

7.4. Power Spectral Density Measurement

7.4.1. Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band. And for antenna gain greater than 6dBi the limit shall reduce by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.4.2. Test Procedure Used

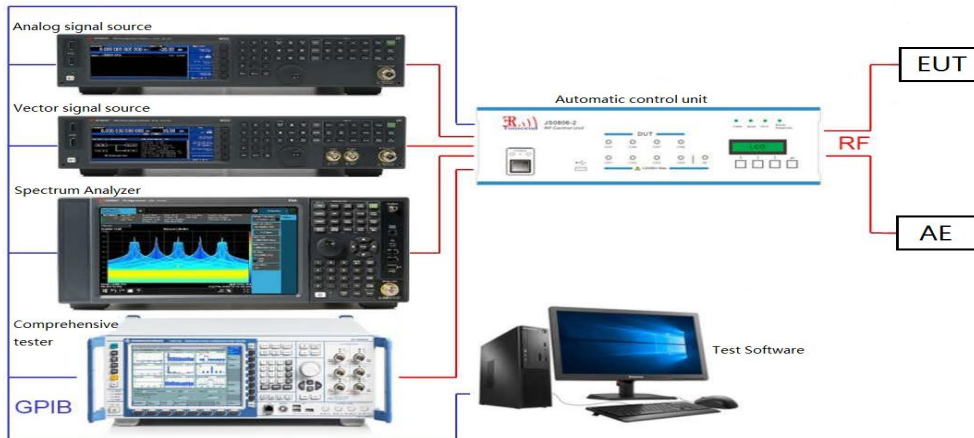
KDB 558074 D01 v05r02 - Section 8.4

ANSI C63.10 – Section 11.10.2

7.4.3. Test Setting

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq [3 \times \text{RBW}]$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.

7.4.4. Test Setup



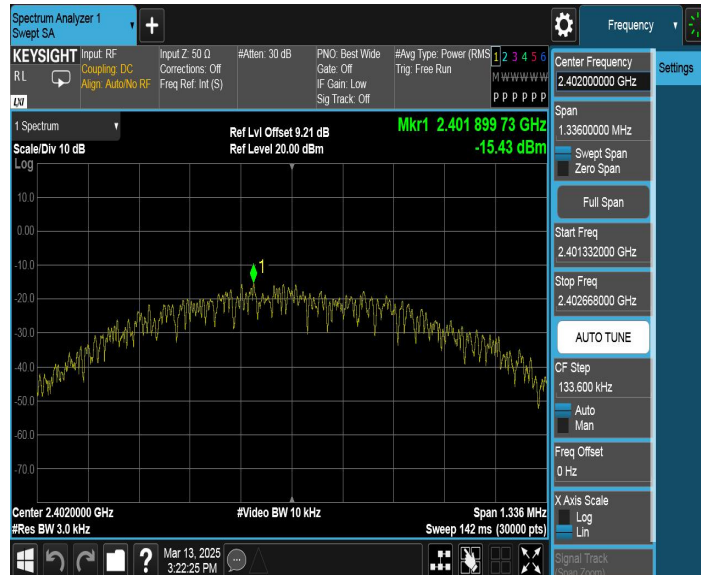
7.4.5. Test Result

Temperature:	19.9 °C
Relative Humidity:	39 %
ATM Pressure:	102.1 kPa
Test Data:	2025-03-13
Test Engineer:	Stone Zhang

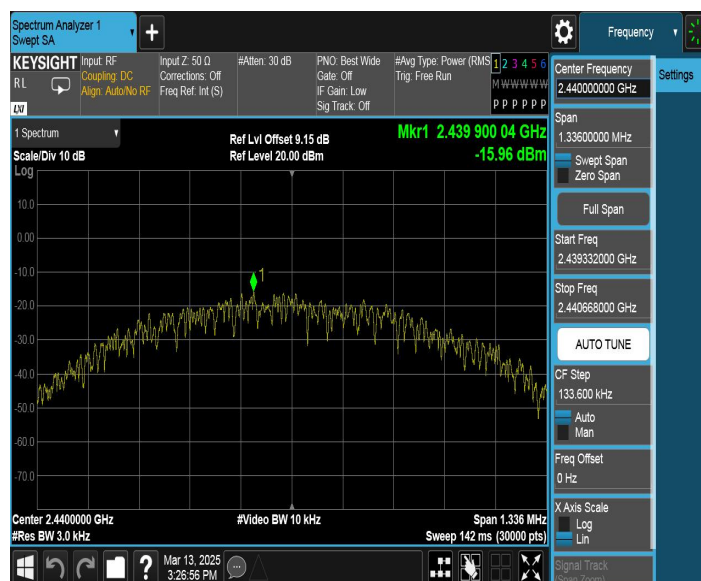
Test Mode	Antenna	Frequency (MHz)	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.43	≤8.00	PASS
		2440	-15.96	≤8.00	PASS
		2480	-16.21	≤8.00	PASS

Test Graphs

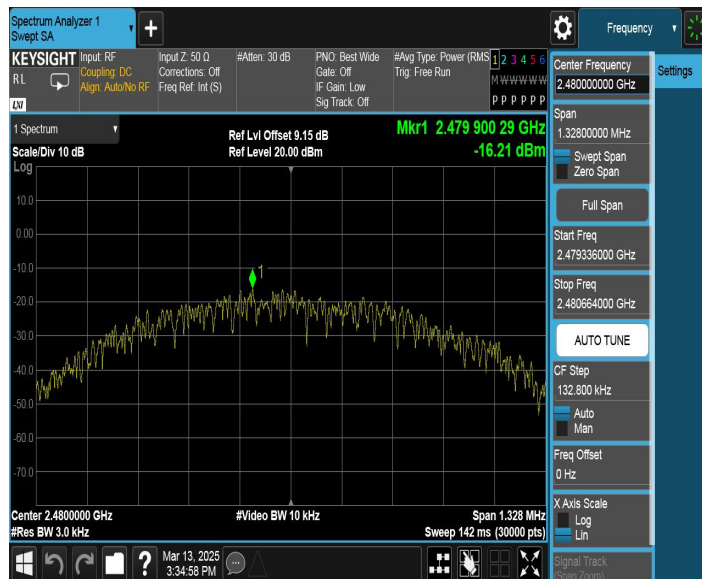
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



7.5. Conducted Band Edge and Out-of-Band Emissions

7.5.1. Test Limit

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth per the PSD procedure.

7.5.2. Test Procedure Used

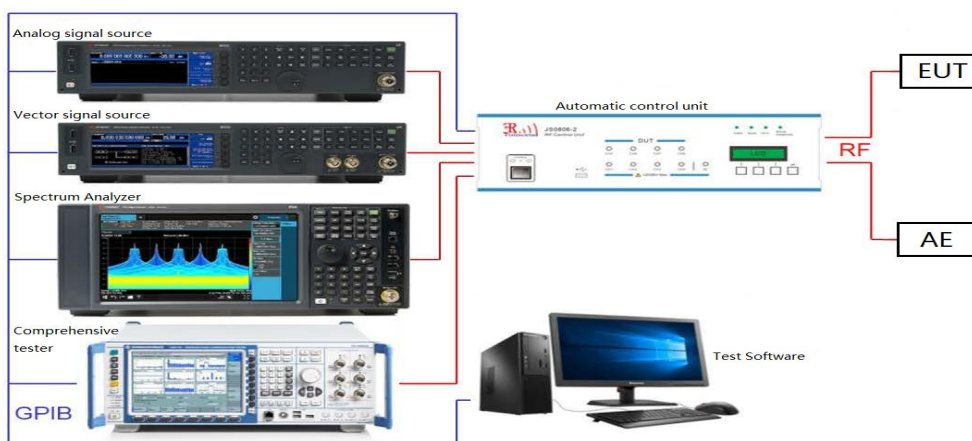
KDB 558074 D01 v05r02 - Section 8.5 & Section 8.6

ANSI C63.10 – Section 11.11&11.12

7.5.3. Test Setting

- (a) Set the center frequency and span to encompass frequency range to be measured
- (b) RBW = 100kHz
- (c) VBW = 300kHz
- (d) Detector = Peak
- (e) Trace mode = max hold
- (f) Sweep time = auto couple
- (g) The trace was allowed to stabilize

7.5.4. Test Setup



7.5.5. Test Result

Temperature:	19.9 °C
Relative Humidity:	39 %
ATM Pressure:	102.1 kPa
Test Data:	2025-03-13
Test Engineer:	Stone Zhang

Band edge

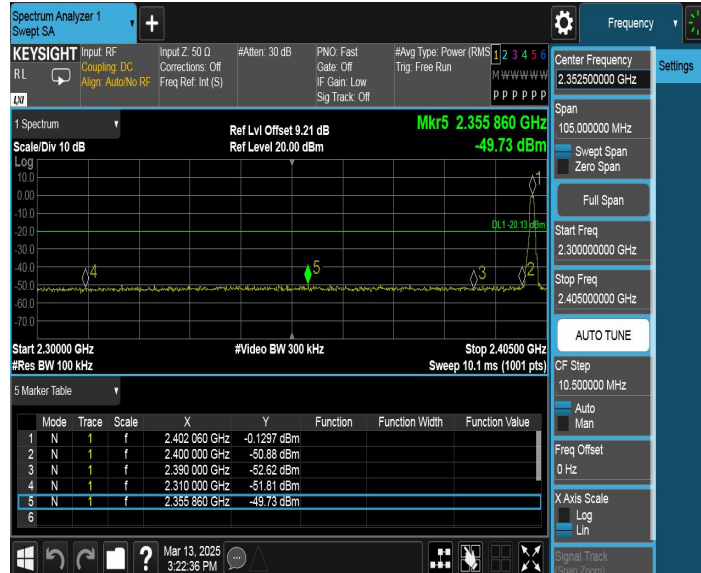
Test Mode	Antenna	ChName	Frequency (MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.13	-49.73	≤-20.13	PASS
		High	2480	-1.35	-48.99	≤-21.35	PASS

Conducted Spurious Emission

Test Mode	Antenna	Frequency (MHz)	Frequency Range [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-0.36	-0.36	---	PASS
			30~1000	-0.36	-58.68	≤-20.36	PASS
			1000~26500	-0.36	-37.33	≤-20.36	PASS
		2440	Reference	-0.86	-0.86	---	PASS
			30~1000	-0.86	-58.99	≤-20.86	PASS
			1000~26500	-0.86	-36.14	≤-20.86	PASS
		2480	Reference	-1.12	-1.12	---	PASS
			30~1000	-1.12	-59.06	≤-21.12	PASS
			1000~26500	-1.12	-38.22	≤-21.12	PASS

