FCC TEST REPORT

Reference No. : **GPWL2005000933EG**

Applicant : **Pittasoft Co., Ltd.**

Equipment Under Test (EUT) :

Product Name : CAR DASHCAM

Model Name : DR750-2CH LTE

Alt.Model Name : Refer to Page 4

Applied Standards : **FCC Part 15 Subpart B**

ANSI C 63.4:2014

FCC ID : **YCK-DR750-2CHLTE**

Date of Receipt : **May 20, 2020**

Date of Test : **May 29, 2020**

Date of Issue : **June 23, 2020**

Test Results : **Complied**

Tested by : ----------
Yongtae Yu

Reviewed by : ----------
Paul Kang

This test report does not assure KOLAS accreditation.
1) The results of this test report are effective only to the items tested.
2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.

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Contents

Revision History

Revision	Report Number	Description
0	F690501-RF-EMG000235	Initial
1		
2		

1. General Information

1.1 Client Information

Applicant : Pittasoft Co., Ltd.
- Address of Applicant : A 4th floor, ABN Tower, 331, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

Manufacturer : Pittasoft Co., Ltd.
- Address of Manufacturer : A 4th floor, ABN Tower, 331, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

Factory : SMT SCOUT Co., Ltd.
- Address of Factory : 38 Dangjeong-ro, Gunpo-si, Gyeonggi-do, Republic of Korea, 15849

1.2 Test Laboratory

Name and Address : SGS Korea Co., Ltd.
- Giheung 1 Laboratory : 35, Giheungdanji-ro 121beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea
- Giheung 2 Laboratory : 23, Giheungdanji-ro 24beon-gil, Giheung-gu,Yongin-si, Gyeonggi-do, Republic of Korea
- Gunpo Laboratory : 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, 15807, Republic of Korea.

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e-mail : paul.kang@sgs.com

1.3 General Information of E.U.T.

<table>
<tr><th>Classification</th><th>Description</th></tr>
<tr><td>Product Name</td><td>CAR DASHCAM</td></tr>
<tr><td>Model Name</td><td>DR750-2CH LTE</td></tr>
<tr><td>Alt.Model Name</td><td>DR750-2CH IR LTE, DR750-2CH Truck LTE, DR750-1CH LTE, DR750S-2CH LTE, DR750X-2CH LTE, DR750G-2CH LTE</td></tr>
<tr><td>Model Differences</td><td>
<table>
<tr><th>Model Name</th><th>Differences</th></tr>
<tr><td>DR750-2CH IR LTE</td><td>Rear camera IR model</td></tr>
<tr><td>DR750-2CH Truck LTE</td><td>Rear camera Truck model</td></tr>
<tr><td>DR750-1CH LTE</td><td>Non rear camera model</td></tr>
<tr><td>DR750S-2CH LTE, DR750X-2CH LTE, DR750G-2CH LTE</td><td>Just variant model name add.</td></tr>
</table>
</td></tr>
<tr><td>Serial No.</td><td>DR7LNAAJ400063</td></tr>
<tr><td>Highest Internal Frequency</td><td>1 850 ㎒ ~ 1 990 ㎒</td></tr>
<tr><td>EMI Classification</td><td>Class B</td></tr>
<tr><td>Test Voltage</td><td>12 Vd.c., 24 Vd.c. (for Battery)</td></tr>
<tr><td>Operating Voltage</td><td>12 Vd.c., 24 Vd.c. 1 A (Minimum 12 Vd.c. ~ Maximum 24 Vd.c.)</td></tr>
<tr><td>Operating Temperature</td><td>(-)20 ℃ ~ (+)70 ℃</td></tr>
<tr><td>S/W Version</td><td>DR750-2CH LTE V1.000</td></tr>
<tr><td>H/W Version</td><td>DR750-2CH LTE REV1.1</td></tr>
<tr><td>Function</td><td>This device is an LTE connection used in Dash Cam.</td></tr>
</table>

1.4 Operating Modes and Conditions

Operating Mode	Conditions
1) Operating at 12 V	CAM operating and LTE 2 Band idle status at 12 V
2) Operating at 24 V	CAM operating and LTE 2 Band idle status at 24 V

1.5 Auxiliary Equipments

Description	Model	Serial No.	Manufacturer
Car Battery	-	-	-
BLACKVUE Full HD	RC100F	RC7LNAAJ400033	Pittasoft Co., Ltd.

