TEST REPORT

Job No.	:	**GPEM2312000857EC**
Test Report No.	:	**F690501-RF-EMC002168_1**
Applicant	:	**CanTops Co., Ltd.**
Product Name	:	**Hybrid PIO**
Model Name	:	**CTS-HPIO-25**
Standards	:	**FCC Part 15 Subpart B, Class A**
FCC ID	:	**RMN-CTSHPIO25**
Date of Receipt	:	**December 14, 2023**
Date of Test	:	**March 26, 2024 ~ March 27, 2024**
Date of Issue	:	**March 29, 2024**
Test Result	:	**Complied**

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

	Tested by (Name, signature)	Approved by (Name, signature)
Affirmation	*Dojun Lee*	*Julia Choi*

SGS Korea Co., Ltd. Gunpo Laboratory
4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, 15807, KOREA

Contents

Revision History

Revision	Report Number	Description
0	F690501-RF-EMC002168	Initial
1	F690501-RF-EMC002168_1	Retested to apply FCC Part 15 Subpart B, Class A.

1. Test Laboratory

1.1 General information

Name	SGS Korea Co., Ltd.
- Branch Site	4, LS-ro 182beon-gil, Gunposi, Gyeonggi-do, Republic of Korea Tel. 82 31 428 5700 Fax. 82 31 427 5370
- Branch Site-3	35, Giheungdanji-ro 121beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea Tel. 82 31 548 0710 Fax. 82 31 548 0719
- Branch Site-4	12, Dongtansandan 10-gil, Hwaseong-si, Gyeonggi-do, 18487, Republic of Korea Tel. 82 31 8007 5302 Fax. 82 31 427 2370
Website	http://www.sgsgruop.kr/ee

SGS Korea Co., Ltd. has been accredited by the agencies listed in the following table;

Accreditation	Accreditation bodies	Accreditation No.
KC	MSIT- RRA	KR0150
FCC	FCC (MRA)	
IC	IC (MRA)	
Vietnam-MIC	Vietnam-MIC	
Japan EMI	VCCI	C-14102, T-11153, R-13662, G-20037
KOLAS	KATS - KOLAS	Testing No.123
CBTL	IECEE	TL 146
SDPPI	SDPPI	-

2. General Information of E.U.T.

2.1 Applicant Information

Applicant	CanTops Co., Ltd.
Applicant Address	A-1002~1008, Digital Empire BLDG, 16, Deogyeong-daero 1556beon-gil, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16690, Republic of Korea
Manufacturer	CanTops Co., Ltd.
Manufacturer Address	A-1002~1008, Digital Empire BLDG, 16, Deogyeong-daero 1556beon-gil, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16690, Republic of Korea

2.2 General Information of E.U.T.

Classification	Description	
Product Name	Hybrid PIO	
Model Name	CTS-HPIO-25	
Alt. Model Name	-	
Model Differences	-	
Serial No.	-	
EMI Classification	Class A	
Internal Clock Frequency	4 ㎒, 16 ㎒	
Rated Power	DC 24 V	
Tested Power	DC 24 V	
H/W Version	1.0	
S/W Version	1.0	
RF Communication	Frequency Band	2 405 ~ 2 466 ㎒, 126 channel
		5 727 ~ 5 847 ㎒, 128 channel
	Communication method	1:1 communication, Half Duplex
	Main Function	8 bit, I/O Communication, F/W and Download communication data
IR Communication	Main Function	8 bit, I/O Communication
	Communication method	1:1 communication, Half Duplex
	Modulation method	Pulse Modulation
Current Consumption	Below 100 ㎃ @ 24 V	
Port	DC IN, Serial & MAINT, Antenna	
Components	-	
Function	It is a communication device installed in industrial and using IR and ISM Frequency band.	

2.3 Configurations of E.U.T

Description	Model	Serial No.	Manufacturer	Note
Main Board	CTS-HPIO-25 REV1.0	-	-	-
Antenna	-	-	-	-

3. E.U.T. Operation and Test Configuration

3.1 Peripheral Equipments

Description	Model	Serial No.	Manufacturer	Note.
DC POWER SUPPLY	IT6720	-	ITECH	-
Notebook Computer	NT740U5L	OMMN91GH900176P	Samsung Electronics Suzhou Computer Co., Ltd.	China
Hybrid PIO	CTS-HPIO-25	-	CanTops Co., Ltd.	Korea

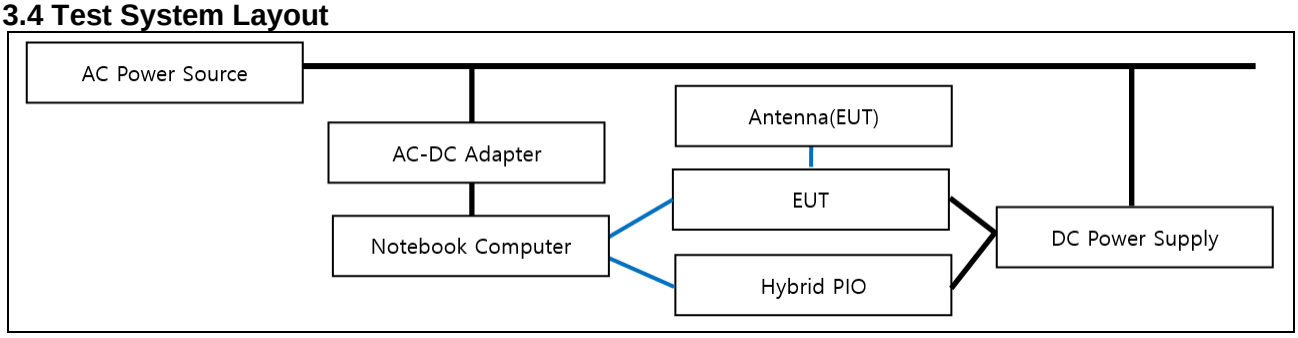
3.2 Cable List

Start		END		Cable Spec.		Used core
Name	I/O Port	Name	I/O Port	Length (m)	Shield	
EUT	DC IN	DC Power Supply	DC OUT	3.5	Unshielded	-
	Serial & MAINT	Notebook Computer	USB	3.5	Unshielded	-
	Antenna	Antenna(EUT)	Antenna	0.5	Shielded	-

3.3 Operating Modes and Conditions

Operating mode	Operating condition
01 IR	A state of IR Communication between the EUT and the Hybrid PIO (CTS-HPIO-25)
02 RF 2.4 ㎓	A stage of 2.4 ㎓ RF communication between the EUT and the Hybrid PIO (CTS-HPIO-25)
03 RF 5 ㎓	A stage of 5 ㎓ RF communication between the EUT and the Hybrid PIO (CTS-HPIO-25)

3.4 Test System Layout



3.5 Modifications to the test items during testing

■	No modifications done during testing
□	Modification done during testing (see details below)
No.	Description of modification (if any)
1	
2	

4. Test Results

4.1 Summary

Test Items	Standards	Test Results
Conducted Emission	FCC Part 15 Subpart B Section 15.107 ANSI C63.4a:2017	N/A
Radiated Emission	FCC Part 15 Subpart B Section 15.109 ANSI C63.4a:2017	Complied

