ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

Test Report No.	**: OT-199-RWD-008**
AGR No.	**: A197A-116**
Applicant	**: Bitfinder, Inc.**
Address	**: 40 boardman Place, San Francisco, California, 94103, United States**
Manufacturer	**: Bitfinder, Inc.**
Address	**: 13F WeWork, 343 Samilda-Ro, Jung-Gu, Seoul, Republic of Korea**
Type of Equipment	**: AWAIR LITE**
FCC ID	**: 2AF65AWAIR0HD3**
Model Name	**: AWAIR Rev3**
Multiple Model Name	**: N/A**
Serial number	**: N/A**
Total page of Report	**: 27 pages (including this page)**
Date of Incoming	**: August 02, 2019**
Date of Issuing	**: September 04, 2019**

SUMMARY

The equipment complies with the requirements of ***FCC CFR 47 PART 15 SUBPART C Section 15.249***

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

It is not a general 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 / Chief Engineer
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

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-199-RWD-008	September 04, 2019	Initial Release	All

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1. VERIFICATION OF COMPLIANCE

Applicant : Bitfinder, Inc.

Address : 40 boardman Place, San Francisco, California, 94103, United States

Contact Person : Kevin, Cho / CTO

Telephone No. : 408-930-9235

FCC ID : 2AF65AWAIR0HD3

Model Name : AWAIR Rev3

Brand Name : -

Serial Number : N/A

Date : September 04, 2019

DEVICE TYPE	DXX – Low Power Communication Device Transmitter
E.U.T. DESCRIPTION	AWAIR LITE
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 CFR47 Part 15 Subpart C Section 15.249
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
15.249 (a)	Field Strength of Emission	Met the Limit / PASS
15.249 (c)	Measurement distance	Met the Requirement / PASS
15.249 (d)	Emissions Radiated Outside of the Specified Frequency Band	Met the Limit / PASS
15.249 (e)	Radiated Emissions above 1 000 MHz	Met the Limit / PASS
15.209	Radiated Emission Limits, General Requirement	Met the Limit / PASS
15.207	Conducted Limits	Met the Limit / PASS
15.203	Antenna Requirement	Met the Requirement / PASS

2.2 Related Submittal(s) / Grant(s)

Original submittal only

2.3 Purpose of the test

To determine whether the equipment under test fulfills the requirements of the regulation stated in section 2.1.

2.4 Test Methodology

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

2.5 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-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 Bitfinder, Inc., Model AWAIR Rev3 (referred to as the EUT in this report) is an AWAIR LITE, Product specification information described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	AWAIR LITE	
Temperature Range	-10 ℃ ~ 50 ℃	
OPERATING FREQUENCY	Sub 1 G	915 MHz
	Bluetooth LE	2 402 MHz ~ 2 480 MHz
	WLAN 2.4 GHz	2 412 MHz ~ 2 462 MHz (802.11b/g/n(HT20))
MODULATION TYPE	Sub 1 G	GFSK
	Bluetooth LE	GFSK
	WLAN 2.4 GHz	802.11b: DSSS Modulation(DBPSK/DQPSK/CCK) 802.11g/n(HT20): OFDM Modulation(BPSK/QPSK/16QAM/64QAM)
RF OUTPUT POWER'	Sub 1 G	112.50 dBuV/m
	Bluetooth LE	6.74 dBm
	WLAN 2.4 GHz	6.84 dBm(802.11b) 11.30 dBm(802.11g) 10.16 dBm(802.11n_HT20)
ANTENNA TYPE		Sub 1 G : PCB Antenna WLAN 2.4 GHz / Bluetooth LE : PCB Antenna
ANTENNA GAIN		Sub 1 G: 2.234 dBi WLAN 2.4 GHz / Bluetooth LE: 5.049 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)		32.768 kHz, 12.288 MHz, 24 MHz

3.2 Model Differences:

-. None

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4. SYSTEM TEST CONFIGURATION

4.1 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	Bitfinder, Inc.	AWAIR-LITE-MAIN-V2.0	N/A
Sub Board	Bitfinder, Inc.	N/A	N/A
LED Board	Bitfinder, Inc.	AWAIR-R2-LED-V4.0	N/A
Air Sensor	Honeywell	HPMA 115S0-XXX	N/A
Lithium Battery	N/A	CR2032	N/A

4.2 Peripheral equipment

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

Model	Manufacturer	Description	Connected to
AWAIR Rev3	Bitfinder, Inc.	AWAIR LITE(EUT)	-
AWAIR Debugger V2.0	Bitfinder, Inc.	Jig Board	EUT / Notebook PC
CC1310 LaunchPad Rev : 1.4	TEXAS INSTRUMENTS	Jig Board	EUT / Notebook PC
ST-LINK/V2	STMicroelectronics	Jig Board	EUT / Notebook PC
Ideapad 100-15IBD	LENOVO	Notebook PC	Jig Board

4.3 Mode of operation during the test

The EUT was set to 915 MHz and then transmitted maximum power during the testing. For getting maximum emission from the EUT, the EUT was moved through XY, XZ, and YZ planes.

4.4 Equipment Modifications

-. None

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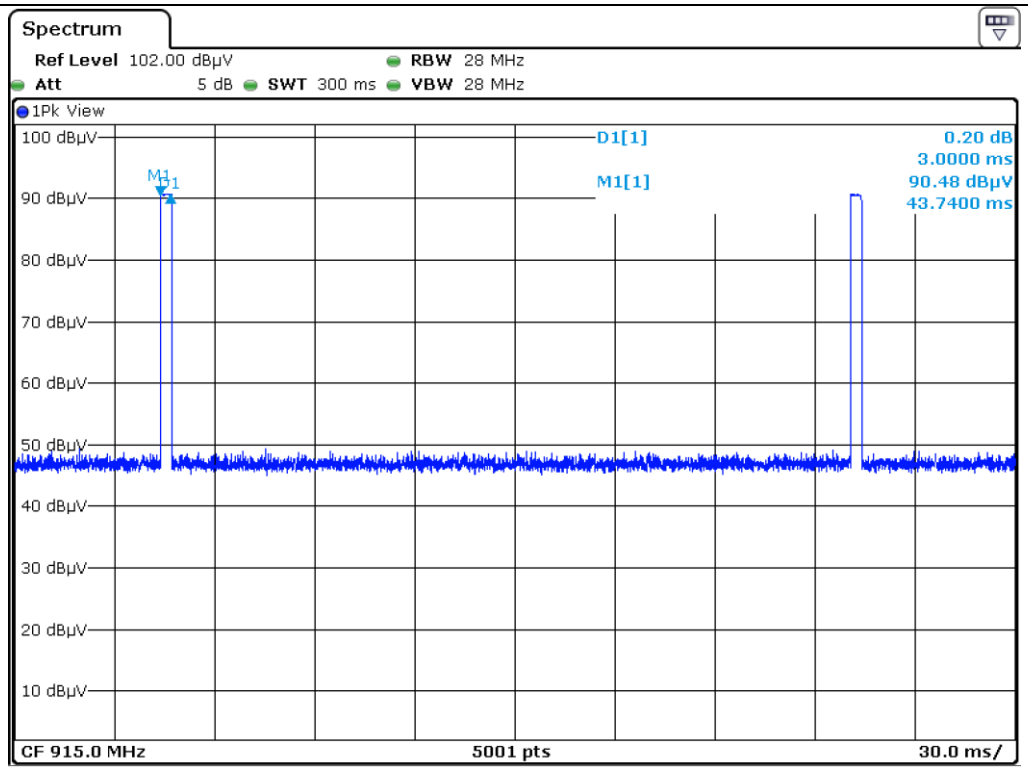
-. Duty Cycle Reduction Factor

Measured worst case transmit time per 100 ms	3.00 ms
Declared worst case transmit time per 100 ms	3.10 ms
Duty Cycle Reduction Factor(Worst Case)	20 * Log (3.10 ms / 100 ms) = -30.17 dB

Note : The worst duty cycle has been provided by the manufacturer's technical documentation.

