7.6. Radiated Spurious Emission Measurement

7.6.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.6.2. Test Procedure Used

ANSI C63.10-2013 – Section 6.6.4.3

7.6.3. Test Setting

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold

7. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

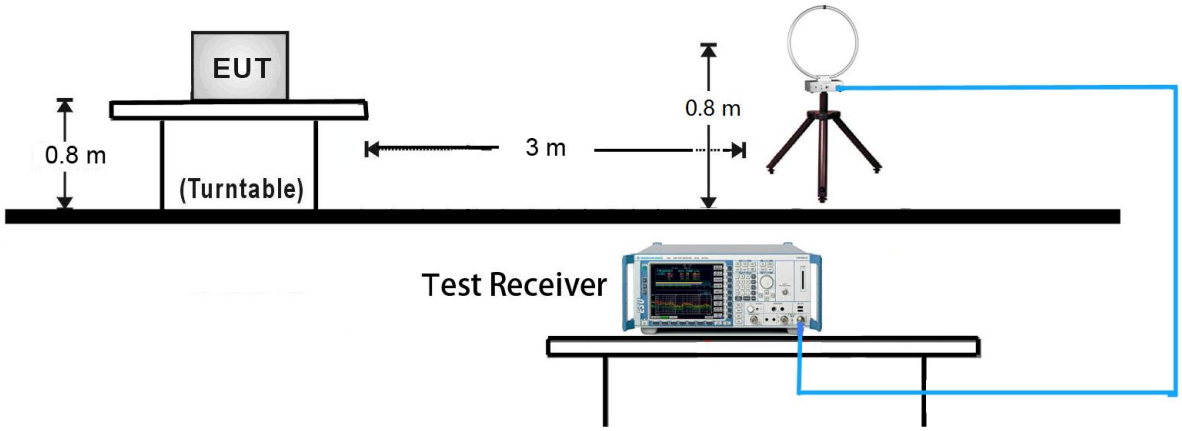
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

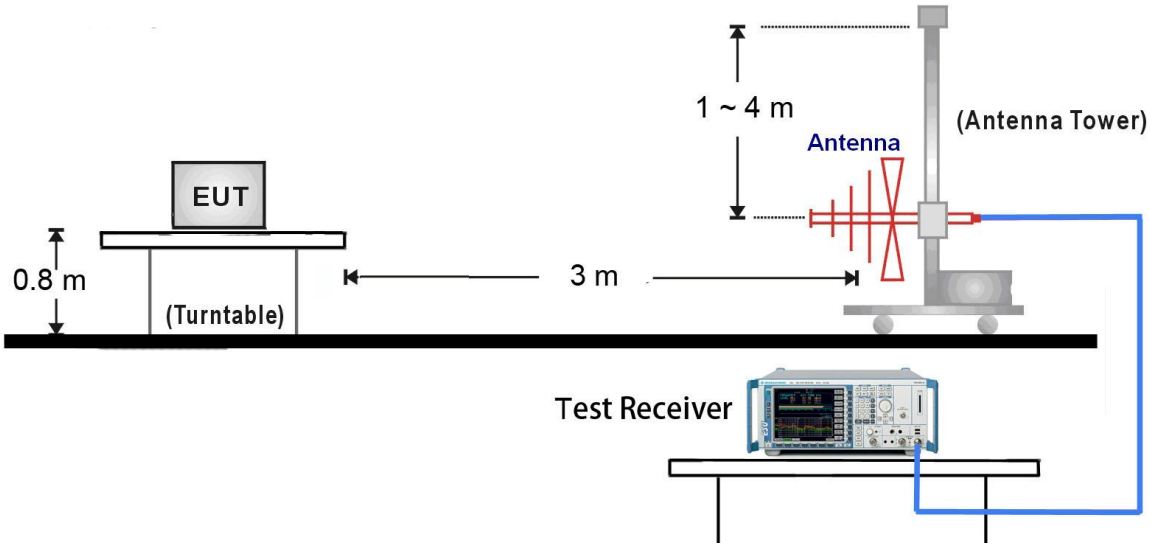
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Power Average (RMS)
5. Number of sweep point = 2001 (Number of sweep points must be ≥ 2 x span / RBW)
6. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces.

7.6.4. Test Setup

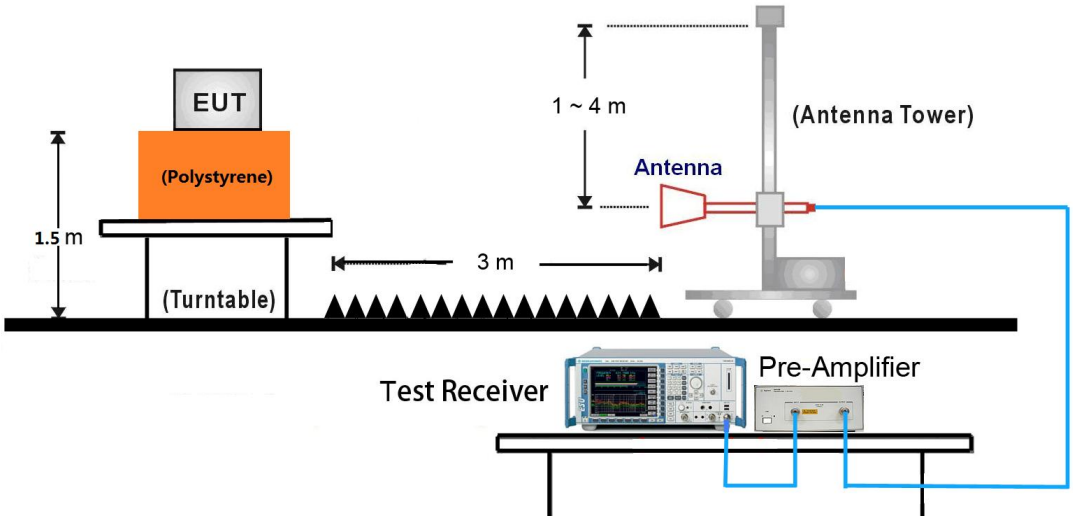
9kHz ~ 30MHz Test Setup:



30MHz ~ 1GHz Test Setup:



1GHz ~ 26.5GHz Test Setup:

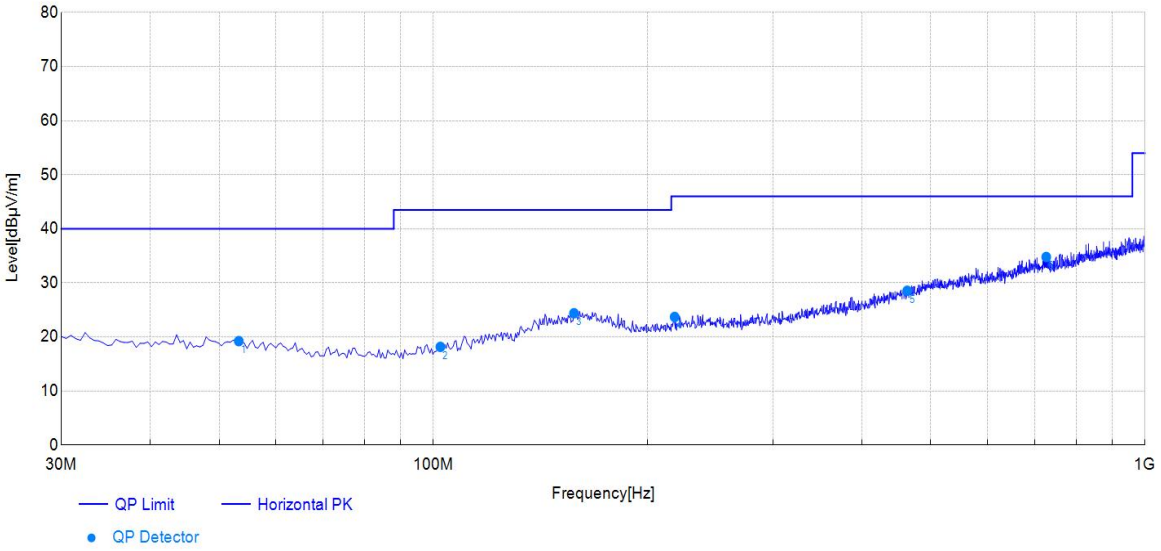


7.6.5. Test Result

The worst case of Radiated Emission below 1GHz:

30MHz – 1GHz Test Data

EUT:	Smart Soil Moisture Sensor	Polarity:	Horizontal
Model:	3RSM0147Z	Test Date:	2025-07-26
Mode:	Transmit at Zigbee Channel 11	Voltage:	DC 1.5V
Environment:	Temp: 25.0℃; Humi:60%	Engineer:	Stone Zhang



Final Data List										
NO.	Frequency [MHz]	Factor [dB/m]	QP Reading [dBµV]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pol	Verdict
1	53.29	13.15	6.08	19.23	40.00	20.77	100	46	Horizontal	PASS
2	102.30	12.45	5.72	18.17	43.50	25.33	150	220	Horizontal	PASS
3	157.62	17.70	6.69	24.39	43.50	19.11	100	81	Horizontal	PASS
4	218.27	15.63	8.08	23.71	46.00	22.29	150	53	Horizontal	PASS
5	463.32	20.97	7.58	28.55	46.00	17.45	150	0	Horizontal	PASS
6	726.32	25.30	9.5	34.80	46.00	11.20	150	161	Horizontal	PASS

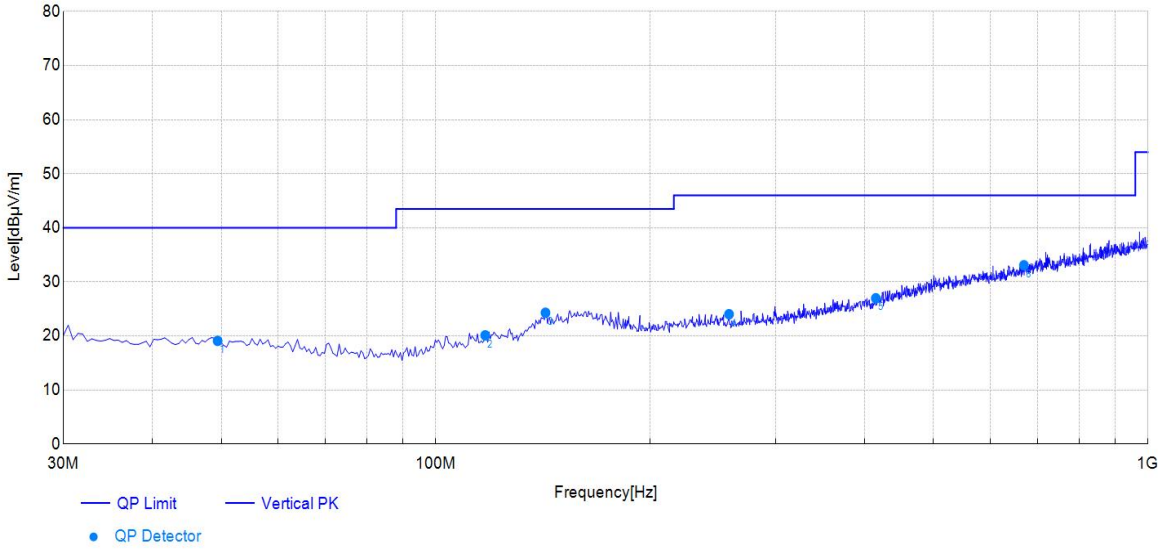
Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

