



TEST REPORT

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea Tel: 82-70-4904-0113 Fax: 82-505-299-8311 www.kctl.co.kr		Report No.: KR26-SEF0108 Page (1) of (24)	 KCTL
1. Client ◦ Name : Uniden America Corporation ◦ Address : 301 International Parkway, Suite 460 Flower Mound, TX 75022 ◦ Date of Receipt : 2026-03-10			
2. Use of Report : -			
3. Name of Product / Model : RADAR DETECTOR / R4w			
4. Manufacturer / Country of Origin : ATTOWAVE CO., LTD / Korea			
5. Date of Test : 2026-03-20 to 2026-03-23			
6. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing (Address: 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea)			
7. Test method used : ANSI C63.4:2014, Class B FCC Part 15 Subpart B			
8. FCC ID : AMWUA2405			
9. Test Results : Refer to the test result in the test report			
Affirmation	Tested by Name : Byunghwan Min (Signature)		Technical Manager Name : Sunbin Hwang (Signature)
	2026-03-30		
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REPORT REVISION HISTORY

Date	Revision	Page No
2026-03-30	Originally issued	-

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General remarks for test reports

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the testing laboratory that conducted the testing.

☒ Statement not required by the standard or client used for type testing

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1. Applicant information

Applicant: Uniden America Corporation
Address: 301 International Parkway, Suite 460 Flower Mound, TX 75022

Manufacturer: ATTOWAVE CO., LTD
Address: 1005, 10F Leader's Tower, 286, Beotkkot-ro, Geumcheon-gu,
 South Korea 08511



2. Laboratory information

Address

Eurofins KCTL Co.,Ltd. (Suwon Lab.)

65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea

Telephone Number: 82 70 4904 0113

Facsimile Number: 82 505 299 8311

FCC Site Designation No: KR0040

VCCI Member No.: 1980, VCCI Registration No.: R-20080, G-20078, C-20059, T-20056

Industry Canada Registration No. : 8035A

KOLAS NO.: KT231

SITE MAP



3. Test system configuration

3.1 Operation environment

	Temperature	Humidity	Pressure
Chamber 10 m (RE)	21.8 °C	28.7 % R.H.	-
Shielded room(CE)	22.0 °C	29.1 % R.H.	-

Test site

These testing items were performed following locations;

Test item	Test site
Conducted Emission	Shielded Room
Radiated Emission	10 m Chamber

3.2 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC.

The factors contributing to uncertainties are test receiver, cable loss, antenna factor calibration, Antenna directivity, antenna factor variation with height, antenna phase center variation, antenna frequency interpolation, measurement distance variation, site imperfection, mismatch, and system repeatability. Based on CISPR 16-4-2, the measurement uncertainty level with a 95 % confidence level was applied.

Conducted Emission measurement (Confidence level about 95 %, $k = 2$)		
Shielded Room (CE#1)	9 kHz ~ 150 kHz:	2.0 dB
	150 kHz ~ 30 MHz:	2.3 dB
Shielded Room (CE#2)	9 kHz ~ 150 kHz:	2.0 dB
	150 kHz ~ 30 MHz:	2.3 dB
Radiated Emission measurement (Confidence level about 95 %, $k = 2$)		
10 m Chamber (4F)	30 MHz ~ 1 000 MHz	3 m: 4.5 dB
		10 m: 4.3 dB
	1 GHz ~ 6 GHz	3 m: 5.2 dB
	6 GHz ~ 18 GHz	3 m: 5.5 dB
	18 GHz ~ 30 GHz	3 m: 5.5 dB
	30 GHz ~ 40 GHz	3 m: 5.5 dB
10 m Chamber (2F)	30 MHz ~ 1 000 MHz	3 m: 4.5 dB
		10 m: 4.3 dB
	1 GHz ~ 6 GHz	3 m: 5.2 dB
	6 GHz ~ 18 GHz	3 m: 5.5 dB

3.3 Measurement Program

These test items were performed by software programs;

Test item	Measurement Program		Used
Conducted Emission	EP5/CE_Ver 5.4.0(TOYO)		☒
Radiated Emission	2F	EP10/RE_Ver 2021.01.000 (TOYO)	☒
	4F	EP5/RE_Ver 5.11.10(TOYO)	