(DoC Name : Operation Description)

-. Plot



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4.5 Configuration of Test System

Line Conducted Test : The EUT was connected to LISN. 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. The radiated emissions measurements were performed on the 10 m Semi Anechoic Chamber.

For frequencies from 150 kHz to 30 MHz measurements were made of the magnetic H field. The measuring antenna is an electrically screened loop antenna.

The frequency spectrum from 30 MHz to 1 000 MHz was scanned and maximum emission levels maximized 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 both horizontal and vertical polarization of the receiving antenna.

4.6 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 PCB Antenna on the main board in the EUT, so no consideration of replacement by the user.

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5. PRELIMINARY TEST

5.1 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)
Transmitting Mode	X

5.2 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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6. CONDUCTED EMISSION TEST

6.1 Operating environment

Temperature : 23 ℃

Relative humidity : 45 % R.H.

6.2 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.

6.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal. (Interval)
■ -	ESCI	Rohde & Schwarz	Test Receiver	101012	Oct. 22, 2018 (1Y)
□ -	NSLK8128	Schwarzbeck	AMN	8128-216	Mar. 20, 2019 (1Y)
■ -	NSLK8126	Schwarzbeck	AMN	8126-404	Mar. 19, 2019 (1Y)
□ -	3825/2	EMCO	AMN	9109-1869	Mar. 19, 2019 (1Y)
■ -	3825/2	EMCO	AMN	9109-1867	Mar. 27, 2019 (1Y)

All test equipment used is calibrated on a regular basis.

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6.4 Test data for Transmitting Mode

Humidity Level : 45 % R.H. Temperature: 23 ℃

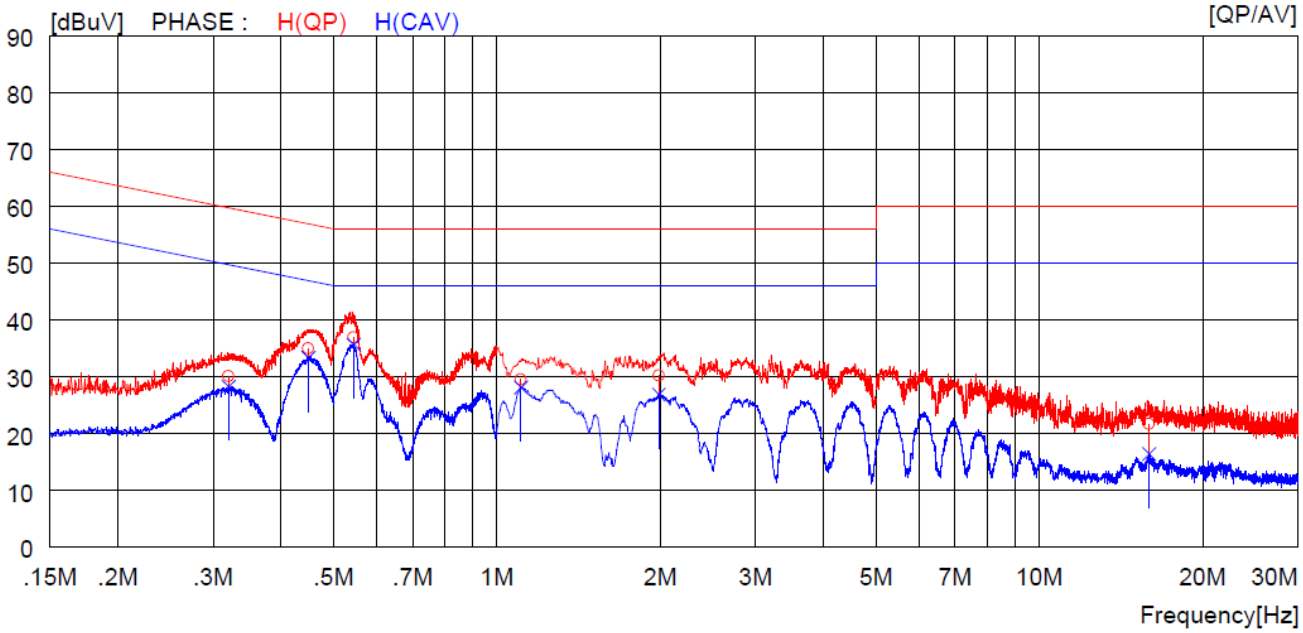
Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.207(a)

Result : PASSED

EUT : AWAIR LITE Date: August 08, 2019 ~ August 16, 2019

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

Tested Line : HOT LINE



NO	FREQ [MHz]	READING QP [dBuV]	READING AV [dBuV]	C.FACTOR [dB]	RESULT QP [dBuV]	RESULT AV [dBuV]	LIMIT QP [dBuV]	LIMIT AV [dBuV]	MARGIN QP [dBuV]	MARGIN AV [dBuV]	PHASE
1	0.32000	20.1	----	10.0	30.1	----	59.7	----	29.6	----	H(QP)
2	0.44900	25.0	----	10.0	35.0	----	56.9	----	21.9	----	H(QP)
3	0.54400	27.0	----	10.0	37.0	----	56.0	----	19.0	----	H(QP)
4	1.10800	19.4	----	10.1	29.5	----	56.0	----	26.5	----	H(QP)
5	1.98800	20.1	----	10.1	30.2	----	56.0	----	25.8	----	H(QP)
6	15.94000	11.1	----	10.6	21.7	----	60.0	----	38.3	----	H(QP)
7	0.32000	----	18.3	10.0	----	28.3	----	49.7	----	21.4	H(CAV)
8	0.44900	----	23.4	10.0	----	33.4	----	46.9	----	13.5	H(CAV)
9	0.54400	----	25.7	10.0	----	35.7	----	46.0	----	10.3	H(CAV)
10	1.10800	----	18.0	10.1	----	28.1	----	46.0	----	17.9	H(CAV)
11	1.98800	----	16.8	10.1	----	26.9	----	46.0	----	19.1	H(CAV)
12	15.94000	----	5.8	10.6	----	16.4	----	50.0	----	33.6	H(CAV)

