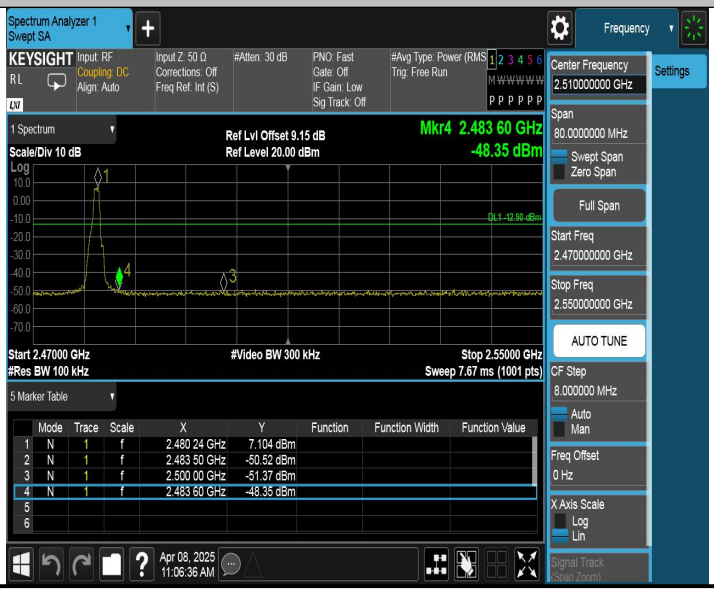
7.5.5. Test Result

Test Mode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	7.68	7.68	---	PASS
			30~1000	7.68	-53.79	≤-12.32	PASS
			1000~26500	7.68	-35.57	≤-12.32	PASS
		2440	Reference	7.12	7.12	---	PASS
			30~1000	7.12	-54.22	≤-12.88	PASS
			1000~26500	7.12	-33.48	≤-12.88	PASS
		2480	Reference	7.02	7.02	---	PASS
			30~1000	7.02	-53.96	≤-12.98	PASS
			1000~26500	7.02	-32.81	≤-12.98	PASS

Test Graphs of Conducted Band Edge

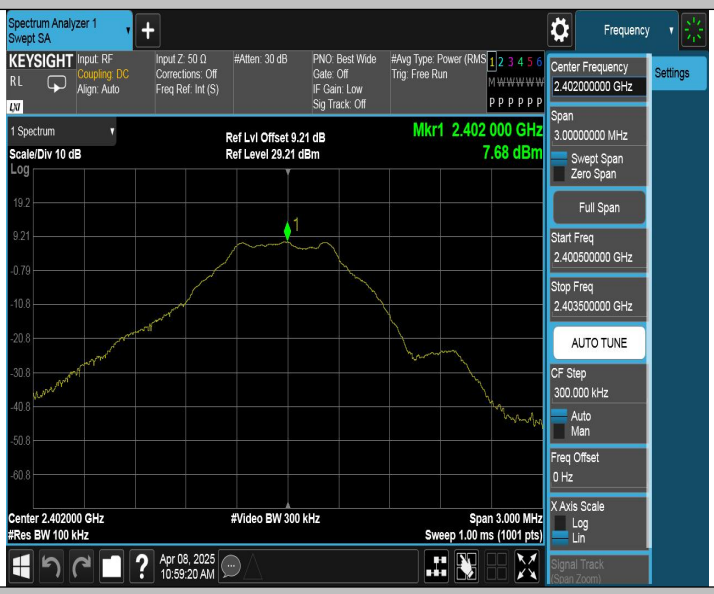
BLE_1M_Ant1_Low_2402

BLE_1M_Ant1_High_2480

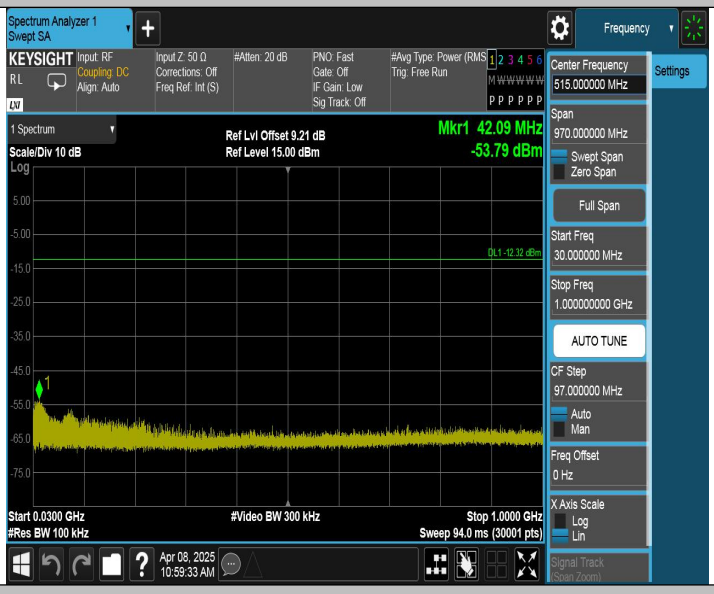


Test Graphs of Out-of-Band Emissions

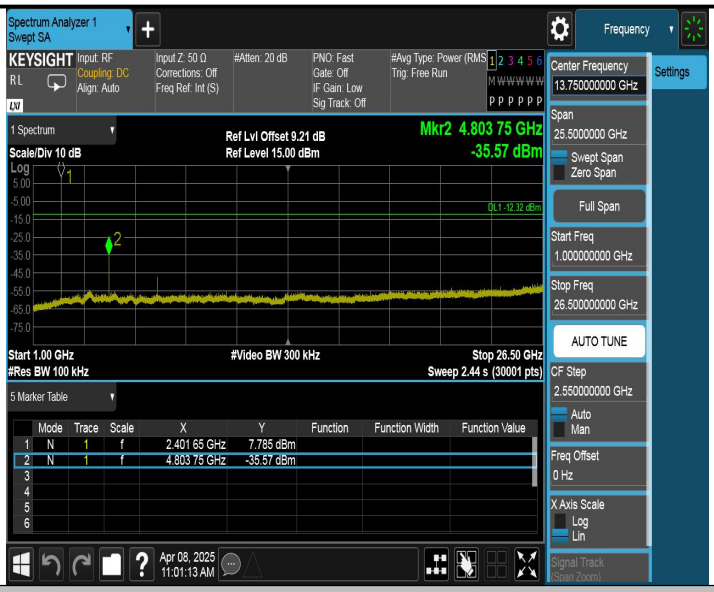
BLE_1M_Ant1_2402_0~Reference



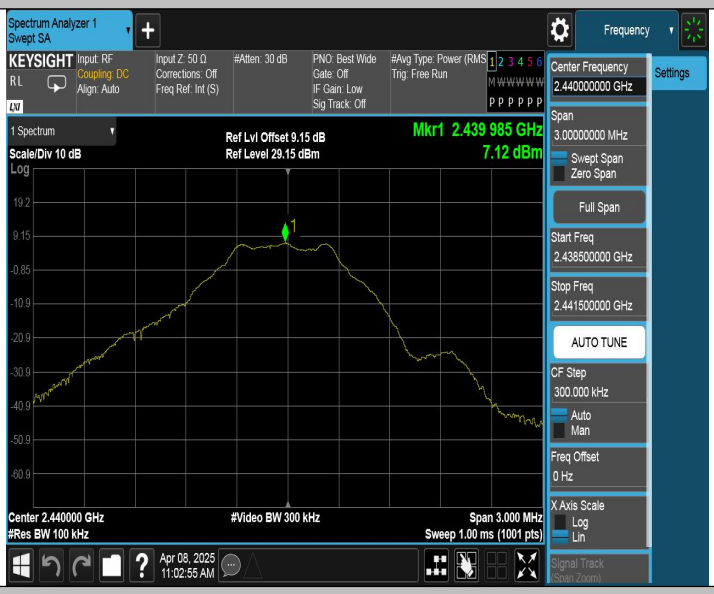
BLE_1M_Ant1_2402_30~1000



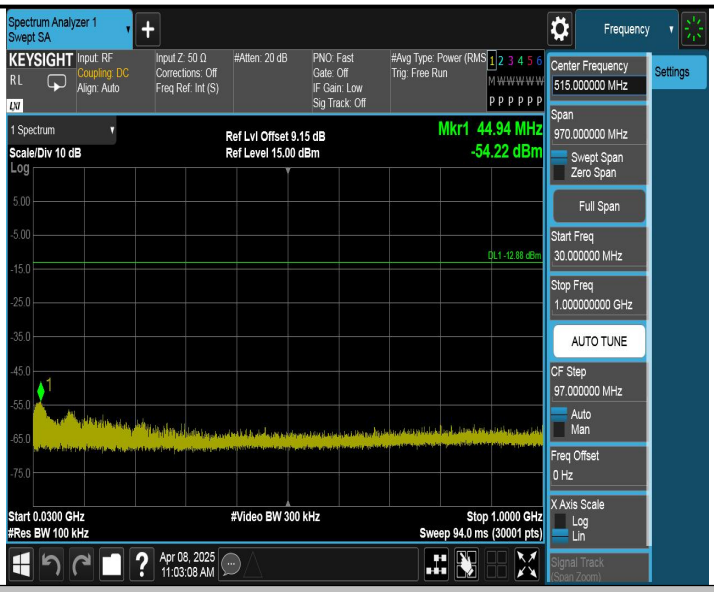
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference



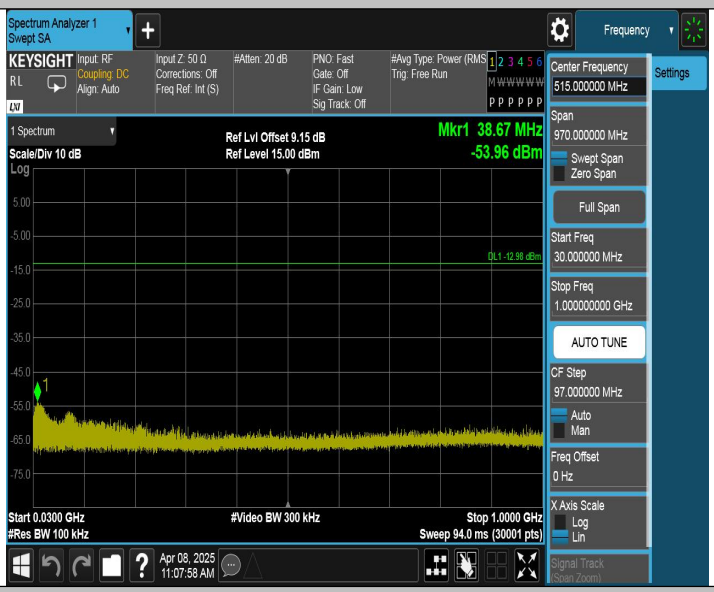
BLE_1M_Ant1_2440_30~1000



BLE_1M_Ant1_2440_1000~26500

BLE_1M_Ant1_2480_0~Reference

BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500


Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
#Atten: 20 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
#Avg Type: Power (RMS)
Trig: Free Run
1 Spectrum
Ref Lvl Offset 9.15 dB
Ref Level 15.00 dBm
Mkr2 4.959 30 GHz
-32.81 dBm
Scale/Div 10 dB
Log
5.00
-5.00
-15.0
-25.0
-35.0
-45.0
-55.0
-65.0
-75.0
DL1 -12.96 dBm
Start 1.00 GHz
#Res BW 100 kHz
#Video BW 300 kHz
Stop 26.50 GHz
Sweep 2.44 s (30001 pts)
5 Marker Table
Mode Trace Scale X Y Function Function Width Function Value
1 N 1 f 2.479 85 GHz 7.030 dBm
2 N 1 f 4.959 30 GHz -32.81 dBm
3
4
5
6
Apr 08, 2025
11:09:39 AM
Frequency
Settings
Center Frequency
13.750000000 GHz
Span
25.5000000 GHz
Swept Span
Zero Span
Full Span
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
AUTO TUNE
CF Step
2.550000000 GHz
Auto
Man
Freq Offset
0 Hz
X Axis Scale
Log
Lin
Signal Track
(Span Zoom)

