

RADIO PERFORMANCE TEST REPORT

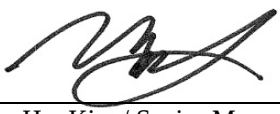
Test Report No. : OT-206-RWD-080
AGR No. : A205A-215
Applicant : NUC Electronics Co., Ltd
Address : 280 Nowon-ro, Bukgu, Daegu-City, 41548, Rep. of Korea
Manufacturer : NUC Electronics Co., Ltd
Address : 280 Nowon-ro, Bukgu, Daegu-City, 41548, Rep. of Korea
Type of Equipment : Body Fat Analyzer
FCC ID. : 2AWUK-KBA-200IF
Model Name : KBA-200IF
Multiple Model Name : N/A
Serial number : N/A
Total page of Report : 32 pages (including this page)
Date of Incoming : June 23, 2020
Date of issue : June 30, 2020

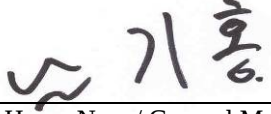
SUMMARY

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.

Reviewed by: 
 Tae-Ho, Kim / Senior Manager
 ONETECH Corp.

Approved by: 
 Ki-Hong, Nam / General Manager
 ONETECH Corp.

CONTENTS

PAGE

1. VERIFICATION OF COMPLIANCE	5
2. TEST SUMMARY.....	6
2.1 TEST ITEMS AND RESULTS	6
2.2 ADDITIONS, DEVIATIONS, EXCLUSIONS FROM STANDARDS.....	6
2.3 RELATED SUBMITTAL(S) / GRANT(S)	6
2.4 PURPOSE OF THE TEST	6
2.5 TEST METHODOLOGY.....	6
2.6 TEST FACILITY.....	6
3. GENERAL INFORMATION.....	7
3.1 PRODUCT DESCRIPTION.....	7
3.2 ALTERNATIVE TYPE(S)/MODEL(S); ALSO COVERED BY THIS TEST REPORT.....	7
4. EUT MODIFICATIONS.....	7
5. SYSTEM TEST CONFIGURATION	8
5.1 JUSTIFICATION.....	8
5.2 PERIPHERAL EQUIPMENT	8
5.3 MODE OF OPERATION DURING THE TEST	8
5.4 CONFIGURATION OF TEST SYSTEM.....	10
5.5 ANTENNA REQUIREMENT	10
6. PRELIMINARY TEST	10
6.1 AC POWER LINE CONDUCTED EMISSIONS TESTS.....	10
6.2 GENERAL RADIATED EMISSIONS TESTS	10
7. MINIMUM 6 DB BANDWIDTH.....	11
7.1 OPERATING ENVIRONMENT	11
7.2 TEST SET-UP	11
7.3 TEST EQUIPMENT USED.....	11
7.4 TEST DATA.....	12
8. MAXIMUM PEAK OUTPUT POWER.....	14
8.1 OPERATING ENVIRONMENT	14
8.2 TEST SET-UP	14
8.3 TEST EQUIPMENT USED.....	14
8.4 TEST DATA.....	15
9. 100 KHZ BANDWIDTH OUTSIDE THE FREQUENCY BAND.....	17

9.1 OPERATING ENVIRONMENT	17
9.2 TEST SET-UP FOR CONDUCTED MEASUREMENT	17
9.3 TEST SET-UP FOR RADIATED MEASUREMENT.....	17
9.4 TEST EQUIPMENT USED.....	17
9.5 TEST DATA FOR CONDUCTED EMISSION	18
9.6 TEST DATA FOR RADIATED EMISSION.....	23
9.6.1 Radiated Emission which fall in the Restricted Band.....	23
9.6.2 Spurious & Harmonic Radiated Emission.....	24
10. PEAK POWER SPECTRAL DENSITY	25
10.1 OPERATING ENVIRONMENT	25
10.2 TEST SET-UP	25
10.3 TEST EQUIPMENT USED.....	25
10.4 TEST DATA.....	26
11. RADIATED EMISSION TEST	28
11.1 OPERATING ENVIRONMENT	28
11.2 TEST SET-UP	28
11.4 TEST DATA.....	31
11.4.1 Test data for 30 MHz ~ 1 GHz	31
11.4.2 Test data for Below 30 MHz.....	32
11.4.3 Test data for above 1 GHz	32

Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-206-RWD-080	June 30, 2020	Initial Release	All

1. VERIFICATION OF COMPLIANCE

Applicant : NUC Electronics Co., Ltd
Address : 280 Nowon-ro, Bukgu, Daegu-City, 41548, Rep. of Korea
Contact Person : Kwak Wonchang / Manager
Telephone No. : +82-53-665-5094
FCC ID : 2AWUK-KBA-200IF
Model Name : KBA-200IF
Brand Name : -
Serial Number : N/A
Date : June 30, 2020

EQUIPMENT CLASS	DTS – DIGITAL TRNSMISSION SYSTEM
E.U.T. DESCRIPTION	Body Fat Analyzer
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	N/A (See Note)
15.203	Antenna Requirement	Met requirement / PASS

Note: This test is not performed because the EUT is operated by DC battery.

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 NUC Electronics Co., Ltd, Model KBA-200IF (referred to as the EUT in this report) is Body Fat Analyzer. Product specification information described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	Body Fat Analyzer
Temperature Range	-20 °C ~ 50 °C
OPERATING FREQUENCY	2 402 MHz ~ 2 480 MHz
NUMBER OF CHANNEL	40 Channel
Modulation Type	GFSK
RF OUTPUT POWER	-4.40 dBm
ANTENNA TYPE	Integral antenna (PCB Pattern type)
ANTENNA GAIN	5.30 dBi
Electrical Rating	DC 3.0 V
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	32 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	NUC Electronics Co., Ltd	N/A	N/A

5.2 Peripheral equipment

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

Model	Manufacturer	Description	Connected to
KBA-200IF	NUC Electronics Co., Ltd	Body Fat Analyzer (EUT)	-
HP Protect Smart	HP	Notebook PC	Jig Board
PPP009C	LIE-ON TECHNOLOGY (CHANGZHOU)CO.,LTD.	AC Adaptor	Notebook PC
FT232R	Future Technology Devices International Ltd.	Jig Board	EUT

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		

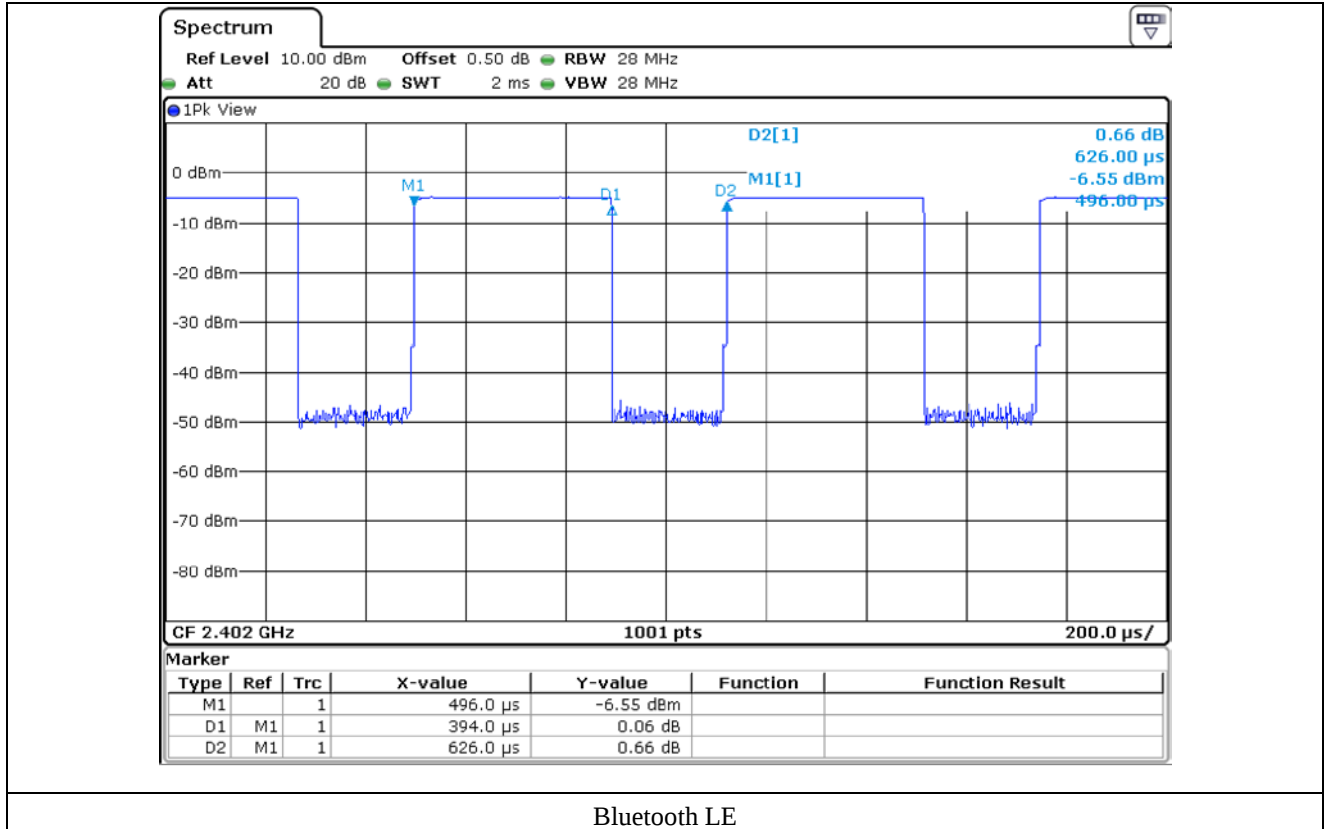
-. Duty Cycle

Mode	Tx On Time [ms]	Tx Off Time [ms]	Duty Cycle [%]	Correction Factor [dB]
Bluetooth LE	0.394	0.232	62.94	2.01

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: It is not need to test this requirement, because the EUT shall be operated by DC battery.