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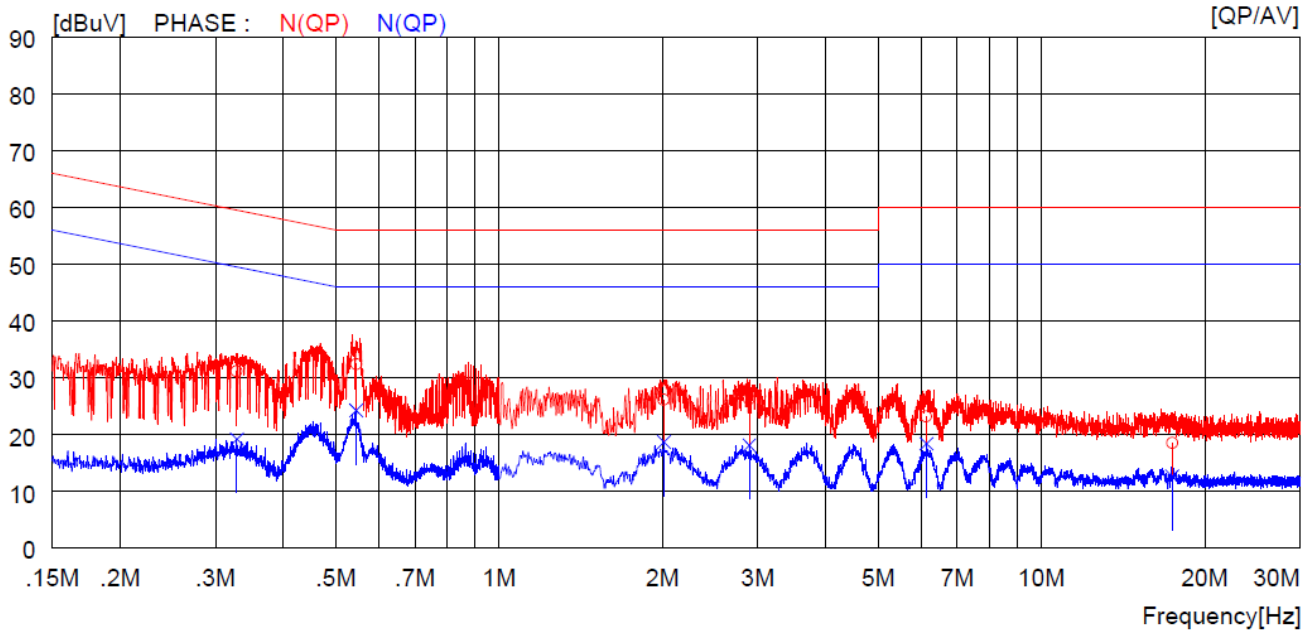
Tested Line : NEUTRAL LINE



NO	FREQ [MHz]	READING QP [dBuV]	READING AV [dBuV]	C.FACTOR [dB]	RESULT QP [dBuV]	RESULT AV [dBuV]	LIMIT QP [dBuV]	LIMIT AV [dBuV]	MARGIN QP [dBuV]	MARGIN AV [dBuV]	PHASE
1	0.32800	21.2	----	10.0	31.2	----	59.5	----	28.3	----	N(QP)
2	0.54500	22.4	----	10.0	32.4	----	56.0	----	23.6	----	N(QP)
3	2.01200	16.1	----	10.1	26.2	----	56.0	----	29.8	----	N(QP)
4	2.89200	16.2	----	10.1	26.3	----	56.0	----	29.7	----	N(QP)
5	6.13500	13.0	----	10.2	23.2	----	60.0	----	36.8	----	N(QP)
6	17.42000	7.9	----	10.6	18.5	----	60.0	----	41.5	----	N(QP)
7	0.32800	----	9.2	10.0	----	19.2	----	49.5	----	30.3	N(CAV)
8	0.54500	----	14.3	10.0	----	24.3	----	46.0	----	21.7	N(CAV)
9	2.01200	----	8.6	10.1	----	18.7	----	46.0	----	27.3	N(CAV)
10	2.89200	----	8.0	10.1	----	18.1	----	46.0	----	27.9	N(CAV)
11	6.13500	----	8.2	10.2	----	18.4	----	50.0	----	31.6	N(CAV)
12	17.42000	----	2.1	10.6	----	12.7	----	50.0	----	37.3	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: Hyung-Kwon, Oh / Assistant Manager

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7. RADIATED EMISSION TEST

7.1 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 up to 10 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 set-up photos are included in appendix I.

7.2 Measurement uncertainty

Radiated emission electric field intensity, 0.15 MHz ~ 30 MHz : ± 2.61 dB

Radiated emission electric field intensity, 30 MHz ~ 300 MHz : ± 4.43 dB

Radiated emission electric field intensity, 300 MHz ~ 1 000 MHz : ± 3.80 dB

Radiated emission electric field intensity, 1 000 MHz ~ 3 000 MHz: ± 4.40 dB

Measurement uncertainty is calculated in accordance with CISPR 16-4-2. The measurement uncertainty is given with a confidence of 95 % with the coverage factor, k = 2.

7.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	FSV40	Rohde & Schwarz	Signal Analyzer	101009	Mar. 11, 2019 (1Y)
■ -	ESU	Rohde & Schwarz	EMI Test Receiver	100261	Mar. 28, 2019 (1Y)
■ -	310N	Sonoma Instrument	Pre-Amplifier	312544	Mar. 18, 2019 (1Y)
■ -	BBV 9718B	Schwarzbeck	Amplifier	009	Mar. 20, 2019 (1Y)
■	SCU40A	Rohde & Schwarz	Signal Conditioning unit	100436	Mar. 11, 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. 13, 2018 (2Y)
■ -	BBHA9120D	Schwarzbeck	Horn Antenna	9120D-1366	Jul. 16, 2019 (1Y)
■ -	BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170179	Jan. 16, 2019 (1Y)
■ -	VAMP9243	Schwarzbeck	ROD ANTENNA	VAMP9243	Mar. 14, 2019 (2Y)

All test equipment used is calibrated on a regular basis.

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7.4 Final Result of Measurement

7.4.1 Field Strength of the Fundamental Frequency

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Humidity Level : 45 % R.H. Temperature: 23 ℃

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249(a)

Result : PASSED

EUT : AWAIR LITE Date: August 08, 2019 ~ August 16, 2019

Operating Condition : TX mode

Distance : 3 m

Radiated Emissions			Ant	Correction Factors			Total	FCC Limit	
Carrier Freq. (MHz)	Reading (dBμV)	Detector Mode	Pol.	Antenna (dB/m)	Cable Loss (dB)	Duty Cycle Reduction (dB)	Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
915.00	86.740	Peak	H	22.20	1.58	-	110.52	113.98	3.46
	86.680	Average				-30.17	80.29	93.98	13.69
	88.720	Peak	V			-	112.50	113.98	1.48
	88.680	Average				-30.17	82.29	93.98	11.69

*Remark: To get a maximum emission level from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes, but the worst plane data were recorded in the report.

Margin (dB) = Limit (dBuV/m) – Total (dBuV/m)

