

ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR LOW-POWER, NON-LICENSED TRANSMITTER

Test Report No. : OT-20N-RWD-059

Reception No. : 2010003942

Applicant : Brightlab Inc.

Address : E-802, 30, Songdomirae-ro, Yeonsu-gu, Incheon, Republic of Korea

Manufacturer : Brightlab Inc.

Address : E-802, 30, Songdomirae-ro, Yeonsu-gu, Incheon, Republic of Korea

Type of Equipment : Smart bicycle light

FCC ID. : 2AX9JPFM-BH110S

Model Name : PFM-BH110S

Multiple Model Name : N/A

Serial number : N/A

Total page of Report : 36 pages (including this page)

Date of Incoming : October 29, 2020

Date of issue : November 19, 2020

SUMMARY

The equipment complies with the regulation; **FCC PART 15 SUBPART C Section 15.247**

This test report only contains the result of a single test of the sample supplied for the examination.

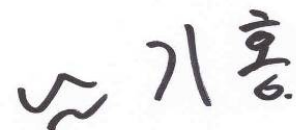
It is not a generally valid assessment of the features of the respective products of the mass-production.



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Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-20N-RWD-059	November 19, 2020	Initial Release	All

1. VERIFICATION OF COMPLIANCE

Applicant : Brightlab Inc.
Address : E-802, 30, Songdomirae-ro, Yeonsu-gu, Incheon, Republic of Korea
Contact Person : Ted kwon / CEO
Telephone No. : +70-8650-8000
FCC ID : 2AX9JPFM-BH110S
Model Name : PFM-BH110S
Brand Name : -
Serial Number : N/A
Date : November 19, 2020

EQUIPMENT CLASS	DTS – DIGITAL TRNSMISSION SYSTEM
E.U.T. DESCRIPTION	Smart bicycle light
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2013
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 SUBPART C Section 15.247 KDB 558074 D01 15.247 Meas Guidance v05r02
Modifications on the Equipment to Achieve Compliance	None
Final Test was Conducted On	3 m, Semi Anechoic Chamber

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. TEST SUMMARY

2.1 Test items and results

SECTION	TEST ITEMS	RESULTS
15.247 (a) (2)	Minimum 6 dB Bandwidth	Met the Limit / PASS
15.247 (b) (3)	Maximum Peak Conducted Output Power	Met the Limit / PASS
15.247 (d)	100 kHz Bandwidth Outside the Frequency Band	Met the Limit / PASS
15.247 (d)	Radiated Emission which fall in the Restricted Band	Met the Limit / PASS
15.247 (e)	Peak Power Spectral Density	Met the Limit / PASS
15.209	Radiated Emission Limits	Met the Limit / PASS
15.207	Conducted Limits	Met the Limit / PASS
15.203	Antenna Requirement	Met requirement / PASS

2.2 Additions, deviations, exclusions from standards

No additions, deviations or exclusions have been made from standard.

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Purpose of the test

To determine whether the equipment under test fulfills the requirements of the regulation stated in FCC PART 15 SUBPART C Section 15.247.

2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013. Radiated testing was performed at a distance of 3 m from EUT to the antenna.

2.6 Test Facility

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea.

-. Site Filing:

VCCI (Voluntary Control Council for Interference) – Registration No. R-4112/ C-14617/ G-10666/ T-11842

ISED (Innovation, Science and Economic Development Canada) – Registration No. Site# 3736A-3

KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation NO. KT085

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

3. GENERAL INFORMATION

3.1 Product Description

The Brightlab Inc., Model PFM-BH110S (referred to as the EUT in this report) is a Smart bicycle light. The product specification described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	Smart bicycle light
Temperature Range	-20 °C ~ 50 °C
OPERATING FREQUENCY	2 402 MHz ~ 2 480 MHz
MODULATION TYPE	GFSK
RF OUTPUT POWER	-2.34 dBm
ANTENNA TYPE	PCB Antenna
ANTENNA GAIN	-1.90 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	3.276 8 kHz, 64 MHz

3.2 Alternative type(s)/model(s); also covered by this test report.

-. None

4. EUT MODIFICATIONS

-. None

5. SYSTEM TEST CONFIGURATION

5.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
Main Board	Brightlab Inc.	LUXI V3.0	N/A
LED Board	N/A	N/A	N/A
Port Board	N/A	N/A	N/A
Battery	N/A	N/A	N/A

5.2 Peripheral equipment

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

-. Charging mode & Transmitting Mode

Model	Manufacturer	Description	Connected to
PFM-BH110S	Brightlab Inc.	Smart bicycle light (EUT)	-
SHV-E330K	Samsung Electronics.	Mobile Phones	-
A1487	Flextronics Power Systems(Dongguan) Co., Ltd.	AC Adaptor	EUT

-. Transmitting Mode

Model	Manufacturer	Description	Connected to
PFM-BH110S	Brightlab Inc.	Smart bicycle light (EUT)	-
HP ProtectSmart	HP	Notebook PC	EUT
PPP009C	LIE-ON TECHNOLOGY (CHANGZHOU)CO.,LTD.	AC Adaptor	-

5.3 Mode of operation during the test

For the testing, software used to control the EUT for staying in continuous transmitting is programmed.

For final testing, the EUT was set at 2 402 MHz, 2 440 MHz, and 2 480 MHz to get a maximum emission levels from the EUT. The EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “XZ” axis, but the worst data was recorded in this report.

-. Channel List (Bluetooth LE)

Channel	Frequency[MHz]	Channel	Frequency[MHz]	Channel	Frequency[MHz]
0	2 402.00	14	2 430.00	28	2 458.00
1	2 404.00	15	2 432.00	29	2 460.00
2	2 406.00	16	2 434.00	30	2 462.00
3	2 408.00	17	2 436.00	31	2 464.00
4	2 410.00	18	2 438.00	32	2 466.00
5	2 412.00	19	2 440.00	33	2 468.00
6	2 414.00	20	2 442.00	34	2 470.00
7	2 416.00	21	2 444.00	35	2 472.00
8	2 418.00	22	2 446.00	36	2 474.00
9	2 420.00	23	2 448.00	37	2 476.00
10	2 422.00	24	2 450.00	38	2 478.00
11	2 424.00	25	2 452.00	39	2 480.00
12	2 426.00	26	2 454.00		
13	2 428.00	27	2 456.00		

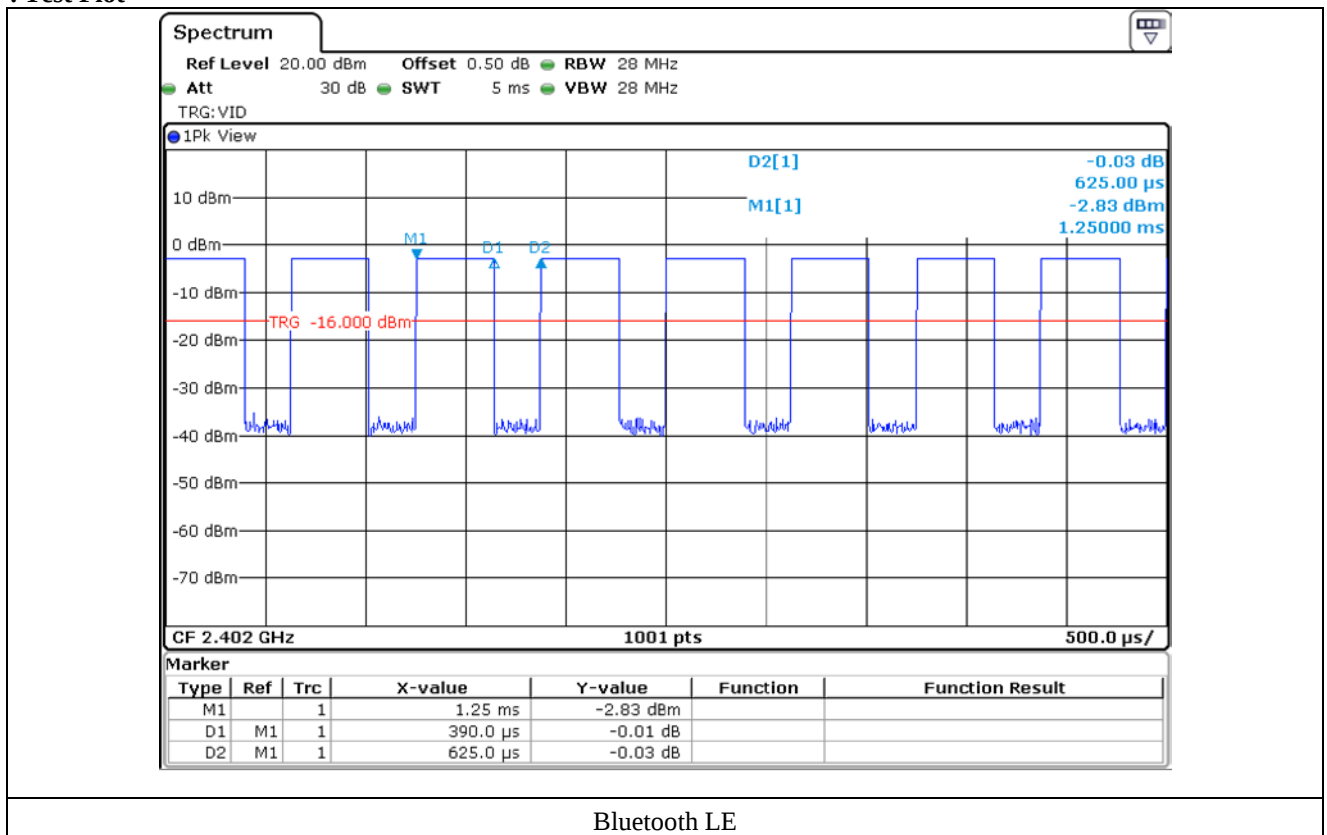
-. Duty Cycle

Mode	Tx On Time [ms]	Tx Off Time [ms]	Duty Cycle [%]	Correction Factor [dB]
Bluetooth LE	0.390	0.235	62.40	2.05

Note – Duty Cycle : (Tx On Time / (Tx On Time + Tx Off Time)) * 100

Correction Factor : 10 * Log(1 / (Duty Cycle / 100))

-. Test Plot



5.4 Configuration of Test System

Line Conducted Test: The EUT was tested in a Charging mode & Transmitting Mode. The EUT was connected to USB and the power of USB was connected to Adaptor. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions. Final radiated emission tests were conducted at 10 meter Semi Anechoic Chamber.

The turntable was rotated through 360 degrees and the EUT was tested by positioned three orthogonal planes to obtain the highest reading on the field strength meter. Once maximum reading was determined, the search antenna was raised and lowered in both vertical and horizontal polarization.

5.5 Antenna Requirement

For intentional device, according to section 15.203, 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.

Antenna Construction:

The antenna of the EUT is a PCB Antenna on the main board in the EUT, so no consideration of replacement by the user.

