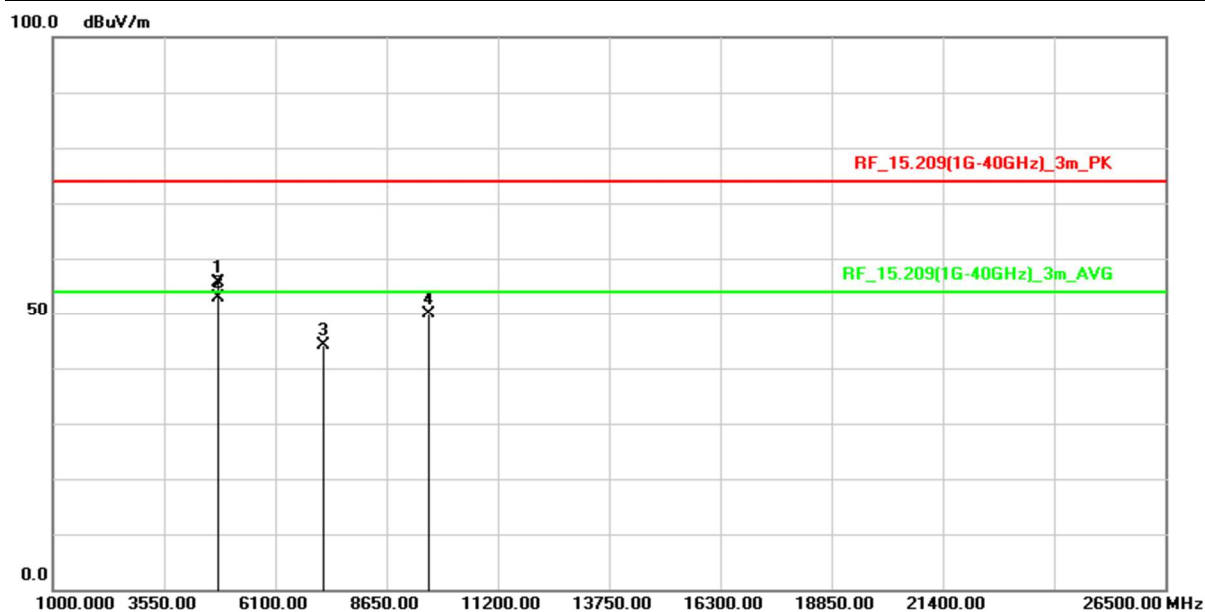


Test Mode :	Transmit BLE (1Mbps)	Test Date :	2021/11/15
Test Channel :	CH00(2402MHz)	Temperature :	25.2 °C
Polarization :	Vertical	Relative Humidity :	40 %



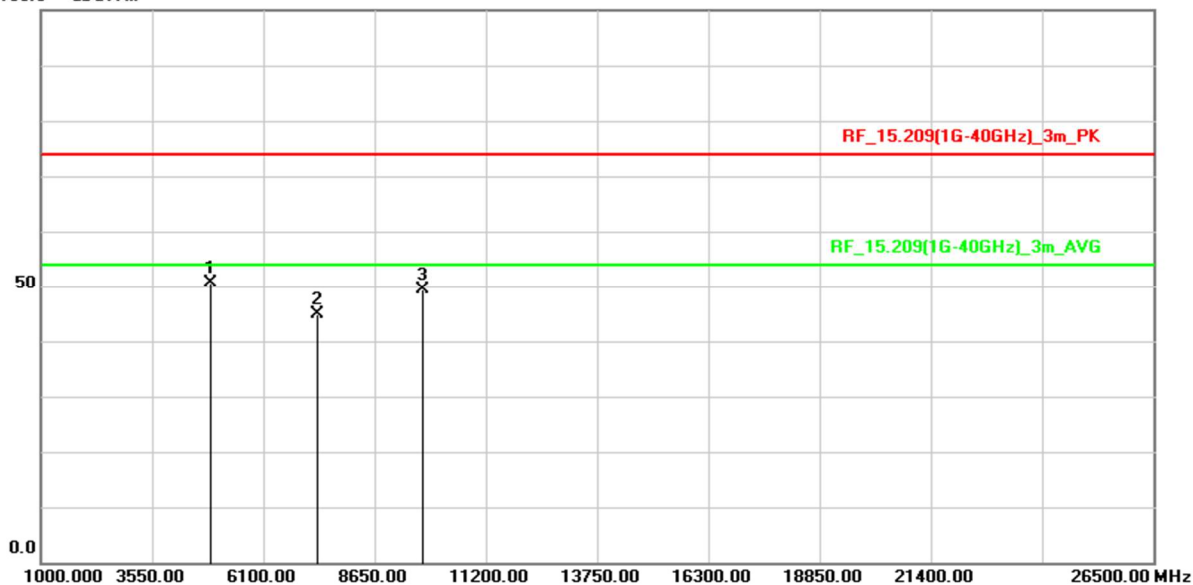
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	76.38	-20.63	55.75	74.00	-18.25	peak
2	4804.000	73.57	-20.63	52.94	54.00	-1.06	AVG
3	7206.000	59.05	-14.88	44.17	74.00	-29.83	peak
4	9608.000	60.88	-10.94	49.94	74.00	-24.06	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (1Mbps)	Test Date :	2021/11/15
Test Channel :	CH19(2440MHz)	Temperature :	25.2 °C
Polarization :	Horizontal	Relative Humidity :	40 %

