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TEST REPORT

Report Number	200500063SEL-TEL1
Applicant Name / Address	Sungshin Hasco, Ltd.
	65, Gongdan 7-ro, Jillyang-eup, Gyeongsan-si, Gyeongbuk-do, South Korea, 38465
Test Sample Description	
- Product name	Digital Manifold Gauge
- Model and/or Brand name	MDM008A
- FCC ID.....	2AWRJMDM008A
- Manufacturer Name	Sungshin Hasco, Ltd.
- Manufacturer Address	65, Gongdan 7-ro, Jillyang-eup, Gyeongsan-si, Gyeongbuk-do, South Korea, 38465
- Variant model Name	N/A
Date of receipt of sample(s)	12 May. 2020
Date of Test	01 Jul. 2020 - 02 Jul. 2020
Test standard(s)	CFR 47 Part 15 Subpart C, §15.249
Test Results & uncertainty	See Summary
Issue date	07 Jul. 2020

Note 1. The results shown in this test report refer only to the sample(s) tested.

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Tested by

Name : Criss.Lee
RF Engineer

Approved by

Name : Bran.Ko
RF Technical Manager

Intertek ETL SEMKO Korea Ltd.

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SECTION 2 GENERAL DESCRIPTION

1. Laboratory Information

Name	Intertek ETL SEMKO Korea Ltd.
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2. Applicant Information

Name	Sungshin Hasco, Ltd.
Address	65, Gongdan 7-ro, Jillyang-eup, Gyeongsan-si, Gyeonbuk-do, South Korea, 38465
Contact Person	Shin Kyong Seob
Phone No.	+82 10 8788 0922

3. Description of EUT

Product name	Digital Manifold Gauge
Model name	MDM008A
Serial No.	-
Manufacturer	Sungshin Hasco, Ltd.
Country of Manufacture	Republic of Korea
Rated Voltage	DC 6.0 V (Battery)
Approved RF Module	Model: BMD-300
Approved Module FCC ID	2AA9B04(**Note**[1])
Frequency Range	2 402 MHz ~ 2 480 MHz (GFSK 1 Mbps, 2 Mbps)
Modulation Technique	GFSK
Number of Channel	40 CH
Antenna Type	Integral Antenna
Antenna Gain	-3.30 dBi (BMD-300)
Transmit Power	90.62 dBuV/m (Peak)
H/W Version	-
S/W Version	-
RF Power Setting Parameter	Default (0 dBm)

Note:

Test was performed by modular transmitter(Model Name: BMD-300, FCC ID: 2AA9B04, Test Report No. CGZ3160202-00109-EFI issued on 03 February 2016 by CENTRE OF TESTING SERVICE CO., LTD.)

4. Test Instrument

Control No.	Equipment	Manufacturer	Model	Serial No.	Cal. Due.
EMC001	EMI Test Receiver	Rohde & Schwarz	ESU40	100478	2021/1/3
EMC002	EMI Test Receiver	Rohde & Schwarz	ESU26	100590	2021/1/2
EMC003	Open Switch and Control Platform	Rohde & Schwarz	OSP130	101467	N/A
EMC009	Loop Antenna	Rohde & Schwarz	HFH2-Z2	100465	2021/1/9
EMC025	Biconilog (Type7)	ETS-Lindgren	3142E	00203547	2021/12/6
EMC028	DRG Horn (Medium)	ETS-Lindgren	3117	00201915	2020/11/15
EMC031	Standard Gain Horn	ETS-Lindgren	3160-09	LM9860	2021/5/12
EMC074	AMP	Rohde & Schwarz	SCU-01D	1904843	2021/6/22
EMC077	AMP	Rohde & Schwarz	SCU-18D	1952128	2021/6/22
EMC079	AMP	Rohde & Schwarz	SCU-26D	1879069	2021/6/22
EMC122	Programmable controller	PACIFIC smartsource	UPC12	N/A	2021/6/24
RF003	VECTOR SIGNAL GENERATOR	Rohde & Schwarz	SMBV100A	261569	2021/6/22
RF004	SIGNAL GENERATOR	Rohde & Schwarz	SMB100A	178493	2021/1/3
RF005	SPECTRUM ANALYZER	Rohde & Schwarz	FSW43	103893	2021/6/23
RF010	ATTENUATOR	WEINSCHEL	10 dB	TEMPNO.4824	2021/6/22
RF018	Notch Rf filter	Micro-Tronics	BRM50702-02	G043	2021/6/23
RF022	System DC Power Supply	KEYSIGHT	N5747A	US16D4132P	2021/6/22
41	Softwarer	Rohde & Schwarz	EMC32	Ver10.30.00	N/A

5. Support Equipment

Description	Manufacturer	Model	Serial No.
Note-PC	Samsung Electronics Co., Ltd.	NT500R5Q	0HV991BH500176W

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6. Channel List

Channel No.	Frequency(MHz)	Channel No.	Frequency(MHz)
0	2 402	20	2 442
1	2 404	21	2 444
2	2 406	22	2 446
3	2 408	23	2 448
4	2 410	24	2 450
5	2 412	25	2 452
6	2 414	26	2 454
7	2 416	27	2 456
8	2 418	28	2 458
9	2 420	29	2 460
10	2 422	30	2 462
11	2 424	31	2 464
12	2 426	32	2 466
13	2 428	33	2 468
14	2 430	34	2 470
15	2 432	35	2 472
16	2 434	36	2 474
17	2 436	37	2 476
18	2 438	38	2 478
19	2 440	39	2 480

7. Test Condition

Mode	Test Frequency(MHz)		
	Lowest	Middle	Highest
GFSK	2 402	2 440	2 480

8. EUT Operation mode

The equipment under test was operated during the measurement under the following conditions:

■ TX- X position 2 Mbps Rate (Worst case)

Operation mode 1:TX-X Position Low (2402MHz) , TX-X Position Middle (2440MHz),
TX-X Position High (2480MHz)

Note: Operation mode 1 TX -X position (2 Mbps Rate) of EUT is the radiated test worst case; so only these test results be recorded in the test report.

SECTION 3 SUMMARY

1. Summary of test results

Requirements	FCC Rule	Compliance
Antenna Requirement	§15.203	Complied
Conducted Emissions	§15.207	N/A
Radiated Emission Restricted Band	§15.205 §15.209 §15.249	Complied
Test method: According to ANSI C63.10-2013 N/A is an abbreviation for Not Applicable. Note : **Test was performed by modular transmitter(Model Name: BMD-300, FCC ID: 2AA9B04, Test Report No. CGZ3160202-00109-EFI issued on 03 February 2016 by CENTRE OF TESTING SERVICE CO., LTD.)**		

2. Measurement Uncertainty

Parameters	Uncertainty (k = 2)	
Maximum Peak Conducted Output Power	1.66 dB	
Power Spectral Density	1.32 dB	
Channel Bandwidth	2.02 kHz	
Spurious Emissions (Conducted)	1.32 dB	
Spurious Emissions (Radiated)	9 kHz to 30 MHz	4.5 dB
	30 MHz to 1 GHz	4.6 dB
	1 GHz to 6 GHz	5.6 dB
	6 GHz to 18 GHz	5.8 dB
	18 GHz to 26.5 GHz	4.5 dB

SECTION 4 TEST RESULT

07. **Antenna Requirement**

07.3**Rule**

According to §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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

1.2 Test Results – Complied

The antenna(BMD-300 Module) of this product is **permanently attached** and there are no provisions for connection to an external antenna. It complies with the requirement of §15.203

Uesd Antenna	
Product Name	Peak Gain (dBi)
BMD-300 Module	-3.30

2. Radiated Spurious Emissions & Restricted Band

2.1 Rule

According to §15.209(a), Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (kHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009 – 0.490	2 400/F(kHz)	20log (2 400/F(kHz))	300
0.490 – 1.705	24 000/F(kHz)	20log (24 000/F(kHz))	30
1.705 – 30	30	30	30
30 – 88	100**	100**	3
88 – 216	150**	150**	3
216 – 960	200**	200**	3
Above 960	500	500	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §15.231 and 15.241.