6. PRELIMINARY TEST

6.1 AC Power line Conducted Emissions Tests

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Charging mode & Transmitting Mode	X

6.2 General Radiated Emissions Tests

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Transmitting Mode	X

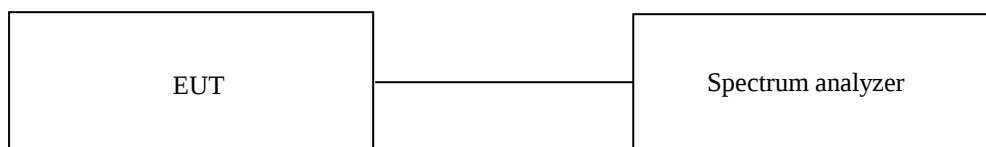
7. MINIMUM 6 dB BANDWIDTH

7.1 Operating environment

Temperature : 23 °C
Relative humidity : 45 % R.H.

7.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz, and peak detection was used. The 6 dB bandwidth is defined as the total spectrum over which the power is higher than the peak power minus 6 dB.



7.3 Test Date

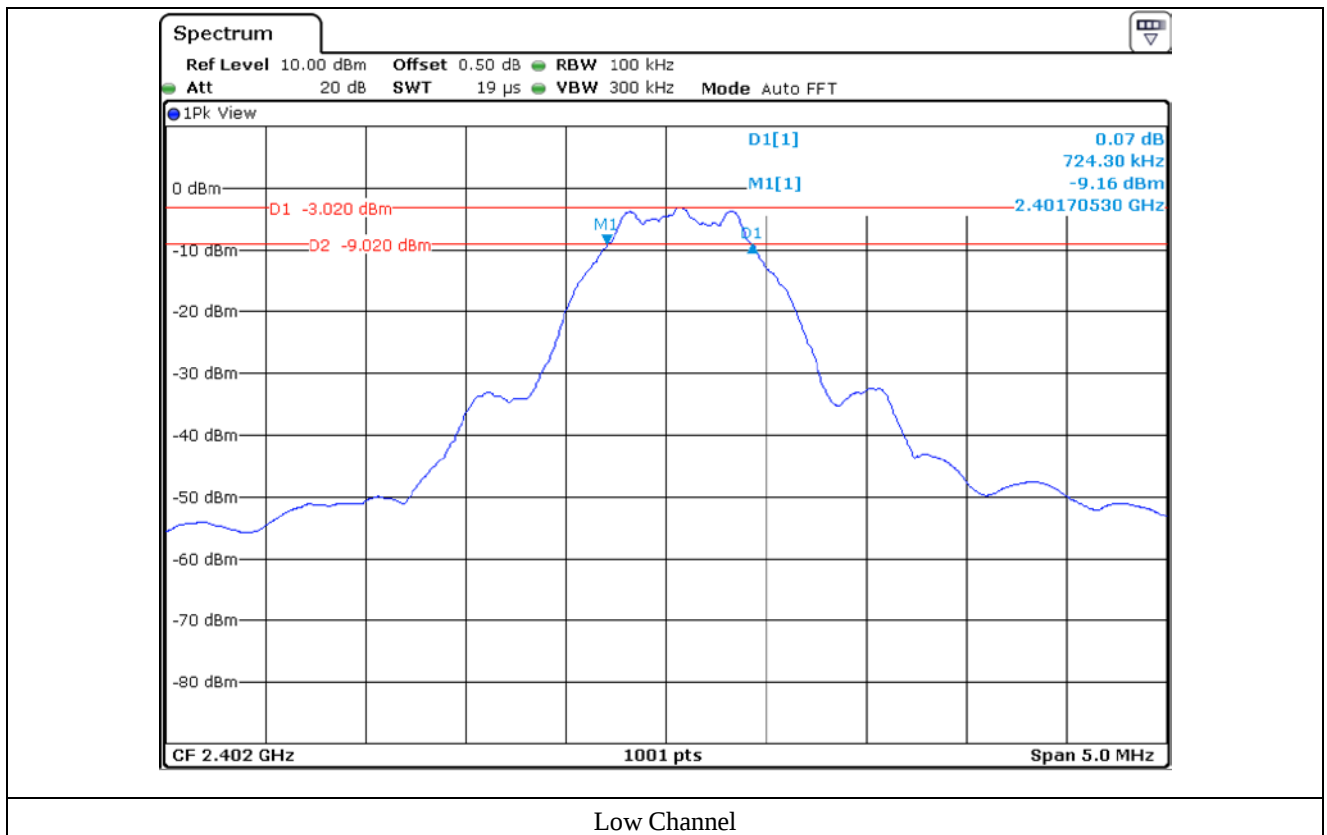
October 29, 2020 ~ November 03, 2020

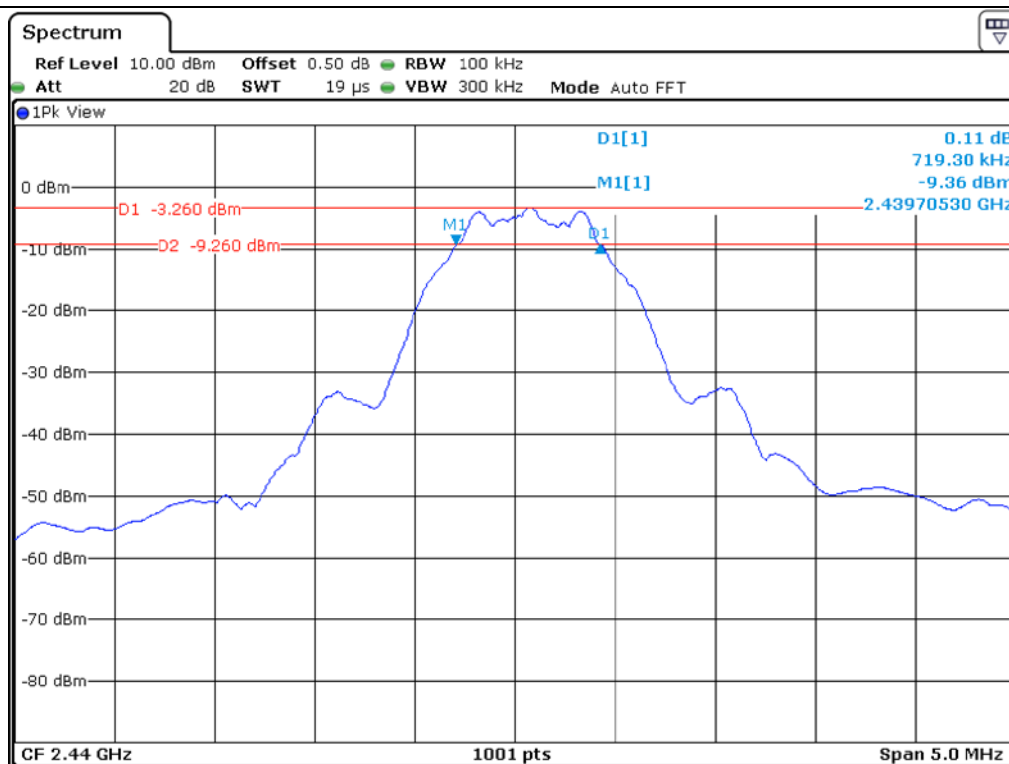
7.4 Test data

-. Test Result : Pass

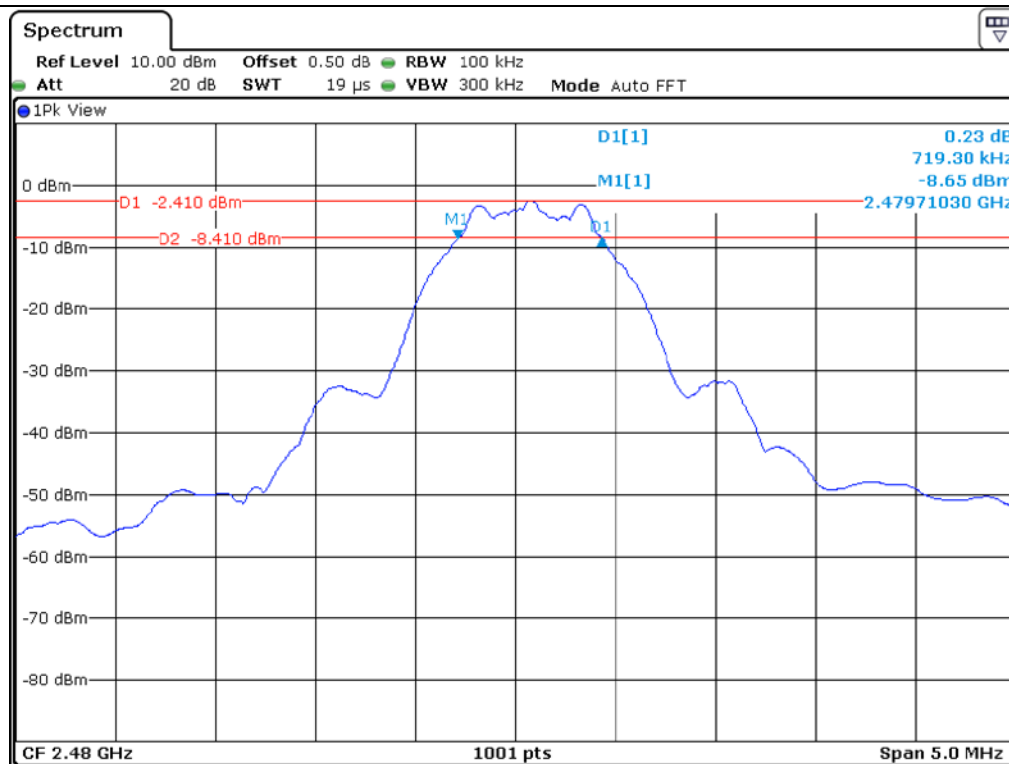
CHANNEL	FREQUENCY(MHz)	MEASURED VALUE (kHz)	LIMIT (kHz)	MARGIN (kHz)
Low	2 402.00	724.30	500.00	224.30
Middle	2 440.00	719.30	500.00	219.30
High	2 480.00	719.30	500.00	219.30

Remark. Margin = Measured Value - Limit





Middle Channel



High Channel

8. MAXIMUM PEAK OUTPUT POWER

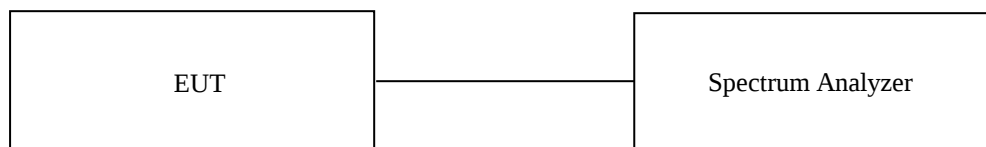
8.1 Operating environment

Temperature : 23 °C
Relative humidity : 45 % R.H.

8.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer.

The resolution bandwidth is set to $\geq$ DTS Bandwidth, the video bandwidth is set to 3 times the resolution bandwidth.