(3) The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

EUT:	Smart Soil Moisture Sensor	Polarity:	Vertical
Model:	3RSM0147Z	Test Date:	2025-07-26
Mode:	Transmit at Zigbee Channel 11	Voltage:	DC 1.5V
Environment:	Temp: 25.0℃; Humi:60%	Engineer:	Stone Zhang



Final Data List										
NO.	Frequency [MHz]	Factor [dB/m]	QP Reading [dBµV]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pol	Verdict
1	49.41	13.33	5.76	19.09	40.00	20.91	150	0	Vertical	PASS
2	117.34	14.00	6.11	20.11	43.50	23.39	100	284	Vertical	PASS
3	142.58	16.61	7.68	24.29	43.50	19.21	150	122	Vertical	PASS
4	258.06	16.04	7.98	24.02	46.00	21.98	150	81	Vertical	PASS
5	414.80	19.66	7.31	26.97	46.00	19.03	150	71	Vertical	PASS
6	669.55	24.42	8.66	33.08	46.00	12.92	100	327	Vertical	PASS

Note:

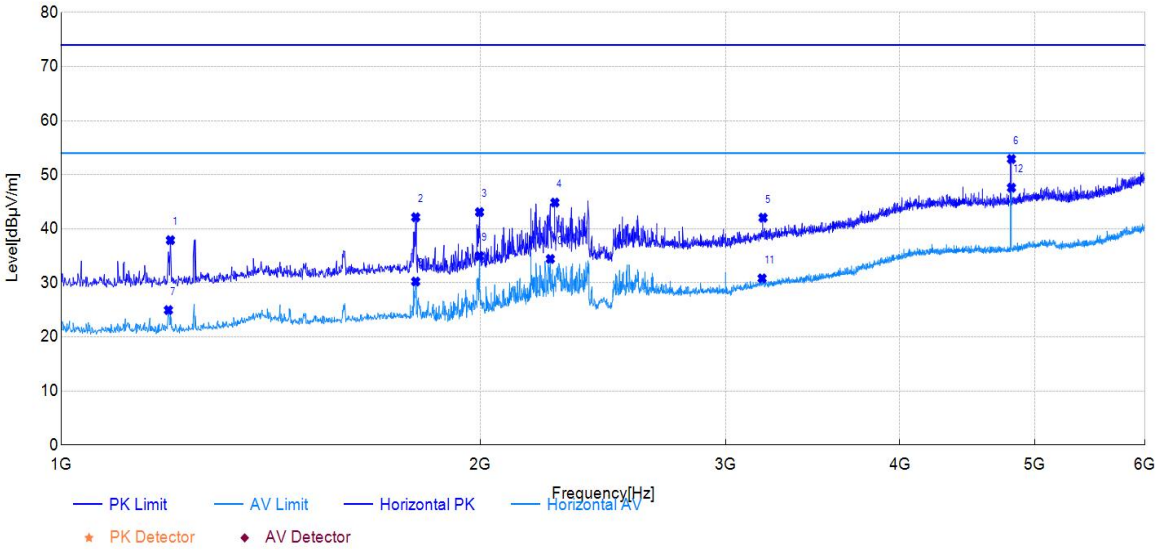
(1) Level=Reading + Factor

(2) Margin=Limit-Level

(3) The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

1GHz-6GHz

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	11	Test Engineer:	Stone Zhang



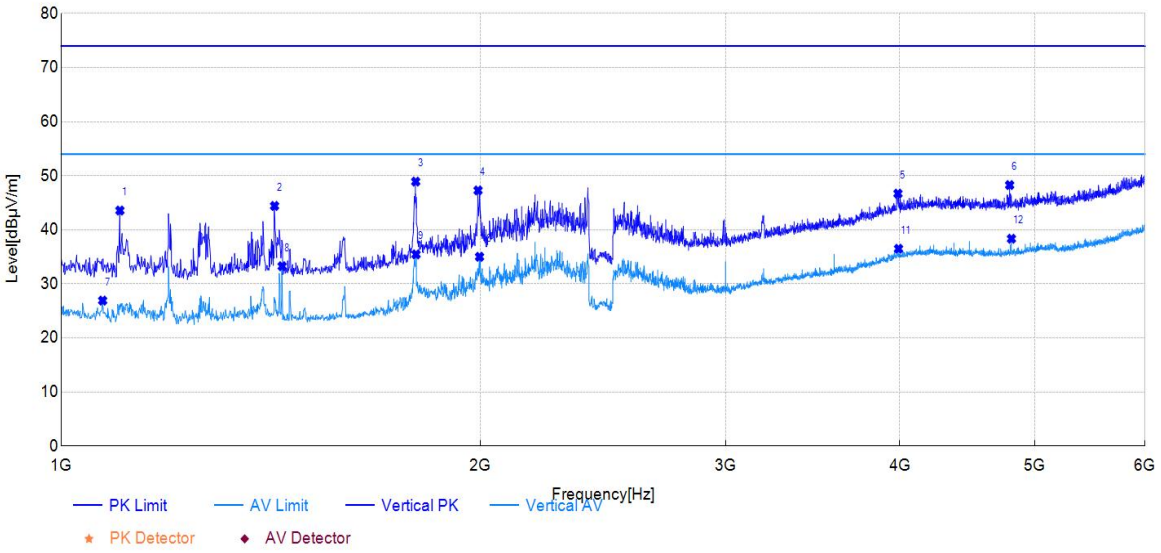
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1198.00	61.36	37.90	-23.46	74.00	36.10	100	92	PK	Horizontal	PASS
2	1797.00	61.65	42.14	-19.51	74.00	31.86	100	70	PK	Horizontal	PASS
3	1997.00	61.28	43.09	-18.19	74.00	30.91	100	163	PK	Horizontal	PASS
4	2262.00	61.84	44.86	-16.98	74.00	29.14	100	159	PK	Horizontal	PASS
5	3191.00	55.69	42.05	-13.64	74.00	31.95	100	18	PK	Horizontal	PASS
6	4811.00	59.67	52.91	-6.76	74.00	21.09	150	11	PK	Horizontal	PASS
7	1194.00	48.44	24.96	-23.48	54.00	29.04	100	92	AV	Horizontal	PASS
8	1797.00	49.75	30.24	-19.51	54.00	23.76	150	66	AV	Horizontal	PASS
9	1997.00	53.15	34.96	-18.19	54.00	19.04	100	163	AV	Horizontal	PASS
10	2245.00	51.46	34.42	-17.04	54.00	19.58	100	170	AV	Horizontal	PASS
11	3186.00	44.50	30.83	-13.67	54.00	23.17	100	95	AV	Horizontal	PASS
12	4811.00	54.36	47.60	-6.76	54.00	6.40	150	15	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	11	Test Engineer:	Stone Zhang



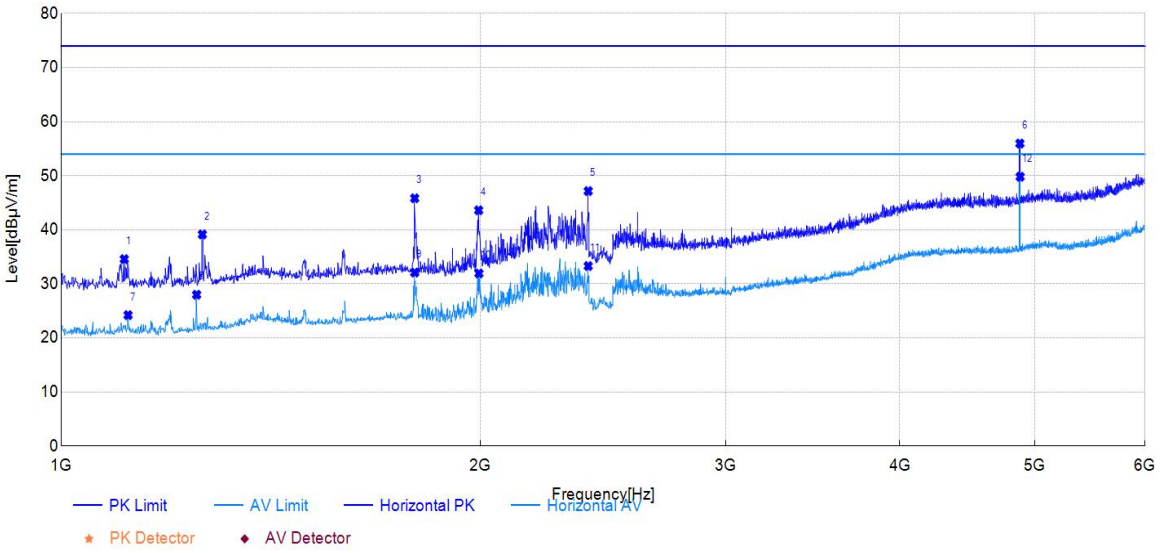
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1102.00	66.36	43.57	-22.79	74.00	30.43	150	18	PK	Vertical	PASS
2	1423.00	65.66	44.42	-21.24	74.00	29.58	150	3	PK	Vertical	PASS
3	1797.00	67.87	48.92	-18.95	74.00	25.08	150	89	PK	Vertical	PASS
4	1992.00	65.11	47.29	-17.82	74.00	26.71	150	89	PK	Vertical	PASS
5	3988.00	55.05	46.70	-8.35	74.00	27.30	150	256	PK	Vertical	PASS
6	4797.00	55.62	48.28	-7.34	74.00	25.72	100	81	PK	Vertical	PASS
7	1071.00	49.82	26.91	-22.91	54.00	27.09	150	104	AV	Vertical	PASS
8	1441.00	54.44	33.26	-21.18	54.00	20.74	150	66	AV	Vertical	PASS
9	1798.00	54.39	35.45	-18.94	54.00	18.55	150	82	AV	Vertical	PASS
10	1997.00	52.80	35.01	-17.79	54.00	18.99	100	100	AV	Vertical	PASS
11	3992.00	44.83	36.50	-8.33	54.00	17.50	150	75	AV	Vertical	PASS
12	4811.00	45.66	38.35	-7.31	54.00	15.65	100	192	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	18	Test Engineer:	Stone Zhang



