectral Density	\leq 8 dBm @ 3 kHz BW
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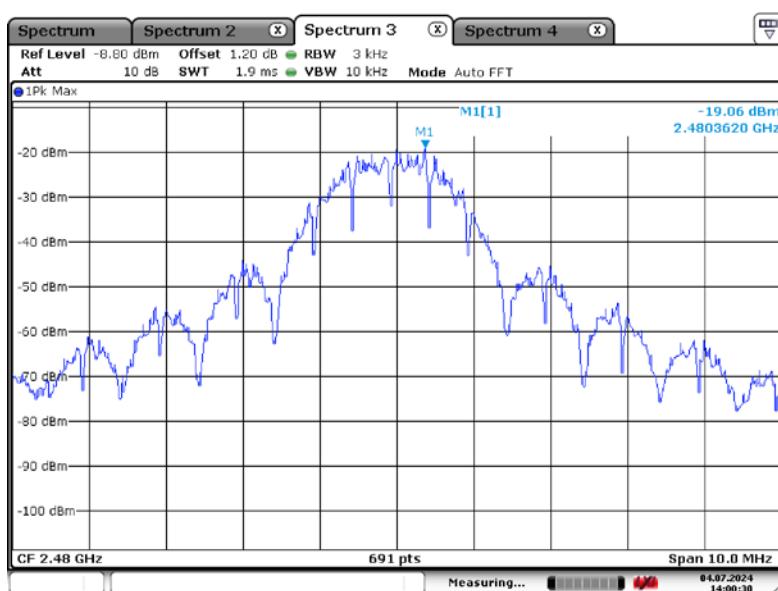
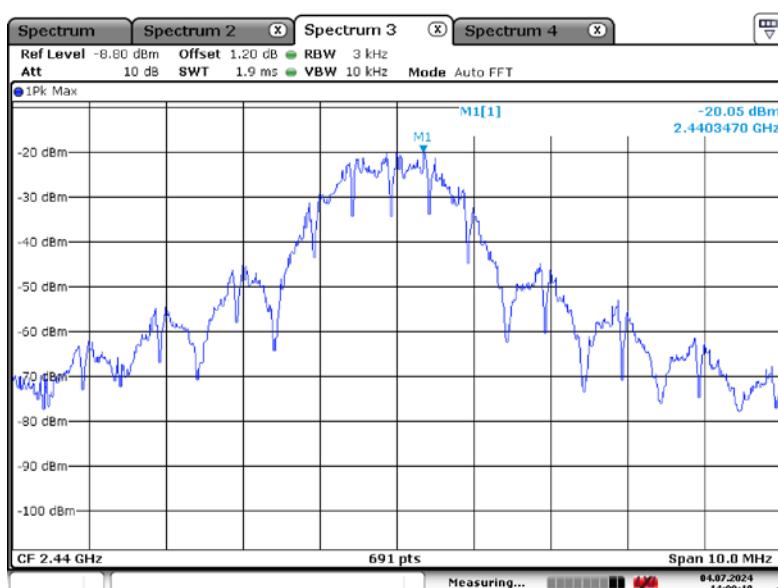
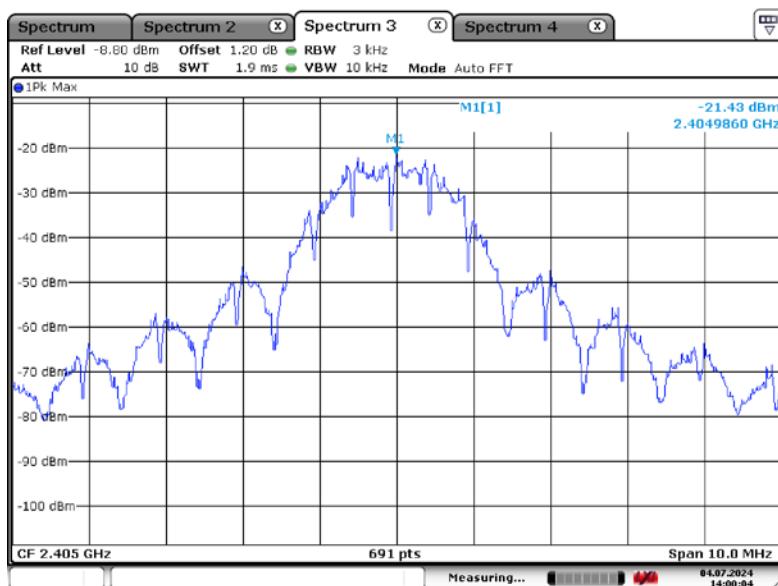
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

Mode - BLE



Mode - Zigbee



3.2.4 Band Edge

Procedure:

The Unwanted emission from the EUT were measured according to the dictates PKPSD measurement procedure in section 11.11 of ANSI C63.10-2013.

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

If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB..

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

Detector function = peak Trace = max hold

Sweep = auto

Measurement Data: Complies

Mode - BLE

Frequency (MHz)	Test Results	
	dBc	Result
Low edge	39.78	Complies
High edge	58.43	Complies

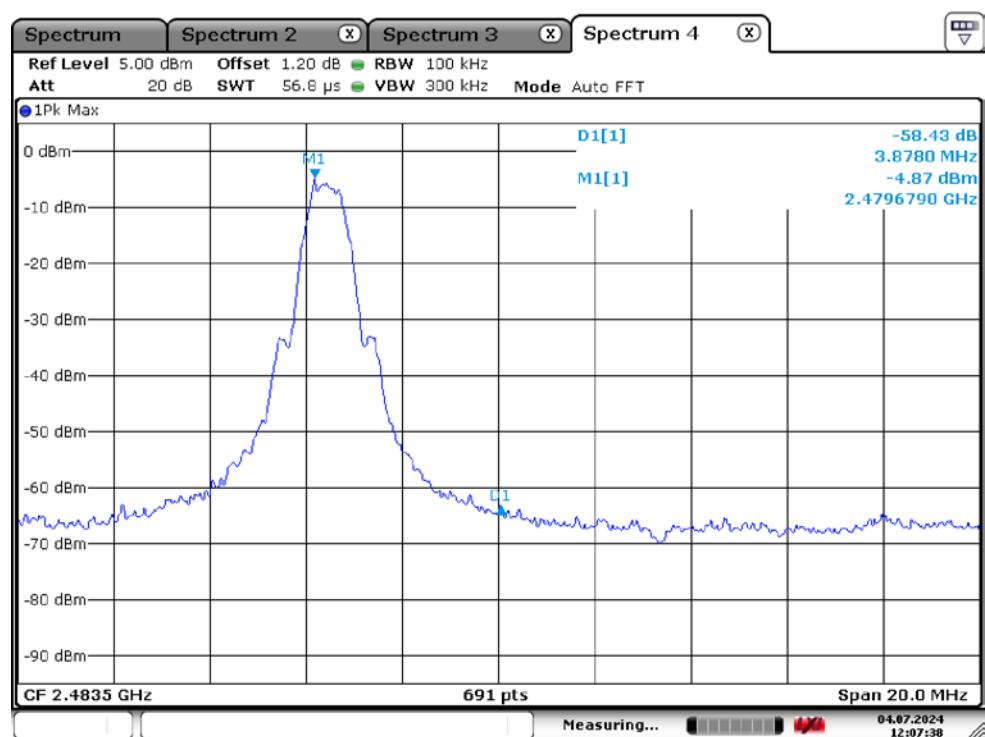
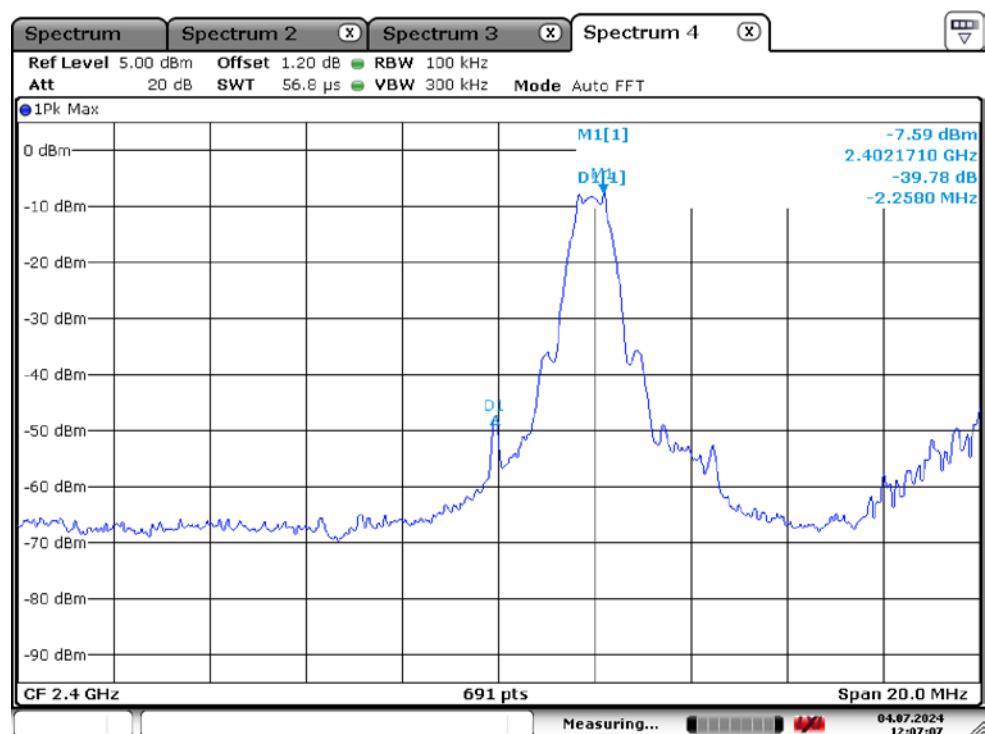
Mode - Zigbee