4.2 Note

1 Test Methods of all test items are performed according to the basic standard in subclause 4.1.

2

Emission Test

5.1 Test Method and Limits

Test Items	Measuring Frequency Range	RBW	Measuring Distance
Conducted Emission	0.15 ㎒ - 30 ㎒	9 ㎑	-
Radiated Emission	30 ㎒ - 1 ㎓	120 ㎑	10 m or 3 m
	Above 1 ㎓	1 ㎒	3 m

5.2 Test Limits

Frequency Range	Limits(dBμV)		Class
	Quasi-peak	CISPR-Average	
0.15 ㎒ - 0.5 ㎒	79	66	Class A
0.5 ㎒ - 30 ㎒	73	60	
0.15 ㎒ - 0.5 ㎒	66 to 56 Note1	56 to 46 Note1	Class B
0.5 ㎒ - 5 ㎒	56	46	
5 ㎒ - 30 ㎒	60	50	

[Table 2.1 Conducted Emission Limits]

Frequency Range	Limits(dBμV/m)	Class
	Quasi-peak	
30 ㎒ - 88 ㎒	39.0	Class A (10 m method)
88 ㎒ - 216 ㎒	43.5	
216 ㎒ - 960 ㎒	46.4	
960 ㎒ - 1 ㎓	49.5	
30 ㎒ - 88 ㎒	40.0	Class B (3 m method)
88 ㎒ - 216 ㎒	43.5	
216 ㎒ - 960 ㎒	46.0	
960 ㎒ - 1 ㎓	54.0	

[Table 2.2 Radiated Emission Limits below 1 ㎓_For FCC Part 15 Subpart B]

Frequency Range	Limits(dBμV)		Class
	Quasi-peak	CISPR-Average	
Above 1 ㎓	79.5	59.5	Class A
	74.0	54.0	Class B

[Table 2.3 Radiated Emission Limits Above 1 ㎓_ For FCC Part 15 Subpart B Note2]

Note 1. The lower limit shall apply at the transition frequencies. The limit decreases linearly with the logarithm of that frequency.
Note 2. The limits of class A equipment is extrapolated using an extrapolation factor of 20 ㏈/decade because it was measured at 3 m distance not 10 m distance.

5.3 Radiated Emission

5.3.1 Test Equipments

Equipment	Model	Manufacturer	Serial No	Cal Due. Date
EMI TEST RECEIVER	ESU40	R&S	100075	2025-01-17
TRILOG BROADBAND ANTENNA	VULB 9163	SCHWARZBECK	01126	2025-02-26
Double Ridged Horn Antenna	HF907	R&S	100208	2025-03-04
Double Ridged Horn Antenna	BBHA9170	SCHWARZBECK	BBHA9170454	2024-07-10
PREAMPLIFIER	AM-1431	MITEQ	1336160	2024-05-23
AMPLIFIER	SCU 18	R&S	10070	2024-08-23
Low Noise Amplifier	TK-PA1840H	TESTEK	110006	2025-01-26
RF Cable	EMH-1Lab-RE-01	-	-	-
RF Cable	EMH-1Lab-RE-02	-	-	-
RF Cable	EMH-1Lab-RE-03	-	-	-
RF Cable	EMH-1Lab-RE-04	-	-	-
RF Cable	EMH-1Lab-RE-05	-	-	-
RF Cable	EMH-1Lab-RE-06	-	-	-
RF Cable	EMD-1Lab-RE-05	-	-	-
RF Cable	EMD-1Lab-RE-06	-	-	-

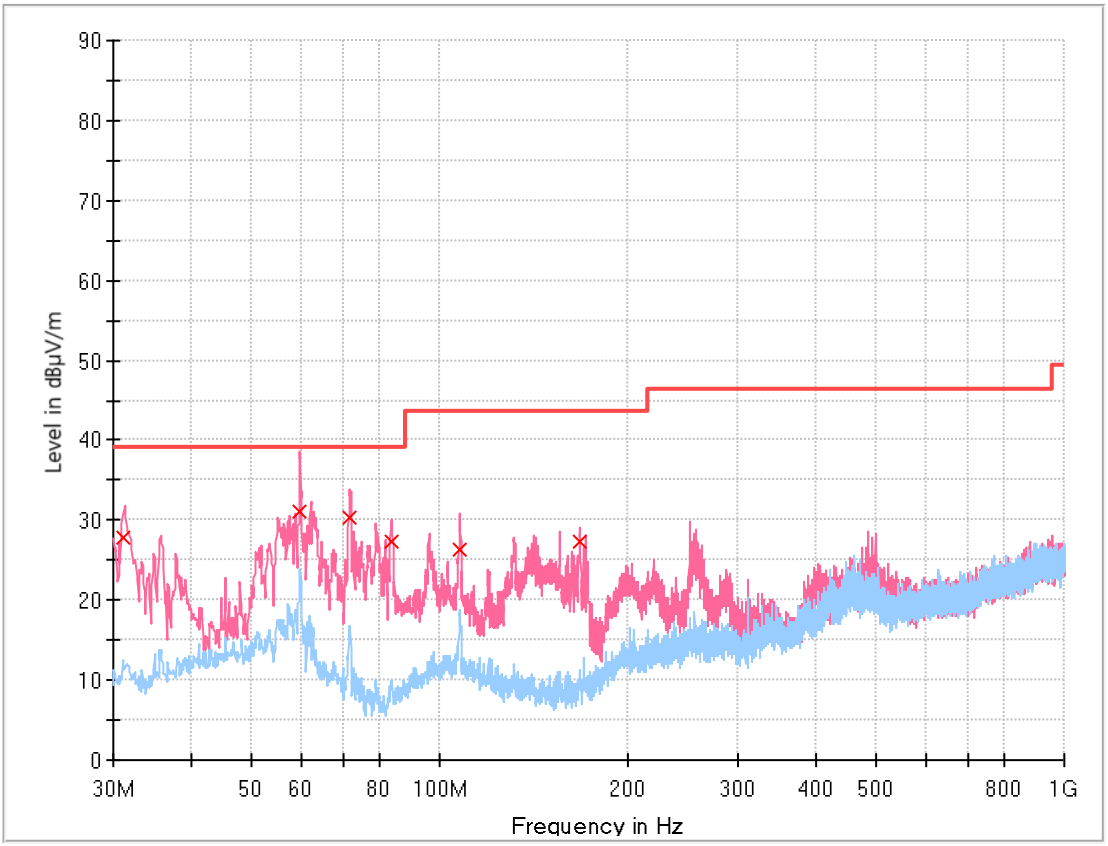
Note. Measuring software is below
- Branch Site : ELECTRA(V5.01.0) from R&S
- Branch Site-3 : EMC32(V10.40.10) from R&S
- Branch Site-4 : EMC32(V10.40.10) from R&S

5.3.2 Environment Conditions

Test SIte	10 m SEMI-ANECHOIC CHAMBER in Branch site-3
Temperature	(Minimum 20.2, Maximum 21.5) ℃
Humidity	(Minimum 31.0, Maximum 34.0) % R.H.
Atmospheric Pressure	(Minimum 101.0, Maximum 101.1) ㎪
Test Date	2024-03-26 ~ 2024-03-27