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 Integral antenna (PCB Pattern type) 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)
It is not need to test this requirement, because the power of the EUT is supplied by DC Battery.	

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

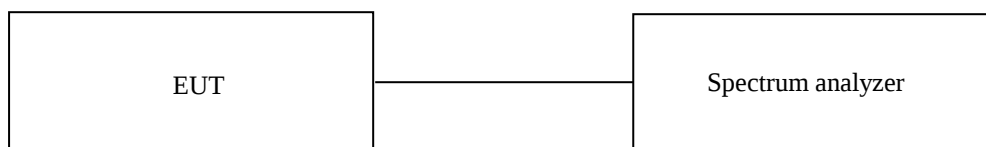
7. MINIMUM 6 dB BANDWIDTH

7.1 Operating environment

Temperature : 24.3 °C
Relative humidity : 43.9 % 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 equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Feb. 21, 2020 (1Y)

All test equipment used is calibrated on a regular basis.

7.4 Test data

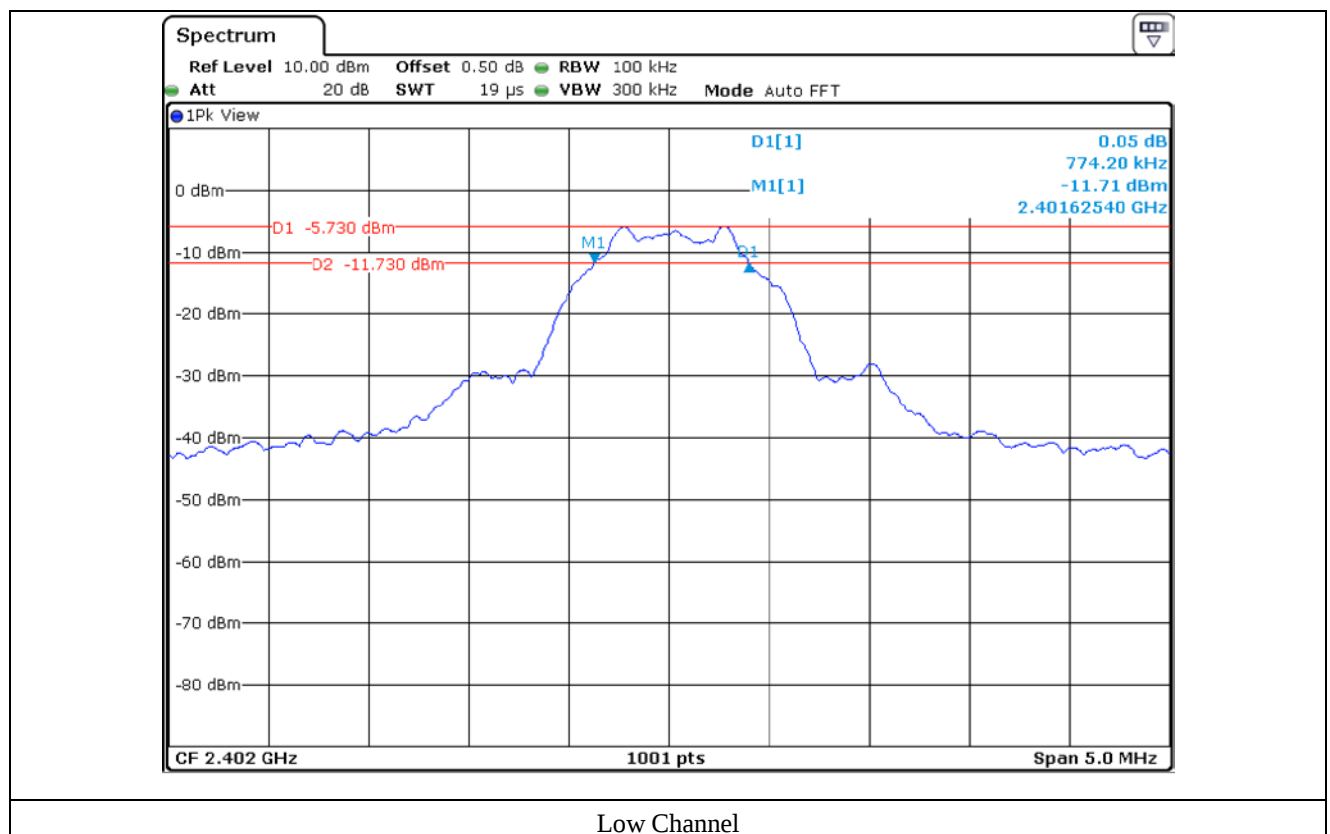
-. Test Date : June 23, 2020 ~ June 26, 2020

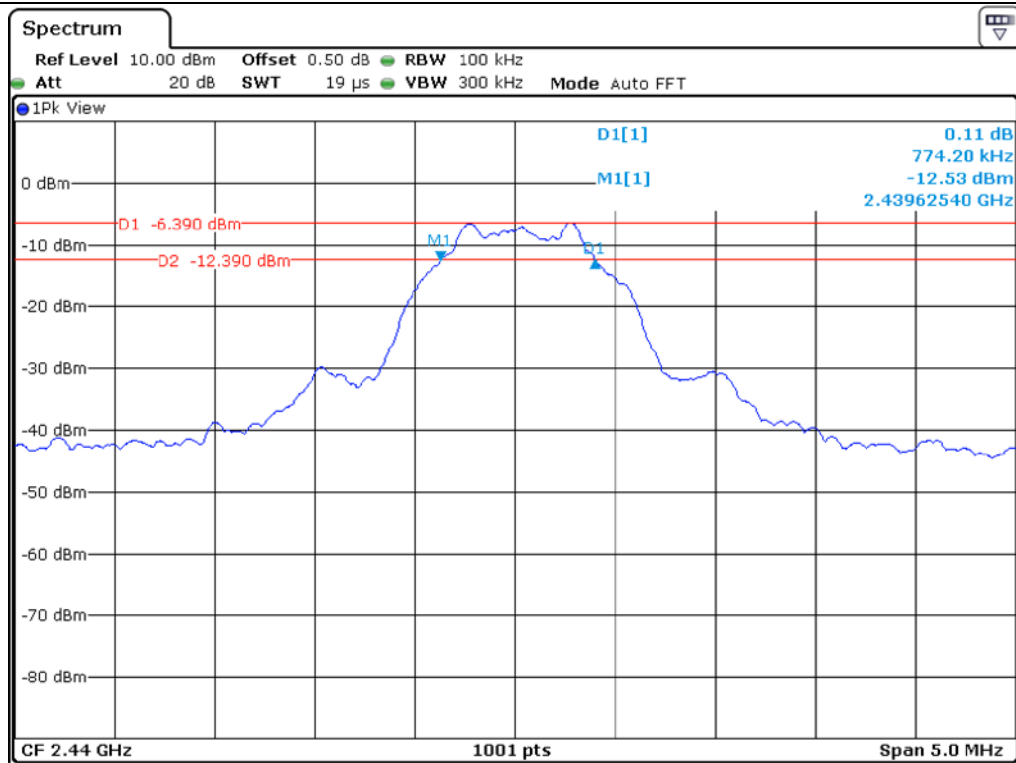
-. Test Result : Pass

CHANNEL	FREQUENCY(MHz)	MEASURED VALUE (kHz)	LIMIT (kHz)	MARGIN (kHz)
Low	2 402.00	774.20	500.00	274.20
Middle	2 440.00	774.20	500.00	274.20
High	2 480.00	774.20	500.00	274.20