Test Graphs of Band Edge

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480

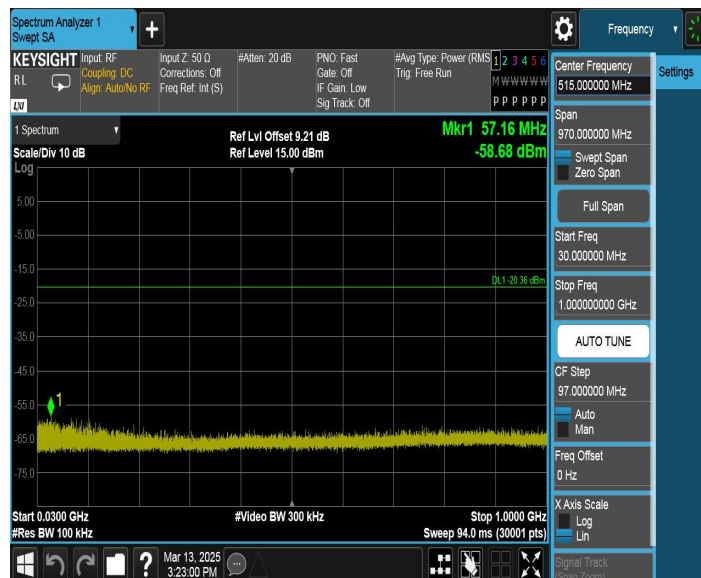


Test Graphs of Out-of-Band Emissions

BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



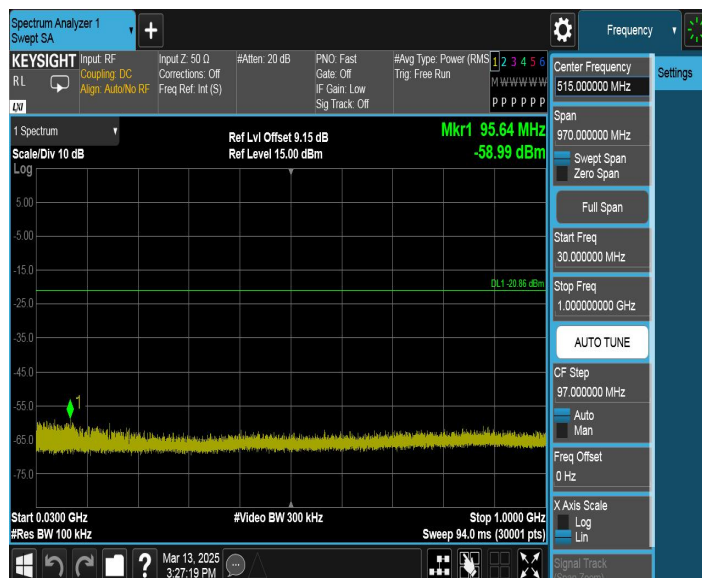
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



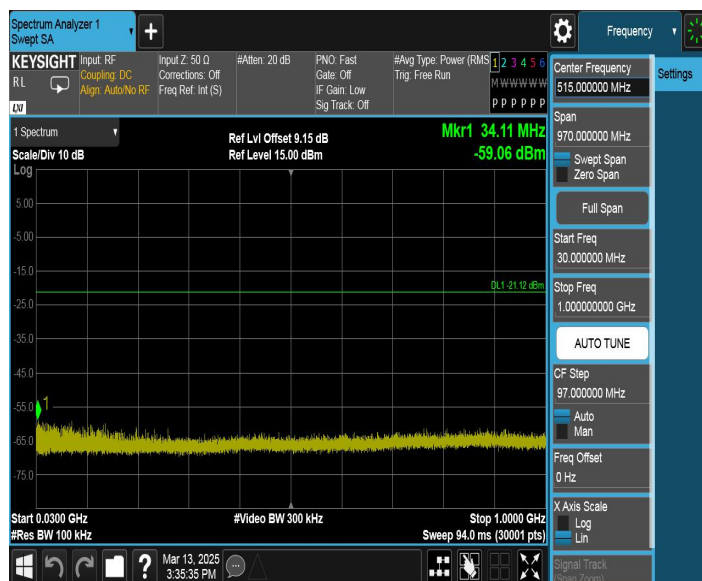
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



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

- Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

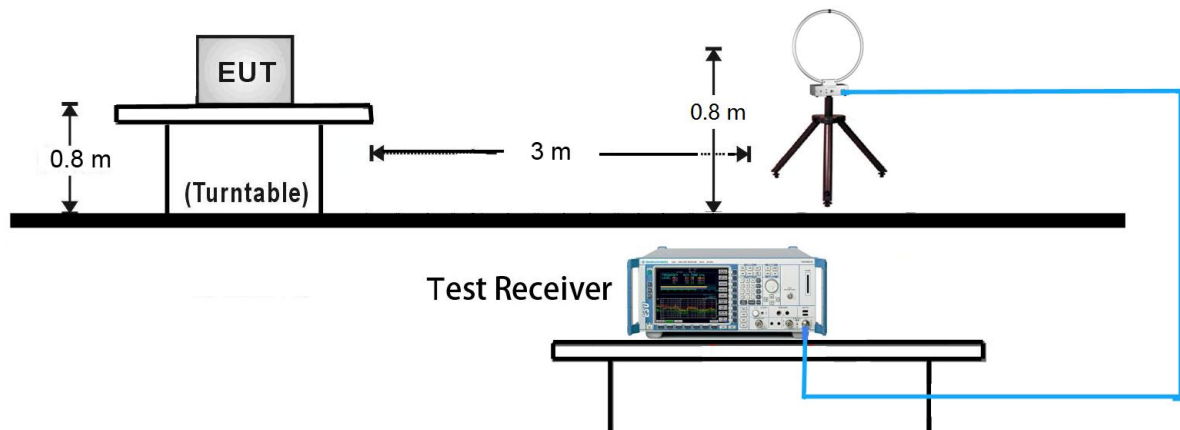
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

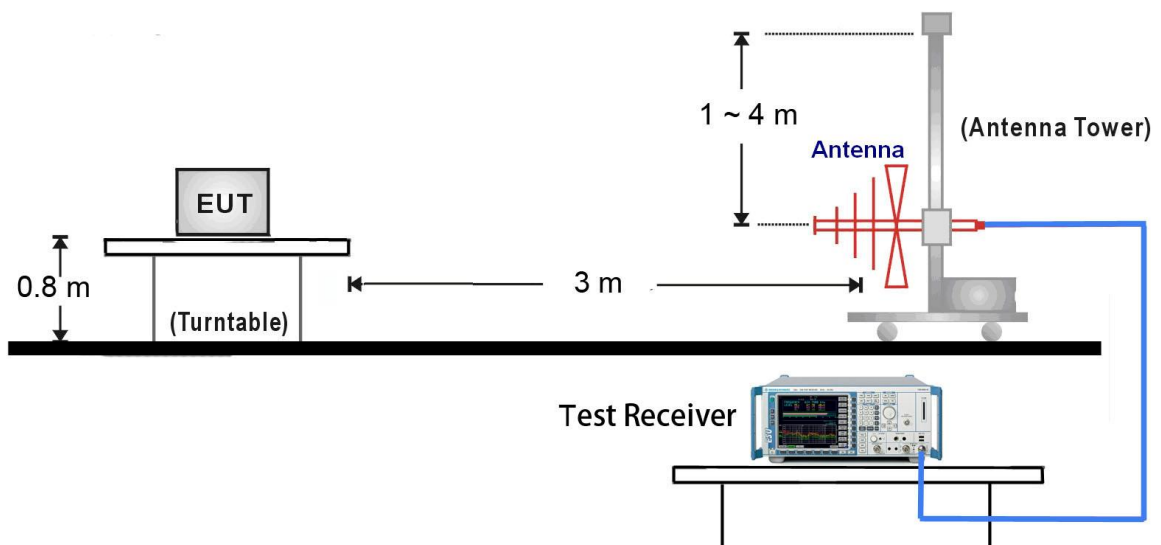
- Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- RBW = 1MHz
- VBW = 3MHz
- Detector = Power Average (RMS)
- Number of sweep point = 2001 (Number of sweep points must be $\geq 2 \times \text{span} / \text{RBW}$)
- Sweep time = auto
- Trace (RMS) averaging was performed over at least 100 traces.

7.6.4. Test Setup

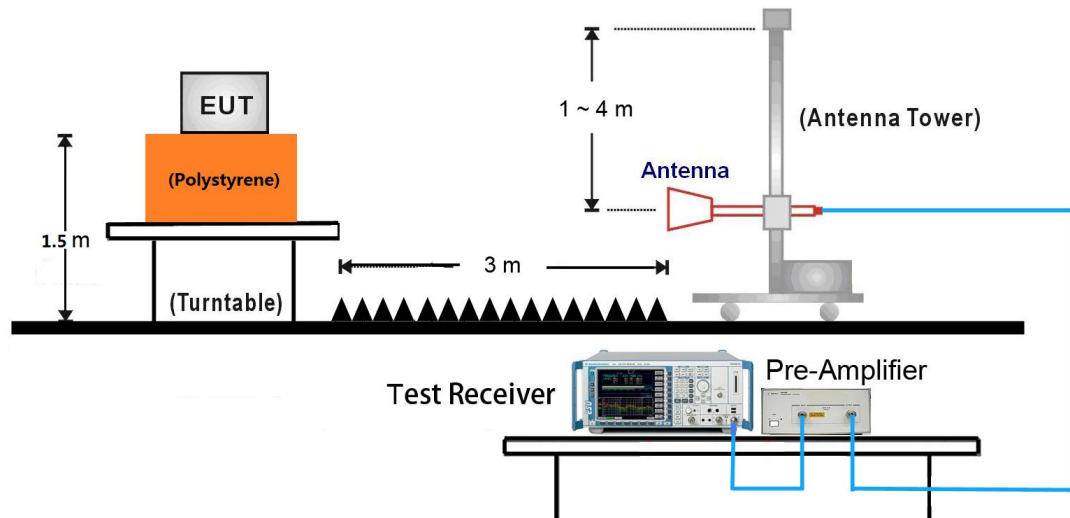
9kHz ~ 30MHz Test Setup:



30MHz ~ 1GHz Test Setup:



1GHz ~ 26.5GHz Test Setup:

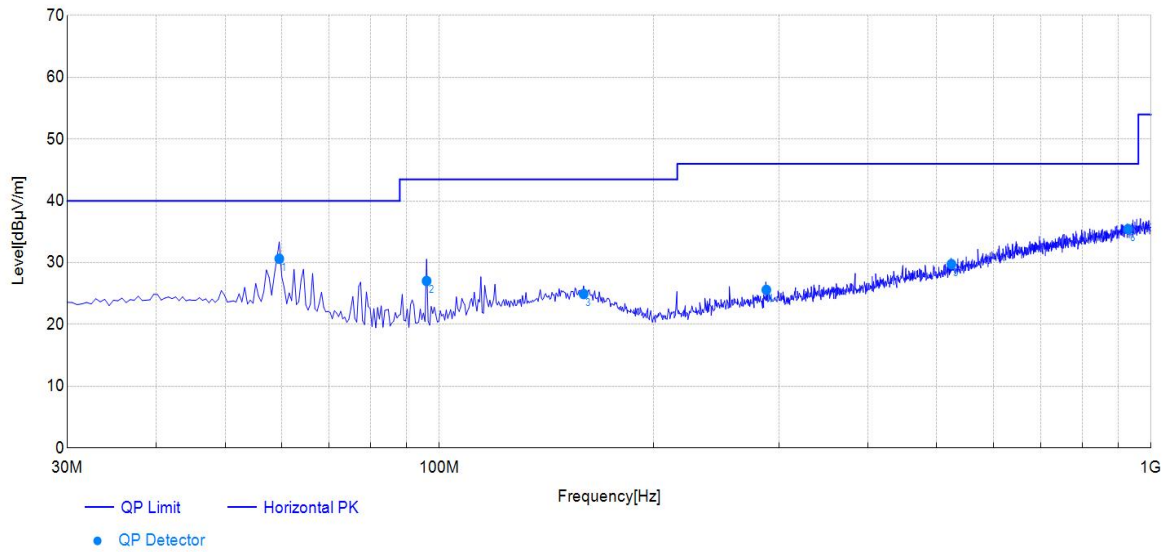


7.6.5. Test Result

The worst case of Radiated Emission below 1GHz:

30MHz – 1GHz Test Data

EUT:	BLE Beacon	Polarity:	Horizontal
Model:	WID330	Test Date:	2025-03-18
Mode:	Transmit at BLE Channel 00	Voltage:	DC 3V
Environment:	Temp: 18.9°C; Humi:36%	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	59.59	13.87	16.77	30.64	40.00	9.36	200	165	Horizontal	PASS
2	95.96	11.19	15.86	27.05	43.50	16.45	200	168	Horizontal	PASS
3	159.50	15.82	9.11	24.93	43.50	18.57	100	228	Horizontal	PASS
4	288.02	14.75	10.85	25.60	46.00	20.40	100	94	Horizontal	PASS
5	524.22	20.09	9.68	29.77	46.00	16.23	100	0	Horizontal	PASS
6	928.22	25.89	9.56	35.45	46.00	10.55	100	162	Horizontal	PASS

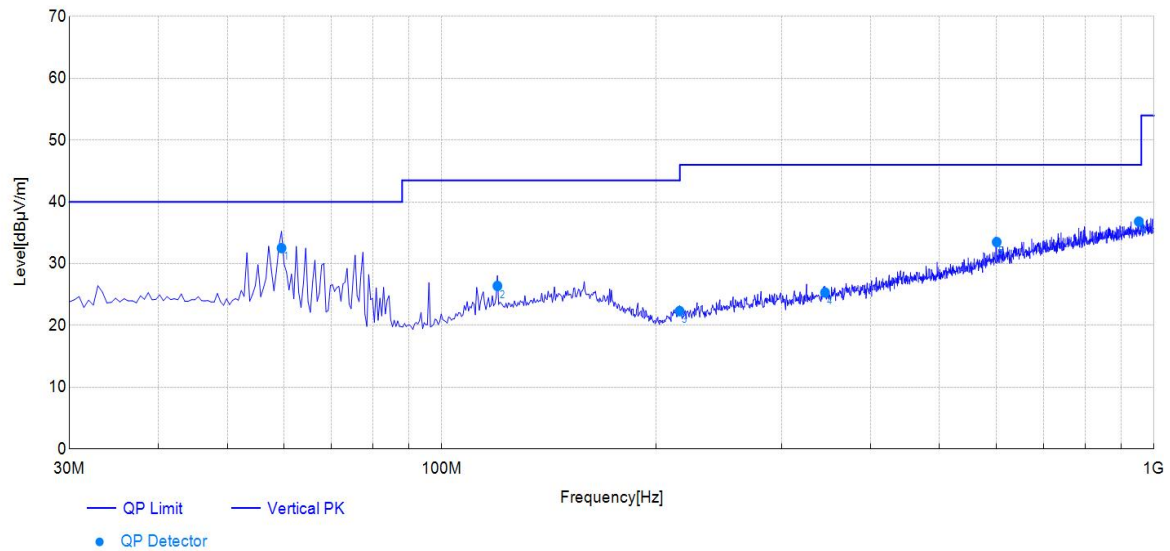
Note:

(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:	BLE Beacon	Polarity:	Vertical
Model:	WID330	Test Date:	2025-03-18
Mode:	Transmit at BLE Channel 11	Voltage:	DC 3V
Environment:	Temp: 18.9°C; Humi:36%	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	59.59	13.87	18.66	32.53	40.00	7.47	100	303	Vertical	PASS
2	119.73	13.73	12.68	26.41	43.50	17.09	100	349	Vertical	PASS
3	215.76	12.40	9.93	22.33	43.50	21.17	100	354	Vertical	PASS
4	345.25	16.22	9.12	25.34	46.00	20.66	200	224	Vertical	PASS
5	601.33	21.69	11.81	33.50	46.00	12.50	100	206	Vertical	PASS
6	951.99	26.06	10.11	36.82	46.00	9.18	200	212	Vertical	PASS

Note:

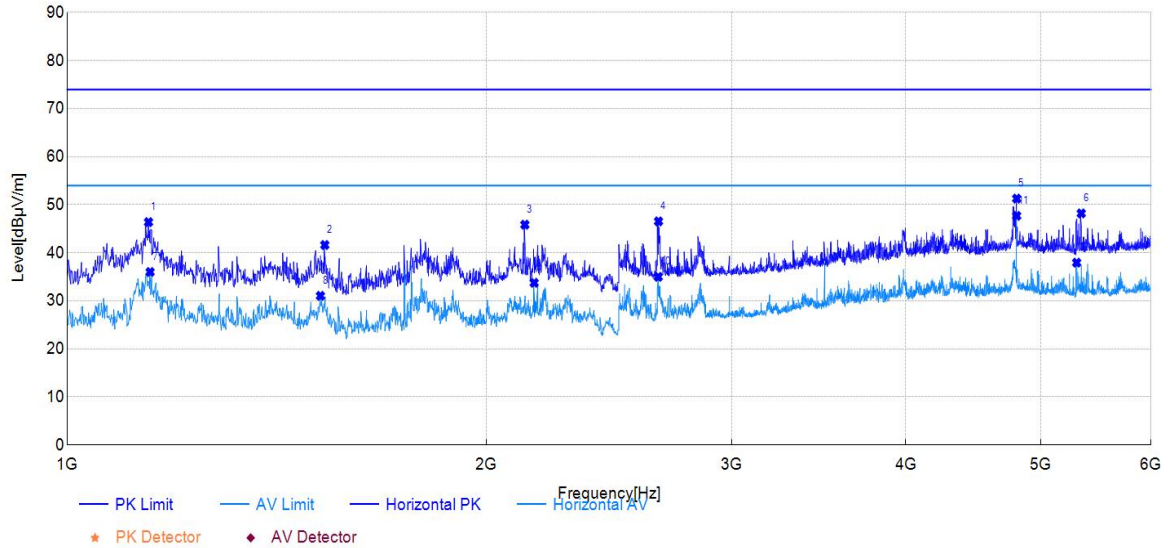
(1) Level=Reading + Factor

(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:	BLE	Test Date:	2025-03-18
Test Channel:	00	Test Engineer:	Stone Zhang



Suspected Data List

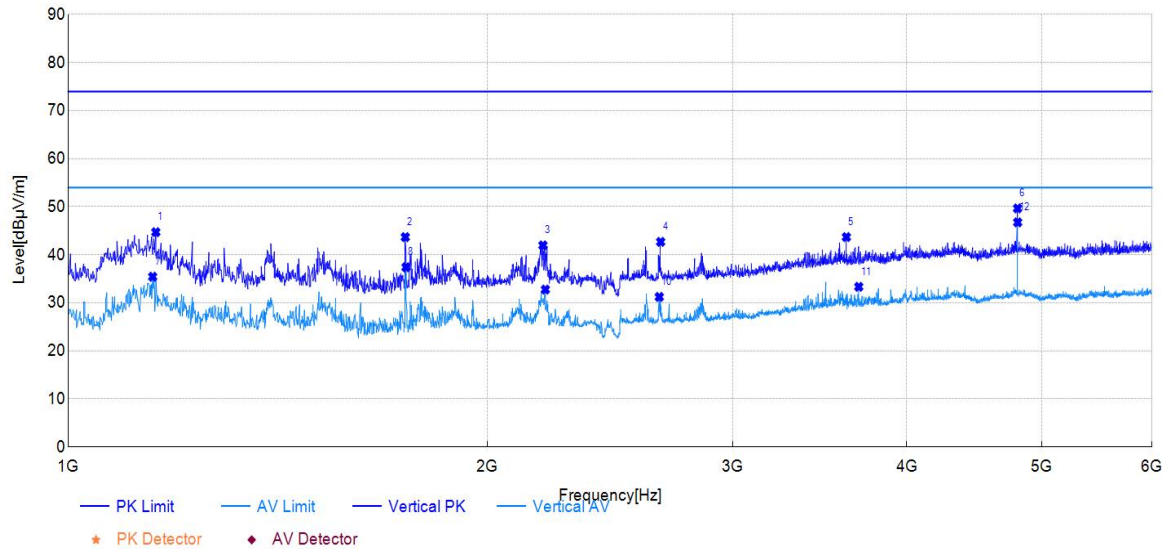
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1144.00	70.06	46.39	-23.67	74.00	27.61	100	123	PK	Horizontal	PASS
2	1531.00	63.17	41.63	-21.54	74.00	32.37	100	123	PK	Horizontal	PASS
3	2131.00	63.38	45.86	-17.52	74.00	28.14	150	86	PK	Horizontal	PASS
4	2658.00	61.88	46.55	-15.33	74.00	27.45	150	99	PK	Horizontal	PASS
5	4805.00	58.07	51.29	-6.78	74.00	22.71	100	203	PK	Horizontal	PASS
6	5346.00	54.31	48.21	-6.10	74.00	25.79	100	154	PK	Horizontal	PASS
7	1147.00	59.66	36.01	-23.65	54.00	17.99	100	123	AV	Horizontal	PASS
8	1520.00	52.67	31.05	-21.62	54.00	22.95	100	106	AV	Horizontal	PASS
9	2164.00	51.13	33.76	-17.37	54.00	20.24	100	92	AV	Horizontal	PASS
10	2657.00	50.34	35.01	-15.33	54.00	18.99	150	104	AV	Horizontal	PASS
11	4805.00	54.48	47.70	-6.78	54.00	6.30	100	198	AV	Horizontal	PASS
12	5306.00	44.16	37.96	-6.20	54.00	16.04	100	154	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	00	Test Engineer:	Stone Zhang