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According to §15.205(a) and (b), only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.009 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.694 75 – 16.695 25	608 – 614	5.35 – 5.46
2.173 5 – 2.190 5	16.804 25 – 16.804 75	960 – 1 240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1 300 – 1 427	8.025 – 8.5
4.177 25 – 4.177 75	37.5 – 38.25	1 435 – 1 626.5	9.0 – 9.2
4.207 25 – 4.207 75	73 – 74.6	1 645.5 – 1 646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1 660 – 1 710	10.6 – 12.7
6.267 75 – 6.268 25	108 – 121.94	1 718.8 – 1 722.2	13.25 – 13.4
6.311 75 – 6.312 25	123 – 138	2 200 – 2 300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2 310 – 2 390	15.35 – 16.2
8.362 – 8.366	156.524 75 – 156.525 25	2 483.5 – 2 500	17.7 – 21.4
8.376 25 – 8.386 75	156.7 – 156.9	2 690 – 2 900	22.01 – 23.12
8.414 25 – 8.414 75	162.012 5 – 167.17	3 260 – 3 267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3 332 – 3 339	31.2 – 31.8
12.519 75 – 12.520 25	240 – 285	3 345.8 – 3 358	36.43 – 36.5
12.576 75 – 12.577 25	322 – 335.4	3 600 – 4 400	Above 38.6
13.36 – 13.41			

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1 000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1 000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements

2.2 Measurement Procedure

According to ANSI C63.10-2013, 11.11 Emissions in non-restricted frequency band, and 11.12 Emissions in restricted frequency bands

2.2.1. Test Procedures for emission below 30 MHz

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Then antenna is a loop antenna is fixed at one meter above the ground to determine the maximum value of the field strength. Both parallel and perpendicular of the antenna are set to make the measurement.
3. For each suspected emission, the EUT was arranged to its worst case and then the table was turned from 0 degrees to 360 degrees to find the maximum reading.
4. The test-receiver system was set to quasi peak detect function and Specified Bandwidth with Maximum Hold Mode.

2.2.2. Test Procedures for emission below 1 000 MHz & above 1 000 MHz

07. The EUT was placed on the top of a rotating table 0.8 meters above the ground at anechoic chamber test site (below 1 GHz) and 1.5 meters above the ground at anechoic chamber test site (above 1 GHz).

The table was rotated 360 degrees to determine the position of the highest radiation.

2. During performing radiated emission below 1 GHz, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower. During performing radiated emission above 1 GHz, the EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna is a bi-log antenna, a horn antenna and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength (Keeping antenna aimed at EUT). Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. The test-receiver system was set to quasi peak detect function (below 1 GHz), peak detect function and average detect function (above 1 GHz).

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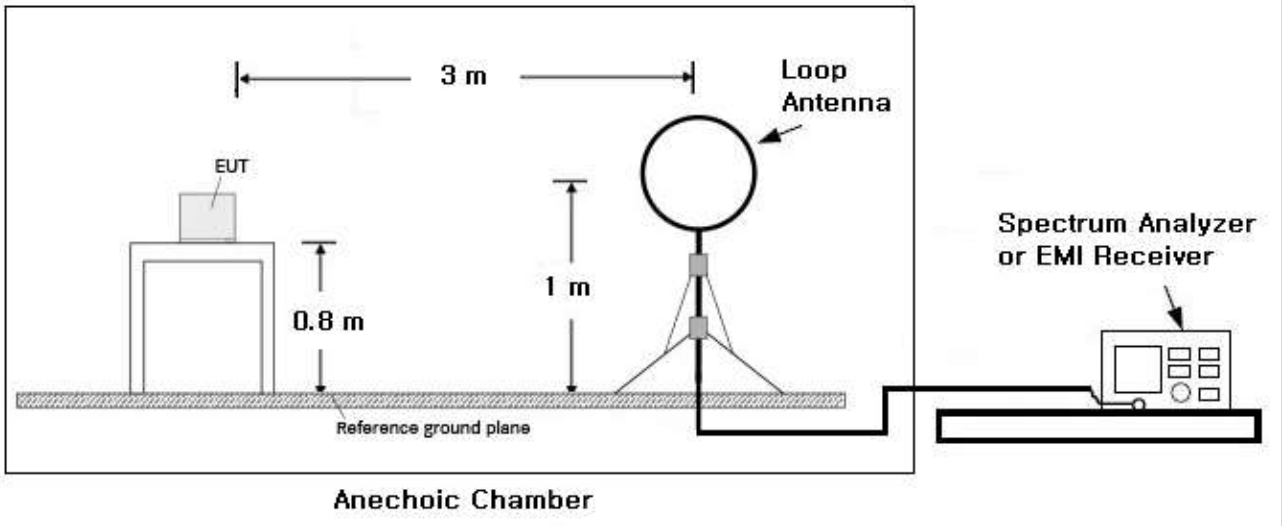
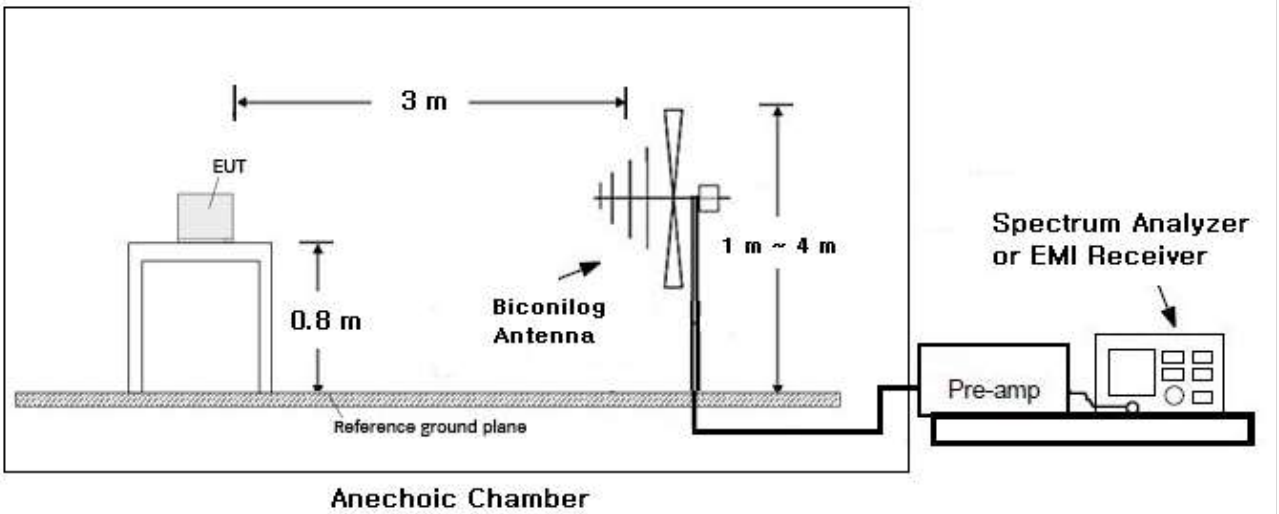
2.2.3. Test Setup

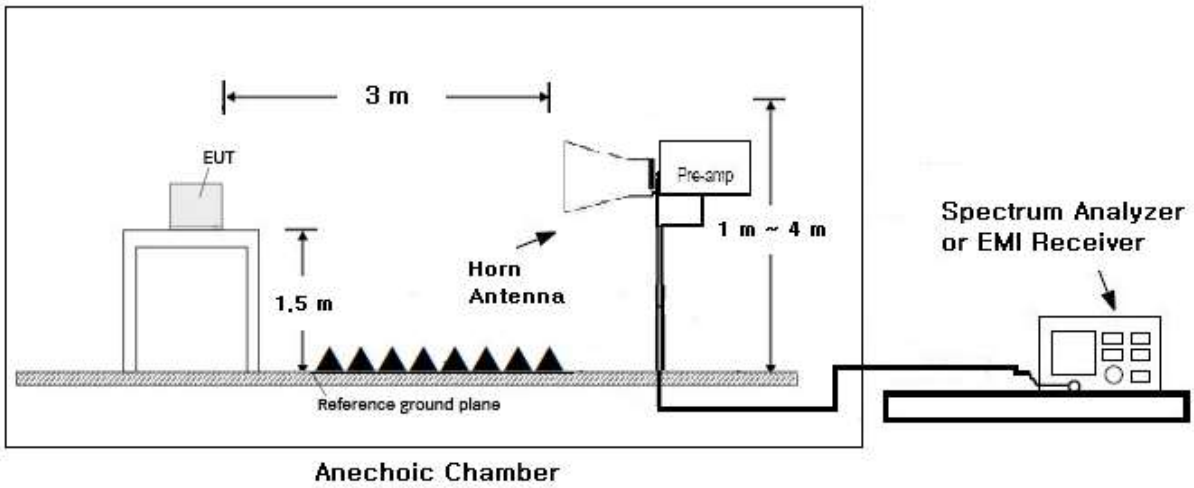
07. 9 kHz to 30 MHz Emissions



2. 30 MHz to 1 000 MHz Emissions



07. Above 1 000 MHz Emissions



NOTE;

All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

07. Unwanted Emissions into Non-Restricted Frequency Bands

- The Reference Level Measurement refer to section 11.2
Set Analyzer centre frequency to DTS channel centre frequency, SPAN ≥ 1.5 times the DTS bandwidth, the RBW = 100 kHz and VBW ≥ 3 × RBW, Detector = Peak, Sweep time = Auto couple, Trace = Max hold.

