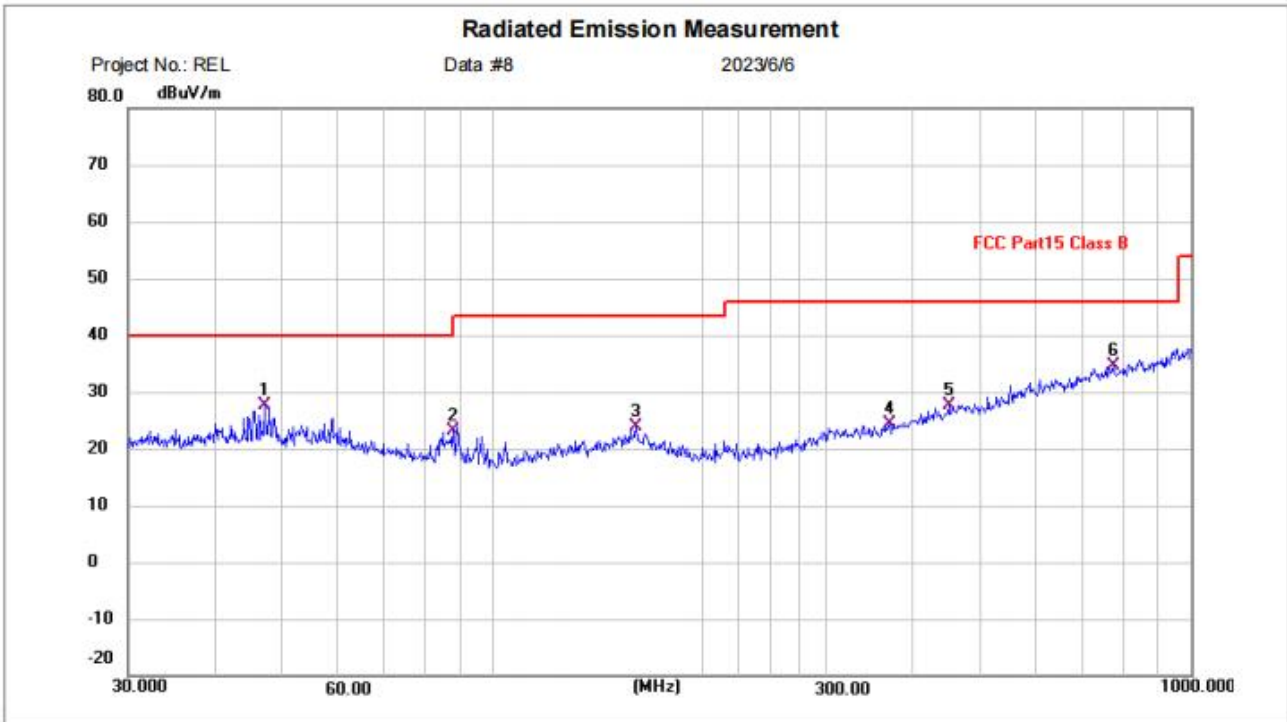


[TestMode: TX]; [Polarity: Vertical]



Site      Polarization: **Vertical**      Temperature: (C)