Frequency (MHz)	Test Results	
	dBc	Result
Low edge	47.19	Complies
High edge	41.71	Complies

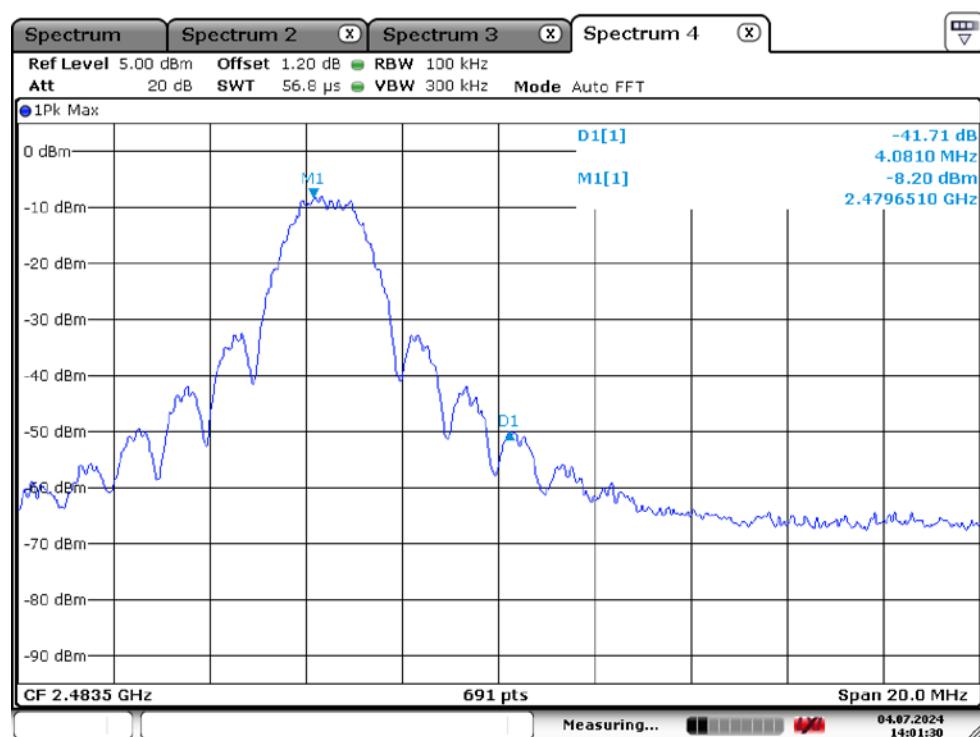
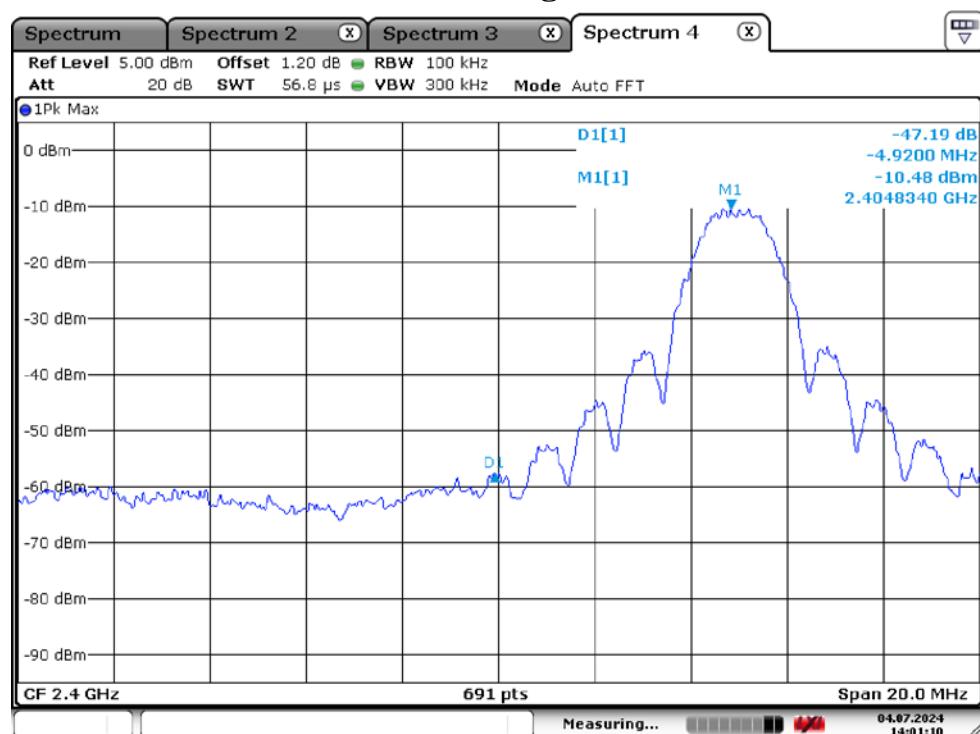
- All conducted emission in any 100 kHz bandwidth outside of the spread spectrum band was at least 20 dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.
- See next pages for actual measured spectrum plots.

Minimum Standard:	≤ 20 dBc
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Mode - BLE



Mode - Zigbee



3.2.5 Conducted Spurious Emissions

Procedure:

The test follows KDB558074. The conducted spurious emissions were measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function disabled at the highest, middle and the lowest available channels.

After the trace being stable, set the marker on the peak of any spurious emission recorded.

The spectrum analyzer is set to:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions

RBW = 100 kHz Sweep = auto

VBW = 100 kHz Detector function = peak

Trace = max hold

Measurement Data: Complies

Mode - BLE

Frequency (MHz)	Test Results	
	dBc	Result
2405	38.13	Complies
2440	41.06	Complies
2480	40.43	Complies

Mode - Zigbee

Frequency (MHz)	Test Results	
	dBc	Result
2405	36.99	Complies
2440	39.11	Complies
2480	39.93	Complies