100.0 dBuV/m



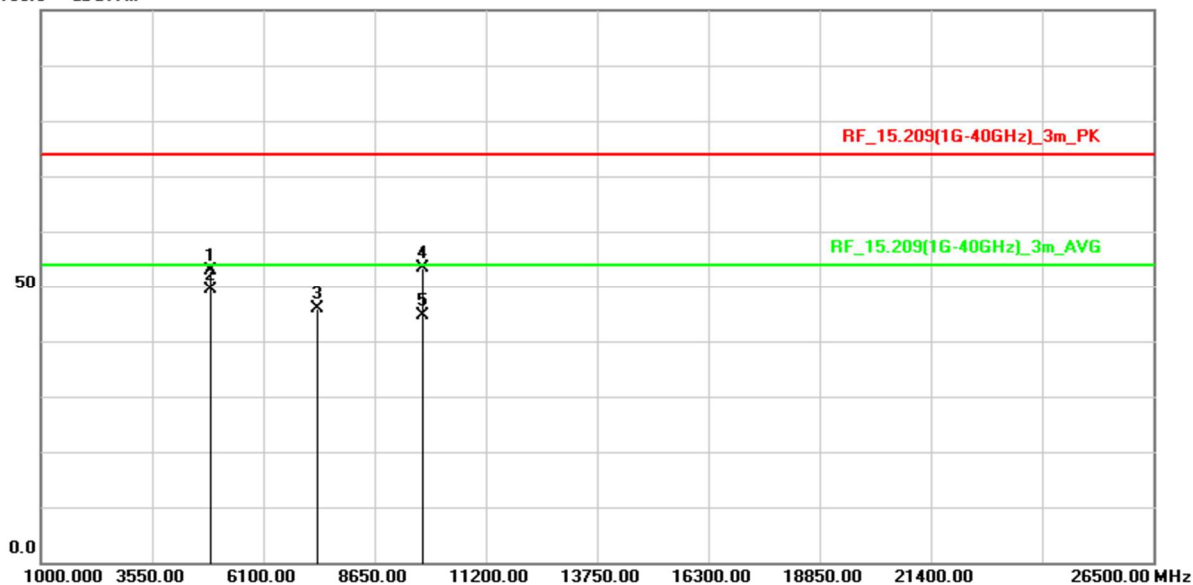
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	71.42	-20.73	50.69	74.00	-23.31	peak
2	7320.000	59.90	-14.95	44.95	74.00	-29.05	peak
3	9760.000	60.10	-10.69	49.41	74.00	-24.59	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (1Mbps)	Test Date :	2021/11/15
Test Channel :	CH19(2440MHz)	Temperature :	25.2 °C
Polarization :	Vertical	Relative Humidity :	40 %

100.0 dBuV/m



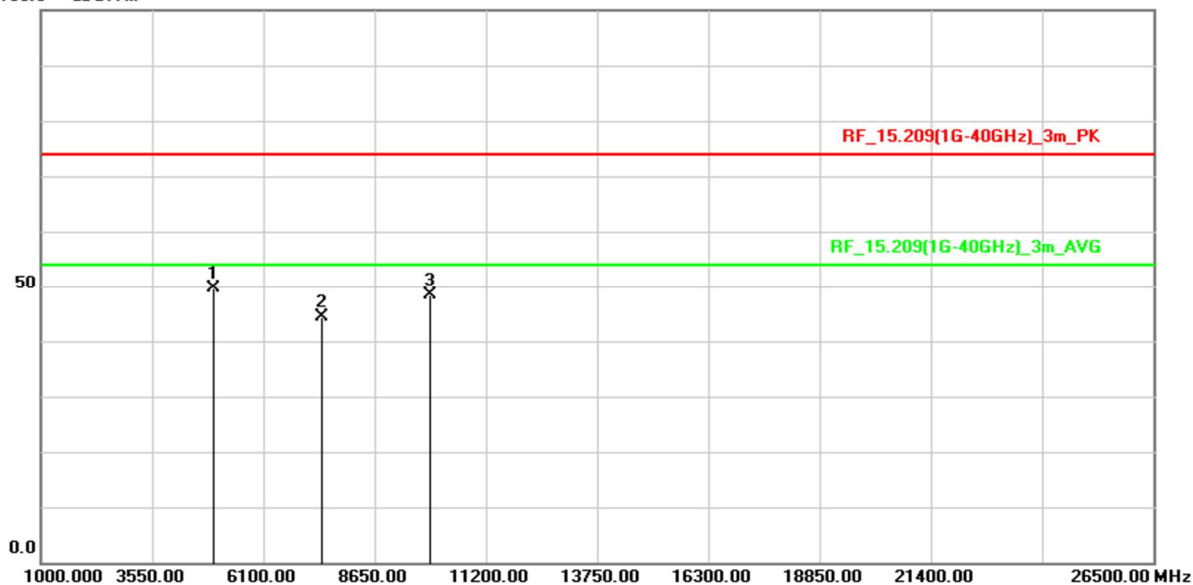
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	73.62	-20.73	52.89	74.00	-21.11	peak
2	4880.000	70.03	-20.73	49.30	54.00	-4.70	AVG
3	7320.000	60.91	-14.95	45.96	74.00	-28.04	peak
4	9760.000	64.05	-10.69	53.36	74.00	-20.64	peak
5	9760.000	55.26	-10.69	44.57	54.00	-9.43	AVG

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (1Mbps)	Test Date :	2021/11/15
Test Channel :	CH39(2480MHz)	Temperature :	25.2 °C
Polarization :	Horizontal	Relative Humidity :	40 %