8.3 Test Date

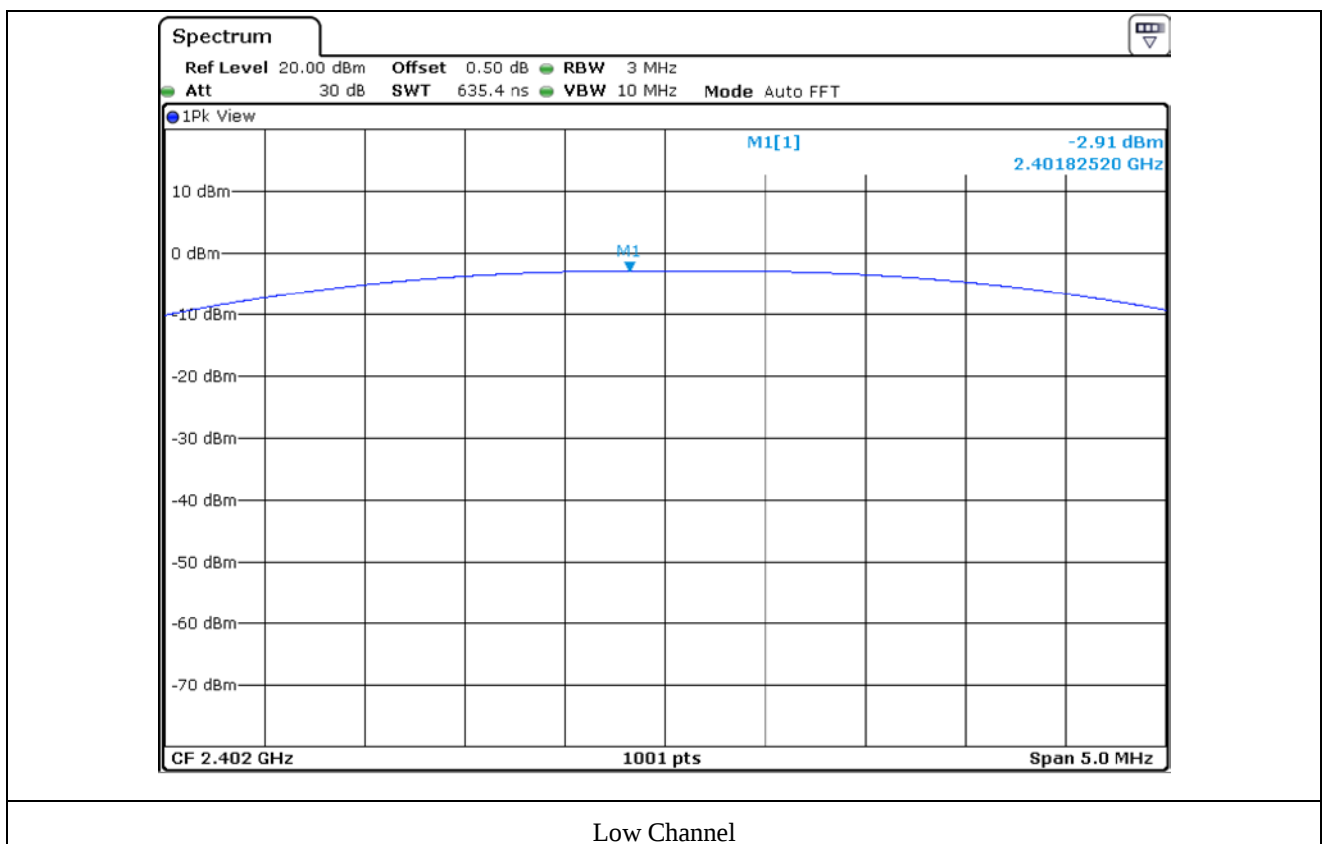
October 29, 2020 ~ November 03, 2020

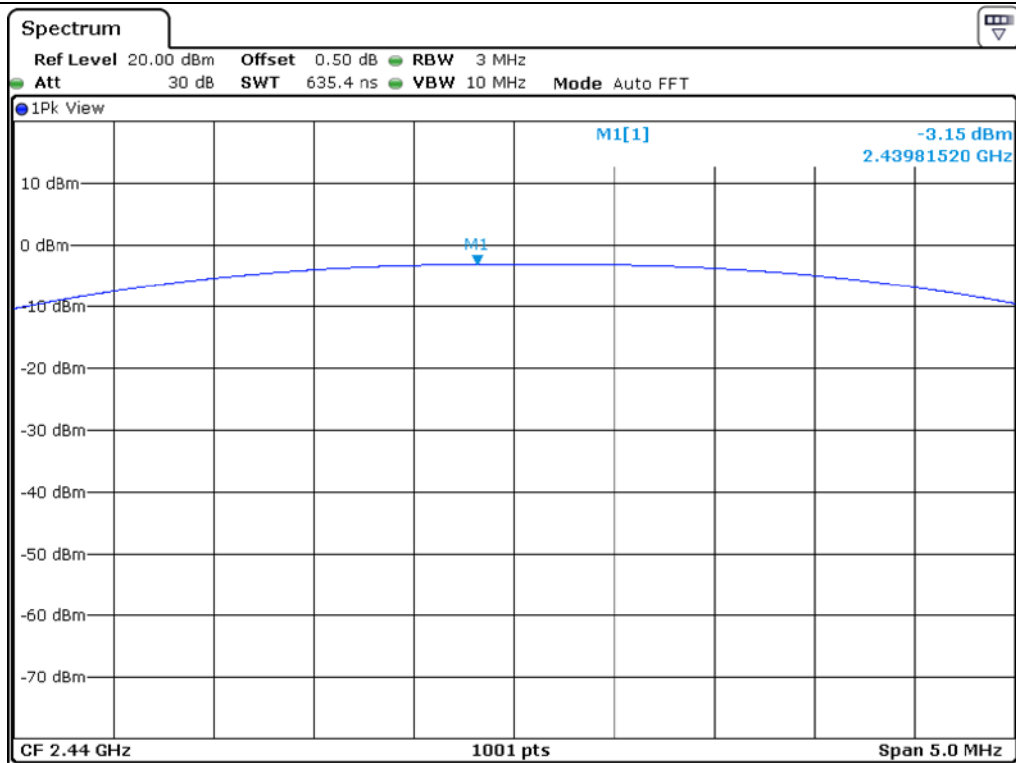
8.4 Test data

-. Test Result : Pass

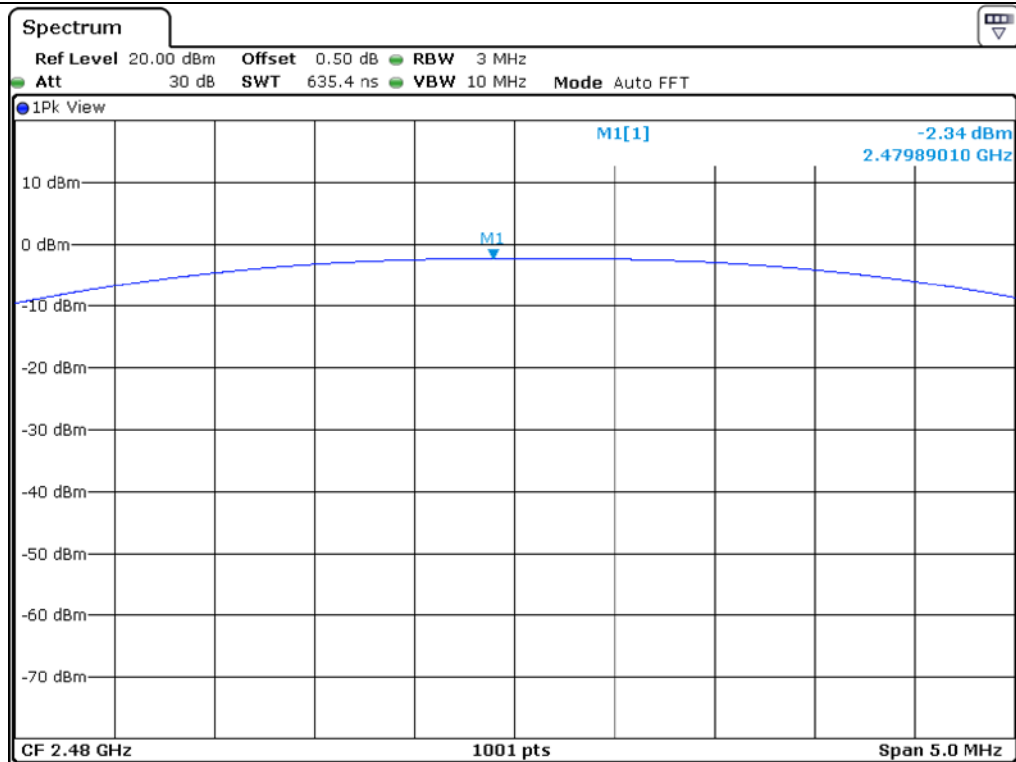
CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 402.00	-2.91	30.00	32.91
MIDDLE	2 440.00	-3.15	30.00	33.15
HIGH	2 480.00	-2.34	30.00	32.34

Remark. Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)





Middle Channel



High Channel

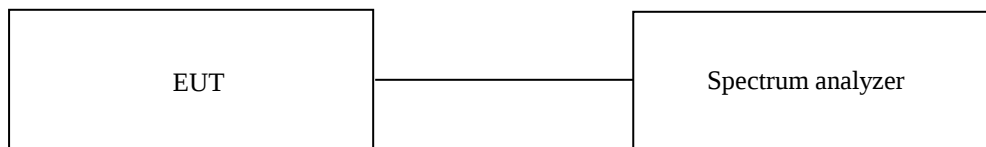
9. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND

9.1 Operating environment

Temperature : 23 °C
Relative humidity : 45 % R.H.

9.2 Test set-up for conducted measurement

The antenna output of the EUT was connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz, the video bandwidth is set to 3 times the resolution bandwidth and peak detection was used.