4. Description of EUT

4.1 General information

Radar

- Receiver type: Dual conversion super-heterodyne
- Antenna type: Linear polarized, self-contained
- Detector type: Scanning frequency discriminator
- Frequency operation: X-band; 10.525 GHz $\pm$ 0.025 GHz
K-band; 24.075 GHz $\pm$ 0.175 GHz
Ka-band (super-wide); 34.550 GHz $\pm$ 1.150 GHz

Laser

- Receiver type: Pulsed laser signal receiver
- Detector type: Digital signal pulse width discriminator
- Optical sensor: Dual convex condenser lens and high-speed photo diode detector, 950nm $\pm$ 150nm (nanometers)

General

- Operating Temperature Range: -10° C to +70° C
- Storage Temperature Range: -30° C to +95° C
- Power requirements: 11V to 16V DC, 300 mA, negative ground
- Dimensions(HxWxL): 32.8 mm x 70.52 mm x 117.65 mm

4.2 Product description

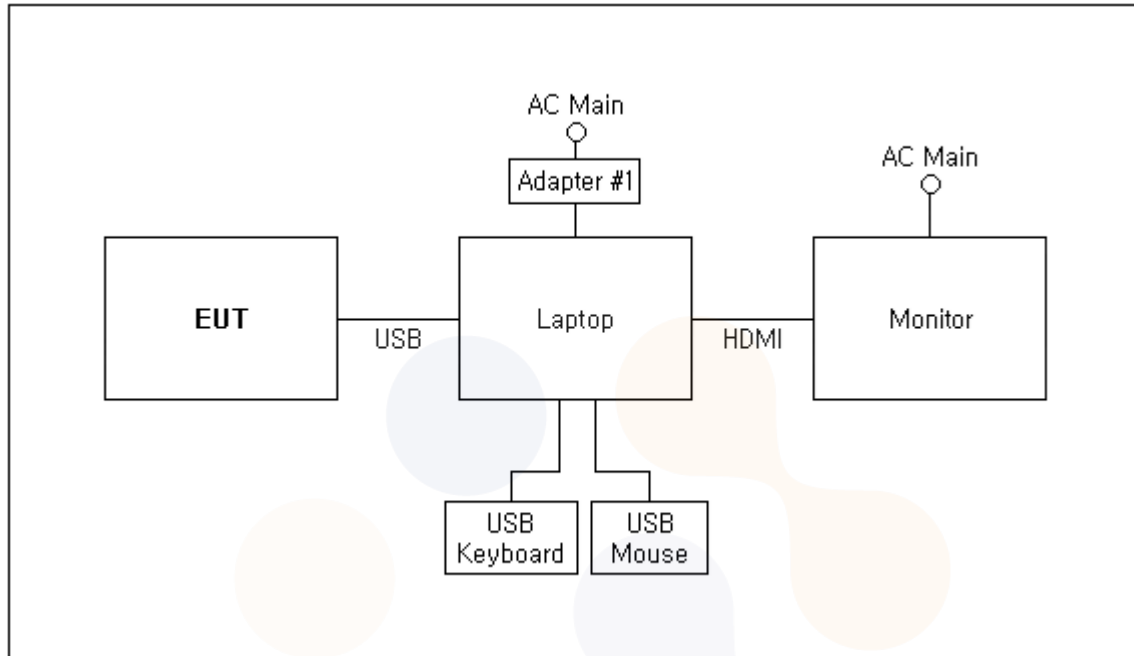
Type of product	RADAR DETECTOR
Model name (Basic)	R4w
Model name (Variant)	-
Difference	-
Serial no	-
Testing voltage	120 V, 60 Hz (Power supplied from Laptop) DC 12 V
Input rating	DC 11 V ~ DC 16 V
Internal clock frequency	12 MHz
RF frequency	Bluetooth, Wi-Fi 2.4 GHz
FCC ID	AMWUA2405
Note	-The following accessories were provided by the manufacturer. 1) Cigar Jack 2) Bluetooth/WiFi Module -FCC ID: AMWUA2404