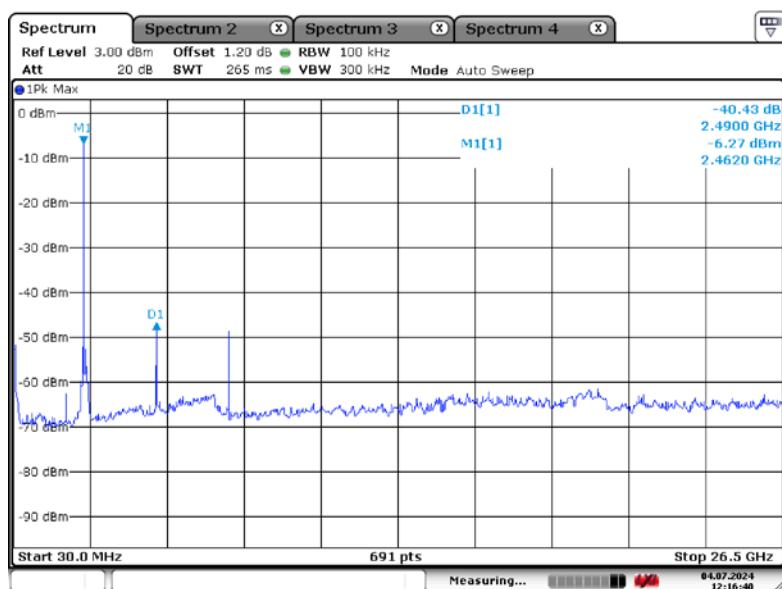
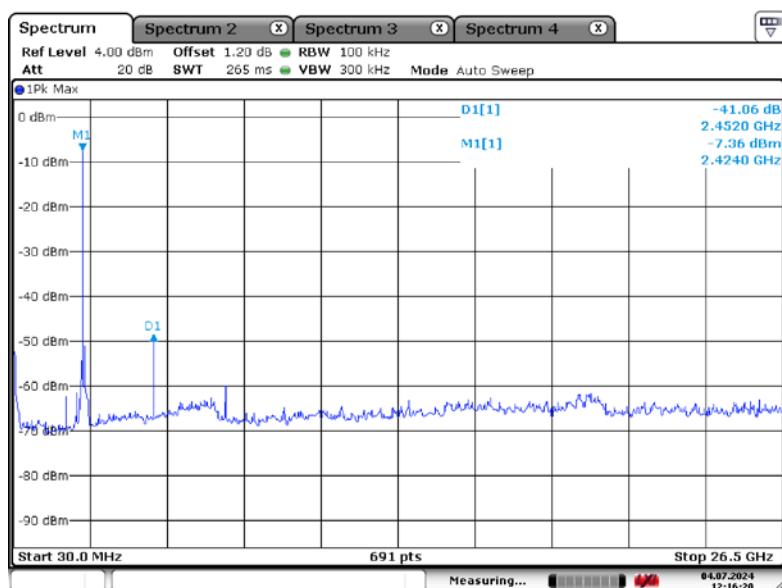
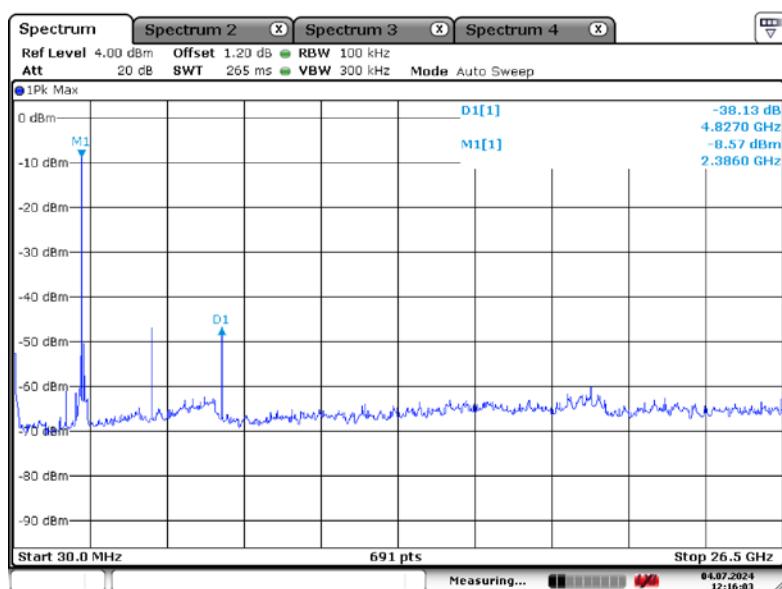
- All conducted emission in any 100 kHz bandwidth outside of the spread spectrum band was at least 20 dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.
- See next pages for actual measured spectrum plots.

Minimum Standard:	≥ 20 dBc
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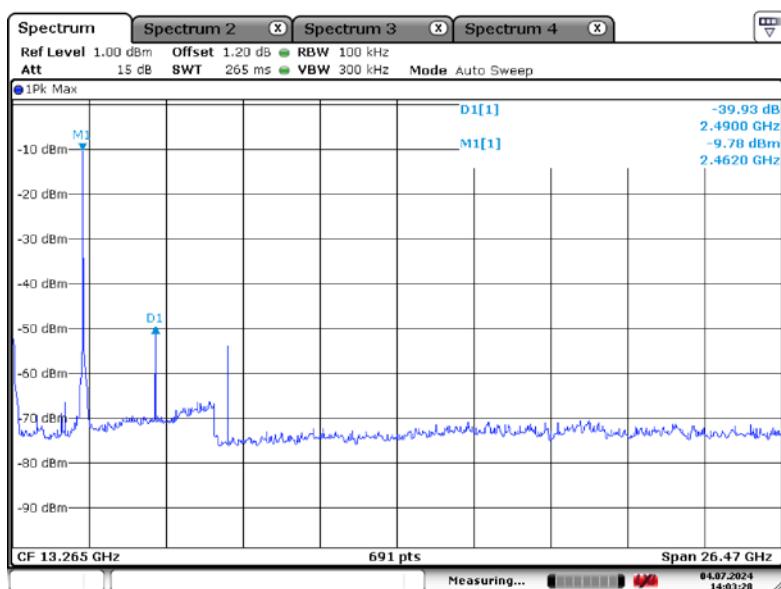
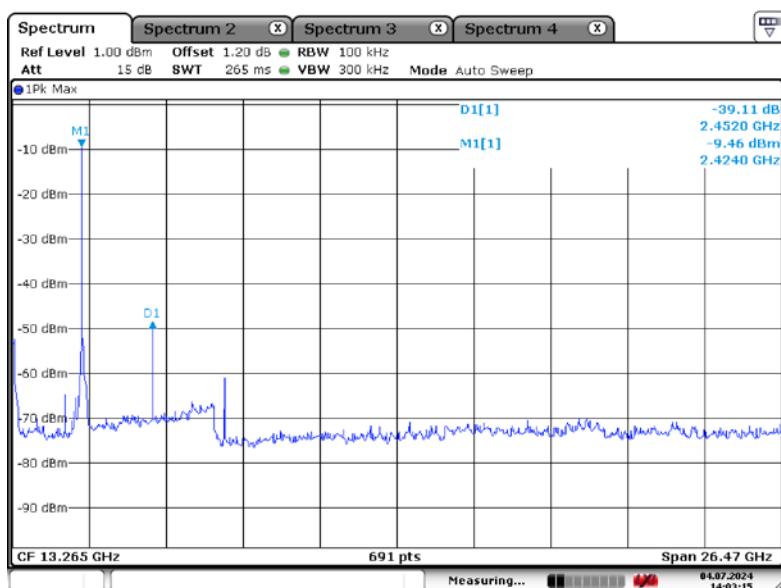
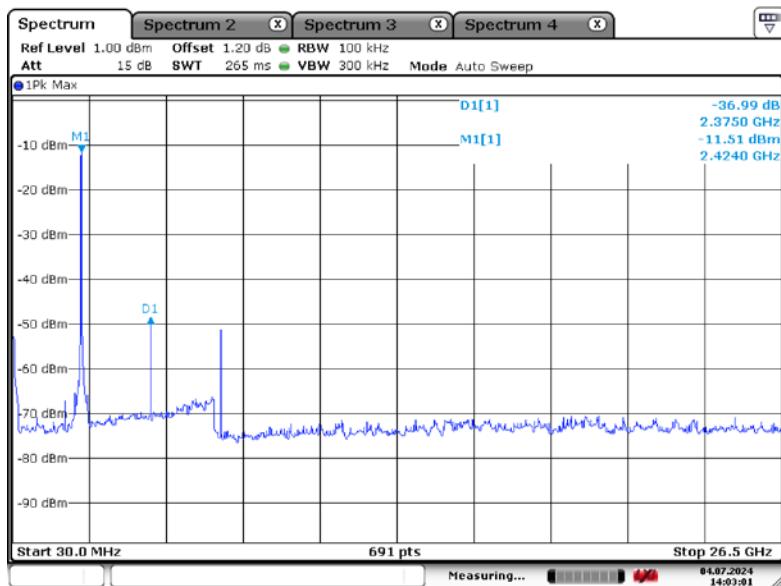
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

Mode - BLE



Mode – Zigbee



3.2.6 Radiated Spurious Emissions

Procedure:

Radiated emissions from 30 MHz to 25 GHz were measured according to the methods defined in ANSI C63.10-2013.