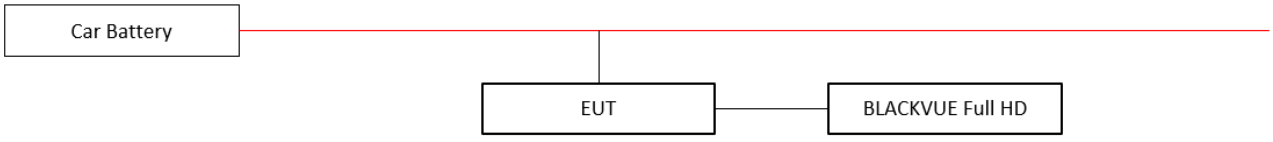
1.6 Cable List

Start		END		Cable Spec.		Used core
Name	I/O Port	Name	I/O Port	Length	Shield	
Car Battery	DC OUT	EUT	DC IN	3.6	Unshield	No
EUT	DC OUT	BLACKVUE Full HD	DC IN	3.1	Unshield	No

1.7 System Configurations

Description	Model	Serial No.	Manufacturer
Front CAM	DR750_2CH_LTE_FRONT_CAM_Rev0.1	-	PITTASOFT Co., Ltd.
Main Board	DR750_2CH_LTE_EU_Main_Rev 0.1	-	PITTASOFT Co., Ltd.
Module	-	-	-
Motion Sensor	DR750-2CH_LTE_EU_MOTION_SENSOR_Rev0.1	-	PITTASOFT Co., Ltd.
Power Board	DR750-2CH_LTE_EU_POWER_Rev0.1	-	PITTASOFT Co., Ltd.
Sub Board	-	-	-

1.8 Test System Layout



1.9 Modifications

- There was no modified item during the test.

1.10 Applicable Standards for Testing

tandards	Status	Deviation
FCC Part 15 Subpart B	Applicable	No Deviation

1.11 Summary of Test Results

Test Item	Basic Standards	Results
Radiated Emission	ANSI C 63.4:2014 FCC Part 15 Subpart B	Complied

Note: Test methods of all test items are performed according to the basic standards in this table.

EMISSION

2.1 Test Results

Test Items	Basic Standards	Test Results
Radiated Emission	ANSI C 63.4:2014, FCC Part 15 Subpart B	**Complied**

2.2 Test Method and Limits

2.2.1 Test Method

Test Items	Measuring Frequency Range	RBW	Measuring Distance
Radiated Emission	30 MHz ~ 1 GHz	120 kHz	10 m&3 m
	Above 1 GHz	1 MHz	3 m

2.2.2 Test Limits

-Radiated Emission Limits below 1 GHz

Frequency Range	Limits(dB(μV/m))	Class
	Quasi-peak	
30 MHz ~ 88 MHz	39.1	**Class A**
88 MHz ~ 216 MHz	43.5	
216 MHz ~ 960 MHz	46.4	
960 MHz ~ 1 GHz	49.5	
30 MHz ~ 88 MHz	40	**Class B**
88 MHz ~ 216 MHz	43.5	
216 MHz ~ 960 MHz	46	
960 MHz ~ 1 GHz	54	

-Radiated Emission Limits above 1 GHz（3m method）

Frequency Range	Limits(dB(μV/m))		Class
	Average	Peak	
Above 1 GHz	59.5	79.5	**Class A**
Above 1 GHz	54	74	**Class B**

2.3 Radiated Emission

The initial preliminary exploratory scans were performed at 3 ㎜ distance over the measuring frequency range(30 ㎒ to 18 ㎓) using a max hold mode incorporating a Peak detector and using the software of EP5RE(Version Ver5.3.70 from TOYO). The final test data was measured using a Quasi-Peak detector below 1 ㎓ at 3 ㎜ distance and a Peak and Average detector above 1 ㎓ at 3 ㎜ distance. Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency.