5.3.4 Test Result

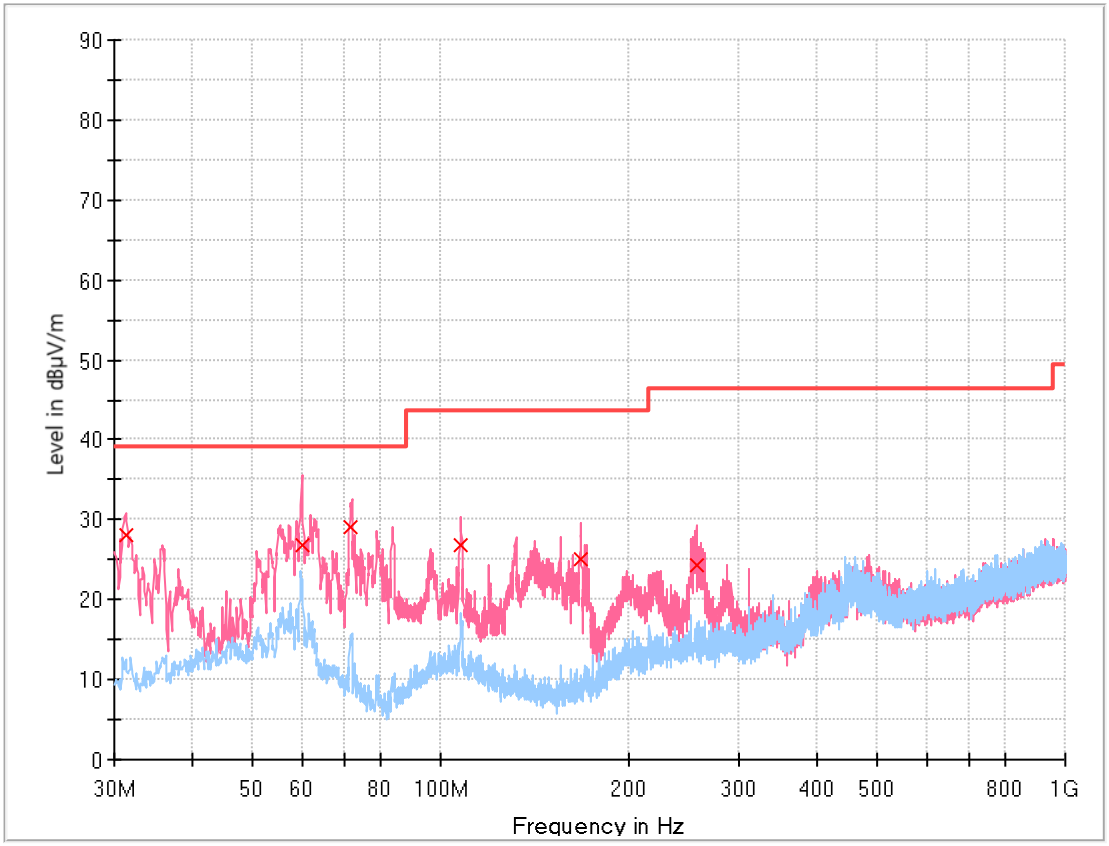
01 Mode



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.067	27.91	39.10	11.19	15 000.0	120.000	315.0	V	116.0	-21.6
59.779	31.07	39.10	8.03	15 000.0	120.000	258.0	V	267.0	-19.1
71.904	30.35	39.10	8.75	15 000.0	120.000	269.0	V	344.0	-22.9
83.835	27.41	39.10	11.69	15 000.0	120.000	201.0	V	217.0	-23.7
107.309	26.42	43.52	17.10	15 000.0	120.000	164.0	V	284.0	-19.5
167.449	27.26	43.52	16.26	15 000.0	120.000	180.0	V	108.0	-22.3

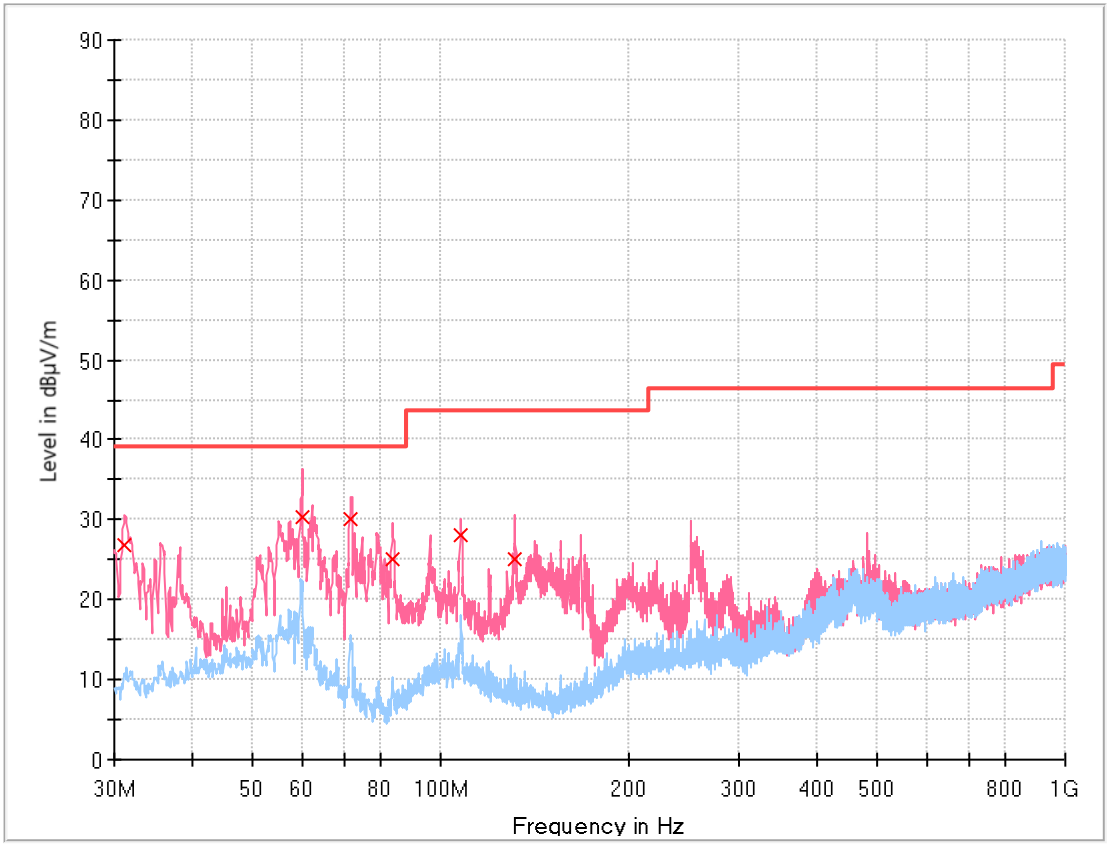
02 Mode



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.261	28.09	39.10	11.01	15 000.0	120.000	154.0	V	88.0	-21.6
59.876	26.89	39.10	12.21	15 000.0	120.000	168.0	V	189.0	-19.1
71.710	29.18	39.10	9.92	15 000.0	120.000	218.0	V	306.0	-22.8
107.600	26.93	43.52	16.59	15 000.0	120.000	185.0	V	306.0	-19.5
167.643	24.95	43.52	18.57	15 000.0	120.000	166.0	V	129.0	-22.3
256.204	24.32	46.50	22.18	15 000.0	120.000	108.0	V	96.0	-18.1