9.3 Test set-up for radiated measurement

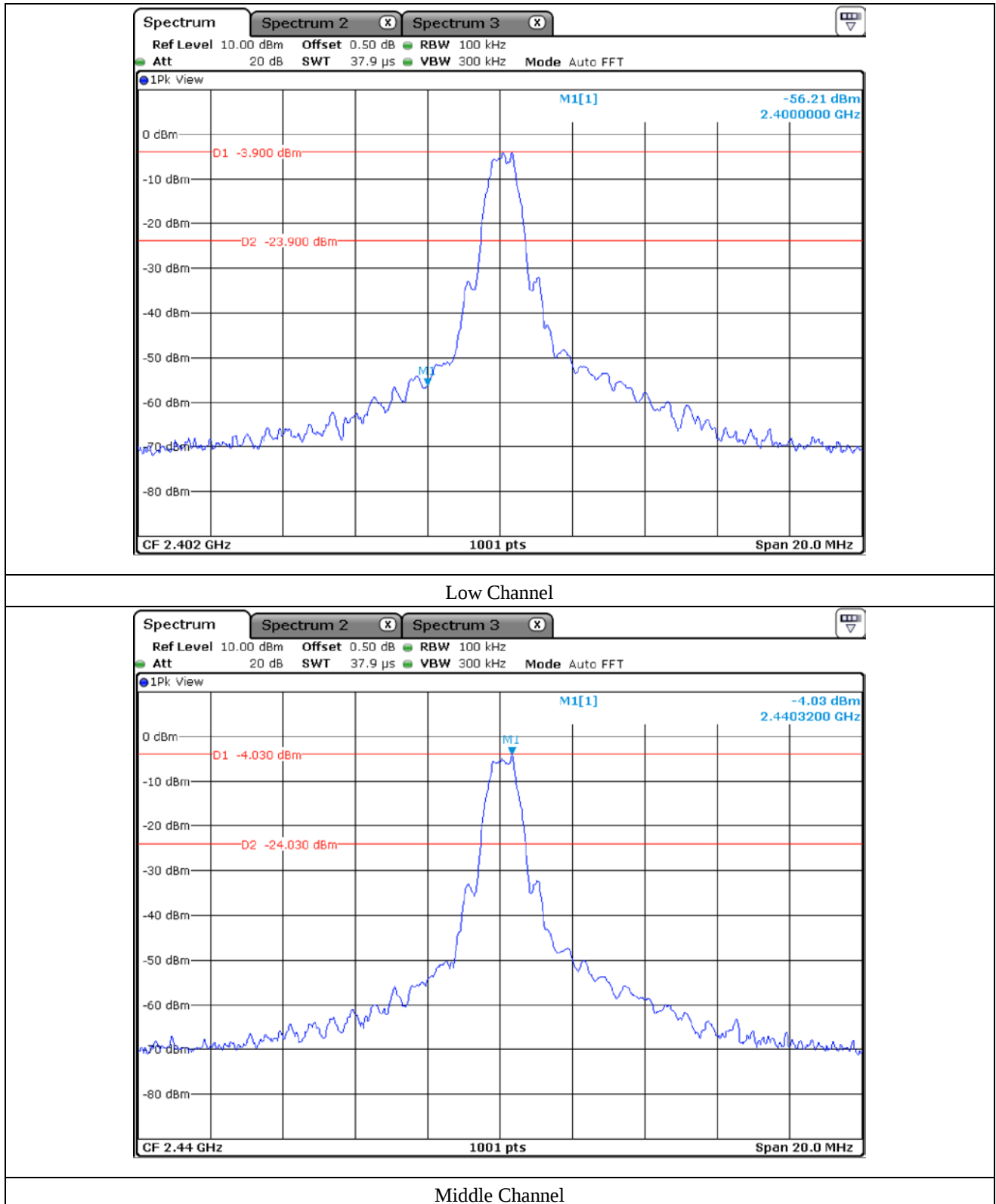
The radiated emissions measurements were performed on the 10 m semi anechoic chamber. The EUT was placed on turntable approximately 1.5 m above the ground plane.

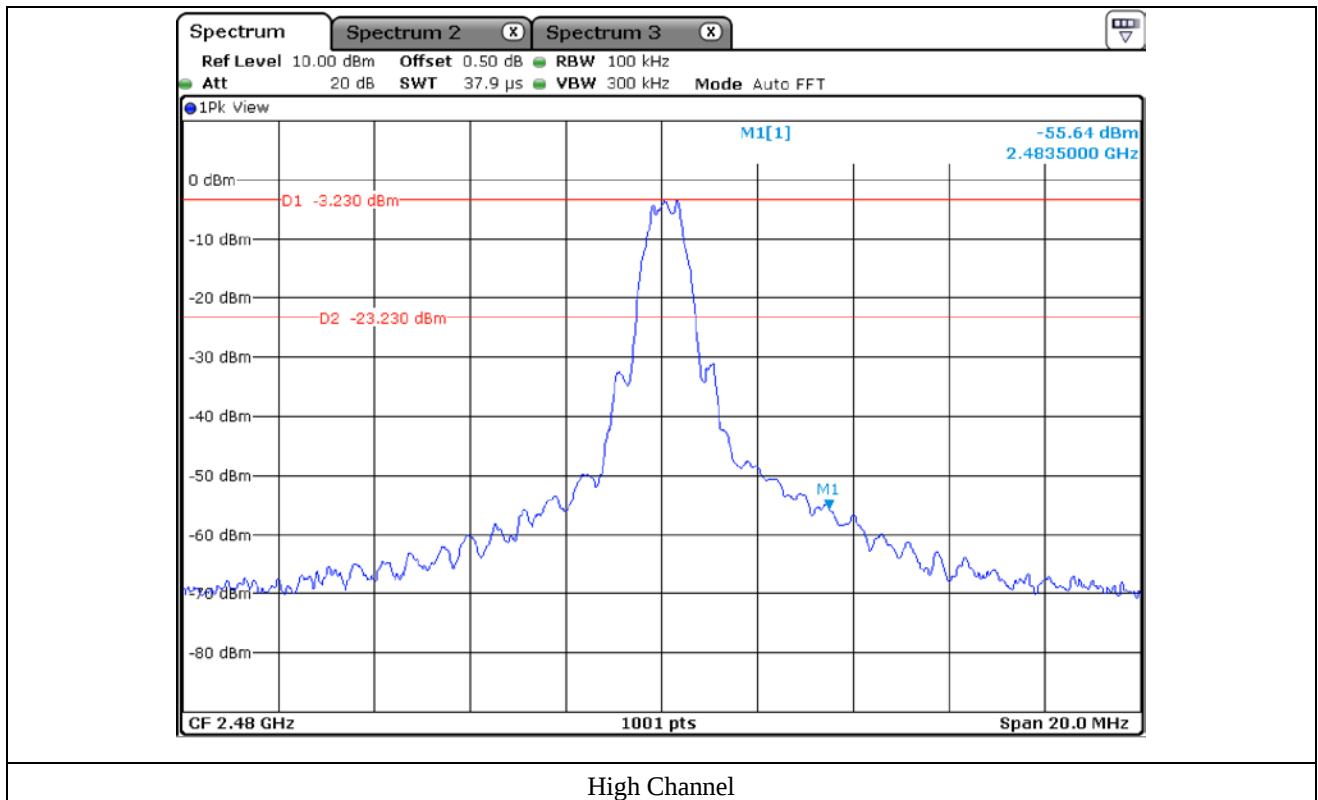
The frequency spectrum from 30 MHz to 26.5 GHz was scanned and maximum emission levels at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal and vertical polarization of the receiving antenna.