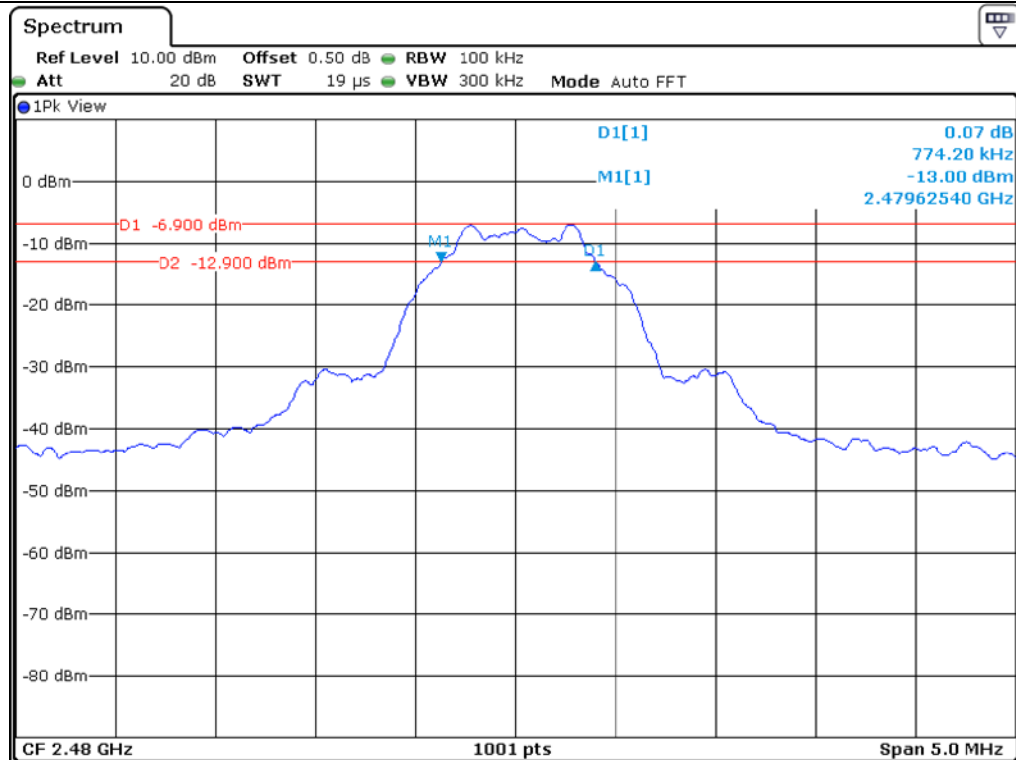
Remark. Margin = Measured Value - Limit

Tested by: Hyung-Kwon, Oh / Manager





Middle Channel



High Channel

8. MAXIMUM PEAK OUTPUT POWER

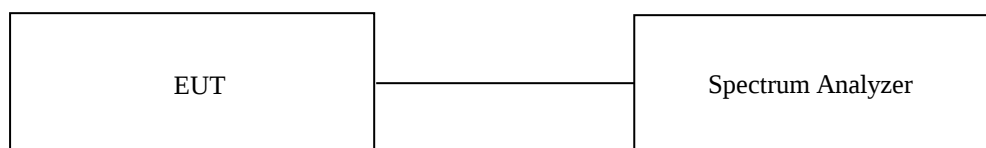
8.1 Operating environment

Temperature : 24.3 °C
Relative humidity : 43.9 % 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 equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Feb. 21, 2020 (1Y)

All test equipment used is calibrated on a regular basis.

8.4 Test data

-. Test Date : June 23, 2020 ~ June 26, 2020

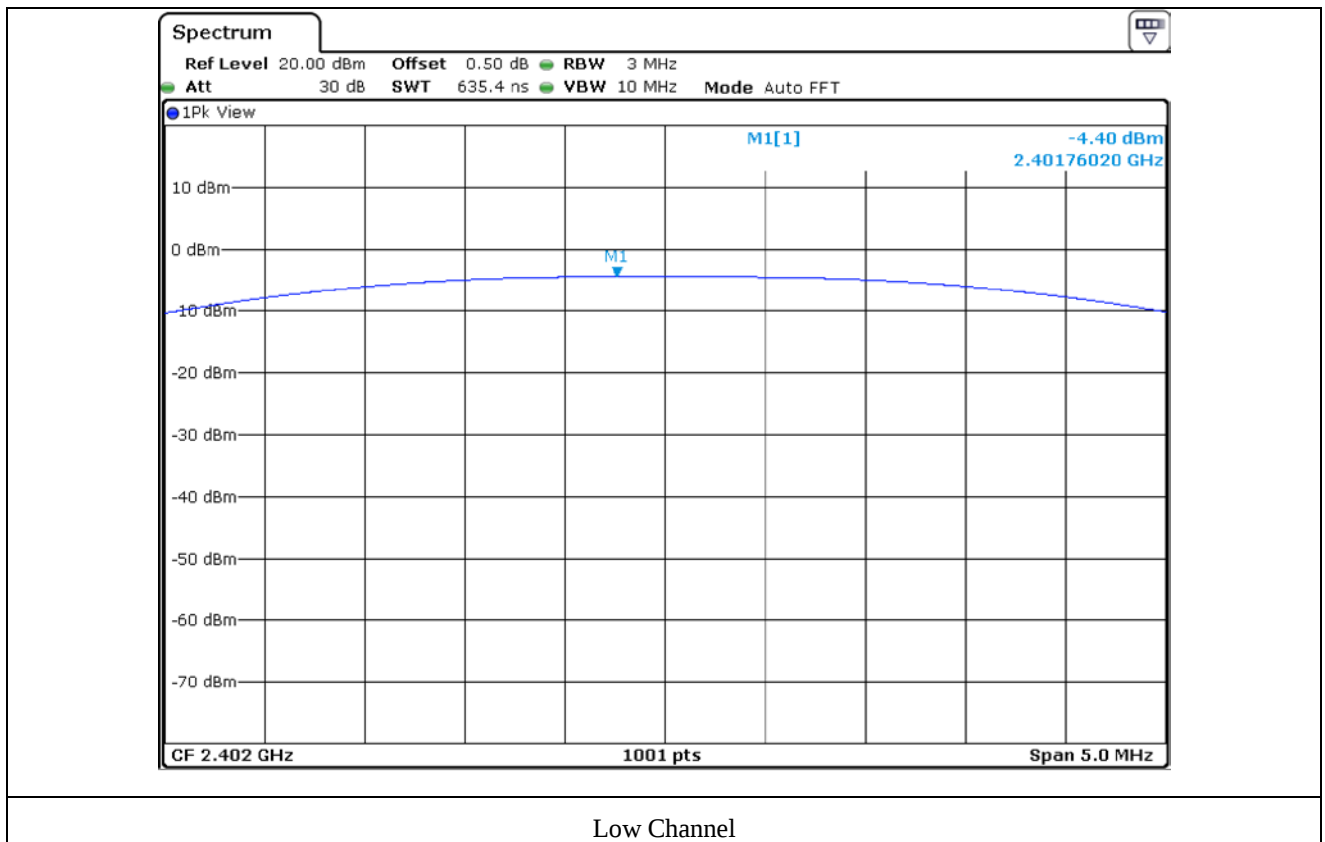
-. Test Result : Pass

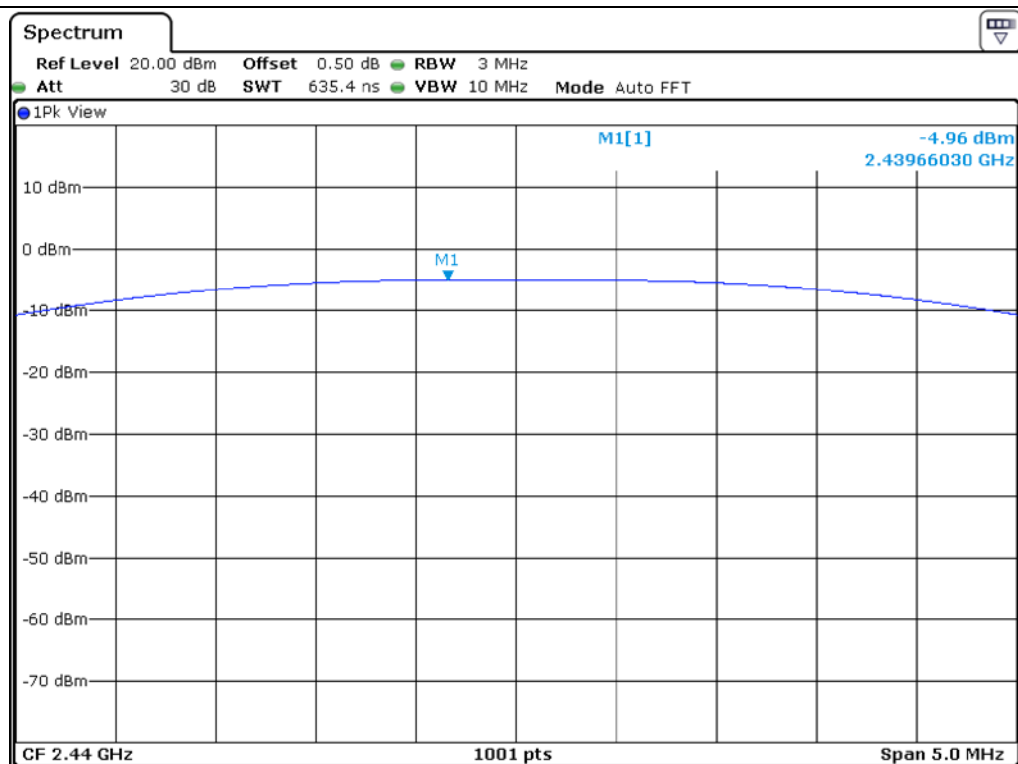
CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 402.00	-4.40	30.00	34.40
MIDDLE	2 440.00	-4.96	30.00	34.96
HIGH	2 480.00	-5.70	30.00	35.70