- Unwanted Emissions Level Measurement refer to section 11.3
Set the centre frequency and span to encompass frequency range to be measured, the RBW = 100 kHz and VBW ≥ 3 × RBW, Detector = Peak, Sweep time = Auto couple, Trace = Max hold.

2. Unwanted Emissions into Restricted Frequency Bands

- Peak Power measurement procedure refer to section 12.2.4
Set RBW = as specified in Table 1, VBW ≥ 3 x RBW, Detector = Peak, Sweep time = auto, Trace = Max hold.

Table 1- RBW as a function of frequency

Frequency	RBW
9 – 150 kHz	200 – 300 Hz
0.15 – 30 MHz	9 – 10 kHz
30 – 1 000 MHz	100 – 120 kHz
> 1 000 MHz	1 MHz

-Average Power measurements procedure refer to section 12.2.5.2
The EUT shall be configured to operate at the maximum achievable duty cycle.
Measure the duty cycle, x, of the transmitter output signal as described in section 6.0.
Set RBW = 1 MHz, VBW ≥ 3 x RBW, Detector = RMS, if span / (# of points in sweep) ≤ (RBW/2).
Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied then the detector mode shall be set to peak.

Averaging type = power (i.e., RMS).
As an alternative the detector and averaging type may be set for linear voltage averaging.
Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used. Sweep time = auto, Perform a trace average of at least 100 traces.

A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is 10 log (1/x), where x is the duty cycle.
3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

The EUT is manipulated through three orthogonal planes (X, Y, Z). Worst orthogonal plan of EUT is **X – axis** during radiation test.

2.3 Test results – Complied

9 kHz ~ 30 MHz

Test Mode – GFSK 2 Mbps – Lowest Channel -2 402 MHz (Worst Case)

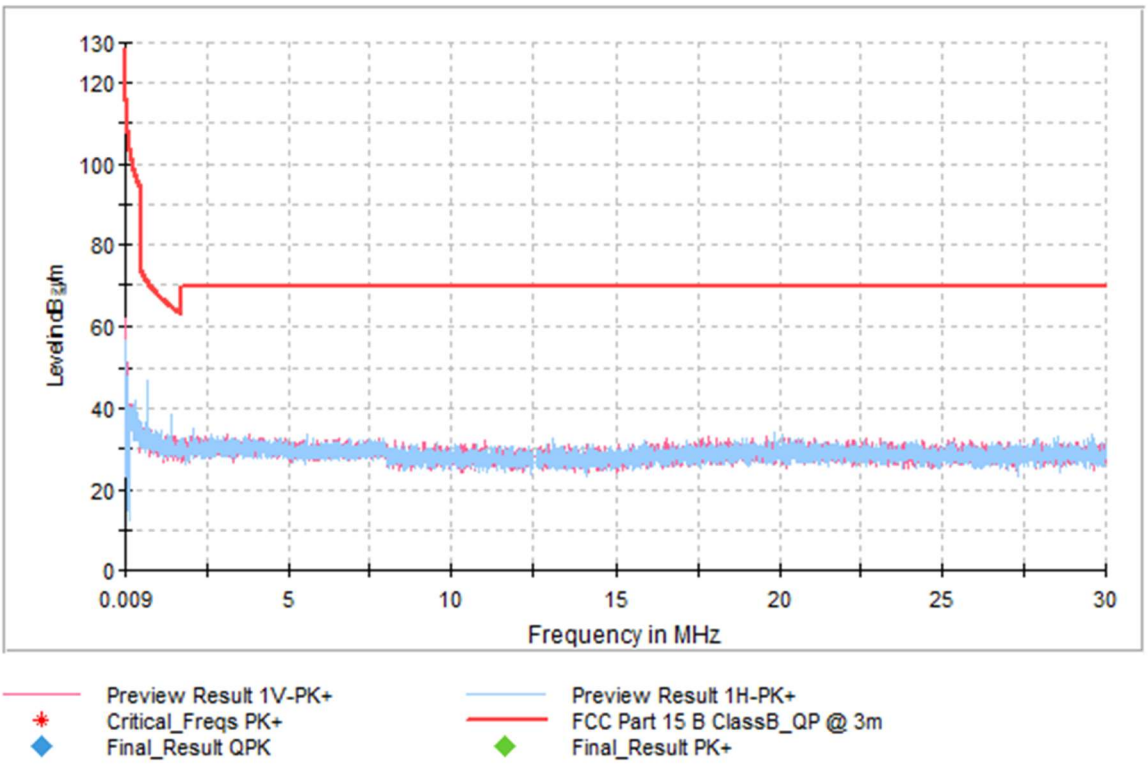
Frequency [MHz]	QuasiPeak [dB(µV)/m]	Limit [dB(µV/m)]	Margin [dB]	Bandwidth [kHz]	Pol.	Azimuth [deg]	Corr. [dB/m]
No spurious emissions were detected within 20 dB of the limit.							

Note :

1. According to § 15.31(o), Emission levels are not reported much lower than the limits by over 20 dB.
2. QuasiPeak[dB(µV)/m] = Reading value[dB(µV)] + Corr.[dB/m]

Test Data

- 9 kHz ~ 30 MHz



30 MHz ~ 1 GHz

Test Mode – GFSK 2 Mbps – Lowest Channel -2 402 MHz (Worst Case)

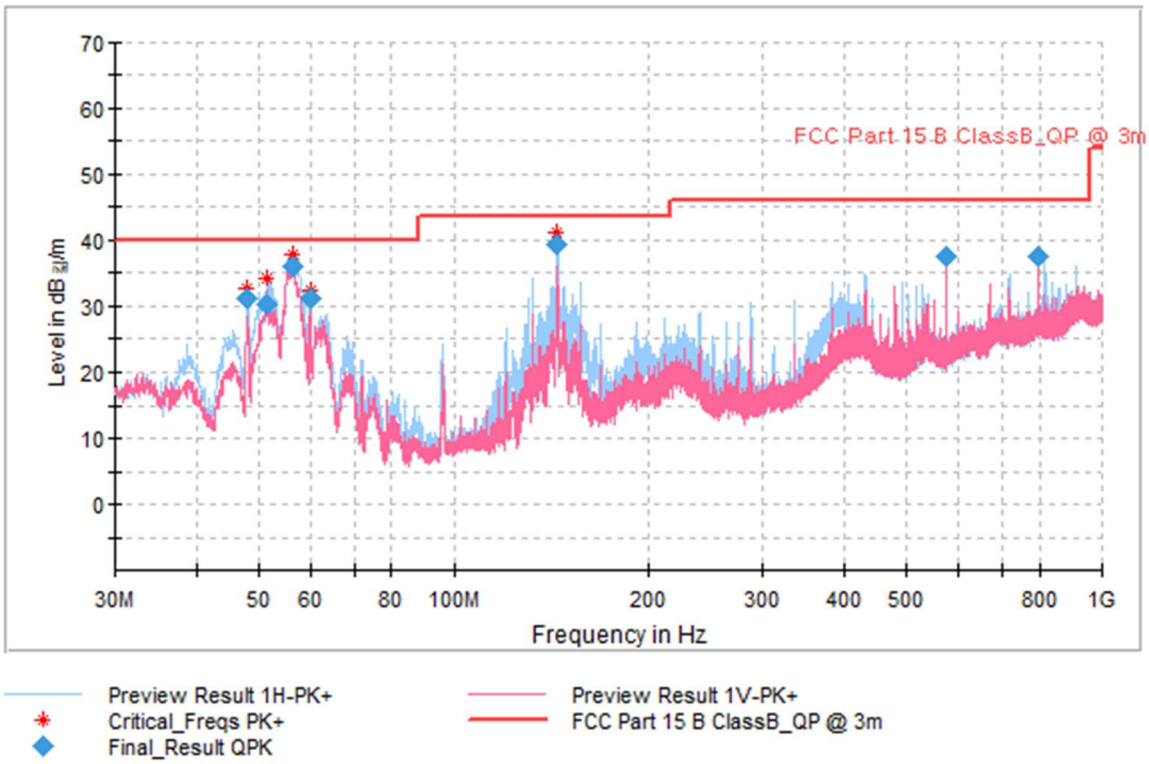
Frequency [MHz]	QuasiPeak [dB(µV)/m]	Limit [dB(µV/m)]	Margin [dB]	Bandwidth [kHz]	Height [cm]	Pol.	Azimuth [deg]	Corr. [dB/m]
47.95	30.97	40.00	9.03	120.0	400.0	H	211.0	-15.68
51.54	30.25	40.00	9.75	120.0	400.0	H	0.0	-16.28
56.16	35.82	40.00	4.18	120.0	300.0	H	8.0	-16.3
60.02	31.03	40.00	8.97	120.0	300.0	H	8.0	-15.84
143.81	39.35	43.50	4.15	120.0	200.0	H	23.0	-12.93
576.83	37.34	46.00	8.66	120.0	100.0	V	52.0	-0.03
796.55	37.44	46.00	8.56	120.0	100.0	V	306.0	4.2