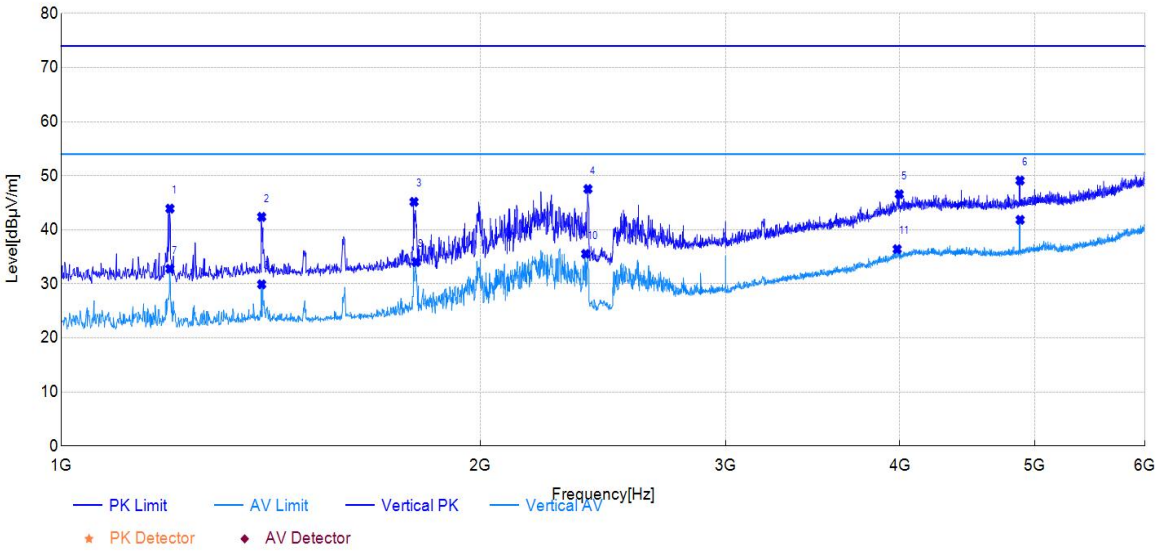
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1110.00	58.38	34.58	-23.80	74.00	39.42	100	85	PK	Horizontal	PASS
2	1263.00	62.25	39.15	-23.10	74.00	34.85	100	81	PK	Horizontal	PASS
3	1794.00	65.38	45.84	-19.54	74.00	28.16	150	67	PK	Horizontal	PASS
4	1994.00	61.83	43.61	-18.22	74.00	30.39	150	60	PK	Horizontal	PASS
5	2390.00	63.52	47.17	-16.35	74.00	26.83	100	156	PK	Horizontal	PASS
6	4879.00	62.53	55.97	-6.56	74.00	18.03	150	11	PK	Horizontal	PASS
7	1117.00	47.99	24.22	-23.77	54.00	29.78	100	85	AV	Horizontal	PASS
8	1251.00	51.16	27.99	-23.17	54.00	26.01	100	85	AV	Horizontal	PASS
9	1794.00	51.64	32.10	-19.54	54.00	21.90	150	67	AV	Horizontal	PASS
10	1995.00	50.13	31.93	-18.20	54.00	22.07	150	164	AV	Horizontal	PASS
11	2390.00	49.65	33.30	-16.35	54.00	20.70	100	156	AV	Horizontal	PASS
12	4881.00	56.38	49.82	-6.56	54.00	4.18	150	15	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	18	Test Engineer:	Stone Zhang



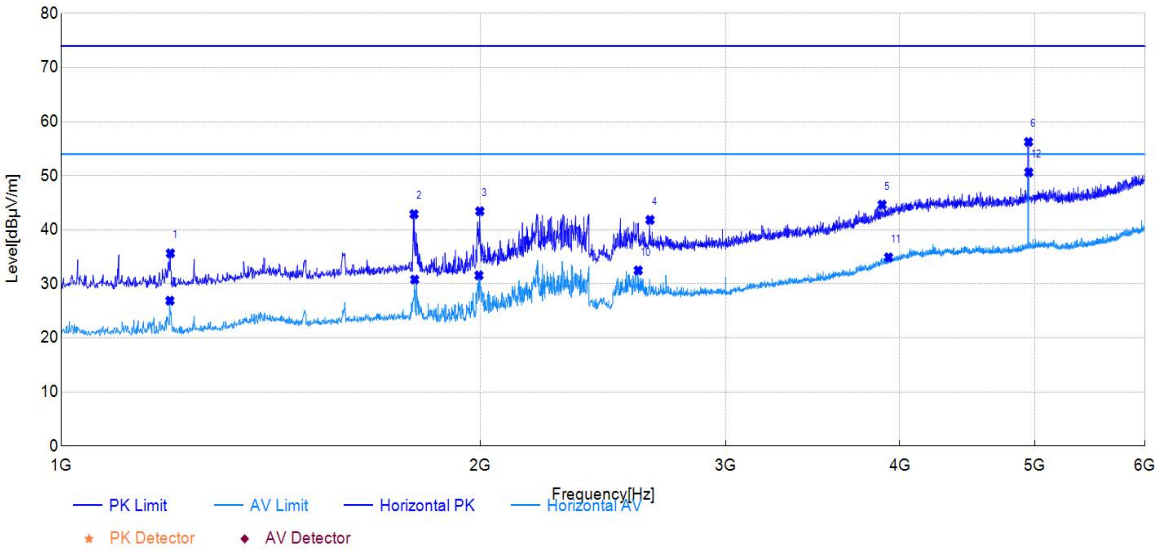
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1197.00	66.40	43.92	-22.48	74.00	30.08	100	115	PK	Vertical	PASS
2	1393.00	63.77	42.39	-21.38	74.00	31.61	100	106	PK	Vertical	PASS
3	1792.00	64.15	45.17	-18.98	74.00	28.83	150	74	PK	Vertical	PASS
4	2389.00	64.05	47.55	-16.50	74.00	26.45	100	54	PK	Vertical	PASS
5	3997.00	54.88	46.58	-8.30	74.00	27.42	100	99	PK	Vertical	PASS
6	4880.00	56.29	49.12	-7.17	74.00	24.88	150	304	PK	Vertical	PASS
7	1197.00	55.27	32.79	-22.48	54.00	21.21	100	99	AV	Vertical	PASS
8	1393.00	51.29	29.91	-21.38	54.00	24.09	100	111	AV	Vertical	PASS
9	1798.00	52.98	34.04	-18.94	54.00	19.96	100	81	AV	Vertical	PASS
10	2380.00	52.08	35.54	-16.54	54.00	18.46	100	58	AV	Vertical	PASS
11	3983.00	44.79	36.42	-8.37	54.00	17.58	150	122	AV	Vertical	PASS
12	4881.00	49.01	41.85	-7.16	54.00	12.15	150	312	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	25	Test Engineer:	Stone Zhang



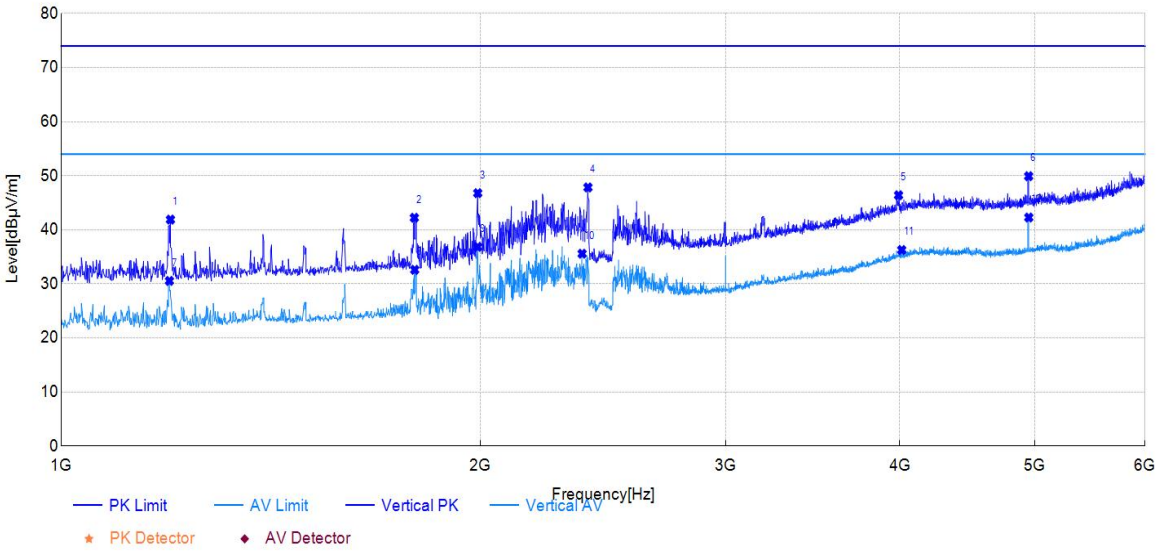
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1198.00	59.11	35.65	-23.46	74.00	38.35	100	96	PK	Horizontal	PASS
2	1792.00	62.45	42.90	-19.55	74.00	31.10	100	89	PK	Horizontal	PASS
3	1998.00	61.62	43.44	-18.18	74.00	30.56	100	167	PK	Horizontal	PASS
4	2647.00	57.21	41.84	-15.37	74.00	32.16	150	68	PK	Horizontal	PASS
5	3885.00	54.04	44.65	-9.39	74.00	29.35	100	36	PK	Horizontal	PASS
6	4949.00	62.52	56.26	-6.26	74.00	17.74	150	3	PK	Horizontal	PASS
7	1197.00	50.35	26.89	-23.46	54.00	27.11	100	92	AV	Horizontal	PASS
8	1794.00	50.33	30.79	-19.54	54.00	23.21	150	71	AV	Horizontal	PASS
9	1995.00	49.77	31.57	-18.20	54.00	22.43	100	146	AV	Horizontal	PASS
10	2596.00	48.03	32.49	-15.54	54.00	21.51	150	68	AV	Horizontal	PASS
11	3927.00	43.98	34.91	-9.07	54.00	19.09	100	239	AV	Horizontal	PASS
12	4951.00	56.89	50.63	-6.26	54.00	3.37	150	3	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	25	Test Engineer:	Stone Zhang



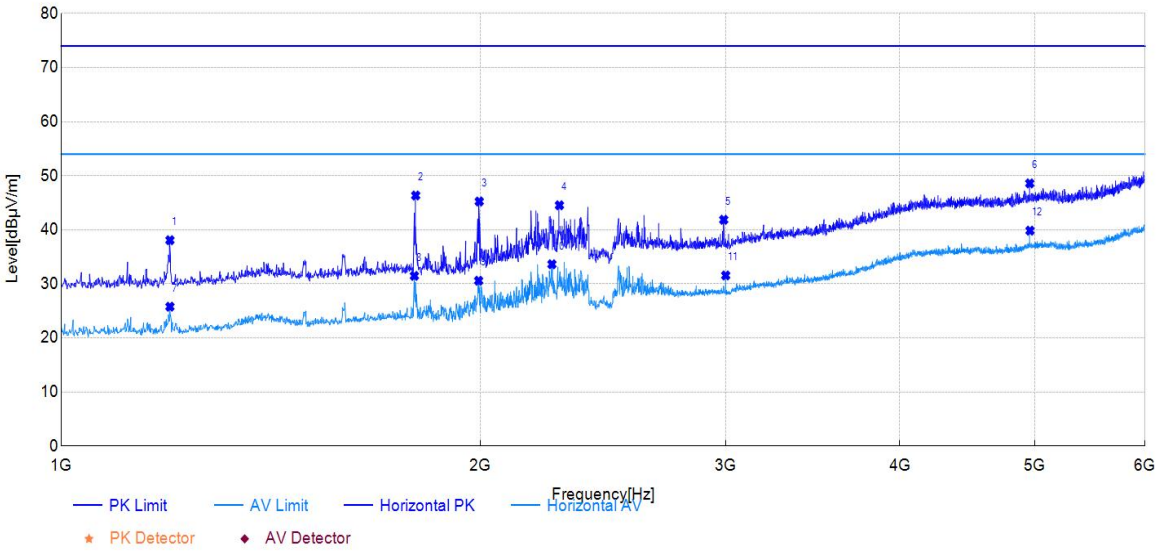
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1198.00	64.37	41.89	-22.48	74.00	32.11	100	60	PK	Vertical	PASS
2	1793.00	61.21	42.23	-18.98	74.00	31.77	150	107	PK	Vertical	PASS
3	1991.00	64.62	46.78	-17.84	74.00	27.22	100	90	PK	Vertical	PASS
4	2389.00	64.34	47.84	-16.50	74.00	26.16	100	60	PK	Vertical	PASS
5	3992.00	54.73	46.40	-8.33	74.00	27.60	150	96	PK	Vertical	PASS
6	4950.00	56.84	49.92	-6.92	74.00	24.08	100	127	PK	Vertical	PASS
7	1196.00	53.04	30.55	-22.49	54.00	23.45	100	112	AV	Vertical	PASS
8	1794.00	51.57	32.60	-18.97	54.00	21.40	100	82	AV	Vertical	PASS
9	1991.00	54.68	36.84	-17.84	54.00	17.16	100	90	AV	Vertical	PASS
10	2366.00	52.17	35.58	-16.59	54.00	18.42	100	49	AV	Vertical	PASS
11	4013.00	44.50	36.27	-8.23	54.00	17.73	150	344	AV	Vertical	PASS
12	4951.00	49.20	42.28	-6.92	54.00	11.72	150	315	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	26	Test Engineer:	Stone Zhang