2.3.1 Test Equipments

Description	Model No.	Manufacturer	S/N	Cal Due. Date
Horn Antenna	HF906	R & S	100326	2021.02.14
Signal Conditioning Unit	SCU 18	R & S	10117	2020.06.12
Test Receiver	ESU26	R & S	100109	2021.02.18
Bilog Antenna	VULB9163	SCHWARZBECK	396	2021.03.21
Amplifier	8447F	HP	2944A03909	2020.08.07
Wideband Radio Communication Tester	CMW500	R & S	144032	2021.05.06
3m SEMI-ANECHOIC CHAMBER	-	SY CORPORATION	-	-

Note : The Bilog Antenna calibration period is 2 years, but the other equipment calibration period are 1 year.

2.3.2 Test Site

3m SEMI-ANECHOIC CHAMBER Gunpo Laboratory (Below 1 ㎓, Above 1 ㎓)

2.3.3 Environment Conditions and data

- Below 1 ㎓

Temperature (Minimum 20.4, Maximum 21.1) ℃,
Humidity (Minimum 33.0, Maximum 36.0) % R.H.,
Atmospheric Pressure (Minimum 100.6, Maximum 100.6) ㎪

Test Date : May 29, 2020

- Above 1 ㎓

Temperature (Minimum 20.4, Maximum 21.1) ℃,
Humidity (Minimum 33.0, Maximum 36.0) % R.H.,
Atmospheric Pressure (Minimum 100.6, Maximum 100.6) ㎪

Test Date : May 29, 2020

- Below 1 ㎓ (3 m method)

-Test Mode : Operating at 12 V

Freq. (㎒)	Level (dB(㎶))	Pol. (H/V)	A (°)	H (cm)	AF (dB/m)	CL (dB)	Amp. (dB)	Result (dB(㎶/m))	Limit (dB(㎶/m))	Margin (dB)
39.90	32.30	V	300	100	19.87	0.69	28.10	24.76	40.00	15.24
138.44	37.50	V	345	100	14.10	1.23	27.85	24.98	43.50	18.52
147.82	35.90	V	276	200	13.80	1.24	27.81	23.13	43.50	20.37
185.77	36.70	V	320	100	15.78	1.48	27.66	26.30	43.50	17.20
246.55	31.30	H	359	400	18.13	1.70	27.46	23.67	46.00	22.33
885.70	29.00	V	54	100	27.81	3.55	28.23	32.13	46.00	13.87

-Test Mode : Operating at 24 V

Freq. (㎒)	Level (dB(㎶))	Pol. (H/V)	A (°)	H (cm)	AF (dB/m)	CL (dB)	Amp. (dB)	Result (dB(㎶/m))	Limit (dB(㎶/m))	Margin (dB)
39.38	31.60	V	299	100	19.71	0.68	28.10	23.89	40.00	16.11
72.56	33.00	V	2	100	13.42	1.03	28.05	19.40	40.00	20.60
147.17	37.60	V	276	200	13.80	1.24	27.81	24.83	43.50	18.67
184.72	36.50	V	354	300	15.67	1.47	27.66	25.98	43.50	17.52
234.27	32.20	H	1	200	17.87	1.50	27.50	24.07	46.00	21.93
885.50	29.10	V	90	100	27.81	3.56	28.23	32.24	46.00	13.76

Measurement Uncertainty (Horizontal) : 5.01 ㏈ (The confidential level is about 95%, *k*=2)
Measurement Uncertainty (Vertical) : 5.38 ㏈ (The confidential level is about 95%, *k*=2)
Note 1: • AF = Antenna Factor • CL = Cable Loss • Amp = Amplifier Gain
• POL H = Horizontal • POL V = Vertical • A : Angle
• H : Height • Margin = Limit – Result • Result = Level + AF + CL – Amp

