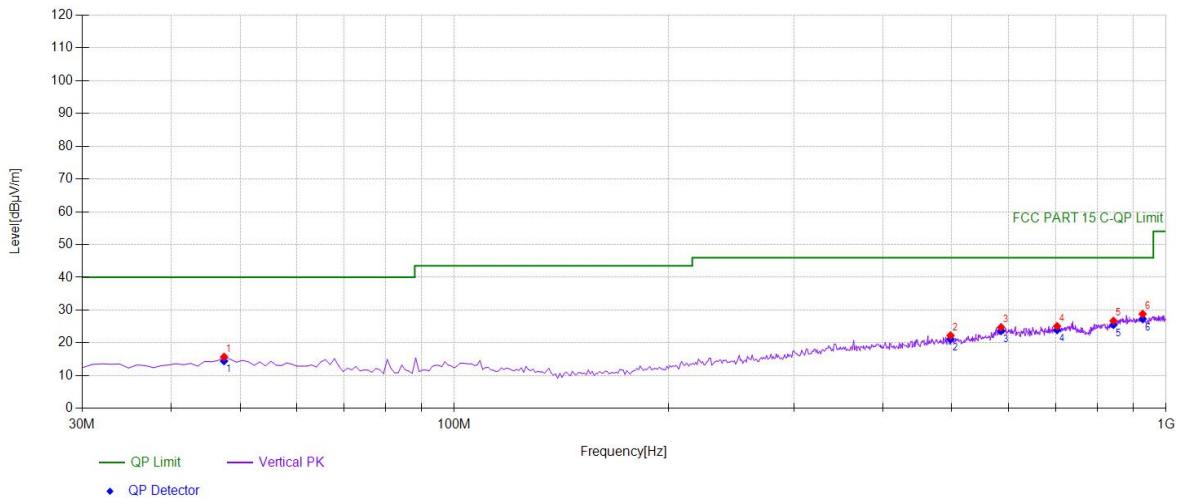


■ Spurious Emission below 1GHz (30MHz to 1GHz)

Bluetooth (GFSK, pi/4-DQPSK, 8DPSK) mode have been tested, and the worst result(GFSK) was report as below:

Test mode: GFSK Frequency: Channel 0: 2402MHz

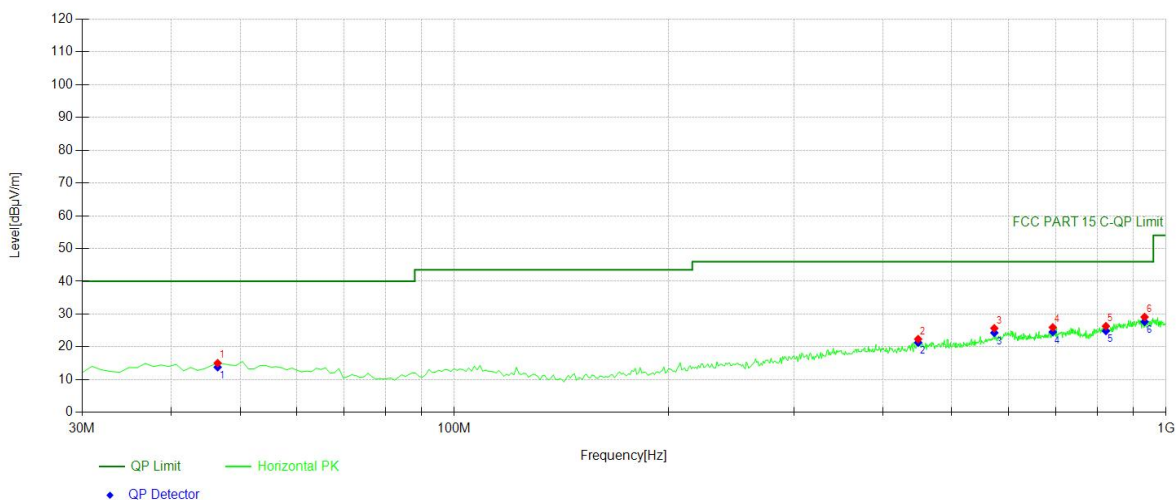


Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	47.4775	26.81	-11.07	15.74	PK	40.00	24.26	Vertical
2	498.008	26.32	-4.06	22.26	PK	46.00	23.74	Vertical
3	586.366	25.75	-1.00	24.75	PK	46.00	21.25	Vertical
4	702.882	25.31	-0.22	25.09	PK	46.00	20.91	Vertical
5	843.673	25.53	1.18	26.71	PK	46.00	19.29	Vertical
6	927.177	26.31	2.50	28.81	PK	46.00	17.19	Vertical

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	47.4775	-11.07	14.47	40.00	25.53
2	498.008	-4.06	21.17	46.00	24.83
3	586.3664	-1.00	23.66	46.00	22.34
4	702.8829	-0.22	23.92	46.00	22.08
5	843.6737	1.18	25.54	46.00	20.46
6	927.1772	2.50	27.32	46.00	18.68



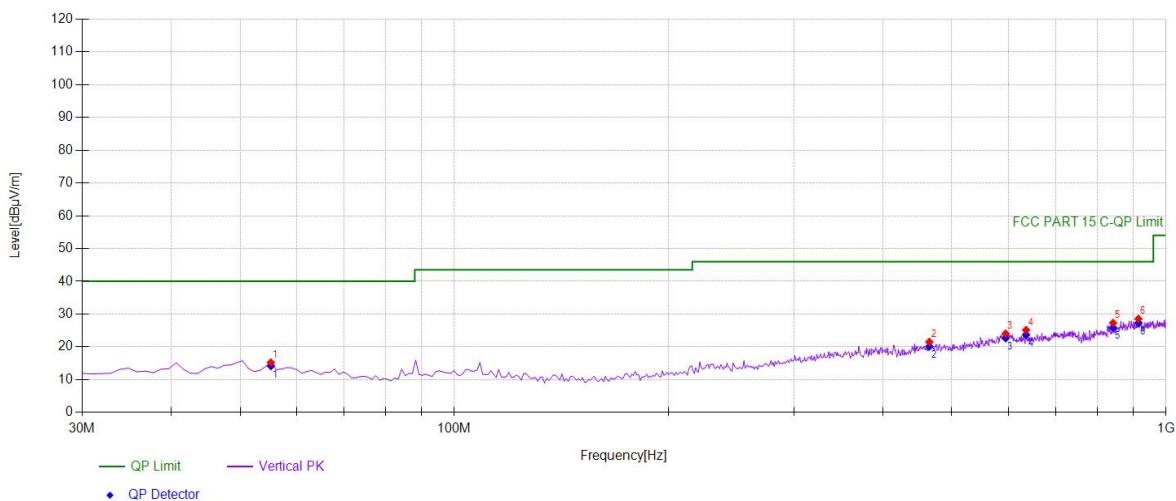
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	46.5065	26.27	-11.22	15.05	PK	40.00	24.95	Horizontal
2	448.488	27.20	-4.82	22.38	PK	46.00	23.62	Horizontal
3	573.743	27.46	-1.78	25.68	PK	46.00	20.32	Horizontal
4	693.173	26.46	-0.51	25.95	PK	46.00	20.05	Horizontal
5	823.283	25.47	0.85	26.32	PK	46.00	19.68	Horizontal
6	933.003	26.84	2.29	29.13	PK	46.00	16.87	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	46.5065	-11.22	13.81	40.00	26.19
2	448.4885	-4.82	21.32	46.00	24.68
3	573.7437	-1.78	24.30	46.00	21.70
4	693.1732	-0.51	24.57	46.00	21.43
5	823.2833	0.85	24.86	46.00	21.14
6	933.003	2.29	27.67	46.00	18.33