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

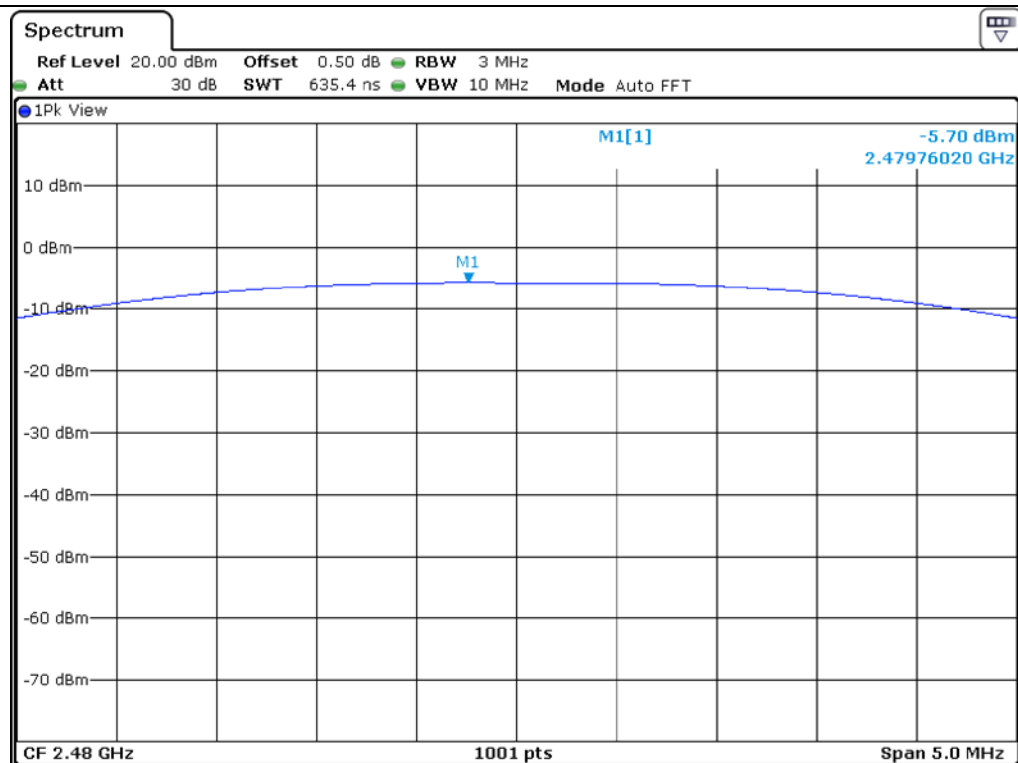


Tested by: Hyung-Kwon, Oh / Manager





Middle Channel



High Channel

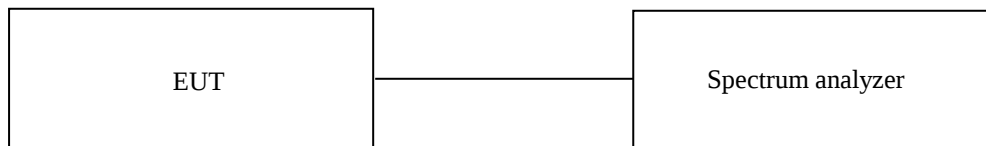
9. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND

9.1 Operating environment

Temperature : 24.3 °C
Relative humidity : 43.9 % 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 3 m semi anechoic chamber. The EUT was placed on turntable approximately 1.5 m above the ground plane.

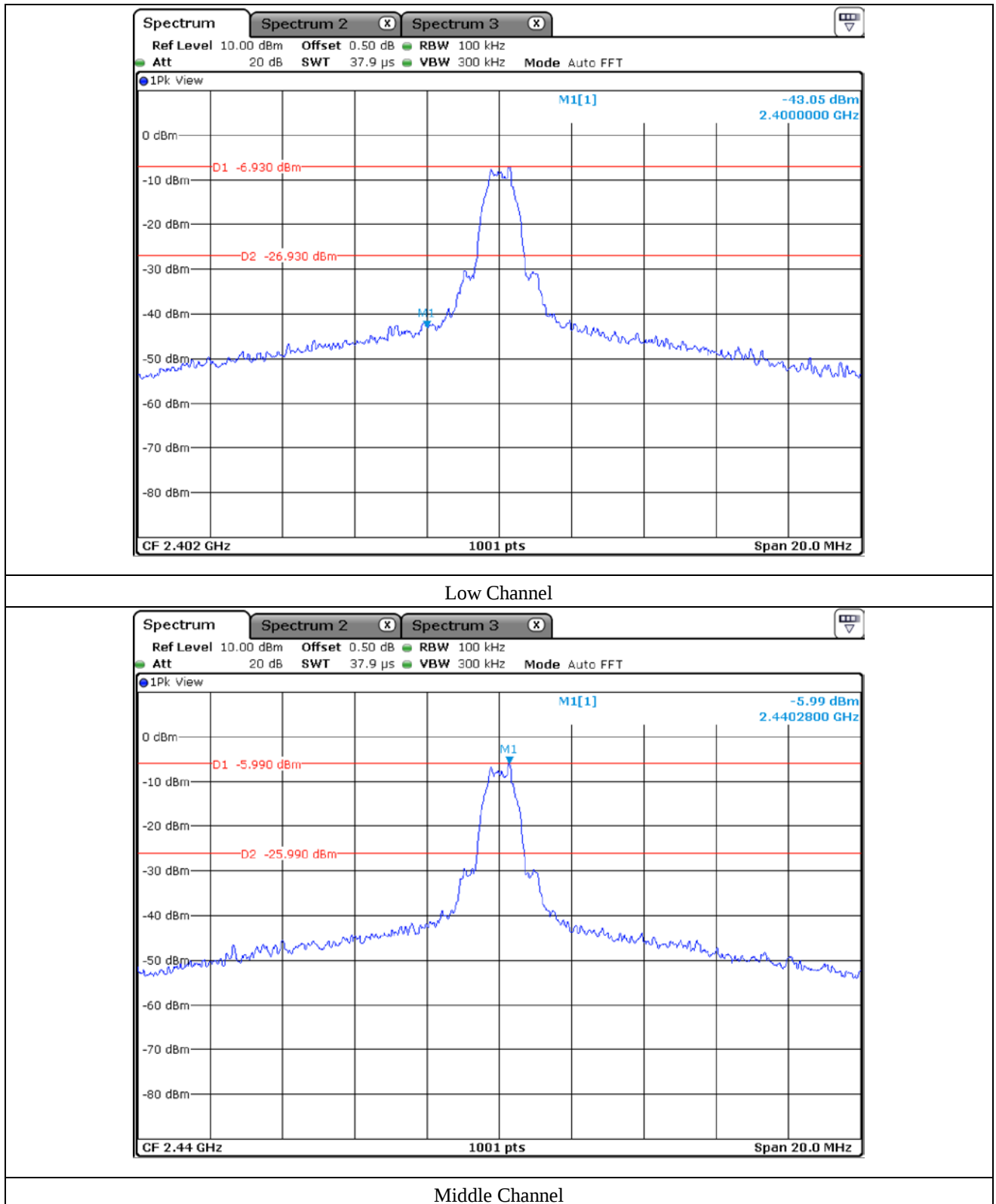
The frequency spectrum from 30 MHz to 26.5 GHz was scanned and maximum emission levels at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal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