- Above 1 ㎓ (3 m method)

-Test Mode : Operating at 12 V

Freq. (㎒)	Level (dBμV)		Pol. (H/V)	A (°)	H (cm)	AF (dB)	CL (dB)	Amp. (dB)	CF (dB)	F/S (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Peak	C-AV										
14423.62	38.40	-	V	304	100	41.20	15.49	44.63	0.00	50.46	74.00	23.54
14423.62	-	21.40	V	304	100	41.20	15.49	44.63	0.00	33.46	54.00	20.54
14478.87	40.10	-	H	56	100	41.26	15.53	44.61	0.00	52.28	74.00	21.72
14478.87	-	22.90	H	56	100	41.26	15.53	44.61	0.00	35.08	54.00	18.92
15513.04	38.80	-	H	308	100	40.05	16.48	44.96	0.00	50.37	74.00	23.63
15513.04	-	22.10	H	308	100	40.05	16.48	44.96	0.00	33.67	54.00	20.33
15578.92	38.00	-	V	16	200	40.20	16.55	45.04	0.00	49.71	74.00	24.29
15578.92	-	21.10	V	16	200	40.20	16.55	45.04	0.00	32.81	54.00	21.19
16302.83	38.70	-	H	155	100	41.31	17.07	45.71	0.00	51.37	74.00	22.63
16302.83	-	21.10	H	155	100	41.31	17.07	45.71	0.00	33.77	54.00	20.23
16505.42	39.50	-	V	289	100	41.41	17.13	45.85	0.00	52.19	74.00	21.81
16505.42	-	21.90	V	289	100	41.41	17.13	45.85	0.00	34.59	54.00	19.41
16863.83	39.60	-	V	142	200	41.73	17.38	46.10	0.00	52.61	74.00	21.39
16863.83	-	21.70	V	142	200	41.73	17.38	46.10	0.00	34.71	54.00	19.29
16917.66	39.40	-	H	125	100	41.84	17.42	46.14	0.00	52.52	74.00	21.48
16917.66	-	21.30	H	125	100	41.84	17.42	46.14	0.00	34.42	54.00	19.58
17388.00	42.70	-	H	56	100	42.65	18.29	46.36	0.00	57.28	74.00	16.72
17388.00	-	23.10	H	56	100	42.65	18.29	46.36	0.00	37.68	54.00	16.32
17616.79	42.60	-	V	265	200	43.57	18.66	46.45	0.00	58.38	74.00	15.62
17616.79	-	21.70	V	265	200	43.57	18.66	46.45	0.00	37.48	54.00	16.52