Test mode: GFSK Frequency: Channel 39: 2441MHz

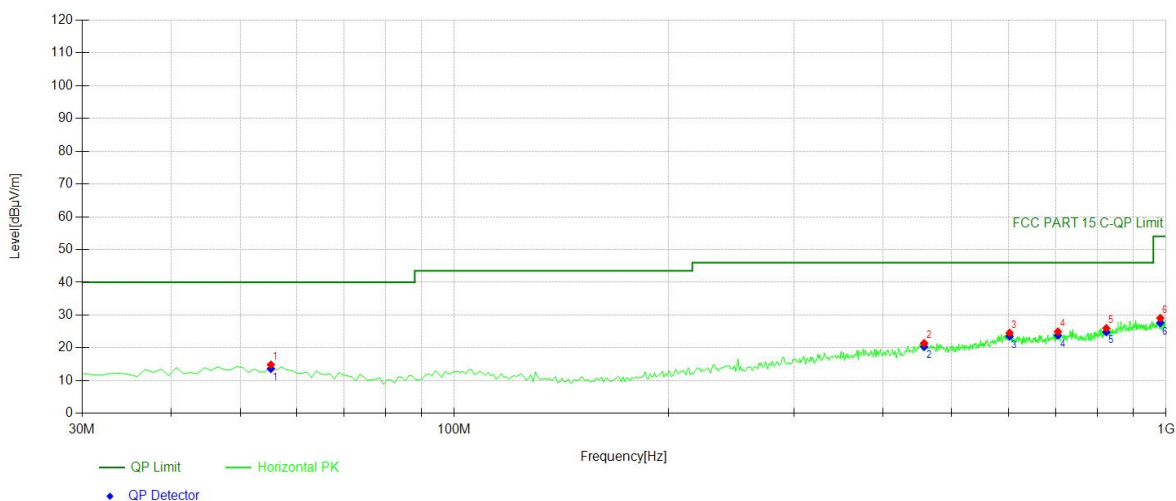


Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	55.2452	26.59	-11.37	15.22	PK	40.00	24.78	Vertical
2	464.995	25.76	-4.27	21.49	PK	46.00	24.51	Vertical
3	595.105	24.54	-0.51	24.03	PK	46.00	21.97	Vertical
4	635.885	26.40	-1.26	25.14	PK	46.00	20.86	Vertical
5	842.702	26.18	1.12	27.30	PK	46.00	18.70	Vertical
6	914.554	25.76	2.79	28.55	PK	46.00	17.45	Vertical

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	55.2452	-11.37	14.19	40.00	25.81
2	464.995	-4.27	20.14	46.00	25.86
3	595.1051	-0.51	22.68	46.00	23.32
4	635.8859	-1.26	23.71	46.00	22.29
5	842.7027	1.12	25.87	46.00	20.13
6	914.5546	2.79	27.30	46.00	18.70