03 Mode

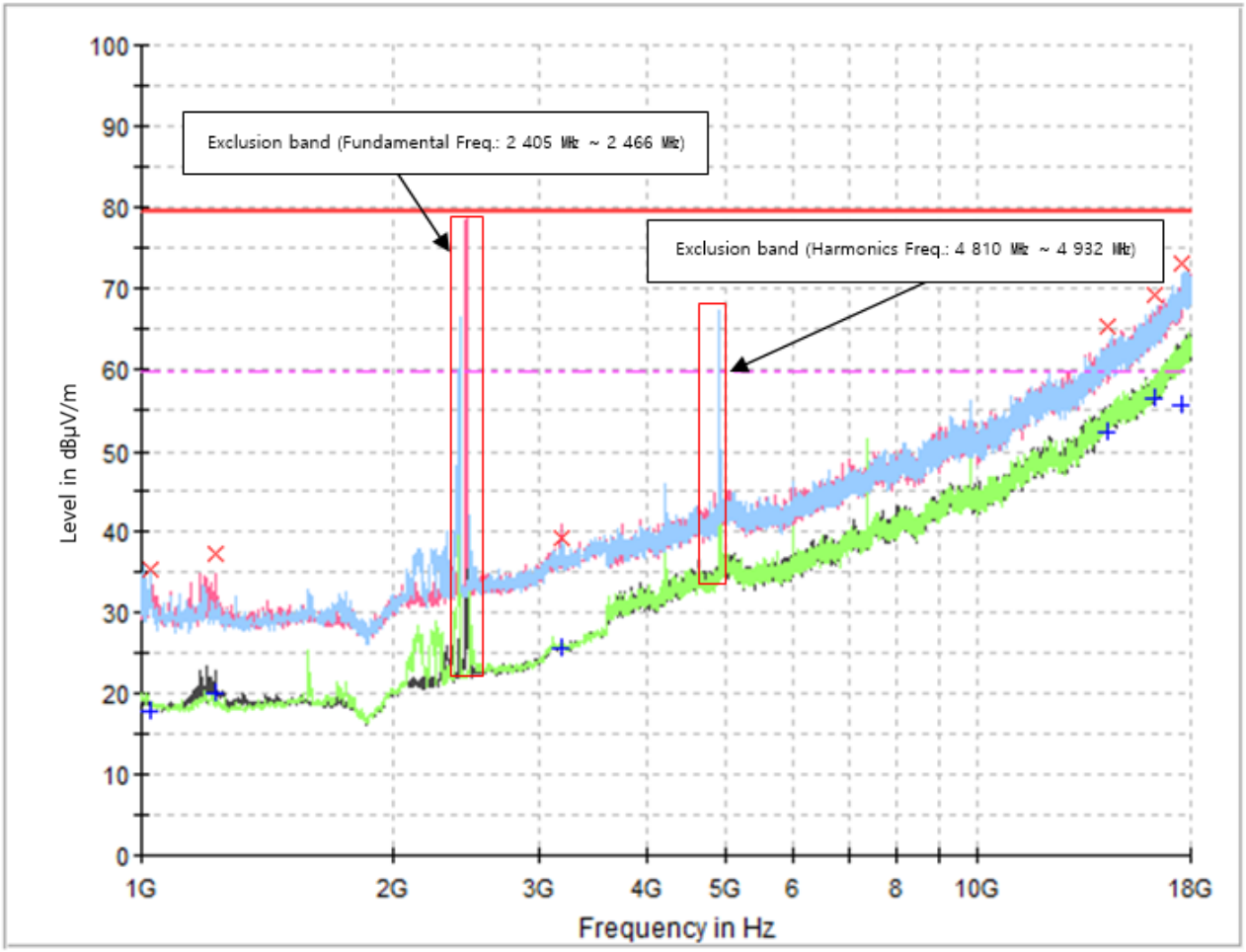


Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.067	26.94	39.10	12.16	15 000.0	120.000	252.0	V	93.0	-21.6
59.973	30.30	39.10	8.80	15 000.0	120.000	241.0	V	285.0	-19.1
71.904	30.03	39.10	9.07	15 000.0	120.000	263.0	V	268.0	-22.9
83.641	25.14	39.10	13.96	15 000.0	120.000	187.0	V	357.0	-23.7
107.600	28.00	43.52	15.52	15 000.0	120.000	122.0	V	244.0	-19.5
131.559	25.13	43.52	18.39	15 000.0	120.000	115.0	V	8.0	-22.9

Note. Measurement Uncertainty: See Appendix A
- POL H = Horizontal
- POL V = Vertical
- Margin = Limit – Quasi Peak
- Corr. = Antenna Factor + Cable loss – Amplifier Gain

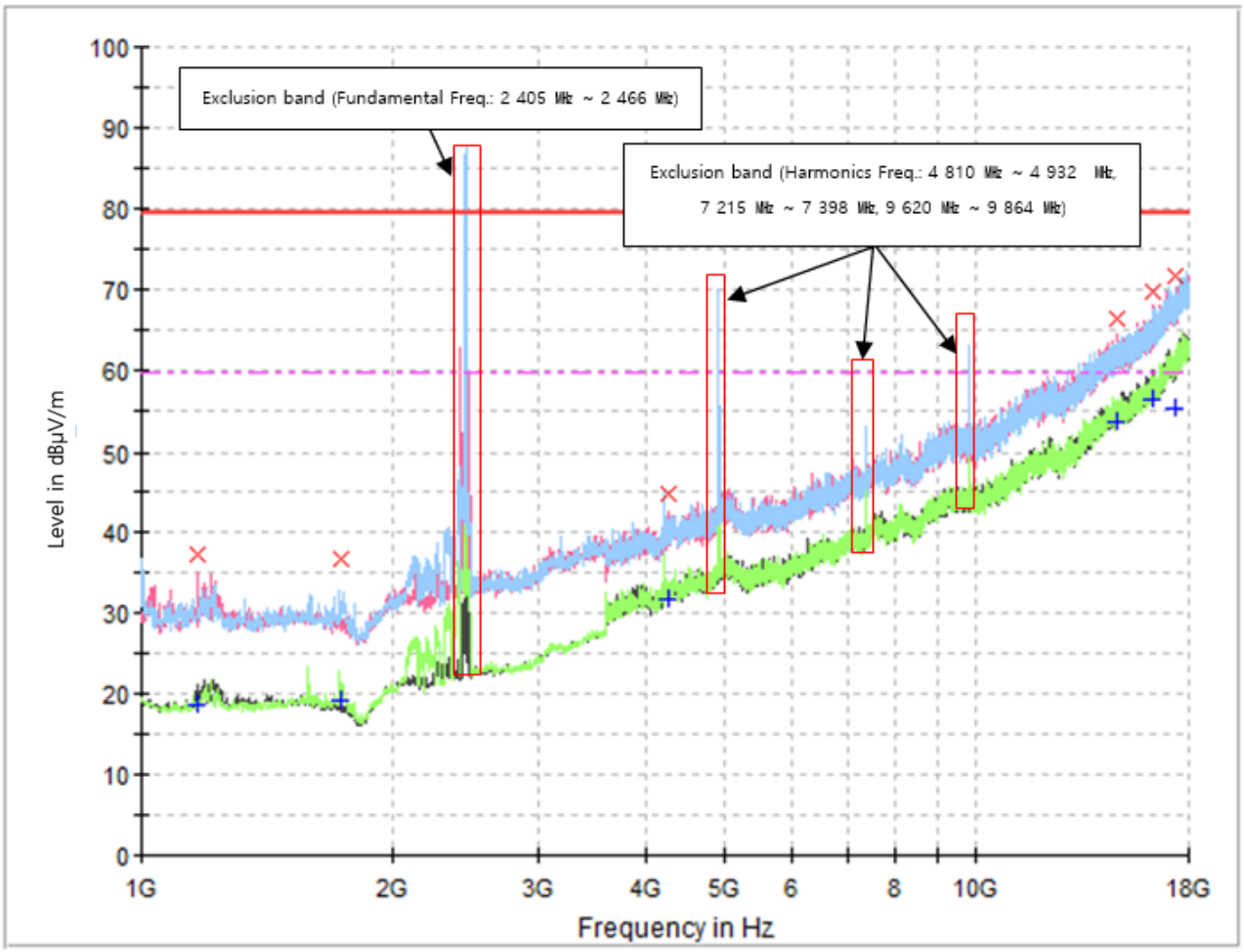
01 Mode (Test Frequency : 1 000 ㎒ ~ 18 000 ㎒)



