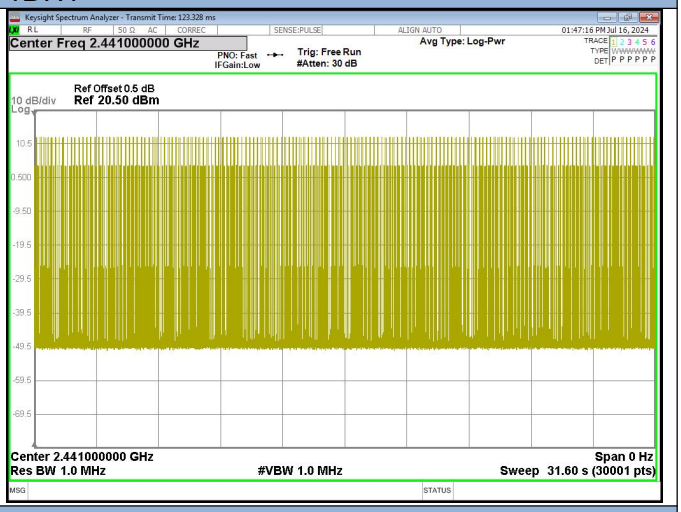
8.5 ORIGINAL TEST DATA
ANT 1

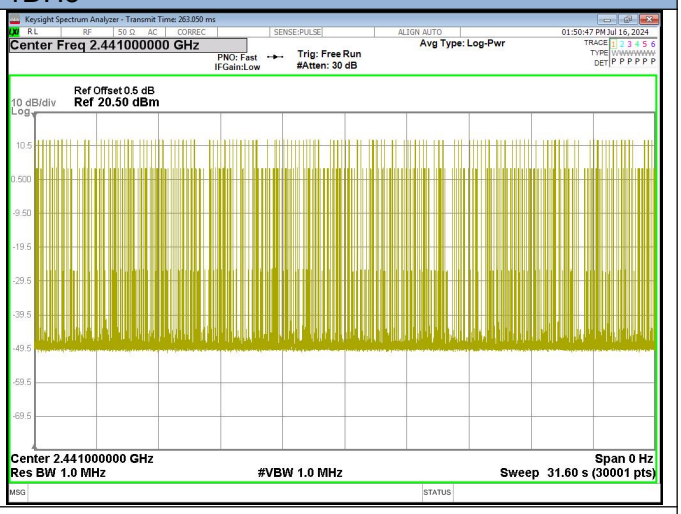
1DH1

1DH1



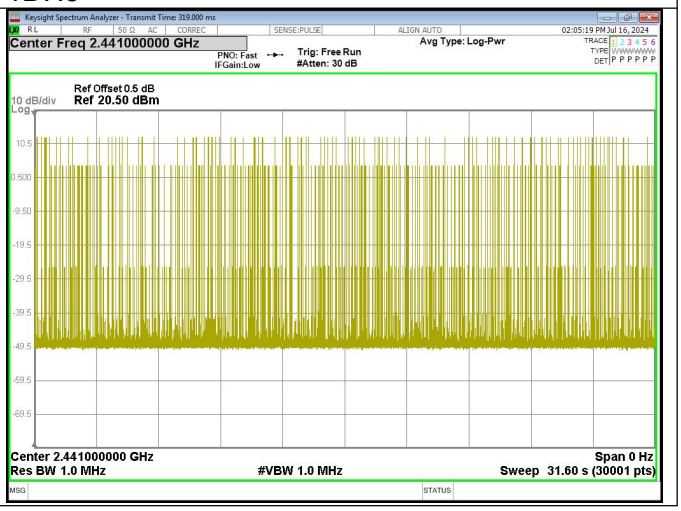
1DH3

1DH3



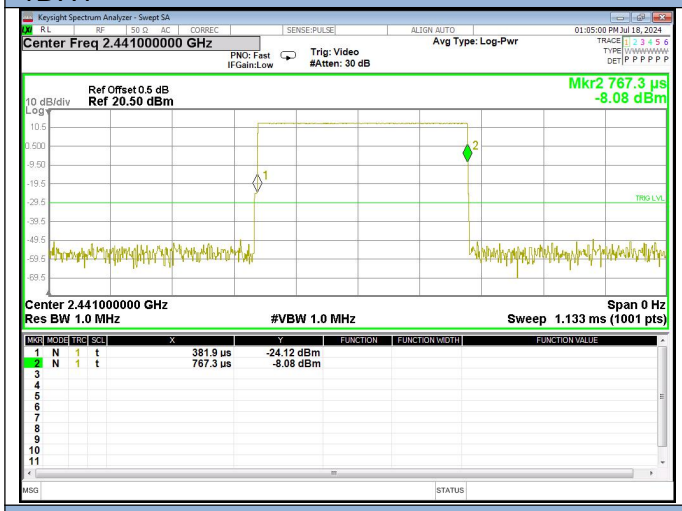
1DH5

1DH5

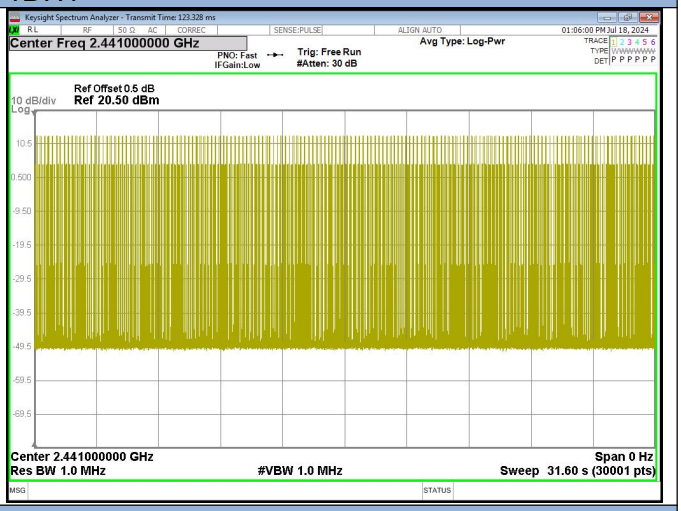


ANT 2

1DH1

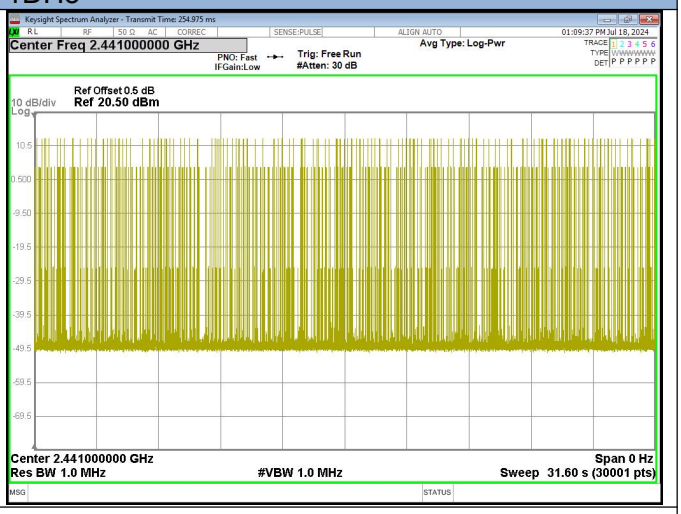


1DH1



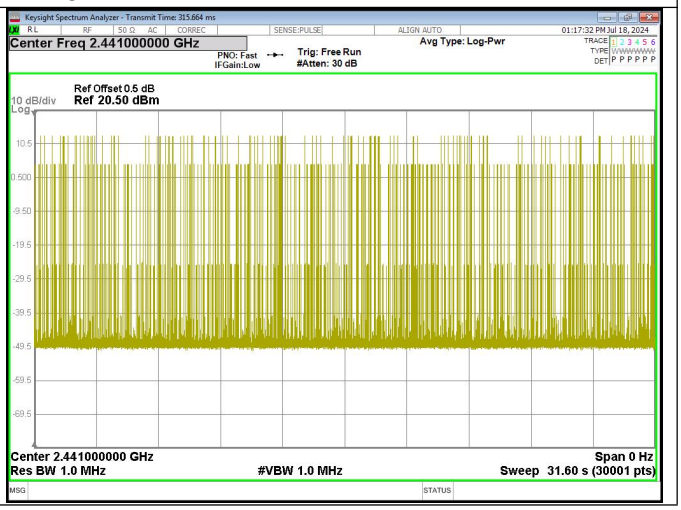
1DH3

1DH3



1DH5

1DH5



9. HOPPING CHANNEL SEPARATION MEASUREMEN

9.1 LIMIT

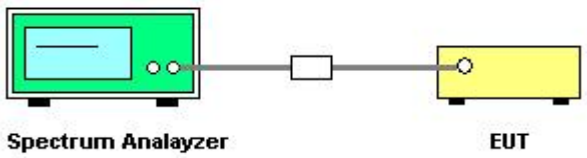
