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

Test Report No.	**: W178R-D001**
AGR No.	**: A176A-401**
Applicant	**: Huintech Co., Ltd.**
Address	**: BI Center 218, 85, Daehak-ro, Gwangyang-eup, Gwangyang-si, Jeollanam-do, Korea**
Manufacturer	**: Huintech Co., Ltd.**
Address	**: BI Center 218, 85, Daehak-ro, Gwangyang-eup, Gwangyang-si, Jeollanam-do, Korea**
Type of Equipment	**: Cording Robot**
FCC ID.	**: 2AM64HU-COCONUT01**
Model Name	**: Coconut**
Multiple Model Name	**: N/A**
Serial number	**: N/A**
Total page of Report	**: 35 pages (including this page)**
Date of Incoming	**: July 03, 2017**
Date of issue	**: August 02, 2017**

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: Jae-Ho Lee / Chief Engineer
ONETECH Corp.

Approved by: Keun-Young, Choi / Vice President
ONETECH Corp.

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

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ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
W178R-D001	August 02, 2017	Initial Issue	All

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1. VERIFICATION OF COMPLIANCE

Applicant : Huintech Co., Ltd.
Address : BI Center 218, 85, Daehak-ro, Gwangyang-eup, Gwangyang-si, Jeollanam-do, Korea
Contact Person : Jongsil, Kim / CEO
Telephone No. : +82-70-8031-3113
FCC ID : 2AM64HU-COCONUT01
Model Name : Coconut
Serial Number : N/A
Date : August 02, 2017

EQUIPMENT CLASS	DTS – DIGITAL TRNSMISSION SYSTEM
KIND OF EQUIPMENT	Cording Robot
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
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.

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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-4617/ G-10666 / T-1842

IC (Industry Canada) – Registration No. Site# 3736A-3

-. Site Accreditation:

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

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

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3. GENERAL INFORMATION

3.1 Product Description

The Huintech Co., Ltd., Model Coconut (referred to as the EUT in this report) is a Cording Robot. The product specification described herein was obtained from product data sheet or user's manual.

Device Type	Cording Robot
Operating Frequency	2 402 MHz ~ 2 480 MHz
RF Output Power	-1.71 dBm
Number of Channel	40 Channel
Modulation Type	GFSK
Antenna Type	PCB Antenna
Antenna Gain	-5.38 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	12 MHz, 16 MHz, 32 MHz
Rated Supply Voltage	DC 3.7 V

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

-. None

4. EUT MODIFICATIONS

-. None

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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	N/A	COCONUT-Mainboard	-
Sub Board	N/A	CoCoNut-BLE4.0	-
Tracer Board	N/A	CoCoNut-Tracer	-
Battery	N/A	LH 602535	-

5.2 Peripheral equipment

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

Model	Manufacturer	Description	Connected to
N/A	N/A	N/A	N/A

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.

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5.4 Configuration of Test System

Line Conducted Test: The EUT was tested in a Charging & Transmitting mode. The EUT was connected to USB and the power of USB was connected to Adapter. 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 3 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 Tests, the following operating mode was investigated

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

6.2 General Radiated Emissions Tests

During Preliminary Tests, the following operating modes were investigated

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

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7. MIMIMUM 6 dB BANDWIDTH

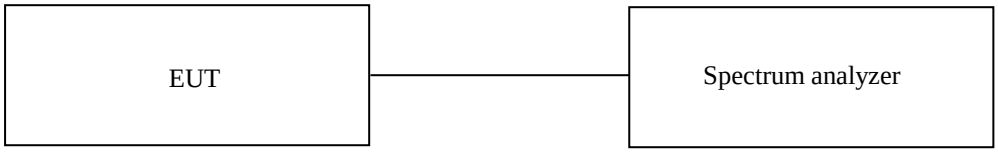
7.1 Operating environment

Temperature : 24 ℃

Relative humidity : 53 % 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	Apr. 05, 2017 (1Y)

All test equipment used is calibrated on a regular basis.

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7.4 Test data

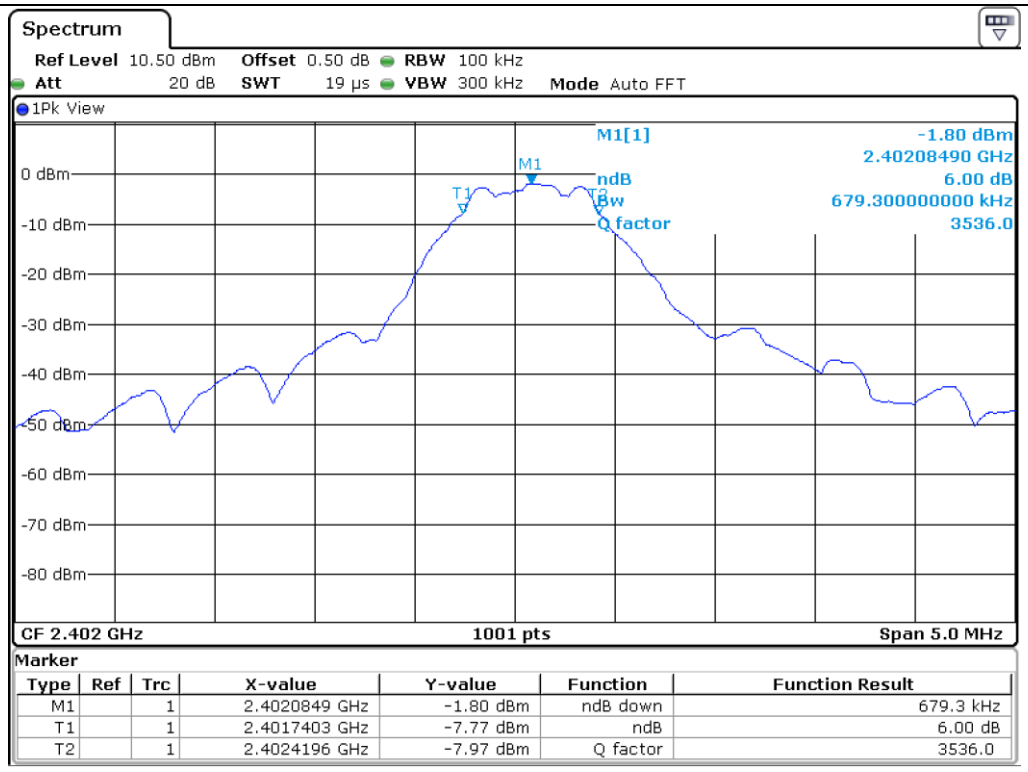
-. Test Date : July 20, 2017

-. Test Result : Pass

CHANNEL	FREQUENCY(MHz)	MEASURED VALUE (kHz)	LIMIT (kHz)	MARGIN (kHz)
Low	2 402.00	679.30	500	179.30
Middle	2 440.00	679.30	500	179.30
High	2 480.00	679.30	500	179.30

Remark. Margin = Measured Value - Limit

Tested by: Min-Gu Ji / Assistant Manager



Low Channel

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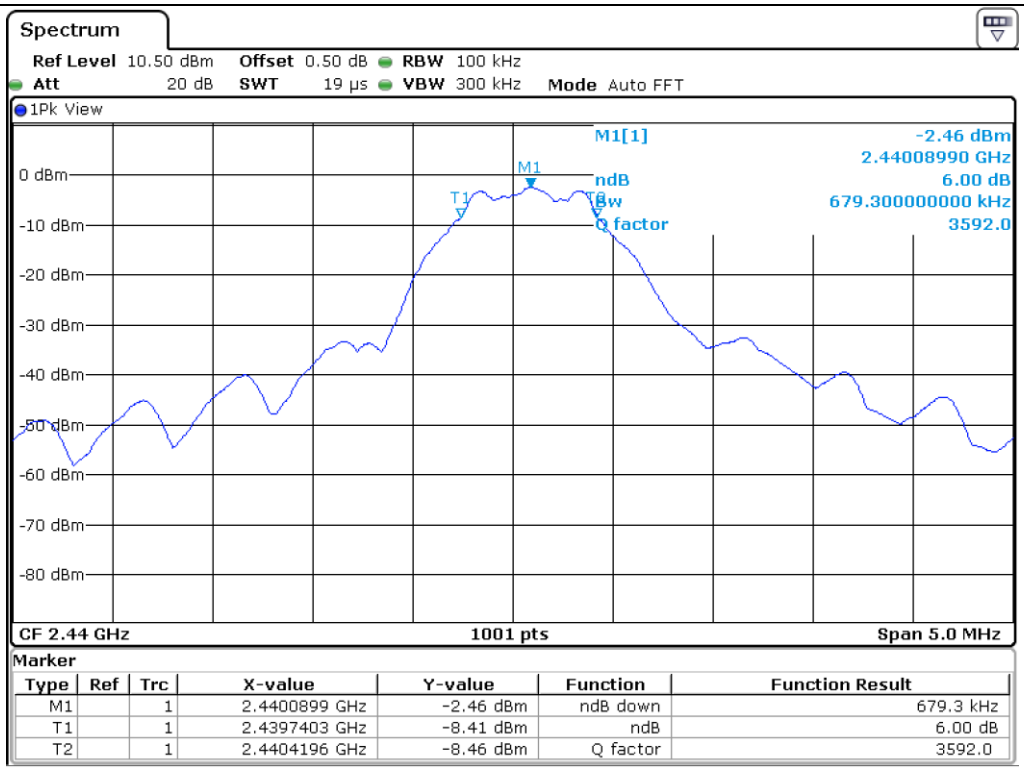
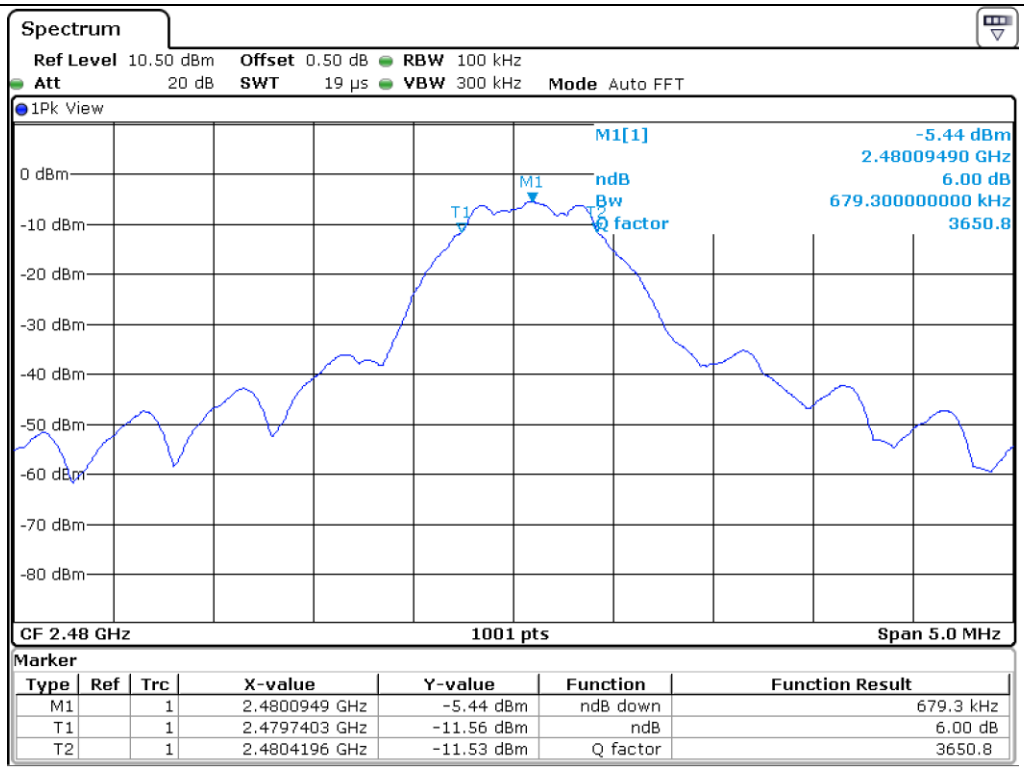