Final_Result

Frequency (㎒)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time(ms)	Bandwidth (㎑)	Height (㎝)	Pol	Azimuth (deg)	Corr. (dB)
1 022.100	---	17.95	59.50	41.55	15 000.0	1 000.000	100.0	H	98.0	-14.4
1 022.100	35.34	---	79.50	44.16	15 000.0	1 000.000	100.0	H	98.0	-14.4
1 224.400	---	20.03	59.50	39.47	15 000.0	1 000.000	100.0	V	336.0	-14.5
1 224.400	37.20	---	79.50	42.30	15 000.0	1 000.000	100.0	V	336.0	-14.5
3 186.200	39.21	---	79.50	40.29	15 000.0	1 000.000	100.0	V	202.0	-2.6
3 186.200	---	25.61	59.50	33.89	15 000.0	1 000.000	100.0	V	202.0	-2.6
14 295.700	65.26	---	79.50	14.24	15 000.0	1 000.000	100.0	V	300.0	23.4
14 295.700	---	52.12	59.50	7.38	15 000.0	1 000.000	100.0	V	300.0	23.4
16 254.100	69.06	---	79.50	10.44	15 000.0	1 000.000	100.0	V	285.0	27.0
16 254.100	---	56.35	59.50	3.15	15 000.0	1 000.000	100.0	V	285.0	27.0
17 610.700	73.11	---	79.50	6.39	15 000.0	1 000.000	100.0	V	202.0	30.7
17 610.700	---	55.33	59.50	4.17	15 000.0	1 000.000	100.0	V	202.0	30.7

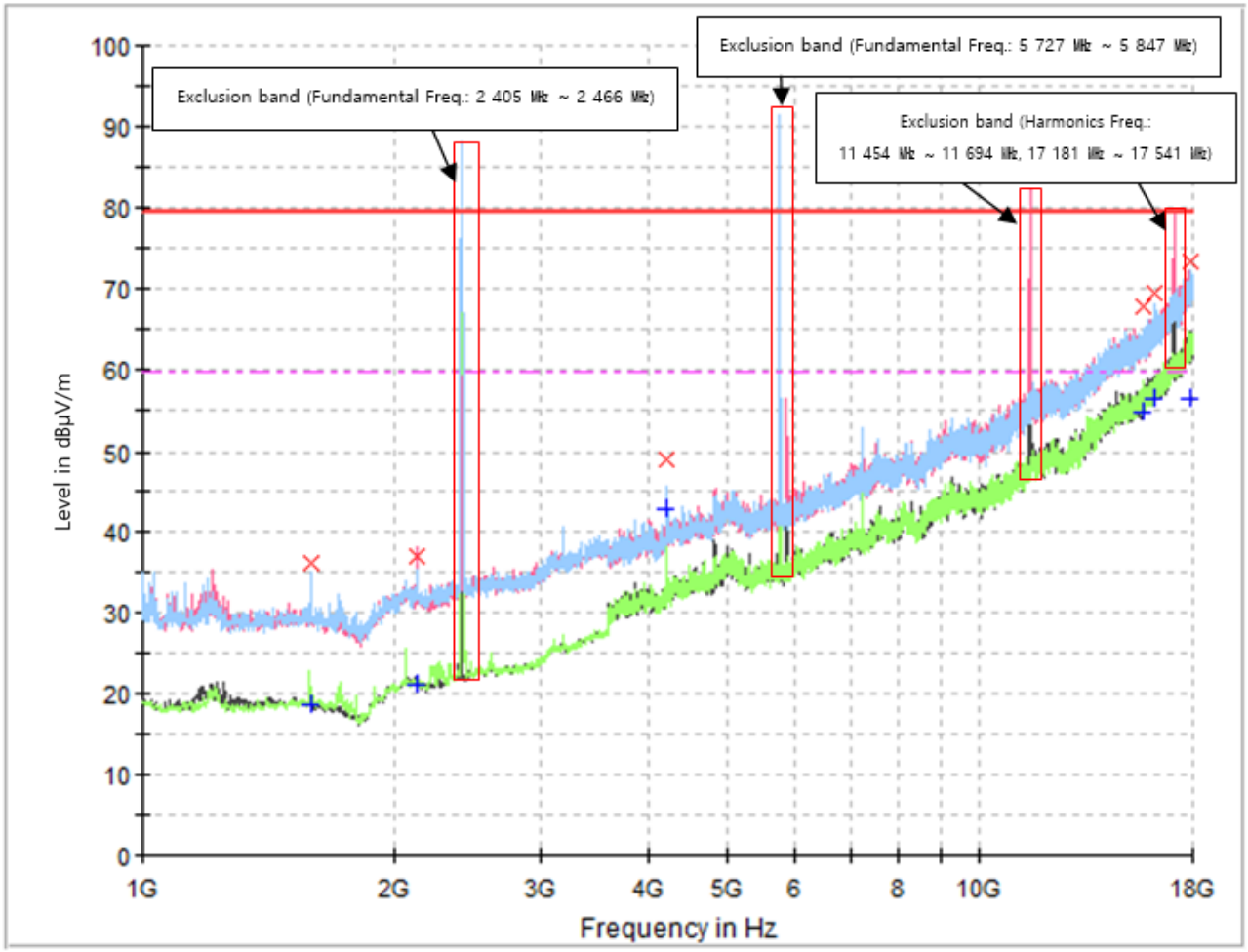
02 Mode (Test Frequency : 1 000 ㎒ ~ 18 000 ㎒)