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

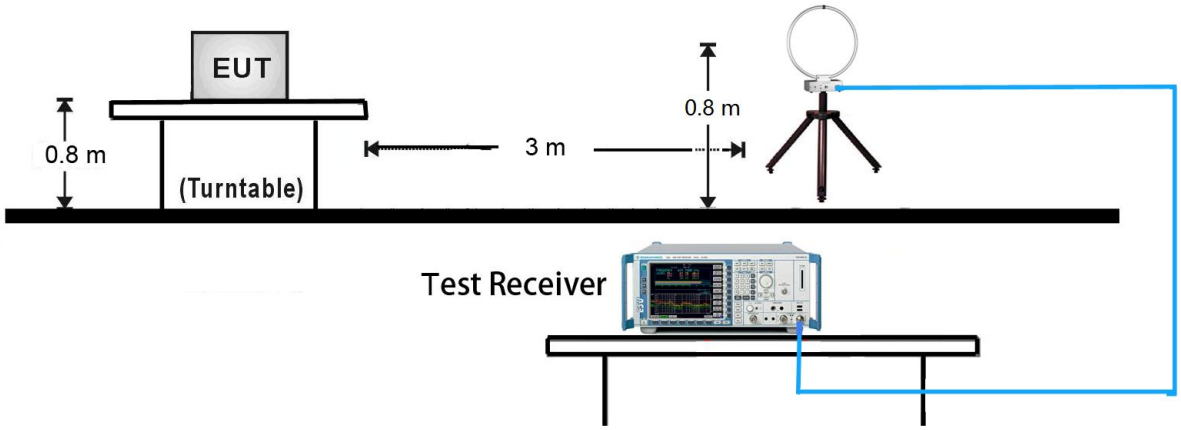
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

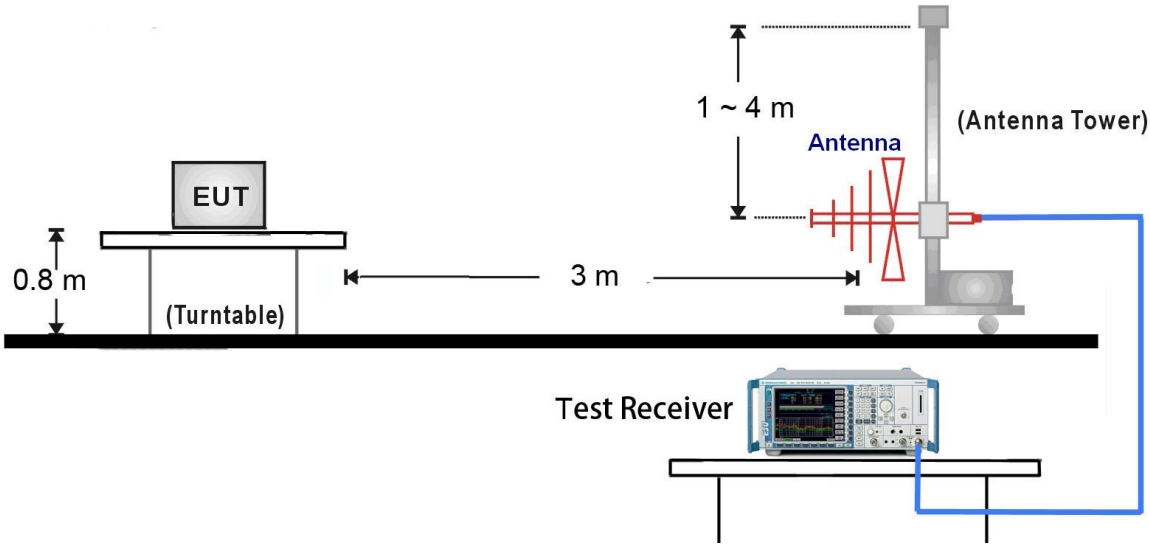
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Power Average (RMS)
5. Number of sweep point = 2001 (Number of sweep points must be ≥ 2 x span / RBW)
6. Sweep time = auto
7. Trace (RMS) averaging was performed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

7.6.4. Test Setup

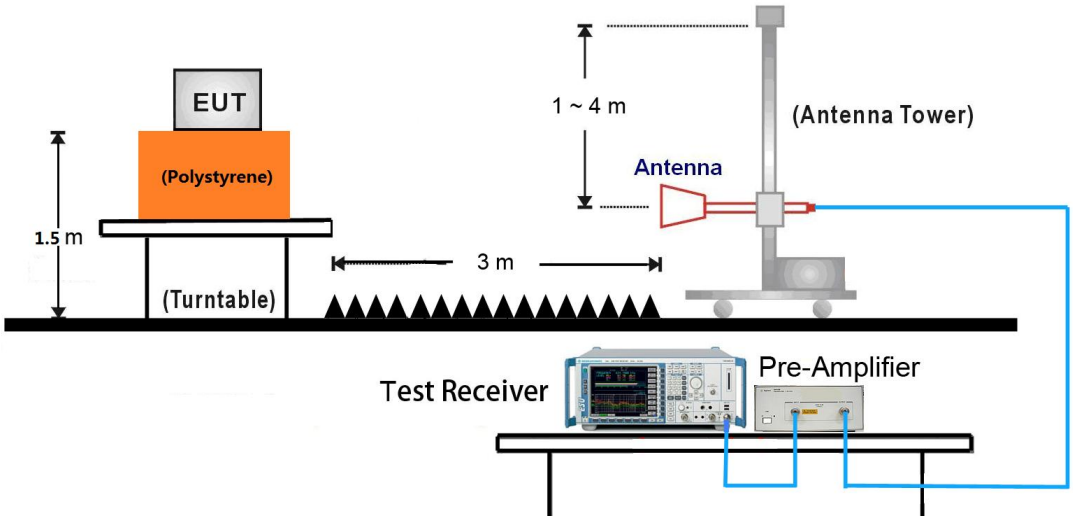
9kHz ~ 30MHz Test Setup:



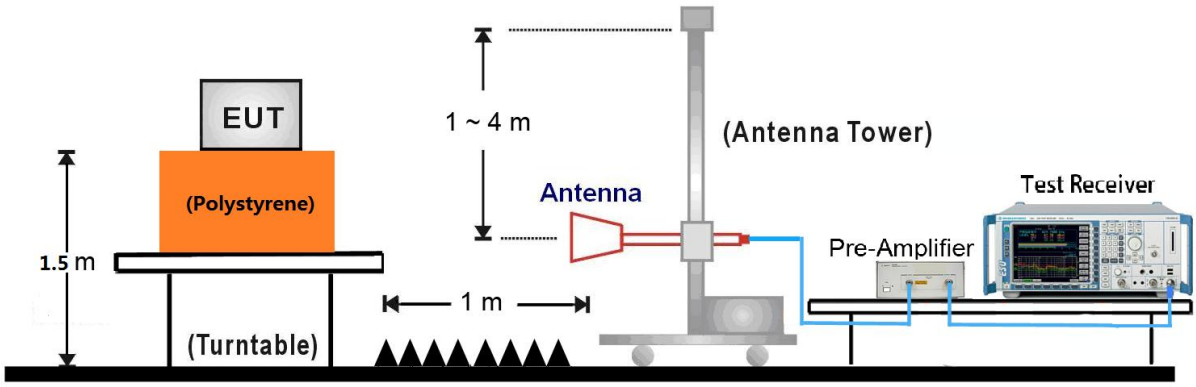
30MHz ~ 1GHz Test Setup:



1GHz ~ 18GHz Test Setup:



18GHz ~25GHz Test Setup:



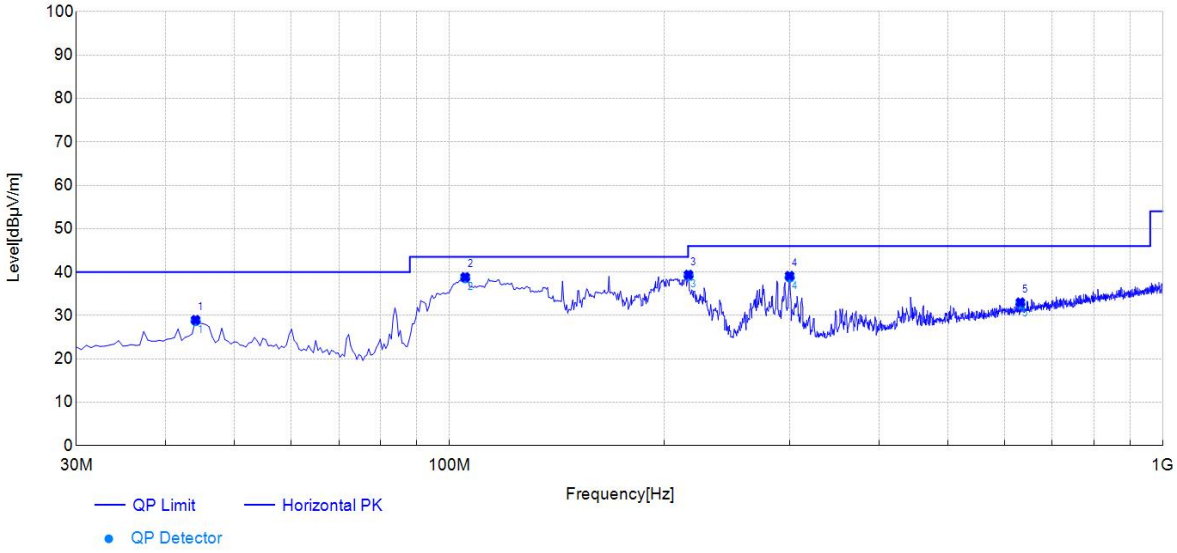
7.6.5. Test Result

The worst case of Radiated Emission below 1GHz:

30MHz – 1GHz Test Data

EUT:	GPS Tracker	Polarity:	Horizontal
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 00	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph

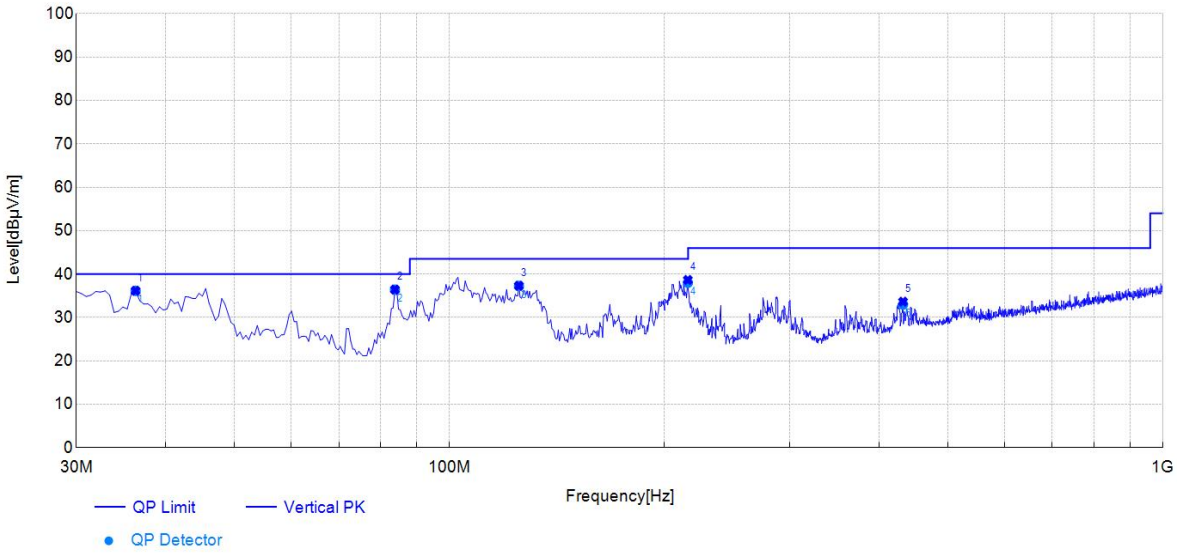


Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	44.07	14.64	28.77	40.00	11.23	150	34	Horizontal
2	105.21	12.10	38.64	43.50	4.86	150	222	Horizontal
3	216.33	12.42	39.20	46.00	6.80	150	78	Horizontal
4	299.79	15.22	38.79	46.00	7.21	150	103	Horizontal
5	631.22	22.12	32.66	46.00	13.34	150	57	Horizontal

Note 1: 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:	GPS Tracker	Polarity:	Vertical
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 00	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph

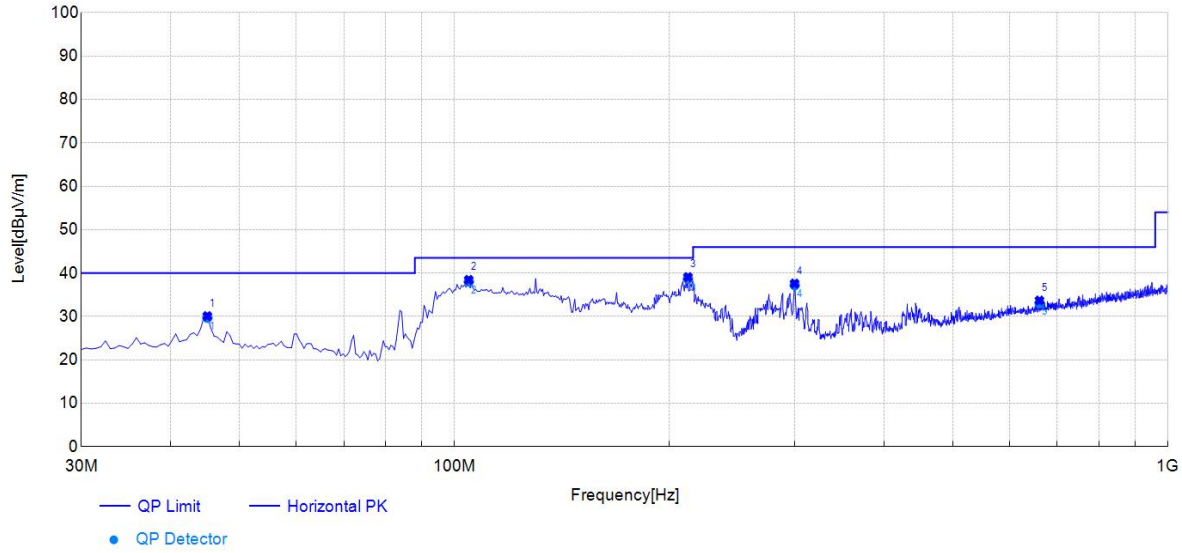


Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.31	14.36	36.15	40.00	3.85	150	234	Vertical
2	83.86	10.59	36.41	40.00	3.59	150	320	Vertical
3	125.11	14.08	37.29	43.50	6.21	150	289	Vertical
4	215.85	12.40	38.00	43.50	5.50	150	190	Vertical
5	432.27	18.32	33.00	46.00	13.00	150	227	Vertical

30MHz – 1GHz Test Data

EUT:	GPS Tracker	Polarity:	Horizontal
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 19	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph

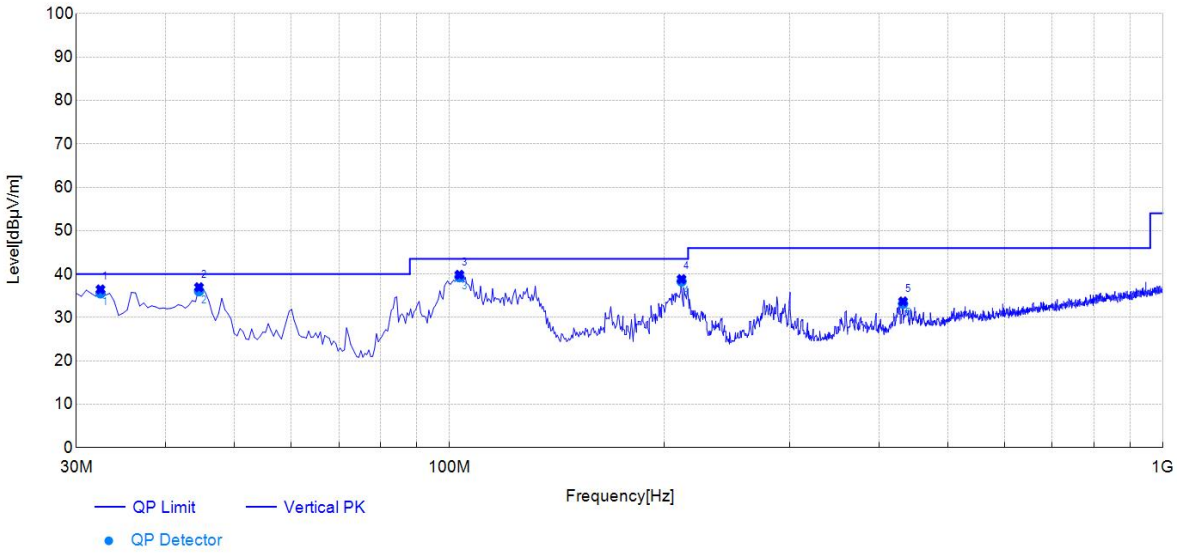


Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	45.04	14.58	29.73	40.00	10.27	150	80	Horizontal
2	104.73	12.05	38.07	43.50	5.43	150	35	Horizontal
3	212.45	12.28	38.72	43.50	4.78	150	86	Horizontal
4	299.79	15.22	37.23	46.00	8.77	150	93	Horizontal
5	660.82	22.65	33.14	46.00	12.86	150	204	Horizontal

Note 1: 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:	GPS Tracker	Polarity:	Vertical
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 19	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph



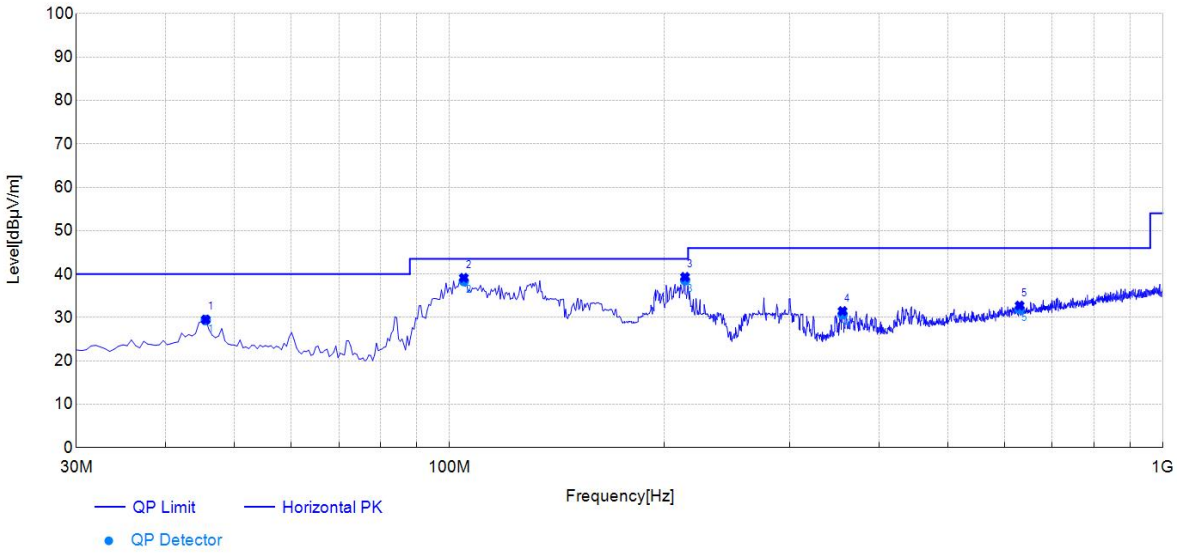
Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	32.43	14.02	35.58	40.00	4.42	150	27	Vertical
2	44.56	14.61	36.07	40.00	3.93	150	55	Vertical
3	103.27	11.88	39.31	43.50	4.19	150	155	Vertical
4	211.48	12.23	38.31	43.50	5.19	150	147	Vertical
5	432.27	18.32	33.17	46.00	12.83	150	223	Vertical

Note 1: 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.