Middle Channel



High Channel

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8. MAXIMUM PEAK OUTPUT POWER

8.1 Operating environment

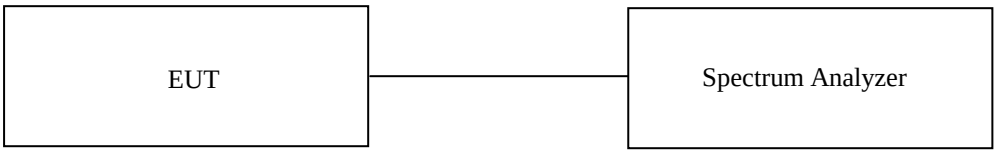
Temperature : 24 ℃

Relative humidity : 53 % 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 ≥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	Apr. 05, 2017 (1Y)

All test equipment used is calibrated on a regular basis.

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8.4 Test data

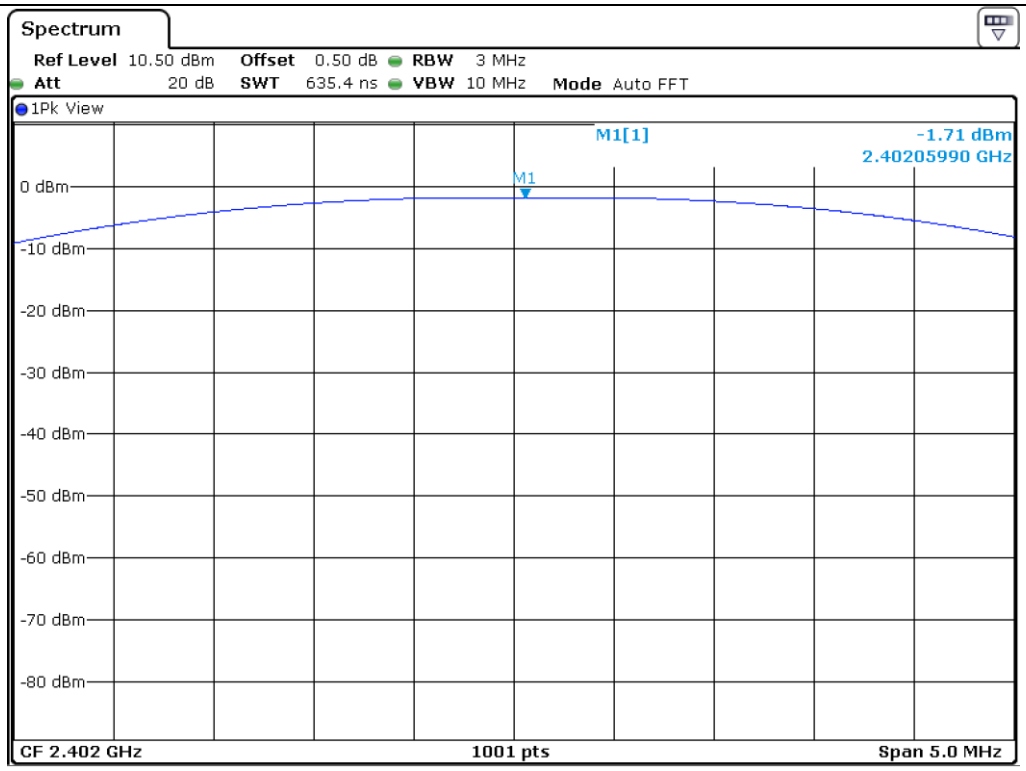
-. Test Date : July 20, 2017

-. Test Result : Pass

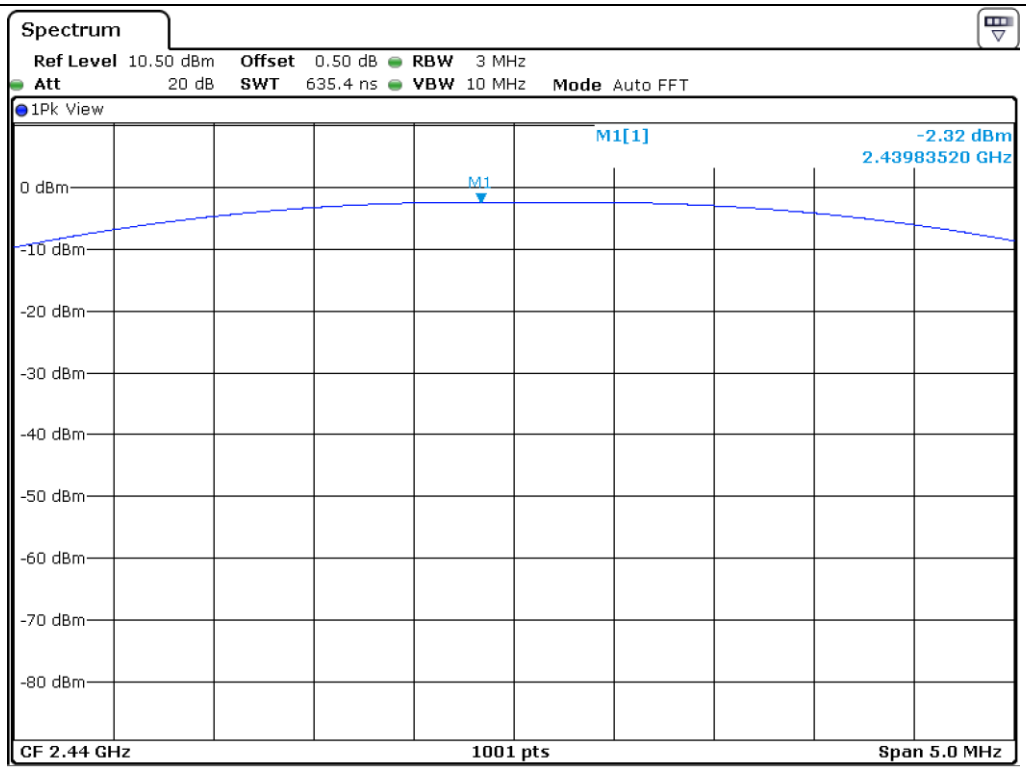
CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 402.00	-1.71	30.00	31.71
MIDDLE	2 440.00	-2.32	30.00	32.32
HIGH	2 480.00	-5.26	30.00	35.26

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

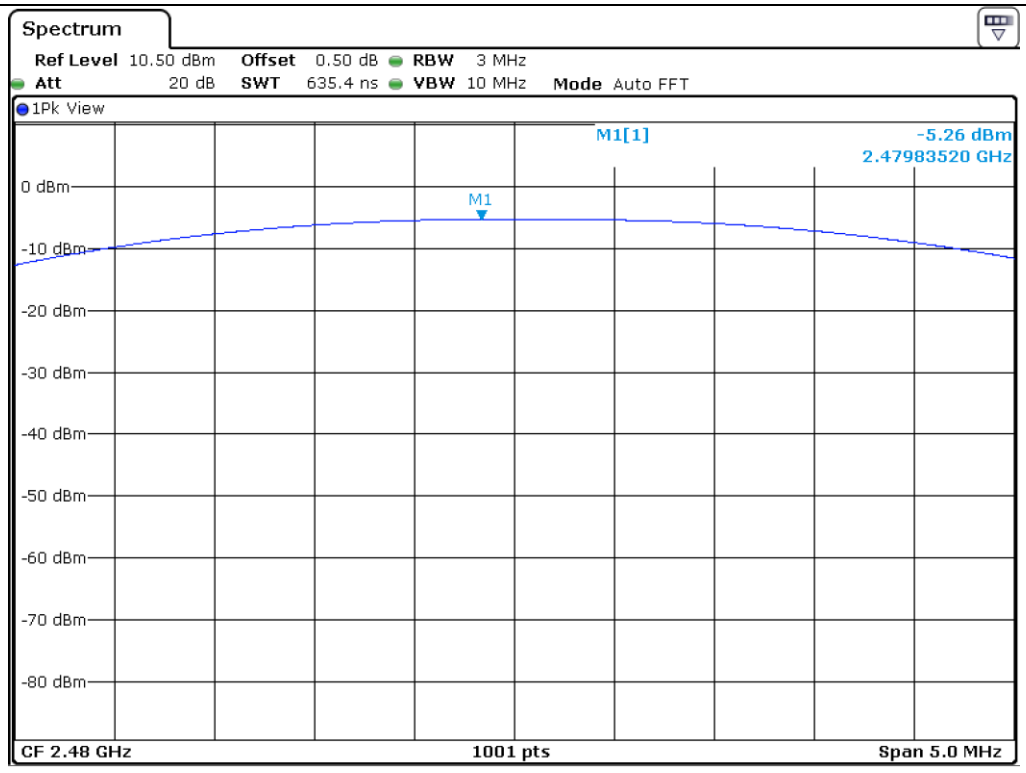
Tested by: Min-Gu Ji / Assistant Manager



Low Channel



Middle Channel



High Channel

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9. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND

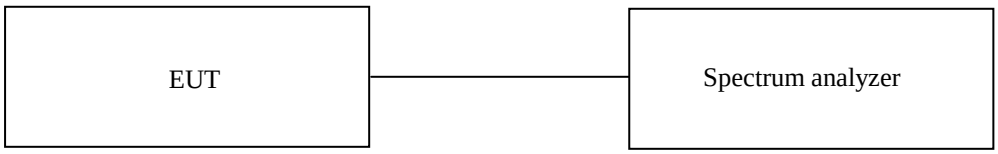
9.1 Operating environment

Temperature : 24 ℃

Relative humidity : 65.9 % R.H.