The EUT is placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna.

The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 9 kHz ~ 10th harmonic.

RBW = 120 kHz (30 MHz ~ 1 GHz)

$$\text{VBW} \geq \text{RBW}$$

$\equiv 1$ MHz (1 GHz \sim 10th harmonic)

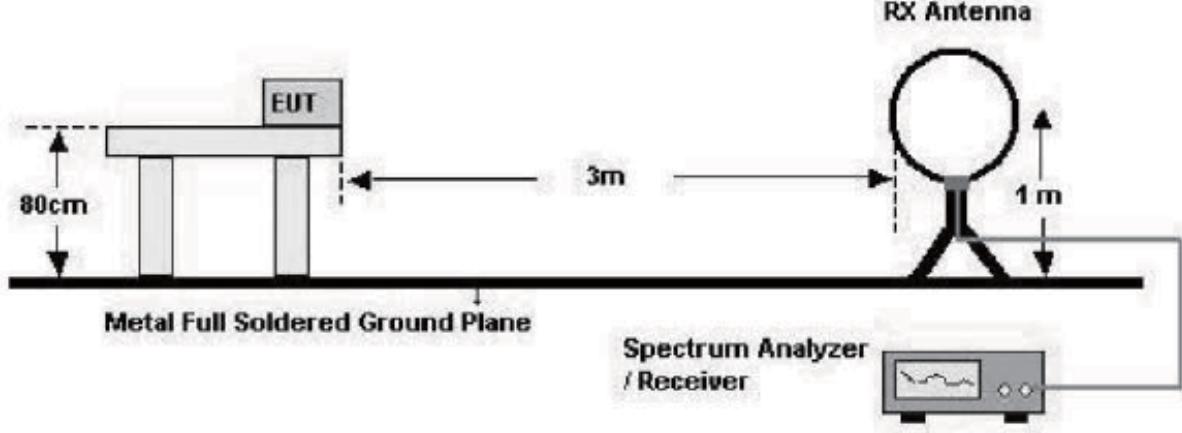
Detector function = peak

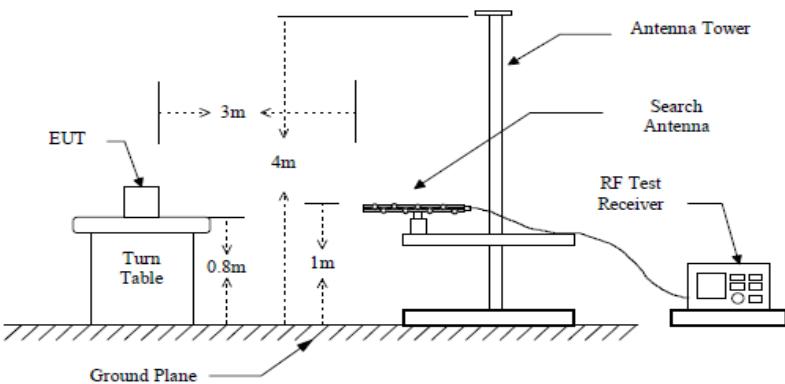
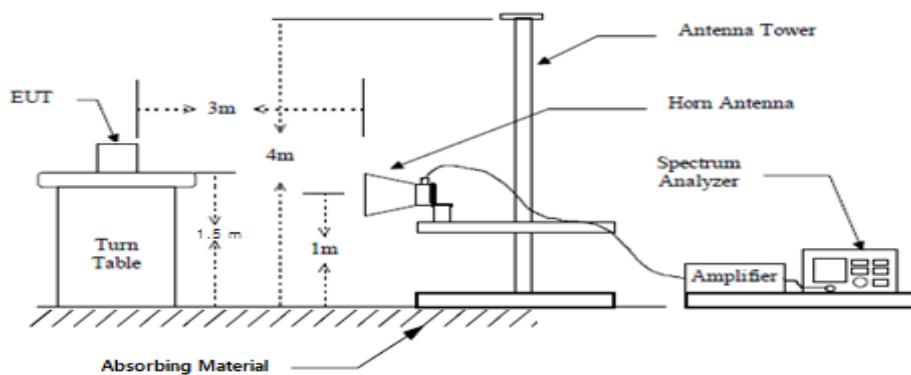
Sweep = auto

Duty cycle: 98.89 %

The EUT configured to transmit continuously ($D = 98\%$) Duty Factor = 0

below 30 MHz



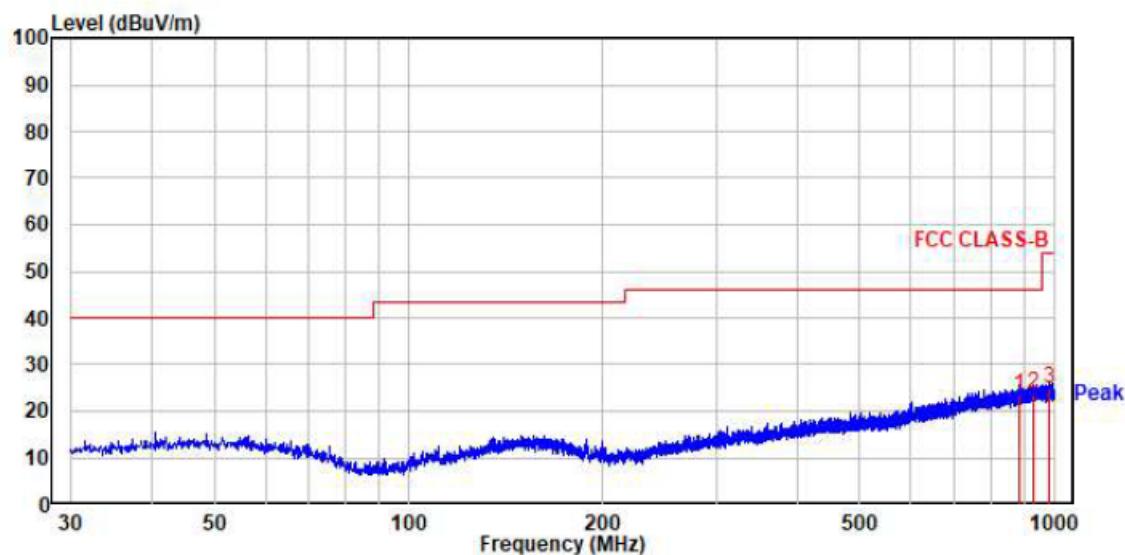
below 1 GHz (30 MHz to 1 GHz)**above 1 GHz****Measurement Data: Complies**

- See next pages for actual measured data.
- No other emissions were detected at a level greater than 20 dB below limit include from 9 kHz to 30MHz.
- The test results for the worst of the various operating modes are presented in accordance with 6.3.4 of ANSI C63.10.
- Checked with a red circle is the fundamental frequency.

Minimum Standard: FCC Part 15.209(a)

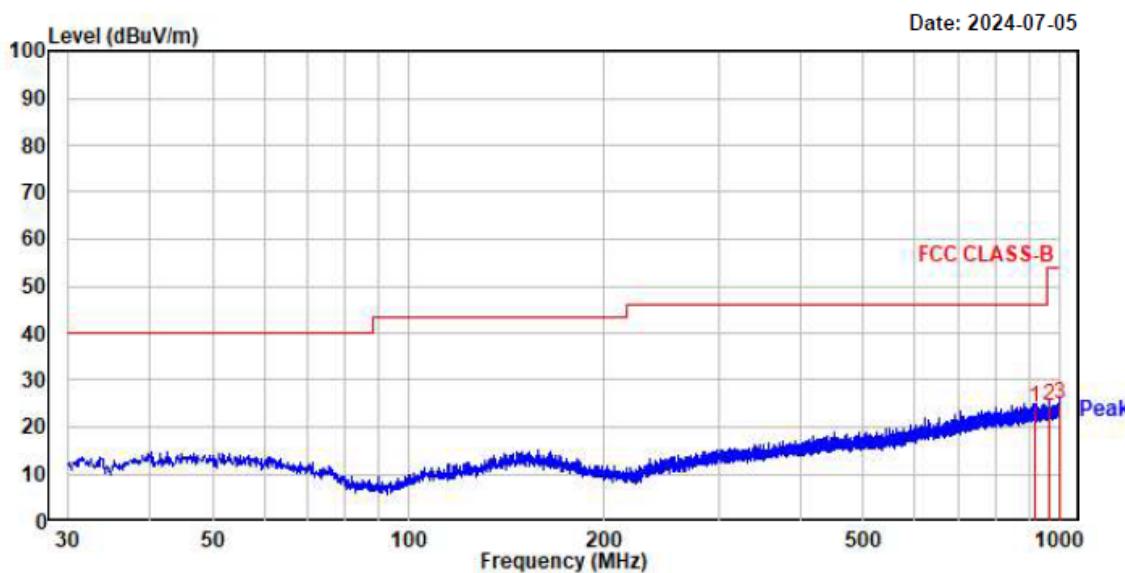
Frequency (MHz)	Limit (uV/m) @ 3 m
0.009 ~ 0.490	2400/F(kHz) (@ 300 m)
0.490 ~ 1.705	24000/F(kHz) (@ 30 m)
1.705 ~ 30	30(@ 30 m)
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