Total = Reading + Antenna Factor + Cable Loss + Duty Cycle Reduction

Tested by: Hyung-Kwon, Oh / Assistant Manager

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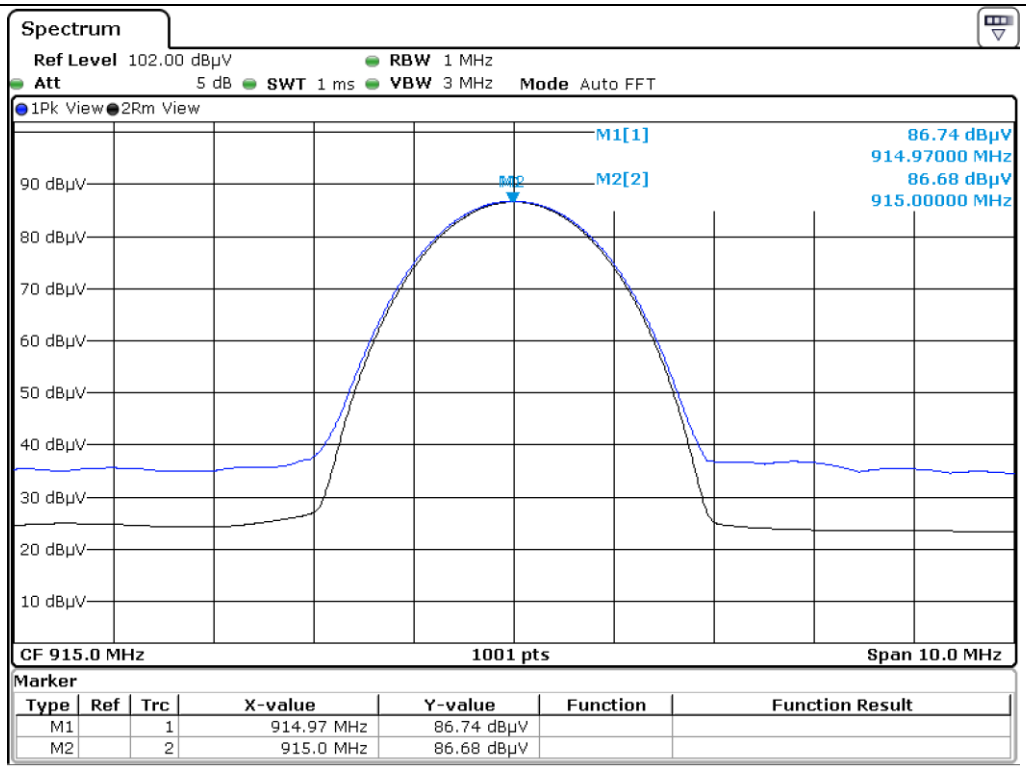
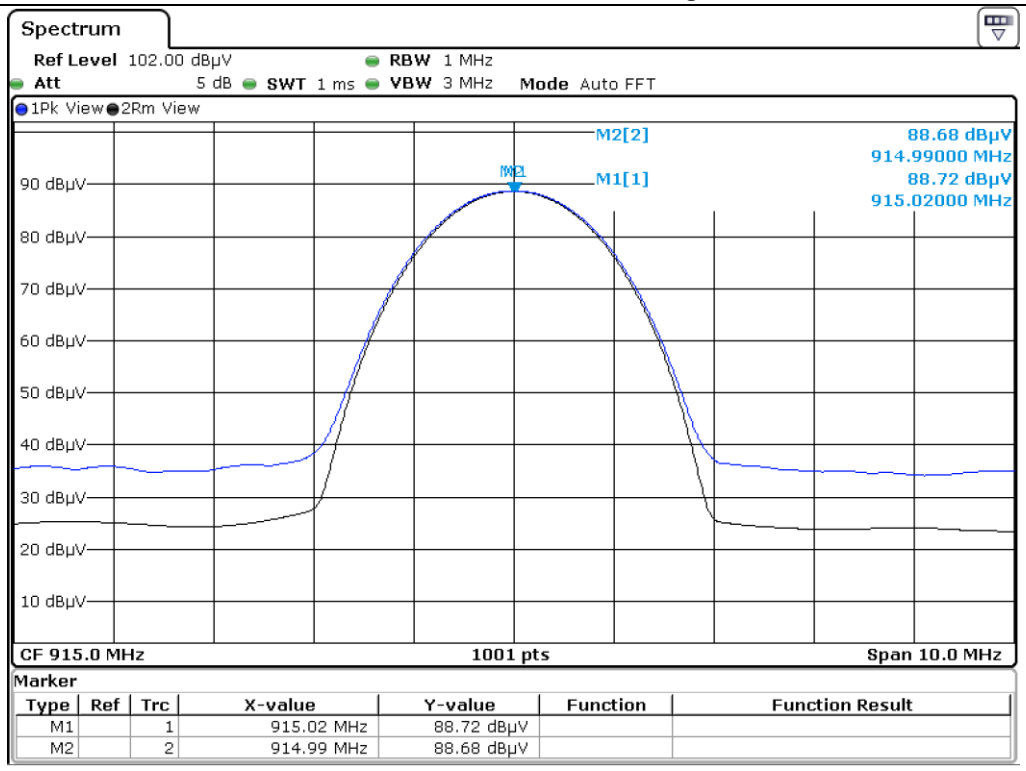


Middle Channel_H_Peak & Average



Middle Channel_V_Peak & Average

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7.4.2 Emissions Radiated Outside of the Specified Frequency Bands

7.4.2.1 Test Data for Harmonic

Humidity Level : 45 % R.H. Temperature: 23 ℃

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249(a)

Result : PASSED

EUT : AWAIR LITE Date: August 08, 2019 ~ August 16, 2019

Operating Condition : TX mode

Distance : 3 m

Radiated Emissions			Ant	Correction Factors			Total	FCC Limit	
Carrier Freq. (MHz)	Reading (dBμV)	Detector Mode	Pol.	Antenna (dB/m)	Cable Loss (dB)	Duty Cycle Reduction (dB)	Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2nd Harmonics (1 830.00)	41.64	Peak	H	25.00	2.93	-	69.57	74.00	4.43
	39.90	Average				-30.17	37.66	54.00	16.34
	42.04	Peak	V			-	69.97	74.00	4.03
	40.14	Average				-30.17	37.90	54.00	16.10
3rd Harmonics (2 745.00)	32.76	Peak	H	28.00	4.79	-	65.55	74.00	8.45
	26.02	Average				-30.17	28.64	54.00	25.36
	33.87	Peak	V			-	66.66	74.00	7.34
	28.25	Average				-30.17	30.87	54.00	23.13
4th Harmonics (3 660.00)	32.25	Peak	H	29.10	7.54	-	68.89	74.00	5.11
	21.38	Average				-30.17	27.85	54.00	26.15
	33.01	Peak	V			-	69.65	74.00	4.35
	22.08	Average				-30.17	28.55	54.00	25.45
Other frequencies were not found up to 10 GHz.									

Tabulated test data for Restricted Band

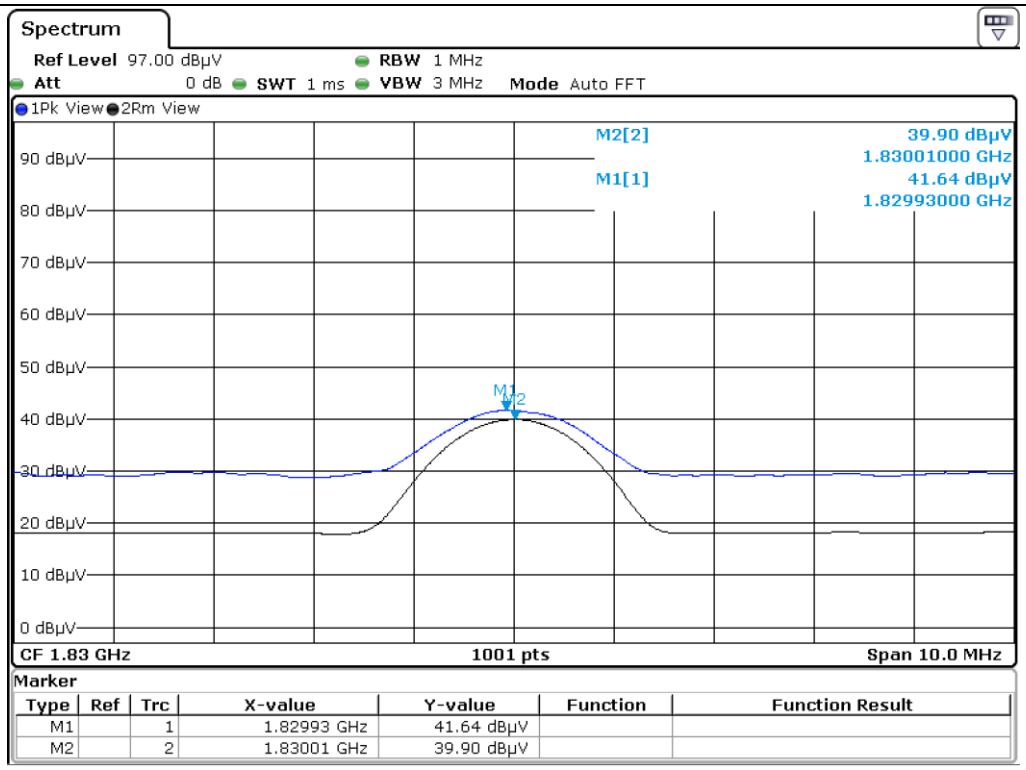
Remark: “H”: Horizontal, “V”: Vertical, “*” Frequency fall in restricted band