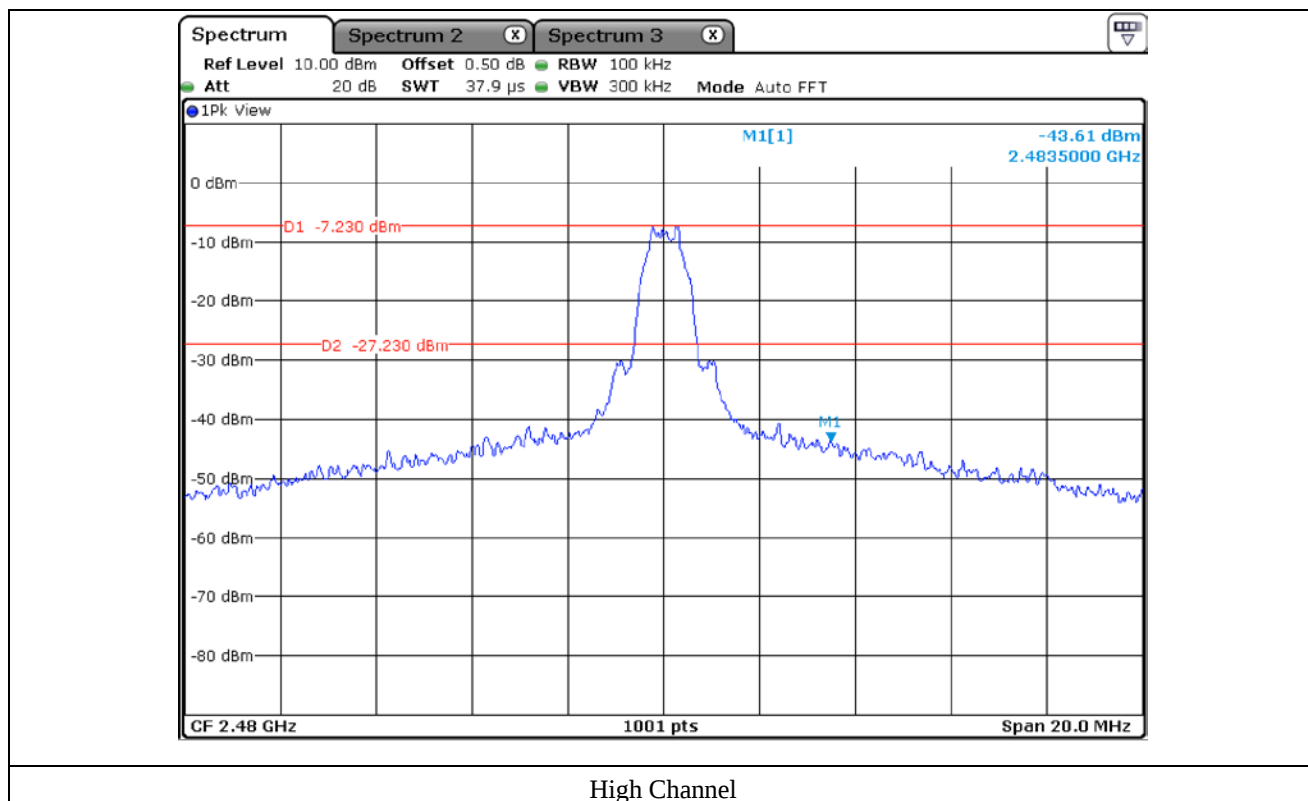
9.4 Test equipment used

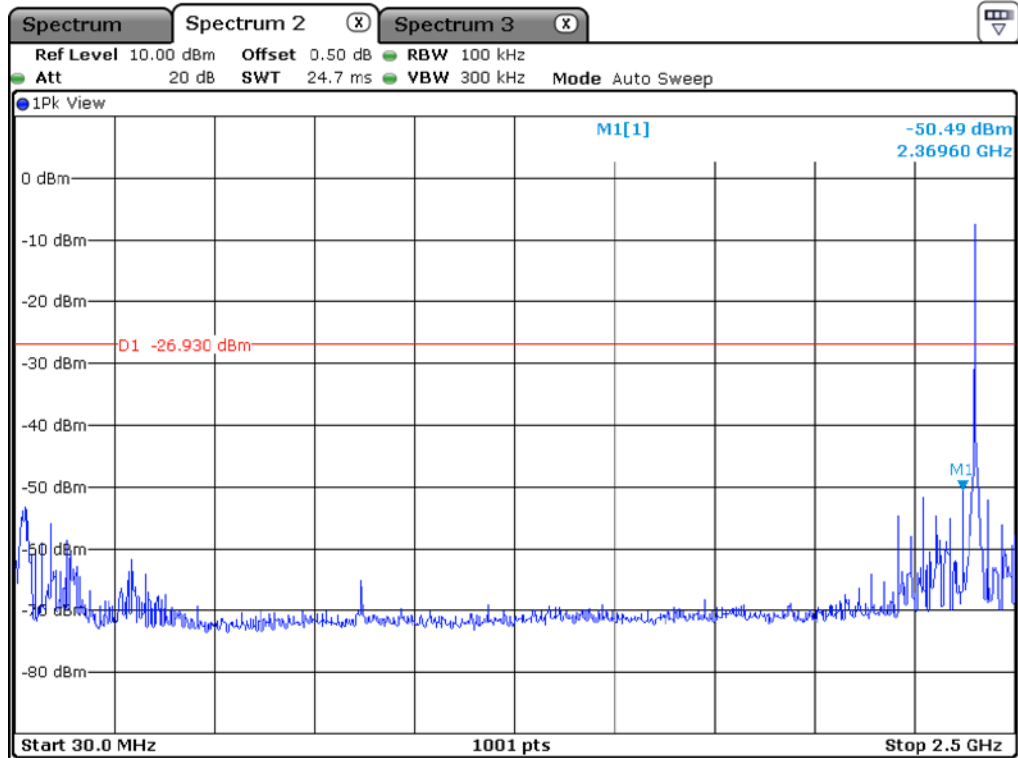
Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ - FSV40	Rohde & Schwarz	Signal Analyzer	101009	Feb. 21, 2020 (1Y)
■ - ESW	Rohde & Schwarz	EMI Test Receiver	101851	Aug. 07, 2019 (1Y)
■ - 310N	Sonoma Instrument	Pre-Amplifier	312544	Mar. 16, 2020 (1Y)
■ - BBV 9718 B	Schwarzbeck	Broadband 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. 24, 2019(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. 16, 2019 (1Y)
■ - BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Jan. 07, 2020(1Y)

All test equipment used is calibrated on a regular basis.