100.0 dBuV/m

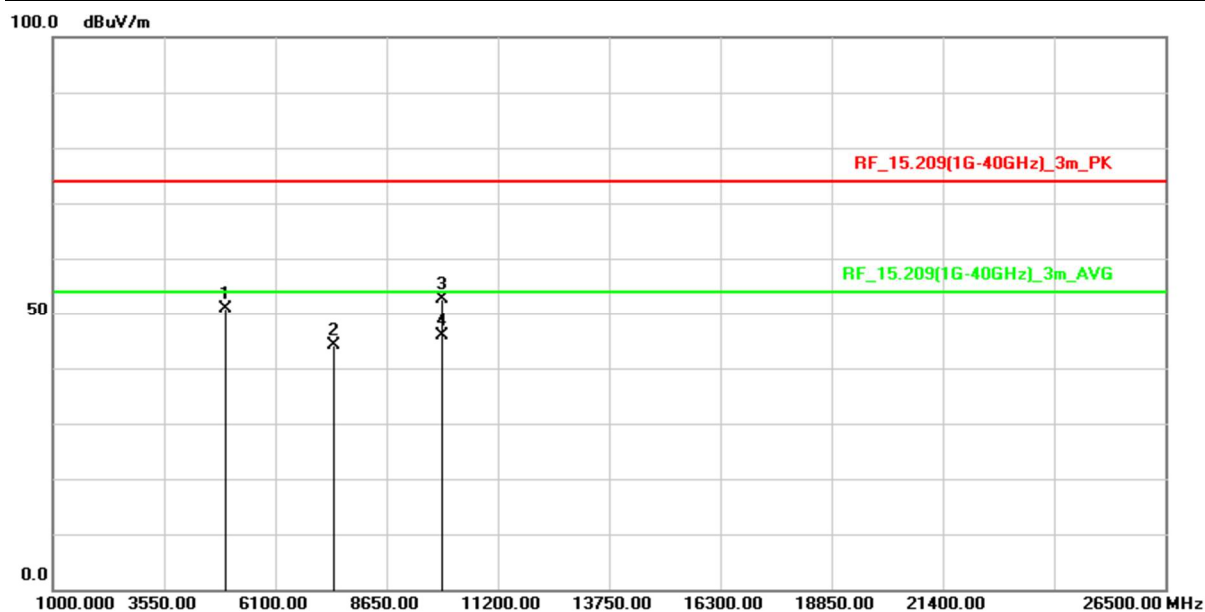


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	70.42	-20.68	49.74	74.00	-24.26	peak
2	7440.000	58.79	-14.50	44.29	74.00	-29.71	peak
3	9920.000	59.22	-10.88	48.34	74.00	-25.66	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (1Mbps)	Test Date :	2021/11/15
Test Channel :	CH39(2480MHz)	Temperature :	25.2 °C
Polarization :	Vertical	Relative Humidity :	40 %

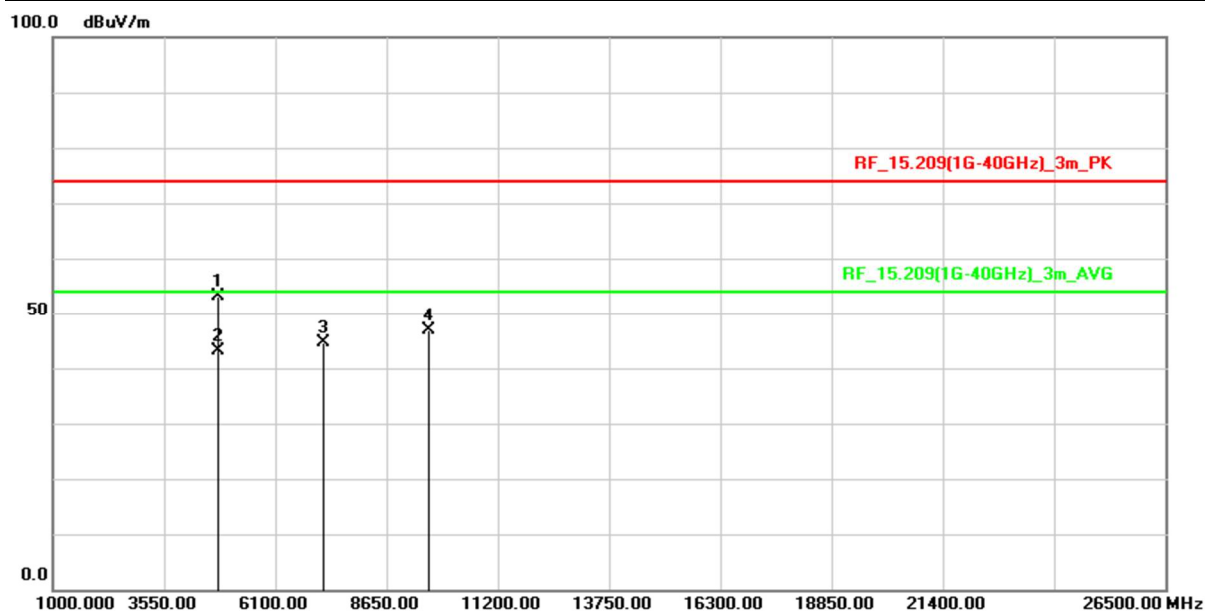


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	71.49	-20.68	50.81	74.00	-23.19	peak
2	7440.000	58.59	-14.50	44.09	74.00	-29.91	peak
3	9920.000	63.40	-10.88	52.52	74.00	-21.48	peak
4	9920.000	56.80	-10.88	45.92	54.00	-8.08	AVG

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (2Mbps)	Test Date :	2021/11/15
Test Channel :	CH00(2402MHz)	Temperature :	25.5 °C
Polarization :	Horizontal	Relative Humidity :	40 %