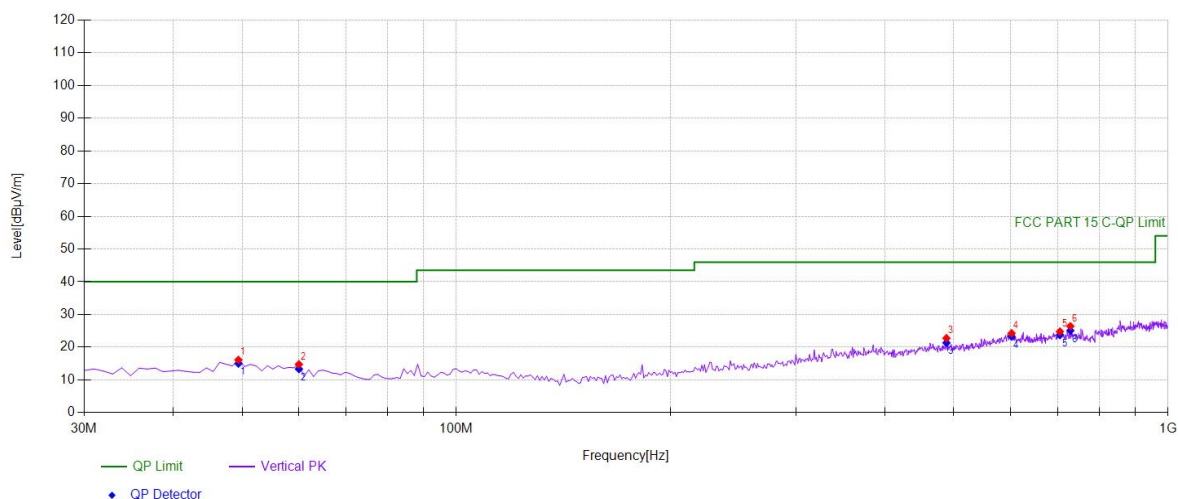
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	55.2452	26.24	-11.37	14.87	PK	40.00	25.13	Horizontal
2	457.227	25.91	-4.48	21.43	PK	46.00	24.57	Horizontal
3	602.872	25.02	-0.44	24.58	PK	46.00	21.42	Horizontal
4	704.824	25.17	-0.22	24.95	PK	46.00	21.05	Horizontal
5	824.254	25.14	0.86	26.00	PK	46.00	20.00	Horizontal
6	981.551	26.18	2.92	29.10	PK	54.00	24.90	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	55.2452	-11.37	13.63	40.00	26.37
2	457.2272	-4.48	20.37	46.00	25.63
3	602.8729	-0.44	23.52	46.00	22.48
4	704.8248	-0.22	23.81	46.00	22.19
5	824.2543	0.86	24.86	46.00	21.14
6	981.5516	2.92	27.64	54.00	26.36

Test mode: GFSK Frequency: Channel 78: 2480MHz

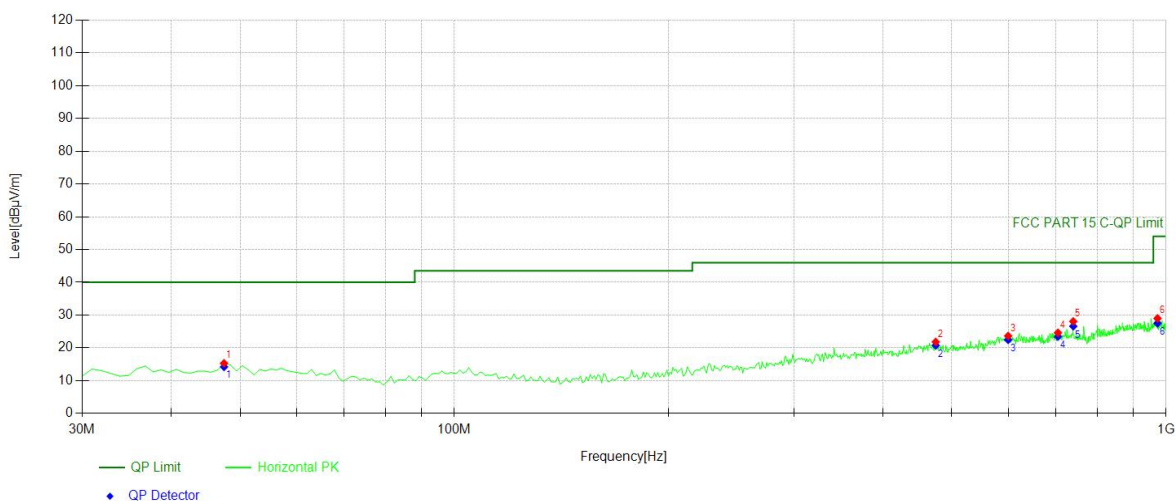


Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	49.4194	26.87	-10.75	16.12	PK	40.00	23.88	Vertical
2	60.1001	26.79	-12.03	14.76	PK	40.00	25.24	Vertical
3	488.298	26.71	-3.95	22.76	PK	46.00	23.24	Vertical
4	602.872	24.71	-0.44	24.27	PK	46.00	21.73	Vertical
5	704.824	24.99	-0.22	24.77	PK	46.00	21.23	Vertical
6	729.099	26.19	0.23	26.42	PK	46.00	19.58	Vertical