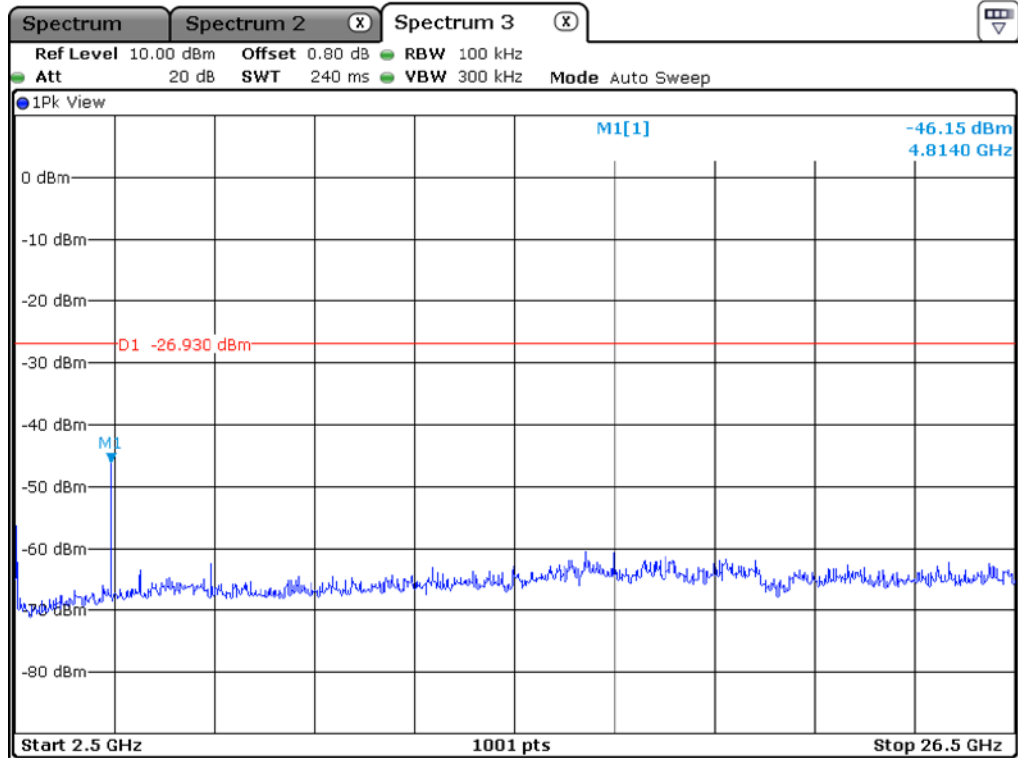
9.5 Test data for conducted emission



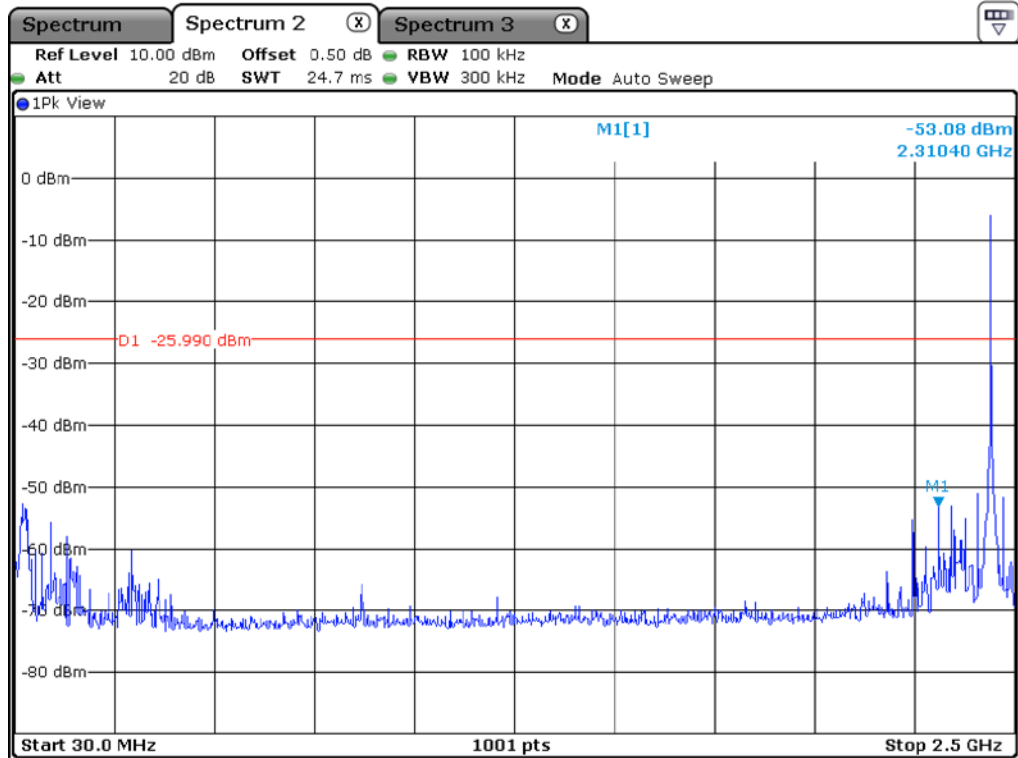




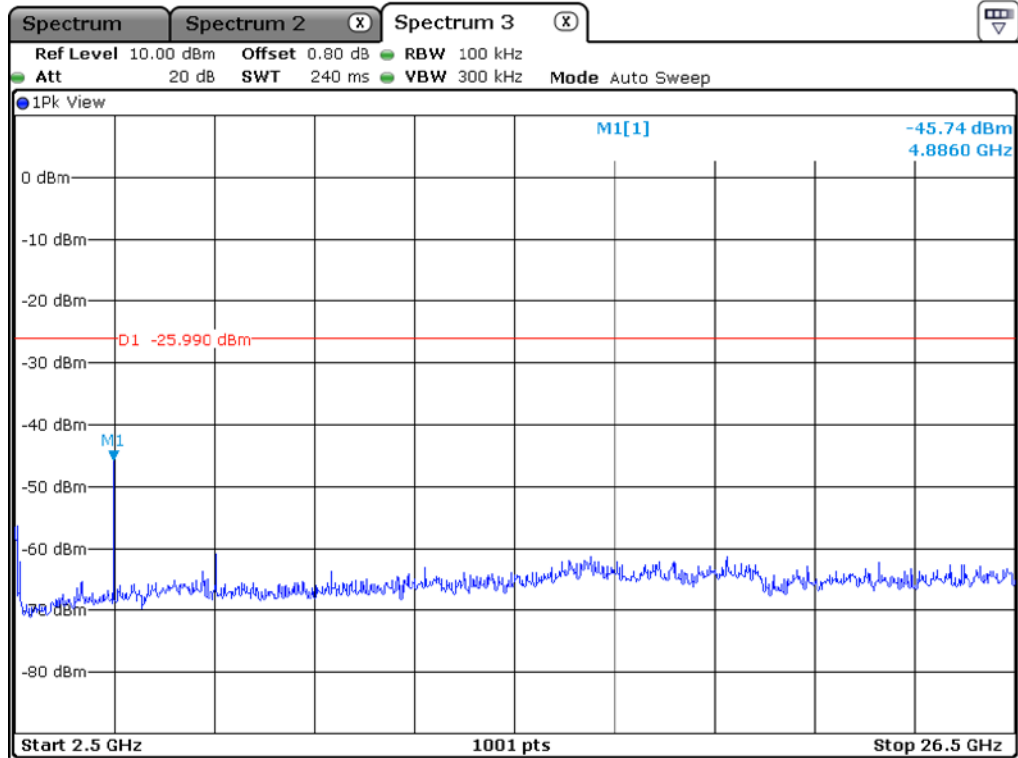
Low Channel



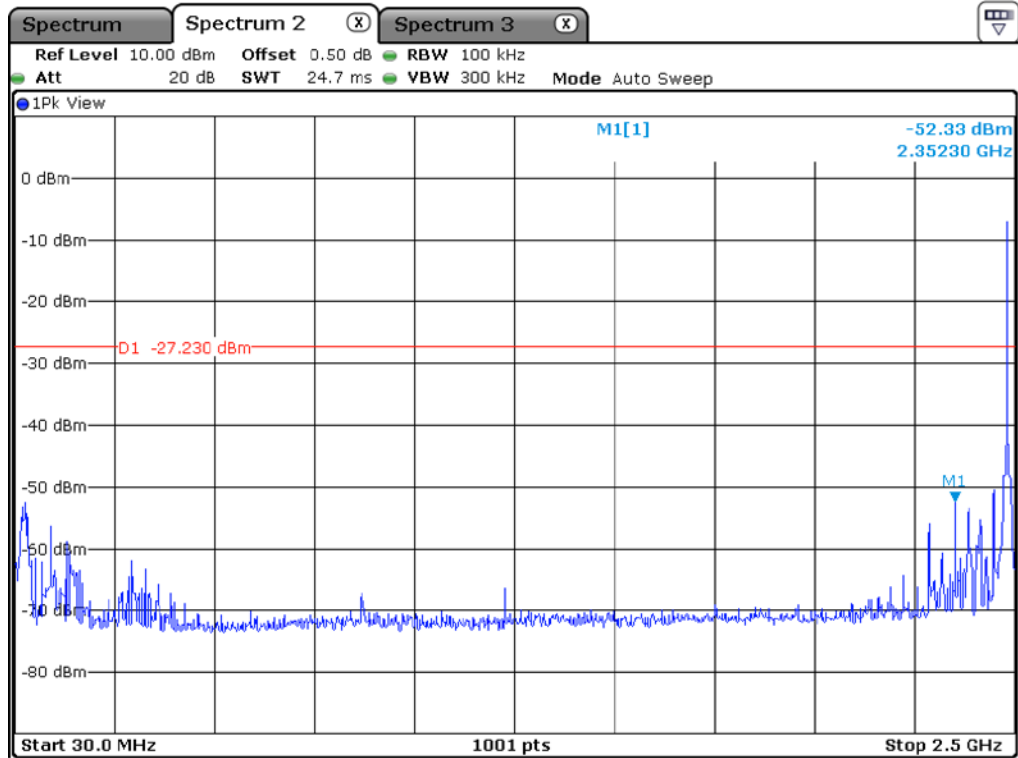
Low Channel



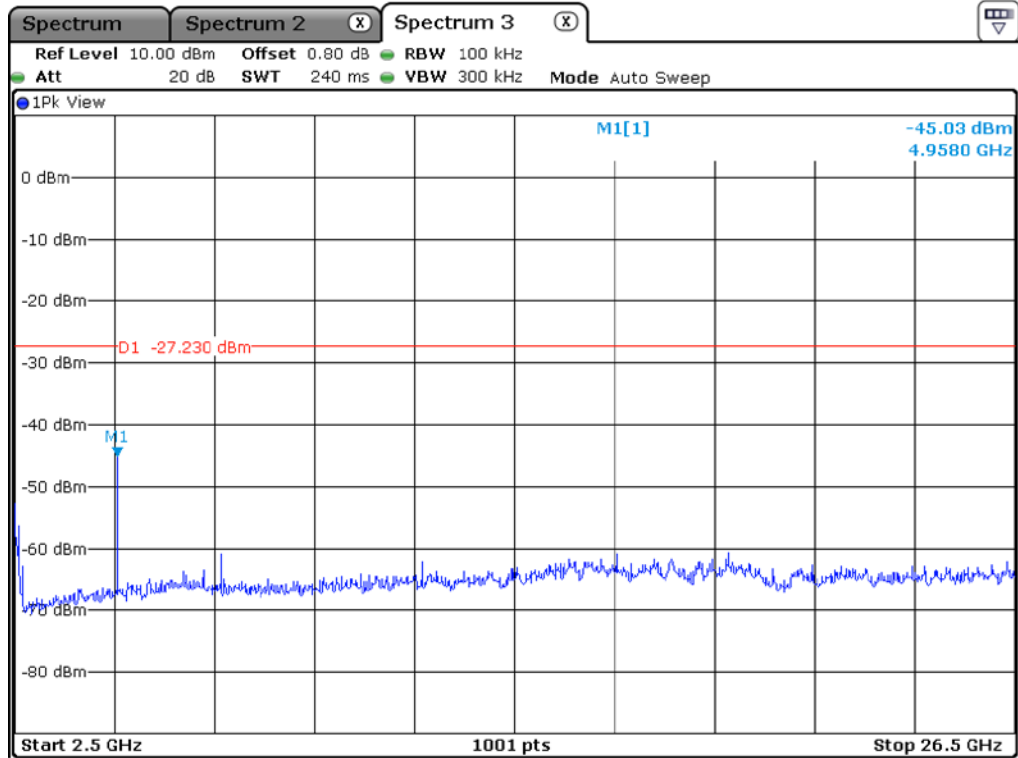
Middle Channel



Middle Channel



High Channel



High Channel

9.6 Test data for radiated emission

9.6.1 Radiated Emission which fall in the Restricted Band

- . Test Date : June 23, 2020 ~ June 26, 2020
- . 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 : 62.94 %
- . 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									
2 369.980	13.96	Peak	H	26.94	9.20	-	50.10	74.00	23.90
2 369.980	3.99	Average	H			2.01	42.14	54.00	11.86
2 369.982	12.39	Peak	V			-	48.53	74.00	25.47
2 369.980	3.75	Average	V			2.01	41.90	54.00	12.10
Test Data for High Channel									
2 483.508	18.74	Peak	H	27.47	9.49	-	55.70	74.00	18.30
2 483.508	7.96	Average	H			2.01	46.93	54.00	7.07
2 483.508	17.23	Peak	V			-	54.19	74.00	19.81
2 483.508	6.58	Average	V			2.01	45.55	54.00	8.45

Tabulated test data for Restricted Band

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

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

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


 Tested by: Hyung-Kwon, Oh / Manager

9.6.2 Spurious & Harmonic Radiated Emission

- . Test Date : June 23, 2020 ~ June 26, 2020
- . 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 : 62.94 %
- . 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									
4 804.00	13.03	Peak	H	28.84	10.31	-	52.18	74.00	21.82
	2.93	Average	H			2.01	44.09	54.00	9.91
	14.52	Peak	V			-	53.67	74.00	20.33
	3.30	Average	V			2.01	44.46	54.00	9.54
Test Data for Middle Channel									
4 880.00	13.18	Peak	H	28.01	10.43	-	51.62	74.00	22.38
	2.86	Average	H			2.01	43.31	54.00	10.69
	14.60	Peak	V			-	53.04	74.00	20.96
	3.48	Average	V			2.01	43.93	54.00	10.07
Test Data for High Channel									
4 960.00	12.89	Peak	H	29.15	10.81	-	52.85	74.00	21.15
	2.78	Average	H			2.01	44.75	54.00	9.25
	14.86	Peak	V			-	54.82	74.00	19.18
	3.47	Average	V			2.01	45.44	54.00	8.56

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


Tested by: Hyung-Kwon, Oh / Manager

10. PEAK POWER SPECTRAL DENSITY

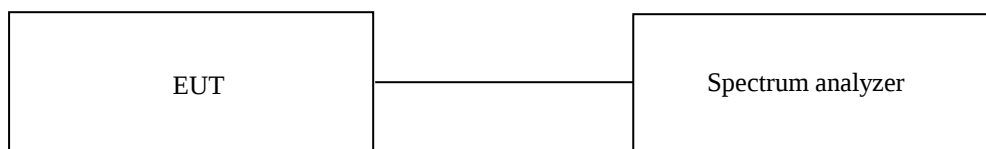
10.1 Operating environment

Temperature : 24.3 °C
Relative humidity : 43.9 % 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 equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Feb. 21, 2020 (1Y)

All test equipment used is calibrated on a regular basis.