-Test Mode : Operating at 24 V

Freq. (MHz)	Level (dBμV)		Pol. (H/V)	A (°)	H (cm)	AF (dB)	CL (dB)	Amp. (dB)	CF (dB)	F/S (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Peak	C-AV										
14706.25	39.20	-	V	76	100	41.09	15.47	44.52	0.00	51.24	74.00	22.76
14706.25	-	22.10	V	76	100	41.09	15.47	44.52	0.00	34.14	54.00	19.86
14714.75	38.50	-	H	140	100	41.07	15.47	44.51	0.00	50.53	74.00	23.47
14714.75	-	21.40	H	140	100	41.07	15.47	44.51	0.00	33.43	54.00	20.57
15503.12	37.80	-	H	140	200	40.01	16.47	44.95	0.00	49.33	74.00	24.67
15503.12	-	21.10	H	140	200	40.01	16.47	44.95	0.00	32.63	54.00	21.37
15547.75	37.80	-	V	286	100	40.19	16.52	45.00	0.00	49.51	74.00	24.49
15547.75	-	20.90	V	286	100	40.19	16.52	45.00	0.00	32.61	54.00	21.39
16059.87	38.80	-	H	109	100	40.72	16.99	45.54	0.00	50.97	74.00	23.03
16059.87	-	21.60	H	109	100	40.72	16.99	45.54	0.00	33.77	54.00	20.23
16428.21	39.50	-	V	249	200	41.40	17.11	45.80	0.00	52.21	74.00	21.79
16428.21	-	21.90	V	249	200	41.40	17.11	45.80	0.00	34.61	54.00	19.39
16809.29	38.80	-	H	55	100	41.78	17.35	46.07	0.00	51.86	74.00	22.14
16809.29	-	20.90	H	55	100	41.78	17.35	46.07	0.00	33.96	54.00	20.04
17133.00	39.50	-	V	286	100	41.97	17.76	46.25	0.00	52.98	74.00	21.02
17133.00	-	21.10	V	286	100	41.97	17.76	46.25	0.00	34.58	54.00	19.42
17736.50	43.40	-	V	60	200	43.77	18.81	46.49	0.00	59.49	74.00	14.51
17736.50	-	22.30	V	60	200	43.77	18.81	46.49	0.00	38.39	54.00	15.61
17752.08	42.50	-	H	64	100	43.81	18.83	46.50	0.00	58.64	74.00	15.36
17752.08	-	21.30	H	64	100	43.81	18.83	46.50	0.00	37.44	54.00	16.56

Measurement Uncertainty (Horizontal) : 5.33 dB (The confidential level is about 95%, *k*=2)
Measurement Uncertainty (Vertical) : 5.35 dB (The confidential level is about 95%, *k*=2)

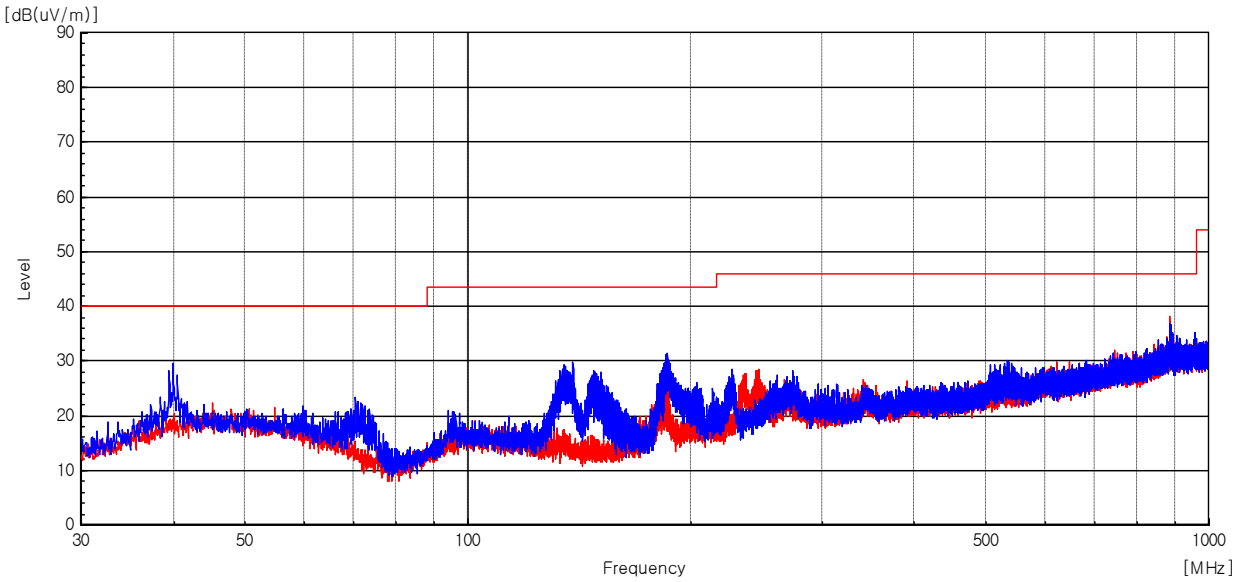
Note 1:
- AF = Antenna Factor
- CL = Cable Loss
- Amp = Amplifier Gain
- POL H = Horizontal
- POL V = Vertical
- A : Angle
- H : Height
- Margin = Limit – Result
- Result = Level + AF + CL – Amp