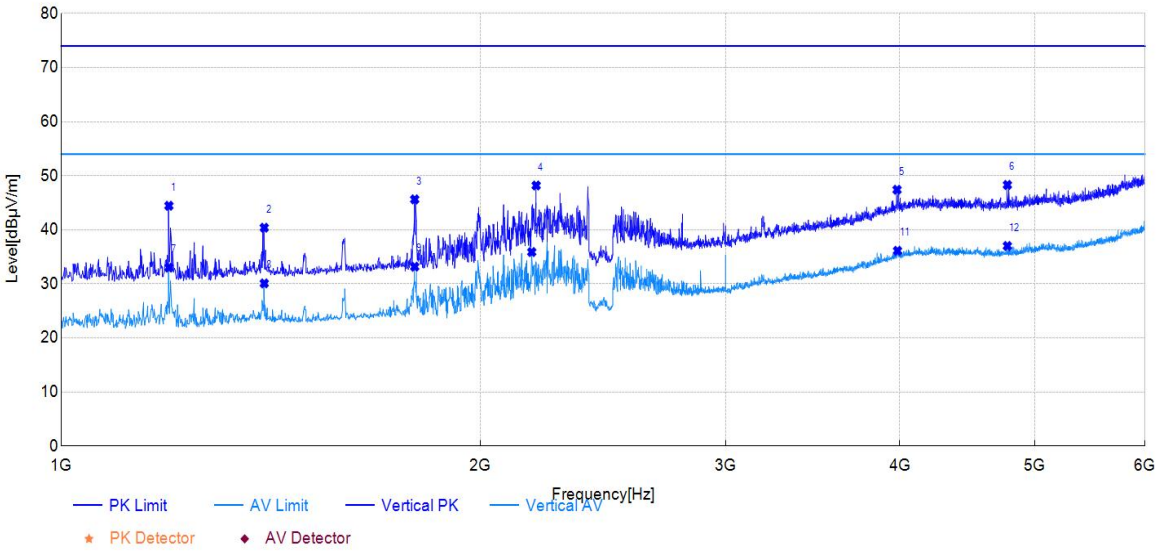
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1197.00	61.54	38.08	-23.46	74.00	35.92	150	342	PK	Horizontal	PASS
2	1797.00	65.86	46.35	-19.51	74.00	27.65	150	74	PK	Horizontal	PASS
3	1996.00	63.43	45.24	-18.19	74.00	28.76	100	159	PK	Horizontal	PASS
4	2279.00	61.46	44.54	-16.92	74.00	29.46	100	162	PK	Horizontal	PASS
5	2990.00	56.43	41.86	-14.57	74.00	32.14	100	48	PK	Horizontal	PASS
6	4959.00	54.81	48.59	-6.22	74.00	25.41	150	1	PK	Horizontal	PASS
7	1197.00	49.24	25.78	-23.46	54.00	28.22	150	342	PK	Horizontal	PASS
8	1793.00	51.02	31.48	-19.54	54.00	22.52	150	74	AV	Horizontal	PASS
9	1994.00	48.80	30.58	-18.22	54.00	23.42	100	148	AV	Horizontal	PASS
10	2251.00	50.65	33.63	-17.02	54.00	20.37	100	162	AV	Horizontal	PASS
11	3000.00	46.11	31.56	-14.55	54.00	22.44	100	125	AV	Horizontal	PASS
12	4961.00	46.06	39.85	-6.21	54.00	14.15	150	22	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	26	Test Engineer:	Stone Zhang



Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1195.00	66.94	44.45	-22.49	74.00	29.55	100	92	PK	Vertical	PASS
2	1399.00	61.72	40.39	-21.33	74.00	33.61	150	70	PK	Vertical	PASS
3	1794.00	64.60	45.63	-18.97	74.00	28.37	150	103	PK	Vertical	PASS
4	2193.00	65.31	48.20	-17.11	74.00	25.80	100	88	PK	Vertical	PASS
5	3982.00	55.80	47.41	-8.39	74.00	26.59	150	92	PK	Vertical	PASS
6	4779.00	55.67	48.31	-7.36	74.00	25.69	100	81	PK	Vertical	PASS
7	1195.00	55.50	33.01	-22.49	54.00	20.99	100	92	AV	Vertical	PASS
8	1399.00	51.42	30.09	-21.33	54.00	23.91	150	70	AV	Vertical	PASS
9	1794.00	52.15	33.18	-18.97	54.00	20.82	150	103	AV	Vertical	PASS
10	2177.00	53.05	35.89	-17.16	54.00	18.11	100	92	AV	Vertical	PASS
11	3985.00	44.49	36.12	-8.37	54.00	17.88	150	95	AV	Vertical	PASS
12	4779.00	44.37	37.01	-7.36	54.00	16.99	100	85	AV	Vertical	PASS

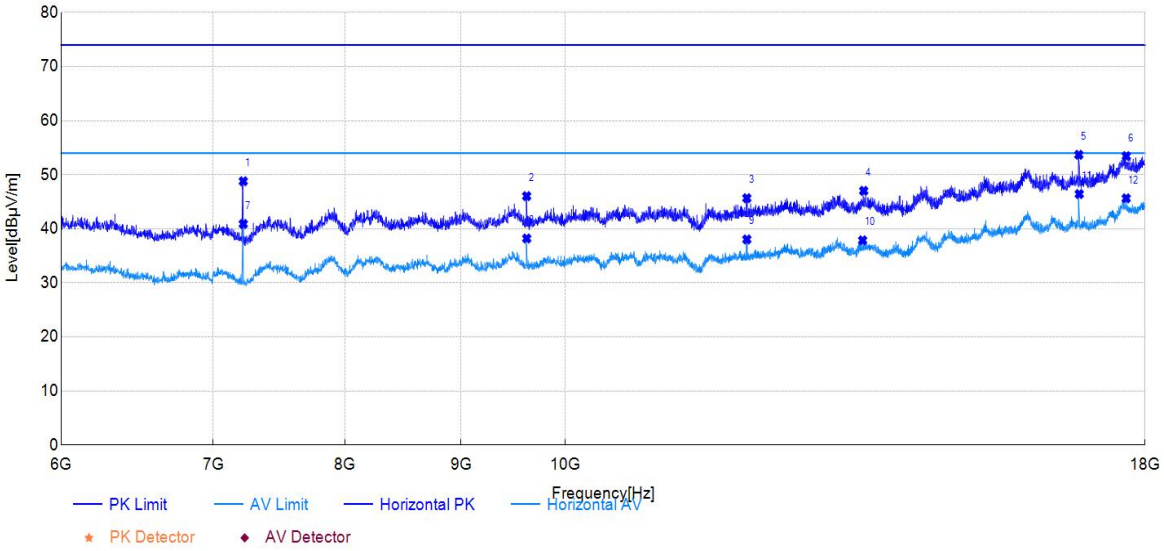
Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

6GHz-18GHz

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	11	Test Engineer:	Stone Zhang



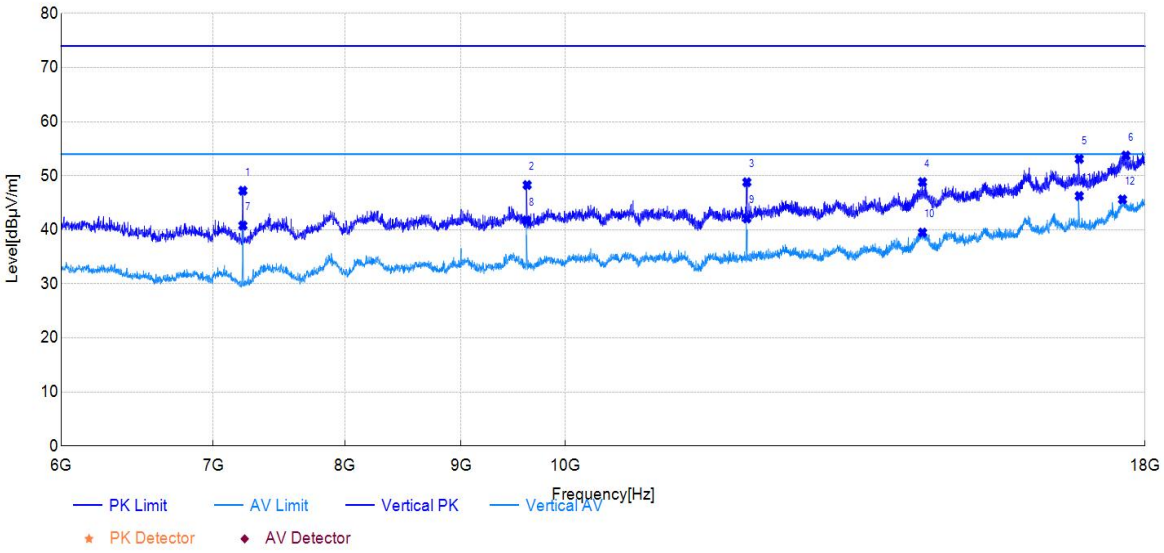
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7216.50	52.86	48.80	-4.06	74.00	25.20	150	63	PK	Horizontal	PASS
2	9618.00	46.44	46.05	-0.39	74.00	27.95	150	28	PK	Horizontal	PASS
3	12022.50	44.15	45.67	1.52	74.00	28.33	100	186	PK	Horizontal	PASS
4	13534.50	43.78	47.03	3.25	74.00	26.97	150	91	PK	Horizontal	PASS
5	16831.50	44.35	53.70	9.35	74.00	20.30	150	342	PK	Horizontal	PASS
6	17661.00	39.84	53.44	13.60	74.00	20.56	100	304	PK	Horizontal	PASS
7	7216.50	44.96	40.90	-4.06	54.00	13.10	150	63	AV	Horizontal	PASS
8	9618.00	38.60	38.21	-0.39	54.00	15.79	100	261	AV	Horizontal	PASS
9	12022.50	36.52	38.04	1.52	54.00	15.96	100	269	AV	Horizontal	PASS
10	13519.50	34.58	37.87	3.29	54.00	16.13	100	319	AV	Horizontal	PASS
11	16839.00	37.08	46.43	9.35	54.00	7.57	150	39	AV	Horizontal	PASS
12	17659.50	32.02	45.64	13.62	54.00	8.36	150	0	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	11	Test Engineer:	Stone Zhang