9.2 Test set-up for conducted measurement

The antenna output of the EUT was connected to the spectrum analyzer. The resolution and video bandwidth is set to 100 kHz, 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.(Interval)
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Apr. 05, 2017 (1Y)
■ -	ESU	Rohde & Schwarz	EMI Test Receiver	100261	Apr. 05, 2017 (1Y)
■ -	310N	Sonoma Instrument	Pre-Amplifier	312544	Apr. 04, 2017 (1Y)
■ -	SCU-18	Rohde & Schwarz	Pre-Amplifier	102266	Apr. 04, 2017 (1Y)
■ -	DT3000	Innco System	Turn Table	930611	N/A
■ -	MA4000-EP	Innco System	Antenna Master	3320611	N/A
■ -	VULB9163	Schwarzbeck	TRILOG Broadband Antenna	9163-421	Apr. 15, 2016 (2Y)
■ -	BBHA9120D	Schwarzbeck	Horn Antenna	BBHA9120D1349	Aug. 31, 2015 (2Y)
■ -	BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Apr. 30, 2015 (2Y)

All test equipment used is calibrated on a regular basis.

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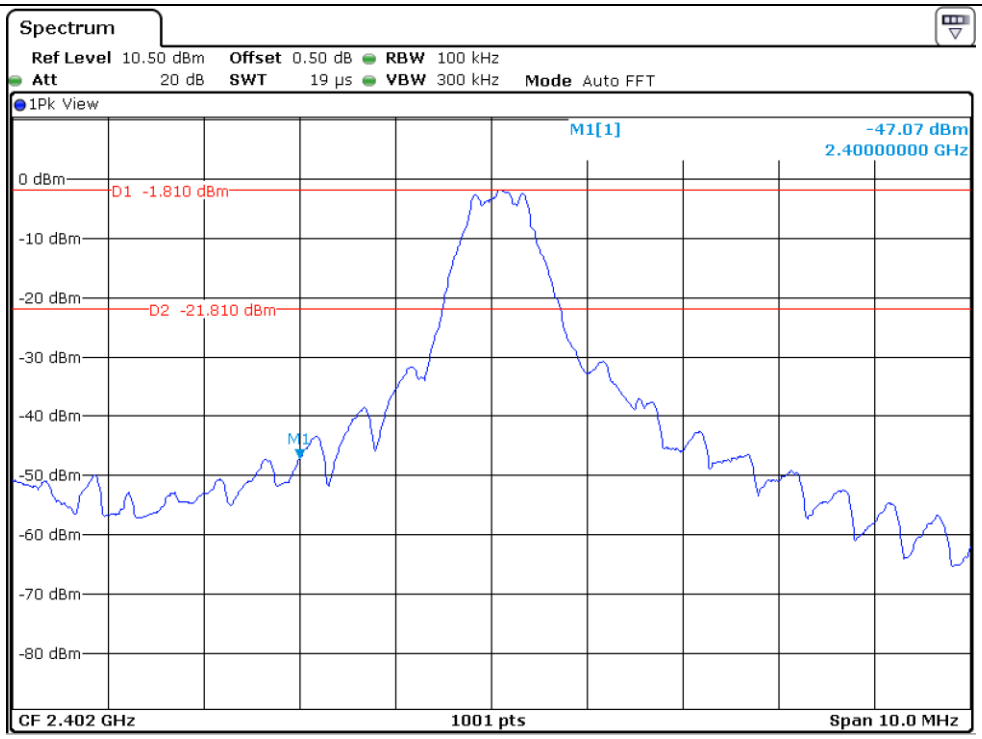
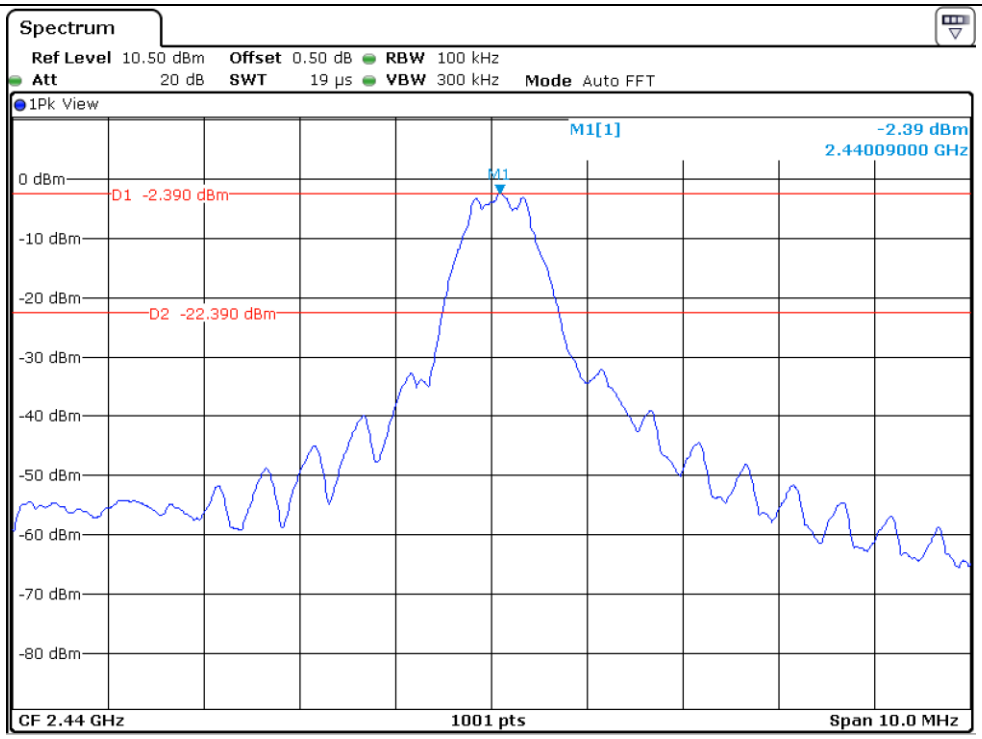
9.5 Test data for conducted emission



Low Channel



Middle Channel

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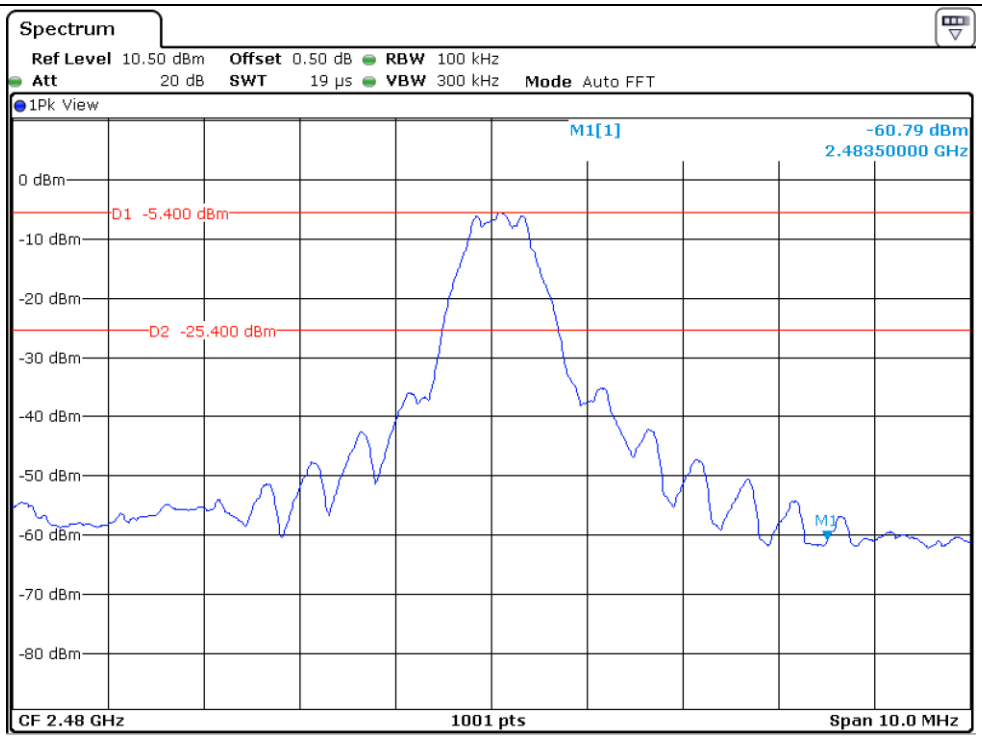

High Channel

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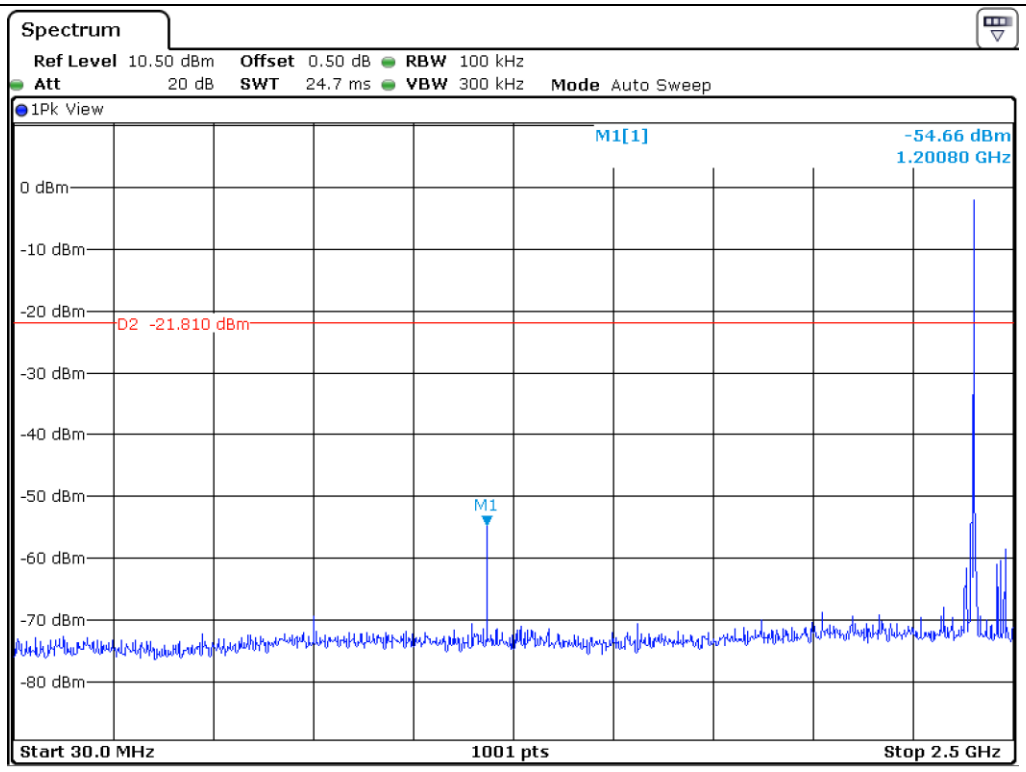