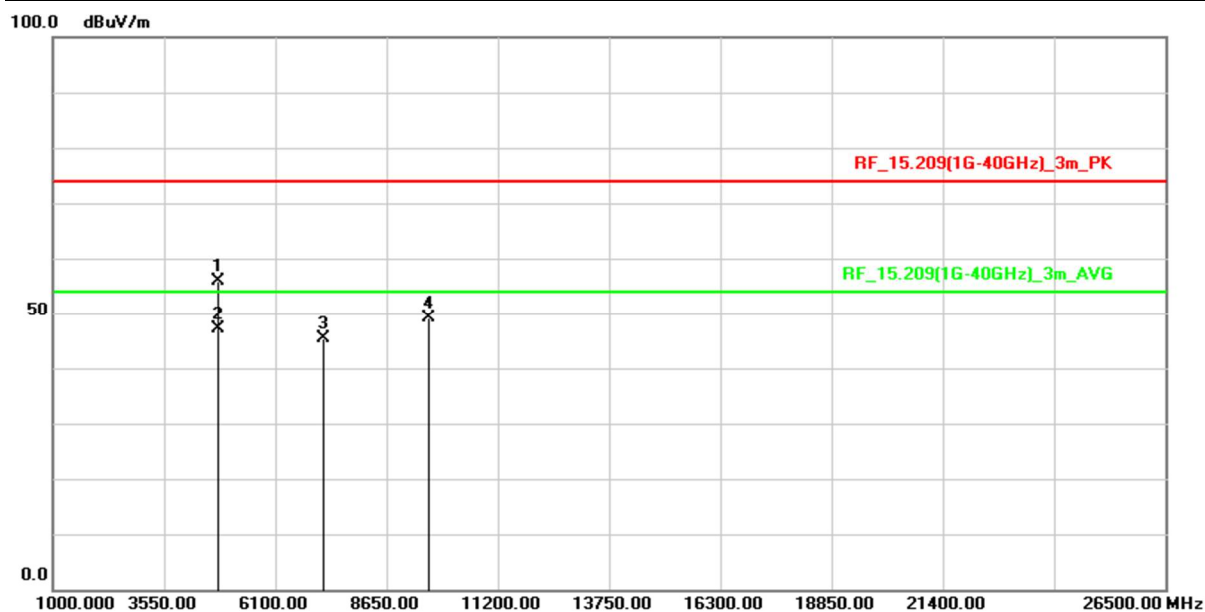


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	73.77	-20.63	53.14	74.00	-20.86	peak
2	4804.000	63.65	-20.63	43.02	54.00	-10.98	AVG
3	7206.000	59.51	-14.88	44.63	74.00	-29.37	peak
4	9608.000	57.86	-10.94	46.92	74.00	-27.08	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (2Mbps)	Test Date :	2021/11/15
Test Channel :	CH00(2402MHz)	Temperature :	25.2 °C
Polarization :	Vertical	Relative Humidity :	40 %

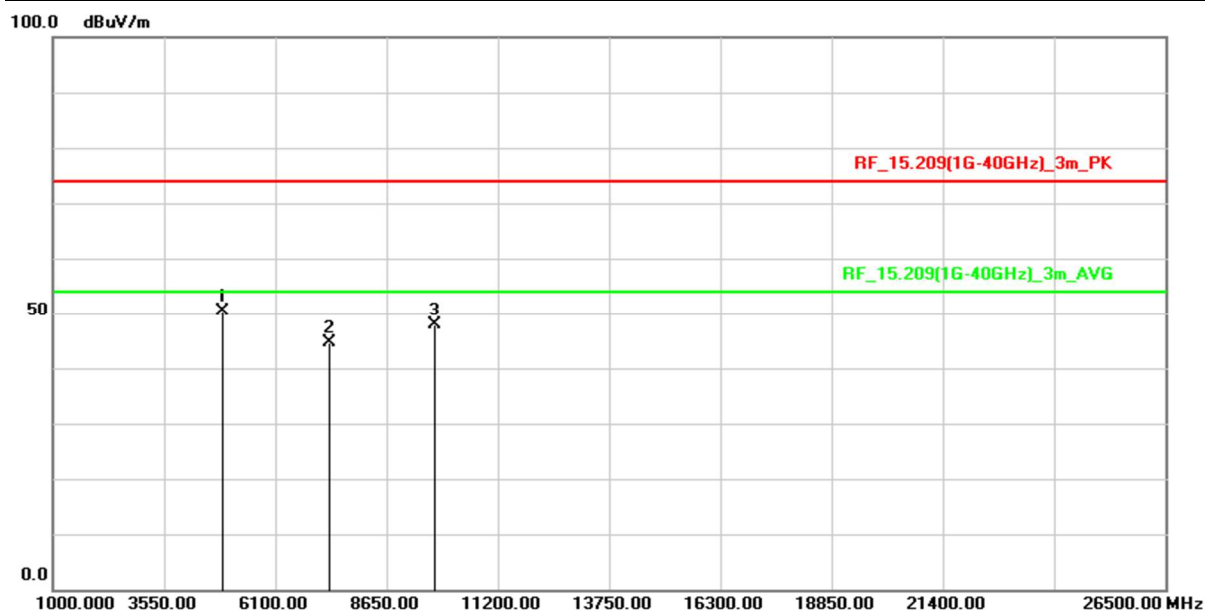


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	76.43	-20.63	55.80	74.00	-18.20	peak
2	4804.000	67.75	-20.63	47.12	54.00	-6.88	AVG
3	7206.000	60.32	-14.88	45.44	74.00	-28.56	peak
4	9608.000	60.06	-10.94	49.12	74.00	-24.88	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (2Mbps)	Test Date :	2021/11/15
Test Channel :	CH19(2440MHz)	Temperature :	25.2 °C
Polarization :	Horizontal	Relative Humidity :	40 %