4.3 Auxiliary equipments

Type	Model / Part #	S/N	Manufacturer
DC Power Supply	E3632A	KR94907353	Agilent
Button Controller	-	-	-
Radar Detectors	R9	3A001231	-
Laser Transponders	-	-	-
Headset	IR-H70V	-	IRIVER
Mobile Phone	SM-S911N	R3CWA01LH5Z	SAMSUNG
Laptop	ThinkPad L16 Gen1	PW-0D3KDC	Lenovo
Adapter #1	ADLX65YLC3D	8SSA10R16919L1CZ 4670HZX	LITE-ON
Monitor	LT24B350	ZWP0HMC101771M	SAMSUNG
USB Mouse	M-U003	-	-
USB Keyboard	SKS-9000UB	-	MONTEREY INTERNATIONAL CORP.
AP	RAXE500	6JX2157VA1667	NETGEAR
Adapter #2	2ABS060K	7220440011147404FJ	NETGEAR

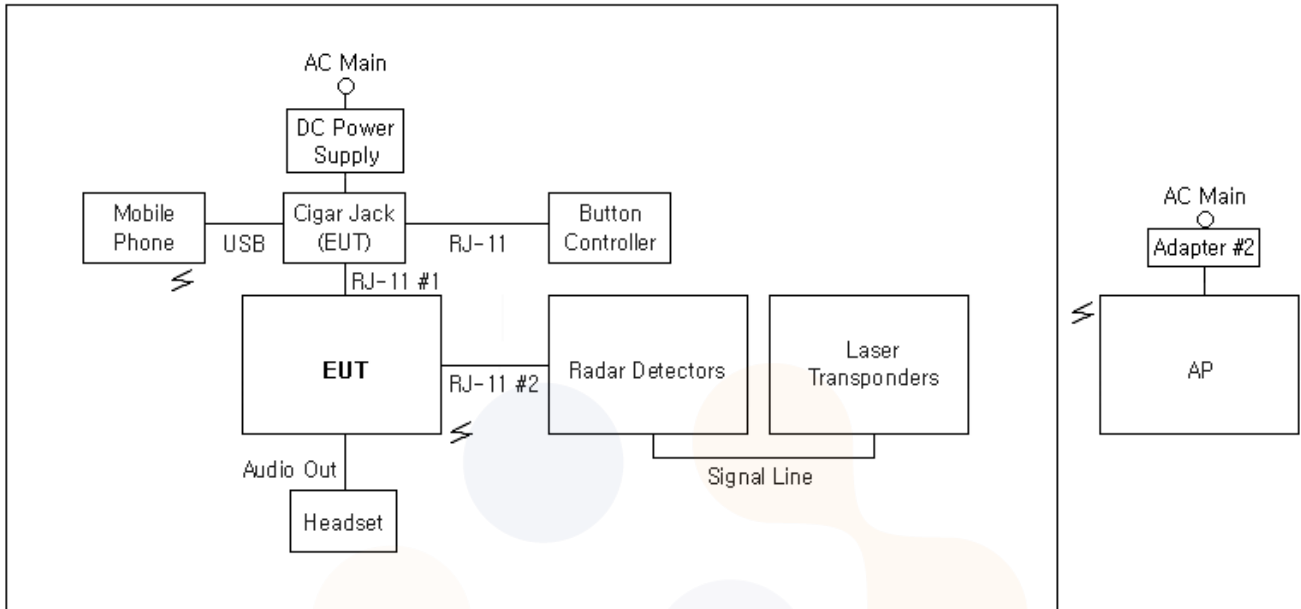
4.4 Test configuration

[Test #1]



	Start		End		Cable	
	Name	I/O port	Name	I/O port	Length (m)	Spec.
1	EUT	USB	Laptop	USB	0.5	Shield
2	Laptop	Power	Adapter #1	-	1.5	Unshield
3		HDMI	Monitor	HDMI	2.0	Shield
4		USB	USB Mouse	-	1.5	Unshield
5		USB	USB Keyboard	-	1.5	Unshield

[Test #2]