30MHz – 1GHz Test Data

EUT:	GPS Tracker	Polarity:	Horizontal
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 39	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph

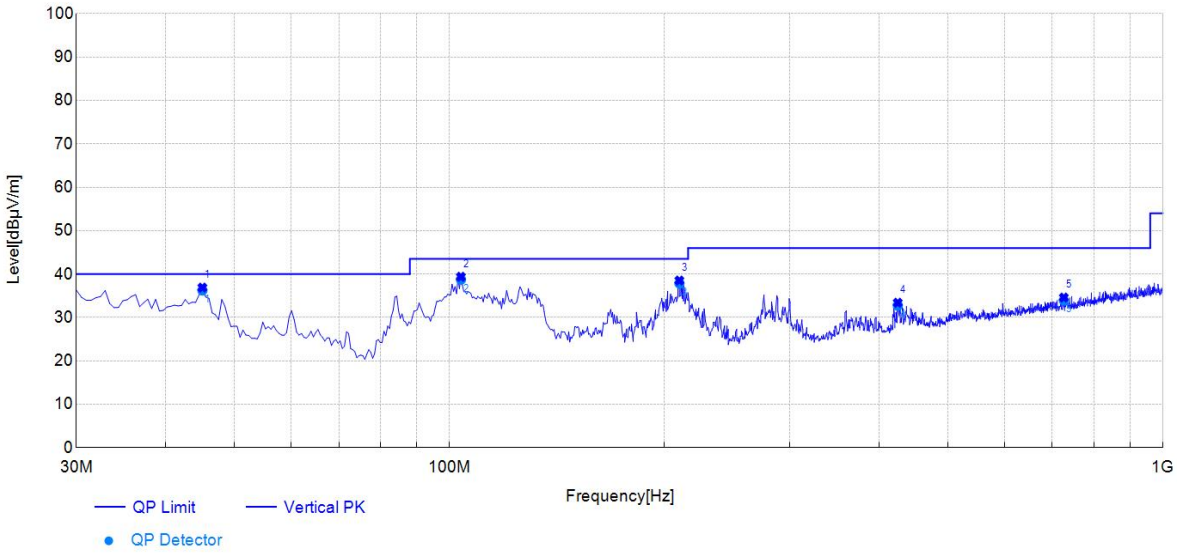


Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	45.53	14.57	29.41	40.00	10.59	150	53	Horizontal
2	104.73	12.05	38.40	43.50	5.10	150	28	Horizontal
3	213.91	12.32	38.60	43.50	4.90	150	104	Horizontal
4	355.60	16.46	30.73	46.00	15.27	150	15	Horizontal
5	629.76	22.09	32.00	46.00	14.00	150	268	Horizontal

Note 1: 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:	GPS Tracker	Polarity:	Vertical
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 39	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph



Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	45.04	14.58	36.25	40.00	3.75	150	27	Vertical
2	103.76	11.94	38.75	43.50	4.75	150	119	Vertical
3	210.03	12.18	37.88	43.50	5.62	150	126	Vertical
4	424.99	18.11	32.77	46.00	13.23	150	226	Vertical
5	726.32	23.55	33.96	46.00	12.04	150	278	Vertical

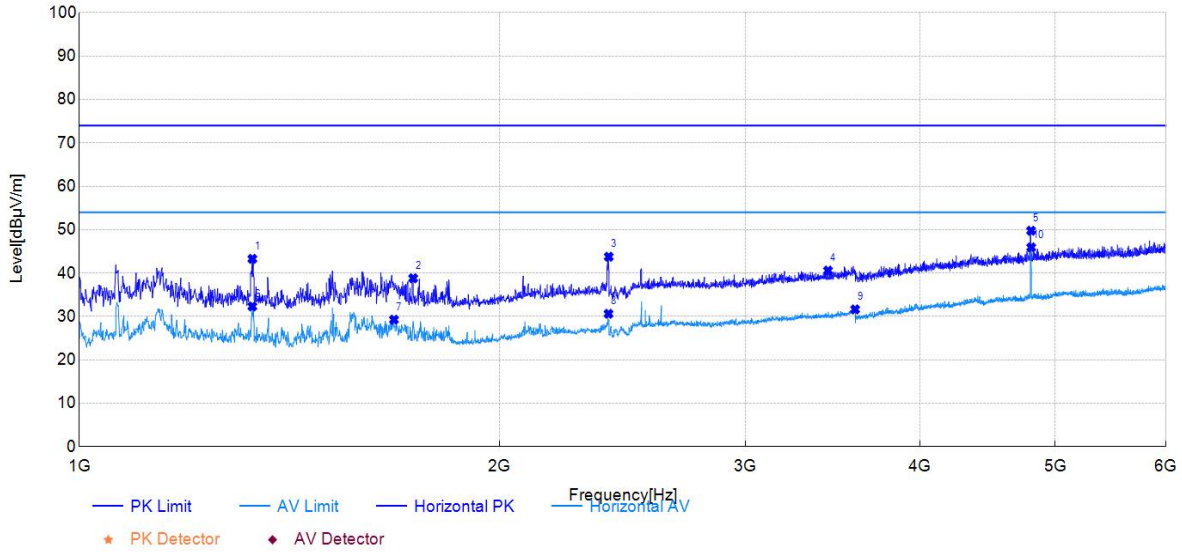
Note 1: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

The worst case of Radiated Emission above 1GHz:

1GHz – 6GHz Test Data

EUT:	GPS Tracker	Polarity:	Horizontal
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 00	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph

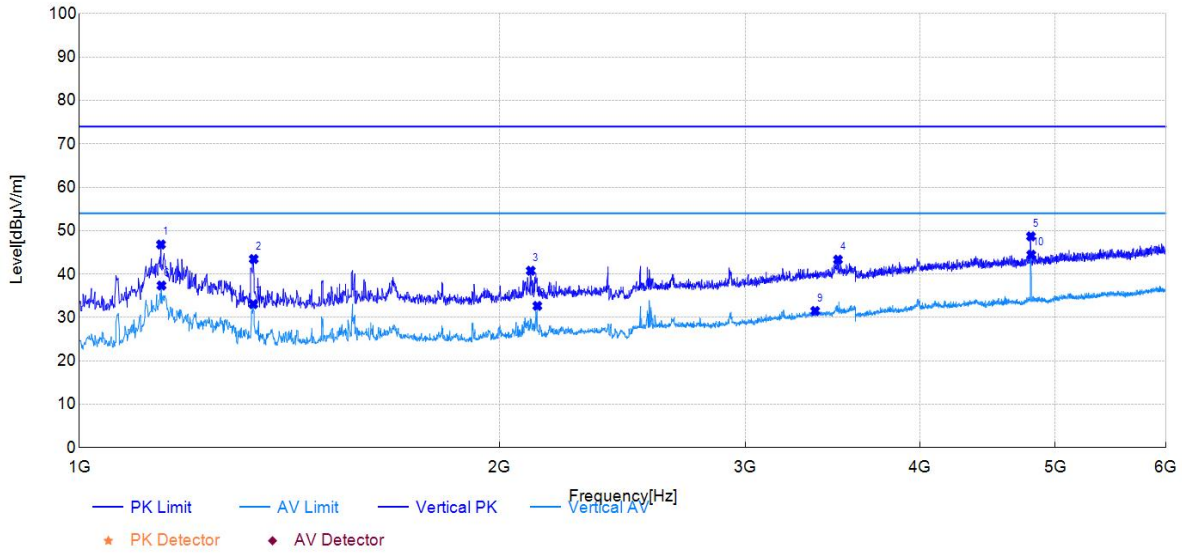


Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
1330.00	43.28	-22.68	74.00	30.72	PK	Horizontal
1734.00	38.81	-20.05	74.00	35.19	PK	Horizontal
2394.00	43.77	-16.33	74.00	30.23	PK	Horizontal
3437.00	40.57	-12.63	74.00	33.43	PK	Horizontal
4804.00	49.76	-6.78	74.00	24.24	PK	Horizontal
1330.00	32.32	-22.68	54.00	21.68	PK	Horizontal
1680.00	29.26	-20.48	54.00	24.74	AV	Horizontal
2393.00	30.62	-16.34	54.00	23.38	AV	Horizontal
3594.00	31.63	-11.55	54.00	22.37	AV	Horizontal
4805.00	45.92	-6.78	54.00	8.08	AV	Horizontal

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

EUT:	GPS Tracker	Polarity:	Vertical
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 00	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph



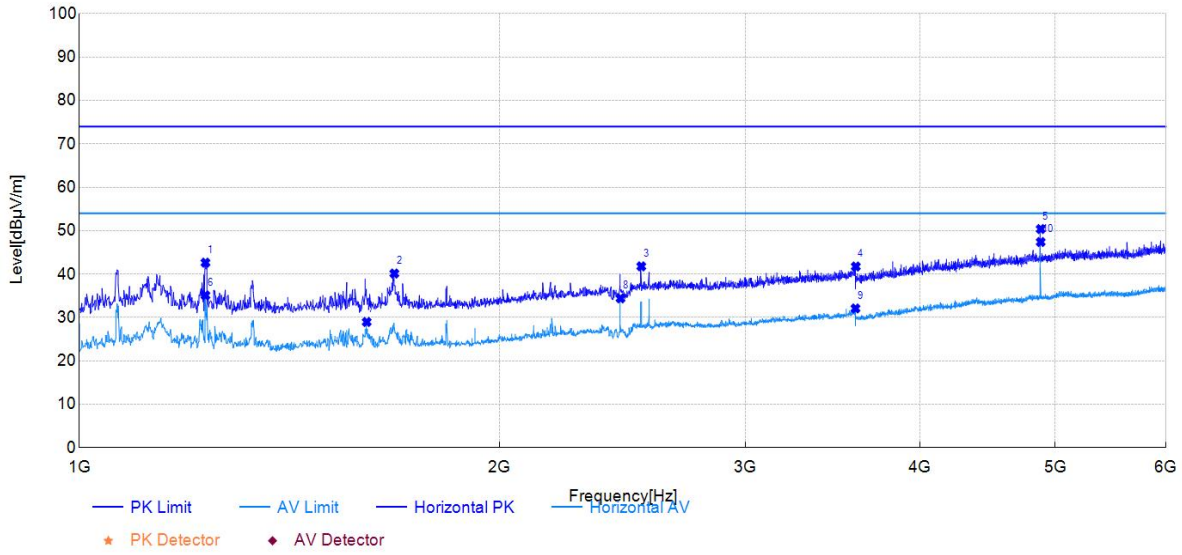
Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
1144.00	45.83	-21.78	74.00	28.17	PK	Vertical
1333.00	41.12	-17.79	74.00	32.88	PK	Vertical
2105.00	49.83	-15.76	74.00	24.17	PK	Vertical
3494.00	45.95	-8.32	74.00	28.05	PK	Vertical
4803.00	53.35	-6.67	74.00	20.65	PK	Vertical
1145.00	48.09	-6.39	74.00	25.91	AV	Vertical
1332.00	34.09	-21.78	54.00	19.91	AV	Vertical
2128.00	32.64	-17.75	54.00	21.36	AV	Vertical
3365.00	47.96	-15.76	54.00	6.04	AV	Vertical
4805.00	34.75	-8.32	54.00	19.25	AV	Vertical

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

1GHz – 6GHz Test Data

EUT:	GPS Tracker	Polarity:	Horizontal
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 19	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph

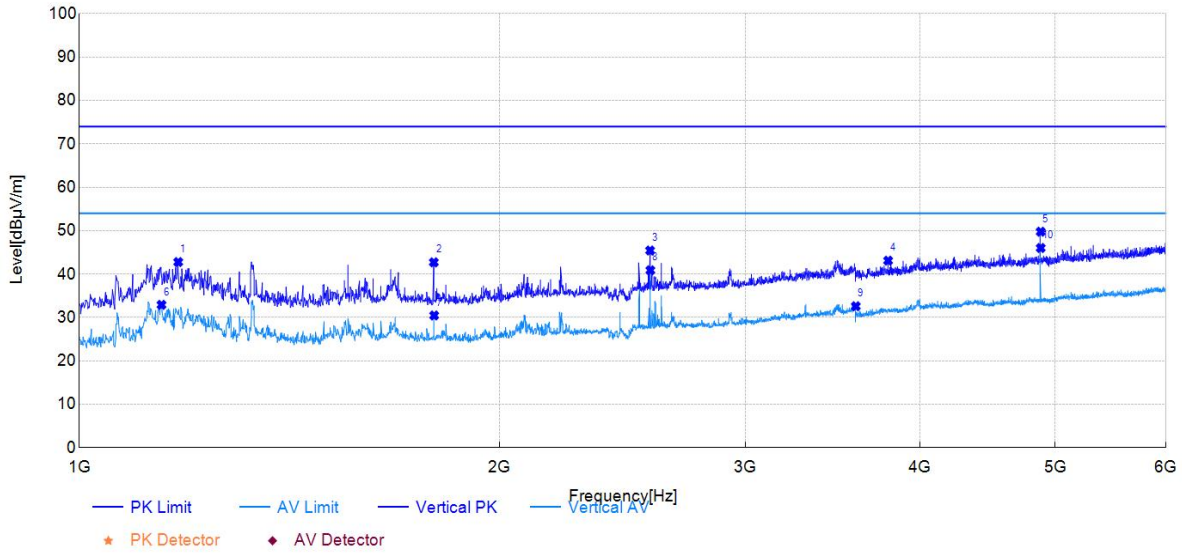


Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
1231.00	42.63	-23.28	74.00	31.37	PK	Horizontal
1681.00	40.13	-20.47	74.00	33.87	PK	Horizontal
2526.00	41.78	-15.73	74.00	32.22	PK	Horizontal
3598.00	41.74	-11.52	74.00	32.26	PK	Horizontal
4881.00	50.38	-6.56	74.00	23.62	PK	Horizontal
1231.00	35.09	-23.28	54.00	18.91	AV	Horizontal
1606.00	28.96	-21.04	54.00	25.04	AV	Horizontal
2441.00	34.41	-16.09	54.00	19.59	AV	Horizontal
3596.00	32.08	-11.53	54.00	21.92	AV	Horizontal
4881.00	47.39	-6.56	54.00	6.61	AV	Horizontal

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

EUT:	GPS Tracker	Polarity:	Vertical
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 19	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph



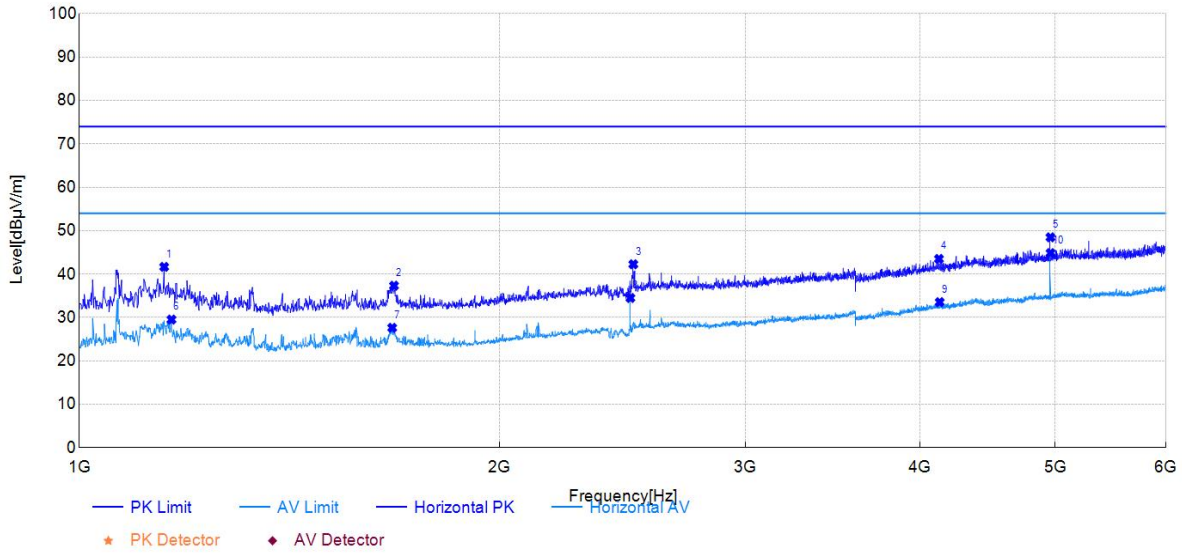
Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
1177.00	42.77	-22.54	74.00	31.23	PK	Vertical
1794.00	42.71	-18.97	74.00	31.29	PK	Vertical
2563.00	45.43	-15.87	74.00	28.57	PK	Vertical
3795.00	43.10	-9.72	74.00	30.90	PK	Vertical
4881.00	49.77	-7.16	74.00	24.23	PK	Vertical
1145.00	32.91	-22.65	54.00	21.09	AV	Vertical
1795.00	30.46	-18.96	54.00	23.54	AV	Vertical
2564.00	40.87	-15.86	54.00	13.13	AV	Vertical
3598.00	32.59	-10.82	54.00	21.41	AV	Vertical
4881.00	46.01	-7.16	54.00	7.99	AV	Vertical

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

1GHz – 6GHz Test Data

EUT:	GPS Tracker	Polarity:	Horizontal
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 39	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph

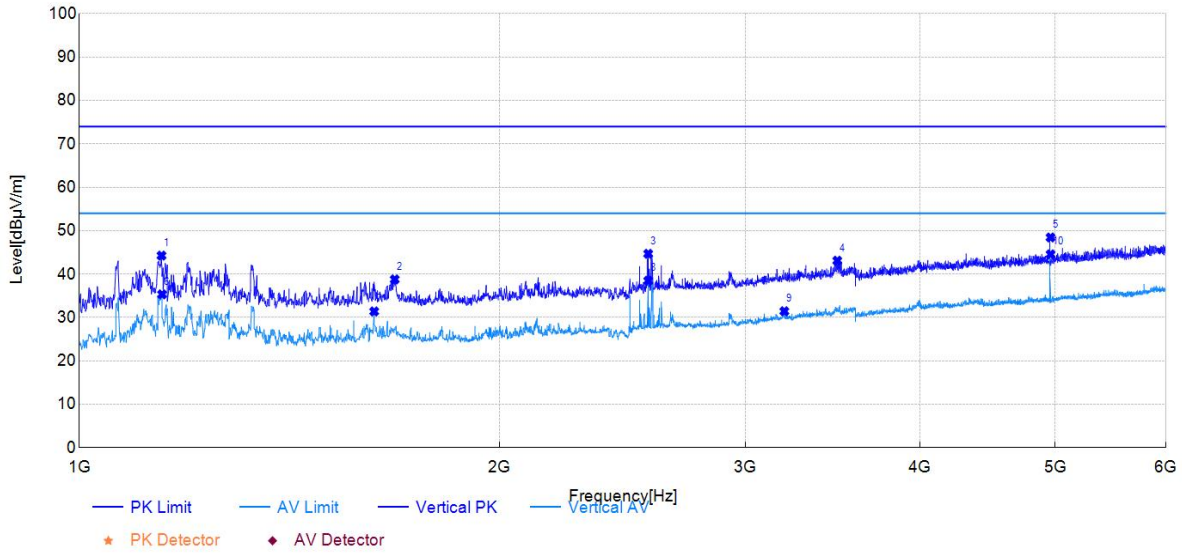


Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
1150.00	41.66	-23.65	74.00	32.34	PK	Horizontal
1680.00	37.32	-20.48	74.00	36.68	PK	Horizontal
2493.00	42.26	-15.84	74.00	31.74	PK	Horizontal
4127.00	43.50	-8.06	74.00	30.50	PK	Horizontal
4960.00	48.47	-6.21	74.00	25.53	PK	Horizontal
1164.00	29.51	-23.59	54.00	24.49	AV	Horizontal
1675.00	27.62	-20.52	54.00	26.38	AV	Horizontal
2481.00	34.50	-15.90	54.00	19.50	AV	Horizontal
4132.00	33.53	-8.06	54.00	20.47	AV	Horizontal
4961.00	44.84	-6.21	54.00	9.16	AV	Horizontal

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

EUT:	GPS Tracker	Polarity:	Vertical
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 39	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph



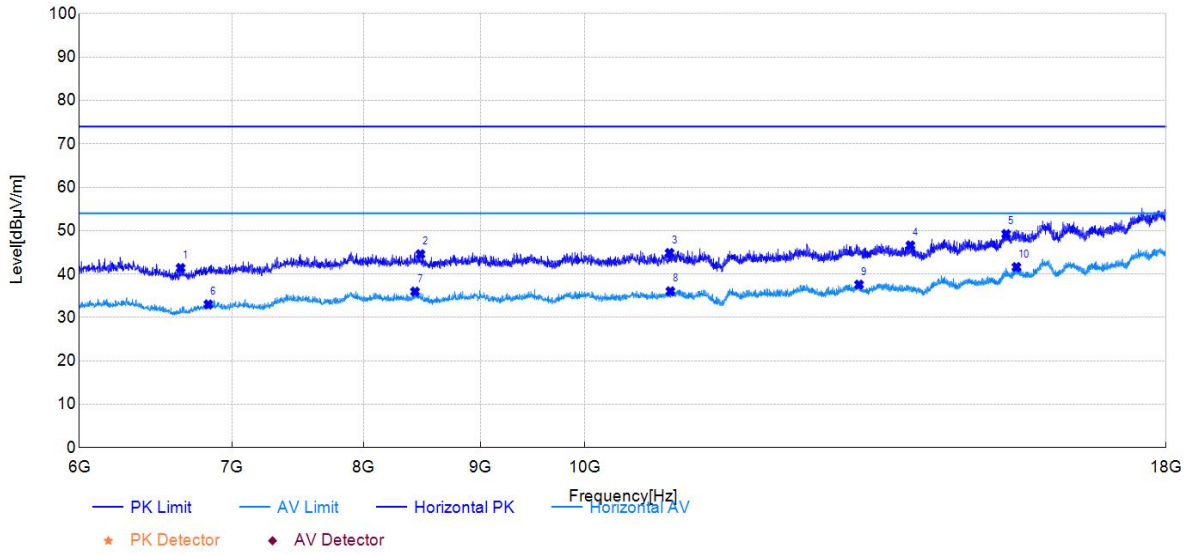
Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
1145.00	44.26	-22.65	74.00	29.74	PK	Vertical
1682.00	38.77	-19.81	74.00	35.23	PK	Vertical
2555.00	44.68	-15.90	74.00	29.32	PK	Vertical
3490.00	43.09	-11.63	74.00	30.91	PK	Vertical
4961.00	48.44	-6.88	74.00	25.56	PK	Vertical
1146.00	35.33	-22.65	54.00	18.67	AV	Vertical
1626.00	31.39	-20.19	54.00	22.61	AV	Vertical
2555.00	38.47	-15.90	54.00	15.53	AV	Vertical
3198.00	31.43	-13.18	54.00	22.57	AV	Vertical
4961.00	44.55	-6.88	54.00	9.45	AV	Vertical