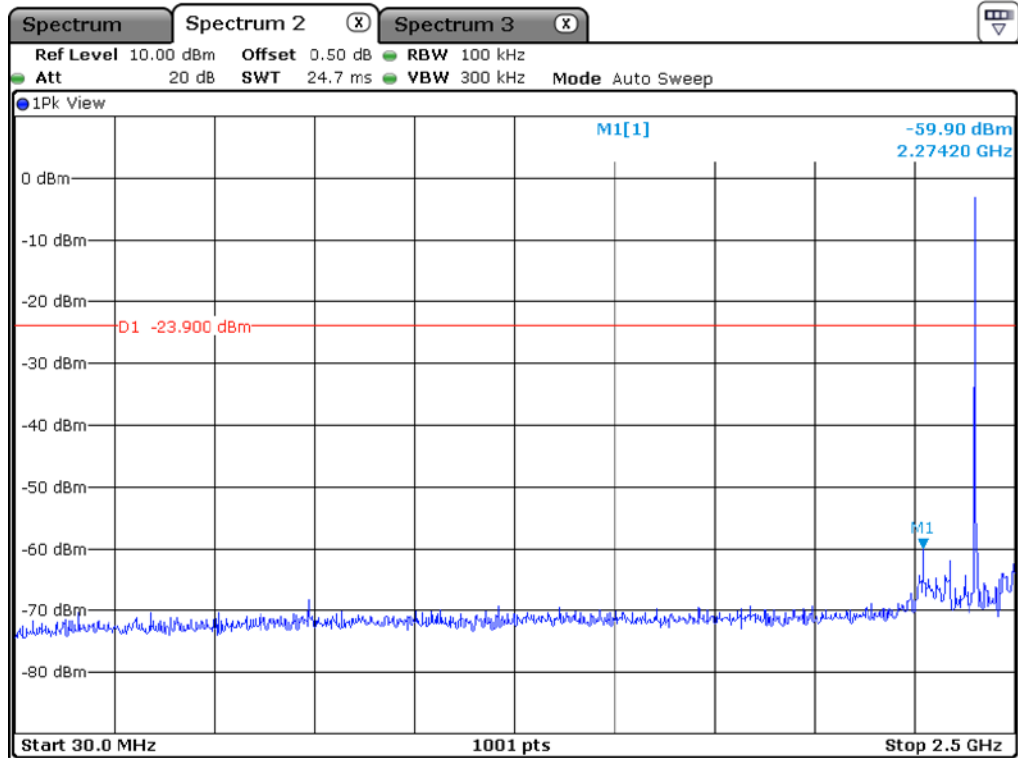
9.4 Test Date

October 29, 2020 ~ November 03, 2020

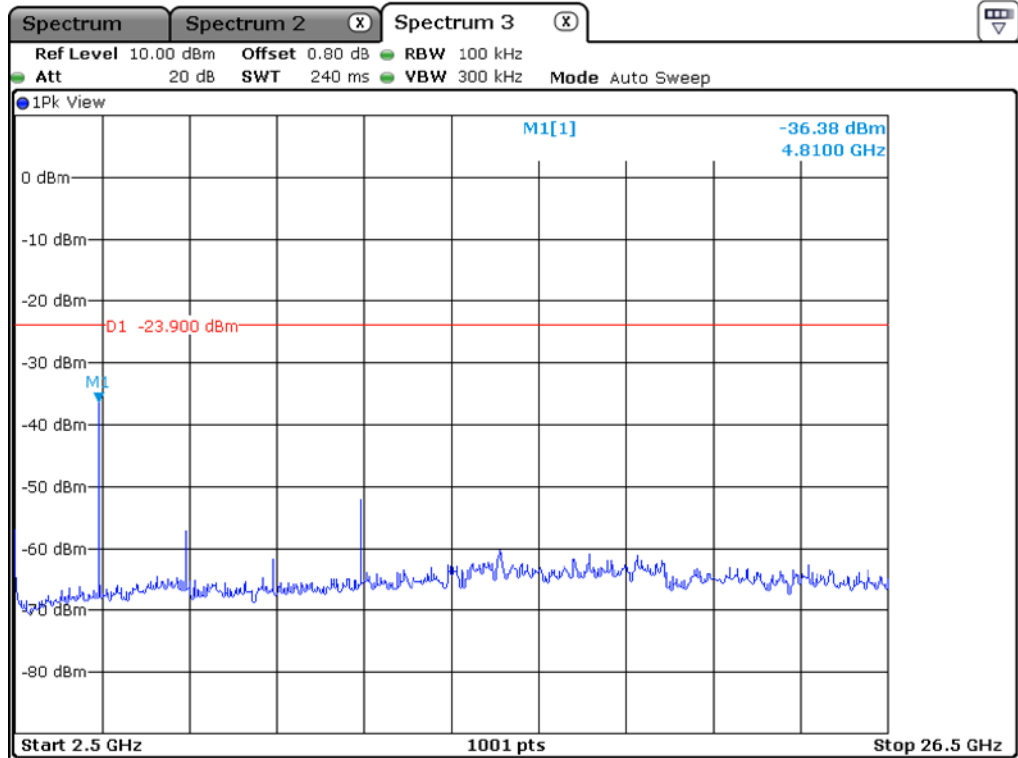
9.5 Test data for conducted emission



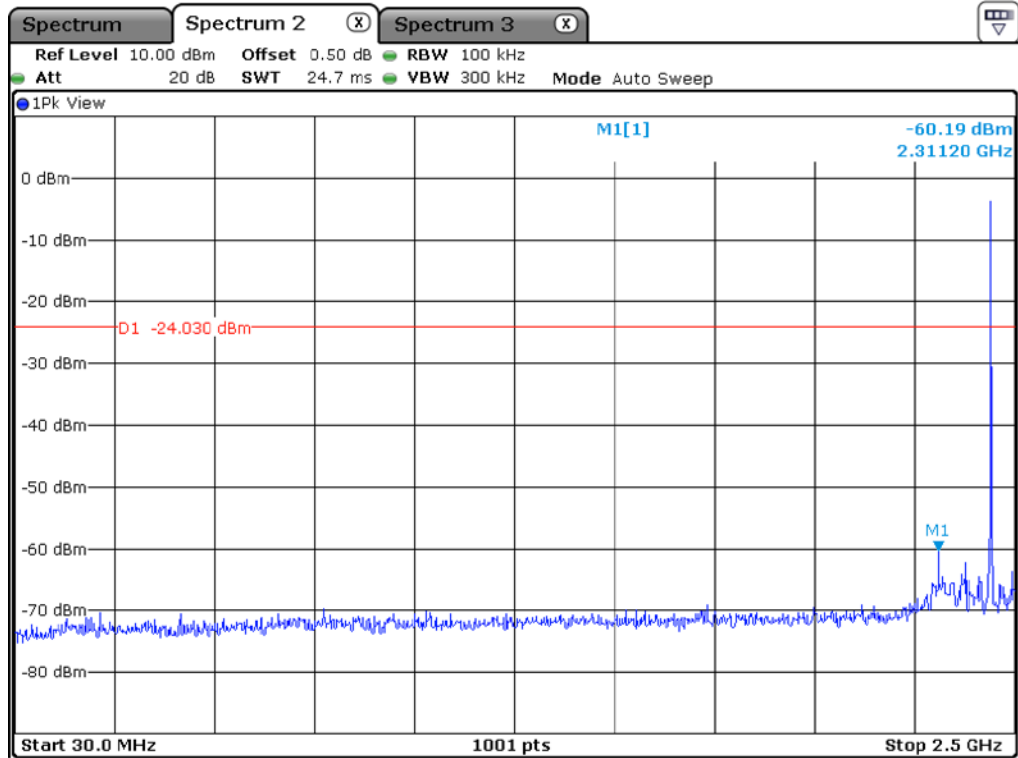




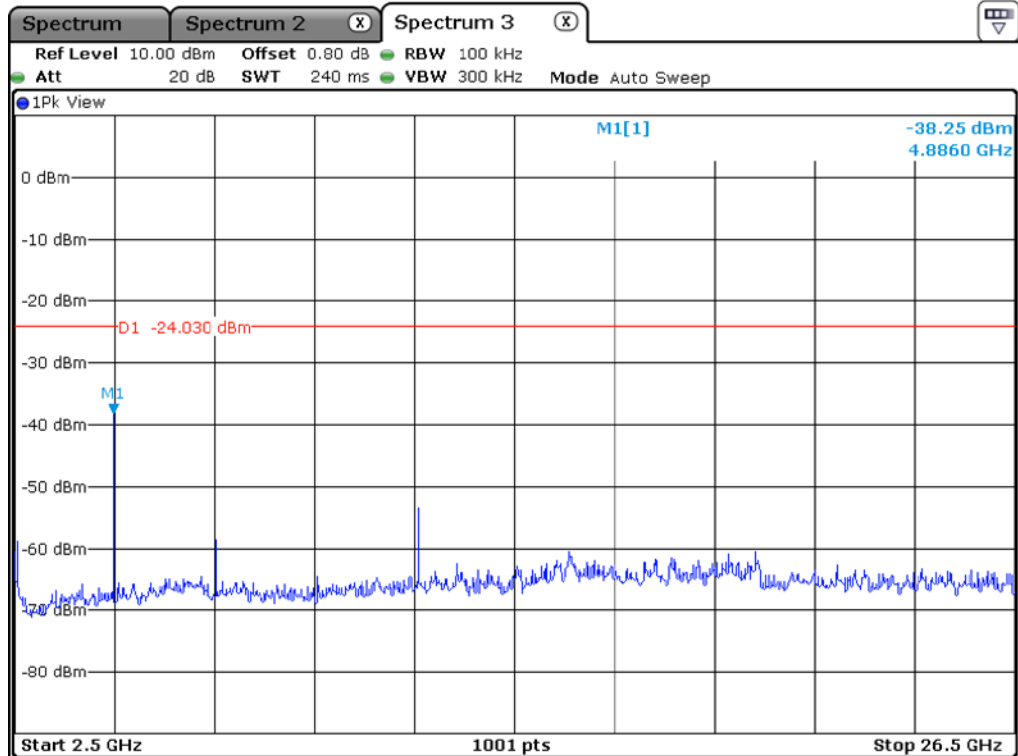
Low Channel



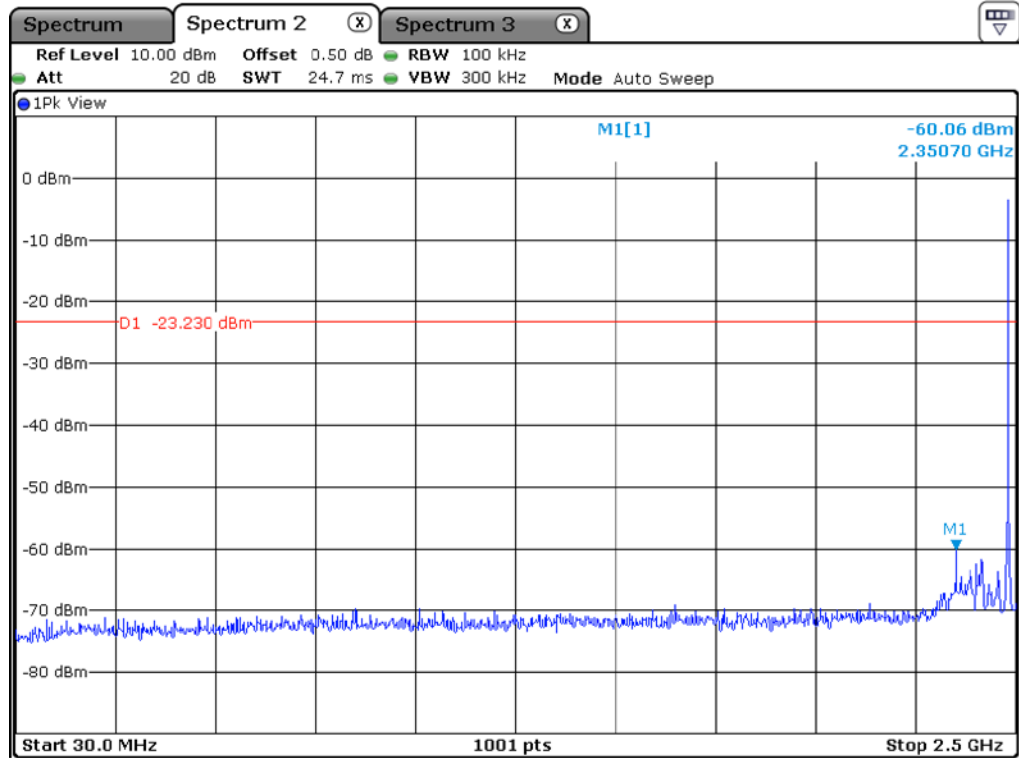
Low Channel



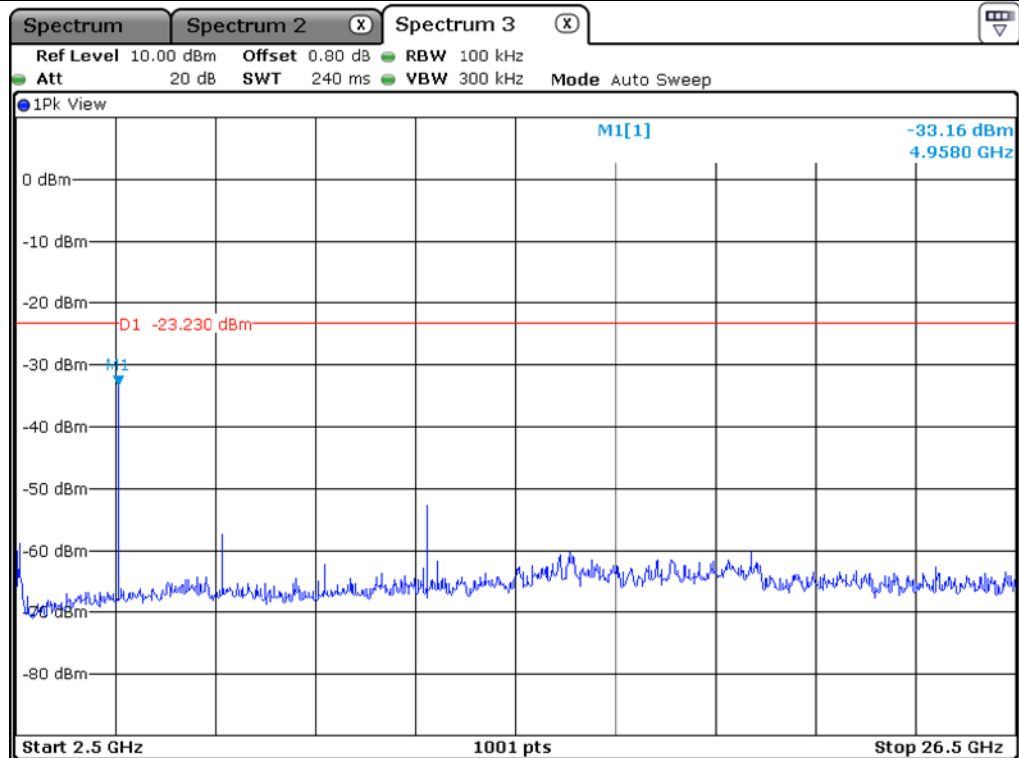
Middle Channel



Middle Channel



High Channel



High Channel

9.6 Test data for radiated emission

9.6.1 Radiated Emission which fall in the Restricted Band

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : 62.40 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
2 333.616	18.50	Peak	H	26.90	3.07	-	48.47	74.00	25.53
2 337.932	7.76	Average	H	26.90	3.07	2.05	39.78	54.00	14.22
2 340.090	18.83	Peak	V	26.90	3.07	-	48.80	74.00	25.20
2 348.801	7.42	Average	V	26.90	3.07	2.05	39.44	54.00	14.56
Test Data for High Channel									
2 483.508	25.21	Peak	H	26.60	3.16	-	54.97	74.00	19.03
2 483.508	7.65	Average	H	26.60	3.16	2.05	39.46	54.00	14.54
2 483.508	23.76	Peak	V	26.60	3.16	-	53.52	74.00	20.48
2 483.508	7.11	Average	V	26.60	3.16	2.05	38.92	54.00	15.08