	Start		End		Cable	
	Name	I/O port	Name	I/O port	Length (m)	Spec.
1	EUT	RJ-11 #1	Cigar Jack (EUT)	-	1.5	Unshield
2		RJ-11 #2	Radar Detectors	-	1.8	Unshield
3		Audio Out	Headset	-	2.0	Unshield
4	Cigar Jack (EUT)	Power	DC Power Supply	-	1.5	Unshield
5		RJ-11	Button Controller	-	2.0	Unshield
6		USB	Mobile Phone	-	0.5	Shield
7	Radar Detectors	Signal Line	Laser Transponders	-	3.0	Unshield
8	AP	Power	Adapter #2	-	1.5	Unshield

4.5 Operating conditions

The EUT was configured as normal intended use.

Test mode	Normal operating
Test #1	Connect with a USB cable between EUT and Laptop and use the 'Uniden FCC Tool' Program to check and Test data communication.
Test #2	Check the operation of Radar Detectors and laser transponders on the LCD of the EUT, and check the charging status by connecting the USB port of the Cigar Jack to the Mobile Phone. The operation of the button controller can be checked on the LCD of the by checking the Wi-Fi 2.4 GHz communication status and Bluetooth communication status using the 'Uniden BLE Test' application on the AP and Mobile Phone.

5. Summary of test results

5.1 Summary of EMI emission test results

Applied	Test items	Test method	Result
☒	Conducted Emission	ANSI C63.4:2014, Class B FCC Part 15 Subpart B	Pass
☒	Radiated Emission	ANSI C63.4:2014, Class B FCC Part 15 Subpart B	Pass

The data collected shows that EUT the complied with technical requirements of above rules part 15.107(a), (d) and 15.109(a).

6. Test results

6.1 Conducted Emissions

Testing voltage	120 V, 60 Hz		
Test facility	Shielded room (CE#1)		
Date	2026-03-23		
Temperature (°C)	22.0 °C	Humidity (% R.H.)	29.1 % R.H.

6.1.1 Limits of conducted emissions measurement

Frequency [MHz]	Class A (dB(μV))		Class B (dB(μV))	
	Quasi-peak	Average	Quasi-peak	Average
0.15 ~ 0.5	79	66	66 ~ 56 ¹⁾	56 ~ 46 ¹⁾
0.5 ~ 5	73	60	56	46
5 ~ 30	73	60	60	50

¹⁾ The limit decreases linearly with the logarithm of frequency

6.1.2 Measurement procedure

The measurements were performed in a shielded room. EUT was setup as shown in photograph and placed on a non-metallic table height of 0.8 m above the reference ground plane. The rear of table was located 0.4 m to the vertical conducted plane. EUT was power through the LISN, which was bonded to the ground plane. The LISN power was filtered. Each EUT power lead, except ground (safety) lead was individually connected through a LISN to input power source. EUT signal cables that hung closer than 0.4 m to the Horizontal metal ground 0.3 m ~ 0.4 m long. The power cord was bundles in the center. All peripheral equipment was powered from a sub LISN. The LISN and ISN were positioned 0.8 m from the EUT. Peak and Average detection were used in preliminary testing and Quasi-peak and Average detections were used at final measurement.