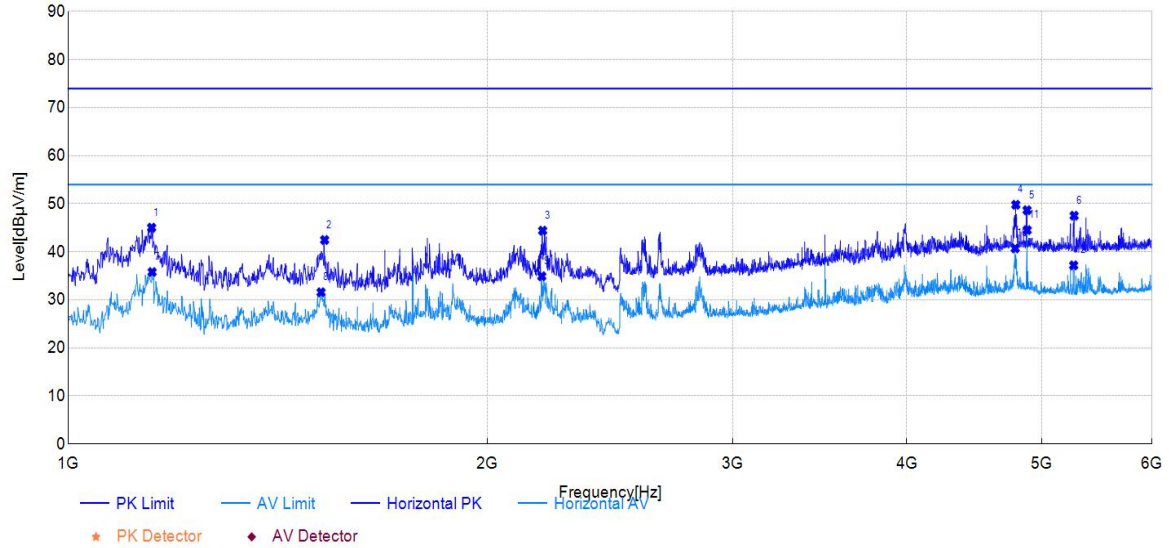
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1156.00	67.34	44.72	-22.62	74.00	29.28	150	149	PK	Vertical	PASS
2	1746.00	63.03	43.69	-19.34	74.00	30.31	100	179	PK	Vertical	PASS
3	2192.00	59.09	41.97	-17.12	74.00	32.03	100	317	PK	Vertical	PASS
4	2663.00	58.15	42.70	-15.45	74.00	31.30	100	55	PK	Vertical	PASS
5	3620.00	54.43	43.70	-10.73	74.00	30.30	100	46	PK	Vertical	PASS
6	4804.00	56.99	49.67	-7.32	74.00	24.33	100	263	PK	Vertical	PASS
7	1150.00	58.09	35.45	-22.64	54.00	18.55	150	149	AV	Vertical	PASS
8	1748.00	56.74	37.42	-19.32	54.00	16.58	100	179	AV	Vertical	PASS
9	2201.00	49.87	32.78	-17.09	54.00	21.22	100	99	AV	Vertical	PASS
10	2657.00	46.71	31.24	-15.47	54.00	22.76	150	56	AV	Vertical	PASS
11	3695.00	43.81	33.35	-10.46	54.00	20.65	100	1	AV	Vertical	PASS
12	4805.00	54.08	46.76	-7.32	54.00	7.24	100	255	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	19	Test Engineer:	Stone Zhang



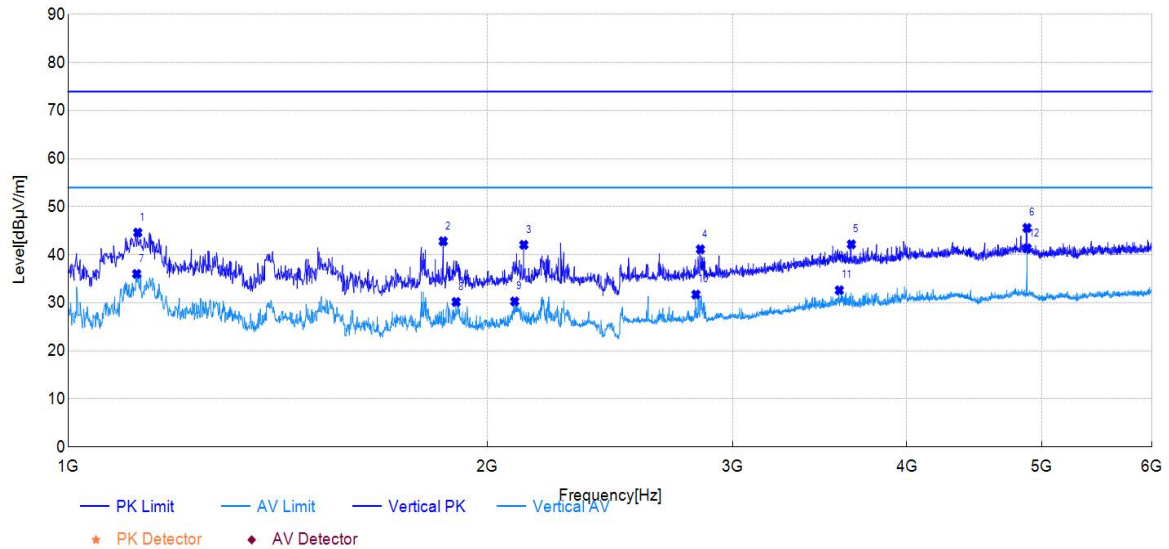
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1148.00	68.68	45.03	-23.65	74.00	28.97	100	115	PK	Horizontal	PASS
2	1528.00	64.03	42.47	-21.56	74.00	31.53	100	110	PK	Horizontal	PASS
3	2191.00	61.66	44.41	-17.25	74.00	29.59	100	146	PK	Horizontal	PASS
4	4790.00	56.62	49.80	-6.82	74.00	24.20	100	159	PK	Horizontal	PASS
5	4880.00	55.23	48.67	-6.56	74.00	25.33	100	211	PK	Horizontal	PASS
6	5275.00	53.75	47.52	-6.23	74.00	26.48	100	154	PK	Horizontal	PASS
7	1149.00	59.43	35.79	-23.64	54.00	18.21	100	115	AV	Horizontal	PASS
8	1519.00	53.21	31.58	-21.63	54.00	22.42	100	110	AV	Horizontal	PASS
9	2188.00	52.18	34.92	-17.26	54.00	19.08	100	97	AV	Horizontal	PASS
10	4785.00	47.55	40.72	-6.83	54.00	13.28	100	159	AV	Horizontal	PASS
11	4881.00	51.08	44.52	-6.56	54.00	9.48	100	115	AV	Horizontal	PASS
12	5271.00	43.42	37.19	-6.23	54.00	16.81	100	154	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	19	Test Engineer:	Stone Zhang



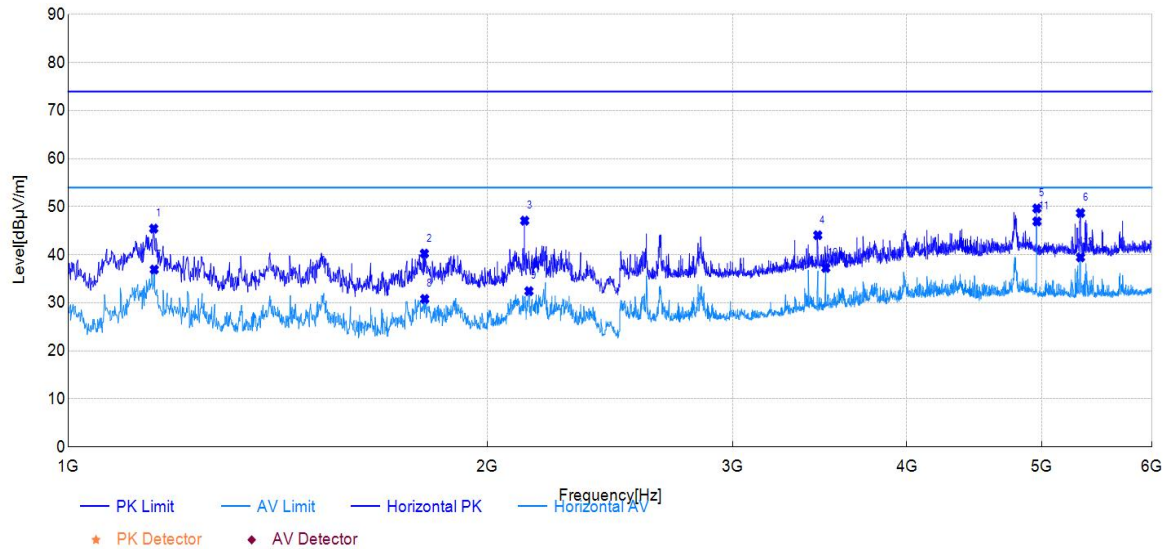
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1122.00	67.35	44.62	-22.73	74.00	29.38	150	146	PK	Vertical	PASS
2	1859.00	61.53	42.83	-18.70	74.00	31.17	100	6	PK	Vertical	PASS
3	2124.00	59.40	42.08	-17.32	74.00	31.92	100	81	PK	Vertical	PASS
4	2844.00	56.09	41.15	-14.94	74.00	32.85	100	67	PK	Vertical	PASS
5	3650.00	52.82	42.19	-10.63	74.00	31.81	100	2	PK	Vertical	PASS
6	4880.00	52.77	45.60	-7.17	74.00	28.40	100	267	PK	Vertical	PASS
7	1120.00	58.76	36.03	-22.73	54.00	17.97	150	146	AV	Vertical	PASS
8	1899.00	48.76	30.19	-18.57	54.00	23.81	150	22	AV	Vertical	PASS
9	2092.00	47.72	30.30	-17.42	54.00	23.70	100	139	AV	Vertical	PASS
10	2823.00	46.78	31.73	-15.05	54.00	22.27	100	41	AV	Vertical	PASS
11	3578.00	43.60	32.63	-10.97	54.00	21.37	100	360	AV	Vertical	PASS
12	4881.00	48.51	41.35	-7.16	54.00	12.65	100	285	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	39	Test Engineer:	Stone Zhang