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

$$\text{Margin (dB)} = \text{Limits (dB}\mu\text{V/m)} - \text{Total Level (dB}\mu\text{V/m)}$$

$$\text{Total Level} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} + \text{Correction Factor}$$

9.6.2 Spurious & Harmonic Radiated Emission

- Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,
1 MHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 62.40 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
4 804.000	21.15	Peak	H	28.20	4.85	-	54.20	74.00	19.80
4 804.000	9.57	Average	H	28.20	4.85	2.05	44.67	54.00	9.33
4 804.000	21.48	Peak	V	28.20	4.85	-	54.53	74.00	19.47
4 804.000	10.06	Average	V	28.20	4.85	2.05	45.16	54.00	8.84
Test Data for Middle Channel									
4 880.000	21.54	Peak	H	28.30	4.91	-	54.75	74.00	19.25
4 880.000	9.36	Average	H	28.30	4.91	2.05	44.62	54.00	9.38
4 880.000	21.49	Peak	V	28.30	4.91	-	54.70	74.00	19.30
4 880.000	10.20	Average	V	28.30	4.91	2.05	45.46	54.00	8.54
Test Data for High Channel									
4 960.000	21.63	Peak	H	28.60	5.04	-	55.27	74.00	18.73
4 960.000	9.02	Average	H	28.60	5.04	2.05	44.71	54.00	9.29
4 960.000	21.72	Peak	V	28.60	5.04	-	55.36	74.00	18.64
4 960.000	10.74	Average	V	28.60	5.04	2.05	46.43	54.00	7.57

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

10. PEAK POWER SPECTRAL DENSITY

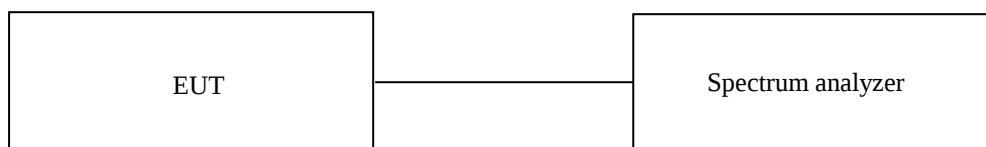
10.1 Operating environment

Temperature : 23 °C
Relative humidity : 45 % R.H.

10.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer.

The resolution bandwidth is set to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$, the video bandwidth is set to 3 times the resolution bandwidth.



10.3 Test Date

October 29, 2020 ~ November 03, 2020

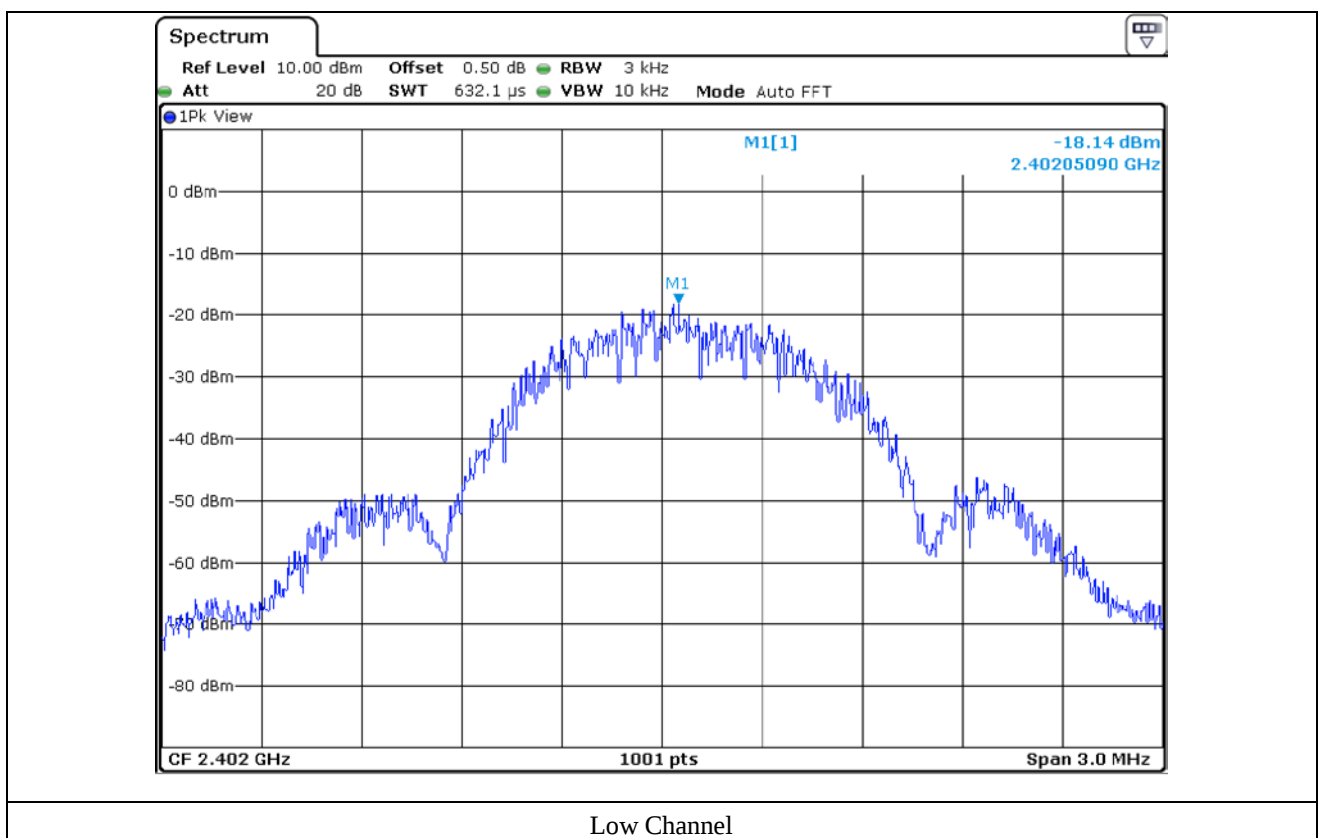
10.4 Test data

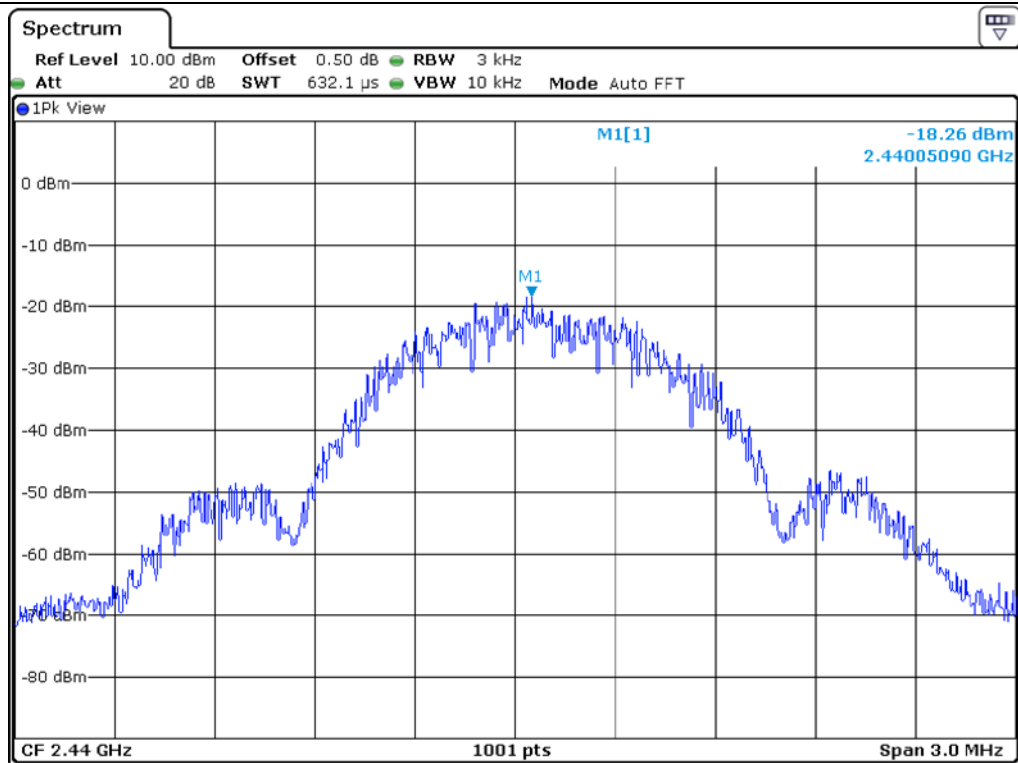
-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

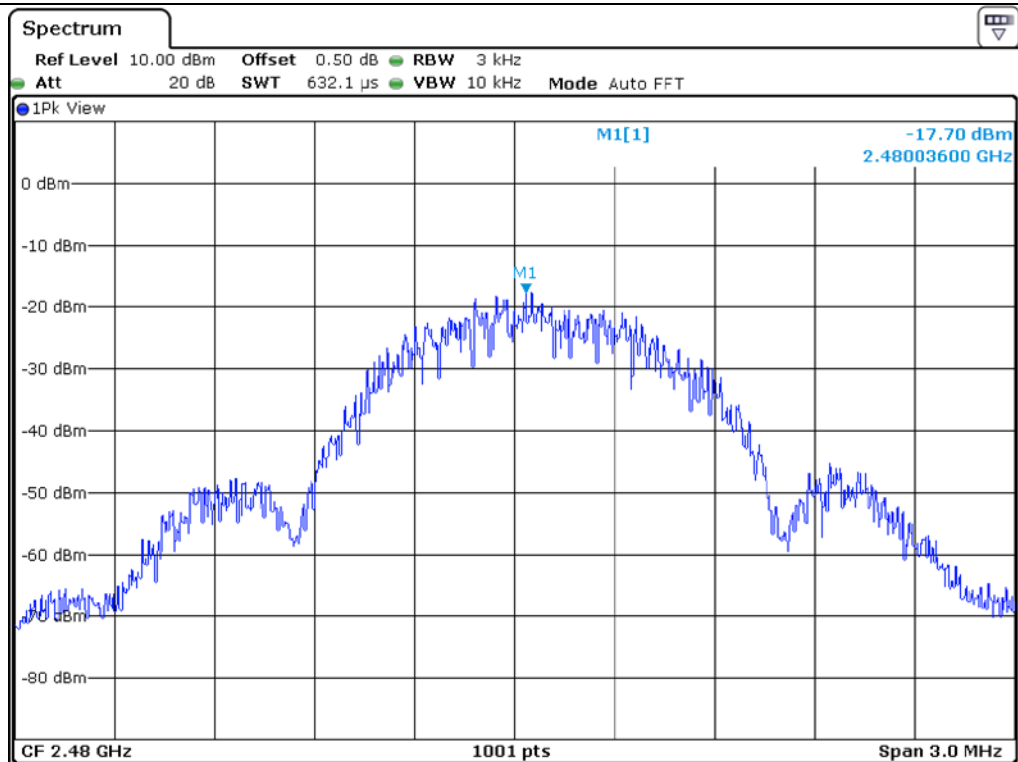
CHANNEL	FREQUENCY(MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 402.00	-18.14	8.00	26.14
Middle	2 440.00	-18.26	8.00	26.26
High	2 480.00	-17.70	8.00	25.70

Remark. Margin = Limit – Measured value





Middle Channel



High Channel

11. RADIATED EMISSION TEST

11.1 Operating environment

Temperature : 23 °C
Relative humidity : 45 % R.H.