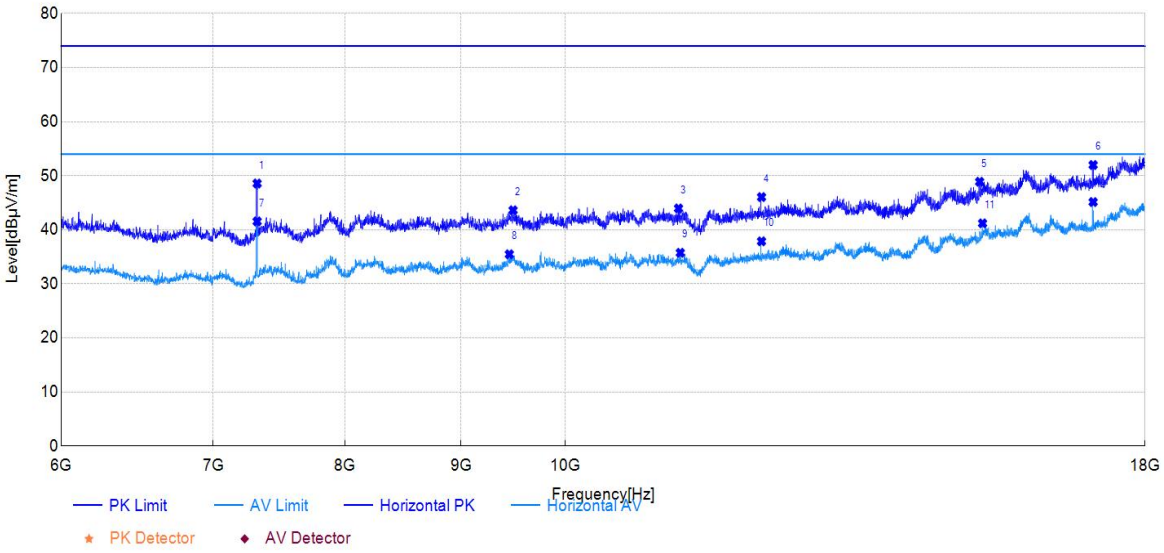
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7213.50	51.31	47.23	-4.08	74.00	26.77	100	54	PK	Vertical	PASS
2	9622.50	48.60	48.29	-0.31	74.00	25.71	100	211	PK	Vertical	PASS
3	12022.50	47.28	48.80	1.52	74.00	25.20	150	359	PK	Vertical	PASS
4	14365.50	43.32	48.83	5.51	74.00	25.17	150	238	PK	Vertical	PASS
5	16839.00	43.50	53.11	9.61	74.00	20.89	150	23	PK	Vertical	PASS
6	17653.50	39.55	53.74	14.19	74.00	20.26	100	340	PK	Vertical	PASS
7	7213.50	44.87	40.79	-4.08	54.00	13.21	100	59	AV	Vertical	PASS
8	9618.00	42.03	41.75	-0.28	54.00	12.25	150	344	AV	Vertical	PASS
9	12022.50	40.57	42.09	1.52	54.00	11.91	150	360	AV	Vertical	PASS
10	14365.50	33.98	39.49	5.51	54.00	14.51	150	297	AV	Vertical	PASS
11	16839.00	36.65	46.26	9.61	54.00	7.74	150	11	AV	Vertical	PASS
12	17593.50	31.18	45.61	14.43	54.00	8.39	150	325	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	18	Test Engineer:	Stone Zhang



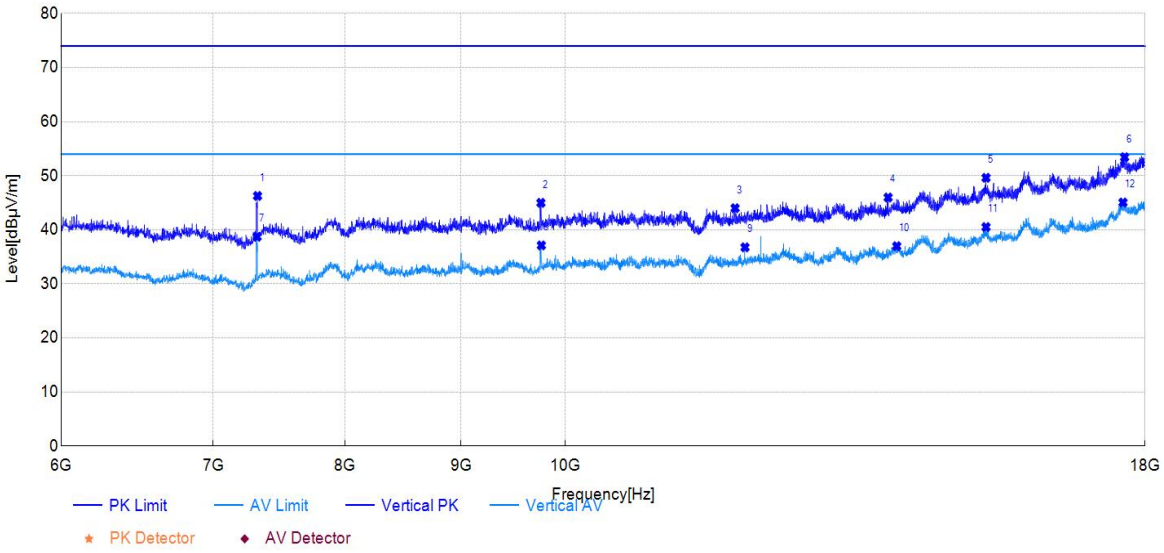
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7318.50	51.91	48.57	-3.34	74.00	25.43	150	59	PK	Horizontal	PASS
2	9486.00	43.67	43.61	-0.06	74.00	30.39	150	172	PK	Horizontal	PASS
3	11218.50	43.17	43.96	0.79	74.00	30.04	150	231	PK	Horizontal	PASS
4	12202.50	44.30	46.06	1.76	74.00	27.94	150	281	PK	Horizontal	PASS
5	15222.00	42.94	48.89	5.95	74.00	25.11	150	228	PK	Horizontal	PASS
6	17077.50	41.64	51.99	10.35	74.00	22.01	150	39	PK	Horizontal	PASS
7	7318.50	44.89	41.55	-3.34	54.00	12.45	150	59	AV	Horizontal	PASS
8	9450.00	35.81	35.47	-0.34	54.00	18.53	150	66	AV	Horizontal	PASS
9	11238.00	34.95	35.75	0.80	54.00	18.25	150	105	AV	Horizontal	PASS
10	12202.50	36.11	37.87	1.76	54.00	16.13	100	160	AV	Horizontal	PASS
11	15267.00	34.48	41.20	6.72	54.00	12.80	150	8	AV	Horizontal	PASS
12	17077.50	34.79	45.14	10.35	54.00	8.86	150	39	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	18	Test Engineer:	Stone Zhang



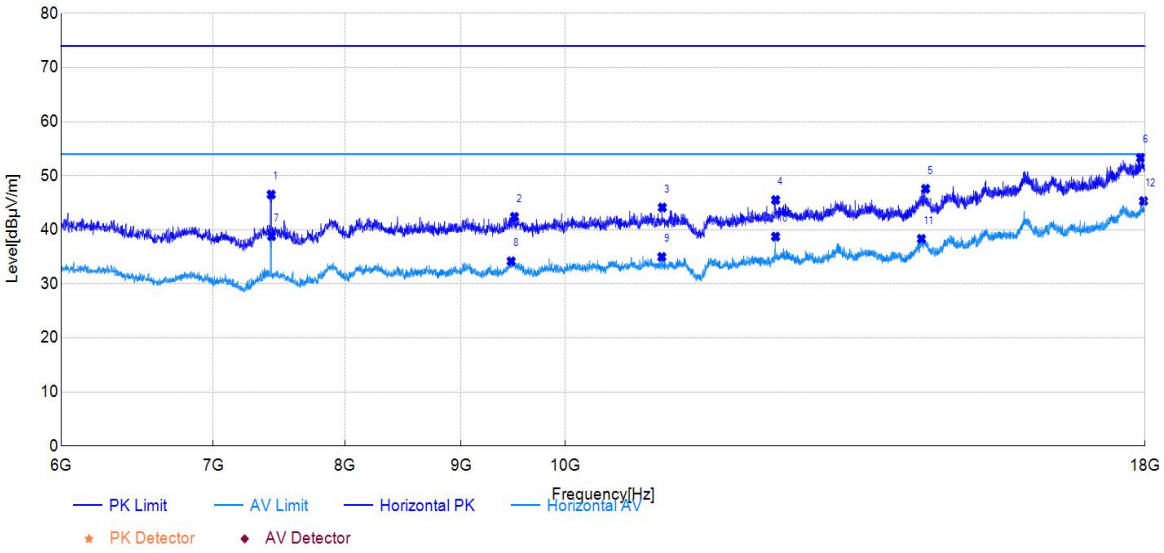
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7321.50	49.59	46.27	-3.32	74.00	27.73	100	57	PK	Vertical	PASS
2	9757.50	45.38	44.99	-0.39	74.00	29.01	150	343	PK	Vertical	PASS
3	11880.00	42.80	44.00	1.20	74.00	30.00	150	183	PK	Vertical	PASS
4	13873.50	42.04	45.98	3.94	74.00	28.02	150	187	PK	Vertical	PASS
5	15321.00	42.63	49.62	6.99	74.00	24.38	150	92	PK	Vertical	PASS
6	17631.00	39.12	53.43	14.31	74.00	20.57	150	136	PK	Vertical	PASS
7	7318.50	42.05	38.71	-3.34	54.00	15.29	100	85	AV	Vertical	PASS
8	9762.00	37.46	37.12	-0.34	54.00	16.88	100	266	AV	Vertical	PASS
9	12000.00	35.23	36.76	1.53	54.00	17.24	150	58	AV	Vertical	PASS
10	13995.00	33.17	36.97	3.80	54.00	17.03	150	152	AV	Vertical	PASS
11	15321.00	33.52	40.51	6.99	54.00	13.49	150	92	AV	Vertical	PASS
12	17602.50	30.56	45.05	14.49	54.00	8.95	150	120	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	25	Test Engineer:	Stone Zhang