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

6GHz – 18GHz Test Data

EUT:	GPS Tracker	Polarity:	Horizontal
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 00	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph

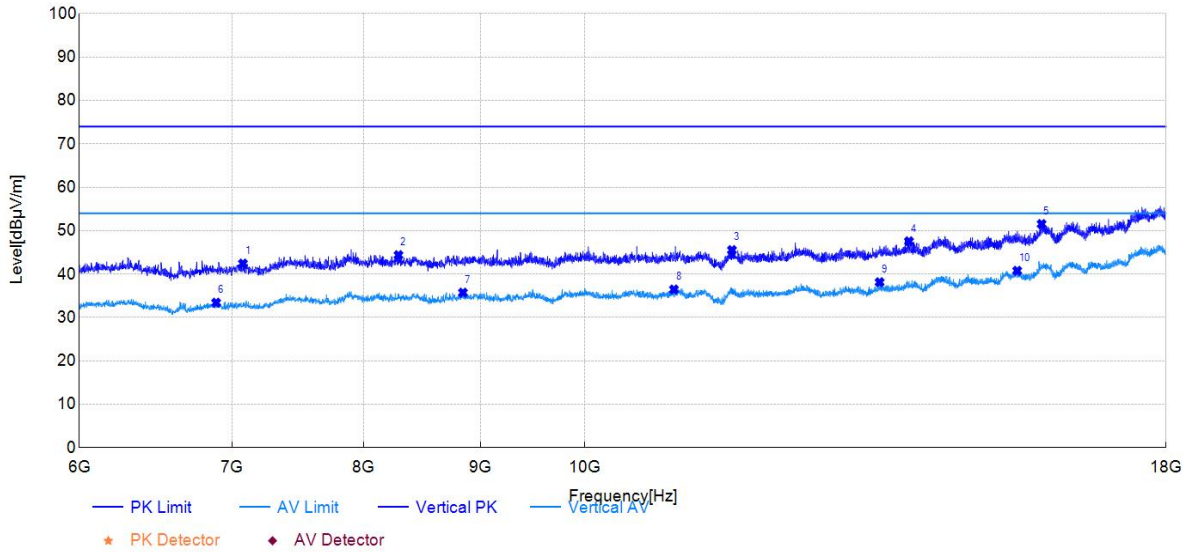


Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
6646.50	41.41	-5.75	74.00	32.59	PK	Horizontal
8470.50	44.58	-1.43	74.00	29.42	PK	Horizontal
10897.50	44.86	0.95	74.00	29.14	PK	Horizontal
13902.00	46.60	3.41	74.00	27.40	PK	Horizontal
15316.50	49.22	7.22	74.00	24.78	PK	Horizontal
6835.50	33.01	-4.73	54.00	20.99	AV	Horizontal
8424.00	35.96	-1.14	54.00	18.04	AV	Horizontal
10906.50	36.04	0.98	54.00	17.96	AV	Horizontal
13198.50	37.57	3.44	54.00	16.43	AV	Horizontal
15475.50	41.62	7.41	54.00	12.38	AV	Horizontal

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

EUT:	GPS Tracker	Polarity:	Vertical
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 00	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph



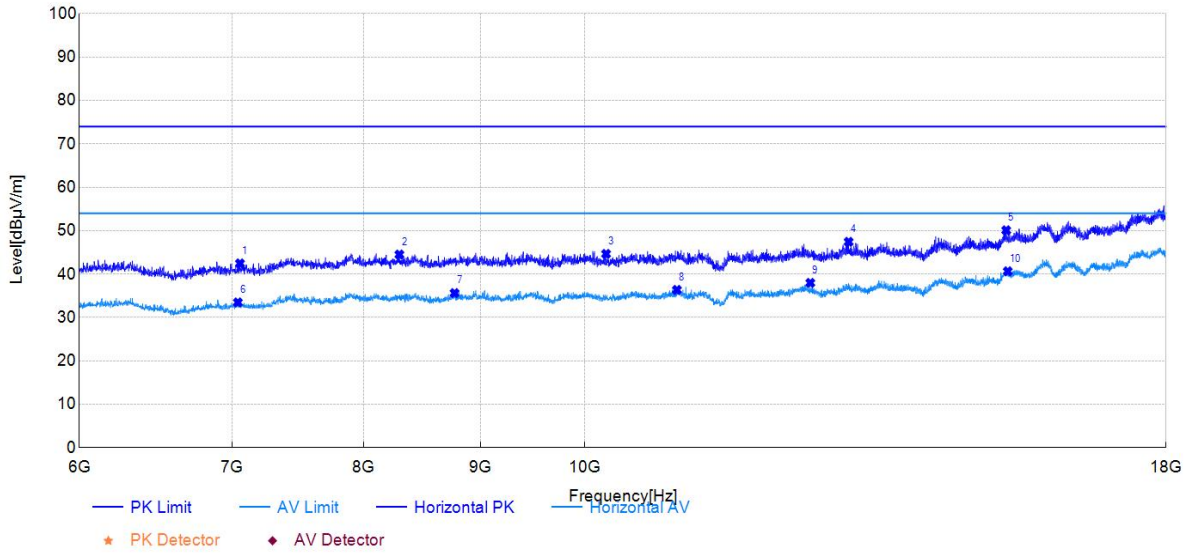
Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
7078.50	42.42	-4.35	74.00	31.58	PK	Vertical
8284.50	44.37	-1.22	74.00	29.63	PK	Vertical
11607.00	45.53	1.75	74.00	28.47	PK	Vertical
13882.50	47.55	3.99	74.00	26.45	PK	Vertical
15874.50	51.54	8.82	74.00	22.46	PK	Vertical
6889.50	33.41	-4.38	54.00	20.59	AV	Vertical
8842.50	35.72	-1.10	54.00	18.28	AV	Vertical
10945.50	36.45	1.24	54.00	17.55	AV	Vertical
13476.00	38.12	2.64	54.00	15.88	AV	Vertical
15487.50	40.76	7.10	54.00	13.24	AV	Vertical

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

6GHz – 18GHz Test Data

EUT:	GPS Tracker	Polarity:	Horizontal
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 19	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph

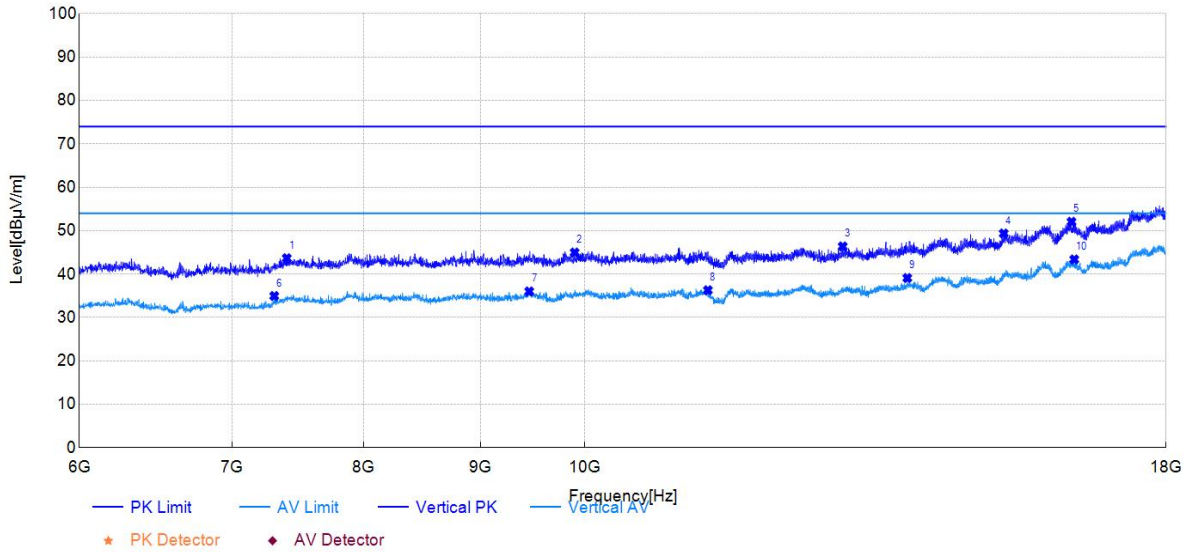


Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
7057.50	42.46	-4.49	74.00	31.54	PK	Horizontal
8292.00	44.50	-1.20	74.00	29.50	PK	Horizontal
10219.50	44.65	-0.03	74.00	29.35	PK	Horizontal
13060.50	47.42	2.83	74.00	26.58	PK	Horizontal
15316.50	50.09	7.22	74.00	23.91	PK	Horizontal
7042.50	33.47	-4.58	54.00	20.53	AV	Horizontal
8767.50	35.62	-1.07	54.00	18.38	AV	Horizontal
10978.50	36.35	1.23	54.00	17.65	AV	Horizontal
12564.00	37.97	2.32	54.00	16.03	AV	Horizontal
15340.50	40.64	7.12	54.00	13.36	AV	Horizontal

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

EUT:	GPS Tracker	Polarity:	Vertical
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 19	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph



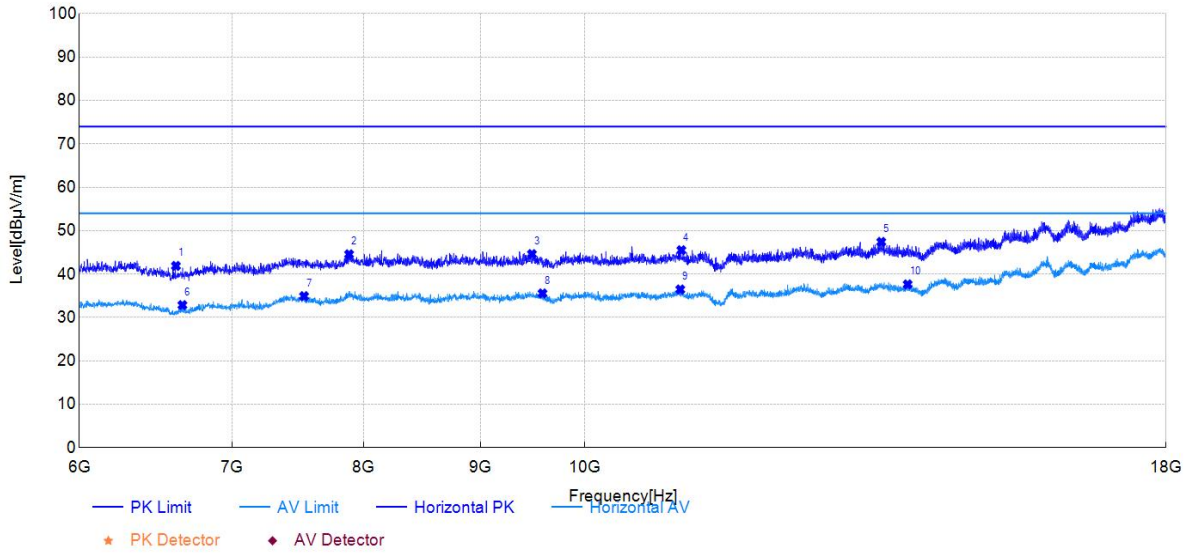
Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
7399.50	43.66	-2.73	74.00	30.34	PK	Vertical
9900.00	44.97	-0.04	74.00	29.03	PK	Vertical
12982.50	46.37	2.17	74.00	27.63	PK	Vertical
15277.50	49.36	6.72	74.00	24.64	PK	Vertical
16362.00	52.05	9.56	74.00	21.95	PK	Vertical
7306.50	34.95	-3.42	54.00	19.05	AV	Vertical
9456.00	36.00	-0.29	54.00	18.00	AV	Vertical
11328.00	36.28	0.84	54.00	17.72	AV	Vertical
13858.50	39.09	3.85	54.00	14.91	AV	Vertical
16407.00	43.37	9.69	54.00	10.63	AV	Vertical