Margin (dB) = Limit (dBuV/m) – Total (dBuV/m)

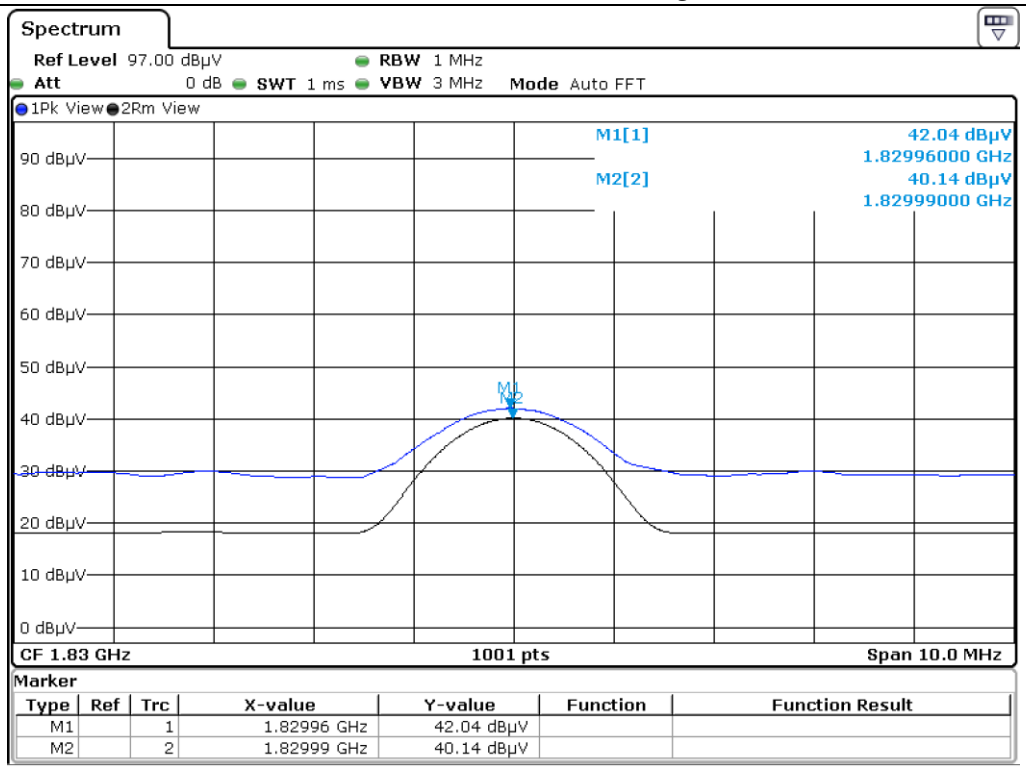
Total = Reading + Antenna Factor + Cable Loss + Duty Cycle Reduction

Tested by: Hyung-Kwon, Oh / 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)