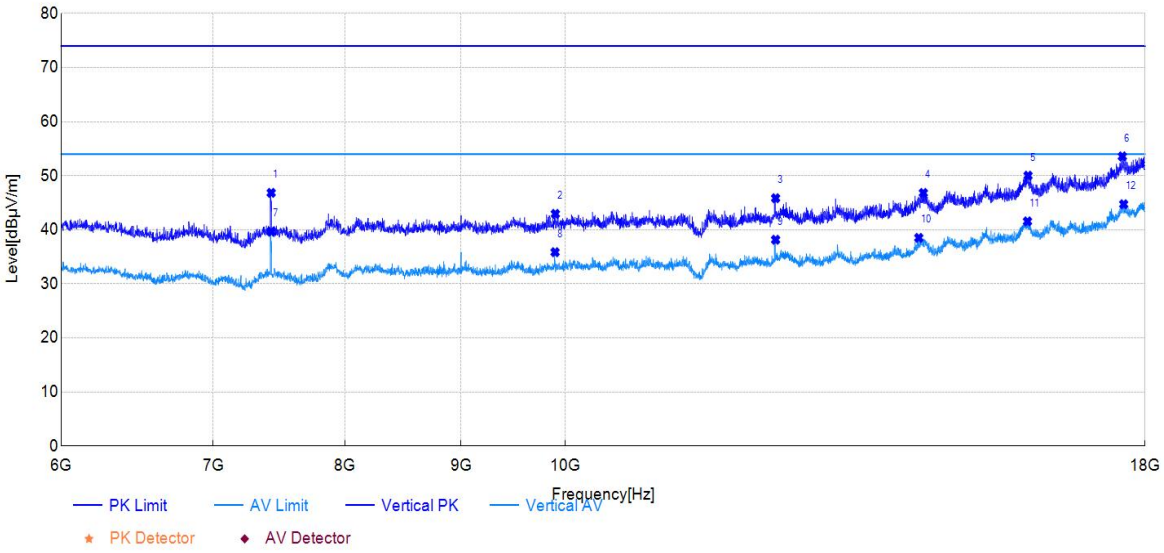
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7423.50	49.32	46.52	-2.80	74.00	27.48	150	66	PK	Horizontal	PASS
2	9499.50	42.35	42.40	0.05	74.00	31.60	150	223	PK	Horizontal	PASS
3	11035.50	43.05	44.13	1.08	74.00	29.87	100	204	PK	Horizontal	PASS
4	12378.00	43.39	45.52	2.13	74.00	28.48	150	278	PK	Horizontal	PASS
5	14410.50	42.50	47.59	5.09	74.00	26.41	100	352	PK	Horizontal	PASS
6	17917.50	38.98	53.29	14.31	74.00	20.71	100	72	PK	Horizontal	PASS
7	7426.50	41.62	38.82	-2.80	54.00	15.18	150	49	AV	Horizontal	PASS
8	9468.00	34.38	34.18	-0.20	54.00	19.82	150	0	AV	Horizontal	PASS
9	11029.50	33.87	34.99	1.12	54.00	19.01	150	360	AV	Horizontal	PASS
10	12378.00	36.61	38.74	2.13	54.00	15.26	150	281	AV	Horizontal	PASS
11	14349.00	33.39	38.34	4.95	54.00	15.66	150	360	AV	Horizontal	PASS
12	17971.50	31.35	45.32	13.97	54.00	8.68	100	160	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	25	Test Engineer:	Stone Zhang



Suspected Data List

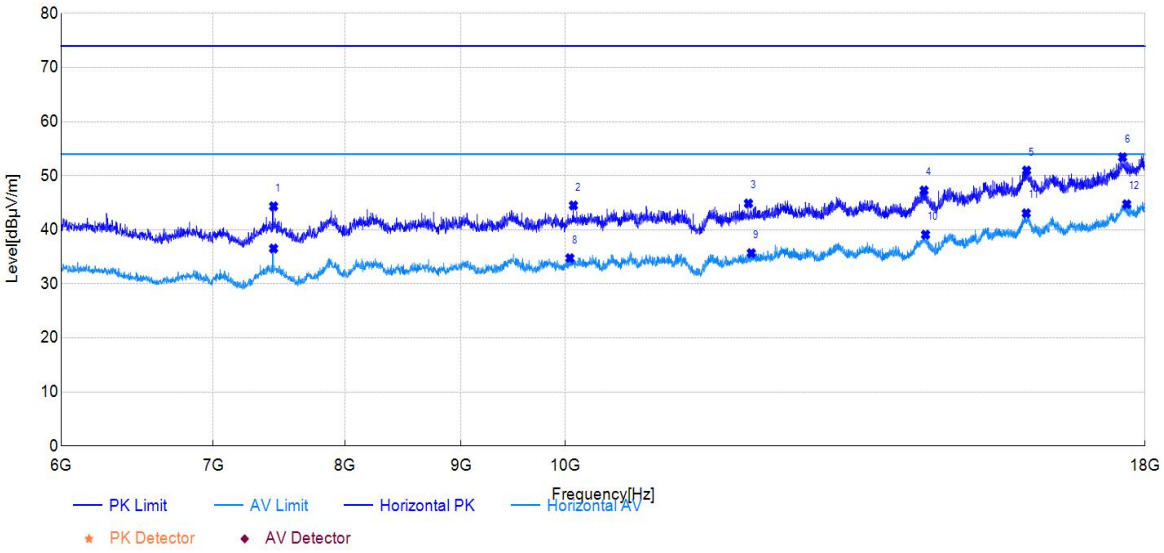
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7423.50	49.64	46.84	-2.80	74.00	27.16	100	255	PK	Vertical	PASS
2	9901.50	42.98	42.95	-0.03	74.00	31.05	100	266	PK	Vertical	PASS
3	12378.00	43.64	45.85	2.21	74.00	28.15	100	342	PK	Vertical	PASS
4	14377.50	41.28	46.82	5.54	74.00	27.18	100	223	PK	Vertical	PASS
5	15987.00	40.74	50.02	9.28	74.00	23.98	100	345	PK	Vertical	PASS
6	17590.50	39.17	53.58	14.41	74.00	20.42	100	0	PK	Vertical	PASS
7	7423.50	42.45	39.65	-2.80	54.00	14.35	100	262	AV	Vertical	PASS
8	9898.50	35.90	35.86	-0.04	54.00	18.14	100	266	AV	Vertical	PASS
9	12378.00	35.95	38.16	2.21	54.00	15.84	100	342	AV	Vertical	PASS
10	14311.50	33.16	38.51	5.35	54.00	15.49	150	251	AV	Vertical	PASS
11	15978.00	32.27	41.56	9.29	54.00	12.44	100	330	AV	Vertical	PASS
12	17614.50	30.32	44.73	14.41	54.00	9.27	100	4	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	26	Test Engineer:	Stone Zhang



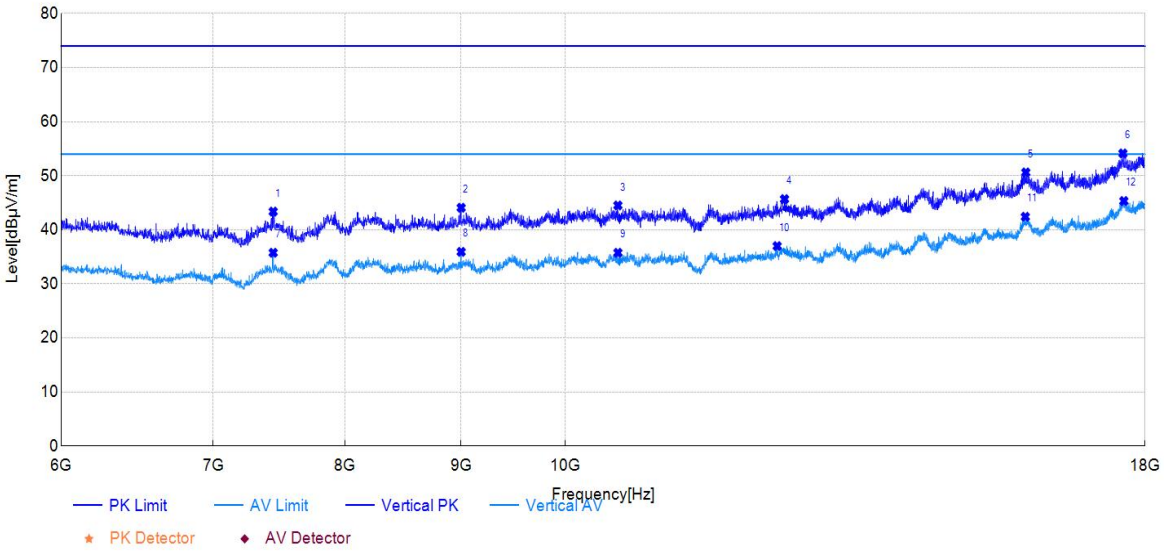
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7441.50	47.20	44.35	-2.85	74.00	29.65	150	44	PK	Horizontal	PASS
2	10084.50	44.56	44.51	-0.05	74.00	29.49	150	251	PK	Horizontal	PASS
3	12042.00	43.36	44.87	1.51	74.00	29.13	150	211	PK	Horizontal	PASS
4	14388.00	42.16	47.28	5.12	74.00	26.72	100	360	PK	Horizontal	PASS
5	15964.50	41.19	50.97	9.78	74.00	23.03	150	6	PK	Horizontal	PASS
6	17595.00	39.50	53.43	13.93	74.00	20.57	100	292	PK	Horizontal	PASS
7	7441.50	39.39	36.54	-2.85	54.00	17.46	150	63	AV	Horizontal	PASS
8	10048.50	34.78	34.75	-0.03	54.00	19.25	150	325	AV	Horizontal	PASS
9	12076.50	34.18	35.68	1.50	54.00	18.32	150	0	AV	Horizontal	PASS
10	14409.00	34.01	39.10	5.09	54.00	14.90	150	44	AV	Horizontal	PASS
11	15958.50	33.28	43.06	9.78	54.00	10.94	100	357	AV	Horizontal	PASS
12	17668.50	31.17	44.73	13.56	54.00	9.27	100	332	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	Zigbee	Test Date:	2025-07-26
Test Channel:	26	Test Engineer:	Stone Zhang



Suspected Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7438.50	46.21	43.37	-2.84	74.00	30.63	100	251	PK	Vertical	PASS
2	9000.00	44.86	44.08	-0.78	74.00	29.92	150	102	PK	Vertical	PASS
3	10549.50	43.42	44.51	1.09	74.00	29.49	150	23	PK	Vertical	PASS
4	12490.50	43.15	45.68	2.53	74.00	28.32	150	149	PK	Vertical	PASS
5	15951.00	41.32	50.61	9.29	74.00	23.39	150	173	PK	Vertical	PASS
6	17601.00	39.64	54.13	14.49	74.00	19.87	100	188	PK	Vertical	PASS
7	7438.50	38.60	35.76	-2.84	54.00	18.24	150	260	AV	Vertical	PASS
8	9000.00	36.70	35.92	-0.78	54.00	18.08	150	106	AV	Vertical	PASS
9	10549.50	34.66	35.75	1.09	54.00	18.25	150	1	AV	Vertical	PASS
10	12397.50	34.64	36.99	2.35	54.00	17.01	100	338	AV	Vertical	PASS
11	15943.50	33.12	42.41	9.29	54.00	11.59	100	74	AV	Vertical	PASS
12	17617.50	30.94	45.33	14.39	54.00	8.67	100	247	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