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> 20 dB Bandwidth or Channel Separation
RB	30 kHz (20dB Bandwidth) / 30 kHz (Channel Separation)
VB	100 kHz (20dB Bandwidth) /100 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

9.2 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
b. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for 20 dB bandwidth measurement.
c. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for channel separation measurement

9.3 TEST SETUP



9.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.5 TEST RESULTS

Temperature:	25 °C	Relative Humidity:	60%
Test Mode:	GFSK Mode	Test Voltage:	DC 5V

ANT 1

Modulation	Test Mode	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
GFSK	1DH1	2402	0.808	> 0.65	Pass
	1DH1	2441	0.678	> 0.64	Pass
	1DH1	2480	1.154	> 0.64	Pass

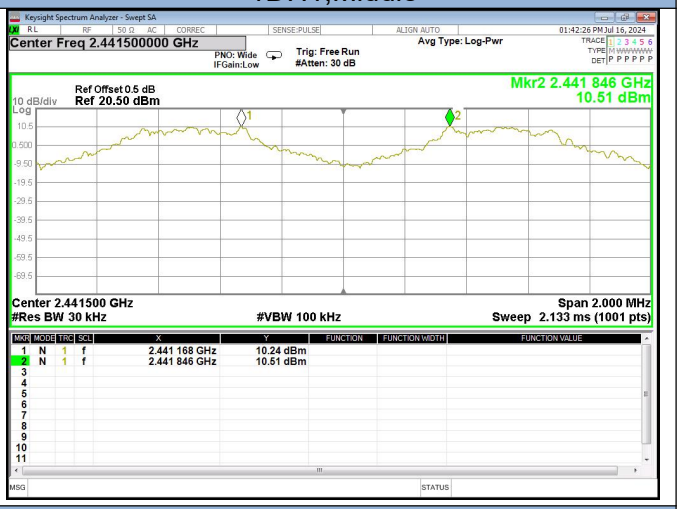
ANT 2

Modulation	Test Mode	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
GFSK	1DH1	2402	1.146	> 0.65	Pass
	1DH1	2441	0.840	> 0.64	Pass
	1DH1	2480	1.004	> 0.68	Pass