Final_Result

Frequency (㎒)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time(ms)	Bandwidth (㎑)	Height (㎝)	Pol	Azimuth (deg)	Corr. (dB)
1 168.300	37.36	---	79.50	42.14	15 000.0	1 000.000	100.0	V	306.0	-14.6
1 168.300	---	18.75	59.50	40.75	15 000.0	1 000.000	100.0	V	306.0	-14.6
1 739.500	36.79	---	79.50	42.71	15 000.0	1 000.000	100.0	H	6.0	-11.3
1 739.500	---	19.32	59.50	40.18	15 000.0	1 000.000	100.0	H	6.0	-11.3
4 262.300	---	31.67	59.50	27.83	15 000.0	1 000.000	100.0	V	347.0	2.4
4 262.300	44.95	---	79.50	34.55	15 000.0	1 000.000	100.0	V	347.0	2.4
14 792.100	---	53.36	59.50	6.14	15 000.0	1 000.000	100.0	V	89.0	24.3
14 792.100	66.29	---	79.50	13.21	15 000.0	1 000.000	100.0	V	89.0	24.3
16 249.000	69.64	---	79.50	9.86	15 000.0	1 000.000	100.0	V	250.0	27.0
16 249.000	---	56.34	59.50	3.16	15 000.0	1 000.000	100.0	V	250.0	27.0
17 352.300	71.69	---	79.50	7.81	15 000.0	1 000.000	100.0	H	331.0	29.9
17 352.300	---	55.12	59.50	4.38	15 000.0	1 000.000	100.0	H	331.0	29.9

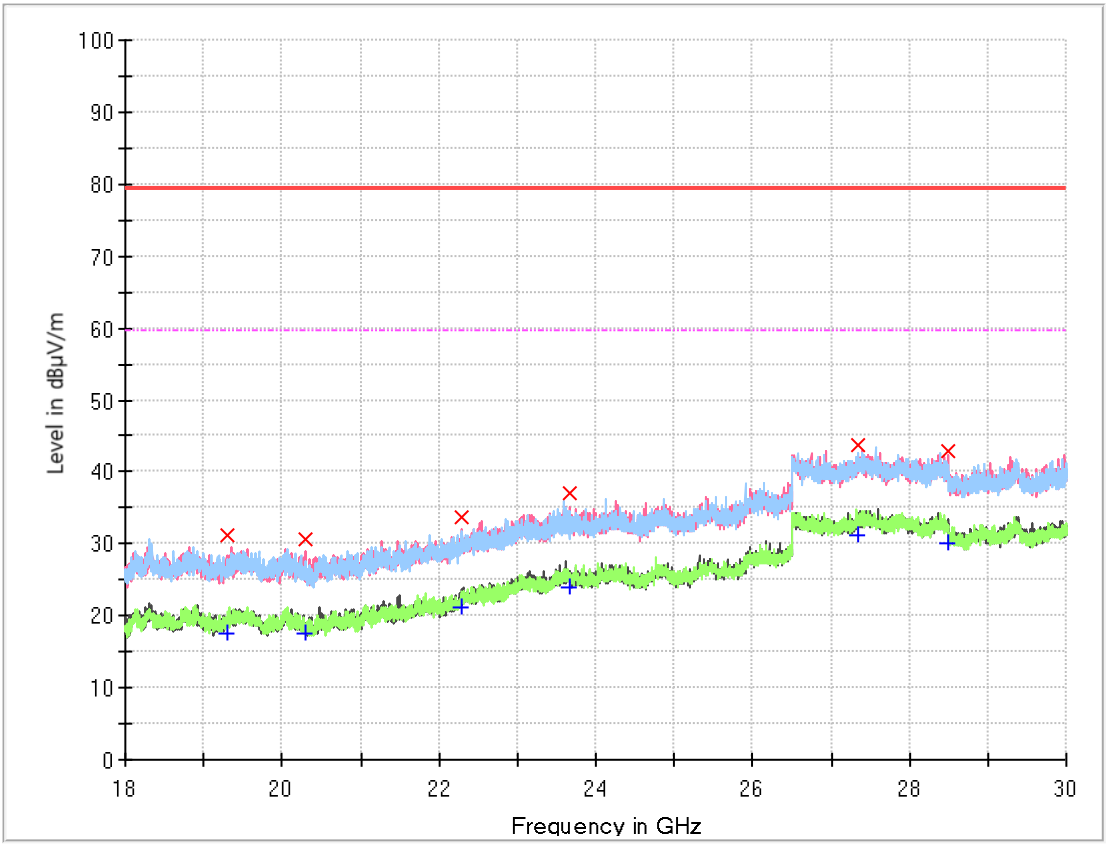
03 Mode (Test Frequency : 1 000 ㎒ ~ 18 000 ㎒)



Final_Result

Frequency (㎒)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time(㎳)	Bandwidth (㎑)	Height (㎝)	Pol	Azimuth (deg)	Corr. (dB)
1 593.300	---	18.70	59.50	40.80	15 000.0	1 000.000	100.0	H	35.0	-12.1
1 593.300	36.09	---	79.50	43.41	15 000.0	1 000.000	100.0	H	35.0	-12.1
2 127.100	---	21.23	59.50	38.27	15 000.0	1 000.000	100.0	H	131.0	-8.4
2 127.100	37.03	---	79.50	42.47	15 000.0	1 000.000	100.0	H	131.0	-8.4
4 228.300	48.91	---	79.50	30.59	15 000.0	1 000.000	100.0	H	0.0	2.2
4 228.300	---	42.78	59.50	16.72	15 000.0	1 000.000	100.0	H	0.0	2.2
15 681.200	67.61	---	79.50	11.89	15 000.0	1 000.000	100.0	V	355.0	25.6
15 681.200	---	54.70	59.50	4.80	15 000.0	1 000.000	100.0	V	355.0	25.6
16 242.200	69.44	---	79.50	10.06	15 000.0	1 000.000	100.0	H	35.0	26.9
16 242.200	---	56.26	59.50	3.24	15 000.0	1 000.000	100.0	H	35.0	26.9
17 899.700	---	56.28	59.50	3.22	15 000.0	1 000.000	100.0	H	76.0	31.7
17 899.700	73.28	---	79.50	6.22	15 000.0	1 000.000	100.0	H	76.0	31.7