7.7. Radiated Restricted Band Edge Measurement

7.7.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1] 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.25 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52480 - 156.525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41	--	--	--

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.7.2. Test Procedure Used

ANSI C63.10 Section 6.3 (General Requirements)

ANSI C63.10 Section 6.6 (Standard test method above 1GHz)

7.7.3. Test Setting

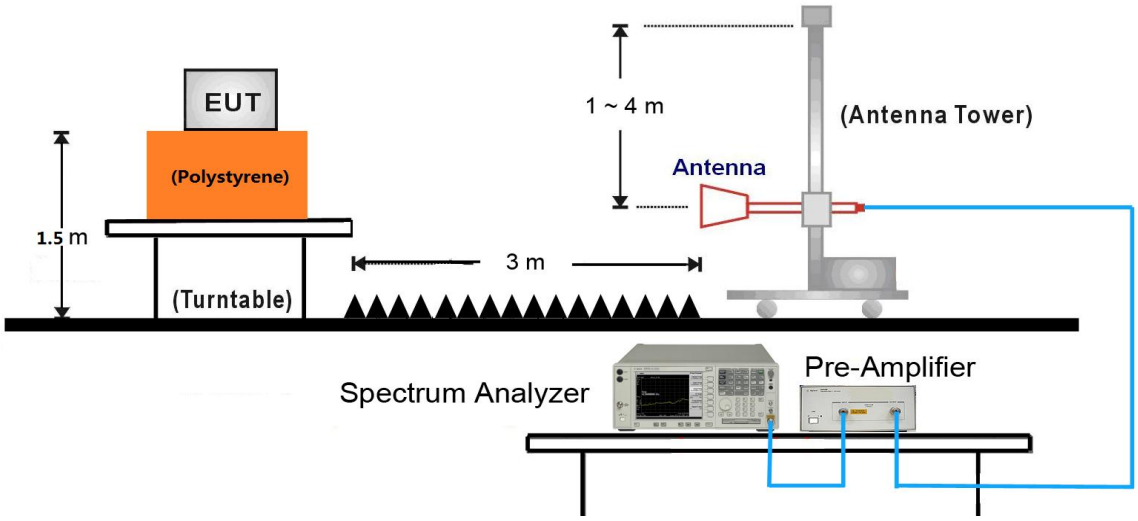
Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Field Strength Measurements

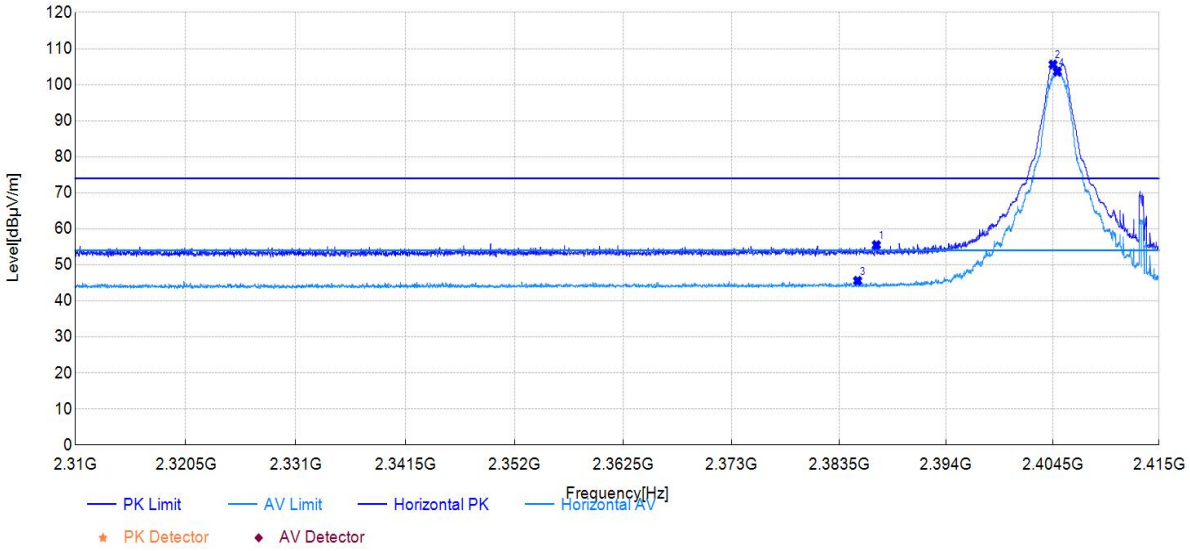
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Power Average (RMS)
5. Number of sweep point = 2001 (Number of sweep points must be ≥ 2 x span / RBW)
6. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces.

7.7.4. Test Setup



7.7.5. Test Result

Project Information			
EUT:	Smart Soil Moisture Sensor	Model:	3RSM0147Z
Test Date:	2025-07-30	Voltage:	DC 1.5V
Environment:	Temp: 23.2℃; Humi:57%	Engineer:	Stone Zhang
Remark:	Transmit by Zigbee at Channel 2405MHz		

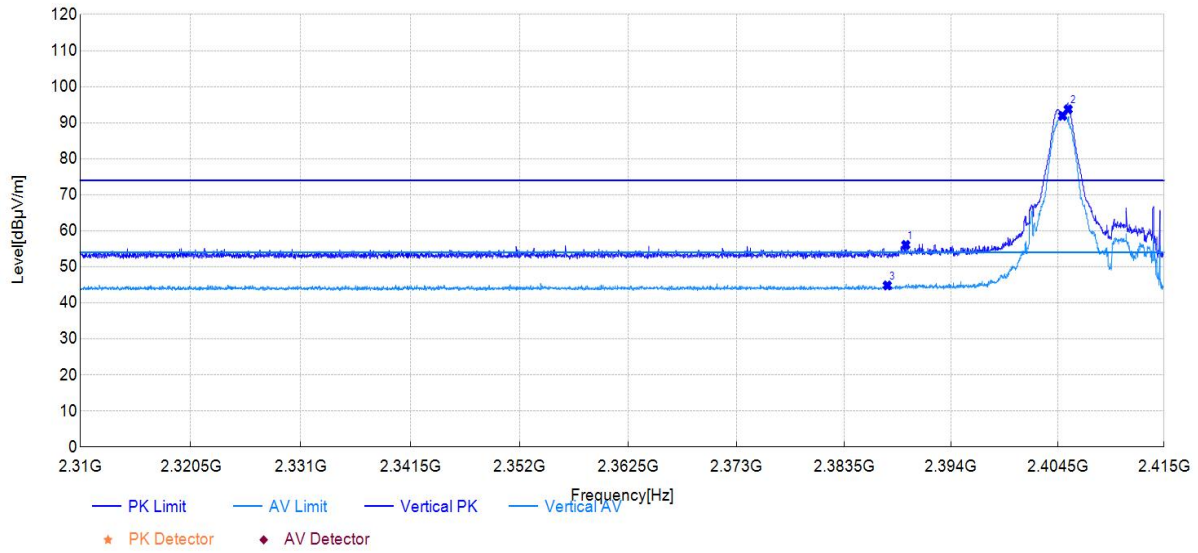


Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2387.17	20.01	55.50	35.49	74.00	18.50	150	337	PK	Horizontal	PASS
2	2404.52	70.09	105.59	35.50	/	/	150	300	PK	Horizontal	PASS
3	2385.33	10.08	45.57	35.49	54.00	8.43	150	0	AV	Horizontal	PASS
4	2404.94	68.08	103.59	35.51	/	/	150	297	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level



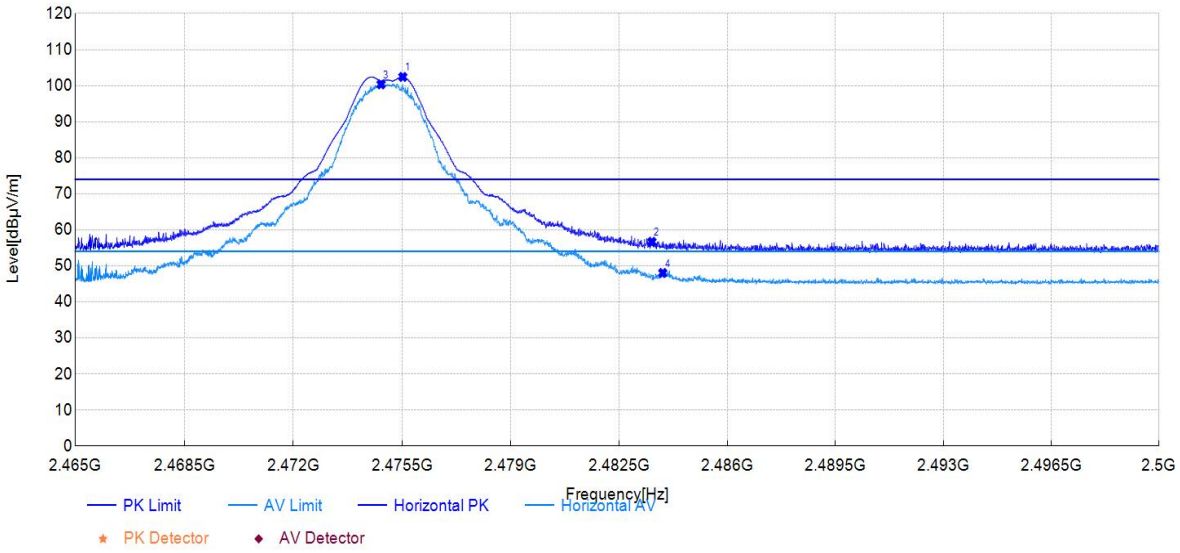
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2389.56	20.75	56.09	35.34	74.00	17.91	150	111	PK	Vertical	PASS
2	2405.52	58.36	93.71	35.35	/	/	150	357	PK	Vertical	PASS
3	2387.75	9.49	44.84	35.35	54.00	9.16	150	20	AV	Vertical	PASS
4	2404.97	56.56	91.90	35.34	/	/	150	0	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Project Information			
EUT:	Smart Soil Moisture Sensor	Model:	3RSM0147Z
Test Date:	2025-07-30	Voltage:	DC 1.5V
Environment:	Temp: 23.2℃; Humi:57%	Engineer:	Stone Zhang
Remark:	Transmit by Zigbee at Channel 2475MHz		