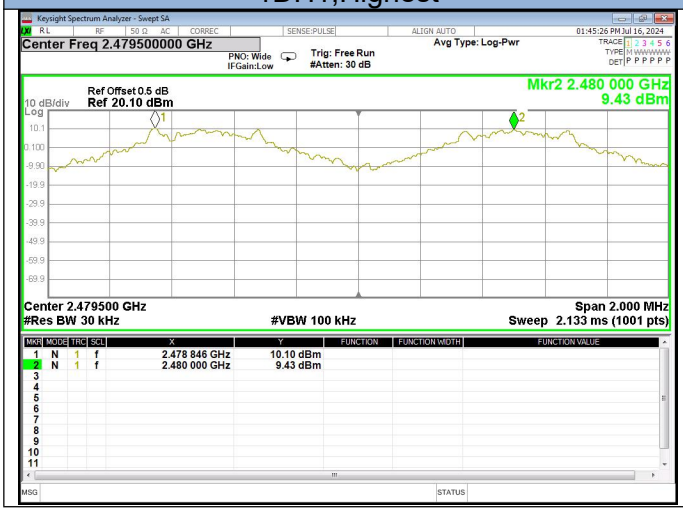
ANT 1

1DH1,Lowest

1DH1,Middle



1DH1,Highest

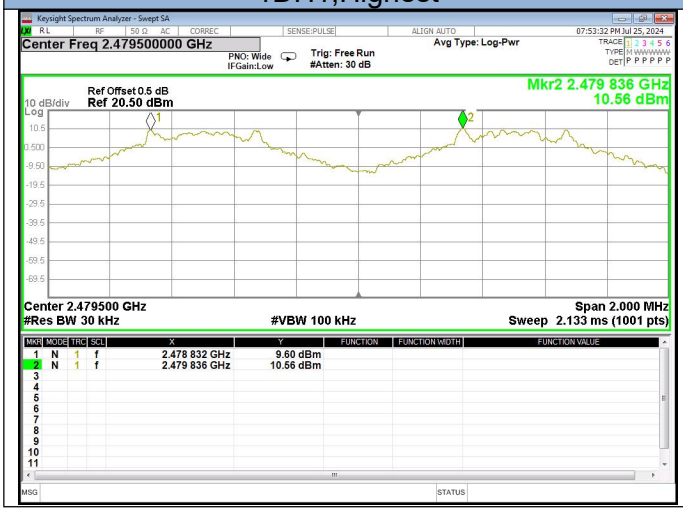


ANT 2

1DH1,Lowest

1DH1,Middle

1DH1,Highest



10 CONDUCTED EMISSION MEASUREMENT

10.1 LIMIT

Operating frequency band. In case the emission fall within the restricted band specified on Part 207(a) limit in the table below has to be followed.

FREQUENCY (MHz)	Conducted Emissionlimit (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

(4) The tighter limit applies at the band edges.

(5) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

10.2 TEST PROCEDURE

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

a. The EUT was 0.1 meters from the horizontal ground plane and 0.4 meters from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

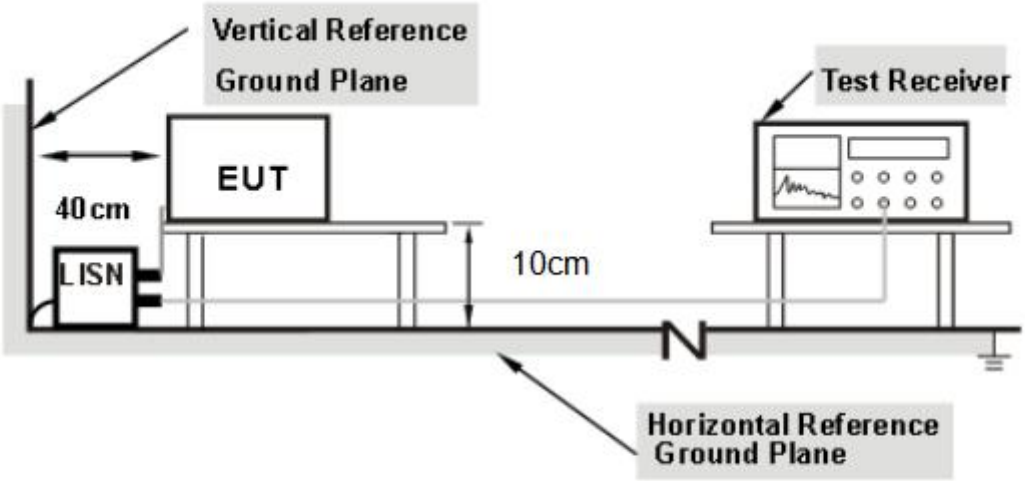
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