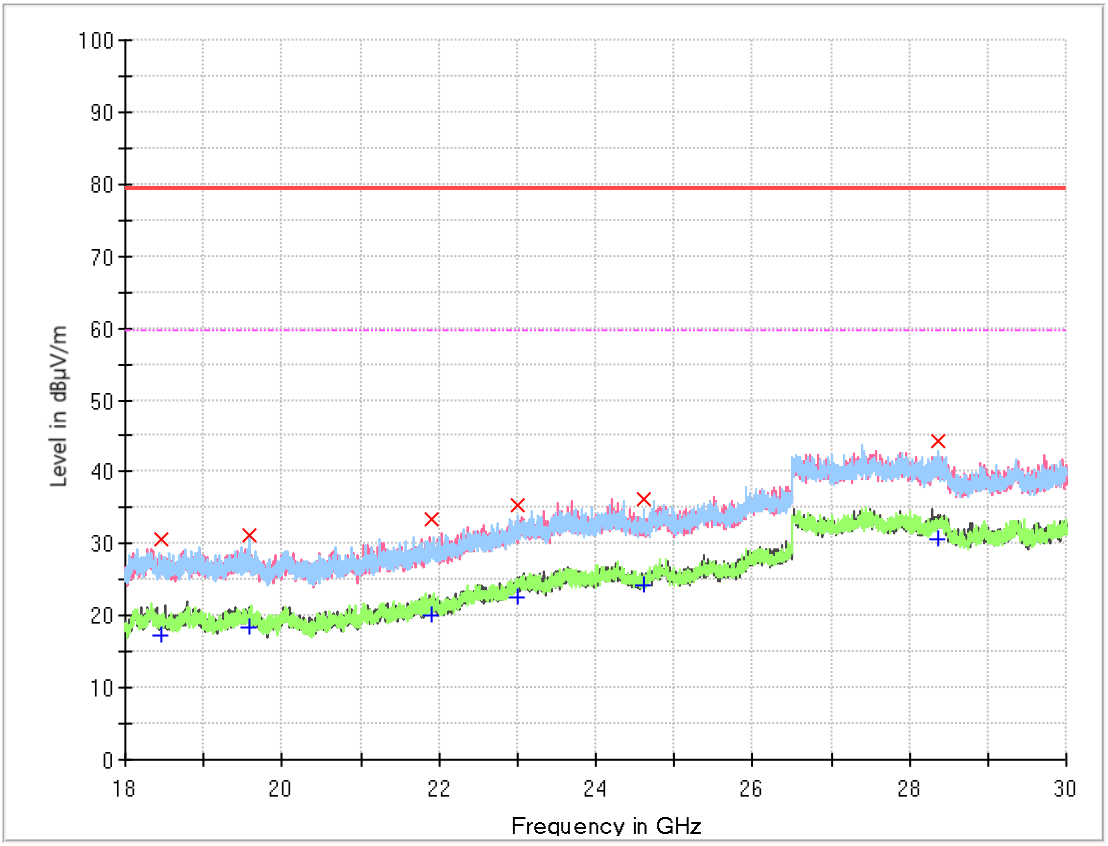
01 Mode (Test Frequency : 18 000 ㎒ ~ 30 000 ㎒)



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time(ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
19 291.400	---	17.68	59.50	41.82	15 000.0	1 000.000	100.0	V	71.0	-2.8
19 291.400	31.08	---	79.50	48.42	15 000.0	1 000.000	100.0	V	71.0	-2.8
20 290.200	30.50	---	79.50	49.00	15 000.0	1 000.000	100.0	V	9.0	-2.6
20 290.200	---	17.45	59.50	42.05	15 000.0	1 000.000	100.0	V	9.0	-2.6
22 296.600	---	21.05	59.50	38.45	15 000.0	1 000.000	100.0	H	202.0	0.6
22 296.600	33.15	---	79.50	46.35	15 000.0	1 000.000	100.0	H	202.0	0.6
23 676.000	36.98	---	79.50	42.52	15 000.0	1 000.000	100.0	V	4.0	3.3
23 676.000	---	24.12	59.50	35.38	15 000.0	1 000.000	100.0	V	4.0	3.3
27 339.000	43.25	---	79.50	36.25	15 000.0	1 000.000	100.0	V	219.0	4.5
27 339.000	---	31.21	59.50	28.29	15 000.0	1 000.000	100.0	V	219.0	4.5
28 485.200	42.54	---	79.50	36.96	15 000.0	1 000.000	100.0	V	0.0	5.0
28 485.200	---	20.11	59.50	39.39	15 000.0	1 000.000	100.0	V	0.0	5.0

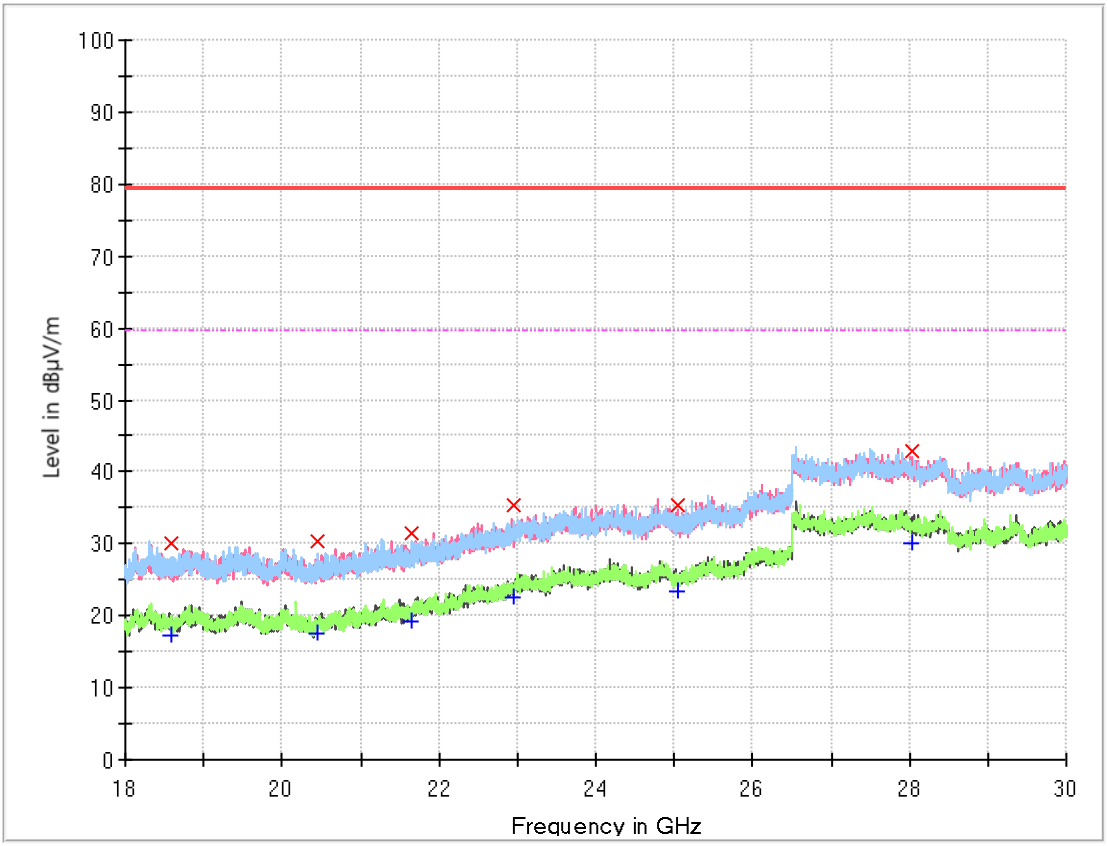
02 Mode (Test Frequency : 18 000 ㎒ ~ 30 000 ㎒)