See Appendix A (Radiated Emission)

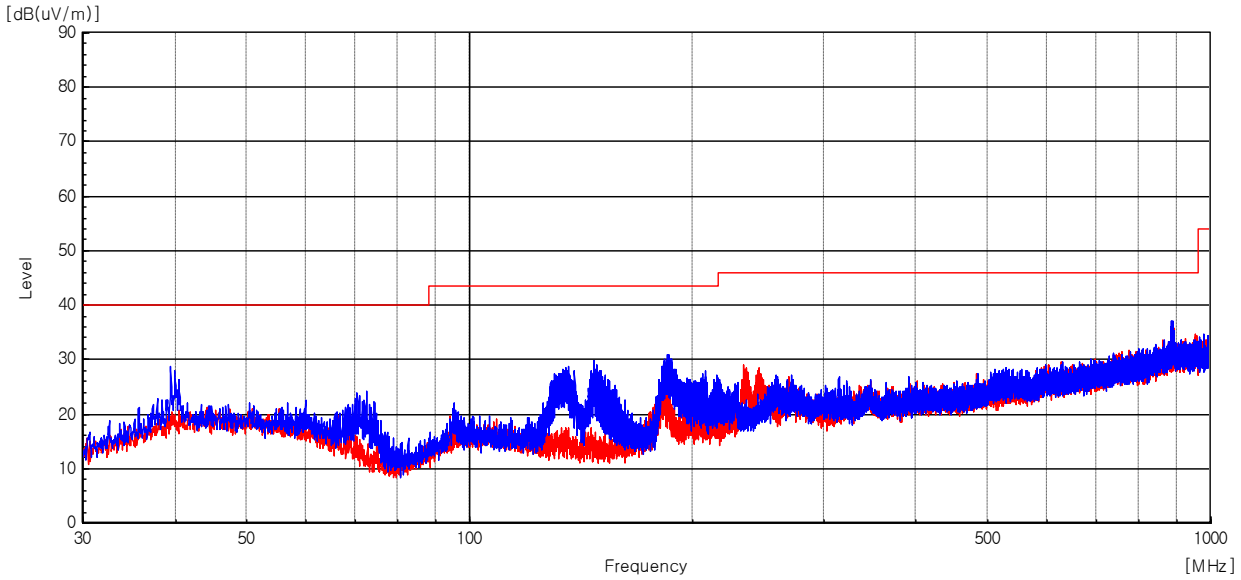
Appendix A : Radiated Emission

Below 1 ㎓

-Test Mode : Operating at 12 V

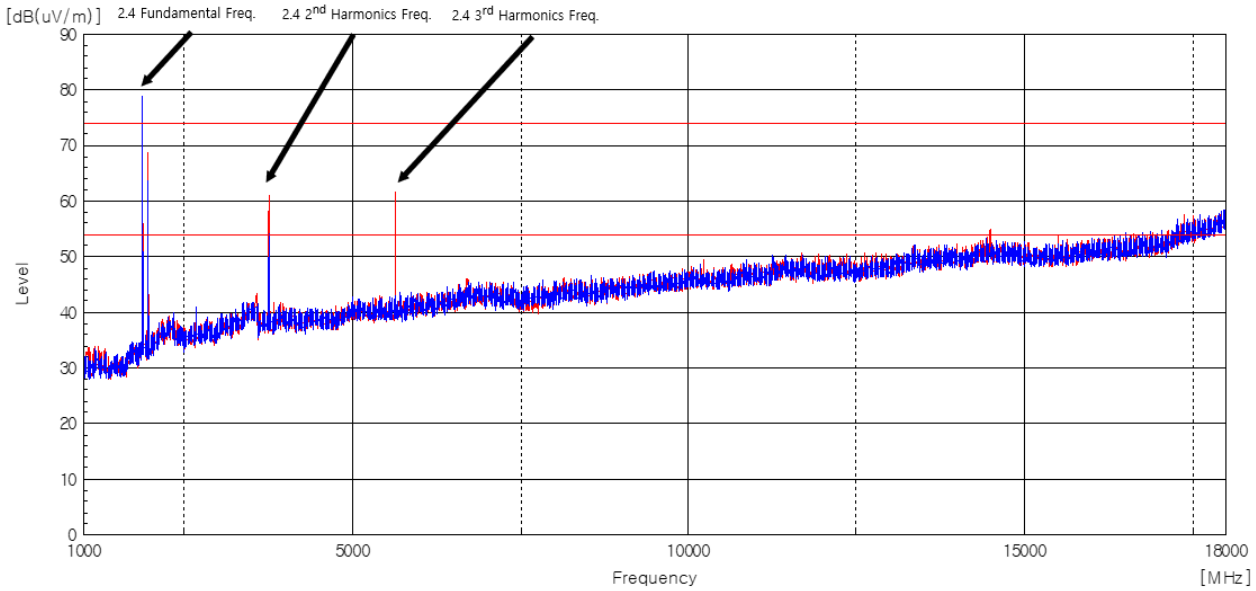