10.3 TEST SETUP



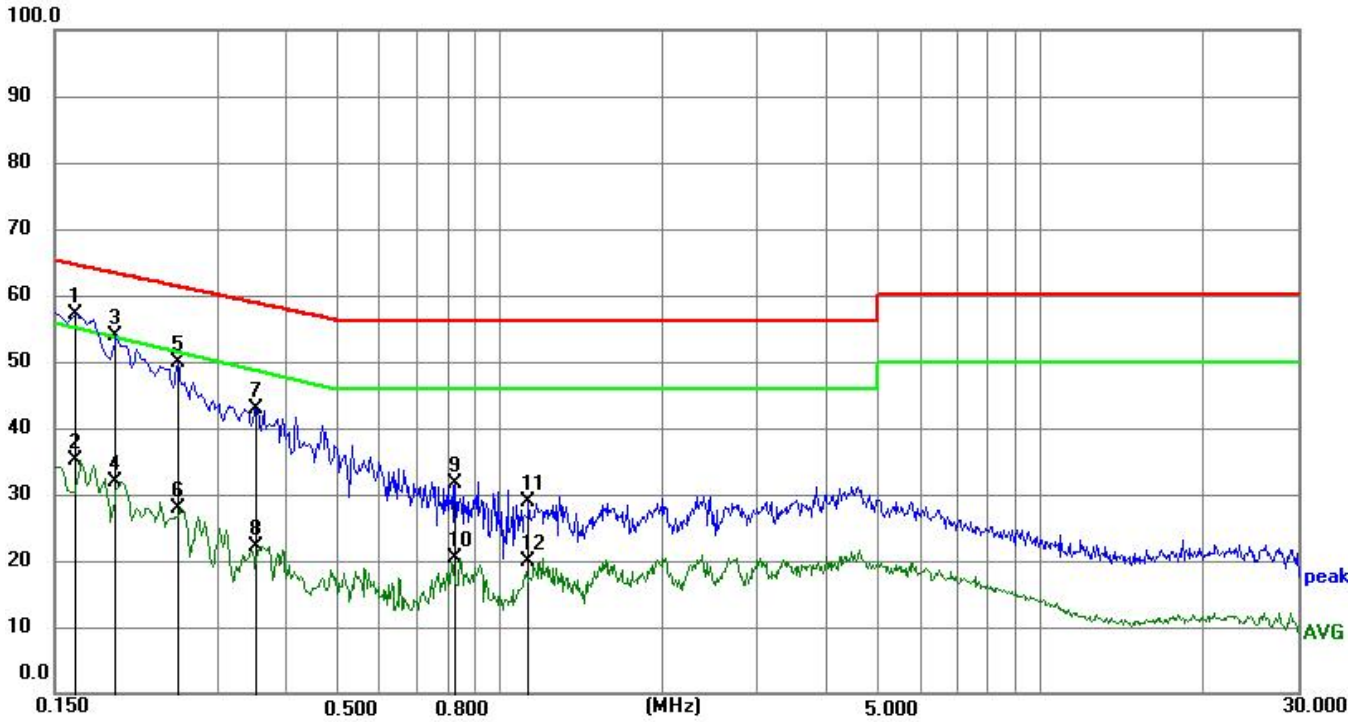
Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