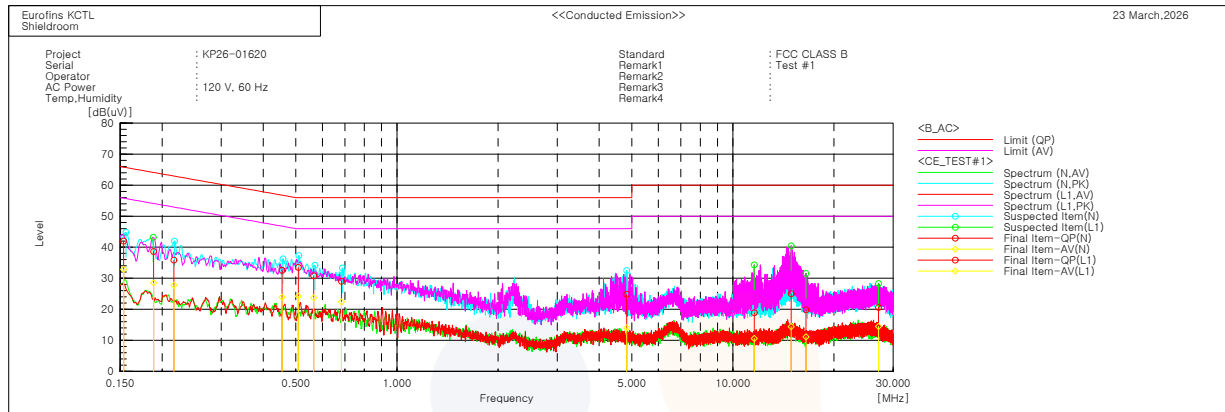
6.1.3 Used equipments

Date : 2026-03-23

Equipment	Model no.	Serial no.	Makers	Next Cal. Date	Used
EMI TEST RECEIVER	ESCI 3	101408	R&S	2026.08.11	☒
TWO-LINE V-NETWORK	ENV216	101358	R&S	2026.04.22	☒
TWO-LINE V-NETWORK	ENV216	101583	R&S	2027.03.20	☒

6.1.4 Conducted emissions measurement result

AC Main



Final Result

--- N Phase ---										
No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB]	Result QP [dB(μV)]	Result CAV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin CAV [dB]
1	0.15366	32.0	22.9	10.0	42.0	32.9	65.8	55.8	23.8	22.9
2	0.21688	25.9	17.8	10.0	35.9	27.8	62.9	52.9	27.0	25.1
3	0.45497	22.5	13.8	10.1	32.6	23.9	56.8	46.8	24.2	22.9
4	0.50888	23.4	14.1	10.1	33.5	24.2	56.0	46.0	22.5	21.8
5	0.56513	20.7	13.6	10.1	30.8	23.7	56.0	46.0	25.2	22.3
6	0.68396	19.0	12.3	10.0	29.0	22.3	56.0	46.0	27.0	23.7
7	4.82828	15.1	4.2	9.8	24.9	14.0	56.0	46.0	31.1	32.0

--- L1 Phase ---										
No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB]	Result QP [dB(μV)]	Result CAV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin CAV [dB]
1	0.18863	28.3	18.2	10.3	38.6	28.5	64.1	54.1	25.5	25.6
2	11.58061	8.6	0.3	10.3	18.9	10.6	60.0	50.0	41.1	39.4
3	14.92044	14.7	4.1	10.3	25.0	14.4	60.0	50.0	35.0	35.6
4	16.49927	9.4	0.8	10.4	19.8	11.2	60.0	50.0	40.2	38.8
5	27.13231	10.1	4.0	10.5	20.6	14.5	60.0	50.0	39.4	35.5

6.2 Radiated Emission

Testing voltage	120 V, 60 Hz / DC 12 V		
Test facility	10 m Chamber (4F)		
Site validation date	Below 1 GHz	2026-03-13	
	Above 1 GHz	2025-11-12	
Test distance	3 m		
Date	2026-03-20		
Temperature (°C)	21.8 °C	Humidity (% R.H.)	28.7 % R.H.

6.2.1 Limits of radiated emission measurement

	Class A at 10 m QP(dB(μV/m))		Class B at 3 m QP(dB(μV/m))	
Frequency [MHz]	FCC ¹⁾	ISED (ICES Issue 7)	FCC ¹⁾	ISED (ICES Issue 7)
30-88	39.1	40.0	40.0	40.0
88-216	43.5	43.5	43.5	43.5
216-230	46.4	46.4	46.0	46.0
230-960	46.4	47.0	46.0	47.0
Above 960	49.5	49.5	54.0	54.0

- ¹⁾: Alternative standard: CISPR, Pub. 22

- Test data in this section has been taken against the FCC 15.109(a) or (B) Limit as it is the most stringent limit.

By complying with more restrictive FCC 15.109 Limit compliance with the ICES-003 Issue 7 limit also demonstrated.

6.2.2 Measurement procedure

The test was done at a 10 m chamber with a quasi-peak detector. EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane. Cables were folded back and forth forming a bundle 0.3 m to 0.4 m long and were hanged at a 0.4 m height to the ground plane.