-Test Mode : Operating at 24 V



Above 1 ㎓

-Test Mode : Operating at 12 V



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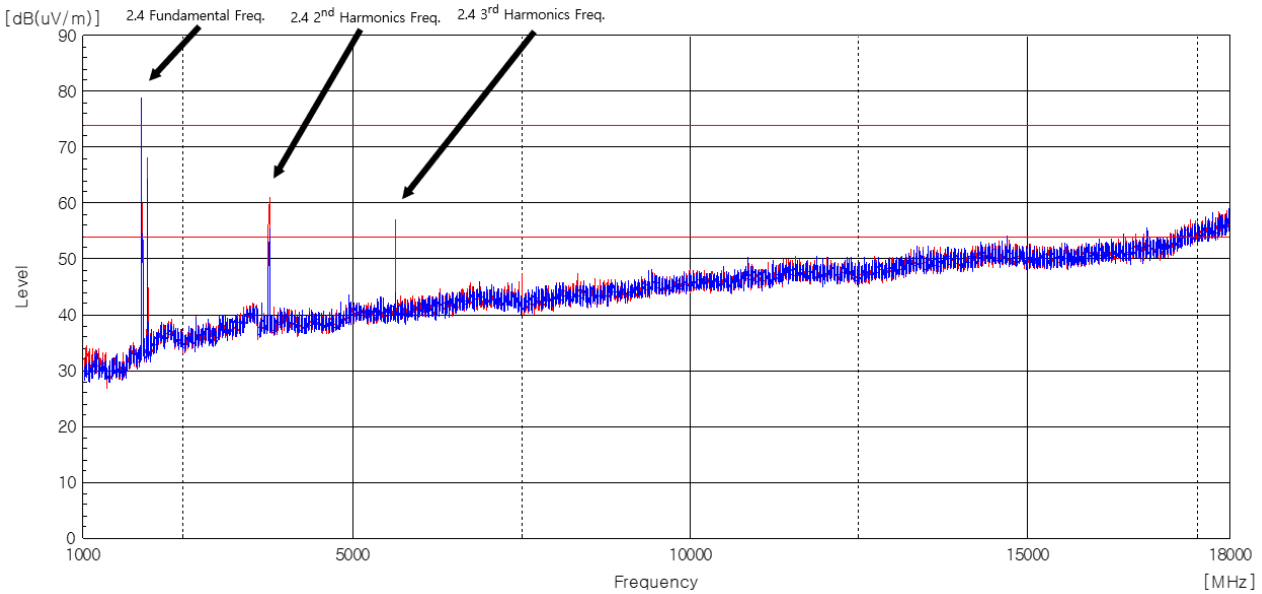

- End of the Report -