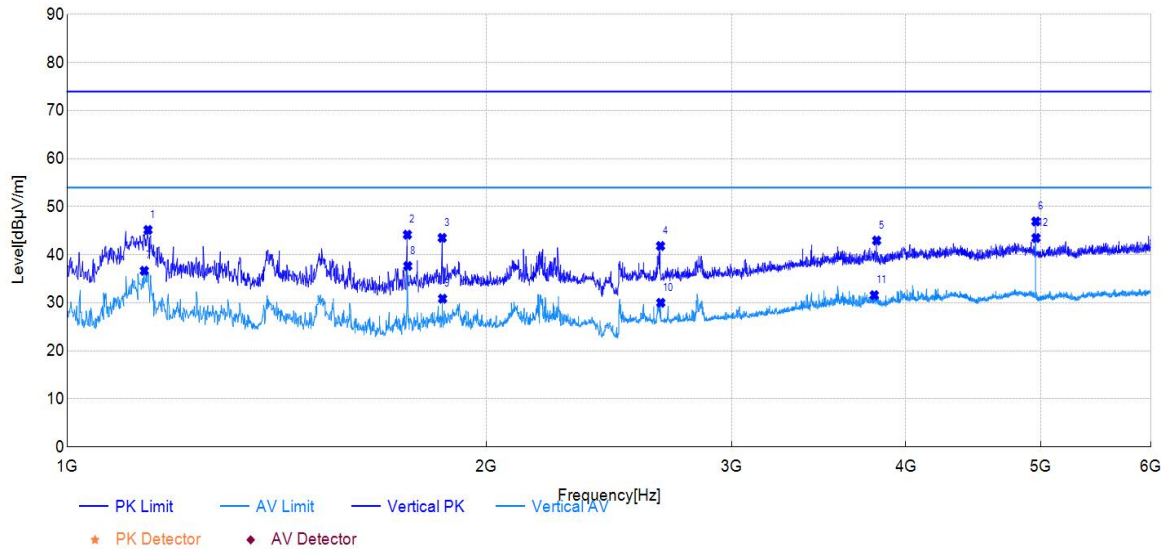
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	1152.00	69.10	45.46	-23.64	74.00	28.54	100	123	PK	Horizontal	PASS
2	1802.00	59.74	40.27	-19.47	74.00	33.73	100	83	PK	Horizontal	PASS
3	2127.00	64.65	47.11	-17.54	74.00	26.89	100	207	PK	Horizontal	PASS
4	3453.00	56.64	44.08	-12.56	74.00	29.92	100	12	PK	Horizontal	PASS
5	4960.00	55.87	49.66	-6.21	74.00	24.34	100	128	PK	Horizontal	PASS
6	5331.00	54.84	48.71	-6.13	74.00	25.29	100	149	PK	Horizontal	PASS
7	1153.00	60.58	36.94	-23.64	54.00	17.06	100	123	AV	Horizontal	PASS
8	1803.00	50.27	30.81	-19.46	54.00	23.19	100	83	AV	Horizontal	PASS
9	2142.00	49.91	32.44	-17.47	54.00	21.56	150	87	AV	Horizontal	PASS
10	3499.00	49.63	37.26	-12.37	54.00	16.74	100	360	AV	Horizontal	PASS
11	4961.00	53.16	46.95	-6.21	54.00	7.05	100	128	AV	Horizontal	PASS
12	5331.00	45.61	39.48	-6.13	54.00	14.52	100	149	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	39	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	1143.00	67.84	45.18	-22.66	74.00	28.82	150	146	PK	Vertical	PASS
2	1755.00	63.45	44.19	-19.26	74.00	29.81	100	321	PK	Vertical	PASS
3	1859.00	62.23	43.53	-18.70	74.00	30.47	150	115	PK	Vertical	PASS
4	2667.00	57.27	41.84	-15.43	74.00	32.16	100	73	PK	Vertical	PASS
5	3812.00	52.55	42.97	-9.58	74.00	31.03	100	78	PK	Vertical	PASS
6	4960.00	53.83	46.95	-6.88	74.00	27.05	100	210	PK	Vertical	PASS
7	1136.00	59.37	36.68	-22.69	54.00	17.32	150	141	AV	Vertical	PASS
8	1756.00	56.93	37.67	-19.26	54.00	16.33	100	325	AV	Vertical	PASS
9	1860.00	49.58	30.87	-18.71	54.00	23.13	150	115	AV	Vertical	PASS
10	2668.00	45.45	30.02	-15.43	54.00	23.98	100	78	AV	Vertical	PASS
11	3797.00	41.31	31.60	-9.71	54.00	22.40	100	15	AV	Vertical	PASS
12	4961.00	50.38	43.50	-6.88	54.00	10.50	100	214	AV	Vertical	PASS

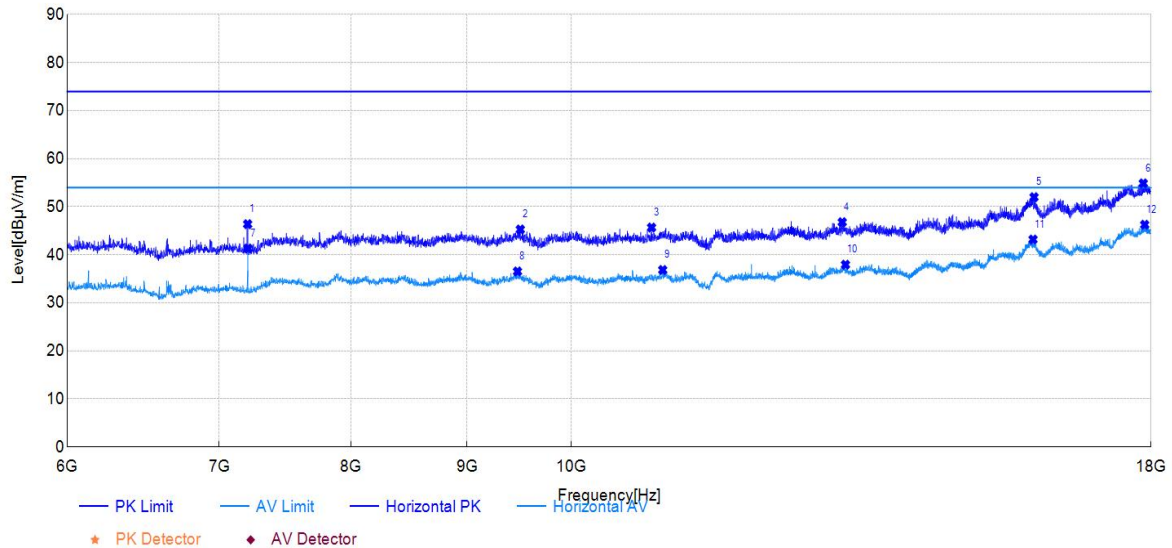
Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

6GHz-18GHz

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	00	Test Engineer:	Stone Zhang



Suspected Data List

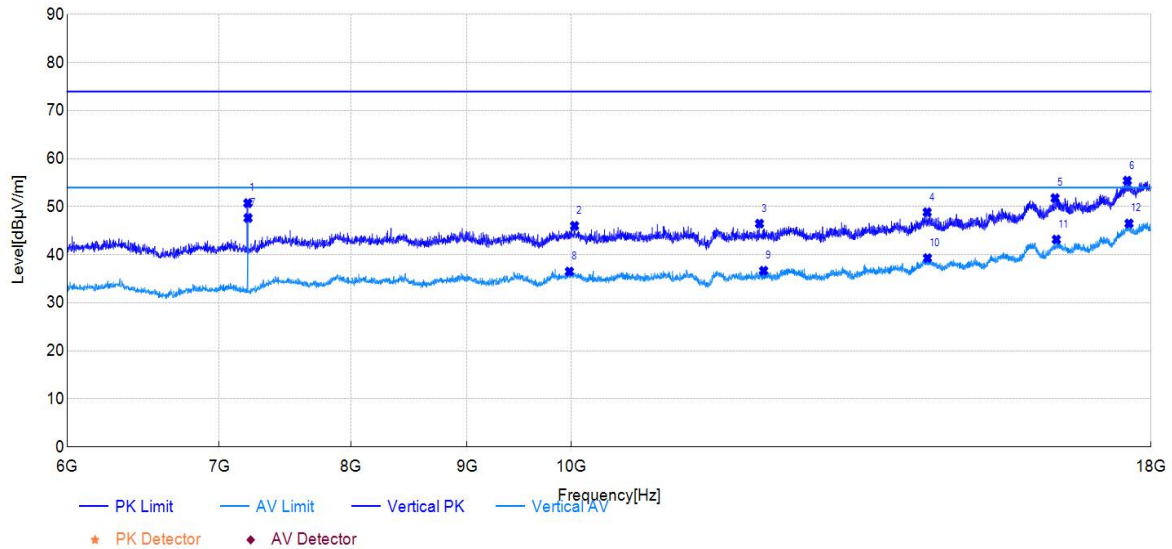
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7204.50	50.53	46.39	-4.14	74.00	27.61	150	99	PK	Horizontal	PASS
2	9498.00	45.25	45.28	0.03	74.00	28.72	100	307	PK	Horizontal	PASS
3	10849.50	44.92	45.68	0.76	74.00	28.32	100	26	PK	Horizontal	PASS
4	13162.50	43.56	46.80	3.24	74.00	27.20	150	288	PK	Horizontal	PASS
5	15987.00	42.23	52.01	9.78	74.00	21.99	150	74	PK	Horizontal	PASS
6	17859.00	40.66	54.87	14.21	74.00	19.13	150	27	PK	Horizontal	PASS
7	7207.50	45.44	41.32	-4.12	54.00	12.68	100	112	AV	Horizontal	PASS
8	9471.00	36.72	36.54	-0.18	54.00	17.46	100	256	AV	Horizontal	PASS
9	10972.50	35.64	36.85	1.21	54.00	17.15	100	343	AV	Horizontal	PASS
10	13206.00	34.55	37.95	3.40	54.00	16.05	100	123	AV	Horizontal	PASS
11	15970.50	33.41	43.19	9.78	54.00	10.81	100	312	AV	Horizontal	PASS
12	17884.50	31.93	46.27	14.34	54.00	7.73	100	327	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	00	Test Engineer:	Stone Zhang