Note :

1. According to § 15.31(o), Emission levels are not reported much lower than the limits by over 20 dB.
2. QuasiPeak[dB(µV)/m] = Reading value[dB(µV)] + Corr.[dB/m]

Test Data

- 30 MHz ~ 1 GHz



1 GHz ~ 18 GHz

Test Mode – GFSK 2 Mbps – Lowest Channel -2 402 MHz

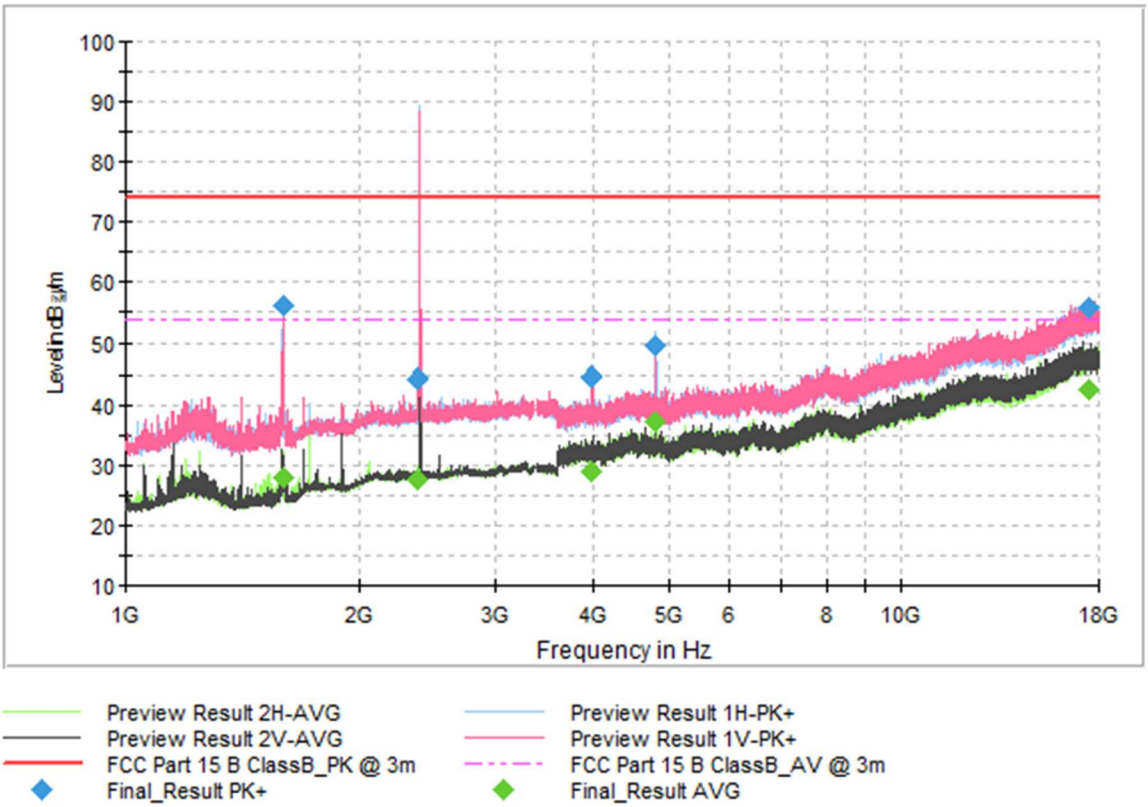
Frequency [MHz]	MaxPeak [dB(µV)/m]	Average [dB(µV)/m]	Limit [dB(µV/m)]	Margin [dB]	Bandwidth [kHz]	Height [cm]	Pol.	Azimuth [deg]	Corr. [dB/m]
#1 595.64	56.04	---	74.00	17.96	1000.0	100.0	V	310.0	-3.55
#1 595.64	---	28.08	54.00	25.92	1000.0	100.0	V	310.0	-3.55
#2 389.16	---	27.47	54.00	26.53	1000.0	100.0	V	310.0	1.15
#2 389.16	44.07	---	74.00	29.93	1000.0	100.0	V	310.0	1.15
#3 985.37	44.69	---	74.00	29.31	1000.0	100.0	V	164.0	4.02
#3 985.37	---	28.96	54.00	25.04	1000.0	100.0	V	164.0	4.02
#4 804.22	---	37.38	54.00	16.62	1000.0	200.0	H	199.0	4.85
#4 804.22	49.45	---	74.00	24.55	1000.0	200.0	H	199.0	4.85
17 451.62	---	42.49	54.00	11.51	1000.0	300.0	V	102.0	24.12
17 451.62	55.71	---	74.00	18.29	1000.0	300.0	V	102.0	24.12

Note :

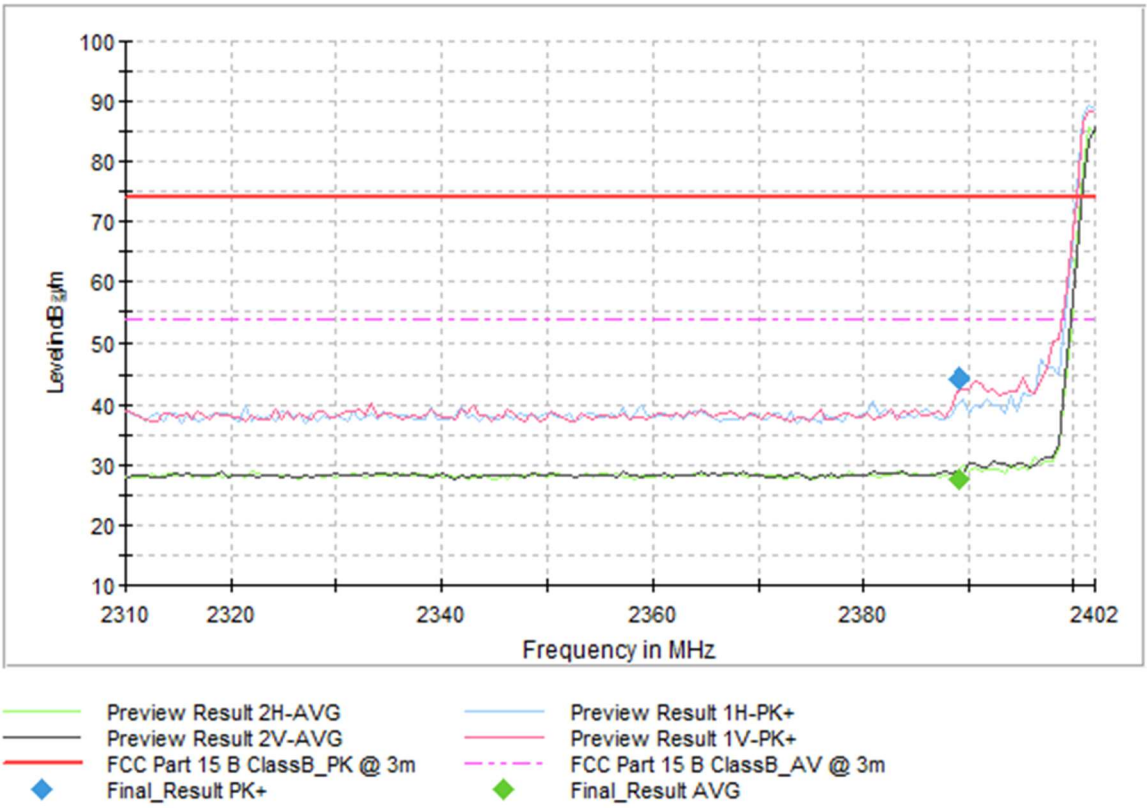
1. According to § 15.31(o), Emission levels are not reported much lower than the limits by over 20 dB.
2. "#" means the restricted band.
3. Maxpeak & Average = reading value[dB(µV)] + Corr.[dB/m]