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

6GHz – 18GHz Test Data

EUT:	GPS Tracker	Polarity:	Horizontal
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 39	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph

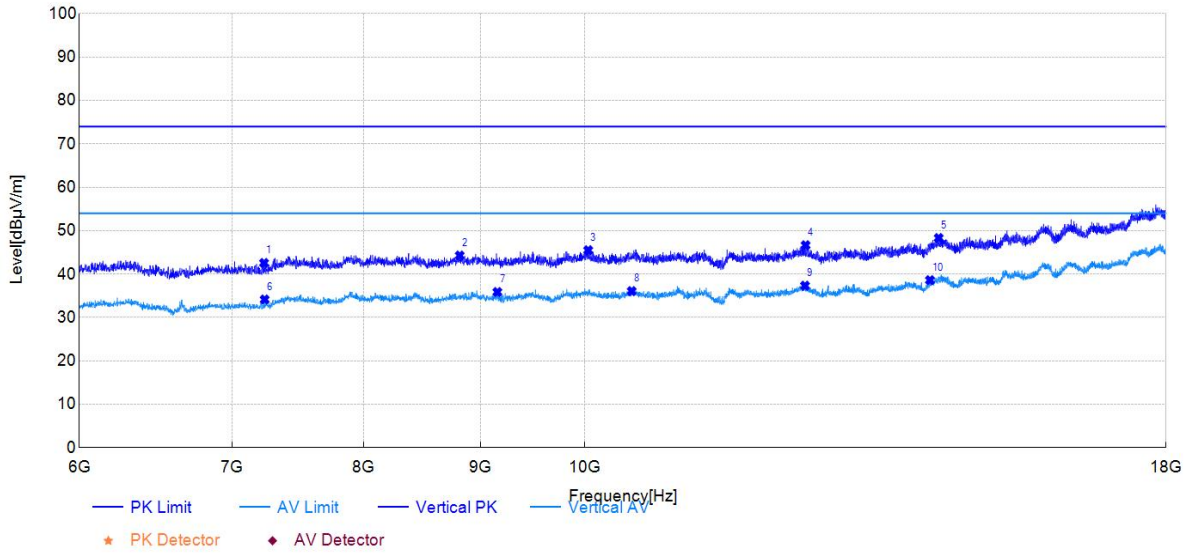


Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
6615.00	41.88	-5.74	74.00	32.12	PK	Horizontal
7881.00	44.56	-1.37	74.00	29.44	PK	Horizontal
9481.50	44.61	-0.09	74.00	29.39	PK	Horizontal
11028.00	45.50	1.13	74.00	28.50	PK	Horizontal
13498.50	47.41	3.33	74.00	26.59	PK	Horizontal
6658.50	32.85	-5.77	54.00	21.15	AV	Horizontal
7530.00	34.91	-2.92	54.00	19.09	AV	Horizontal
9583.50	35.54	-0.17	54.00	18.46	AV	Horizontal
11016.00	36.45	1.21	54.00	17.55	AV	Horizontal
13863.00	37.63	3.32	54.00	16.37	AV	Horizontal

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

EUT:	GPS Tracker	Polarity:	Vertical
Model:	GV650MG-FF	Test Engineer:	Chuang Li
Mode:	Transmit at BLE_1M Channel 39	Voltage:	DC 12V
Environment:	Temp: 26.3℃; Humi: 45%	Test Date:	2025-04-22

Test Graph



Frequency (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
7231.50	42.56	-3.95	74.00	31.44	PK	Vertical
8814.00	44.27	-1.06	74.00	29.73	PK	Vertical
10036.50	45.49	0.45	74.00	28.51	PK	Vertical
12504.00	46.65	2.54	74.00	27.35	PK	Vertical
14305.50	48.31	5.34	74.00	25.69	PK	Vertical
7236.00	34.13	-3.92	54.00	19.87	AV	Vertical
9156.00	35.86	-1.01	54.00	18.14	AV	Vertical
10488.00	36.07	1.09	54.00	17.93	AV	Vertical
12496.50	37.32	2.54	54.00	16.68	AV	Vertical
14179.50	38.60	4.08	54.00	15.40	AV	Vertical

Note 1: 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 ~ 26.5GHz), therefore no data appear in the report.

7.7. 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	156.52475 - 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

For RSS-Gen Section 8.10 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 8.10 of RSS-Gen, must also comply with the radiated emission limits specified in Section 8.9.

Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.009 - 0.110	240 - 285	9.0 - 9.2
2.1735 - 2.1905	322 - 335.4	9.3 - 9.5
3.020 - 3.026	399.9 - 410	10.6 - 12.7
4.125 - 4.128	608 - 614	13.25 - 13.4
4.17725 - 4.17775	960 - 1427	14.47 - 14.5
4.20725 - 4.20775	1435 - 1626.5	15.35 - 16.2
5.677 - 5.683	1645.5 - 1646.5	17.7 - 21.4
6.215 - 6.218	1660 - 1710	22.01 - 23.12
6.26775 - 6.26825	1718.8 -1722.2	23.6 - 24.0
6.31175 - 6.31225	2200 - 2300	31.2 - 31.8
8.291 - 8.294	2310 -2390	36.43 - 36.5
8.362 - 8.366	2655 - 2900	Above 38.6
8.37625 - 8.38675	3260 - 3267	--
8.41425 - 8.41475	3332 -3339	
12.29 - 12.293	334.5 - 3358	
12.51975 - 12.52025	3500 - 4400	
12.57675 - 12.57725	4500 - 5150	
13.36 -13.41	5350 - 5460	
16.42 - 16.423	7250 - 7750	
16.69475 - 16.69525	8025 - 8500	
16.80425 - 16.80475	--	
25.5 - 25.67		
37.5 - 38.25		
73 - 74.6		
74.8 - 75.2		
108 - 138		
156.52475 - 156.525225		
156.7 - 156.9		

All out of band emissions appearing in a restricted band as specified in Section 8.10 of the RSS-Gen

must not exceed the limits shown in Table per Section 8.9.

RSS-Gen Section 8.9		
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

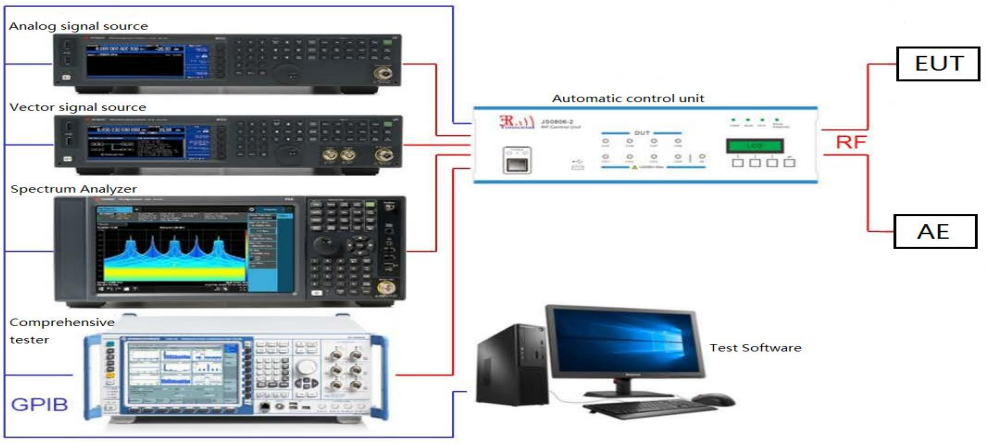
Peak Field Strength Measurements

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

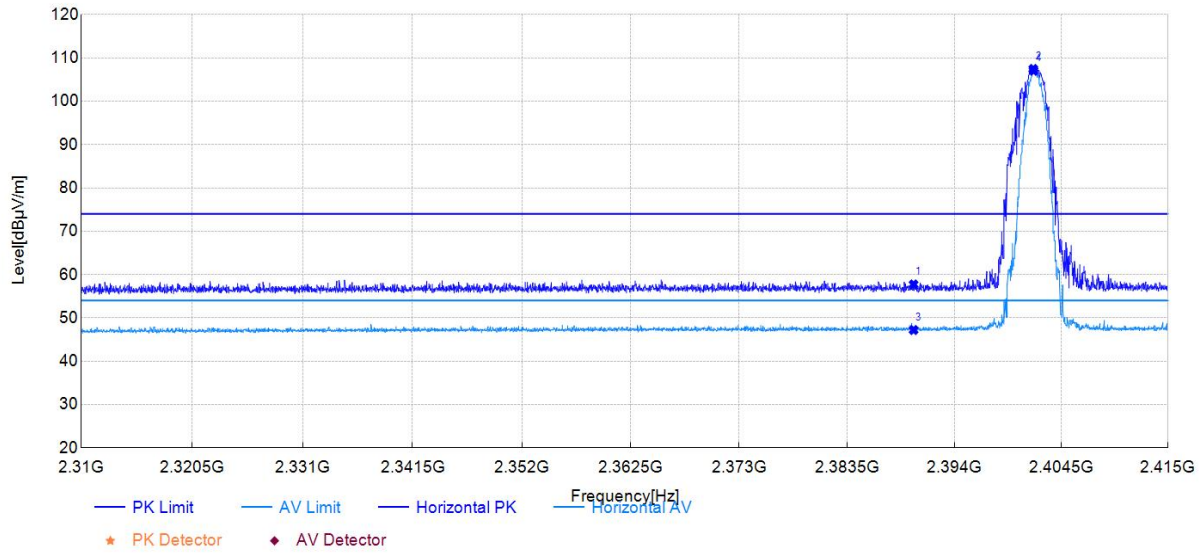


7.7.5. Test Result

BLE_1M

Test Mode:	BLE_1M	Test Date:	2025-04-22
Test Channel:	2402	Test Engineer:	Chuang Li
Remark:	The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.		