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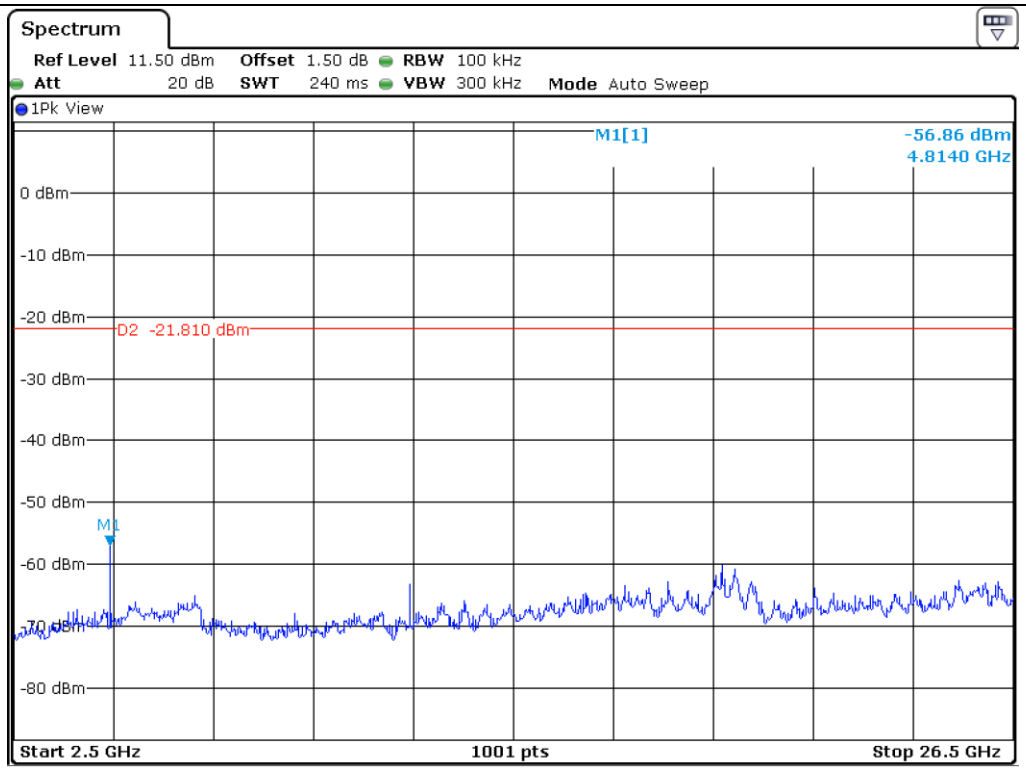

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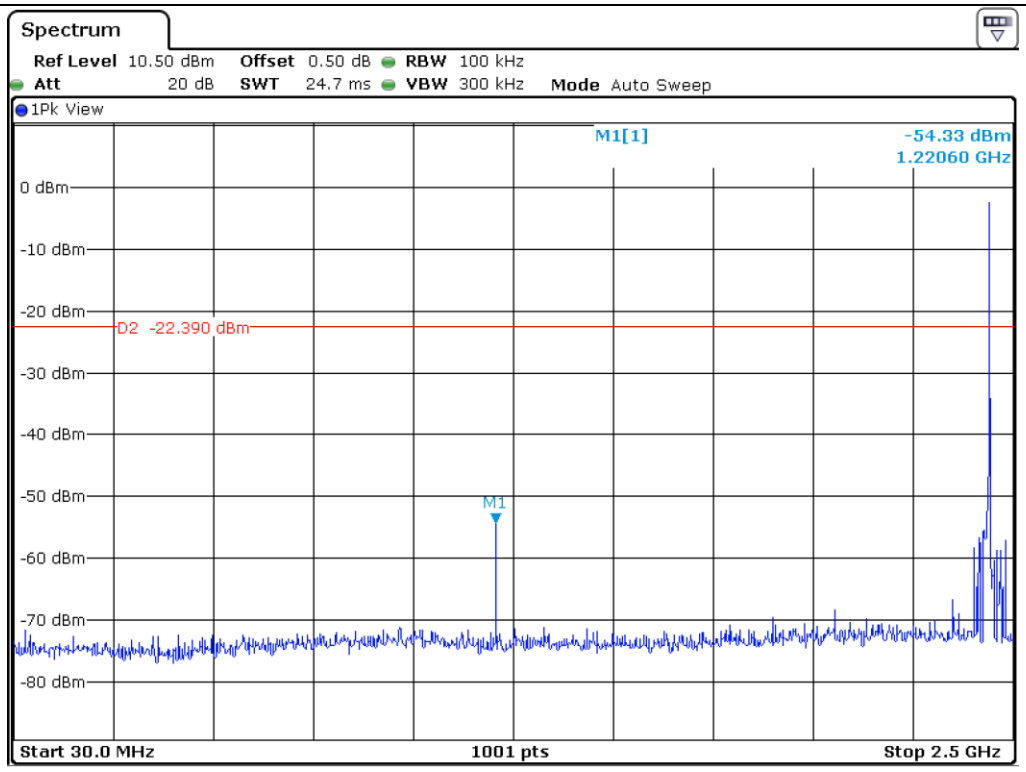
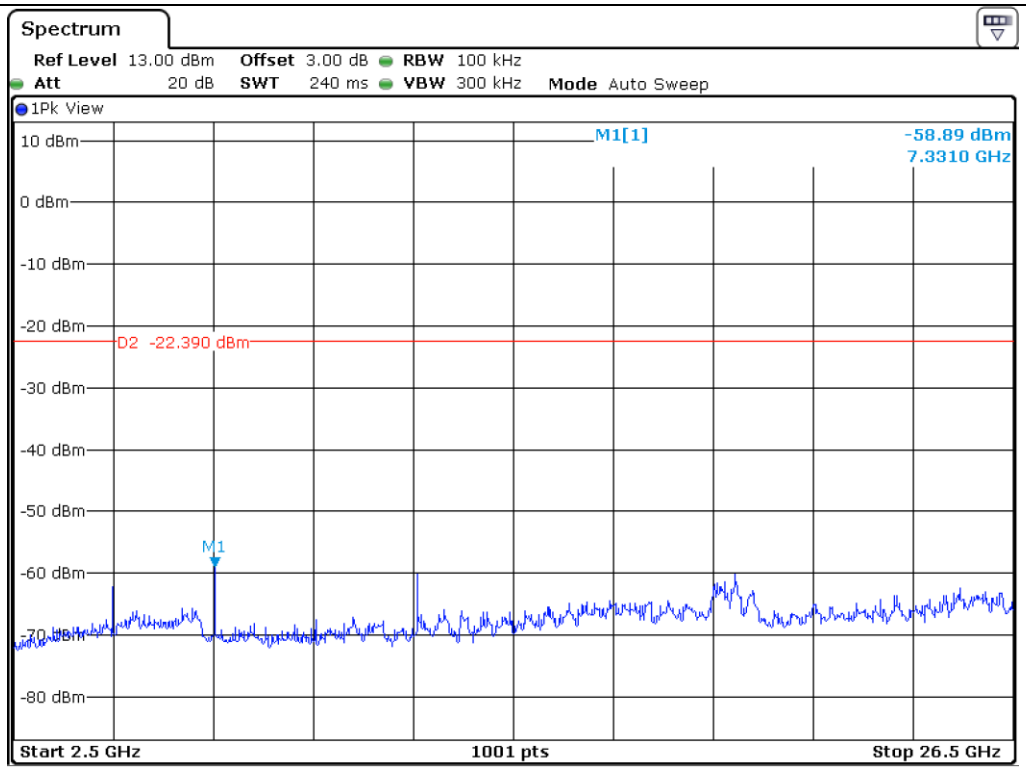


Middle Channel



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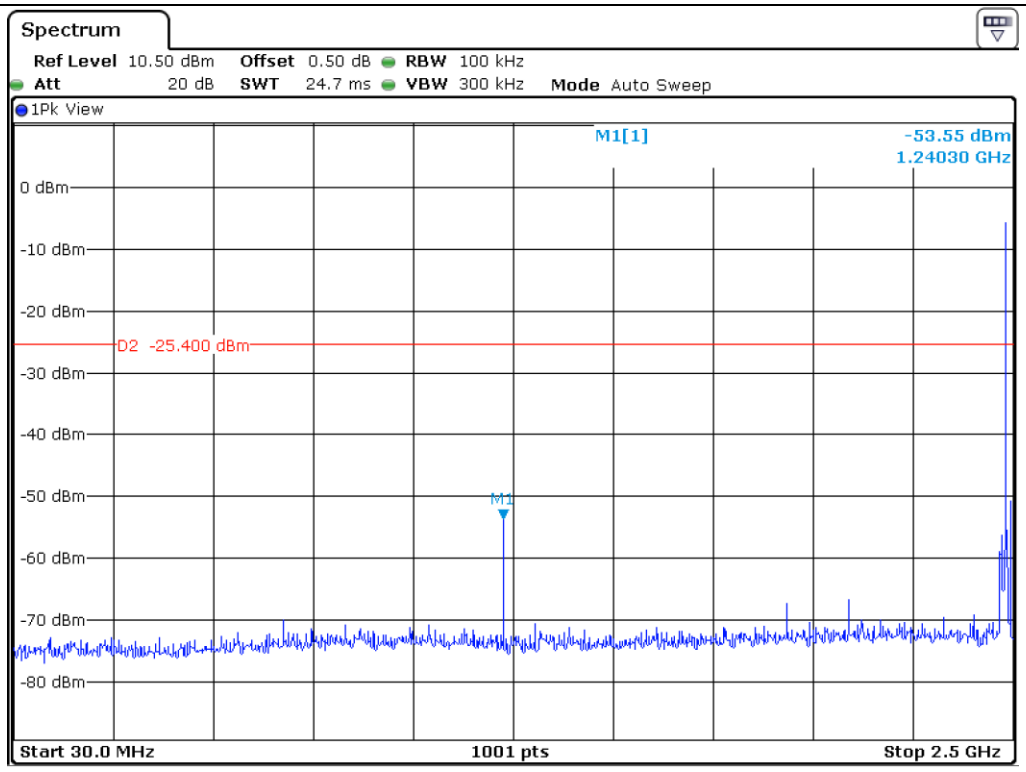
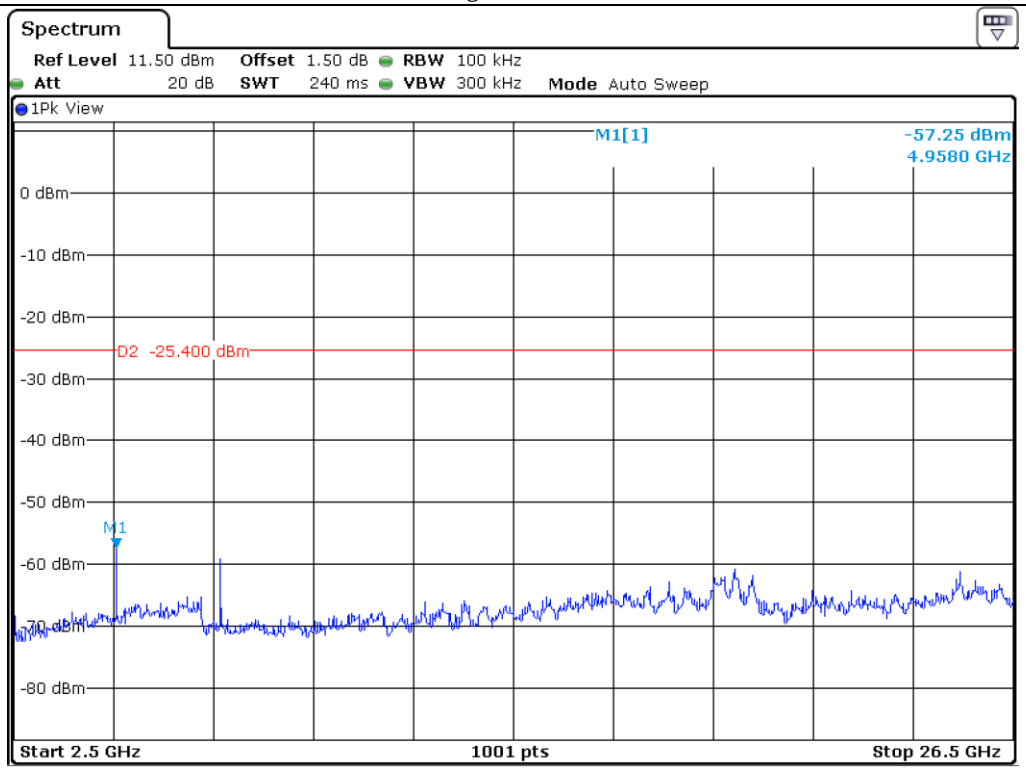