Test Data

- 1 GHz ~ 18 GHz



- Restricted Band



Test Mode – GFSK 2 Mbps – Middle Channel -2 440 MHz

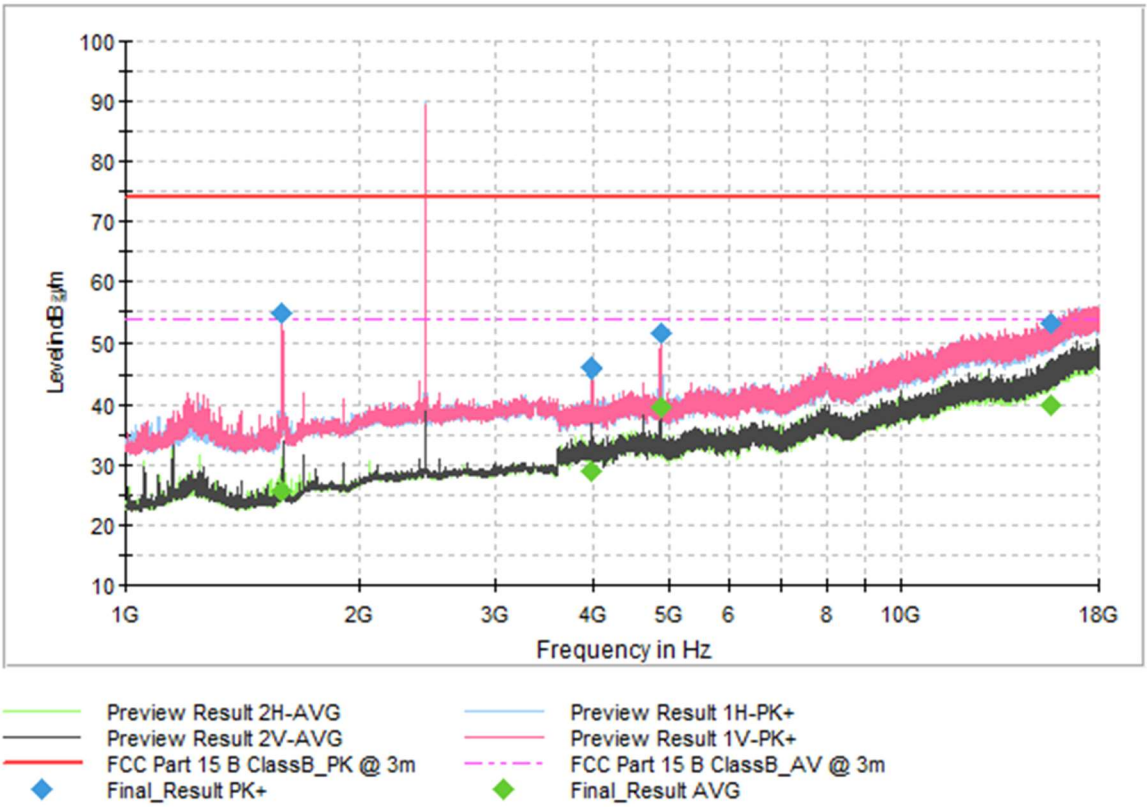
Frequency [MHz]	MaxPeak [dB(µV)/m]	Average [dB(µV)/m]	Limit [dB(µV/m)]	Margin [dB]	Bandwidth [kHz]	Height [cm]	Pol.	Azimuth [deg]	Corr. [dB/m]
#1 593.940	---	25.61	54.00	28.39	1000.0	100.0	V	165.0	-3.57
#1 593.940	54.84	---	74.00	19.16	1000.0	100.0	V	165.0	-3.57
#3 982.050	45.81	---	74.00	28.19	1000.0	100.0	V	346.0	3.99
#3 982.050	---	28.83	54.00	25.17	1000.0	100.0	V	346.0	3.99
#4 880.250	---	39.66	54.00	14.34	1000.0	200.0	H	163.0	4.83
#4 880.250	51.48	---	74.00	22.52	1000.0	200.0	H	163.0	4.83
#15 631.940	53.07	---	74.00	20.93	1000.0	100.0	V	254.0	21.47
#15 631.940	---	39.83	54.00	14.17	1000.0	100.0	V	254.0	21.47

Note :

1. According to § 15.31(o), Emission levels are not reported much lower than the limits by over 20 dB.
2. "#" means the restricted band.
3. Maxpeak & Average = reading value[dB(µV)] + Corr.[dB/m]

Test Data

- 1 GHz ~ 18 GHz



Test Mode – GFSK 2 Mbps – Highest Channel -2 480 MHz

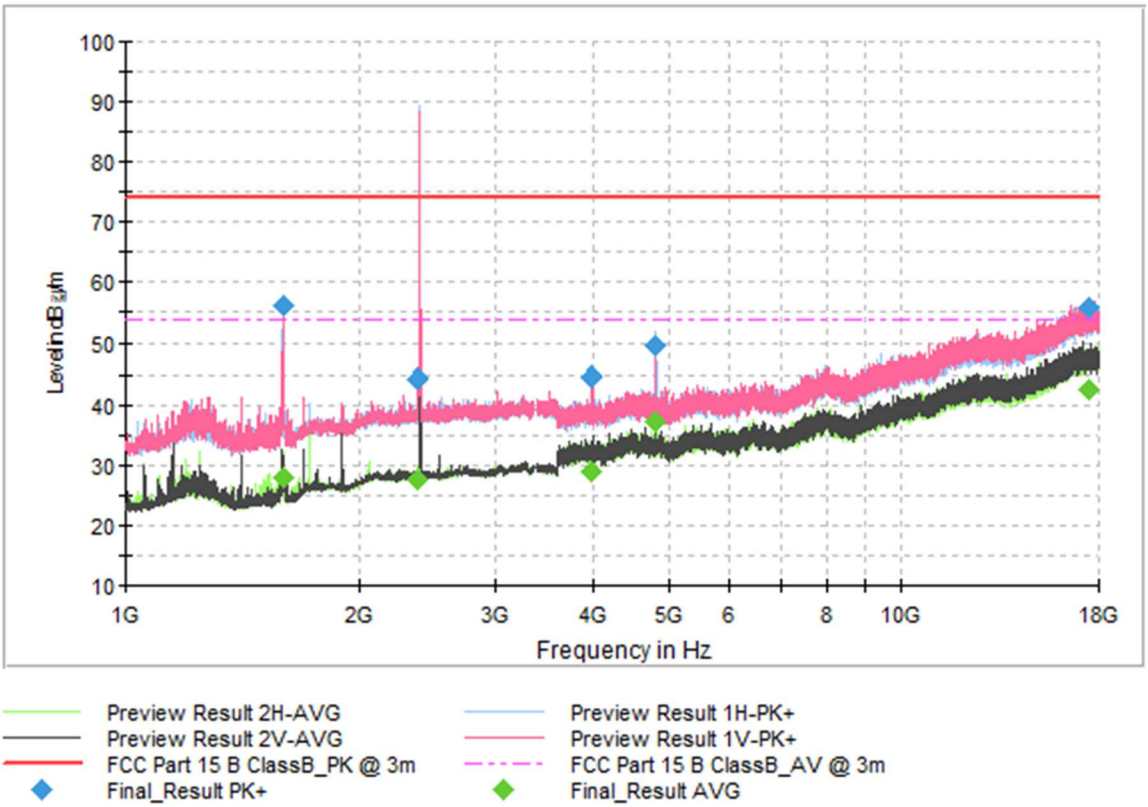
Frequency [MHz]	MaxPeak [dB(µV)/m]	Average [dB(µV)/m]	Limit [dB(µV/m)]	Margin [dB]	Bandwidth [kHz]	Height [cm]	Pol.	Azimuth [deg]	Corr. [dB/m]
#1 596.980	---	27.89	54.00	26.11	1000.0	300.0	V	157.0	-3.53
#1 596.980	53.70	---	74.00	20.30	1000.0	300.0	V	157.0	-3.53
#2 483.600	52.01	---	74.00	21.99	1000.0	400.0	V	353.0	1.48
#2 483.600	---	28.24	54.00	25.76	1000.0	400.0	V	353.0	1.48
#4 643.410	46.80	---	74.00	27.20	1000.0	100.0	H	168.0	5
#4 643.410	---	29.51	54.00	24.49	1000.0	100.0	H	168.0	5
#4 959.070	49.56	---	74.00	24.44	1000.0	200.0	H	351.0	4.74
#4 959.070	---	34.62	54.00	19.38	1000.0	200.0	H	351.0	4.74
17 516.160	55.04	---	74.00	18.96	1000.0	100.0	H	286.0	24.25
17 516.160	---	42.40	54.00	11.60	1000.0	100.0	H	286.0	24.25