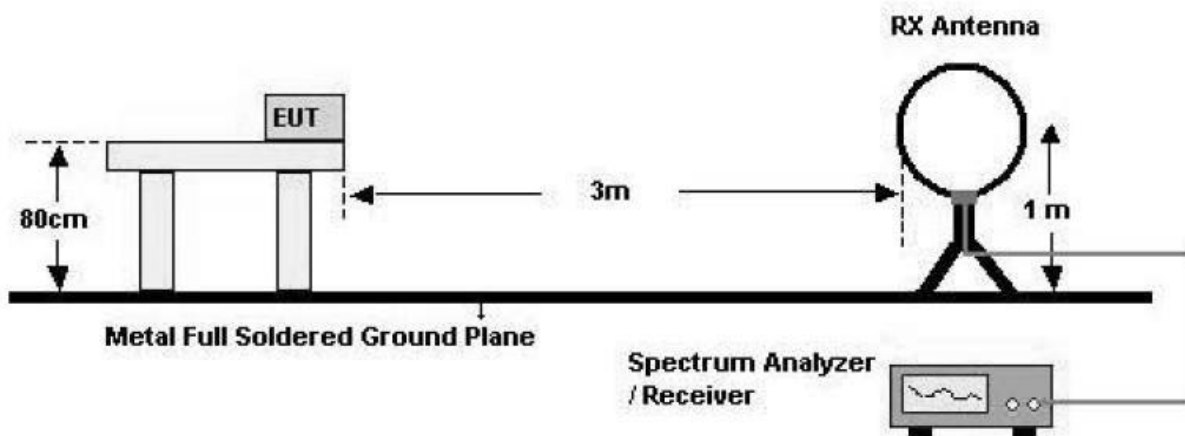
11.2 Test set-up

The radiated emissions measurements were on the 10 m semi anechoic chamber. The EUT and other support equipment were placed on a non-conductive turntable above the ground plane. The interconnecting cables from outside test site were inserted into ferrite clamps at the point where the cables reach the turntable.

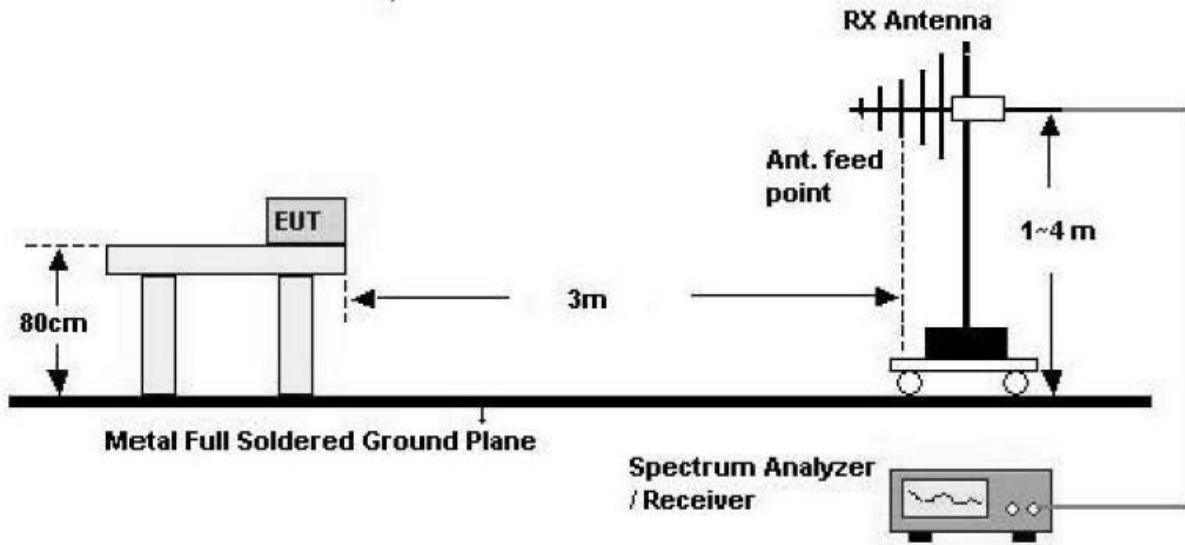
The frequency spectrum from 30 MHz to 26.5 GHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

- Test Configuration

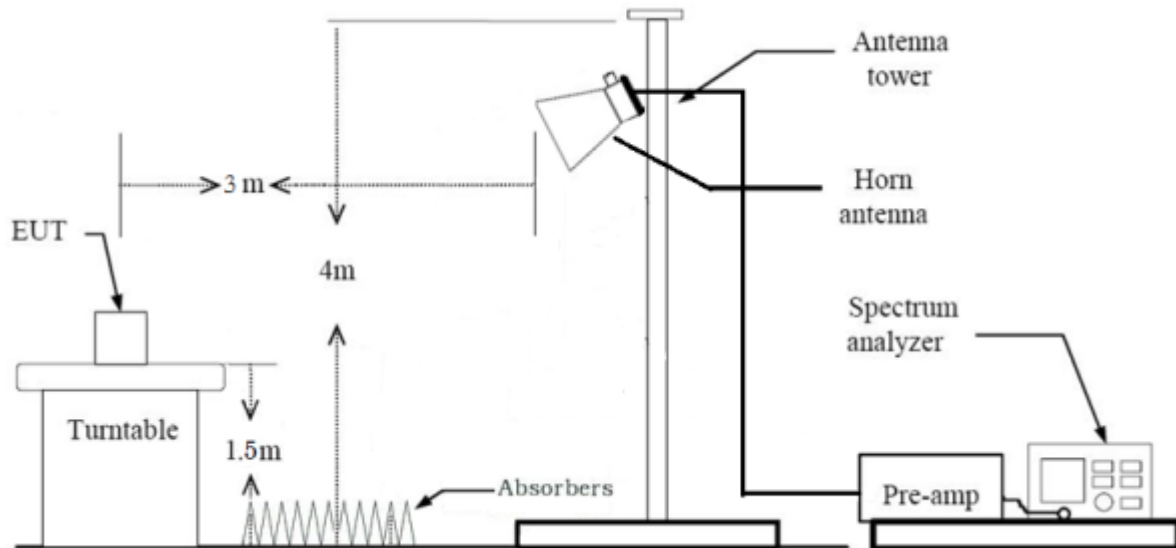
1. Below 30 MHz



2. 30 MHz - 1 GHz



3. Above 1 GHz



11.3 Test Date

October 29, 2020 ~ November 03, 2020

11.4 Test data

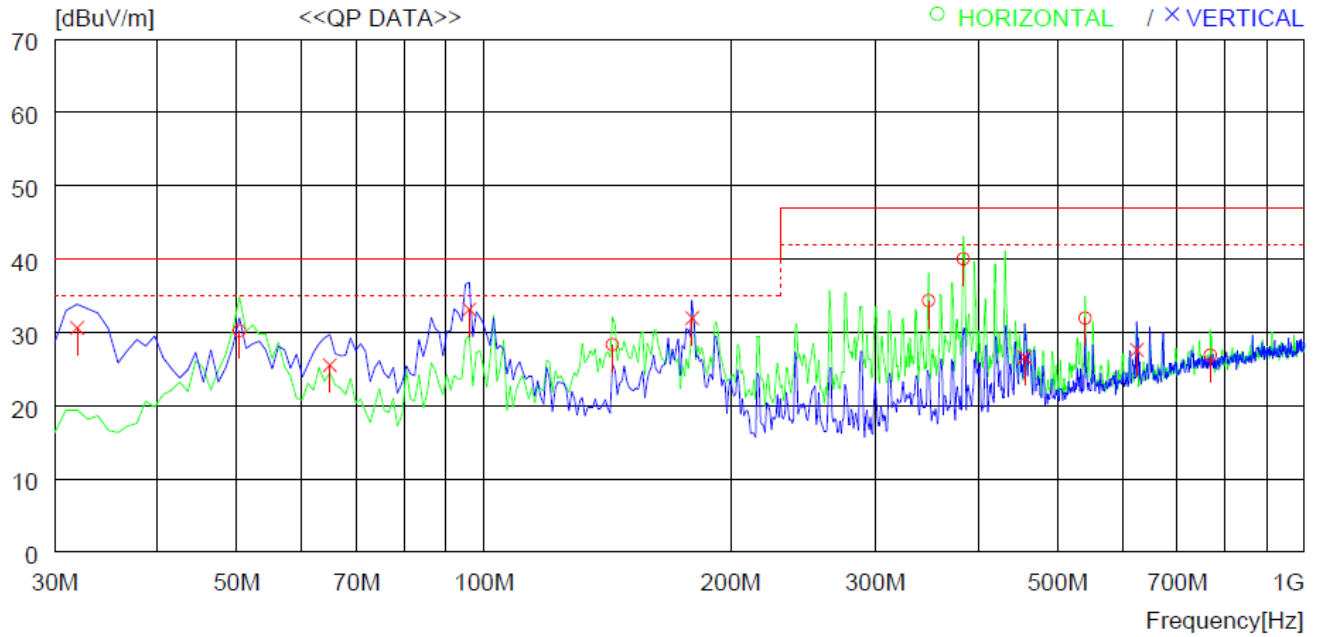
11.4.1 Test data for 30 MHz ~ 1 GHz

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Smart bicycle light

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)



No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	50.370	42.1	19.7	1.1	32.7	30.2	40.0	9.8	300	359
2	143.490	40.3	18.6	2.0	32.6	28.3	40.0	11.7	200	166
3	348.160	43.2	20.3	3.2	32.4	34.3	47.0	12.7	100	338
4	384.050	47.9	21.2	3.3	32.4	40.0	47.0	7.0	100	204
5	540.220	35.9	24.4	4.0	32.4	31.9	47.0	15.1	200	51
6	768.163	26.7	27.8	4.8	32.4	26.9	47.0	20.1	100	359
----- Vertical -----										
7	31.940	44.4	17.9	0.9	32.6	30.6	40.0	9.4	100	188
8	64.920	38.5	18.4	1.3	32.7	25.5	40.0	14.5	100	0
9	95.960	50.1	14.0	1.6	32.6	33.1	40.0	6.9	100	0
10	179.380	44.5	17.7	2.3	32.6	31.9	40.0	8.1	100	0
11	455.831	32.2	23.1	3.6	32.3	26.6	47.0	20.4	100	0
12	624.607	29.9	25.9	4.3	32.5	27.6	47.0	19.4	100	0

11.4.2 Test data for Below 30 MHz

- . Resolution bandwidth : 200 Hz (from 9 kHz to 0.15 MHz), 9 kHz (from 0.15 MHz to 30 MHz)
- . Frequency range : 9 kHz ~ 30 MHz
- . Measurement distance : 3 m
- . Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Ant. Pol. (H/V)	Ant. Height (m)	Angle (°)	Ant. Factor (dB/m)	Cable Loss	Emission Level(dBμV/m)	Limits (dBμV/m)	Margin (dB)
Emission from the EUT more than 20 dB below the limit in each frequency range.									