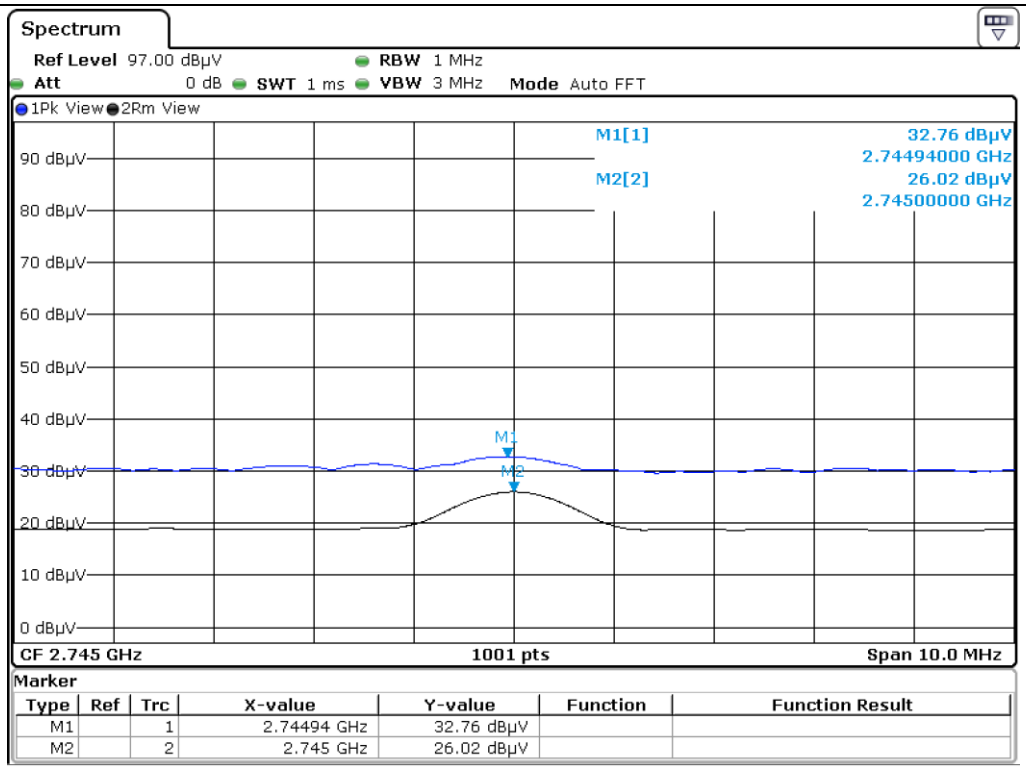


2nd Harmonics_H_Peak & Average

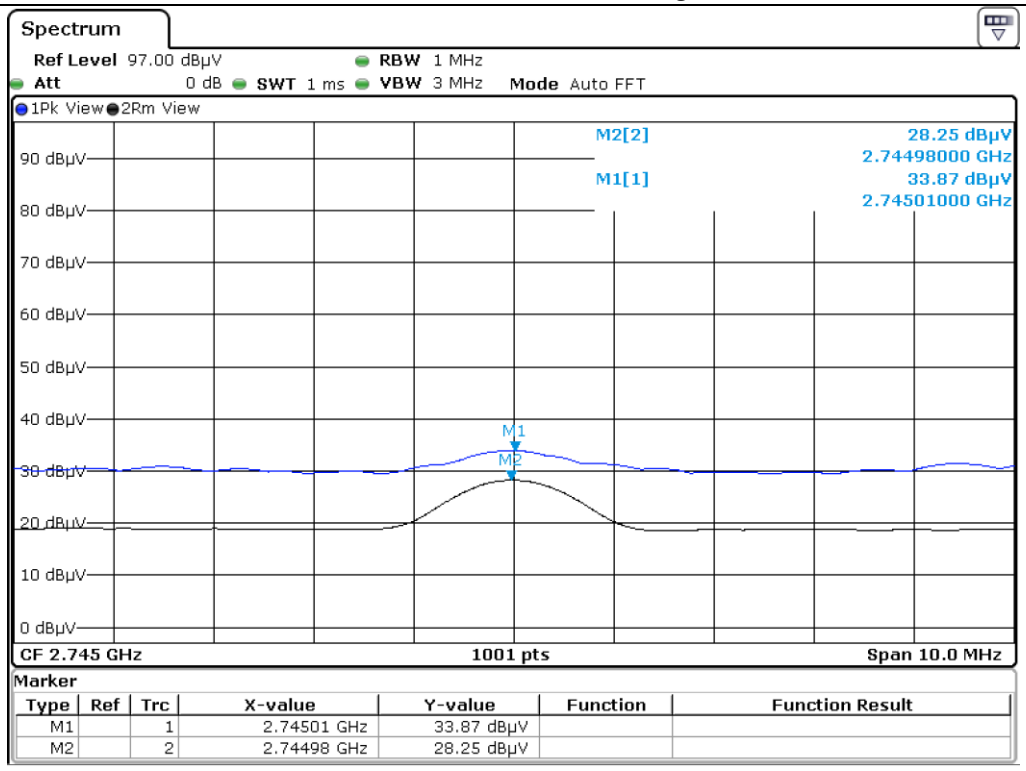


2nd Harmonics_V_Peak & Average

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

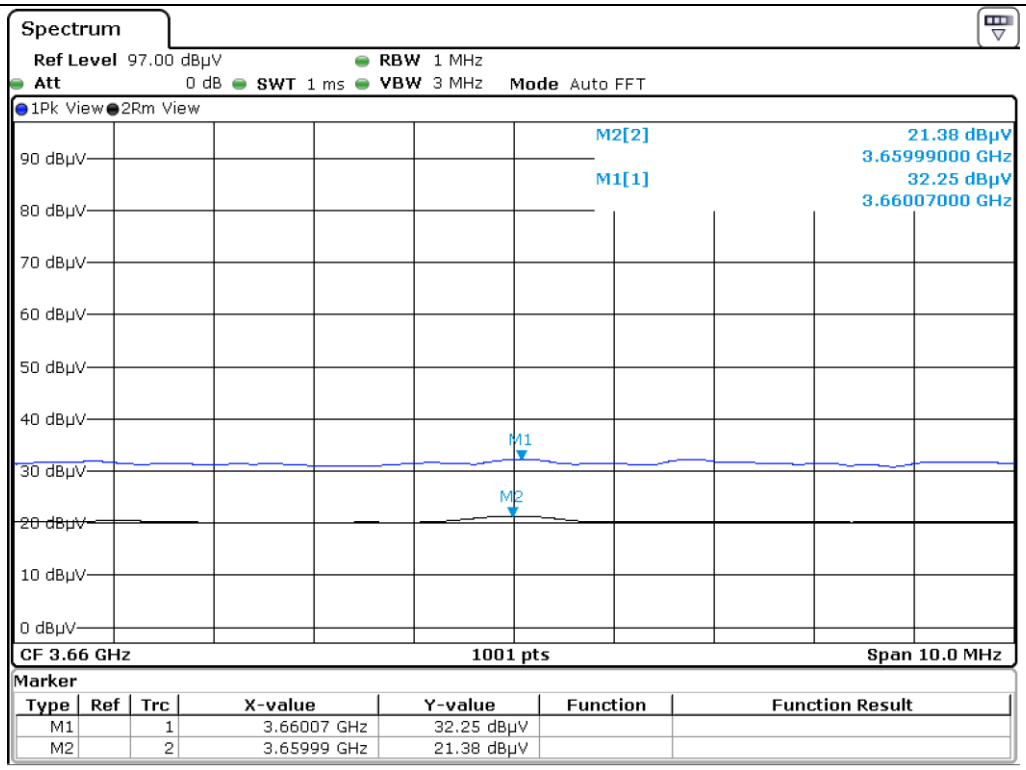


3rd Harmonics_H_Peak & Average

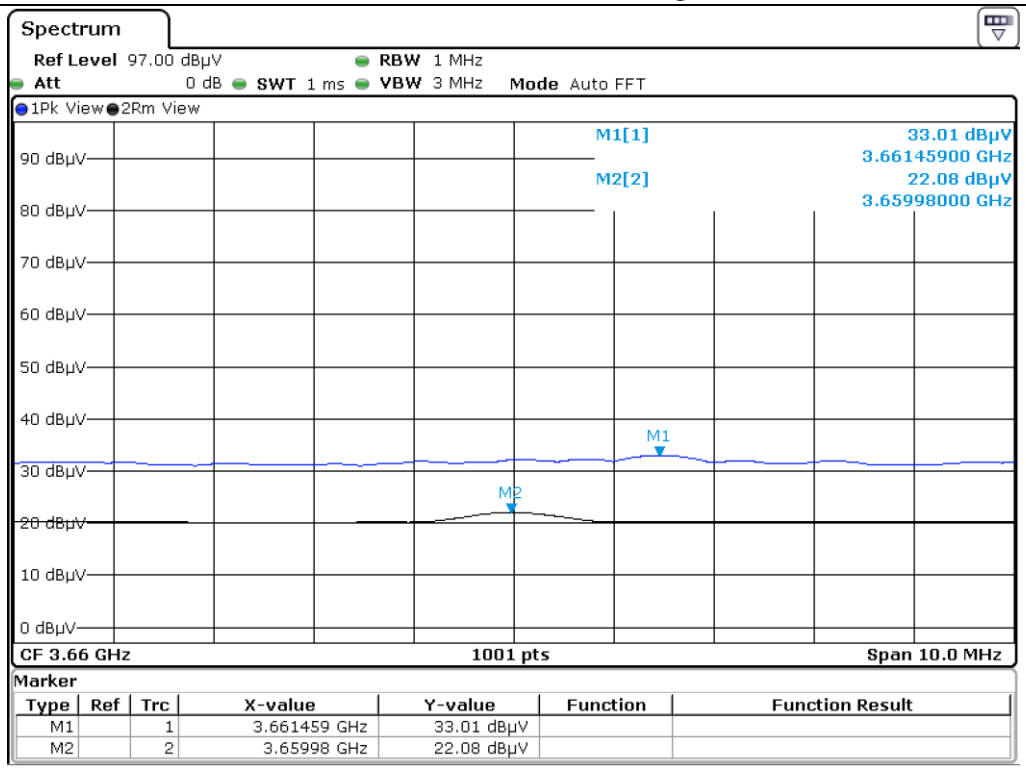


3rd Harmonics_V_Peak & Average

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



4th Harmonics_H_Peak & Average



4th Harmonics_H_Peak & Average

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

7.4.2.2 Test Data for Frequency range: 30 MHz ~ 1 000 MHz

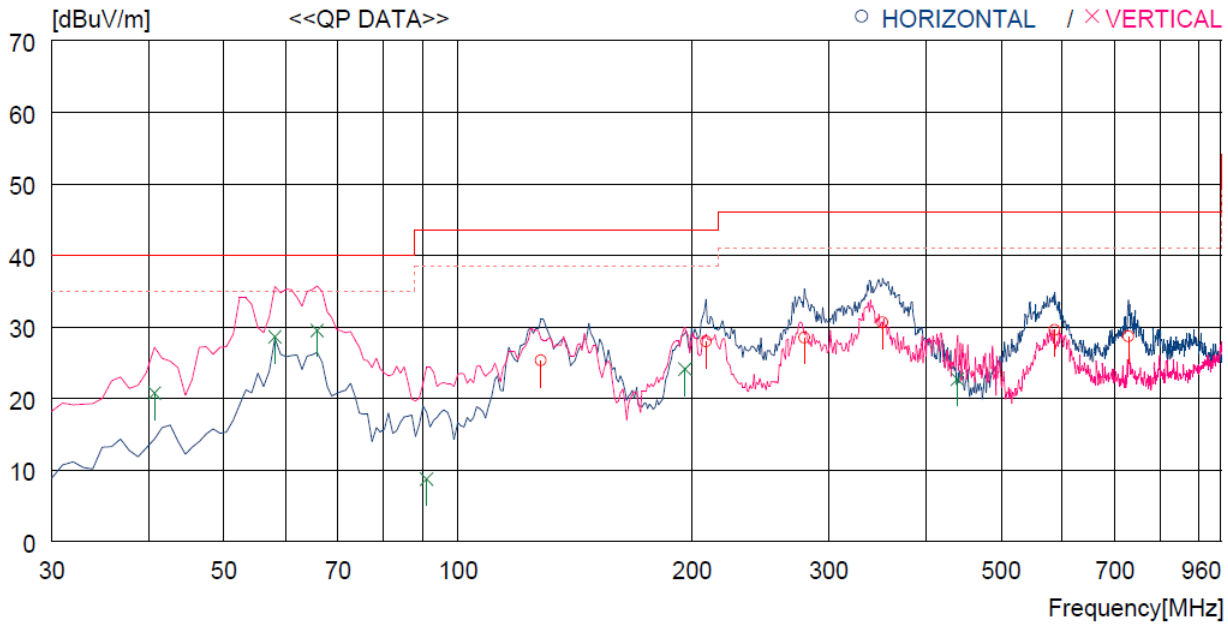
Humidity Level : 45 % R.H. Temperature: 23 ℃