Limit: FCC Part15 Class B      Power:      Humidity: %RH

EUT: Haylou Purfree Lite

M/N: Haylou BC04

Mode: BLE TX mode

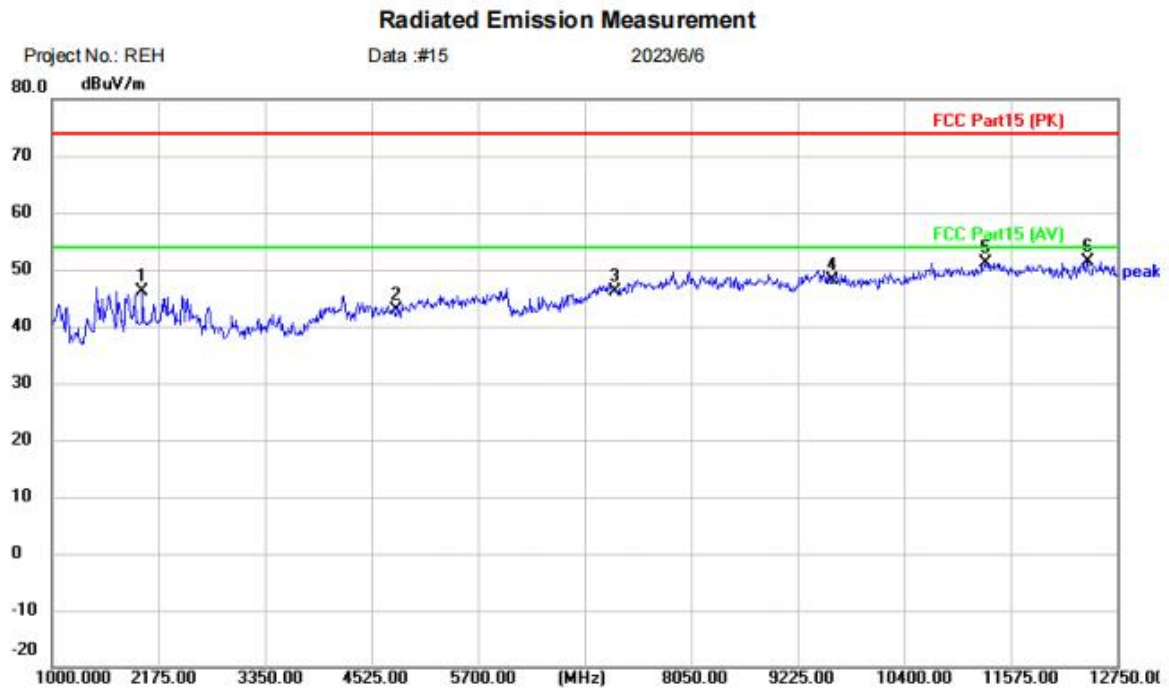
Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	47.1598	4.55	23.14	27.69	40.00	-12.31	QP	P	
2	87.7246	4.06	18.99	23.05	40.00	-16.95	QP	P	
3	160.3456	0.68	23.17	23.85	43.50	-19.65	QP	P	
4	369.4047	-0.59	25.07	24.48	46.00	-21.52	QP	P	
5	449.5558	0.40	27.26	27.66	46.00	-18.34	QP	P	
6 *	774.1584	1.16	33.35	34.51	46.00	-11.49	QP	P	

**Test Result: Pass**

Above 1GHz:

[TestMode: TX low channel]; [Polarity: Horizontal]