Radiated Emissions - BLE

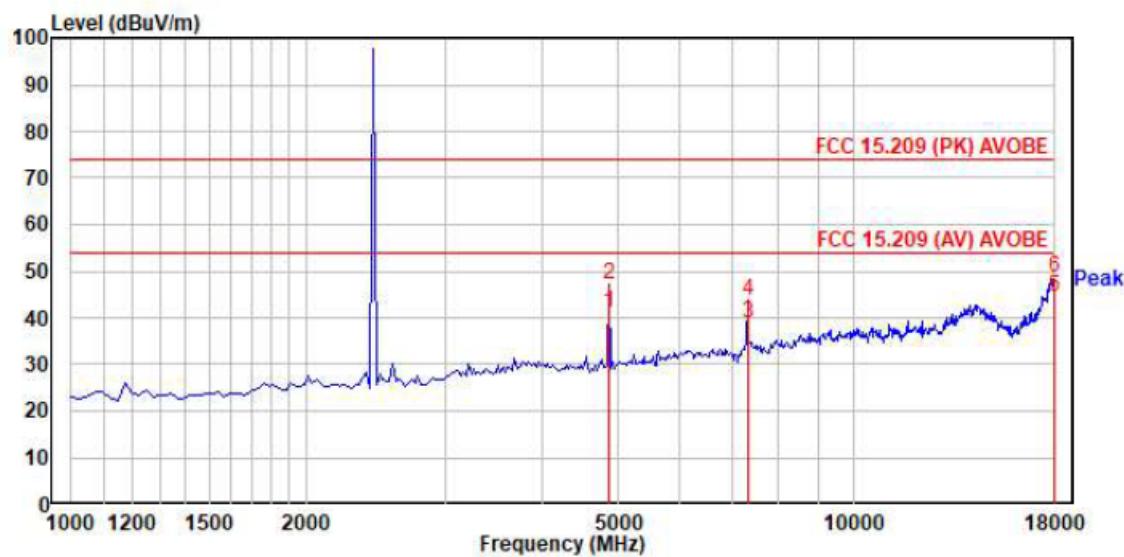
Trace:									
	No.	Freq	Reading	C.F	Result QP	Limit	Margin	Height	Angle
	MHz	dB μ V	dB	dB μ V/m	dB μ V/m	dB	cm	deg	
1.	882.02	27.55	-4.01	23.54	46.00	22.46	-----	-----	horizontal
2.	926.77	26.90	-3.27	23.63	46.00	22.37	-----	-----	horizontal
3.	981.69	27.82	-2.90	24.92	54.00	29.08	-----	-----	horizontal

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



Trace:									
	No.	Freq	Reading	C.F	Result QP	Limit	Margin	Height	Angle
	MHz	dB μ V	dB	dB μ V/m	dB μ V/m	dB	cm	deg	
1.	917.31	28.07	-4.01	24.06	46.00	21.94	-----	-----	vertical
2.	962.53	28.33	-3.77	24.56	54.00	29.44	-----	-----	vertical
3.	998.30	28.08	-3.22	24.86	54.00	29.14	-----	-----	vertical

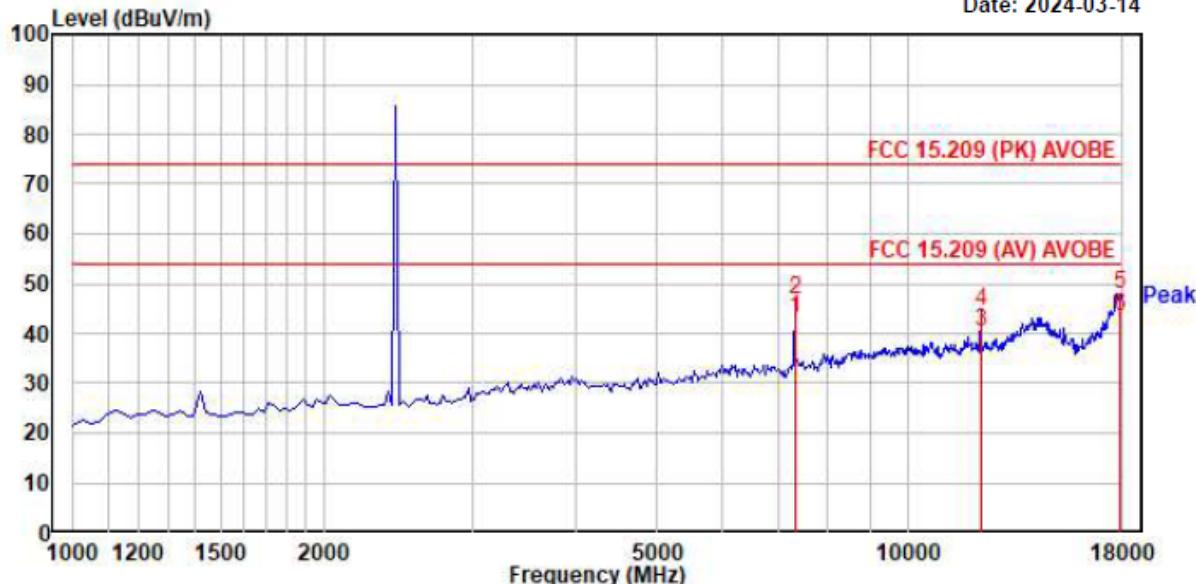
Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



No.	Freq	RD	RD	C.F	Result		Result		Limit		Limit		Margin	Margin	Height	Angle	Polarity
					PK	AV	PK	AV	PK	AV	PK	AV					
MHz	dB μ V	dB μ V	dB	dB μ V	dB μ V	dB	dB μ V	dB μ V	dB	dB	dB	dB	cm	deg			
1.	4868.12	-----	37.11	3.92	-----	41.03	-----	54.00	-----	54.00	-----	12.97	100	133	horizontal		
2.	4868.12	43.25	37.11	3.92	47.17	41.03	74.00	54.00	26.83	12.97	100	133					
3.	7307.25	-----	30.20	8.76	-----	38.96	-----	54.00	-----	54.00	-----	15.04	100	118	horizontal		
4.	7307.25	34.88	30.20	8.76	43.64	38.96	74.00	54.00	30.36	15.04	100	118					
6.	18000.00	23.56	19.50	24.98	48.54	44.48	74.00	54.00	25.46	9.52	100	27					