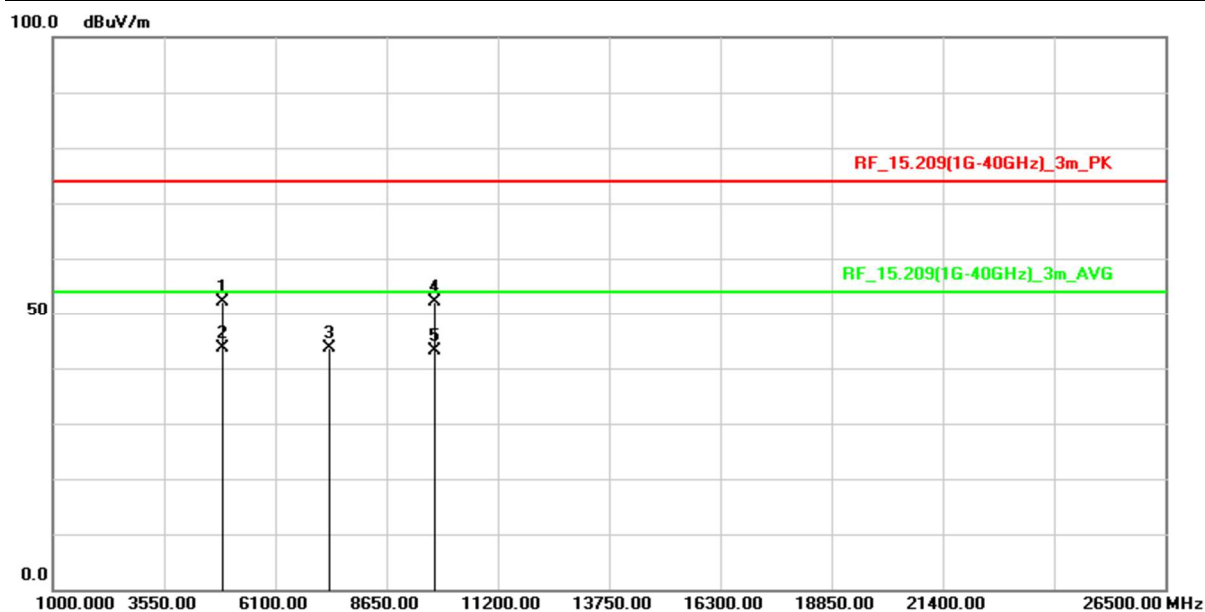


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	71.10	-20.73	50.37	74.00	-23.63	peak
2	7320.000	59.69	-14.95	44.74	74.00	-29.26	peak
3	9760.000	58.50	-10.69	47.81	74.00	-26.19	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (2Mbps)	Test Date :	2021/11/15
Test Channel :	CH19(2440MHz)	Temperature :	25.2 °C
Polarization :	Vertical	Relative Humidity :	40 %



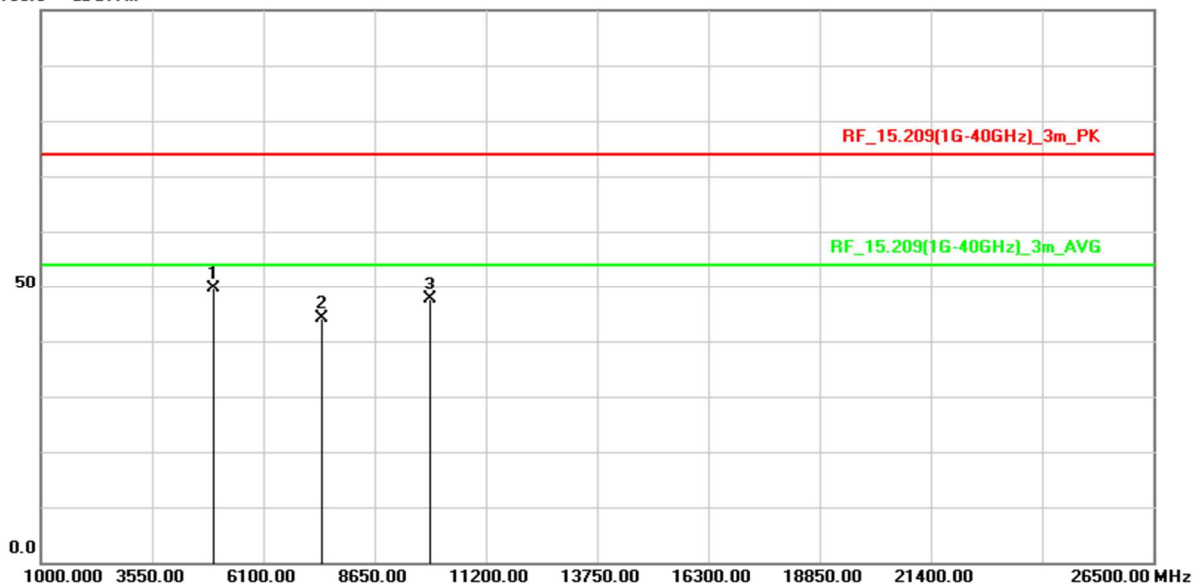
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	72.75	-20.73	52.02	74.00	-21.98	peak
2	4880.000	64.26	-20.73	43.53	54.00	-10.47	AVG
3	7320.000	58.52	-14.95	43.57	74.00	-30.43	peak
4	9760.000	62.83	-10.69	52.14	74.00	-21.86	peak
5	9760.000	53.81	-10.69	43.12	54.00	-10.88	AVG

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (2Mbps)	Test Date :	2021/11/15
Test Channel :	CH39(2480MHz)	Temperature :	25.2 °C
Polarization :	Horizontal	Relative Humidity :	40 %

100.0 dBuV/m



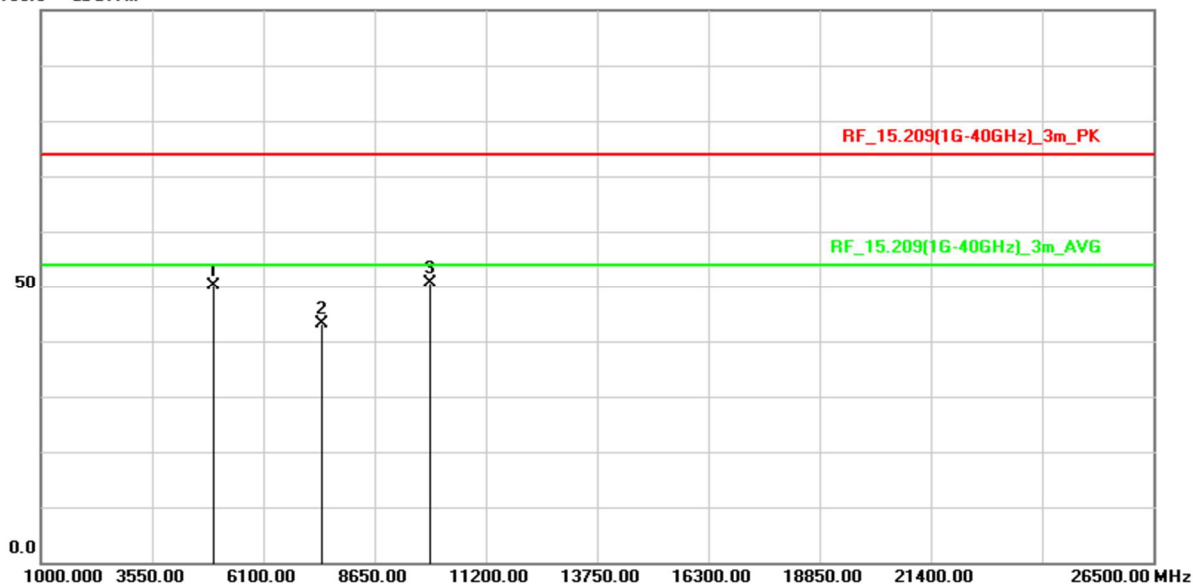
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	70.31	-20.68	49.63	74.00	-24.37	peak
2	7440.000	58.65	-14.50	44.15	74.00	-29.85	peak
3	9920.000	58.57	-10.88	47.69	74.00	-26.31	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (2Mbps)	Test Date :	2021/11/15
Test Channel :	CH39(2480MHz)	Temperature :	25.2 °C
Polarization :	Vertical	Relative Humidity :	40 %