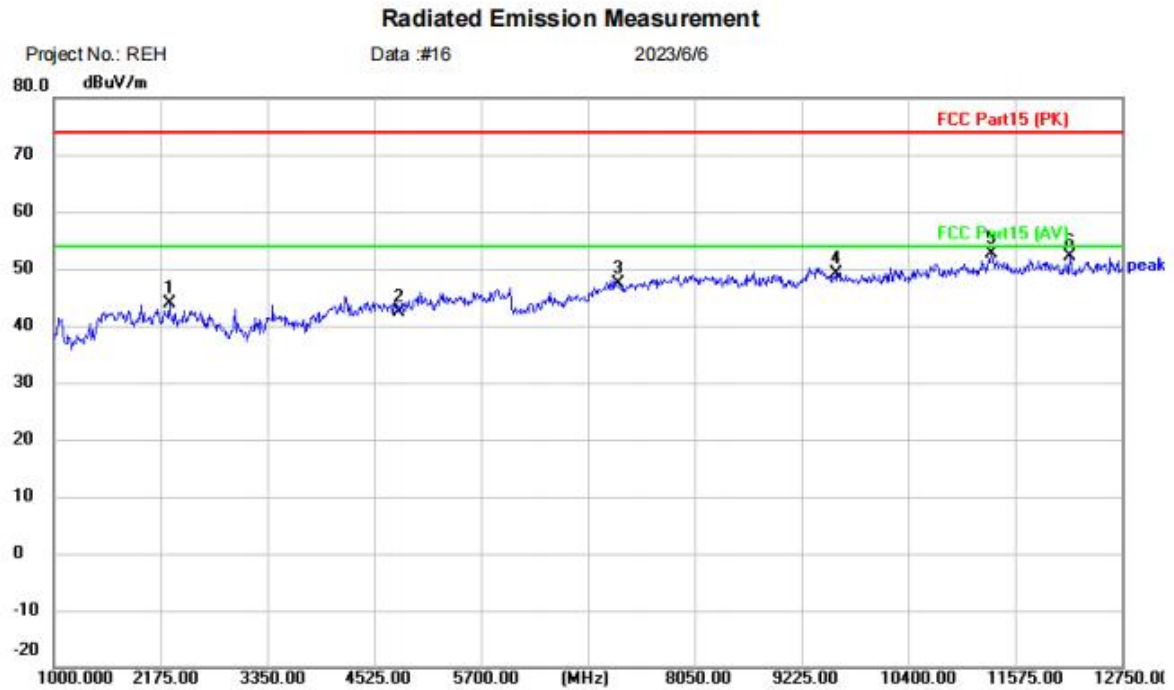


Site	Polarization: <b>Horizontal</b>	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Haylou Purfree Lite		
M/N: Haylou BC04		
Mode: BLE-TX-L		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		1998.750	51.13	-4.97	46.16	74.00	-27.84	peak	
2		4804.000	38.49	4.36	42.85	74.00	-31.15	peak	
3		7206.000	37.97	8.12	46.09	74.00	-27.91	peak	
4		9608.000	37.19	10.98	48.17	74.00	-25.83	peak	
5		11293.00	38.13	13.07	51.20	74.00	-22.80	peak	
6	*	12421.00	38.73	12.63	51.36	74.00	-22.64	peak	

**Test Result: Pass**

[TestMode: TX low channel]; [Polarity: Vertical]