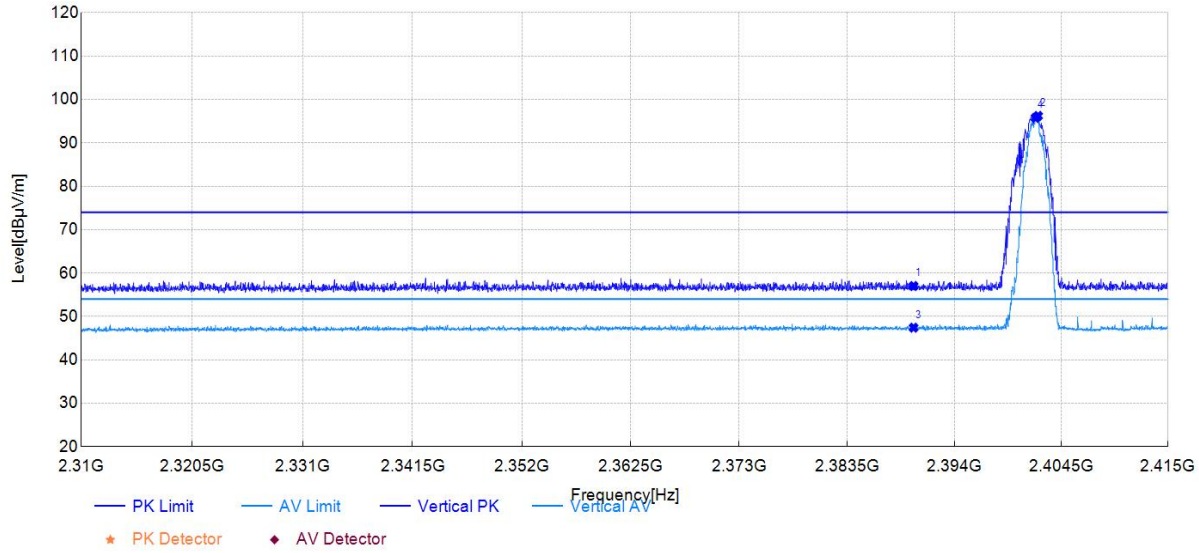
Test Graph



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
2390.00	57.72	36.10	74.00	16.28	150	312	Peak	Horizontal
2401.74	107.47	36.15	74.00	-33.47	150	144	Peak	Horizontal
2390.00	47.20	36.10	54.00	6.80	150	168	Average	Horizontal
2401.77	107.05	36.15	54.00	-53.05	150	148	Average	Horizontal

Test Mode:	BLE_1M	Test Date:	2025-04-22
Test Channel:	2402	Test Engineer:	Chuang Li
Remark:	The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.		

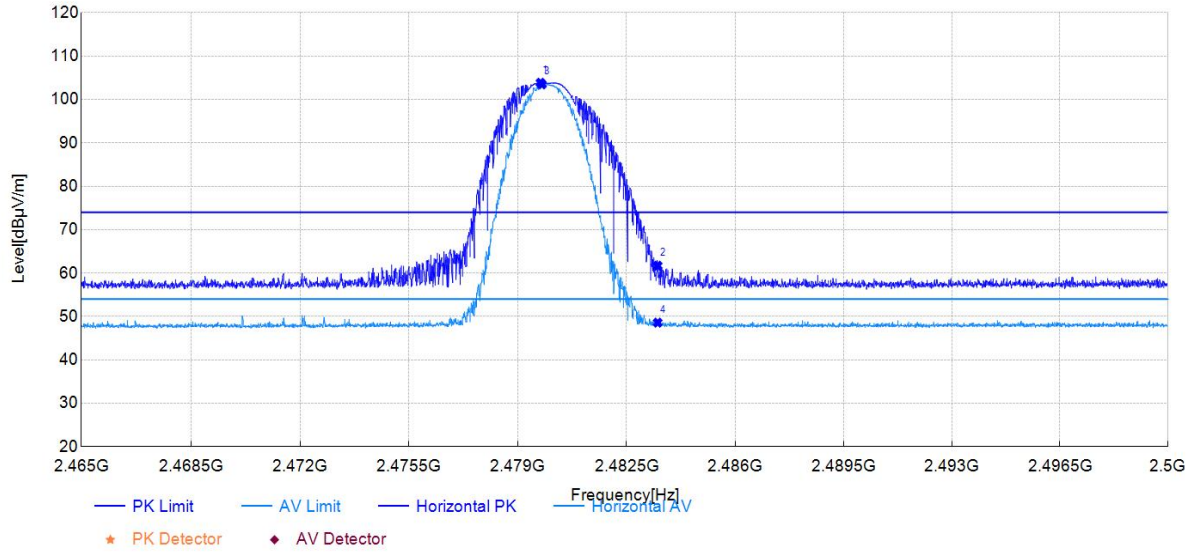
Test Graph



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
2390.00	57.02	35.95	74.00	16.98	150	138	Peak	Vertical
2402.21	96.23	35.99	74.00	-22.23	150	81	Peak	Vertical
2390.00	47.42	35.95	54.00	6.58	150	254	Average	Vertical
2401.95	95.78	35.99	54.00	-41.78	150	81	Average	Vertical

Test Mode:	BLE_1M	Test Date:	2025-04-22
Test Channel:	2480	Test Engineer:	Chuang Li
Remark:	The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.		

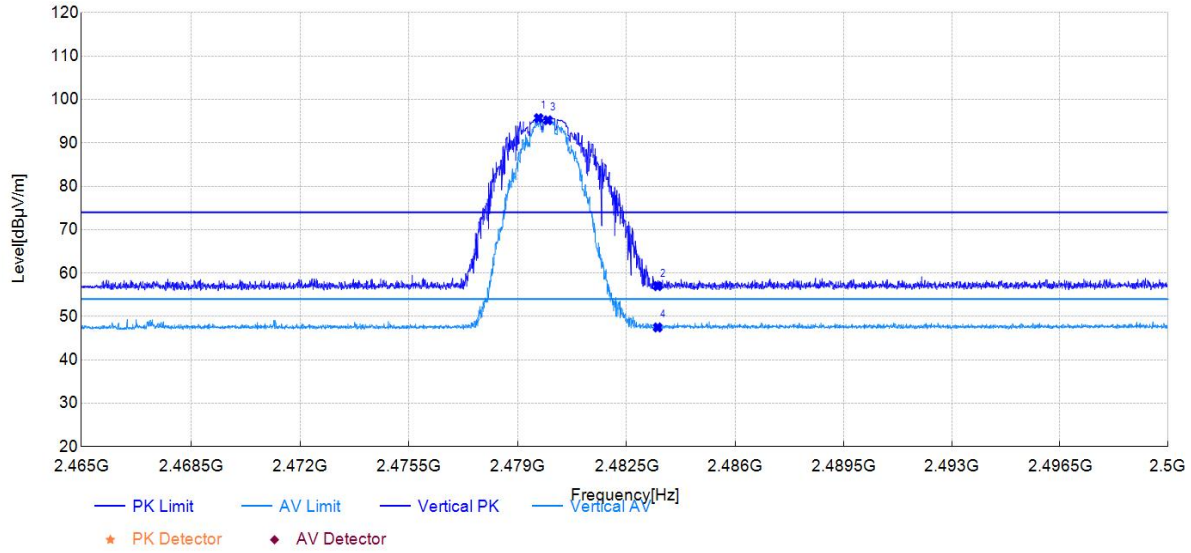
Test Graph



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
2479.73	103.86	36.35	74.00	-29.86	150	110	Peak	Horizontal
2483.50	61.69	36.36	74.00	12.31	150	142	Peak	Horizontal
2479.77	103.50	36.35	54.00	-49.50	150	163	Average	Horizontal
2483.50	48.58	36.36	54.00	5.42	150	155	Average	Horizontal

Test Mode:	BLE_1M	Test Date:	2025-04-22
Test Channel:	2480	Test Engineer:	Chuang Li
Remark:	The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.		

Test Graph



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity
2479.67	95.70	36.08	74.00	-21.70	150	282	Peak	Vertical
2483.50	56.99	36.08	74.00	17.01	150	320	Peak	Vertical
2479.97	95.22	36.08	54.00	-41.22	150	282	Average	Vertical
2483.50	47.47	36.08	54.00	6.53	150	360	Average	Vertical

7.8. AC Conducted Emissions Measurement

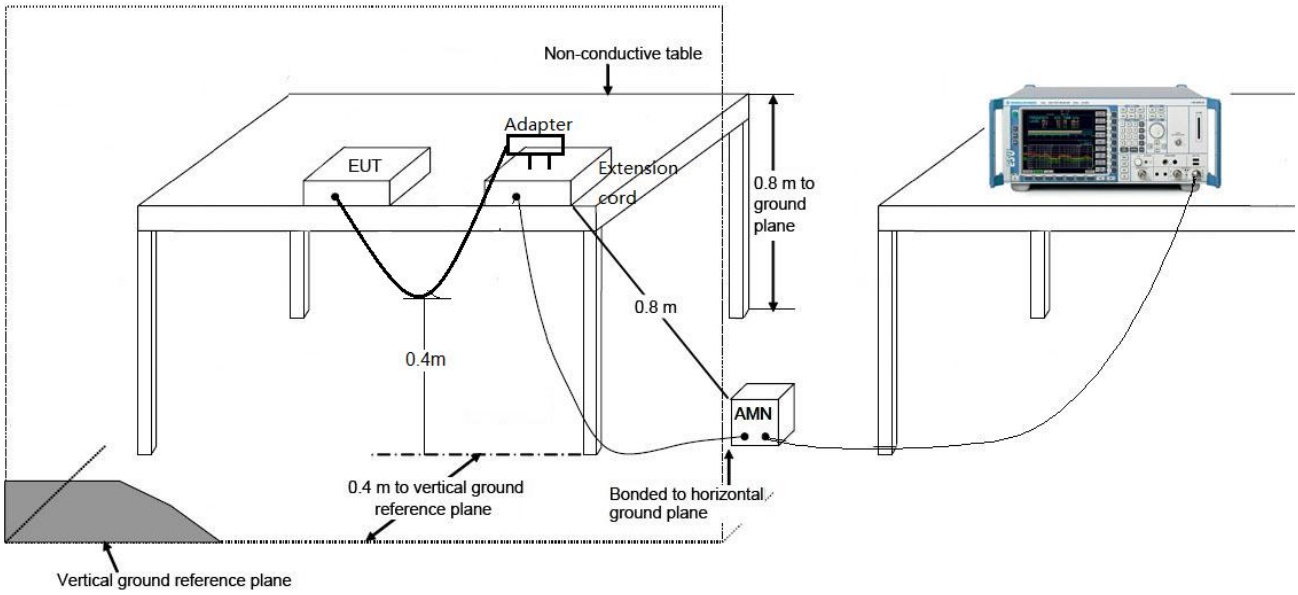
7.8.1. Test Limit

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 device is only powered by DC 8~90V.

8. CONCLUSION

The data collected relate only the item(s) tested and show that the **GPS Tracker (Model: GV650MG-FF)** 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.
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