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time(ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
18 451.000	---	17.32	59.50	42.18	15 000.0	1 000.000	100.0	H	138.0	-2.7
18 451.000	30.52	---	79.50	48.98	15 000.0	1 000.000	100.0	H	138.0	-2.7
19 581.800	---	18.36	59.50	41.14	15 000.0	1 000.000	100.0	H	68.0	-2.8
19 581.800	31.25	---	79.50	48.25	15 000.0	1 000.000	100.0	H	68.0	-2.8
21 902.800	---	20.14	59.50	39.36	15 000.0	1 000.000	100.0	H	38.0	-0.1
21 902.800	33.41	---	79.50	46.09	15 000.0	1 000.000	100.0	H	38.0	-0.1
23 016.000	---	22.57	59.50	36.93	15 000.0	1 000.000	100.0	H	239.0	2.4
23 016.000	35.25	---	79.50	43.65	15 000.0	1 000.000	100.0	H	239.0	2.4
24 608.800	---	24.22	59.50	35.28	15 000.0	1 000.000	100.0	H	261.0	3.2
24 608.800	36.32	---	79.50	43.18	15 000.0	1 000.000	100.0	H	261.0	3.2
28 362.000	---	30.58	59.50	28.92	15 000.0	1 000.000	100.0	H	261.0	4.9
28 362.000	44.33	---	79.50	35.17	15 000.0	1 000.000	100.0	H	261.0	4.9

03 Mode (Test Frequency : 18 000 ㎒ ~ 30 000 ㎒)



Final_Result

Frequency (㎒)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time(ms)	Bandwidth (㎑)	Height (㎝)	Pol	Azimuth (deg)	Corr. (dB)
18 580.800	---	17.33	59.50	42.17	15 000.0	1 000.000	100.0	H	122.0	-2.8
18 580.800	29.98	---	79.50	49.52	15 000.0	1 000.000	100.0	H	122.0	-2.8
20 461.800	---	17.52	59.50	41.98	15 000.0	1 000.000	100.0	H	101.0	-2.3
20 461.800	30.25	---	79.50	49.25	15 000.0	1 000.000	100.0	H	101.0	-2.3
21 654.200	31.58	---	79.50	47.92	15 000.0	1 000.000	100.0	H	7.0	-0.5
21 654.200	---	19.34	59.50	40.16	15 000.0	1 000.000	100.0	H	7.0	-0.5
22 954.400	35.24	---	79.50	44.26	15 000.0	1 000.000	100.0	H	175.0	2.3
22 954.400	---	22.52	59.50	36.98	15 000.0	1 000.000	100.0	H	175.0	2.3
25 035.600	---	23.51	59.50	35.99	15 000.0	1 000.000	100.0	V	102.0	2.8
25 035.600	35.33	---	79.50	44.17	15 000.0	1 000.000	100.0	V	102.0	2.8
28 040.800	42.85	---	79.50	36.65	15 000.0	1 000.000	100.0	V	236.0	4.8
28 040.800	---	30.11	59.50	29.39	15 000.0	1 000.000	100.0	V	236.0	4.8

Note. Measurement Uncertainty: See Appendix A

- AF = Antenna Factor
- CL = Cable Loss
- AMP = Amplifier Gain
- POL H = Horizontal
- POL V = Vertical
- A = Angle
- H = Height
- Margin = Limit – Result
- Corr. = AF + CL – AMP ** The value of 'Level' includes 'Corr.'.

Ex) In case

Freq ; 100 ㎒, level ; 30 dB(µV/m), AF ; 10 dB/m, CL ; 4 dB, Amp ; 25 dB

Result = Level + AF + CL – Amp = 30 + 10 + 4 - 25 = 19

Margin = Limit – Result = 43.5 – 19 = 24.5

Appendix A: Measurement Uncertainty

Test Method			Measurement Uncertainty
Conducted Emission		ENV216	3.1 dB (The confidential level is 95 %, *k*=2)
		ESH2-Z5	2.8 dB (The confidential level is 95 %, *k*=2)
		ESH3-Z6	3.0 dB (The confidential level is 95 %, *k*=2)
Conducted Emission - Signal		ISN T800	5.3 dB (The confidential level is 95 %, *k*=2)
		ISNT8-Cat6	5.4 dB (The confidential level is 95 %, *k*=2)
		ISN S751	7.1 dB (The confidential level is 95 %, *k*=2)
Disturbance Voltage at Antenna Terminal			2.2 dB (The confidential level is 95 %, *k*=2)
Radiated Emission	9 kHz - 30 MHz	Horizontal	3.6 dB (The confidential level is 95 %, *k*=2)
		Vertical	3.6 dB (The confidential level is 95 %, *k*=2)
	30 MHz - 1 000 MHz	Horizontal	4.6 dB (The confidential level is 95 %, *k*=2)
		Vertical	4.9 dB (The confidential level is 95 %, *k*=2)
	1 GHz - 18 GHz	Horizontal	3.9 dB (The confidential level is 95 %, *k*=2)
		Vertical	3.8 dB (The confidential level is 95 %, *k*=2)

Table A.1 Measurement Uncertainty of Branch Site

Test Method			Measurement Uncertainty
Conducted Emission		ENV216	3.2 dB (The confidential level is 95 %, *k*=2)
		ESH3-Z6	3.2 dB (The confidential level is 95 %, *k*=2)
		ESH2-Z5	3.0 dB (The confidential level is 95 %, *k*=2)
		NNLK8129	3.0 dB (The confidential level is 95 %, *k*=2)
Conducted Emission - Signal		ISN T800	5.5 dB (The confidential level is 95 %, *k*=2)
		ISN ST08	6.6 dB (The confidential level is 95 %, *k*=2)
Radiated Emission	9 kHz - 30 MHz	Horizontal	3.3 dB (The confidential level is 95 %, *k*=2)
		Vertical	3.3 dB (The confidential level is 95 %, *k*=2)
	30 MHz - 1 000 MHz	Horizontal	4.3 dB (The confidential level is 95 %, *k*=2)
		Vertical	4.6 dB (The confidential level is 95 %, *k*=2)
	1 GHz - 18 GHz	Horizontal	3.9 dB (The confidential level is 95 %, *k*=2)
		Vertical	4.0 dB (The confidential level is 95 %, *k*=2)

Table A.2 Measurement Uncertainty of Branch Site-3

Test Method			Measurement Uncertainty
Conducted Emission		ENV216	3.5 dB (The confidential level is 95 %, *k*=2)
		ESH2-Z5	3.3 dB (The confidential level is 95 %, *k*=2)
		ESH3-Z6	3.3 dB (The confidential level is 95 %, *k*=2)
		NNLK8129	3.4 dB (The confidential level is 95 %, *k*=2)
Conducted Emission - Signal		ISN T800	5.7 dB (The confidential level is 95 %, *k*=2)
		ISN ST08	5.5 dB (The confidential level is 95 %, *k*=2)
Radiated Emission	9 kHz - 30 MHz (Triple Loop Ant.)	3.4 dB (The confidential level is 95 %, *k*=2)	
	9 kHz - 30 MHz (Loop Ant.)	Horizontal	3.8 dB (The confidential level is 95 %, *k*=2)
		Vertical	3.8 dB (The confidential level is 95 %, *k*=2)
	30 MHz - 1 000 MHz	Horizontal	4.8 dB (The confidential level is 95 %, *k*=2)
		Vertical	5.4 dB (The confidential level is 95 %, *k*=2)
	1 GHz - 18 GHz	Horizontal	4.1 dB (The confidential level is 95 %, *k*=2)
		Vertical	4.2 dB (The confidential level is 95 %, *k*=2)

Table A.3 Measurement Uncertainty of Branch Site-4

- End of Test Report -