Note :

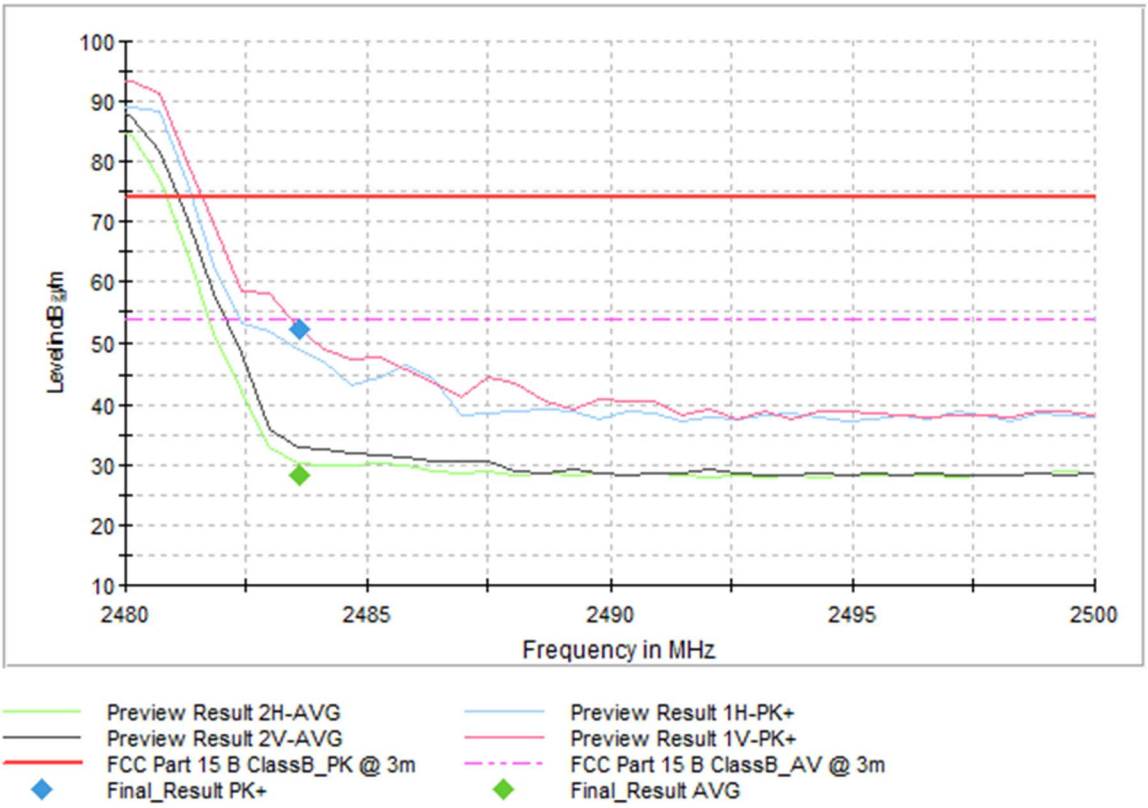
1. According to § 15.31(o), Emission levels are not reported much lower than the limits by over 20 dB.
2. "#" means the restricted band.
3. Maxpeak & Average = reading value[dB(µV)] + Corr.[dB/m]

Test Data

- 1 GHz ~ 18 GHz



- Restricted Band



18 GHz ~ 26.5 GHz

Test Mode – GFSK 2 Mbps – Lowest Channel -2 402 MHz

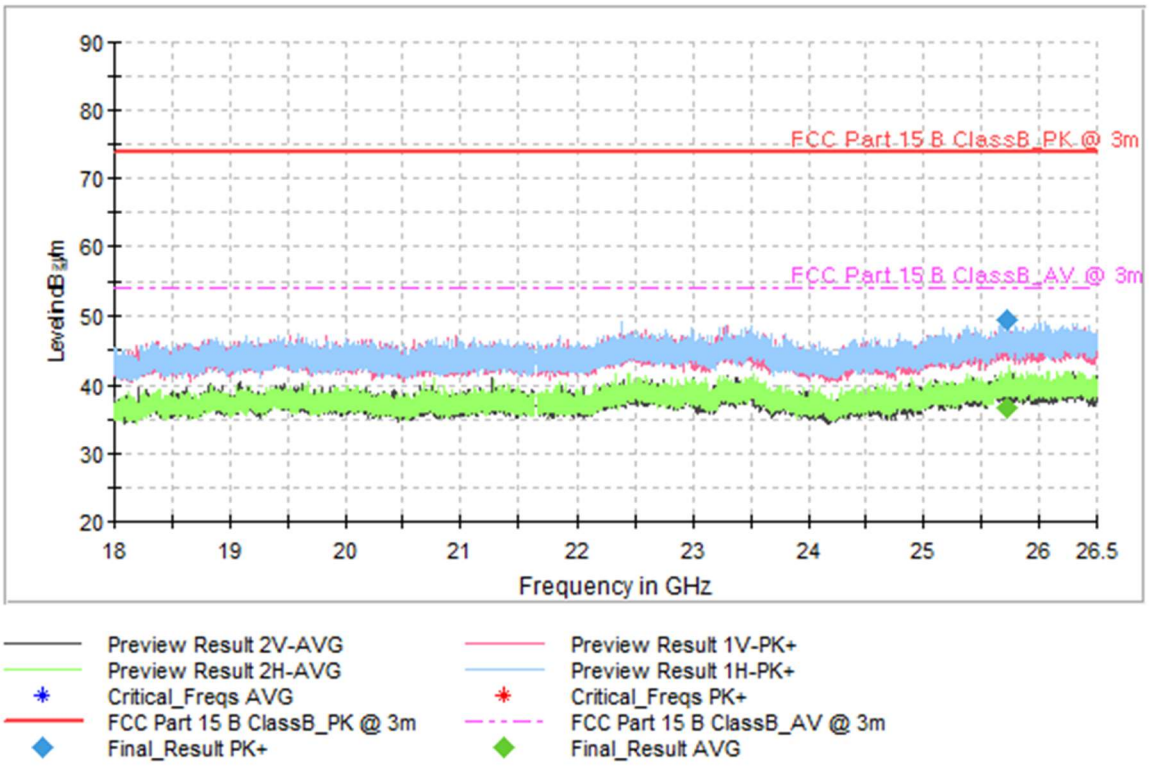
Frequency [MHz]	MaxPeak [dB(µV)/m]	Average [dB(µV)/m]	Limit [dB(µV/m)]	Margin [dB]	Bandwidth [kHz]	Height [cm]	Pol.	Azimuth [deg]	Corr. [dB/m]
25 723.79	---	36.77	54.00	17.23	1000.0	100.0	H	346.0	10.17
25 723.79	49.21	---	74.00	24.79	1000.0	100.0	H	346.0	10.17