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	49.4194	-10.75	15.02	40.00	24.98
2	60.1001	-12.03	13.34	40.00	26.66
3	488.2983	-3.95	21.34	46.00	24.66
4	602.8729	-0.44	23.26	46.00	22.74
5	704.8248	-0.22	23.76	46.00	22.24
6	729.0991	0.23	25.09	46.00	20.91



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	47.4775	26.37	-11.07	15.30	PK	40.00	24.70	Horizontal
2	474.704	25.89	-4.06	21.83	PK	46.00	24.17	Horizontal
3	599.96	23.91	-0.27	23.64	PK	46.00	22.36	Horizontal
4	704.824	24.83	-0.22	24.61	PK	46.00	21.39	Horizontal
5	740.750	27.63	0.45	28.08	PK	46.00	17.92	Horizontal
6	972.812	25.86	3.14	29.00	PK	54.00	25.00	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	47.4775	-11.07	14.22	40.00	25.78
2	474.7047	-4.06	20.75	46.00	25.25
3	599.96	-0.27	22.48	46.00	23.52
4	704.8248	-0.22	23.45	46.00	22.55
5	740.7508	0.45	26.60	46.00	19.40
6	972.8128	3.14	27.52	54.00	26.48

9.8 CONDUCTED EMISSION TEST

9.8.1 Applicable Standard

According to FCC Part 15.207(a).

9.8.2 Conformance Limit

Conducted Emission Limit		
Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note1: The lower limit shall apply at the transition frequencies.
Note2: The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

9.8.3 Test Configuration

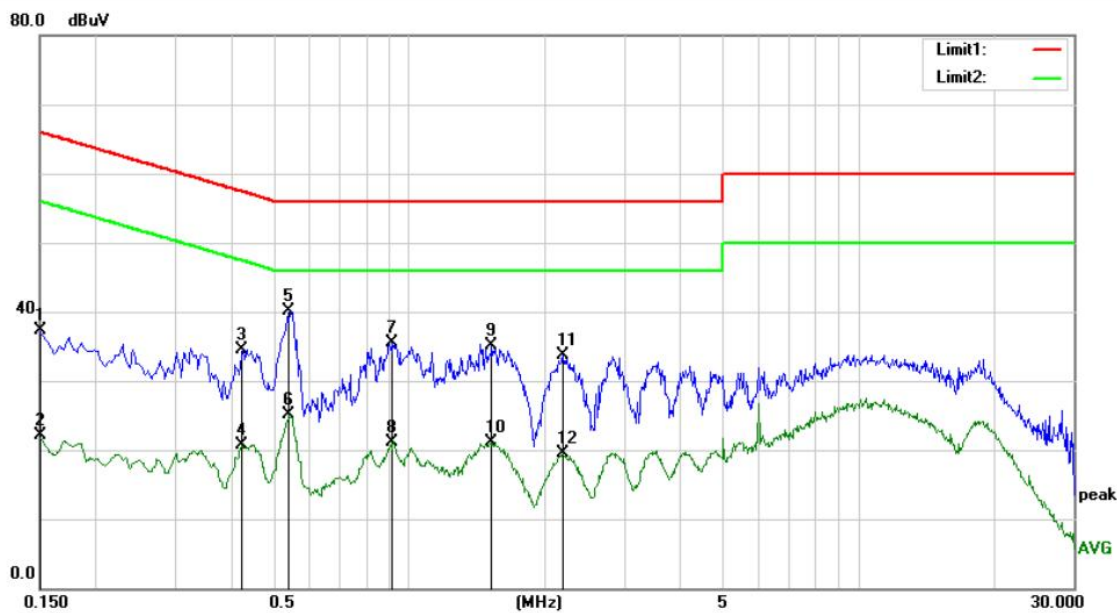
Test according to clause 7.3 conducted emission test setup.