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)

Result : PASSED

EUT : AWAIR LITE Date: August 08, 2019 ~ August 16, 2019

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



No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	127.970	46.7	9.4	2.2	33.0	25.3	43.5	18.2	300	70
2	208.480	47.1	11.0	2.8	33.0	27.9	43.5	15.6	200	0
3	279.290	45.2	13.1	3.2	33.0	28.5	46.0	17.5	100	359
4	352.040	45.2	14.8	3.6	33.0	30.6	46.0	15.4	100	359
5	586.778	39.0	19.2	4.6	33.3	29.5	46.0	16.5	300	359
6	729.364	36.1	20.4	5.3	33.2	28.6	46.0	17.4	100	147
----- Vertical ------										
7	40.670	38.2	14.2	1.4	33.1	20.7	40.0	19.3	100	65
8	58.130	46.6	13.4	1.7	33.1	28.6	40.0	11.4	100	167
9	65.890	50.0	10.9	1.7	33.1	29.5	40.0	10.5	100	0
10	91.110	28.4	11.3	2.0	33.0	8.7	43.5	34.8	100	0
11	195.870	43.5	10.8	2.8	33.0	24.1	43.5	19.4	100	276
12	439.341	35.7	16.0	4.1	33.1	22.7	46.0	23.3	100	0

Tested by: Hyung-Kwon, Oh / 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)

7.4.2.3 Test Data for Below 30 MHz

Humidity Level : 45 % R.H. Temperature: 23 ℃

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

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)

Result : PASSED

EUT : AWAIR LITE Date: August 08, 2019 ~ August 16, 2019

Detector : CISPR Quasi-Peak (Resolution Bandwidth: 9 kHz)

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)
It was not observed any emissions from the EUT.									

Tested by: Hyung-Kwon, Oh / 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)

7.4.2.4 Test Data above 1 GHz except for harmonic

-. Test Date : August 08, 2019 ~ August 16, 2019

- . Humidity Level : 45 % R.H.

-. Temperature : 23 ℃

-. 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

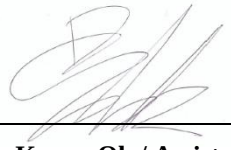
-. Frequency range : 1 GHz ~ 10 GHz

-. Measurement distance : 3 m

-. Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)

- Result : PASSED

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)
It was not observed any emissions from the EUT.									



Tested by: Hyung-Kwon, Oh / 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)

7.4.2.5 Band Edge

-. Test Date : August 08, 2019 ~ August 16, 2019

-. 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

-. Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)

-. Result : PASSED

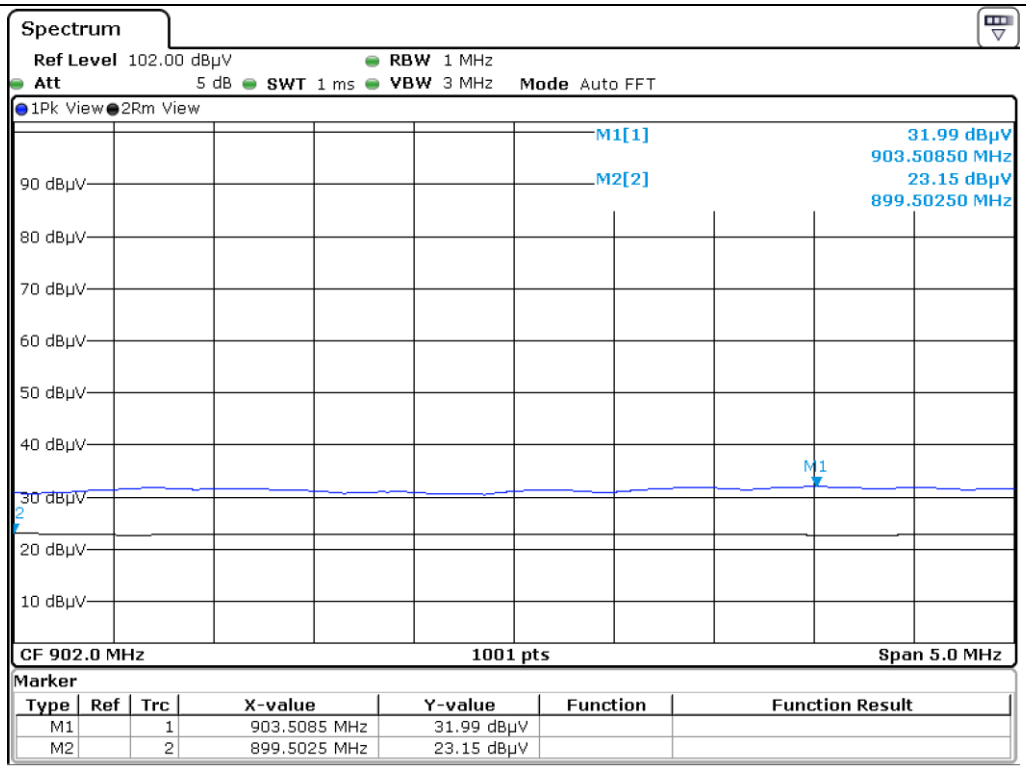
Radiated Emissions			Ant	Correction Factors			Total	FCC Limit	
Frequency (MHz)	**Reading (dBµV)**	**Detector Mode**	**Ant. Pol. (H/V)**	**Ant. Factor**	**Cable Loss (dB)**	**Duty Cycle Reduction (dB)**	**Total (dBµV/m)**	**Limits (dBµV/m)**	**Margin (dB)**
Lowest Edge									
903.508	31.99	Peak	H	22.20	1.58	-	55.77	66.02	10.25
899.502	23.15	Average	H			-30.17	16.76	46.02	29.26
899.542	35.05	Peak	V			-	58.83	66.02	7.19
899.502	26.70	Average	V			-30.17	20.31	46.02	25.71
Highest Edge									
927.115	34.74	Peak	H	22.20	1.58	-	58.52	66.02	7.50
930.497	25.01	Average	H			-30.17	18.62	46.02	27.40
930.497	36.15	Peak	V			-	59.93	66.02	6.09
930.497	25.12	Average	V			-30.17	18.73	46.02	27.29

Remark. Margin (dB) = Limit (dBuV/m) – Total (dBuV/m)