10.4 Test data

-. Test Date : June 23, 2020 ~ June 26, 2020

-. Test Result : Pass

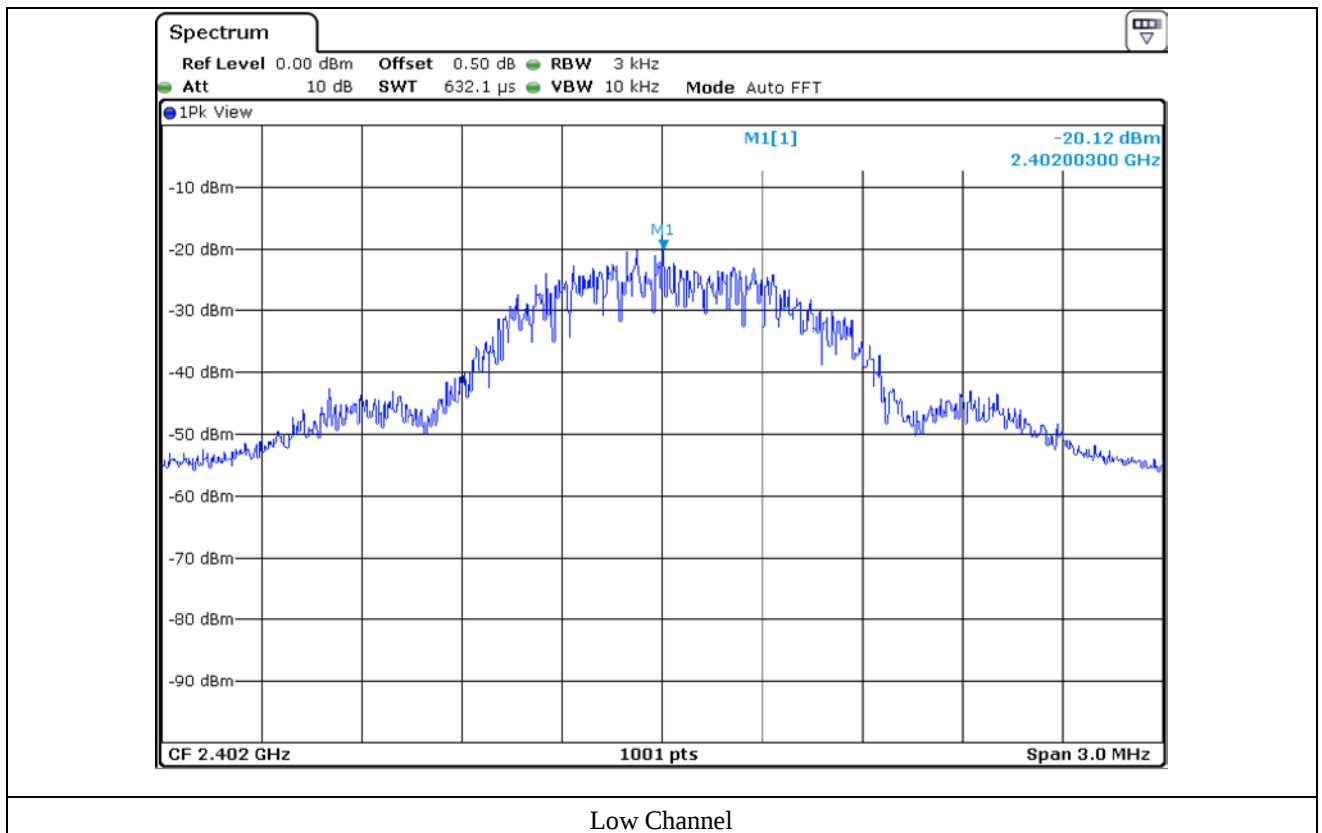
-. Operating Condition : Continuous transmitting mode

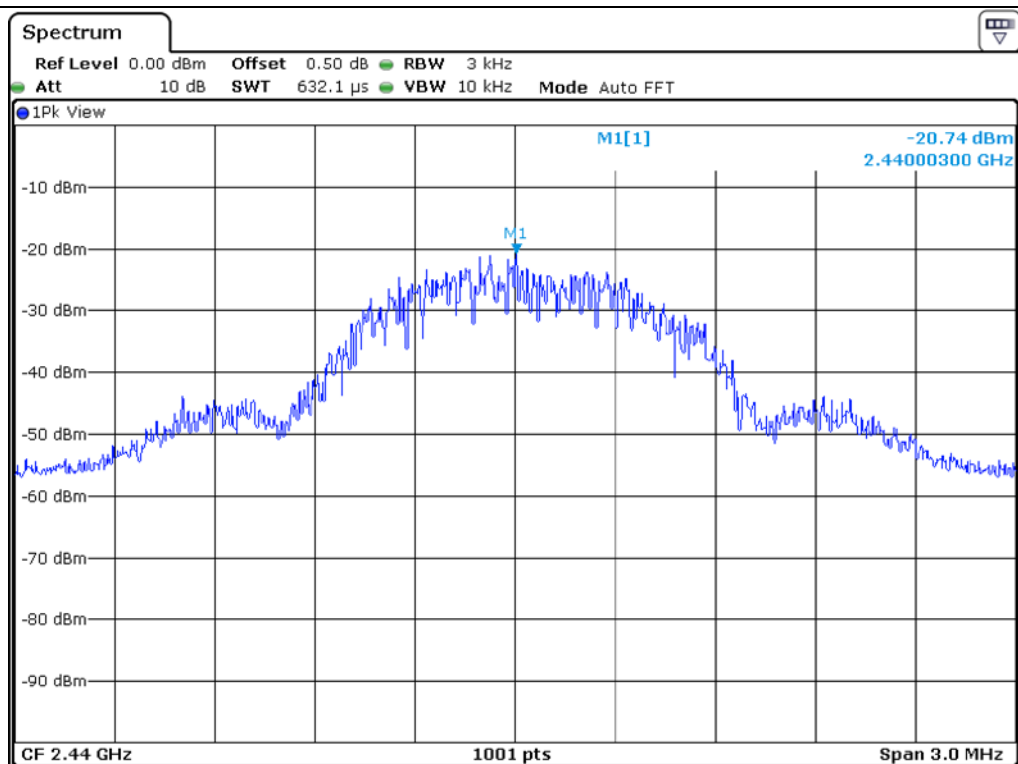
CHANNEL	FREQUENCY(MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 402.00	-20.12	8.00	28.12
Middle	2 440.00	-20.74	8.00	28.74
High	2 480.00	-21.45	8.00	29.45

Remark. Margin = Limit – Measured value

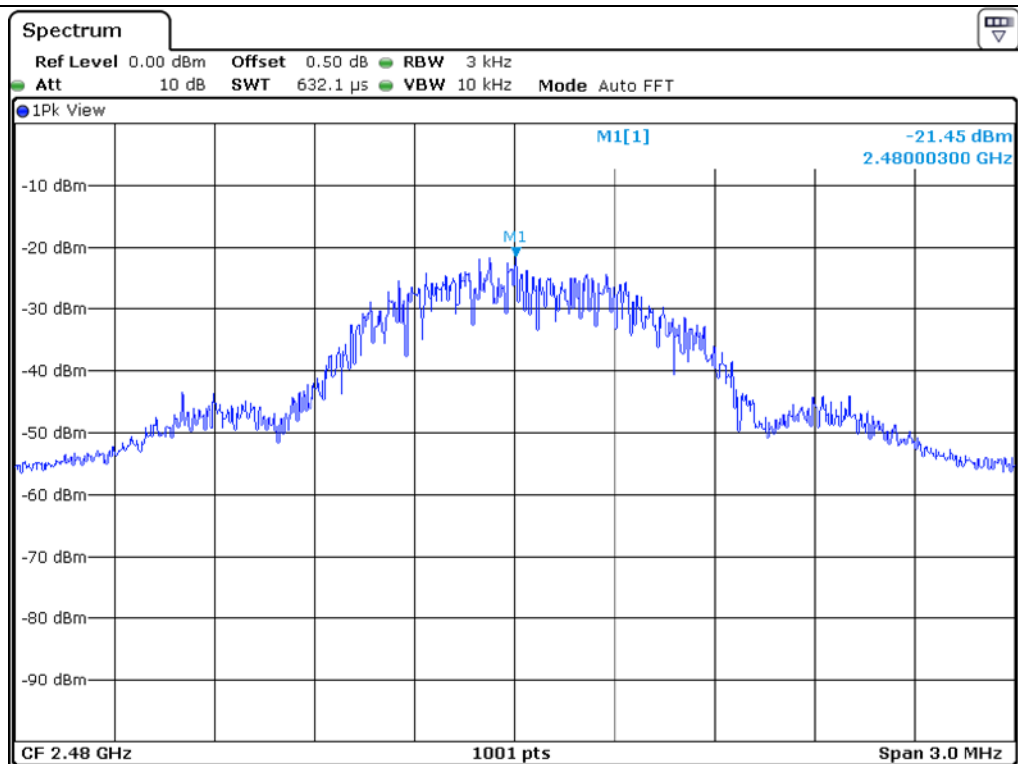


Tested by: Hyung-Kwon, Oh / Manager





Middle Channel



High Channel

11. RADIATED EMISSION TEST

11.1 Operating environment

Temperature : 24.3 °C
Relative humidity : 43.9 % R.H.

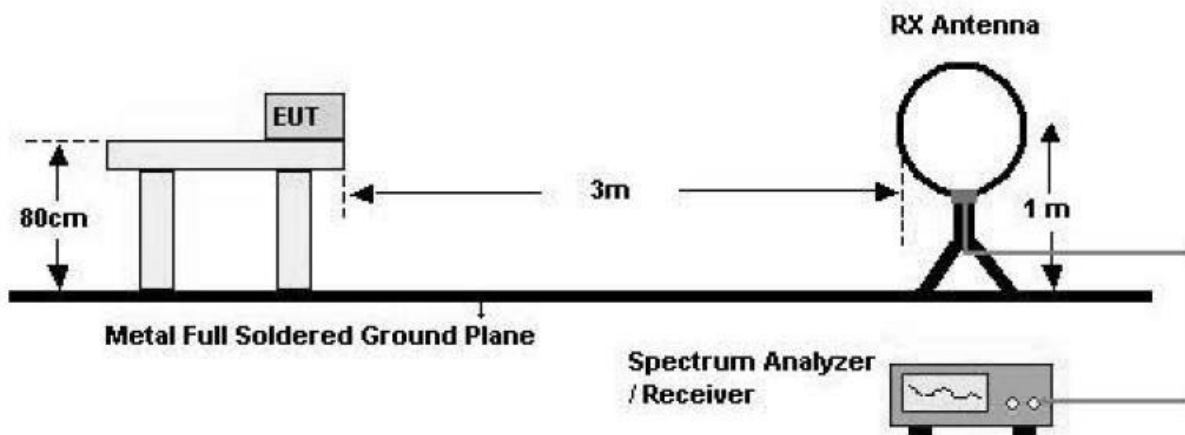
11.2 Test set-up

The radiated emissions measurements were on the 3 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.