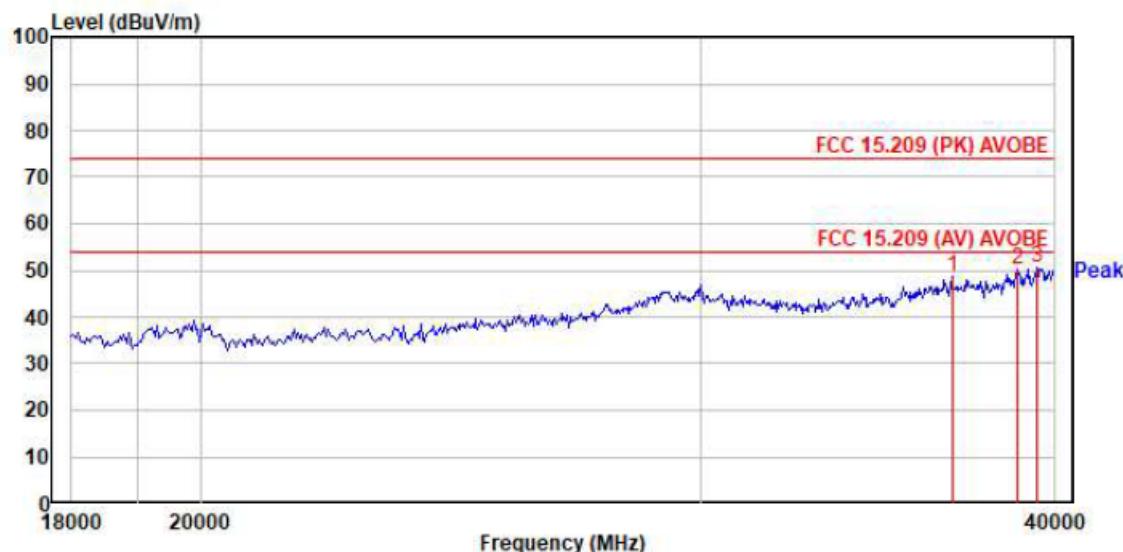
Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

Date: 2024-03-14



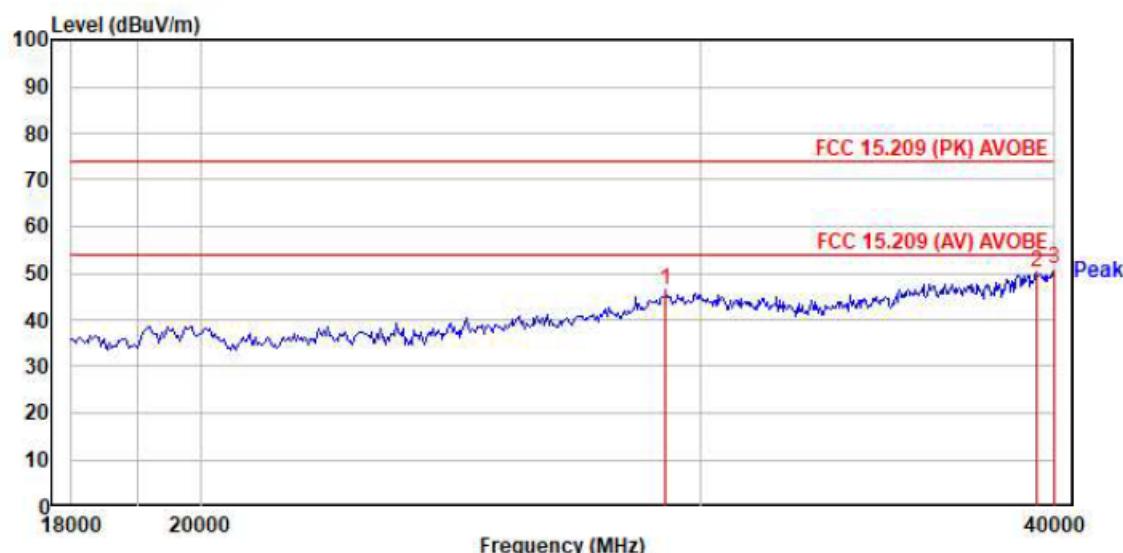
No.	Freq	RD	RD	C.F	Result		Result		Limit		Limit		Margin	Margin	Height	Angle	Polarity
					PK	AV	PK	AV	PK	AV	PK	AV					
MHz	dB μ V	dB μ V	dB	dB μ V	dB μ V	dB	dB μ V	dB μ V	dB	dB	dB	dB	cm	deg			
1.	7307.25	-----	34.10	8.76	-----	42.86	-----	54.00	-----	54.00	-----	11.14	100	360	vertical		
2.	7307.25	38.09	34.10	8.76	46.85	42.86	74.00	54.00	27.15	11.14	100	360					
3.	12210.14	-----	26.40	14.02	-----	40.42	-----	54.00	-----	54.00	-----	13.58	100	182	vertical		
4.	12210.14	30.56	-----	14.02	44.58	-----	74.00	-----	29.42	-----	100	182					
5.	17926.09	23.05	-----	24.88	47.93	-----	74.00	-----	26.07	-----	100	398					
6.	17926.09	-----	18.61	24.88	-----	43.49	-----	54.00	-----	10.51	100	398					

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



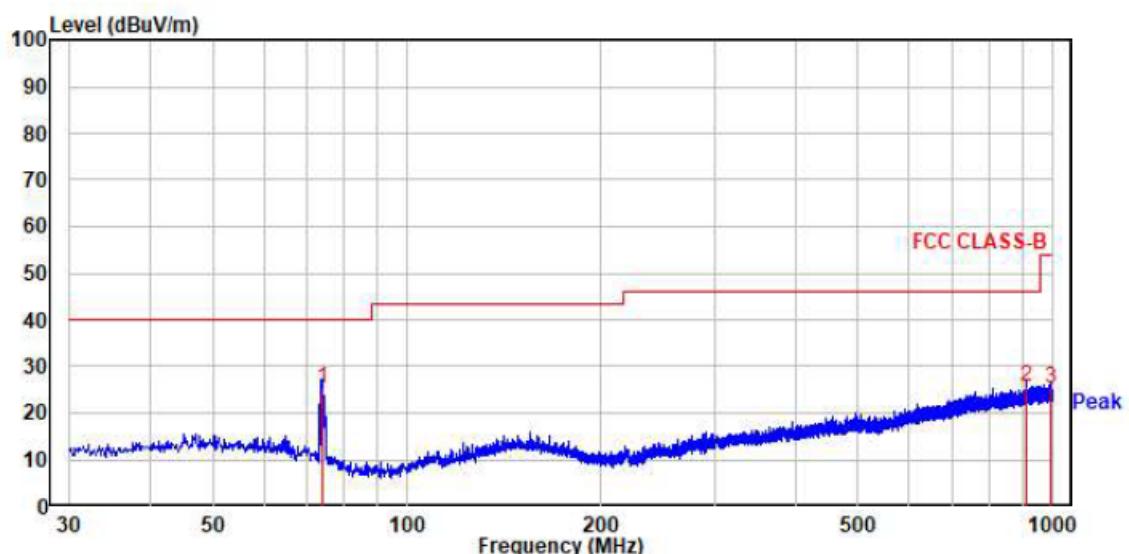
No.	Freq	RD	RD	C.F		Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Polarity
				PK	AV									
	MHz	dB μ V	dB μ V	dB	dB μ V	dB	dB	cm	deg					
1.	36811.59	24.48	-----	24.24	48.72	-----	74.00	-----	25.28	-----	100	102	horizontal	
2.	38852.18	27.26	-----	23.12	50.38	-----	74.00	-----	23.62	-----	100	360	horizontal	
3.	39457.97	25.84	-----	24.75	50.59	-----	74.00	-----	23.41	-----	100	295	horizontal	

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



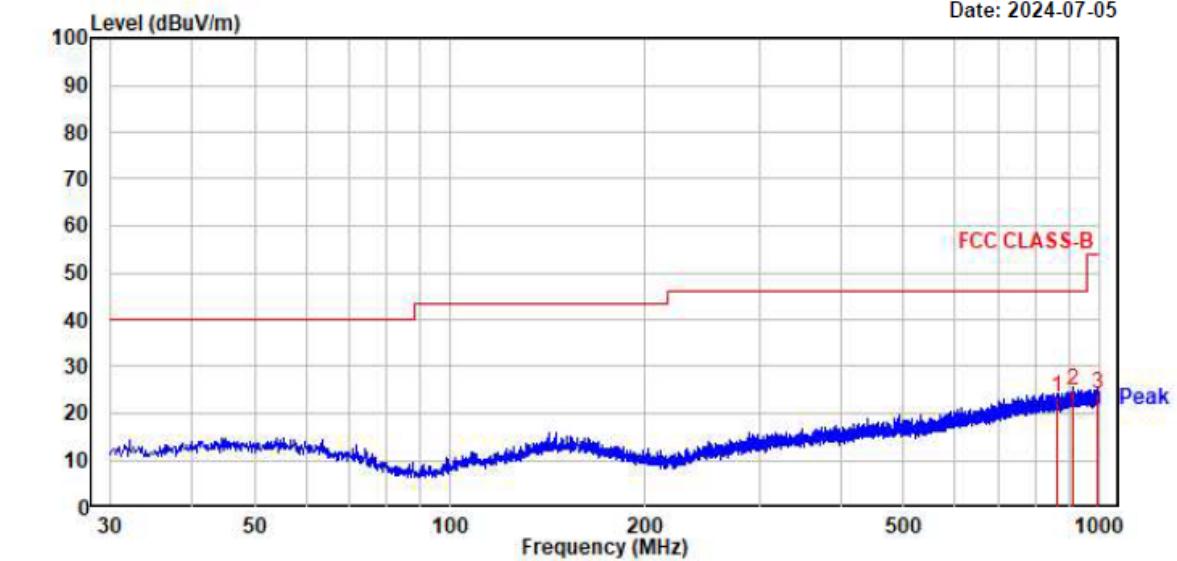
No.	Freq	RD	RD	C.F		Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Polarity
				PK	AV									
	MHz	dB μ V	dB μ V	dB	dB μ V	dB	dB	cm	deg					
1.	29191.30	22.96	-----	23.48	46.44	-----	74.00	-----	27.56	-----	100	0	vertical	
2.	39426.09	25.21	-----	24.83	50.04	-----	74.00	-----	23.96	-----	100	84	vertical	
3.	40000.00	25.67	-----	25.11	50.78	-----	74.00	-----	23.22	-----	100	247	vertical	