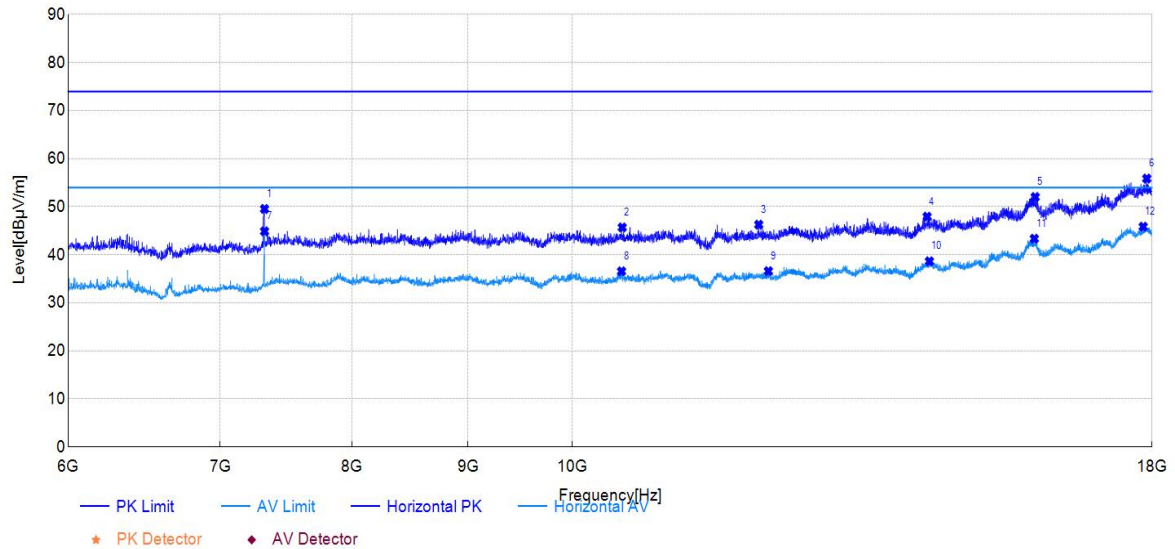
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7206.00	54.88	50.75	-4.13	74.00	23.25	100	180	PK	Vertical	PASS
2	10035.00	45.58	46.03	0.45	74.00	27.97	150	278	PK	Vertical	PASS
3	12103.50	44.97	46.49	1.52	74.00	27.51	100	180	PK	Vertical	PASS
4	14346.00	43.41	48.87	5.46	74.00	25.13	100	0	PK	Vertical	PASS
5	16332.00	42.37	51.80	9.43	74.00	22.20	150	5	PK	Vertical	PASS
6	17572.50	41.20	55.43	14.23	74.00	18.57	150	20	PK	Vertical	PASS
7	7207.50	51.79	47.67	-4.12	54.00	6.33	100	186	AV	Vertical	PASS
8	9982.50	36.13	36.52	0.39	54.00	17.48	150	324	AV	Vertical	PASS
9	12154.50	35.01	36.68	1.67	54.00	17.32	150	319	AV	Vertical	PASS
10	14350.50	33.84	39.31	5.47	54.00	14.69	150	344	AV	Vertical	PASS
11	16353.00	33.68	43.19	9.51	54.00	10.81	100	201	AV	Vertical	PASS
12	17602.50	32.03	46.52	14.49	54.00	7.48	100	67	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	19	Test Engineer:	Stone Zhang



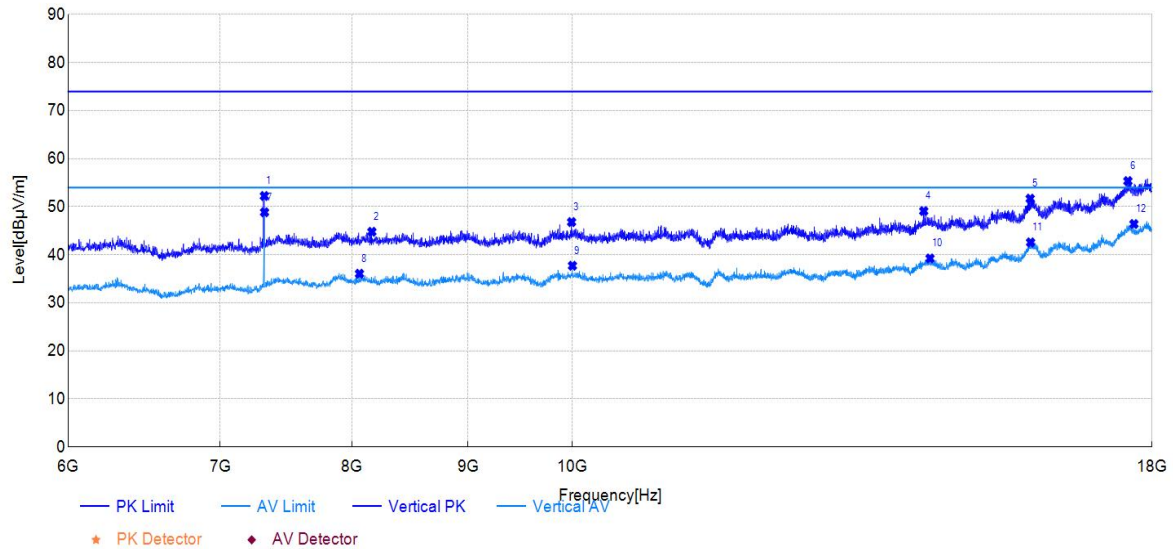
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7321.50	52.87	49.55	-3.32	74.00	24.45	100	107	PK	Horizontal	PASS
2	10521.00	44.86	45.70	0.84	74.00	28.30	100	24	PK	Horizontal	PASS
3	12082.50	44.78	46.28	1.50	74.00	27.72	150	217	PK	Horizontal	PASS
4	14331.00	43.07	47.94	4.87	74.00	26.06	150	149	PK	Horizontal	PASS
5	15990.00	42.25	52.03	9.78	74.00	21.97	150	104	PK	Horizontal	PASS
6	17904.00	41.47	55.87	14.40	74.00	18.13	150	247	PK	Horizontal	PASS
7	7321.50	48.22	44.90	-3.32	54.00	9.10	100	112	AV	Horizontal	PASS
8	10513.50	35.71	36.57	0.86	54.00	17.43	100	303	AV	Horizontal	PASS
9	12201.00	34.84	36.60	1.76	54.00	17.40	100	148	AV	Horizontal	PASS
10	14364.00	33.63	38.65	5.02	54.00	15.35	150	185	AV	Horizontal	PASS
11	15975.00	33.58	43.36	9.78	54.00	10.64	100	262	AV	Horizontal	PASS
12	17839.50	31.75	45.86	14.11	54.00	8.14	150	134	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	19	Test Engineer:	Stone Zhang



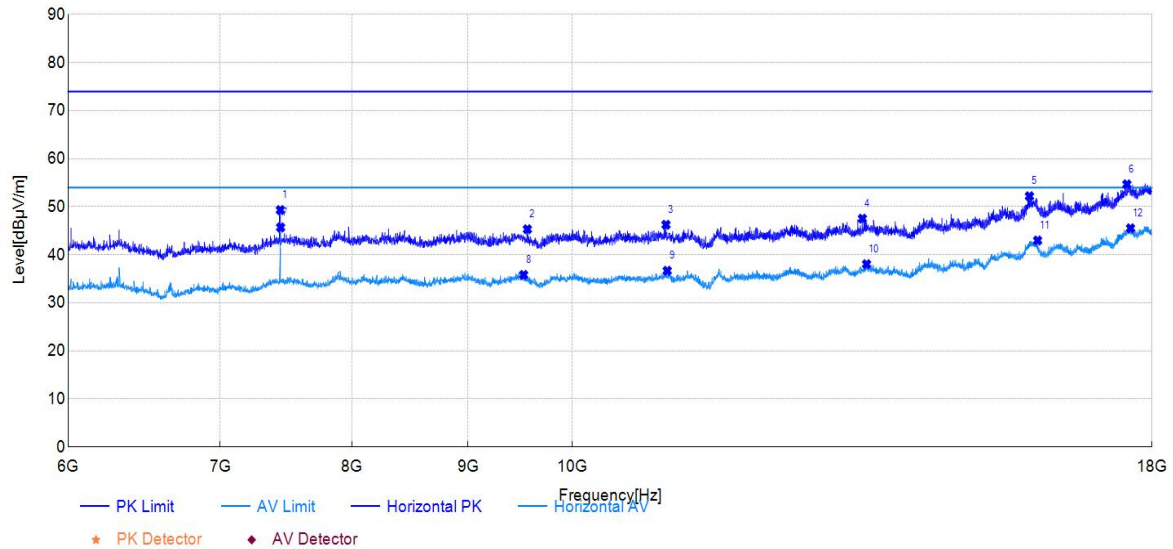
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7320.00	55.58	52.25	-3.33	74.00	21.75	100	196	PK	Vertical	PASS
2	8163.00	46.10	44.80	-1.30	74.00	29.20	150	284	PK	Vertical	PASS
3	9994.50	46.36	46.82	0.46	74.00	27.18	100	190	PK	Vertical	PASS
4	14281.50	43.97	49.11	5.14	74.00	24.89	150	77	PK	Vertical	PASS
5	15909.00	42.39	51.69	9.30	74.00	22.31	150	247	PK	Vertical	PASS
6	17565.00	41.18	55.35	14.17	74.00	18.65	150	128	PK	Vertical	PASS
7	7321.50	52.18	48.86	-3.32	54.00	5.14	100	196	AV	Vertical	PASS
8	8061.00	37.28	36.07	-1.21	54.00	17.93	150	350	AV	Vertical	PASS
9	10003.50	37.25	37.73	0.48	54.00	16.27	150	216	AV	Vertical	PASS
10	14373.00	33.72	39.25	5.53	54.00	14.75	150	97	AV	Vertical	PASS
11	15915.00	33.29	42.59	9.30	54.00	11.41	100	114	AV	Vertical	PASS
12	17673.00	32.34	46.41	14.07	54.00	7.59	150	299	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	39	Test Engineer:	Stone Zhang