100.0 dBuV/m



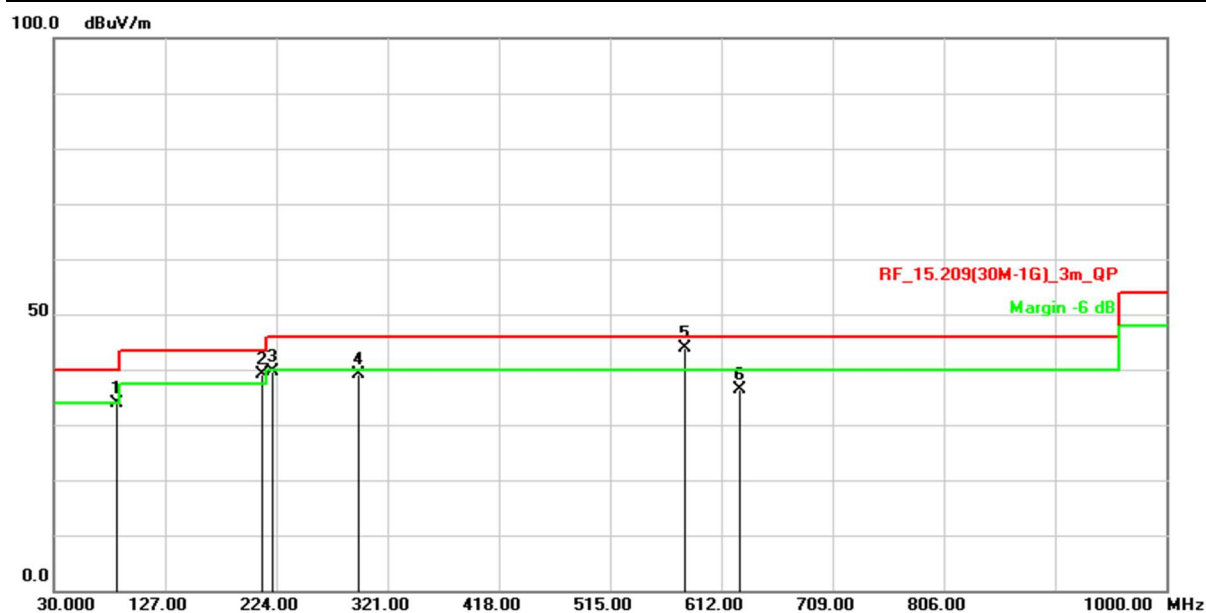
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	70.82	-20.68	50.14	74.00	-23.86	peak
2	7440.000	57.52	-14.50	43.02	74.00	-30.98	peak
3	9920.000	61.41	-10.88	50.53	74.00	-23.47	peak

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Below 1GHz Data

Test Mode :	Transmit BLE (1Mbps)	Test Date :	2021/11/05
Test Channel :	CH19(2440MHz)	Temperature :	25.2 °C
Polarization :	Horizontal	Relative Humidity :	40 %

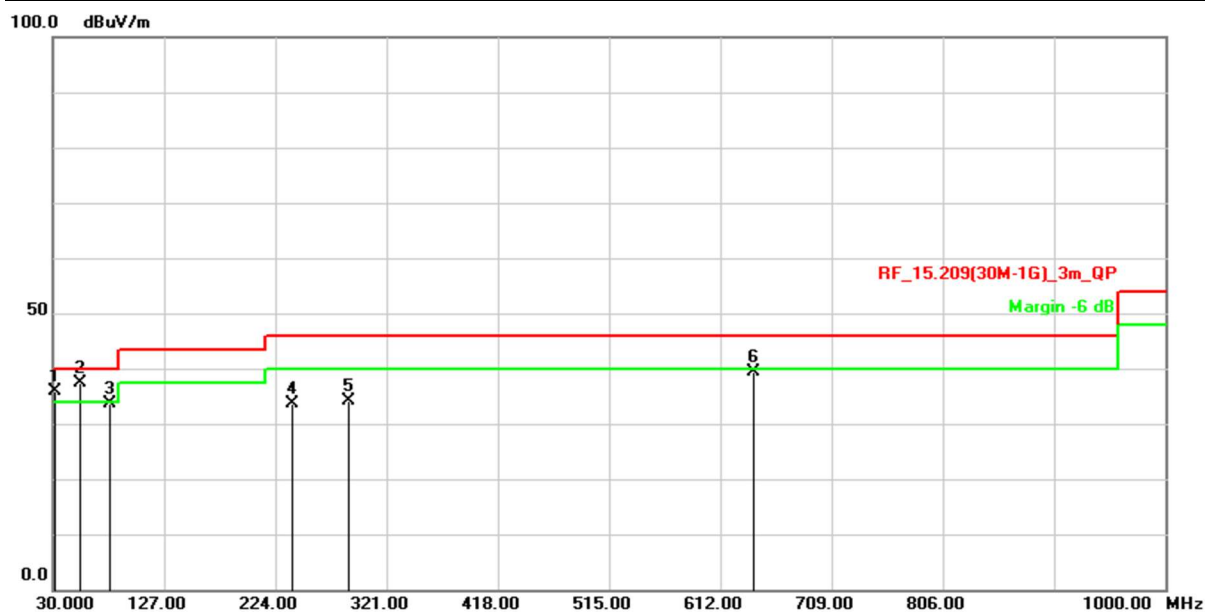


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	84.3200	50.61	-16.72	33.89	40.00	-6.11	QP
2	211.3900	53.65	-14.45	39.20	43.50	-4.30	QP
3	221.0900	54.09	-14.45	39.64	46.00	-6.36	QP
4	295.7800	49.82	-10.60	39.22	46.00	-6.78	QP
5	579.9900	47.27	-3.41	43.86	46.00	-2.14	QP
6	627.5200	38.61	-2.26	36.35	46.00	-9.65	QP