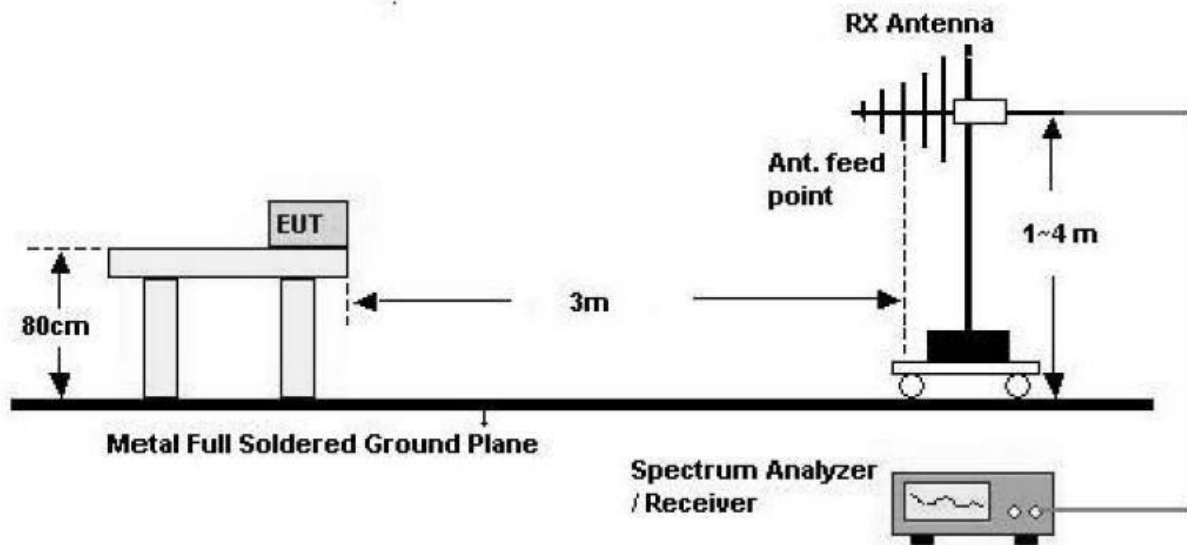
The frequency spectrum from 30 MHz to 26.5 GHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal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

- Test Configuration

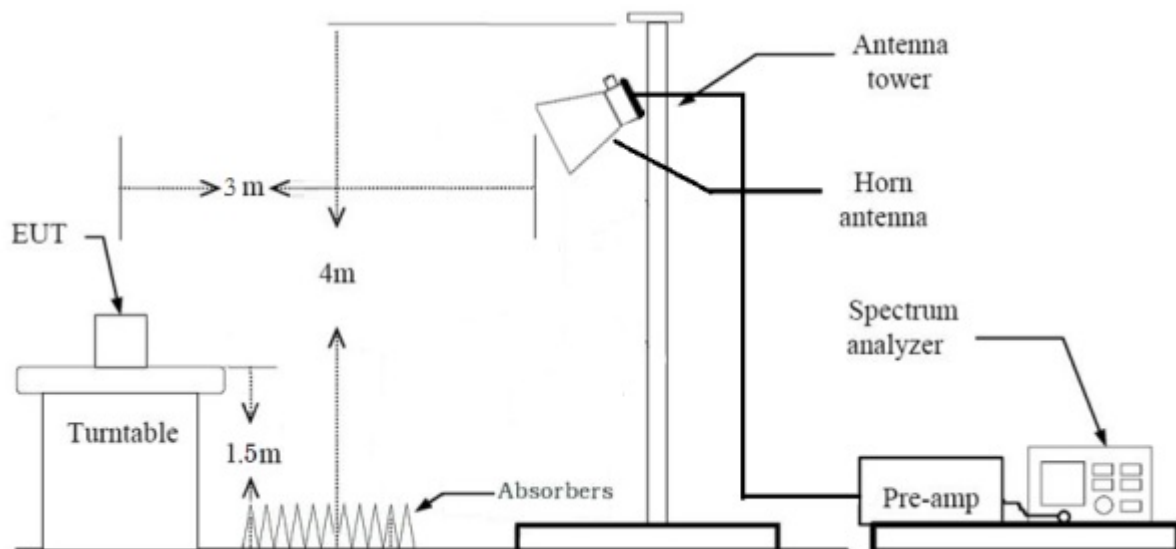
1. Below 30 MHz



2. 30 MHz - 1 GHz



3. Above 1 GHz



11.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Feb. 21, 2020 (1Y)
■ -	ESW	Rohde & Schwarz	EMI Test Receiver	101851	Aug. 07, 2019 (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. 24, 2019(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. 16, 2019 (1Y)
■ -	BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Jan. 07, 2020(1Y)

All test equipment used is calibrated on a regular basis.

11.4 Test data

11.4.1 Test data for 30 MHz ~ 1 GHz

Humidity Level : 43.9 % R.H.

Temperature: 24.3 °C

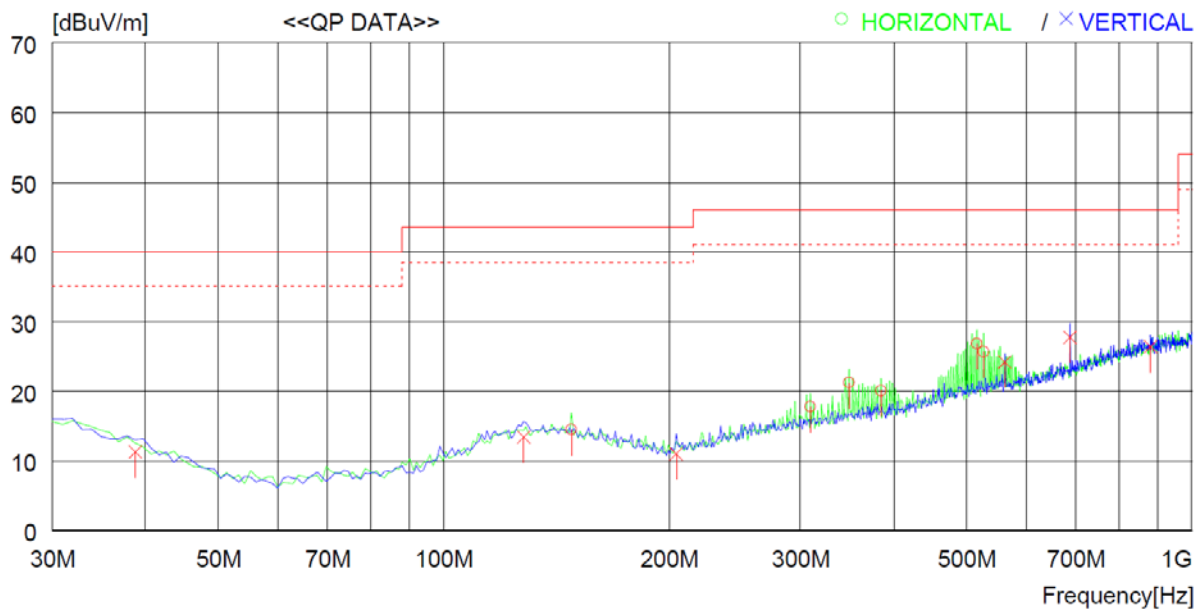
Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Body Fat Analyzer

Test Date: June 23, 2020 ~ June 26, 2020

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	148.340	25.8	18.8	2.4	32.5	14.5	43.5	29.0	300	9
2	309.360	27.4	19.6	3.3	32.5	17.8	46.0	28.2	100	38
3	348.160	29.9	20.3	3.5	32.5	21.2	46.0	24.8	100	54
4	384.050	27.6	21.2	3.8	32.5	20.1	46.0	25.9	100	0
5	515.971	31.3	23.9	4.3	32.7	26.8	46.0	19.2	100	0
6	526.640	29.9	24.1	4.3	32.7	25.6	46.0	20.4	100	0
----- Vertical -----										
7	38.730	23.7	18.7	1.4	32.5	11.3	40.0	28.7	200	0
8	127.970	26.3	17.4	2.2	32.5	13.4	43.5	30.1	200	0
9	204.600	24.9	15.8	2.8	32.5	11.0	43.5	32.5	100	359
10	562.529	27.4	24.9	4.5	32.6	24.2	46.0	21.8	100	359
11	687.655	28.4	26.7	5.2	32.6	27.7	46.0	18.3	100	155
12	879.710	23.7	28.8	5.7	31.8	26.4	46.0	19.6	300	240

Tested by: Hyung-Kwon, Oh / Manager

11.4.2 Test data for Below 30 MHz

- . Test Date : June 23, 2020 ~ June 26, 2020
- . 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

- . Test Date : June 23, 2020 ~ June 26, 2020
- . 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.									



Tested by: Hyung-Kwon, Oh / Manager