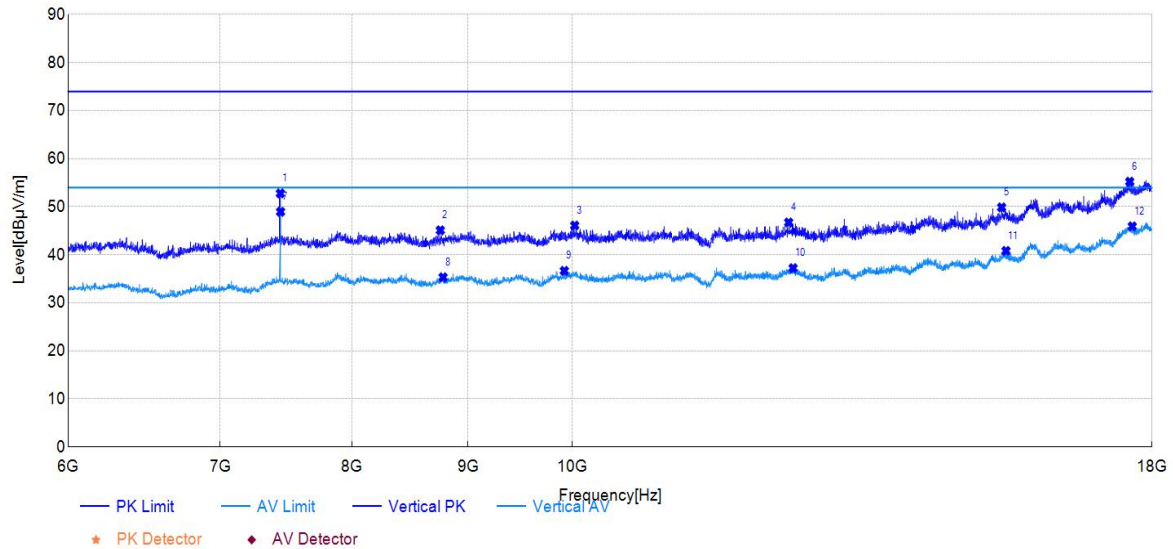
Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	7440.00	52.17	49.33	-2.84	74.00	24.67	100	112	PK	Horizontal	PASS
2	9556.50	45.43	45.33	-0.10	74.00	28.67	100	235	PK	Horizontal	PASS
3	10998.00	44.96	46.26	1.30	74.00	27.74	100	180	PK	Horizontal	PASS
4	13420.50	44.55	47.53	2.98	74.00	26.47	100	272	PK	Horizontal	PASS
5	15897.00	42.48	52.20	9.72	74.00	21.80	150	8	PK	Horizontal	PASS
6	17547.00	41.19	54.67	13.48	74.00	19.33	150	279	PK	Horizontal	PASS
7	7441.50	48.56	45.71	-2.85	54.00	8.29	100	103	AV	Horizontal	PASS
8	9520.50	35.83	35.83	0.00	54.00	18.17	150	345	AV	Horizontal	PASS
9	11011.50	35.45	36.68	1.23	54.00	17.32	150	126	AV	Horizontal	PASS
10	13477.50	34.83	38.06	3.23	54.00	15.94	100	276	AV	Horizontal	PASS
11	16029.00	33.68	42.99	9.31	54.00	11.01	100	184	AV	Horizontal	PASS
12	17611.50	31.62	45.53	13.91	54.00	8.47	100	76	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Test Mode:	BLE	Test Date:	2025-03-18
Test Channel:	39	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	7440.00	55.63	52.79	-2.84	74.00	21.21	100	201	PK	Vertical	PASS
2	8749.50	46.18	45.10	-1.08	74.00	28.90	100	23	PK	Vertical	PASS
3	10026.00	45.63	46.10	0.47	74.00	27.90	100	299	PK	Vertical	PASS
4	12454.50	44.27	46.74	2.47	74.00	27.26	150	276	PK	Vertical	PASS
5	15454.50	42.98	49.88	6.90	74.00	24.12	100	120	PK	Vertical	PASS
6	17598.00	40.74	55.23	14.49	74.00	18.77	100	1	PK	Vertical	PASS
7	7441.50	51.81	48.96	-2.85	54.00	5.04	100	170	AV	Vertical	PASS
8	8773.50	36.40	35.33	-1.07	54.00	18.67	150	92	AV	Vertical	PASS
9	9921.00	36.60	36.67	0.07	54.00	17.33	100	181	AV	Vertical	PASS
10	12510.00	34.71	37.23	2.52	54.00	16.77	100	170	AV	Vertical	PASS
11	15523.50	33.76	40.82	7.06	54.00	13.18	100	42	AV	Vertical	PASS
12	17643.00	31.69	45.93	14.24	54.00	8.07	150	292	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

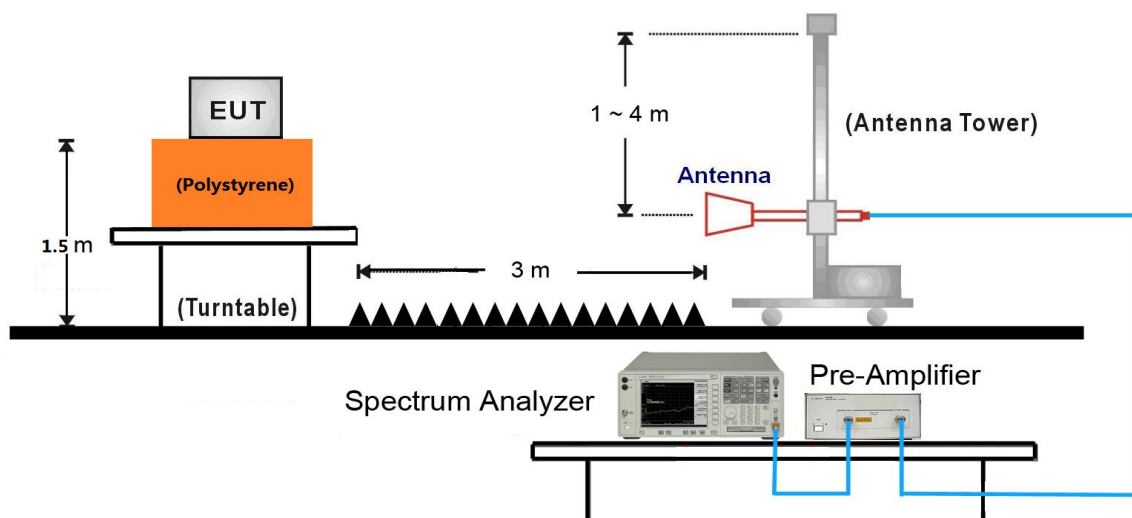
Peak Field Strength Measurements

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

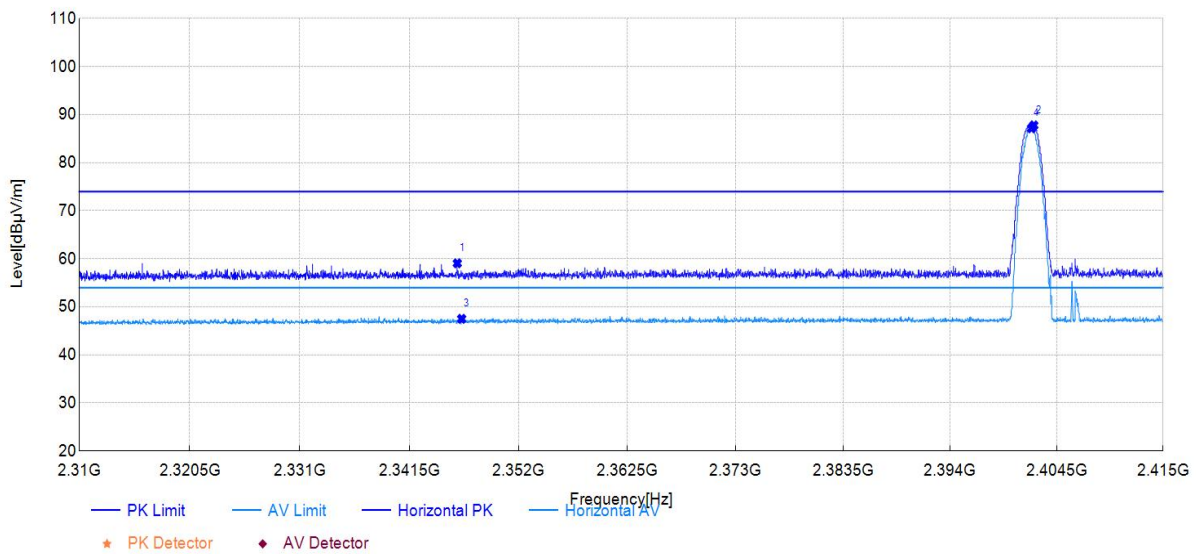
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Power Average (RMS)
5. Number of sweep point = 2001 (Number of sweep points must be $\geq 2 \times \text{span} / \text{RBW}$)
6. Sweep time = auto
7. Trace (RMS)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

7.7.4. Test Setup



7.7.5. Test Result

Project Information			
EUT:	BLE Beacon	Model:	WID330
Test Date:	2025-03-18	Voltage:	DC 3V
Environment:	Temp: 18.9°C; Humi:36%	Engineer:	Stone Zhang
Remark:	Transmit by BLE at Channel 2402MHz		