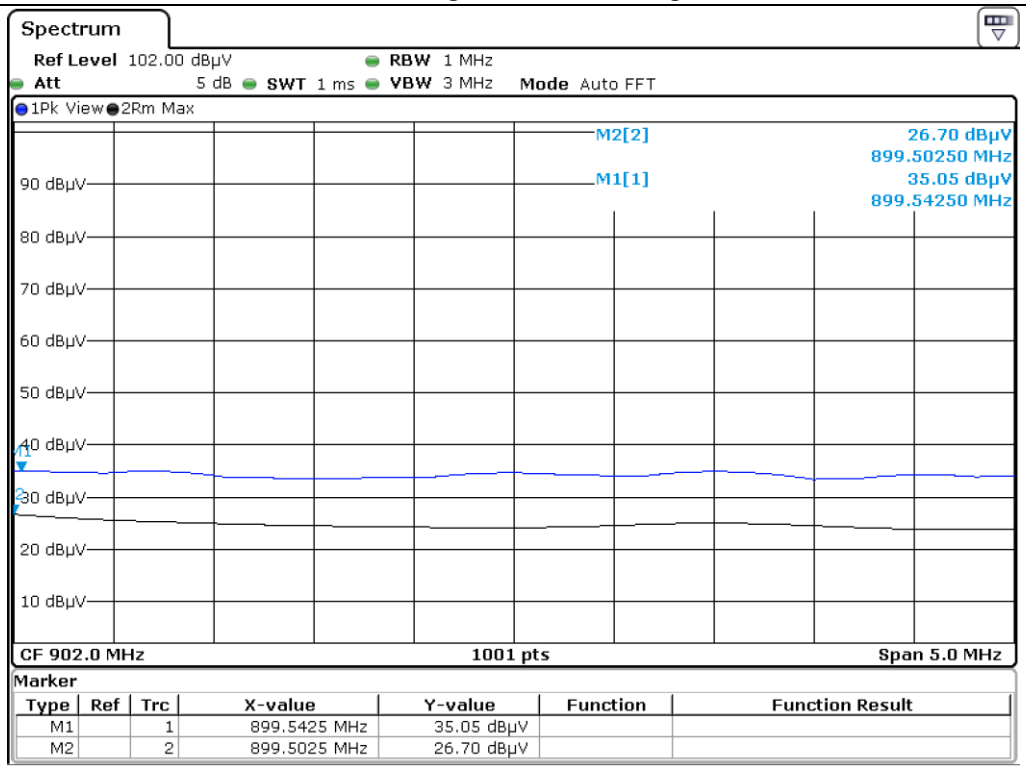
Total = Reading + Antenna Factor + Cable Loss + Duty Cycle Reduction

Tested by: Hyung-Kwon, Oh / 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)

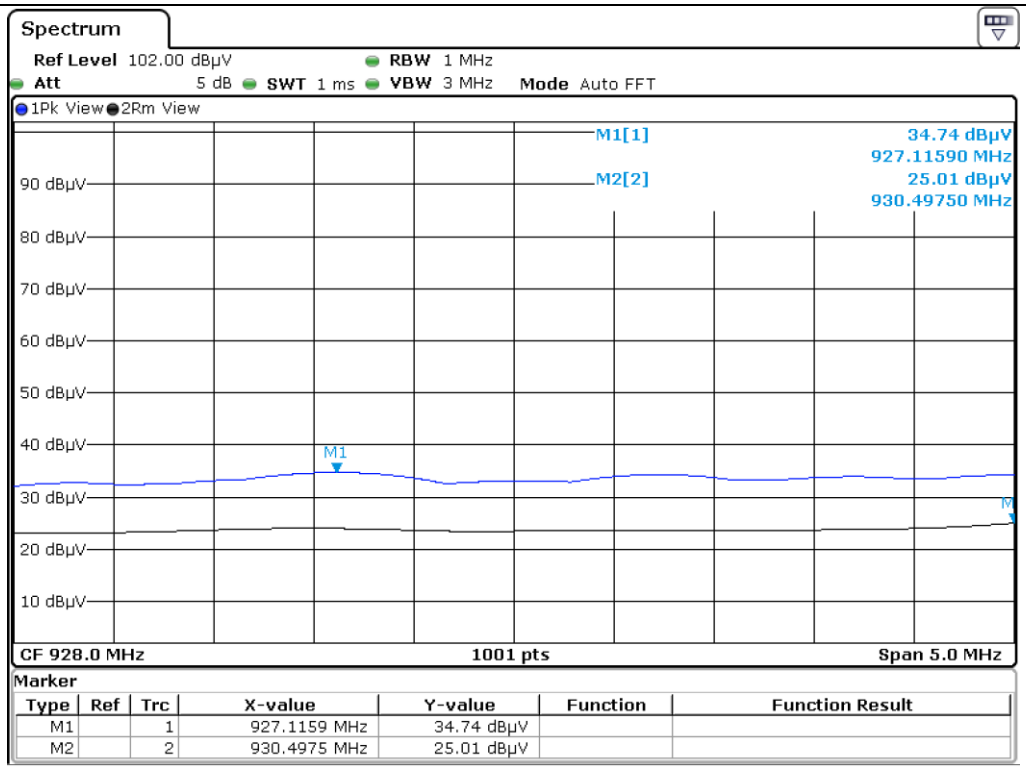


Lowest Edge_H_Peak & Average

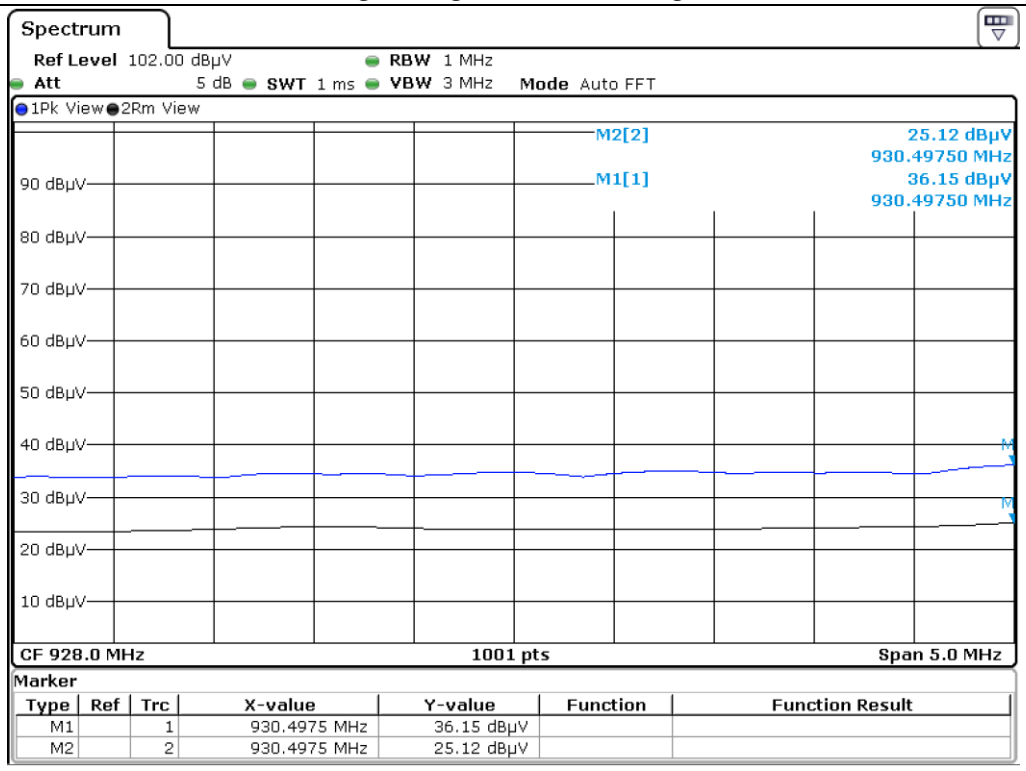


Lowest Edge_V_Peak & Average

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



Highest Edge_H_Peak & Average



Highest Edge_H_Peak & Average

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