High Channel



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9.6 Test data for radiated emission

9.6.1 Radiated Emission which fall in the Restricted Band

-. Test Date : July 21, 2017

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Detector : Peak Mode(Peak), Average Mode(RMS)

-. Measurement distance : 3 m

-. Result : PASSED

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel									
2 380.00	45.67	Peak	H	27.10	7.50	43.00	37.27	74.00	36.73
	23.28	Average	H				14.88	54.00	39.12
2 380.00	43.99	Peak	V				35.59	74.00	38.41
	23.02	Average	V				14.62	54.00	39.38
Test Data for Band Edge									
2 400.00	36.96	Peak	H	27.10	7.50	43.00	28.56	66.06	37.50
	14.23	Average	H				5.83	46.06	40.23
	36.88	Peak	V				28.48	65.73	37.25
	13.86	Average	V				5.46	45.73	40.27
Test Data for High Channel									
2 485.87	44.98	Peak	H	27.10	7.50	43.00	36.58	74.00	37.42
	22.91	Average	H				14.51	54.00	39.49
2 486.65	46.63	Peak	V				38.23	74.00	35.77
	23.13	Average	V				14.73	54.00	39.27

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 – Pre-Amplifier Gain

Tested by: Min-Gu Ji / Assistant Manager

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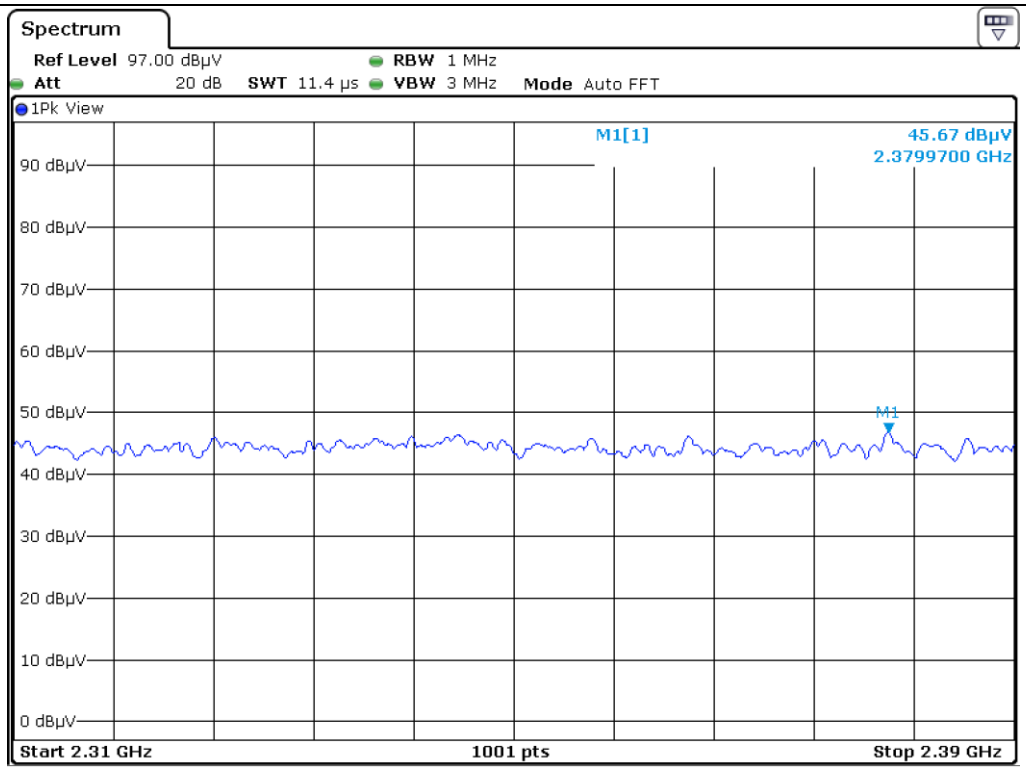
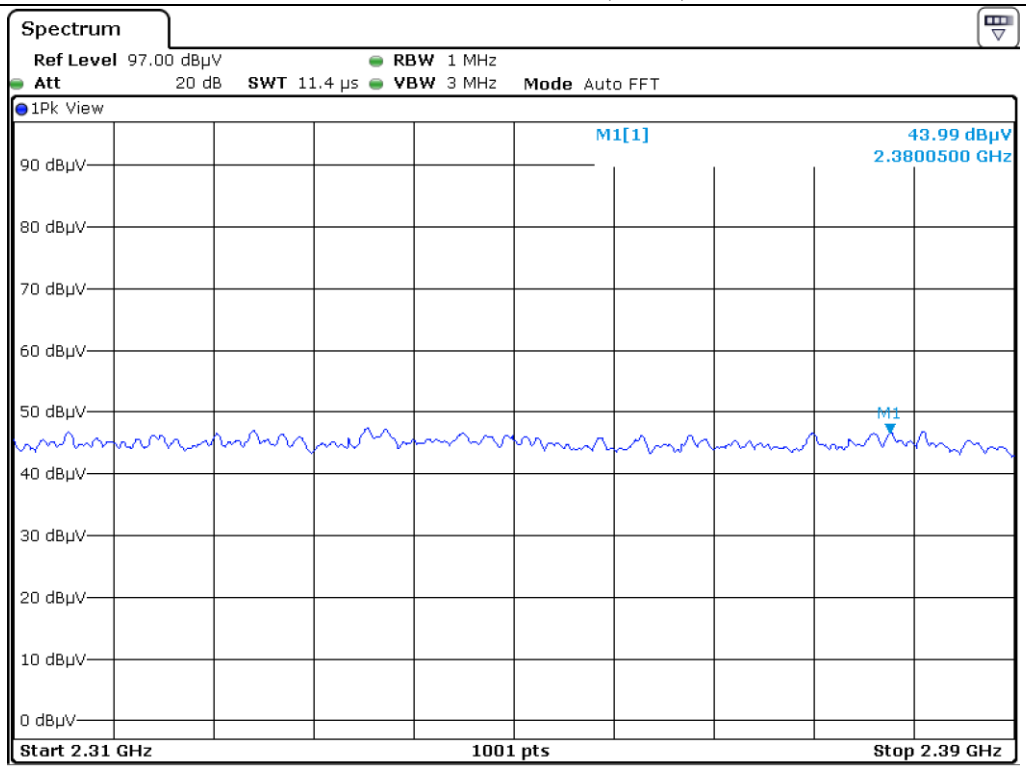
- Plots of Restricted Band measurement data

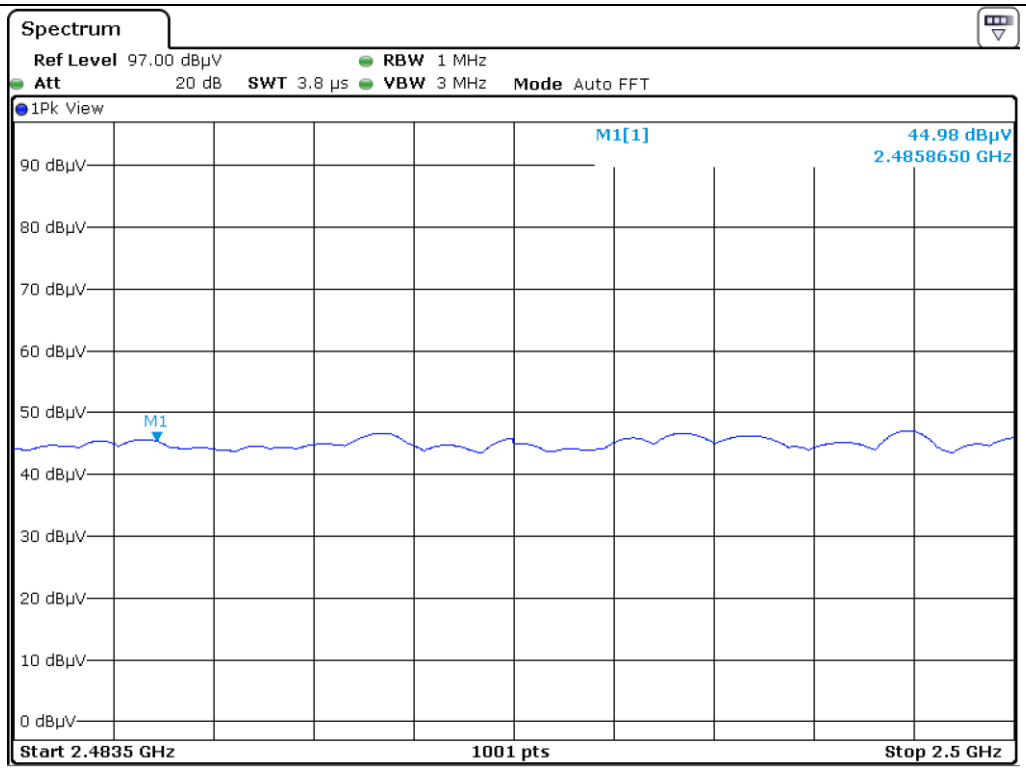


Low Channel-Horizontal(PEAK)