9.8.4 Test Procedure

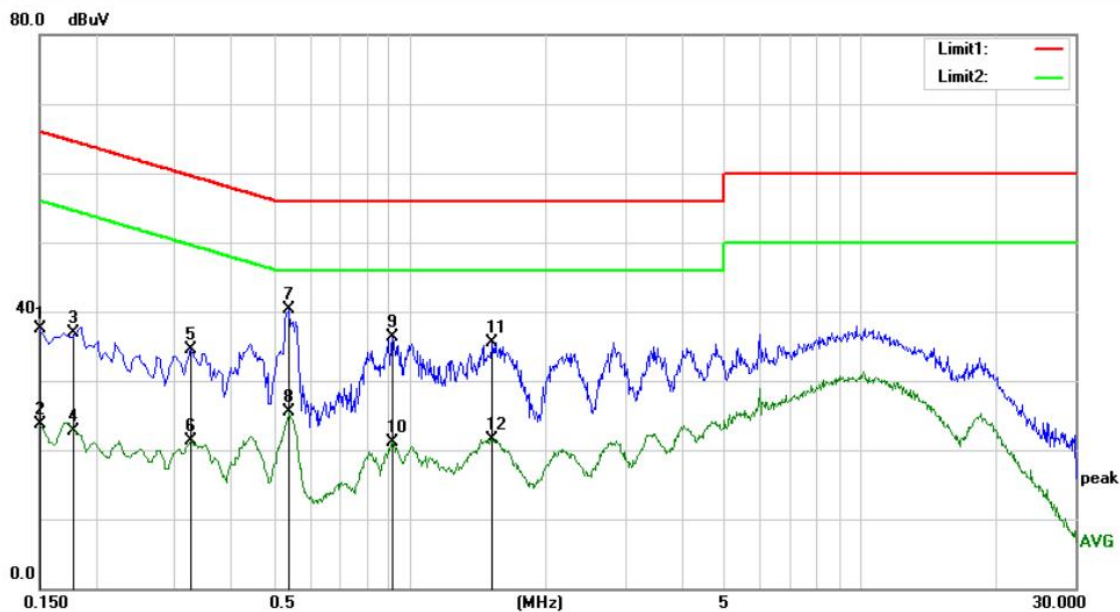
The EUT was placed on a table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Repeat above procedures until all frequency measured were complete.

9.8.5 Test Results

Pass



Site Conduction #1				Phase: N		Temperature: 21.9		
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector Comment
1		0.1500	27.47	9.78	37.25	66.00	-28.75	QP
2		0.1500	12.26	9.78	22.04	56.00	-33.96	AVG
3		0.4220	24.80	9.64	34.44	57.41	-22.97	QP
4		0.4220	11.11	9.64	20.75	47.41	-26.66	AVG
5	*	0.5380	30.34	9.68	40.02	56.00	-15.98	QP
6		0.5380	15.35	9.68	25.03	46.00	-20.97	AVG
7		0.9180	25.78	9.73	35.51	56.00	-20.49	QP
8		0.9180	11.47	9.73	21.20	46.00	-24.80	AVG
9		1.5260	25.30	9.76	35.06	56.00	-20.94	QP
10		1.5260	11.37	9.76	21.13	46.00	-24.87	AVG
11		2.1980	23.91	9.83	33.74	56.00	-22.26	QP
12		2.1980	9.59	9.83	19.42	46.00	-26.58	AVG