11.4.3 Test data for above 1 GHz

- . Resolution bandwidth : 1 MHz for Peak and Average Mode
- . Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode
- . Frequency range : 1 GHz ~ 26.5 GHz
- . Measurement distance : 3 m
- . Operating mode : Transmitting mode

Frequency (MHz)	Reading (dBμV)	Ant. Pol. (H/V)	Ant. Height (m)	Angle (°)	Ant. Factor (dB/m)	Cable Loss	Emission Level(dBμV/m)	Limits (dBμV/m)	Margin (dB)
Emission from the EUT more than 20 dB below the limit in each frequency range.									

12. CONDUCTED EMISSION TEST

12.1 Operating environment

Temperature : 23 °C
Relative humidity : 45 % R.H.

12.2 Test set-up

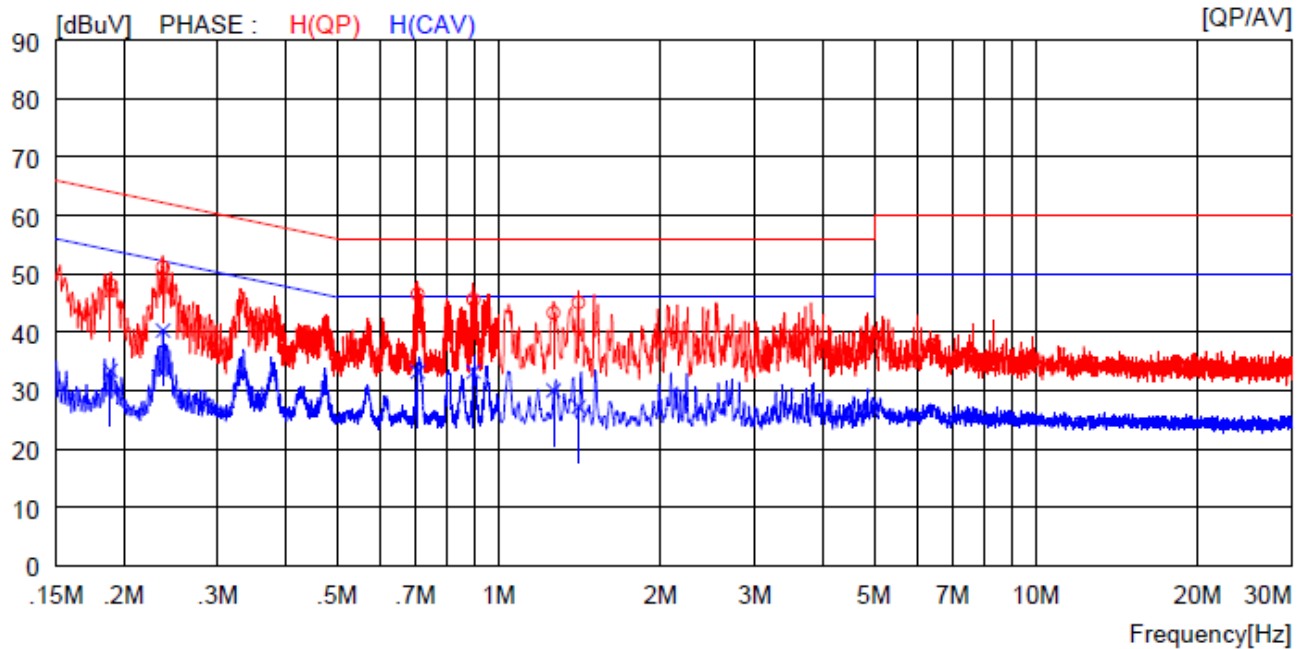
The EUT was placed on a wooden table, 0.8 m height above the floor. Power was fed to the EUT through a $50\ \Omega$ / $50\ \mu\text{H}$ + $5\ \Omega$ Artificial Mains Network (AMN). The ground plane was electrically bonded to the reference ground system and all power lines were filtered from ambient.

12.3 Test Date

October 29, 2020 ~ November 03, 2020

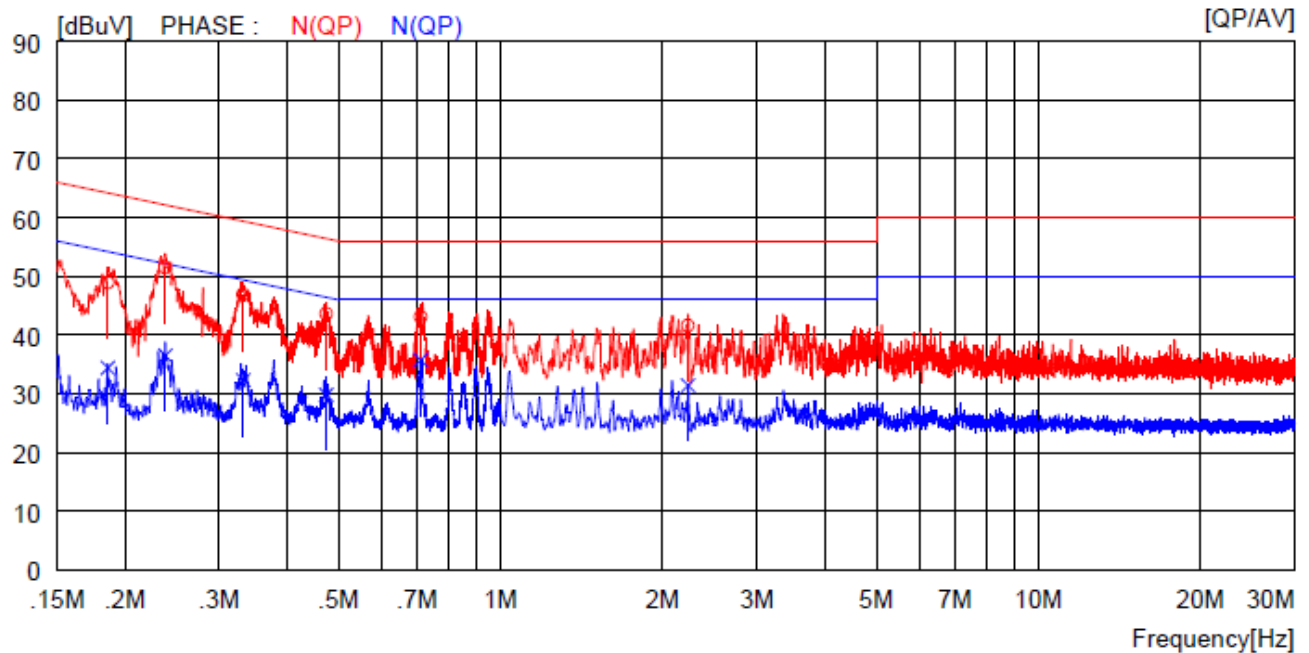
12.4 Test data

- Resolution bandwidth : 9 kHz
- Frequency range : 0.15 MHz ~ 30 MHz
- Tested Line : HOT LINE



NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.18900	26.6	----	21.5	48.1	----	64.1	----	16.0	----	H (QP)
2	0.23700	29.6	----	21.5	51.1	----	62.2	----	11.1	----	H (QP)
3	0.70600	25.0	----	21.5	46.5	----	56.0	----	9.5	----	H (QP)
4	0.89700	24.0	----	21.6	45.6	----	56.0	----	10.4	----	H (QP)
5	1.26400	21.7	----	21.6	43.3	----	56.0	----	12.7	----	H (QP)
6	1.40800	23.5	----	21.6	45.1	----	56.0	----	10.9	----	H (QP)
7	0.18900	----	11.9	21.5	----	33.4	----	54.1	----	20.7	H (CAV)
8	0.23700	----	18.8	21.5	----	40.3	----	52.2	----	11.9	H (CAV)
9	0.70600	----	11.7	21.5	----	33.2	----	46.0	----	12.8	H (CAV)
10	0.89700	----	11.6	21.6	----	33.2	----	46.0	----	12.8	H (CAV)
11	1.26400	----	8.4	21.6	----	30.0	----	46.0	----	16.0	H (CAV)
12	1.40800	----	5.6	21.6	----	27.2	----	46.0	----	18.8	H (CAV)

-. Tested Line : NEUTRAL LINE



NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.18600	27.4	----	21.5	48.9	----	64.2	----	15.3	----	N (QP)
2	0.23800	30.0	----	21.5	51.5	----	62.2	----	10.7	----	N (QP)
3	0.33200	25.4	----	21.5	46.9	----	59.4	----	12.5	----	N (QP)
4	0.47400	22.1	----	21.5	43.6	----	56.4	----	12.8	----	N (QP)
5	0.71000	21.6	----	21.5	43.1	----	56.0	----	12.9	----	N (QP)
6	2.23200	20.0	----	21.6	41.6	----	56.0	----	14.4	----	N (QP)
7	0.18600	----	12.9	21.5	----	34.4	----	54.2	----	19.8	N (CAV)
8	0.23800	----	15.0	21.5	----	36.5	----	52.2	----	15.7	N (CAV)
9	0.33200	----	10.8	21.5	----	32.3	----	49.4	----	17.1	N (CAV)
10	0.47400	----	8.3	21.5	----	29.8	----	46.4	----	16.6	N (CAV)
11	0.71000	----	14.2	21.5	----	35.7	----	46.0	----	10.3	N (CAV)
12	2.23200	----	9.8	21.6	----	31.4	----	46.0	----	14.6	N (CAV)

Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

13. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
FSV40	Rohde & Schwarz	Signal Analyzer	101009	Feb. 21, 2020 (1Y)
ESW	Rohde & Schwarz	EMI Test Receiver	101851	Mar. 27, 2020 (1Y)
310N	Sonoma Instrument	Pre-Amplifier	312544	Mar. 16, 2020 (1Y)
BBV 9718 B	Schwarzbeck	Broadband Preamplifier	00009	Mar. 16, 2020 (1Y)
SCU40A	Rohde & Schwarz	Signal Conditioning unit	100436	Feb. 20, 2020 (1Y)
SCU18	Rohde & Schwarz	Signal Conditioning unit	102266	Jul. 15, 2020 (1Y)
DT3000-3t	Innco System	Turn Table	DT3000/093	N/A
MA-4000XPET	Innco System	Antenna Master	MA4000/509	N/A
VULB9163	Schwarzbeck	TRILOG Broadband Antenna	777	Apr. 08, 2020 (2Y)
BBHA9120D	Schwarzbeck	Horn Antenna	9120D-1366	Jul. 23, 2020 (1Y)
BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Jan. 07, 2020 (1Y)
ESCI	Rohde & Schwarz	Test Receiver	101420	Mar. 23, 2020 (1Y)
NSLK8126	SCHWARZ BECK	LISN	8126480	Oct. 15, 2020 (1Y)
3825/2	EMCO	AMN	9109-1867	Mar. 23, 2020 (1Y)