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

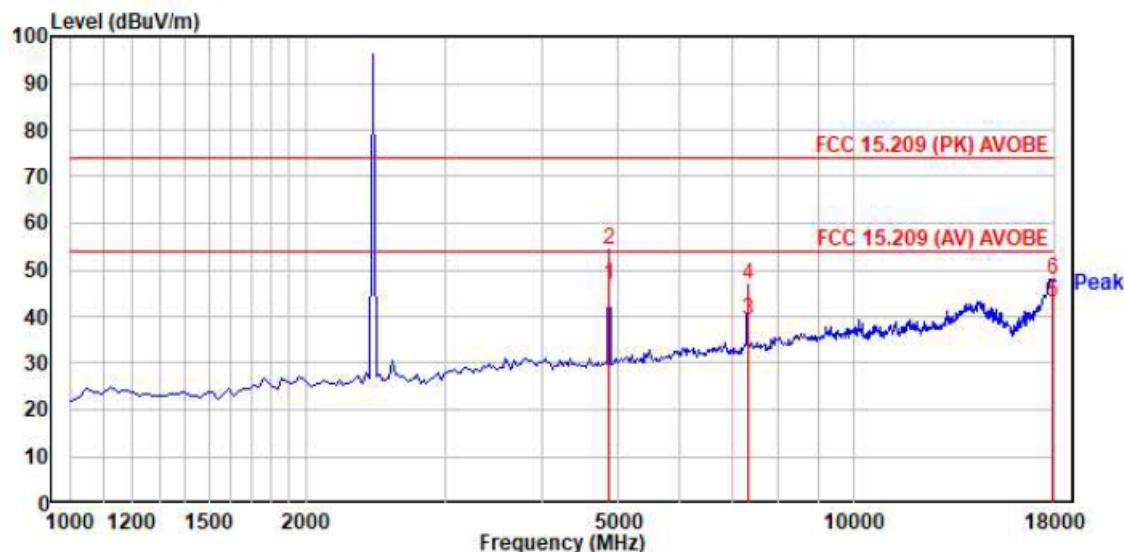
Radiated Emissions - Zigbee

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

Date: 2024-07-05

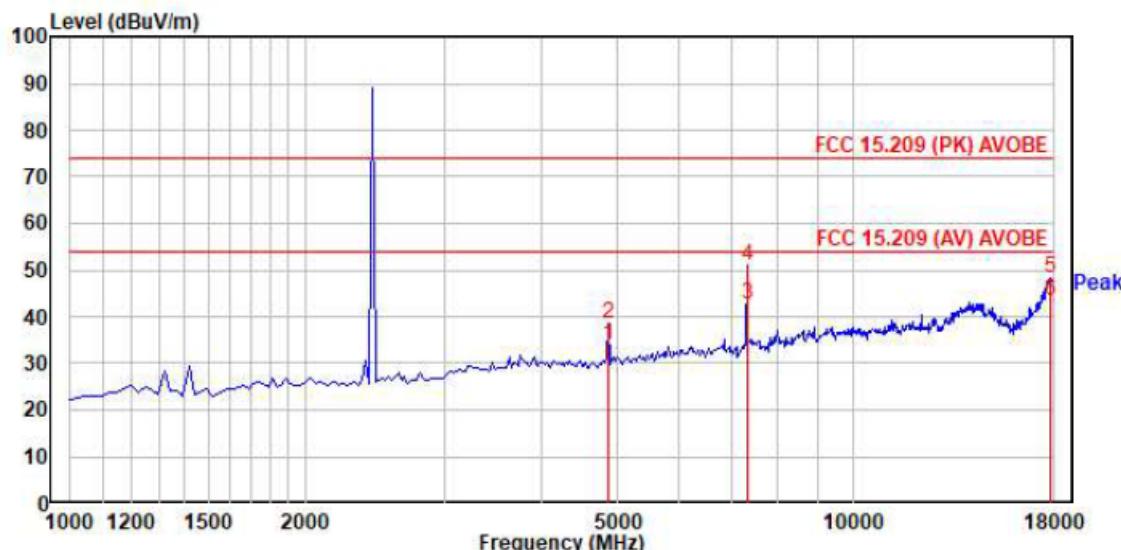


Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



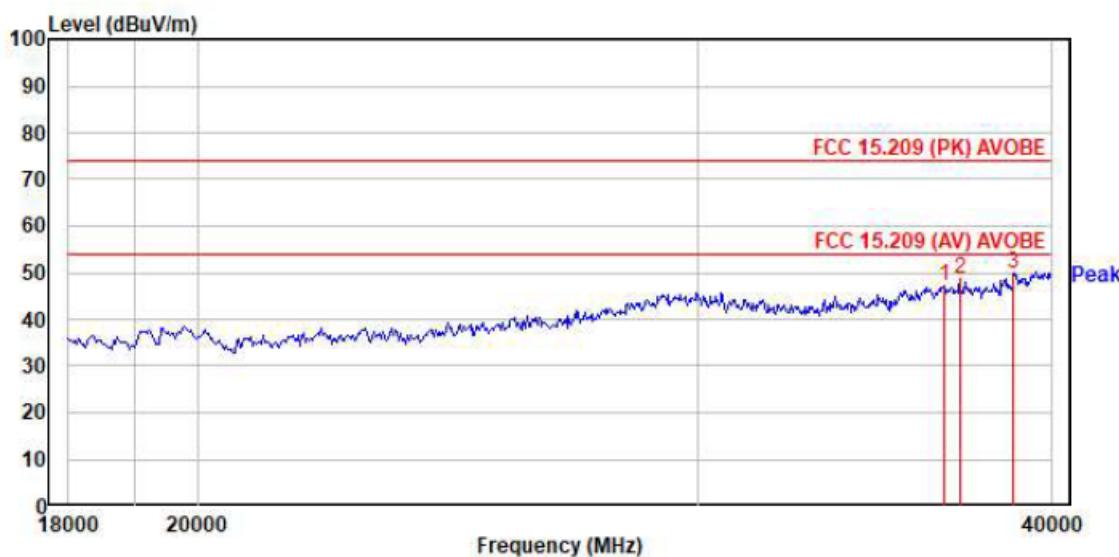
No.	Freq	RD	RD	C.F	Result		Result		Limit		Margin		Height	Angle	Polarity
					PK	AV	PK	AV	PK	AV	PK	AV			
	MHz	dB μ V	dB μ V		dB	dB μ V	dB μ V	dB μ V	dB μ V	dB	cm	deg			
1.	4868.12	-----	42.71	3.92	-----	46.63	-----	54.00	-----	7.37	100	54	horizontal		
2.	4868.12	50.36	42.71	3.92	54.28	46.63	74.00	54.00	19.72	7.37	100	54	horizontal		
3.	7307.25	-----	30.50	8.76	-----	39.26	-----	54.00	-----	14.74	100	54	horizontal		
4.	7307.25	37.89	30.50	8.76	46.65	39.26	74.00	54.00	27.35	14.74	100	54	horizontal		
5.	17950.72	-----	18.00	24.95	-----	42.95	-----	54.00	-----	11.05	100	130	horizontal		
6.	17950.72	23.15	-----	24.95	48.10	-----	74.00	-----	25.90	-----	100	130	horizontal		