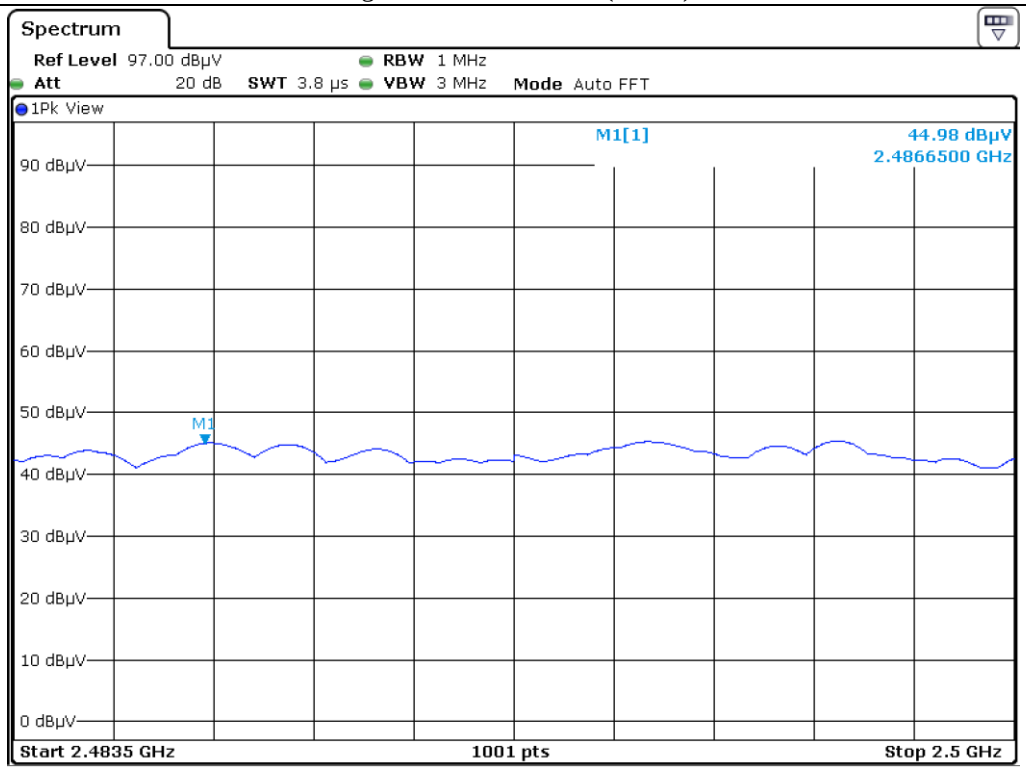


Low Channel-Vertical(PEAK)

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



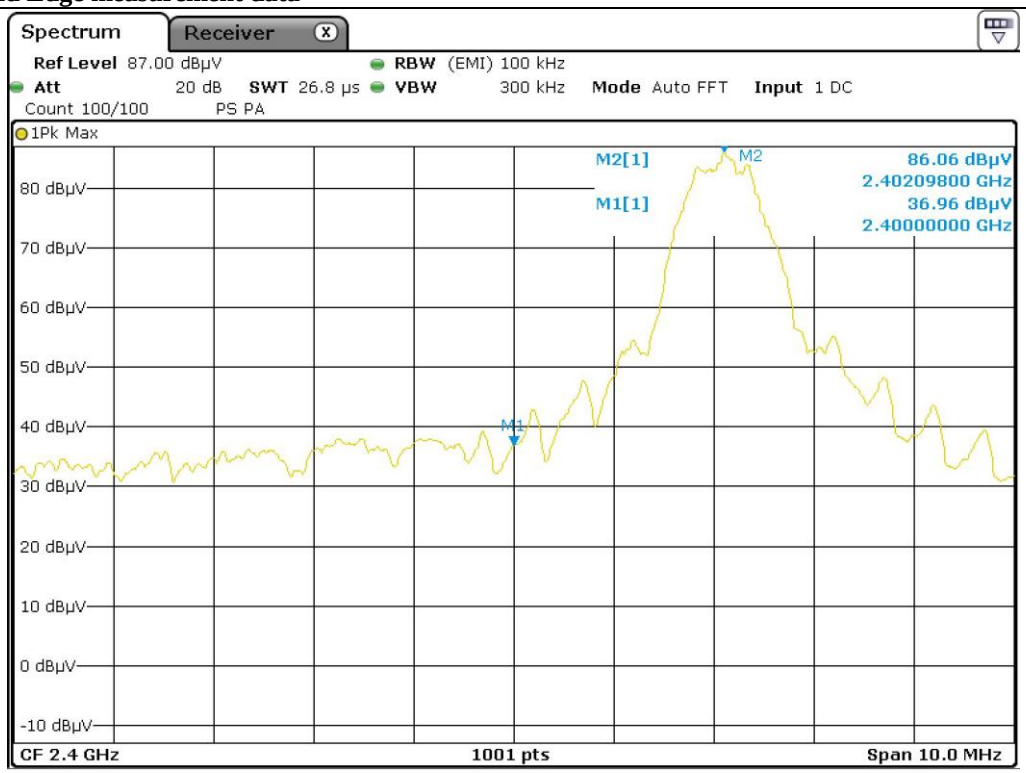
High Channel-Horizontal(PEAK)



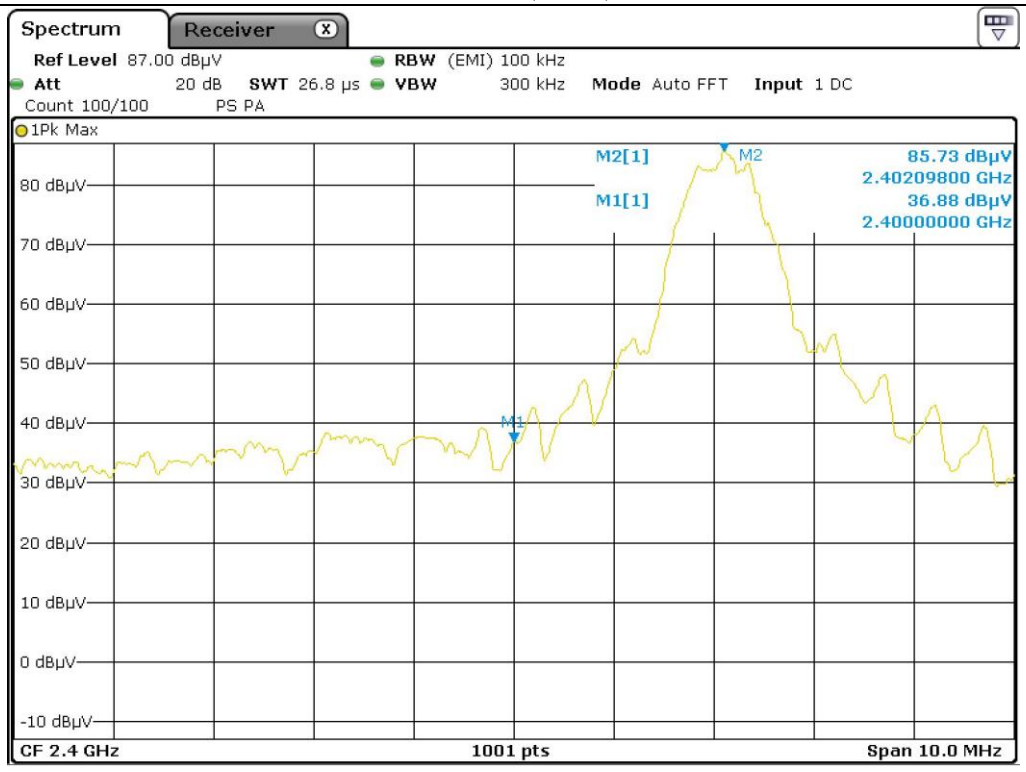
High Channel-Vertical(PEAK)

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

- Plots of Band Edge measurement data



Horizontal(PEAK)



Vertical(PEAK)

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

9.6.2 Spurious & Harmonic Radiated Emission

-. Test Date : July 21, 2017

-. Resolution bandwidth : 1 MHz for Peak and Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Detector : Peak Mode(Peak), Average Mode(RMS)

-. Frequency range : 1 GHz ~ 26.5 GHz

-. Measurement distance : 3 m

-. Result : PASSED

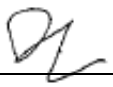
Frequency (GHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
4 804.00	44.87	Peak	H	30.60	11.10	42.50	44.07	74.00	29.93
	34.93	Average	H				34.13	54.00	19.87
	44.33	Peak	V				43.53	74.00	30.47
	33.02	Average	V				32.22	54.00	21.78
Test Data for Middle Channel									
4 880.00	42.62	Peak	H	30.70	11.20	42.50	42.02	74.00	31.98
	31.11	Average	H				30.51	54.00	23.49
	40.66	Peak	V				40.06	74.00	33.94
	29.36	Average	V				28.76	54.00	25.24
Test Data for High Channel									
4 960.00	41.54	Peak	H	30.80	11.30	42.50	41.14	74.00	32.86
	30.64	Average	H				30.24	54.00	23.76
	40.35	Peak	V				39.95	74.00	34.05
	28.65	Average	V				28.25	54.00	25.75

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 – Pre-Amplifier Gain



Tested by: Min-Gu Ji / Assistant Manager

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

10. PEAK POWER SPECTRAL DENSITY

10.1 Operating environment

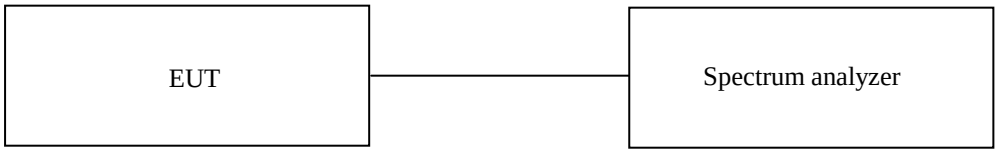
Temperature : 24 ℃

Relative humidity : 53 % 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 kHz ≤ RBW ≤100 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	Apr. 05, 2017 (1Y)

All test equipment used is calibrated on a regular basis.