Note :

1. According to § 15.31(o), Emission levels are not reported much lower than the limits by over 20 dB.
2. "#" means the restricted band.
3. Maxpeak & Average = reading value[dB(µV)] + Corr.[dB/m]

Test Data

- 18 GHz ~ 26.5 GHz



Test Mode – GFSK 2 Mbps – Middle Channel -2 440 MHz

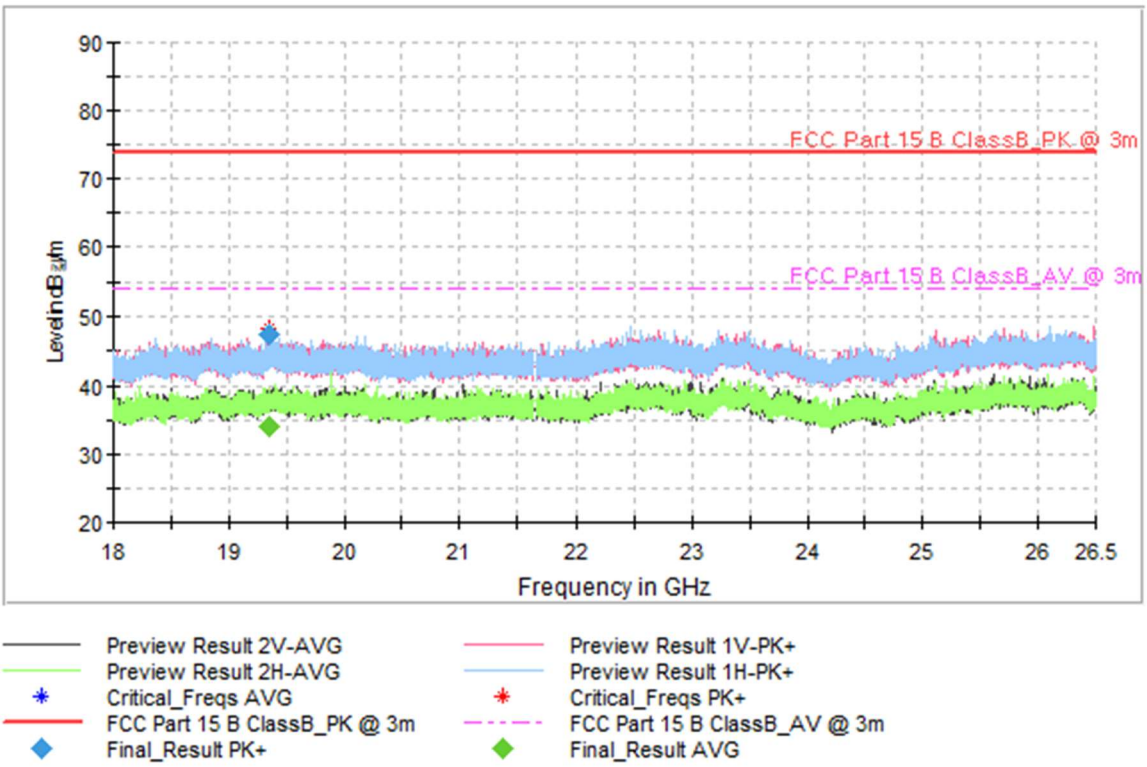
Frequency [MHz]	MaxPeak [dB(µV)/m]	Average [dB(µV)/m]	Limit [dB(µV/m)]	Margin [dB]	Bandwidth [kHz]	Height [cm]	Pol.	Azimuth [deg]	Corr. [dB/m]
#19 357.17	---	34.02	54.00	19.98	1000.0	200.0	V	352.0	4.73
#19 357.17	47.21	---	74.00	26.79	1000.0	200.0	V	352.0	4.73

Note :

1. According to § 15.31(o), Emission levels are not reported much lower than the limits by over 20 dB.
2. "#" means the restricted band.
3. Maxpeak & Average = reading value[dB(µV)] + Corr.[dB/m]

Test Data

- 18 GHz ~ 26.5 GHz



Test Mode – GFSK 2 Mbps – Highest Channel -2 480 MHz

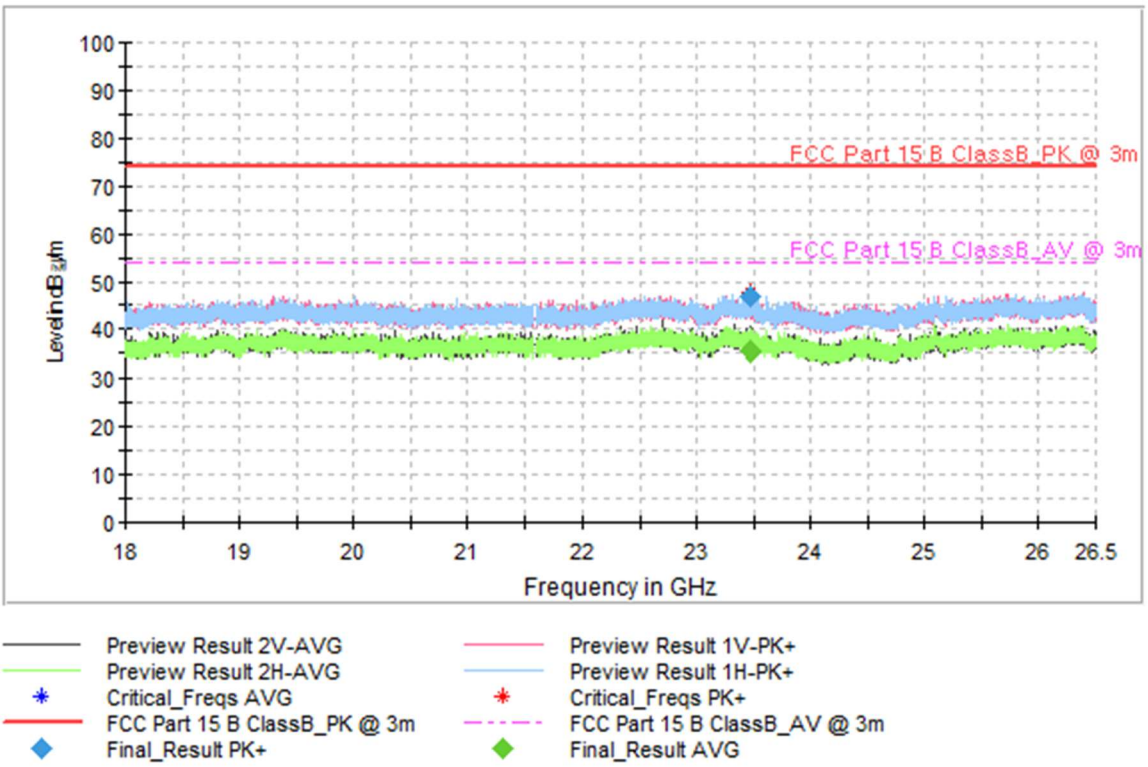
Frequency [MHz]	MaxPeak [dB(µV)/m]	Average [dB(µV)/m]	Limit [dB(µV/m)]	Margin [dB]	Bandwidth [kHz]	Height [cm]	Pol.	Azimuth [deg]	Corr. [dB/m]
23 472.79	---	35.54	54.00	18.46	1000.0	200.0	V	0.0	9.91
23 472.79	47.05	---	74.00	26.95	1000.0	200.0	V	0.0	9.91

Note :

1. According to § 15.31(o), Emission levels are not reported much lower than the limits by over 20 dB.
2. "#" means the restricted band.
3. Maxpeak & Average = reading value[dB(µV)] + Corr.[dB/m]

Test Data

- 18 GHz ~ 26.5 GHz



07. **Conducted Emissions**

3.1 Rule

According to §15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 µH/50 Ω line impedance stabilization network (LISN).
Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency range (MHz)	Limits dB(µV)			
	Quasi-peak		Average	
	Class A	Class B	Class A	Class B
0.15 to 0.50	79	66 to 56	66	56 to 46
0.50 to 5	73	56	60	46
5 to 30		60		50

Note 1 The lower limit shall apply at the transition frequencies.
Note 2 The limit decreases linearly with the logarithm of the frequency in the range (0.15 ~ 0.5) MHz.
Note 3 Result (dBµV) = Reading (dBµV) + Corr. (Insertion Loss (dB) + Cable Loss (dB))
Result: Final value, Reading: Receiver reading value, Corr.: Correction Factor
Margin = Limit – Result

3.2 Measurement Procedure

All data rates and modes were investigated for this test. The full data for the worst case data rate are reported in this section.