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



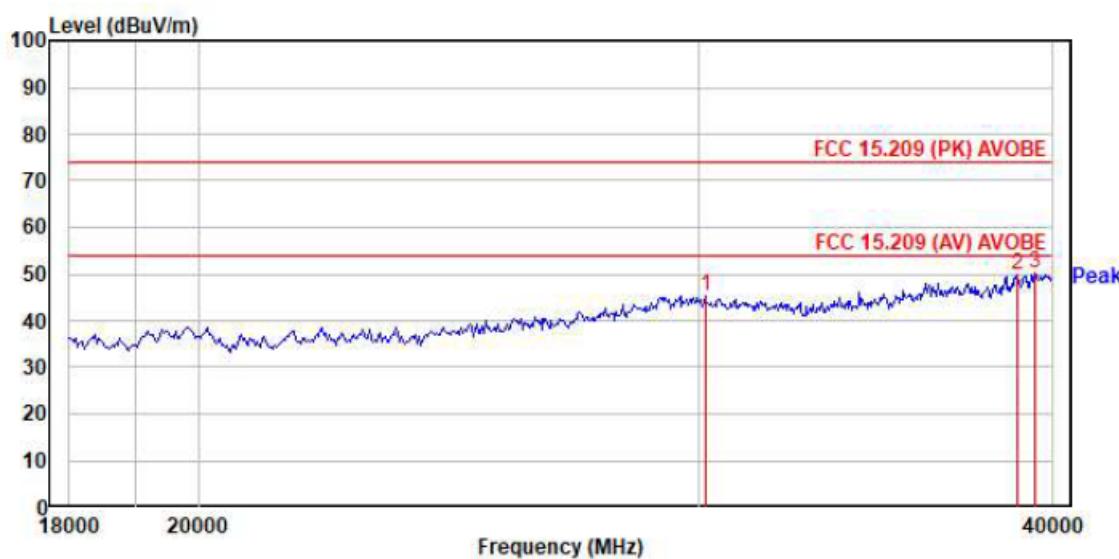
No.	Freq	RD	RD	C.F	Result		Result		Limit		Margin		Height	Angle	Polarity
					PK	AV	PK	AV	PK	AV	PK	AV			
	MHz	dB μ V	dB μ V		dB	dB μ V	dB μ V	dB μ V	dB μ V	dB	cm	deg			
1.	4868.12	-----	30.01	3.92	-----	33.93	-----	54.00	-----	20.07	100	111	vertical		
2.	4868.12	34.64	30.01	3.92	38.56	33.93	74.00	54.00	35.44	20.07	100	111	vertical		
3.	7307.25	-----	33.70	8.76	-----	42.46	-----	54.00	-----	11.54	100	122	vertical		
4.	7307.25	42.31	33.70	8.76	51.07	42.46	74.00	54.00	22.93	11.54	100	122	vertical		
5.	17827.54	23.58	-----	24.68	48.26	-----	74.00	-----	25.74	-----	100	153	vertical		
6.	17827.54	-----	18.60	24.68	-----	43.28	-----	54.00	-----	10.72	100	153	vertical		

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



No.	Freq	RD	RD	C.F	Result		Result		Limit		Margin		Margin	Height	Angle	Polarity
					PK	AV	PK	AV	PK	AV	PK	AV				
	MHz	dB _{μV}	dB _{μV}		dB	dB _{μV}		dB _{μV}	dB _{μV}	dB	dB	cm	deg			
1.	36652.18	22.83	-----	24.34	47.17	-----	74.00	-----	26.83	-----	100	101	horizontal			
2.	37130.43	24.90	-----	23.82	48.72	-----	74.00	-----	25.28	-----	100	101	horizontal			
3.	38788.41	26.63	-----	23.18	49.81	-----	74.00	-----	24.19	-----	100	360	horizontal			

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



No.	Freq	RD	RD	C.F	Result		Result		Limit		Margin		Margin	Height	Angle	Polarity
					PK	AV	PK	AV	PK	AV	PK	AV				
	MHz	dB _{μV}	dB _{μV}		dB	dB _{μV}		dB _{μV}	dB _{μV}	dB	dB	cm	deg			
1.	30179.71	22.21	-----	23.23	45.44	-----	74.00	-----	28.56	-----	100	2	vertical			
2.	38884.06	26.54	-----	23.32	49.86	-----	74.00	-----	24.14	-----	100	0	vertical			
3.	39426.09	25.22	-----	24.83	50.05	-----	74.00	-----	23.95	-----	100	0	vertical			

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

3.2.7 AC Conducted Emissions

Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its hopping function disabled at the middle channels in line with Section 15.31(m). Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

Minimum Standard: FCC Part 15.207(a) / EN 55022

Measurement Data: N/A

Class B

Frequency Range	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

APPENDIX
TEST EQUIPMENT USED FOR TESTS

O	Use	Description	Model No.	Serial No.	Manufacturer	Interval	Next Cal. Date
1	■	Signal Analyzer (9 kHz ~ 30 GHz)	FSV30	100757	R&S	1 year	2024-08-30
2	■	Signal Generator (~3.2 GHz)	8648C	3623A02597	HP	1 year	2025-03-08
3		SYNTHESIZED CW GENERATOR	83711B	US34490456	HP	1 year	2025-03-08
4		Attenuator (3 dB)	8491A	37822	HP	1 year	2024-08-30
5		Attenuator (10 dB)	8491A	63196	HP	1 year	2024-08-30
6	■	EMI Test Receiver (~7 GHz)	ESCI7	100722	R&S	1 year	2024-08-30
7		RF Amplifier (~1.3 GHz)	8447D OPT 010	2944A07684	HP	1 year	2024-08-30
8		RF Amplifier (1~26.5 GHz)	8449B	3008A02126	HP	1 year	2025-03-08
9	■	Horn Antenna (1~18 GHz)	3115	00114105	ETS	2 year	2025-08-30
10	■	DRG Horn (Small)	3116B	81109	ETS-Lindgren	2 year	2026-03-08
11	■	DRG Horn (Small)	3116B	133350	ETS-Lindgren	2 year	2026-03-08
12	■	TRILOG Antenna	VULB 9160	9160-3237	SCHWARZBECK	2 year	2026-03-08
13		Temp.Humidity Data Logger	SK-L200TH II A	00801	SATO	1 year	2025-03-08
14		Splitter (SMA)	ZFSC-2-2500	SF617800326	Mini-Circuits	-	-
15	■	DC Power Supply	6674A	3637A01657	Agilent	-	-
17	■	Power Meter	EPM-441A	GB32481702	HP	1 year	2025-03-08
18	■	Power Sensor	8481A	3318A94972	HP	1 year	2024-08-30
19		Audio Analyzer	8903B	3729A18901	HP	1 year	2024-08-30
20		Modulation Analyzer	8901B	3749A05878	HP	1 year	2024-08-30
21		TEMP & HUMIDITY Chamber	YJ-500	LTAS06041	JinYoung Tech	1 year	2024-08-30
22		Stop Watch	HS-3	812Q08R	CASIO	2 year	2026-03-14
23		LISN	KNW-407	8-1430-1	Kyoritsu	1 year	2025-03-08
24		Two-Lime V-Network	ESH3-Z5	893045/017	R&S	1 year	2025-03-08
25		UNIVERSAL RADIO COMMUNICATION TESTER	CMU200	106243	R&S	1 year	2025-03-08
26		Highpass Filter	WHKX1.5/15G-10SS	74	Wainwright Instruments	1 year	2025-03-08
27		Highpass Filter	WHKX3.0/18G-10SS	118	Wainwright Instruments	1 year	2025-03-08
28		OSP120 BASE UNIT	OSP120	101230	R&S	1 year	2025-03-08
29	■	Signal Generator(100 kHz ~ 40 GHz)	SMB100A03	177621	R&S	1 year	2025-03-08
30	■	Signal Analyzer (10 Hz ~ 40 GHz)	FSV40	101367	R&S	1 year	2025-03-08
31	■	Active Loop Antenna	FMZB 1519	1519-031	SCHWARZBECK	2 year	2026-03-08