Cables connected to EUT were fixed to cause maximum emission. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

6.2.3 Used equipments

Date : 2026-03-20

Equipment	Model no.	Serial no.	Makers	Next Cal. Date	Used
EMI TEST RECEIVER	ESR7	101078	R&S	2026.08.11	☒
Bilog Antenna	CBL 6112D	62438	TESEQ	2027.04.15	☒
AMPLIFIER	310N	344922	SONOMA	2026.08.12	☒
ATTENUATOR	8491B-6dB	MY39271082	KEYSIGHT	-	☒
Antenna Mast	MA4640-XP-ET	-	Innco Systems	-	☒
Turn Table	DT3000-2t	-	Innco Systems	-	☒
DOUBLE RIDGED HORN ANTENNA	3115	00086706	ETS-LINDGREN	2026.11.04	☒
DOUBLE RIDGED HORN ANTENNA	3117	00161083	ETS-LINDGREN	2027.02.03	☒
AMPLIFIER	BBV9718C	00138	SCHWARZBECK	2026.09.29	☒
EMI TEST RECEIVER	ESW44	103121	R&S	2026.06.11	☒

6.2.4 Sample calculation

The field strength is calculated adding the antenna Factor, cable loss and, Antenna pad adding, subtracting the amplifier gain from the measured reading.

The sample calculation is as follow:

$$\text{Result} = \text{M.R} + \text{C.F}(\text{A.F} + \text{C.L} + 6 \text{ dB Att} - \text{A.G})$$

M.R = Meter Reading

C.F = Correction Factor

A.F = Antenna Factor

C.L = Cable Loss

A.G = Amplifier Gain

6 dB Att = 6 dB Attenuator

If M.R is 30 dB, A.F 12 dB, C.L 5 dB, 6 dB, A.G 35 dB

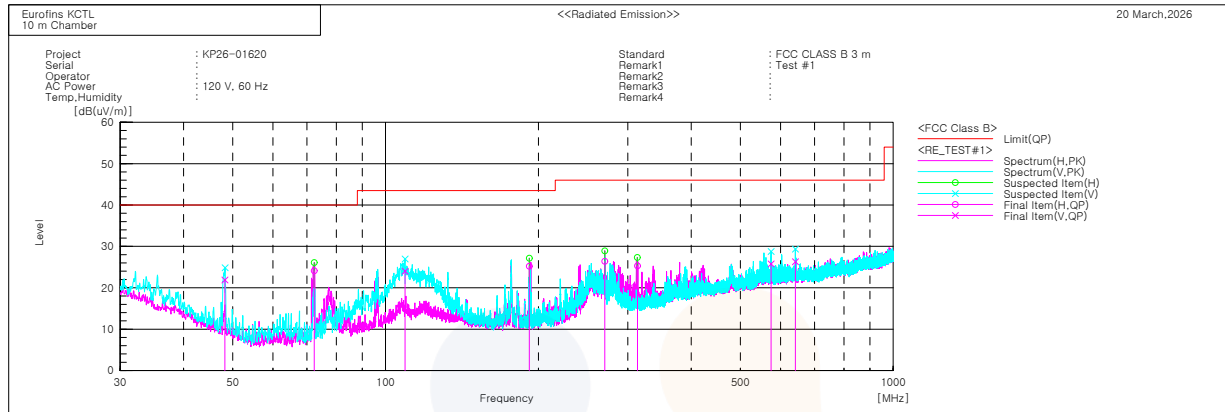
The result is $30 + 12 + 5 + 6 - 35 = 18 \text{ dB } (\mu\text{V/m})$

Bilog Antenna and ATTENUATOR (6 dB) were calibrated together.