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

Test Mode :	Transmit BLE (1Mbps)	Test Date :	2021/11/05
Test Channel :	CH19(2440MHz)	Temperature :	25.2 °C
Polarization :	Vertical	Relative Humidity :	40 %



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.9250	48.54	-12.78	35.76	40.00	-4.24	QP
2	53.2800	48.98	-11.51	37.47	40.00	-2.53	QP
3	79.9500	49.53	-15.83	33.70	40.00	-6.30	QP
4	238.5500	46.52	-12.81	33.71	46.00	-12.29	QP
5	288.0200	44.95	-10.80	34.15	46.00	-11.85	QP
6	641.1000	41.40	-1.92	39.48	46.00	-6.52	QP

Remark :

1. Correction Factor = Antenna factor + Cable loss – Amplifier gain
2. Result Value = Reading Level + Correct Factor
3. Margin Level = Result Value – Limit Value
4. The other emission levels were very low against the limit

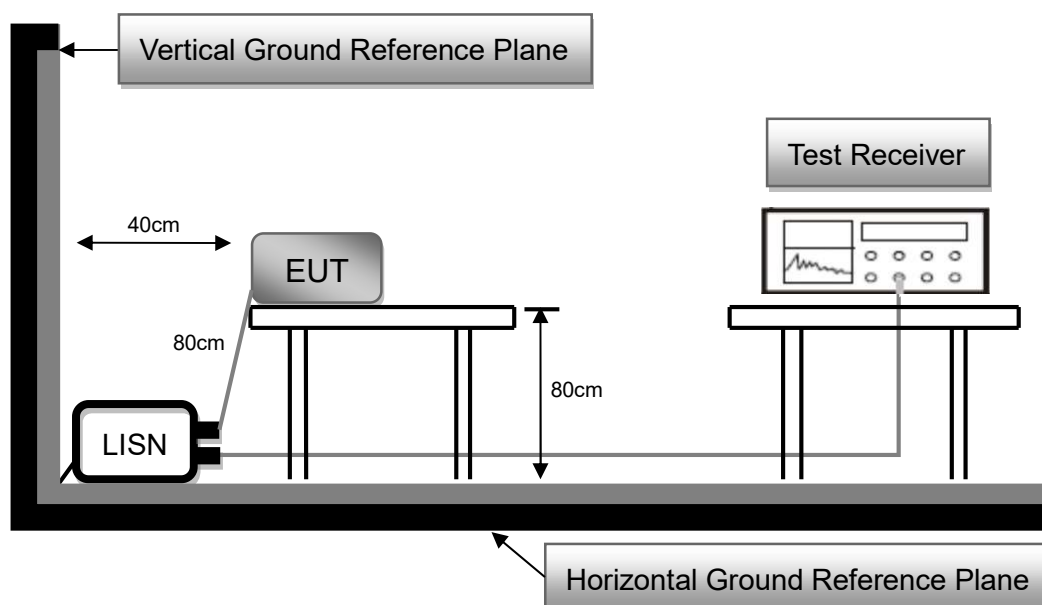
2.7 AC Conducted Emissions Measurement

2.7.1 Limit

Frequency (MHz)	FCC Part 15 Subpart C Paragraph 15.207 (dBμV) Limit	
	Quasi-peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.50 to 5.0	56	46
5.0 to 30.0	60	50

*Decreases with the logarithm of the frequency

2.7.2 Test Setup

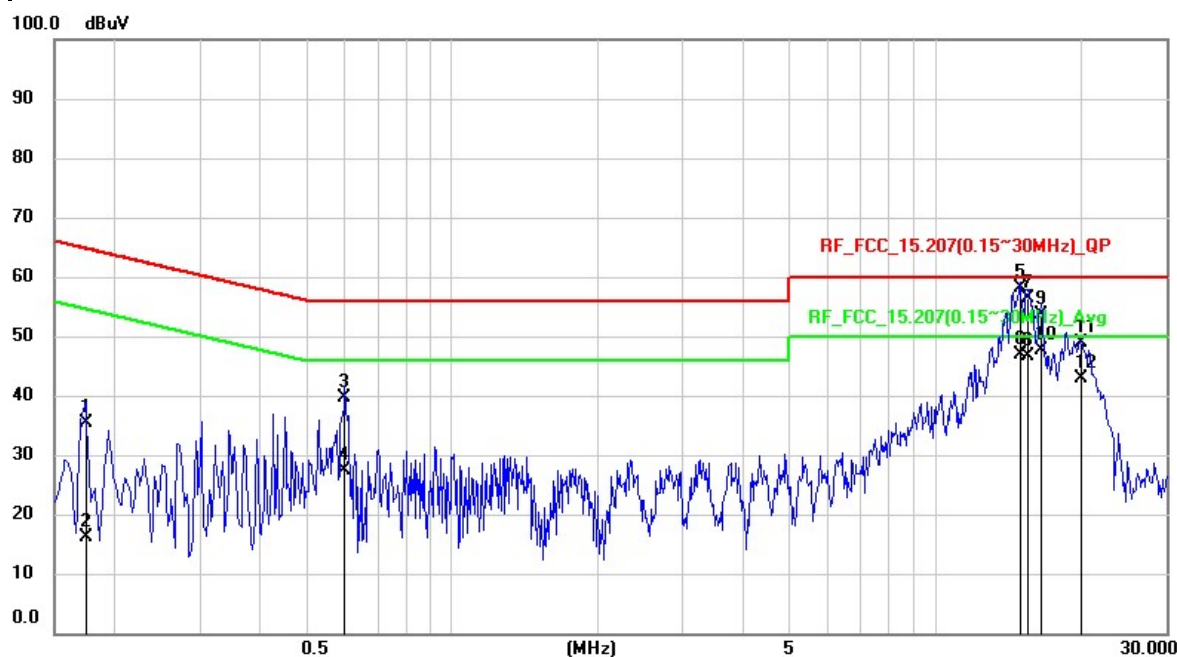


2.7.3 Test Procedure

1. Reference ANSI C63.10 : 2013 chapter 6.2
2. The EUT was placed 0.8 meter height wooden table from the horizontal ground plane with EUT being connected to power source through a line impedance stabilization network (LISN). The LISN at least be 80 cm from nearest chassis of EUT.
3. The line impedance stabilization network (LISN) provides 50 ohm/50uH of coupling impedance for the measuring instrument. All other support equipments powered from additional LISN(s).
4. Interrelating cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle. All I/O cables were positioned to simulate typical usage.
5. All I/O cables that are not connected to a peripheral shall be bundle 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.
6. The EMI test receiver connected to LISN powering the EUT. The actual test configuration, please refer to EUT test photos.
7. The receiver scanned from 150kHz to 30MHz for emissions in each of test modes. A scan was taken on both power lines, Line and Neutral, recording at least six highest emissions.
8. The EUT and cable configuration of the above highest emission levels were recorded. The Test Data of the worst case was recorded.