10.4 TEST RESULTS

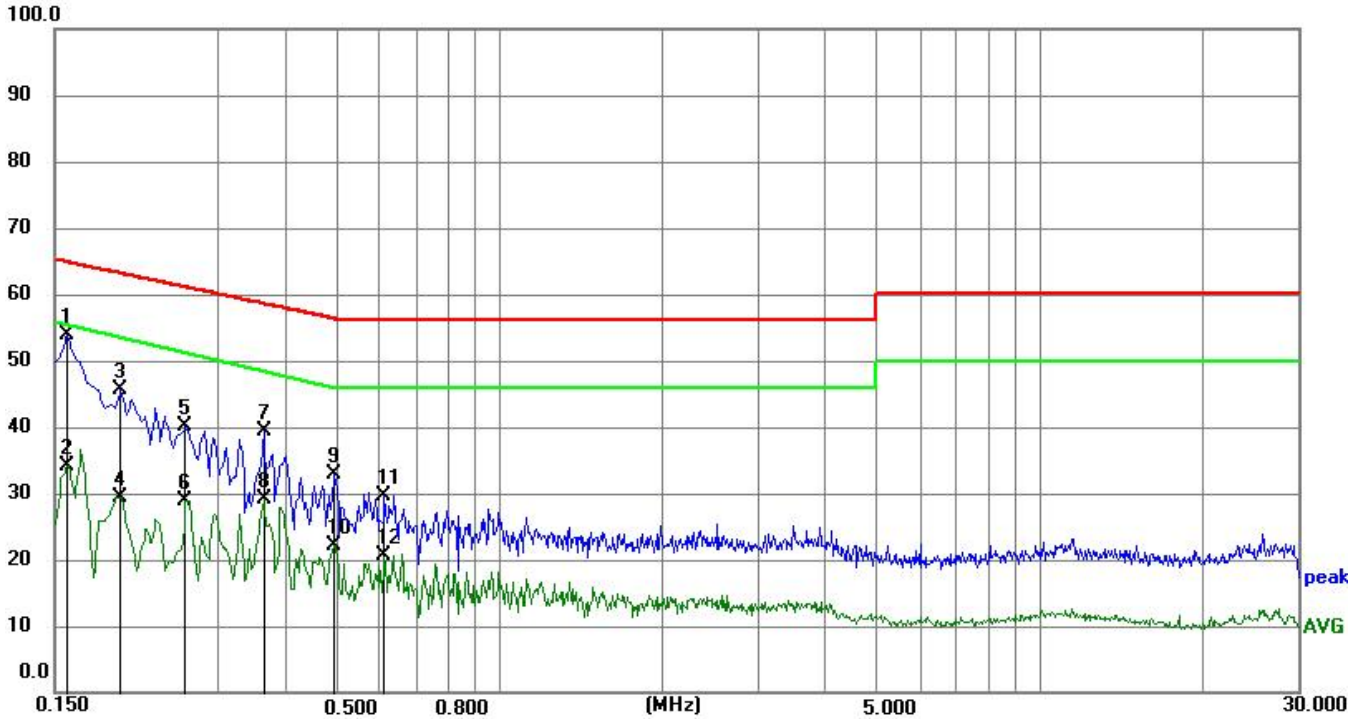
ANT 1

Temperature:	25℃	Relative Humidity:	50%
Test Mode:	GFSK(worst mode)	Test Voltage:	DC 5V from adapter AC 120V/60Hz
Result:	L	Result:	Pass



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1635	47.07	10.12	57.19	64.36	7.17	QP
2	0.1635	25.06	10.12	35.18	55.28	20.10	AVG
3	0.1949	43.68	10.09	53.77	63.04	9.27	QP
4	0.1949	21.80	10.09	31.89	53.83	21.94	AVG
5	0.2535	39.73	10.05	49.78	61.08	11.30	QP
6	0.2535	17.86	10.05	27.91	51.64	23.73	AVG
7	0.3537	32.78	10.02	42.80	58.59	15.79	QP
8	0.3537	12.10	10.02	22.12	48.88	26.76	AVG
9	0.8294	21.60	9.99	31.59	56.00	24.41	QP
10	0.8294	10.42	9.99	20.41	46.00	25.59	AVG
11	1.1309	18.80	10.00	28.80	56.00	27.20	QP
12	1.1309	9.78	10.00	19.78	46.00	26.22	AVG

Temperature:	25℃	Relative Humidity:	50%
Test Mode:	GFSK(worst mode)	Test Voltage:	DC 5V from adapter AC 120V/60Hz
Result:	N	Result:	Pass