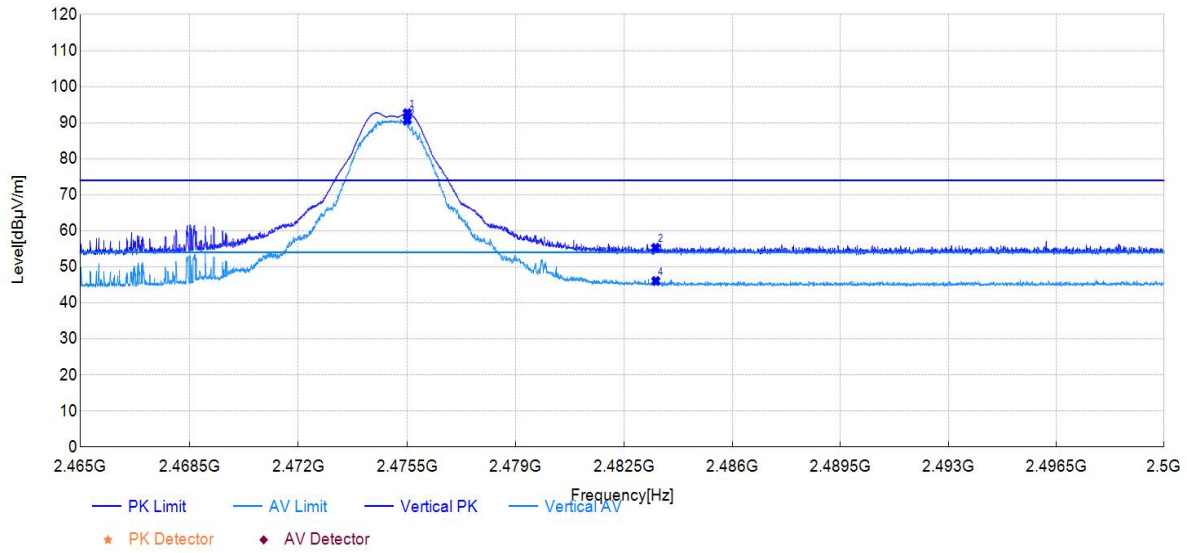


Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2475.53	66.22	102.43	36.21	/	/	150	300	PK	Horizontal	PASS
2	2483.56	20.38	56.68	36.30	74.00	17.32	150	297	PK	Horizontal	PASS
3	2474.83	64.15	100.36	36.21	/	/	150	297	AV	Horizontal	PASS
4	2483.91	11.74	48.04	36.30	54.00	5.96	150	293	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level



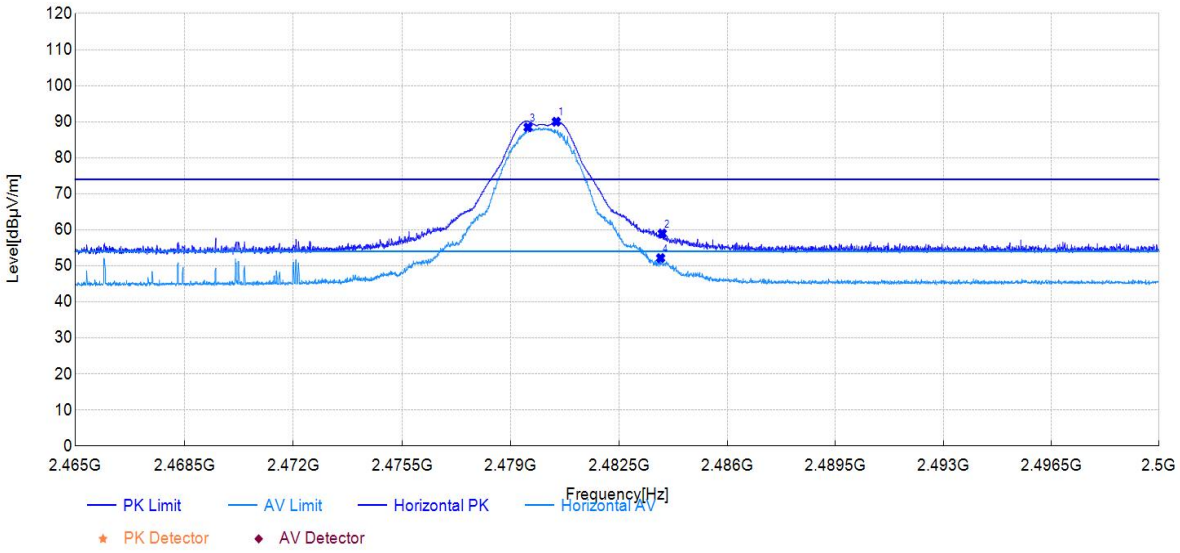
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2475.51	56.70	92.65	35.95	/	/	150	182	PK	Vertical	PASS
2	2483.52	19.27	55.28	36.01	74.00	18.72	150	0	PK	Vertical	PASS
3	2475.51	54.81	90.76	35.95	/	/	150	179	AV	Vertical	PASS
4	2483.53	10.07	46.08	36.01	54.00	7.92	150	156	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Project Information			
EUT:	Smart Soil Moisture Sensor	Model:	3RSM0147Z
Test Date:	2025-07-30	Voltage:	DC 1.5V
Environment:	Temp: 24.2℃; Humi:41%	Engineer:	Stone Zhang
Remark:	Transmit by Zigbee at Channel 2480MHz		

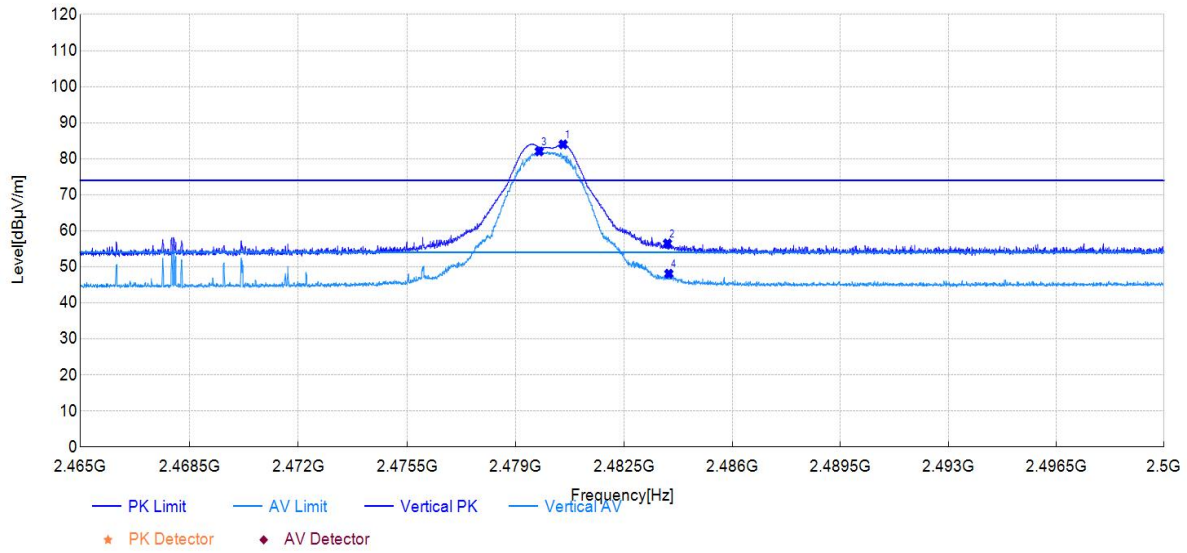


Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2480.47	53.74	90.00	36.26	/	/	150	74	PK	Horizontal	PASS
2	2483.90	22.67	58.97	36.30	74.00	15.03	150	305	PK	Horizontal	PASS
3	2479.56	52.20	88.45	36.25	/	/	150	74	AV	Horizontal	PASS
4	2483.84	15.86	52.16	36.30	54.00	1.84	150	309	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level



Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2480.54	48.00	83.99	35.99	/	/	150	357	PK	Vertical	PASS
2	2483.90	20.47	56.49	36.02	74.00	17.51	150	70	PK	Vertical	PASS
3	2479.76	46.05	82.04	35.99	/	/	150	357	AV	Vertical	PASS
4	2483.95	12.07	48.09	36.02	54.00	5.91	150	70	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

7.8. AC Conducted Emissions Measurement

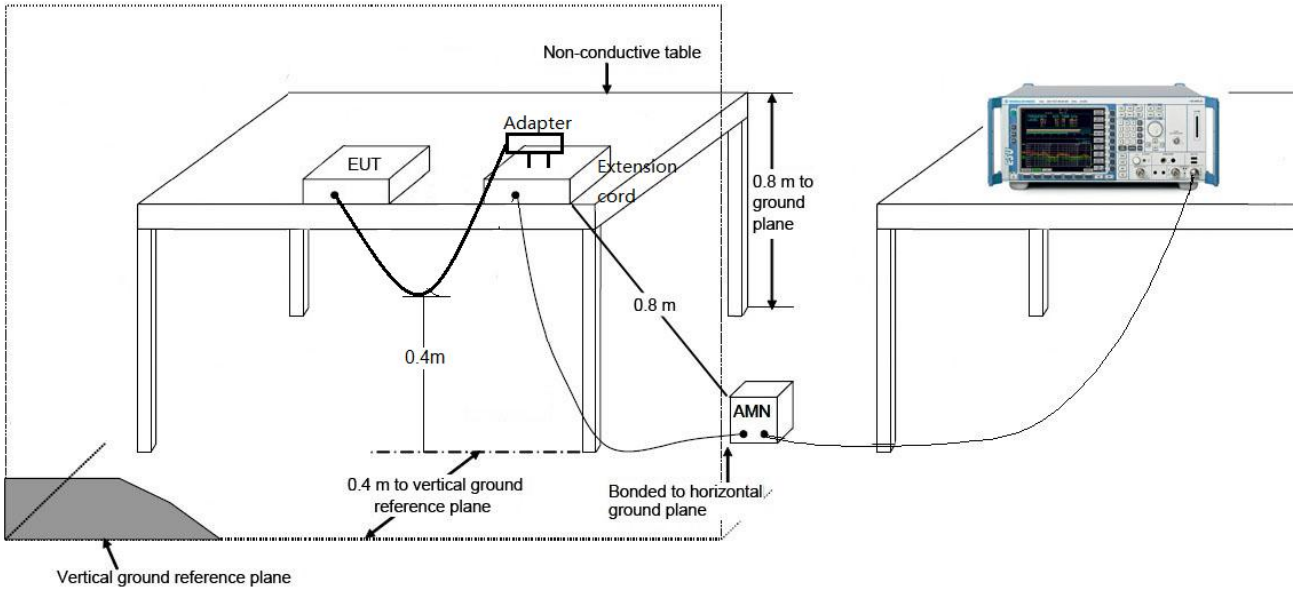
7.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 – 46
0.50 - 5.0	56	46
5.0 - 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 0.15MHz to 0.5MHz.

7.8.2. Test Setup



7.8.3. Test Result

Not Applicable. The EUT is only powered by DC 1.5V from battery.

8. Conclusion

The data collected relate only the item(s) tested and show that the **Smart Soil Moisture Sensor (Model: 3RSM0147Z)** is in compliance with Part 15C of the FCC Rules.

Statement

1. This report is invalid for the following states: without the special inspection and testing stamp or the official stamp of our institution; without the signature of the report authorized officer; if the report is altered.

2. It is forbidden to copy partial contents of the report except in full without the approval of our institution.

3. The client shall provide the test sample(s) and commission information and be responsible for their authenticity.

4. The report content is only applicable to the tested sample(s) this time.

5. If there are any objections to the report content, please submit them to our company in writing within 15 days from the date of receiving the report.

6. If the reports include both Chinese and English versions, when there are any inconsistencies caused by language, the Chinese version shall prevail.

7. This report is issued by the following laboratory premises:

   3/F., Comprehensive Laboratory Building, No.8, Ningyun Road, Xinwu District, Wuxi, Jiangsu, China (Ningyun Road Laboratory)

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