2.7.4 Test Result

Test Voltage :	120Vac, 60Hz	Frequency Range:	0.15-30 MHz
Test Mode :	Normal Link	6dB Bandwidth :	9 kHz
Test Date :	2021/11/17	Phase :	L
Temperature :	26°C	Humidity :	38 %

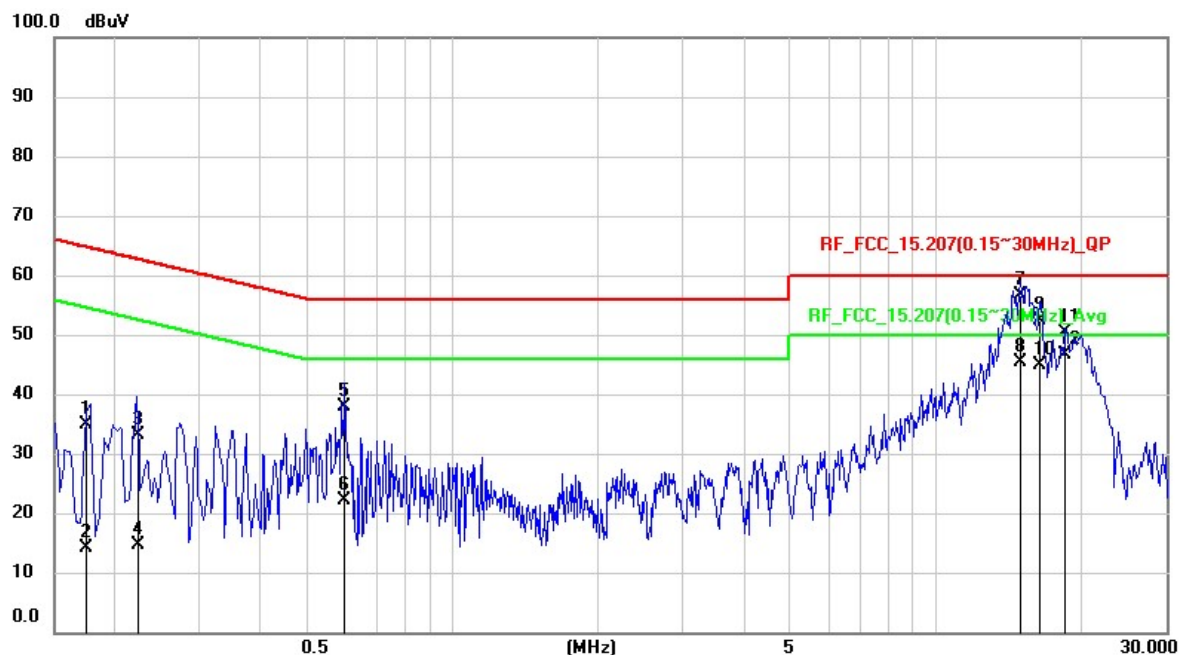


No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1743	19.45	9.82	29.27	64.75	-35.48	QP
2	0.1743	1.28	9.82	11.1	54.75	-43.65	AVG
3	0.2988	16	9.81	25.81	60.28	-34.47	QP
4	0.2988	-0.51	9.81	9.3	50.28	-40.98	AVG
5	0.5924	24.86	9.81	34.67	56	-21.33	QP
6	0.5924	9.54	9.81	19.35	46	-26.65	AVG
7	14.9999	46.05	10.16	56.21	60	-3.79	QP
8	14.9999	34.51	10.16	44.67	50	-5.33	AVG
9	18.6004	38.92	10.23	49.15	60	-10.85	QP
10	18.6004	33.31	10.23	43.54	50	-6.46	AVG
11	19.3992	37.52	10.25	47.77	60	-12.23	QP
12	19.3992	32.14	10.25	42.39	50	-7.61	AVG

Remark:

1. QP = Quasi Peak, AVG = Average
2. Correction Factor = Insertion loss of LISN + Cable loss
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Result Value – Limit Value

Test Voltage :	120Vac, 60Hz	Frequency Range:	0.15-30 MHz
Test Mode :	Normal Link	6dB Bandwidth :	9 kHz
Test Date :	2021/11/17	Phase :	N
Temperature :	26°C	Humidity :	38 %



No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1753	19.99	9.83	29.82	64.71	-34.89	QP
2	0.1753	0.81	9.83	10.64	54.71	-44.07	AVG
3	0.199	19.44	9.84	29.28	63.65	-34.37	QP
4	0.199	1.33	9.84	11.17	53.65	-42.48	AVG
5	0.5932	21.83	9.81	31.64	56	-24.36	QP
6	0.5932	6.08	9.81	15.89	46	-30.11	AVG
7	11.9211	29.04	10.09	39.13	60	-20.87	QP
8	11.9211	21.57	10.09	31.66	50	-18.34	AVG
9	15.519	45.14	10.17	55.31	60	-4.69	QP
10	15.519	35.08	10.17	45.25	50	-4.75	AVG
11	19.4467	30.81	10.25	41.06	60	-18.94	QP
12	19.4467	24	10.25	34.25	50	-15.75	AVG

Remark:

1. QP = Quasi Peak, AVG = Average
2. Correction Factor = Insertion loss of LISN + Cable loss
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Result Value – Limit Value

--- END ---