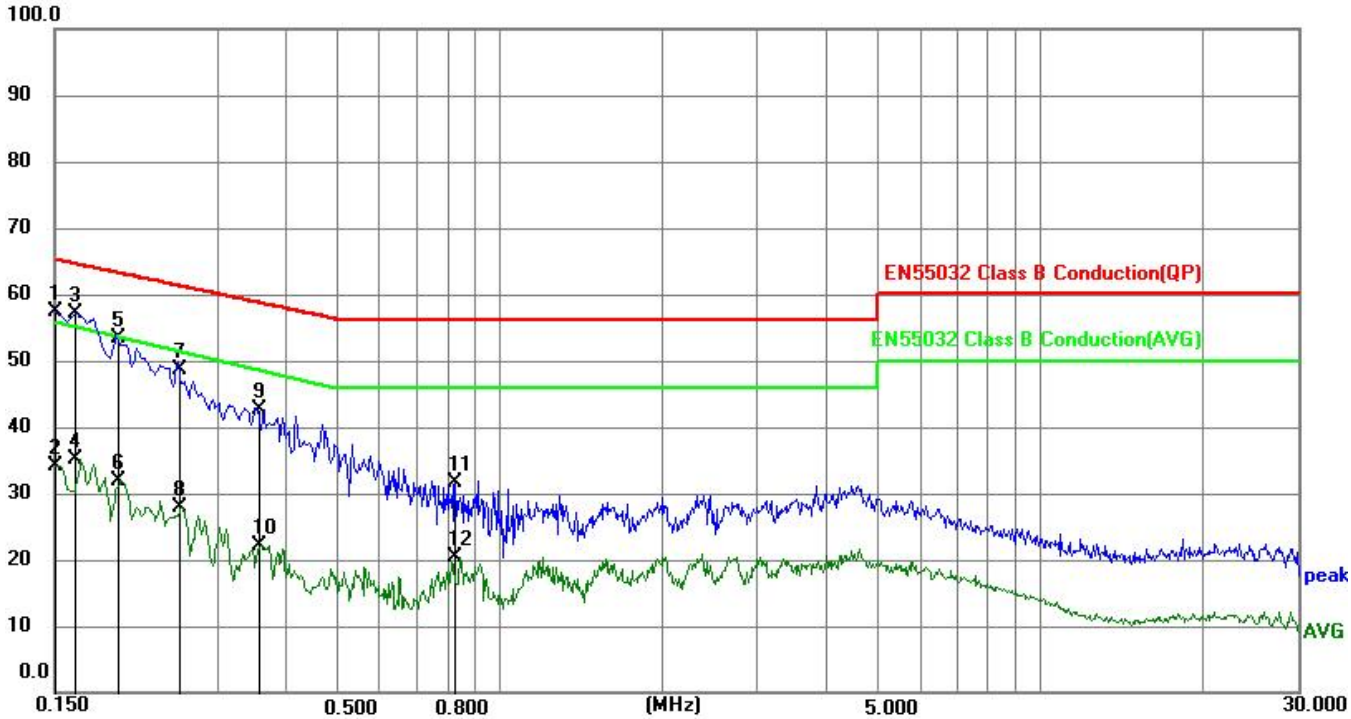


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1590	43.80	10.07	53.87	64.56	10.69	QP
2	0.1590	24.13	10.07	34.20	55.52	21.32	AVG
3	0.1995	35.69	10.05	45.74	62.87	17.13	QP
4	0.1995	19.43	10.05	29.48	53.63	24.15	AVG
5	0.2625	30.00	10.04	40.04	60.82	20.78	QP
6	0.2625	18.94	10.04	28.98	51.35	22.37	AVG
7	0.3660	29.42	10.01	39.43	58.33	18.90	QP
8	0.3660	19.20	10.01	29.21	48.59	19.38	AVG
9	0.4965	22.84	10.01	32.85	56.05	23.20	QP
10	0.4965	12.23	10.01	22.24	46.06	23.82	AVG
11	0.6134	19.73	9.99	29.72	56.00	26.28	QP
12	0.6134	10.61	9.99	20.60	46.00	25.40	AVG

Remark:1.All readings are Quasi-Peak and Average values
2. During the test, pre-scan all modes, only the worst case is recorded in the report. AC conducted emission pre-test at both at AC 120V/60Hz and AC 240V/60Hz modes, recorded worst case AC 120V/60Hz.