AV = CAV : Abbreviation of CISPR Average

6.2.5 Radiated emission measurement result

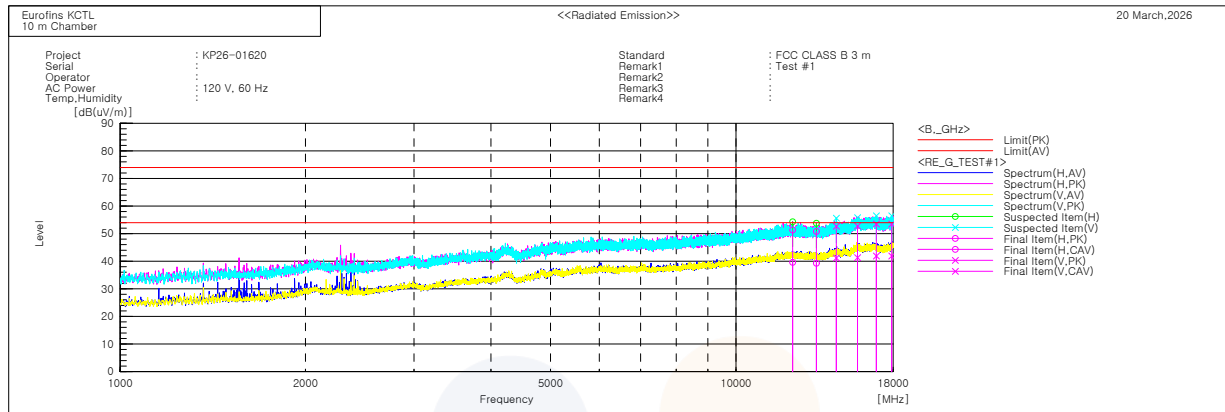
30 MHz ~ 1 GHz



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	48.258	V	37.0	-15.1	21.9	40.0	18.1	111.0	49.0
2	72.377	H	41.2	-17.1	24.1	40.0	15.9	319.0	11.0
3	109.236	V	34.9	-10.9	24.0	43.5	19.5	196.0	264.0
4	191.909	H	37.7	-12.5	25.2	43.5	18.3	221.0	257.0
5	270.318	H	34.1	-7.7	26.4	46.0	19.6	152.0	318.0
6	313.462	H	31.6	-6.3	25.3	46.0	20.7	182.0	258.0
7	574.822	V	24.6	1.2	25.8	46.0	20.2	179.0	328.0
8	641.879	V	23.9	2.4	26.3	46.0	19.7	217.0	325.0

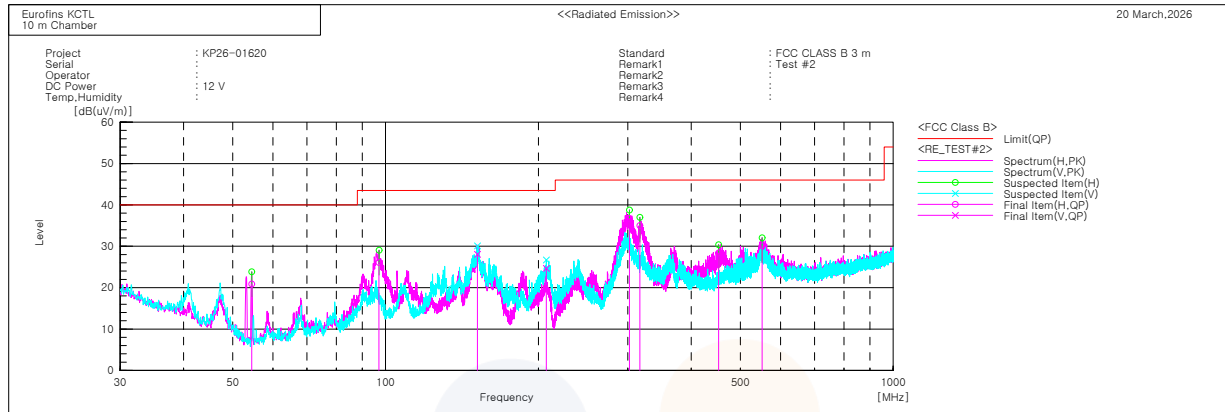
1 GHz ~ 18 GHz



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]
1	12358.220	H	35.3	23.6	16.0	51.3	39.6	74.0	54.0	22.7	14.4	286.0	283.0
2	13509.200	H	35.2	23.7	15.6	50.8	39.3	74.0	54.0	23.2	14.7	186.0	359.0
3	14556.470	V	36.3	24.8	16.4	52.7	41.2	74.0	54.0	21.3	12.8	397.0	204.0
4	15755.080	V	35.4	23.9	17.4	52.8	41.3	74.0	54.0	21.2	12.7	179.0	73.0
5	16899.190	V	35.3	23.7	18.2	53.5	41.9	74.0	54.0	20.5	12.1	169.0	249.0
6	17904.710	V	34.0	22.4	19.5	53.5	41.9	74.0	54.0	20.5	12.1	176.0	310.0