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

10.4 Test data

-. Test Date : July 20, 2017

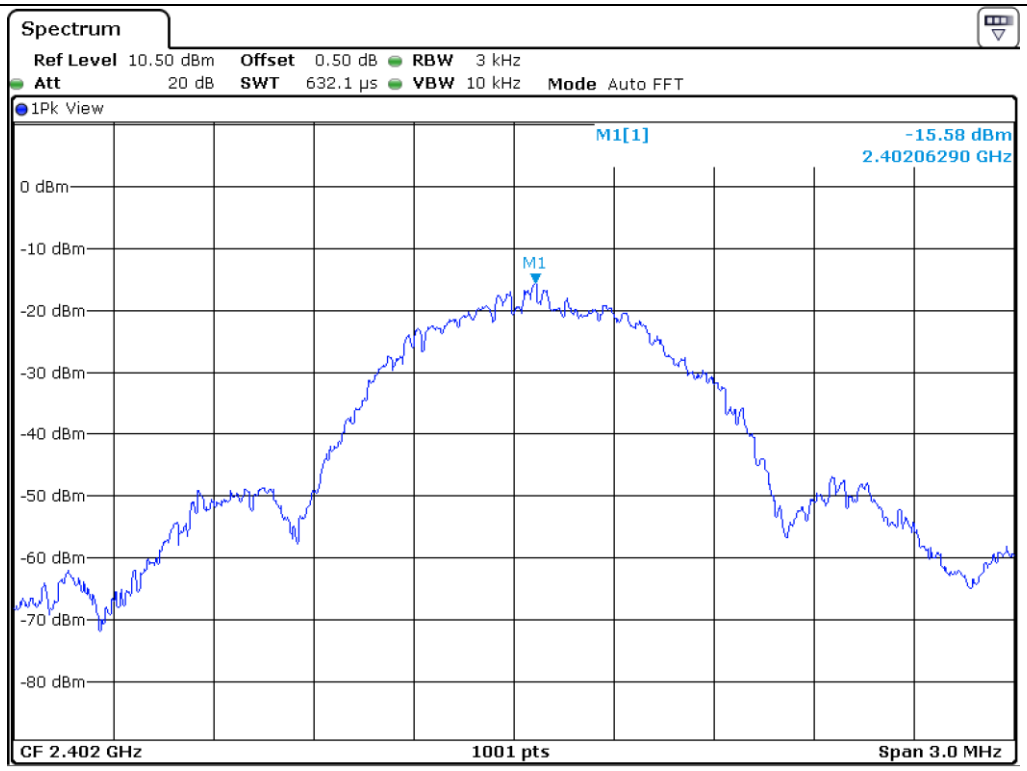
-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY(MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 402.00	-15.58	8.00	23.58
Middle	2 440.00	-15.83	8.00	23.83
High	2 480.00	-18.86	8.00	26.86

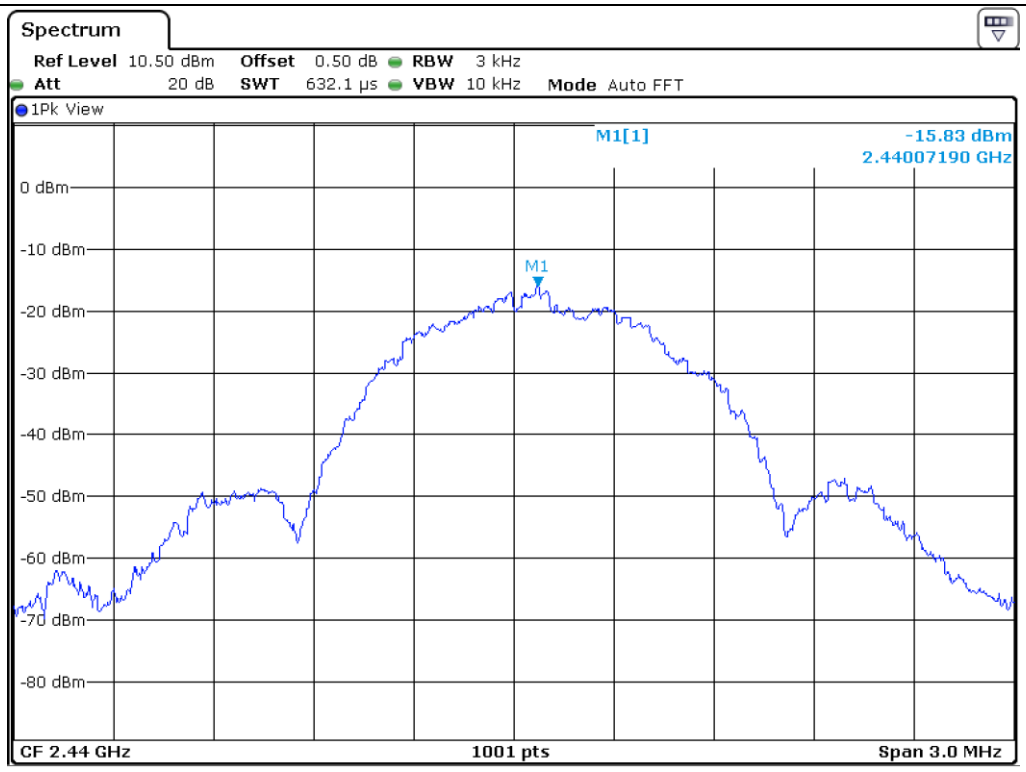
Remark. Margin = Limit – Measured value

Tested by: Min-Gu Ji / Assistant Manager

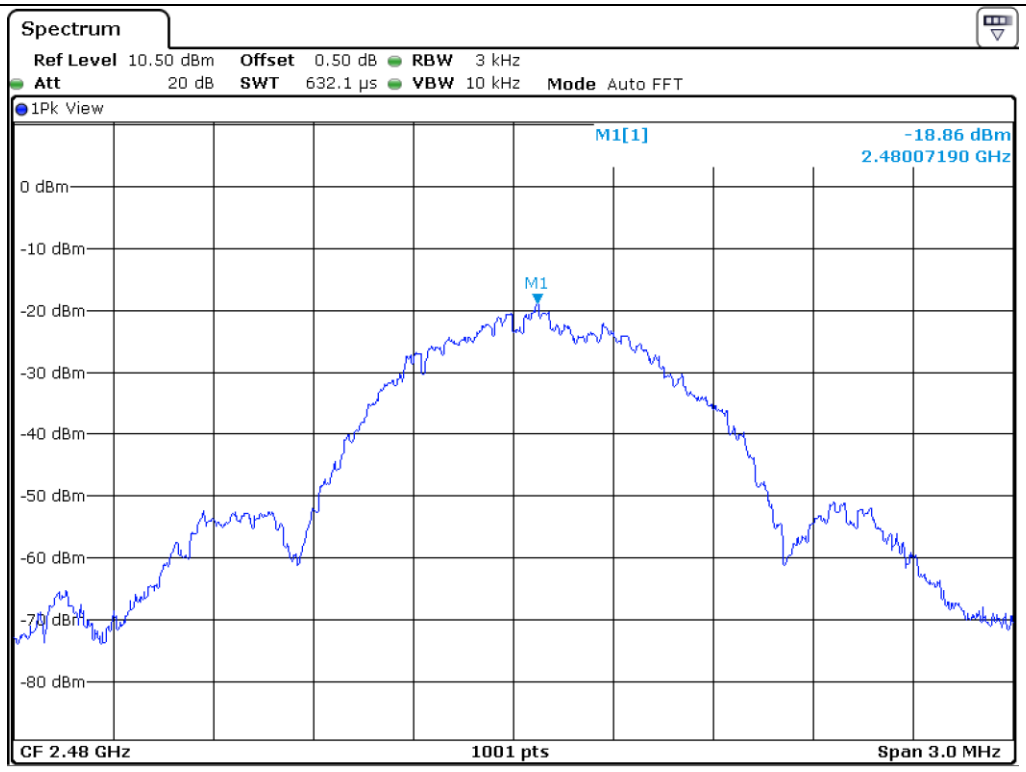


Low Channel

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



Middle Channel



High Channel

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

11. RADIATED EMISSION TEST

11.1 Operating environment

Temperature : 24 ℃

Relative humidity : 65.9 % 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.

11.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Apr. 05, 2017 (1Y)
■ -	ESCI	Rohde & Schwarz	Test Receiver	101012	Nov. 01, 2016 (1Y)
■ -	310N	Sonoma Instrument	Pre-Amplifier	312544	Apr. 04, 2017 (1Y)
■ -	SCU-18	Rohde & Schwarz	Pre-Amplifier	10041	Nov. 02, 2016 (1Y)
■ -	DT3000	Innco System	Turn Table	930611	N/A
■ -	MA4000-EP	Innco System	Antenna Master	3320611	N/A
■ -	VULB9163	Schwarzbeck	TRILOG Broadband Antenna	9163-421	Apr. 15, 2016 (2Y)
■ -	BBHA9120D	Schwarzbeck	Horn Antenna	BBHA9120D295	Aug. 31, 2015 (2Y)
■ -	BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Apr. 30, 2015 (2Y)

All test equipment used is calibrated on a regular basis.

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

11.4 Test data for Transmitting Mode

11.4.1 Test data for 30 MHz ~ 1 GHz

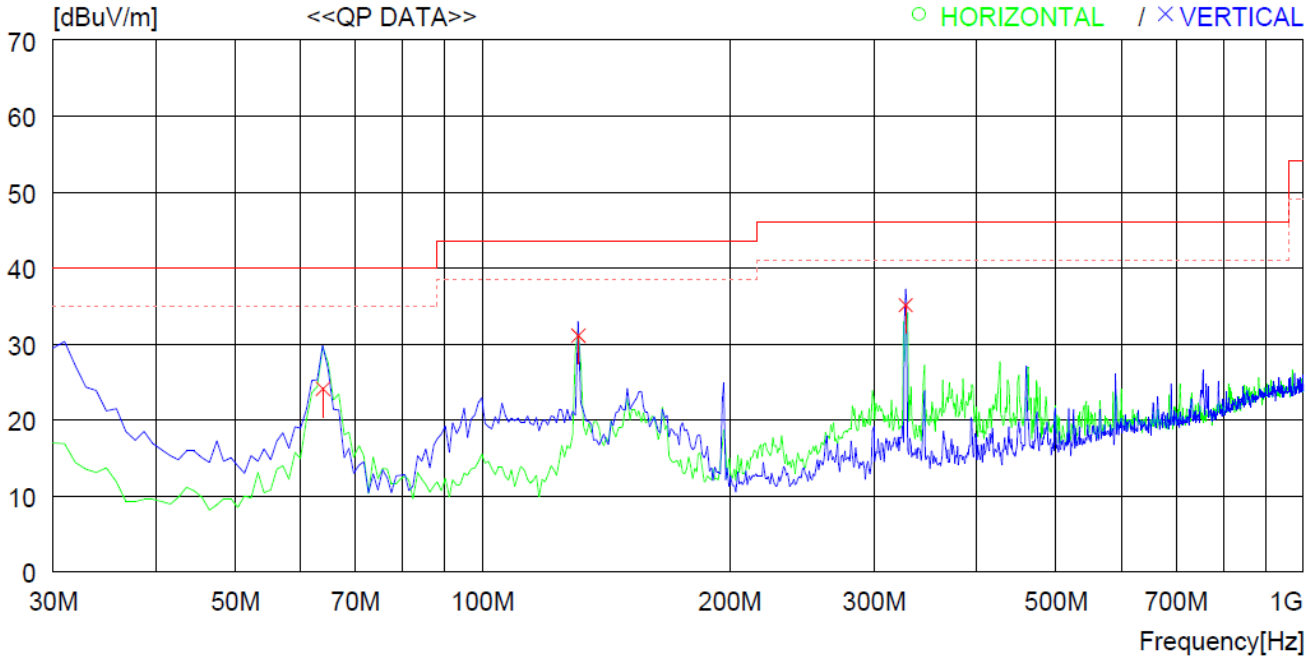
Humidity Level : 65.9 % R.H. Temperature: 24 ℃

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

Result : PASSED

EUT : Cording Robot Date: July 21, 2017

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



No.	FREQ	READING QP	ANT FACTOR	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Vertical ------										
1	63.950	43.6	11.7	1.9	33.1	24.1	40.0	15.9	400	217
2	130.880	52.4	9.0	2.7	33.0	31.1	43.5	12.4	100	0
3	327.790	49.8	14.2	4.2	33.1	35.1	46.0	10.9	200	162

Tested by: Min-Gu Ji / Assistant Manager

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

11.4.2 Test data for Below 30 MHz

-. Test Date : July 21, 2017

-. 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)
Any emissions less than 20 dB below the limit were not observed.									