AC line conducted emissions from the EUT were measured according to the dictates of ANSI C63.10-2013

1. The test procedure is performed in a 6.5 m × 3.6 m × 3.6 m (L × W × H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W) × 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.
3. The excess power cable between the EUT and the LISN was bundled. All connecting cables of EUT were moved to find the maximum emission.

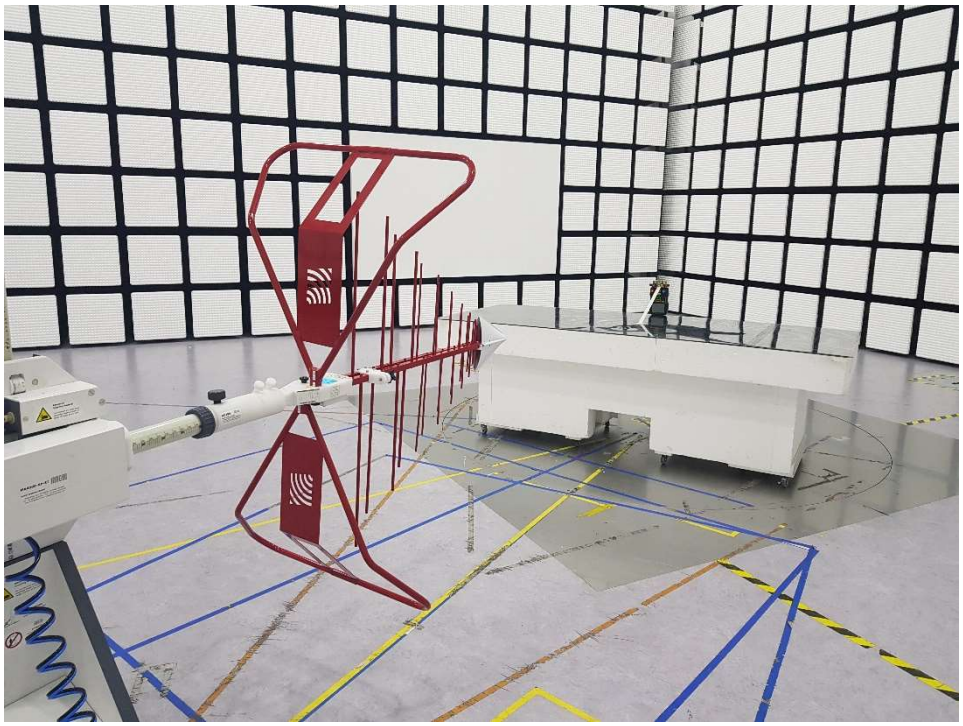
3.3 Test result – N/A

SECTION 5 APPENDIX 1 – PHOTOS

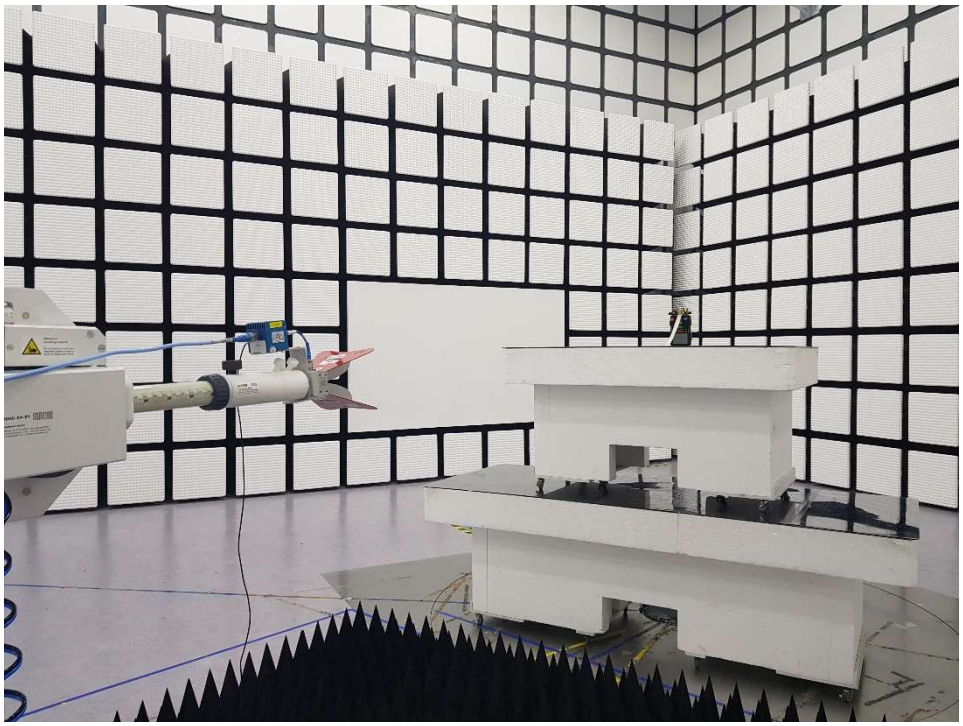
Setup Photos

- Radiated Emissions (9 kHz ~ 30 MHz)

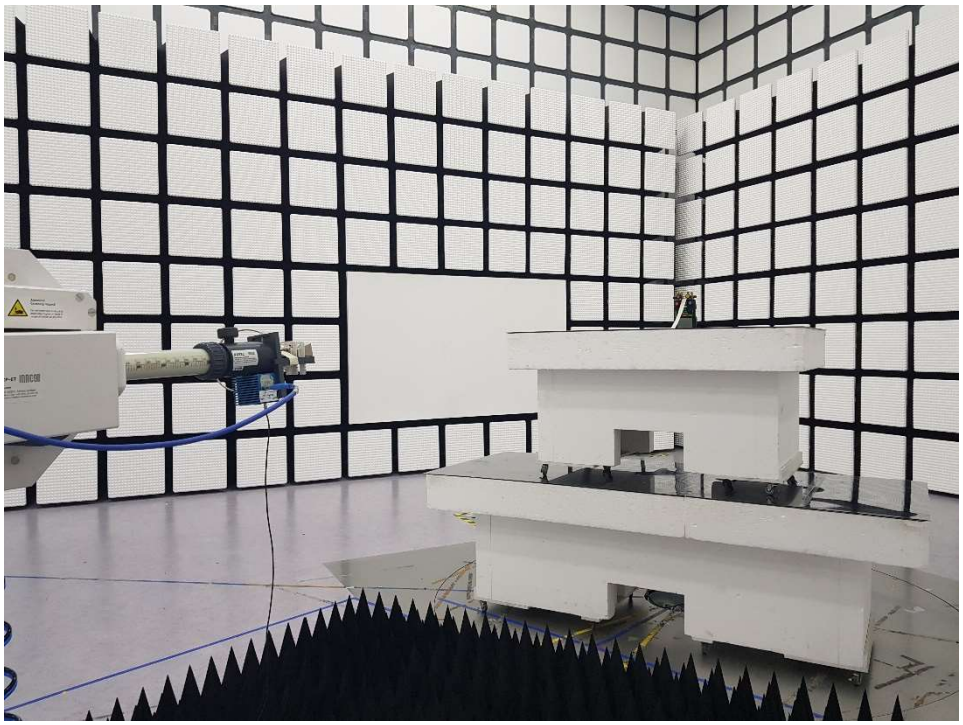
- Radiated Emissions (30 MHz ~ 1 GHz)



- Radiated Emissions (1 GHz ~ 18 GHz)



- Radiated Emissions (18 GHz ~ 26.5 GHz)



SECTION 6 REVISION HISTORY

REVISION HISTORY			
Revision	Report No.	Issue Date	Description
0	200500063SEL-TEL1	07 Jul. 2020	Initial
1	200500063SEL-TEL1(R1)	07 Aug. 2020	FCCID and FCC Rule revised
2	200500063SEL-TEL1(R1)	12 Aug. 2020	Page 6. Note Added

- End -