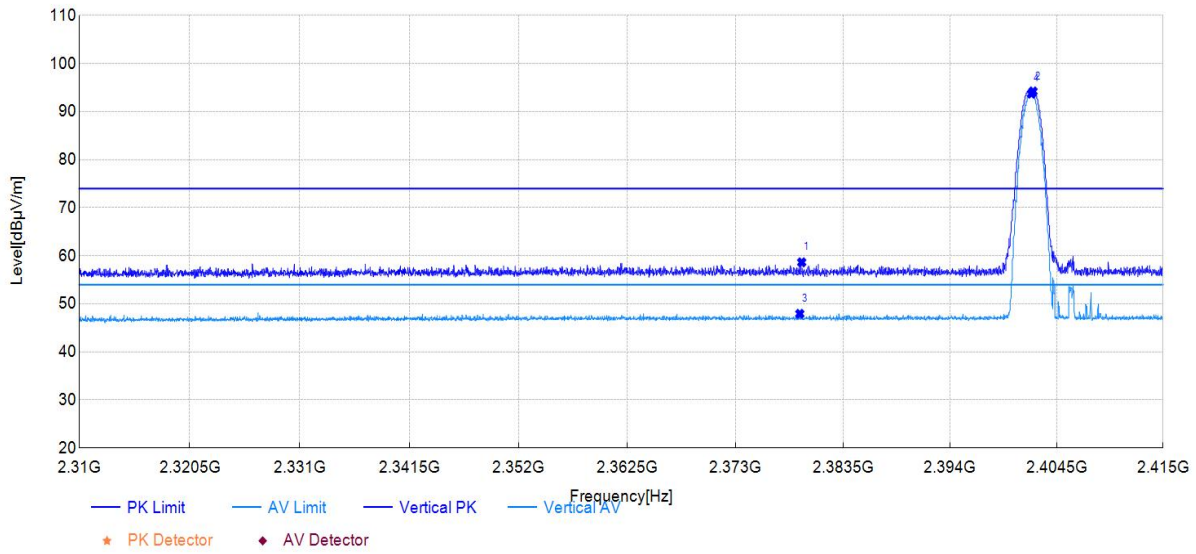


Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2346.10	23.20	59.07	35.87	74.00	14.93	150	164	PK	Horizontal	PASS
2	2402.24	51.62	87.78	36.16	/	/	150	258	PK	Horizontal	PASS
3	2346.52	11.64	47.52	35.88	54.00	6.48	150	75	AV	Horizontal	PASS
4	2402.00	51.01	87.16	36.15	/	/	150	258	AV	Horizontal	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level



Suspected Data List

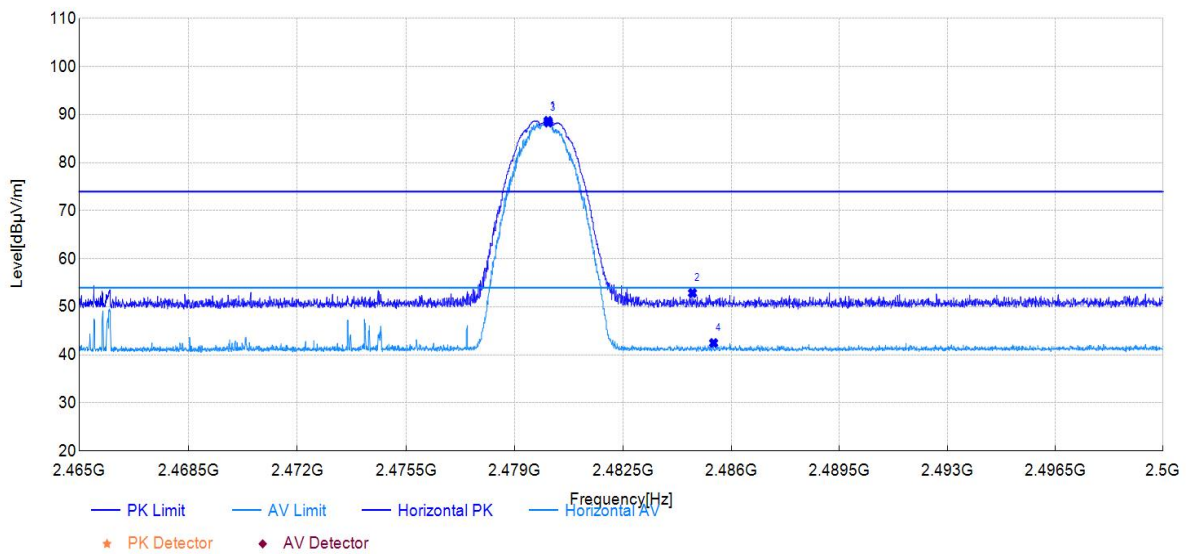
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2379.47	22.74	58.65	35.91	74.00	15.35	100	88	PK	Vertical	PASS
2	2402.16	58.23	94.22	35.99	/	/	150	314	PK	Vertical	PASS
3	2379.29	12.03	47.94	35.91	54.00	6.06	150	122	AV	Vertical	PASS
4	2402.00	57.76	93.75	35.99	/	/	150	314	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

Project Information			
EUT:	BLE Beacon	Model:	WID330
Test Date:	2025-03-18	Voltage:	DC 3V
Environment:	Temp: 25.3°C; Humi:53%	Engineer:	Stone Zhang
Remark:	Transmit by BLE at Channel 2480MHz		

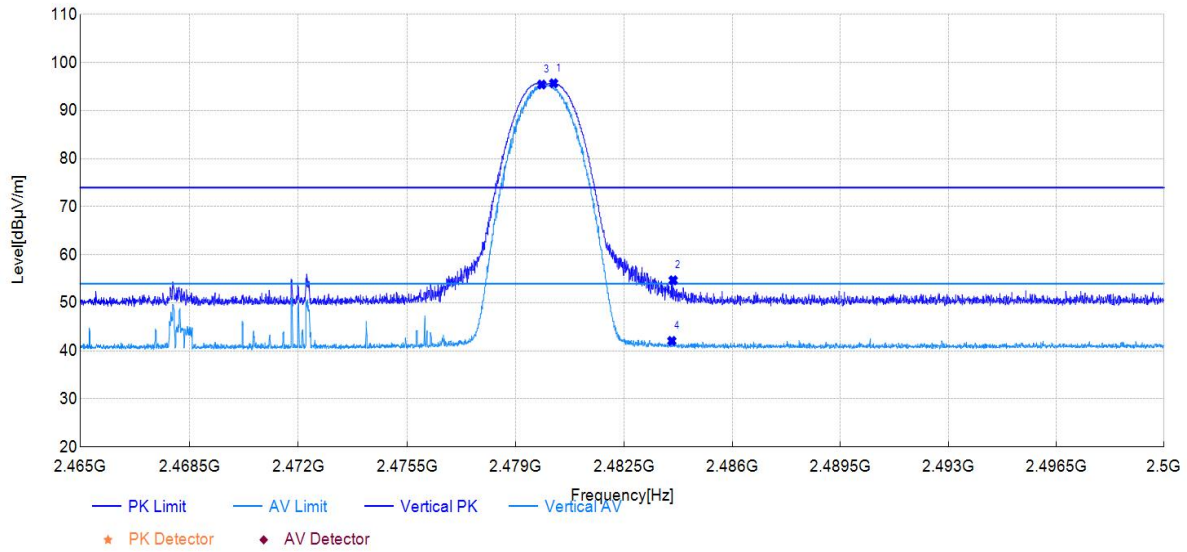


Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2480.08	52.36	88.71	36.35	/	/	150	89	PK	Horizontal	PASS
2	2484.74	16.52	52.88	36.36	74.00	21.12	150	355	PK	Horizontal	PASS
3	2480.09	52.01	88.36	36.35	/	/	150	89	AV	Horizontal	PASS
4	2485.43	6.11	42.48	36.37	54.00	11.52	150	106	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	2480.23	59.62	95.70	36.08	/	/	150	319	PK	Vertical	PASS
2	2484.09	18.62	54.70	36.08	74.00	19.30	150	311	PK	Vertical	PASS
3	2479.84	59.36	95.44	36.08	/	/	150	319	AV	Vertical	PASS
4	2484.04	6.00	42.08	36.08	54.00	11.92	150	323	AV	Vertical	PASS

Note:

(1) Level=Reading + Factor

(2) Margin=Limit-Level

7.8. AC Conducted Emissions Measurement

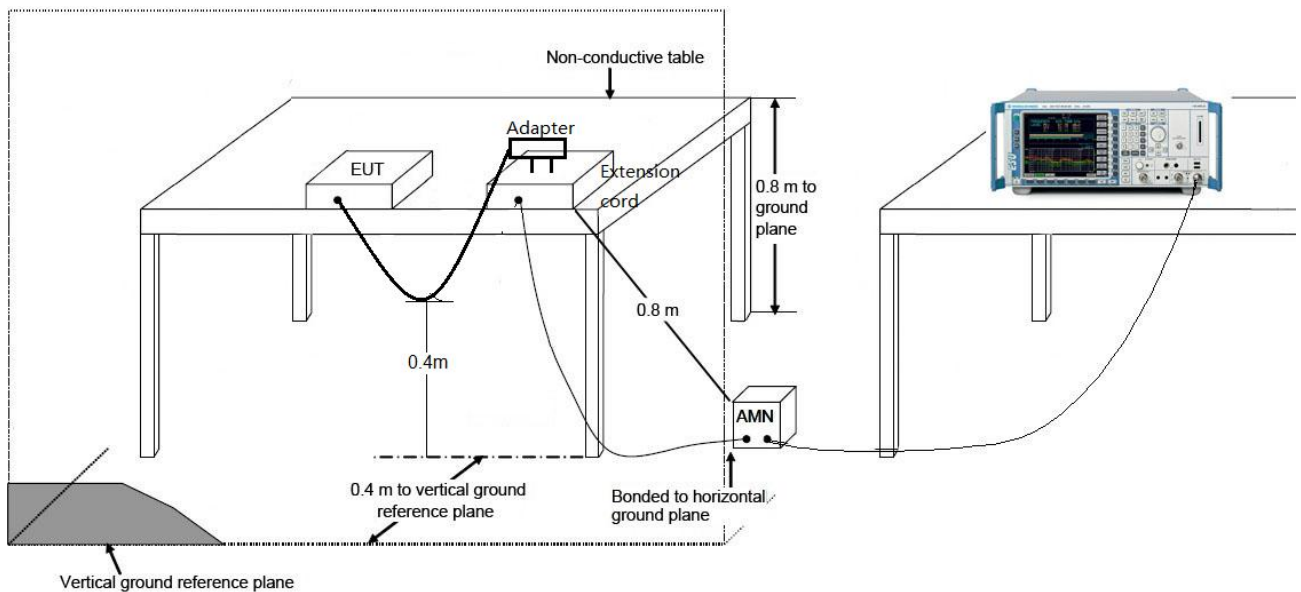
7.8.1. Test Limit

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 3V from battery.

8. CONCLUSION

The data collected relate only the item(s) tested and show that the **BLE Beacon (Model: WID330)** 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. Information about laboratory sites involved in our company:

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Building 2 and Building 3, GRGTest Science and Technology Industrial Park, No.8, Chuangyun Road, Panyu District, Guangzhou, Guangdong, China (Panyu Laboratory)

Building G9, China Sensor Network International Innovation Park, No.200, Linghu Avenue, Wuxi, Jiangsu, China (Wuxi Innovation Park Laboratory)

Building 3, Maoxuan Industrial Park, No.81, Jinma Road, Hongshan Subdistrict, Xinwu District, Wuxi, Jiangsu, China (Maoxuan Industrial Park Laboratory)

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

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