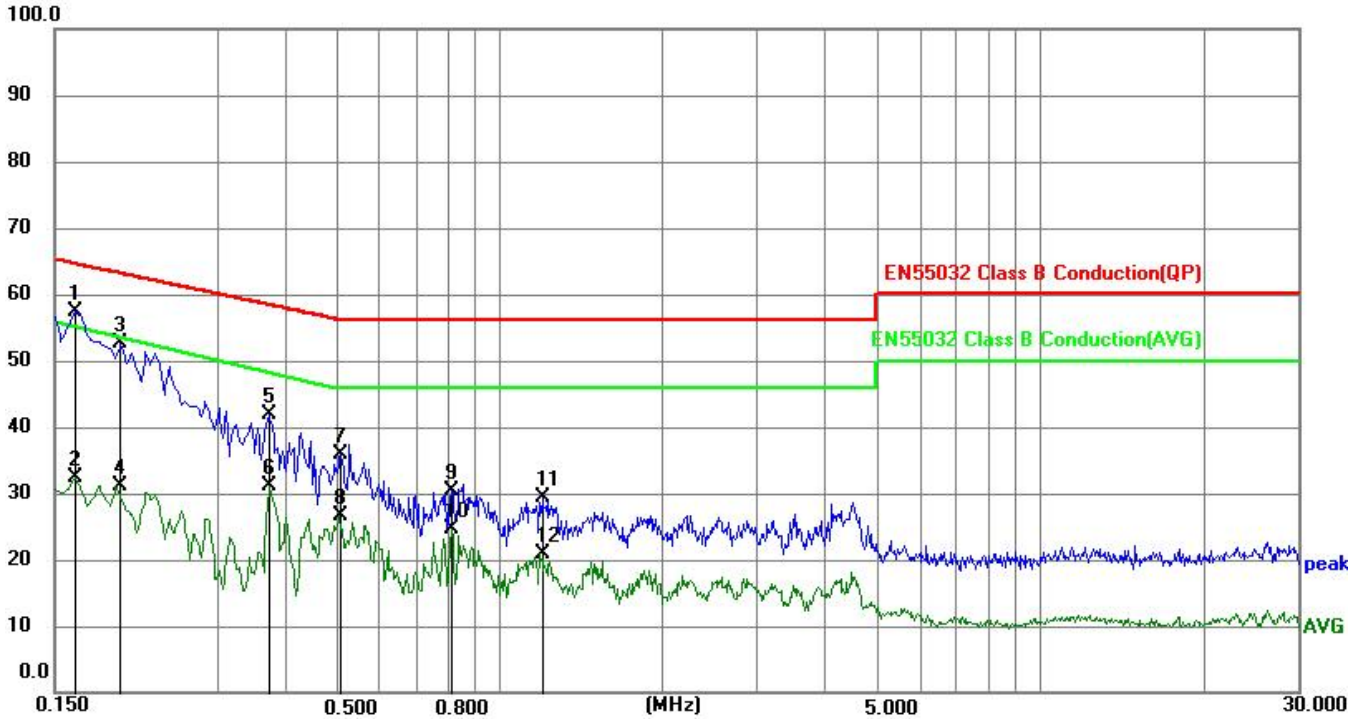
ANT 2

Temperature:	25℃	Relative Humidity:	50%
Test Mode:	GFSK(worst mode)	Test Voltage:	DC 5V from adapter AC 120V/60Hz
Result:	L	Result:	Pass



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	47.22	10.14	57.36	65.00	7.64	QP
2	0.1500	24.11	10.14	34.25	56.00	21.75	AVG
3	0.1635	47.07	10.12	57.19	64.36	7.17	QP
4	0.1635	25.06	10.12	35.18	55.28	20.10	AVG
5	0.1954	43.34	10.09	53.43	63.02	9.59	QP
6	0.1954	21.80	10.09	31.89	53.80	21.91	AVG
7	0.2547	38.70	10.05	48.75	61.04	12.29	QP
8	0.2547	17.86	10.05	27.91	51.60	23.69	AVG
9	0.3570	32.68	10.02	42.70	58.52	15.82	QP
10	0.3570	12.14	10.02	22.16	48.80	26.64	AVG
11	0.8294	21.60	9.99	31.59	56.00	24.41	QP
12	0.8294	10.42	9.99	20.41	46.00	25.59	AVG

Temperature:	25℃	Relative Humidity:	50%
Test Mode:	GFSK(worst mode)	Test Voltage:	DC 5V from adapter AC 120V/60Hz
Result:	N	Result:	Pass



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1635	47.20	10.07	57.27	64.36	7.09	QP
2	0.1635	22.34	10.07	32.41	55.28	22.87	AVG
3	0.1995	42.64	10.05	52.69	62.87	10.18	QP
4	0.1995	21.00	10.05	31.05	53.63	22.58	AVG
5	0.3750	31.91	10.01	41.92	58.15	16.23	QP
6	0.3750	21.10	10.01	31.11	48.39	17.28	AVG
7	0.5100	25.84	10.01	35.85	56.00	20.15	QP
8	0.5100	16.50	10.01	26.51	46.00	19.49	AVG
9	0.8158	20.51	9.98	30.49	56.00	25.51	QP
10	0.8158	14.66	9.98	24.64	46.00	21.36	AVG
11	1.1984	19.44	9.98	29.42	56.00	26.58	QP
12	1.1984	10.99	9.98	20.97	46.00	25.03	AVG

Remark:1.All readings are Quasi-Peak and Average values
2.During the test, pre-scan all modes, only the worst case is recorded in the report. AC conducted emission pre-test at both at AC 120V/60Hz and AC 240V/60Hz modes, recorded worst case AC 120V/60Hz.

11. ANTENNA REQUIREMENT

11.1 STANDARD REQUIREMENT

For intentional device, according to FCC 47 CFR 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

11.2 RESULT

The antennas used for this product are PCB antenna and no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is -0.58dBi.

※※※※※END OF THE REPORT※※※※※