Site Conduction #1					Phase: L1		Temperature: 21.9	
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector Comment
1		0.1500	27.68	9.78	37.46	66.00	-28.54	QP
2		0.1500	14.01	9.78	23.79	56.00	-32.21	AVG
3		0.1785	27.13	9.70	36.83	64.56	-27.73	QP
4		0.1785	12.99	9.70	22.69	54.56	-31.87	AVG
5		0.3260	24.89	9.56	34.45	59.55	-25.10	QP
6		0.3260	11.81	9.56	21.37	49.55	-28.18	AVG
7	*	0.5380	30.64	9.68	40.32	56.00	-15.68	QP
8		0.5380	15.90	9.68	25.58	46.00	-20.42	AVG
9		0.9140	26.52	9.73	36.25	56.00	-19.75	QP
10		0.9140	11.39	9.73	21.12	46.00	-24.88	AVG
11		1.5260	25.71	9.76	35.47	56.00	-20.53	QP
12		1.5260	11.82	9.76	21.58	46.00	-24.42	AVG

9.9 ANTENNA APPLICATION

9.9.1 Antenna Requirement

Standard	Requirement
FCC CRF Part 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

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.

9.9.2 Result

PASS

Temperature : 25°C ATM Pressure: 1011 mbar
Humidity : 45 % Test Engineer: XXH

The EUT is integrated antenna, the antenna gain is 2.85 dBi.

- ☒ Antenna use a permanently attached antenna which is not replaceable.
- ☐ Not using a standard antenna jack or electrical connector for antenna replacement
- ☐ The antenna has to be professionally installed (please provide method of installation)

which in accordance to section 15.203, please refer to the internal photos.

Detail of factor for radiated emission:

Frequency(MHz)	Ant_F(dB)	Cab_L(dB)	Preamp(dB)	Correct Factor(dB)
0.009	20.6	0.03	\	20.63
0.15	20.7	0.1	\	20.8
1	20.9	0.15	\	21.05
10	20.1	0.28	\	20.38
30	18.8	0.45	\	19.25
30	11.7	0.62	27.9	-15.58
100	12.5	1.02	27.8	-14.28
300	12.9	1.91	27.5	-12.69
600	19.2	2.92	27	-4.88
800	21.1	3.54	26.6	-1.96
1000	22.3	4.17	26.2	0.27
1000	25.6	1.76	41.4	-14.04
3000	28.9	3.27	43.2	-11.03
5000	31.1	4.2	44.6	-9.3
8000	36.2	5.95	44.7	-2.55
10000	38.4	6.3	43.9	0.8
12000	38.5	7.14	42.3	3.34
15000	40.2	8.15	41.4	6.95
18000	45.4	9.02	41.3	13.12
18000	37.9	1.81	47.9	-8.19
21000	37.9	1.95	48.7	-8.85
25000	39.3	2.01	42.8	-1.49
28000	39.6	2.16	46.0	-4.24
31000	41.2	2.24	44.5	-1.06
34000	41.5	2.29	46.6	-2.81
37000	43.8	2.30	46.4	-0.3
40000	43.2	2.50	42.2	3.5

--- End of Report ---

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1. 本报告无授权批准人签字及“检验检测专用章”无效。
1. This report is invalid without the signature of the authorized approver and "special seal for testing".
2. 未经许可本报告不得部分复制。
2. This report shall not be copied partly without authorization.
3. 本报告的检测结果仅对送测样品有效，委托方对样品的代表性和资料的真实性负责。
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4. The observations or tests with special mark fall outside the scope of accreditation, and are only used for purpose of commission, research, training, internal quality control etc.
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5. The test results or observations are provided in accordance with measured value, without taking risks caused by uncertainty into account. Without explicit stipulation in special agreements, standards or regulations, EMTEK shall not assume any responsibility.
6. 对本检验报告若有异议，请于收到报告之日起 20 日内提出。
6. Objections shall be raised within 20 days from the date receiving the report.