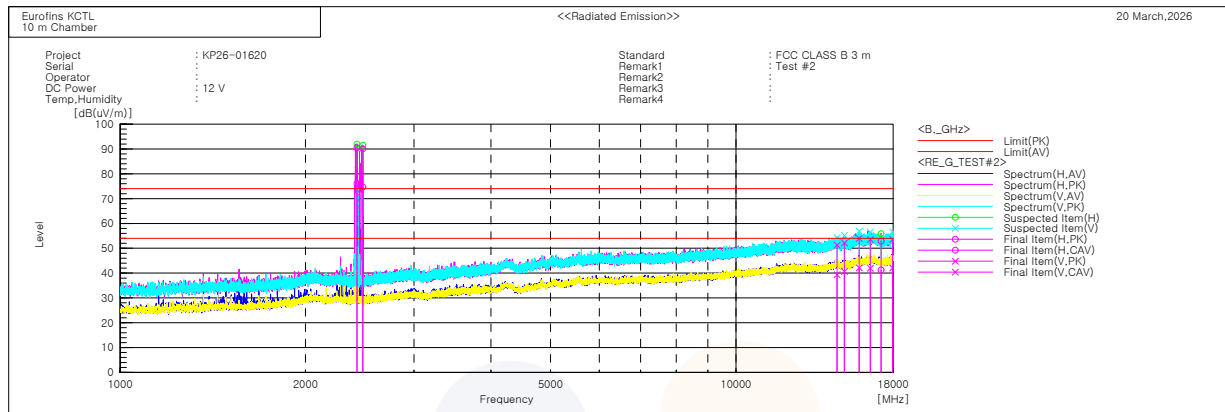
30 MHz ~ 1 GHz



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	54.477	H	38.4	-17.5	20.9	40.0	19.1	399.0	65.0
2	97.043	H	39.4	-13.3	26.1	43.5	17.4	349.0	78.0
3	151.685	V	39.7	-11.6	28.1	43.5	15.4	167.0	39.0
4	207.419	V	36.7	-12.0	24.7	43.5	18.8	135.0	53.0
5	302.331	H	43.8	-7.1	36.7	46.0	9.3	173.0	15.0
6	316.872	H	41.5	-6.5	35.0	46.0	11.0	114.0	358.0
7	452.945	H	29.9	-1.5	28.4	46.0	17.6	167.0	354.0
8	552.033	H	29.0	1.1	30.1	46.0	15.9	137.0	193.0

1 GHz ~ 18 GHz



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]
1	2424.979	H	92.2	77.8	-1.7	90.5	76.1	74.0	54.0	-16.5	-22.1	295.0	89.0
2	2477.873	H	92.1	76.7	-2.0	90.1	74.7	74.0	54.0	-16.1	-20.7	119.0	30.0
3	14590.870	V	34.7	22.8	16.6	51.3	39.4	74.0	54.0	22.7	14.6	113.0	228.0
4	14996.870	V	35.6	24.1	16.6	52.2	40.7	74.0	54.0	21.8	13.3	200.0	4.0
5	15949.460	V	36.2	24.4	17.8	54.0	42.2	74.0	54.0	20.0	11.8	184.0	182.0
6	16526.440	V	35.5	23.9	18.1	53.6	42.0	74.0	54.0	20.4	12.0	264.0	76.0
7	17208.280	H	34.7	23.1	18.2	52.9	41.3	74.0	54.0	21.1	12.7	122.0	175.0
8	17959.480	V	34.3	22.8	19.3	53.6	42.1	74.0	54.0	20.4	11.9	100.0	136.0

No. 1, 2 is the fundamental frequency. (2 424.979 MHz_Wi-Fi 2.4 GHz), (2 477.873 MHz_Bluetooth)

-End-