11.4.3 Test data for above 1 GHz

-. Test Date : July 21, 2017

-. 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)
Any emissions less than 20 dB below the limit were not observed.									

Tested by: Min-Gu Ji / Assistant Manager

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

12. CONDUCTED EMISSION TEST

12.1 Operating environment

Temperature : 24 ℃

Relative humidity : 65.9 % 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 Ω / 50 μH + 5 Ω 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 equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal. (Interval)
■ -	ESPI	Rohde & Schwarz	EMI Test Receiver	101278	Nov. 01, 2016 (1Y)
☐ -	ESHS10	Rohde & Schwarz	EMI Test Receiver	834467/007	Apr. 03, 2017 (1Y)
☐	NSLK8128	Schwarzbeck	AMN	8128-216	Apr. 05, 2017 (1Y)
■ -	NSLK8126	Schwarzbeck	AMN	8126-404	Apr. 03, 2017 (1Y)
☐ -	3825/2	EMCO	AMN	9109-1869	Apr. 06, 2017 (1Y)
■ --	3825/2	EMCO	AMN	9109-1867	Apr. 07, 2017 (1Y)

All test equipment used is calibrated on a regular basis.

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

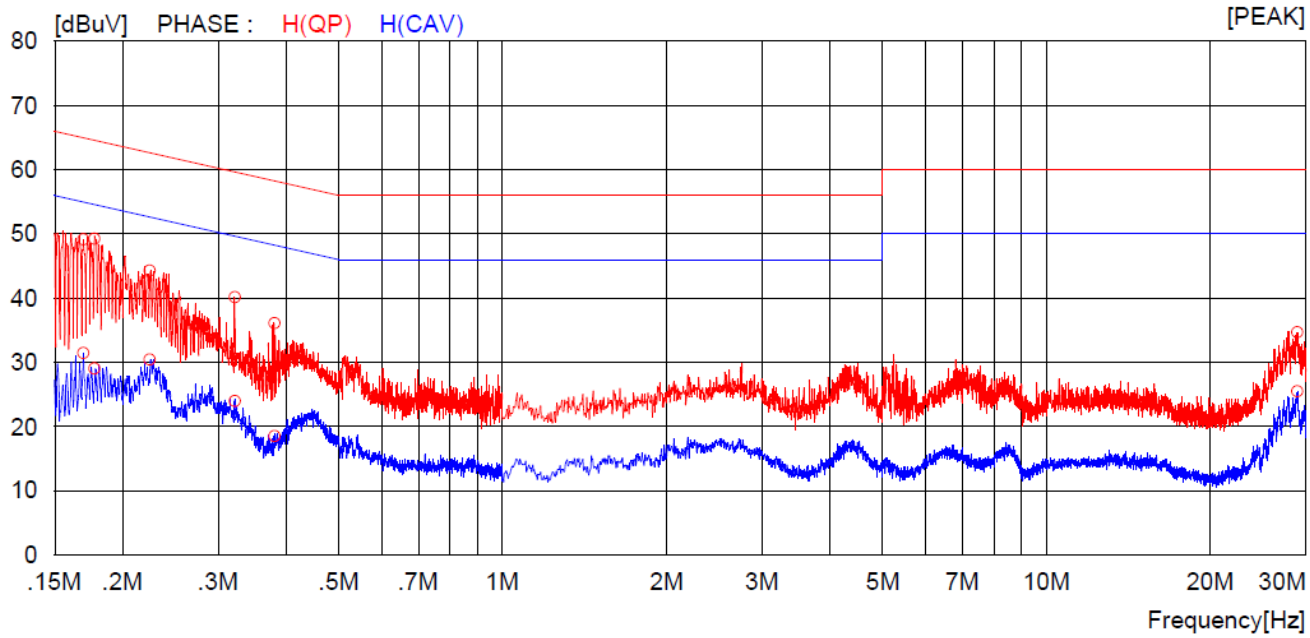
12.4 Test data

-. Test Date : July 21, 2017

-. Resolution bandwidth : 9 kHz

-. Frequency range : 0.15 MHz ~ 30 MHz

-. Tested Line : HOT LINE



NO	FREQ [MHz]	READING(PK) [dBuV]	C.F [dB]	RESULT [dBuV]	LIMIT QP [dBuV]	LIMIT AV [dBuV]	MARGIN QP [dB]	MARGIN AV [dB]	PHASE
1	0.17000	39.1	10.0	49.1	65.0	----	15.9	----	H(QP)
2	0.17800	39.2	10.0	49.2	64.6	----	15.4	----	H(QP)
3	0.22500	34.2	10.0	44.2	62.6	----	18.4	----	H(QP)
4	0.32200	30.1	10.0	40.1	59.7	----	19.6	----	H(QP)
5	0.38100	26.1	10.0	36.1	58.3	----	22.2	----	H(QP)
6	28.95000	23.8	10.8	34.6	60.0	----	25.4	----	H(QP)
7	0.17000	21.4	10.0	31.4	----	55.0	----	23.6	H(CAV)
8	0.17800	19.0	10.0	29.0	----	54.6	----	25.6	H(CAV)
9	0.22500	20.4	10.0	30.4	----	52.6	----	22.2	H(CAV)
10	0.32200	13.9	10.0	23.9	----	49.7	----	25.8	H(CAV)
11	0.38100	8.5	10.0	18.5	----	48.3	----	29.8	H(CAV)
12	28.95000	14.6	10.9	25.5	----	50.0	----	24.5	H(CAV)

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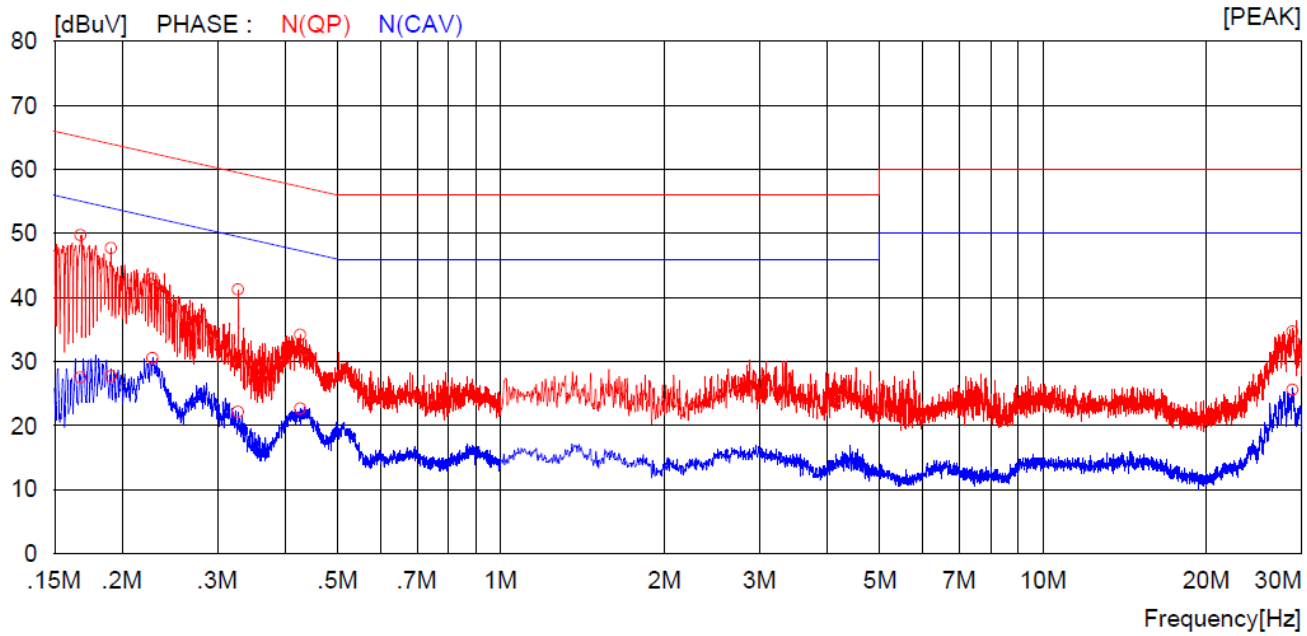
-. Tested Line : NEGATIVE LINE



NO	FREQ [MHz]	READING(PK) [dBuV]	C.F [dB]	RESULT [dBuV]	LIMIT QP [dBuV]	LIMIT AV [dBuV]	MARGIN QP [dB]	MARGIN AV [dB]	PHASE
1	0.16800	39.7	10.0	49.7	65.1	----	15.4	----	N(QP)
2	0.19100	37.7	10.0	47.7	64.0	----	16.3	----	N(QP)
3	0.22800	33.0	9.9	42.9	62.5	----	19.6	----	N(QP)
4	0.32800	31.3	9.9	41.2	59.5	----	18.3	----	N(QP)
5	0.42700	24.3	9.9	34.2	57.3	----	23.1	----	N(QP)
6	28.84000	23.5	11.1	34.6	60.0	----	25.4	----	N(QP)
7	0.16800	17.5	10.0	27.5	----	55.1	----	27.6	N(CAV)
8	0.19100	17.7	10.0	27.7	----	54.0	----	26.3	N(CAV)
9	0.22800	20.5	10.0	30.5	----	52.5	----	22.0	N(CAV)
10	0.32800	12.1	10.0	22.1	----	49.5	----	27.4	N(CAV)
11	0.42700	12.6	10.0	22.6	----	47.3	----	24.7	N(CAV)
12	28.84000	14.8	10.8	25.6	----	50.0	----	24.4	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.

Tested by: Min-Gu Ji / Assistant Manager

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)