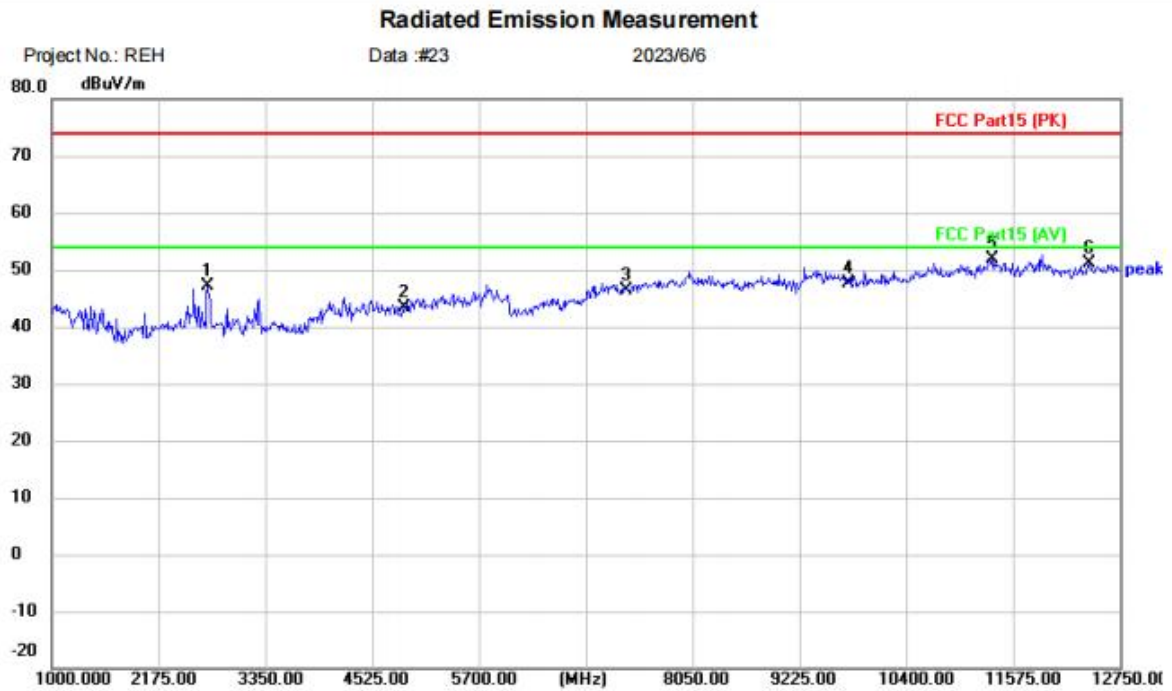


Site	Polarization: <b>Vertical</b>	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Haylou Purfree Lite		
M/N: Haylou BC04		
Mode: BLE-TX-L		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2269.000	46.27	-2.41	43.86	74.00	-30.14	peak	
2		4804.000	38.10	4.36	42.46	74.00	-31.54	peak	
3		7206.000	39.14	8.12	47.26	74.00	-26.74	peak	
4		9608.000	38.20	10.98	49.18	74.00	-24.82	peak	
5	*	11316.50	39.50	13.09	52.59	74.00	-21.41	peak	
6		12174.25	39.30	12.86	52.16	74.00	-21.84	peak	

**Test Result: Pass**

[TestMode: TX middle channel]; [Polarity: Horizontal]

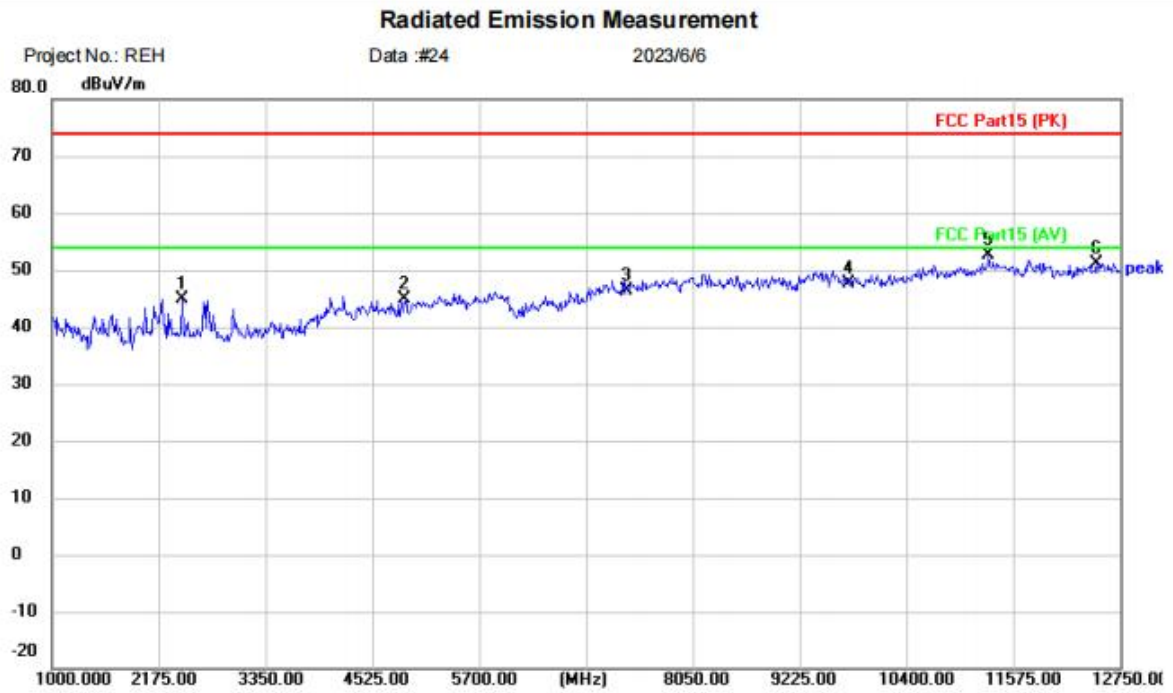


Site    Polarization: **Horizontal**                      Temperature: (C)  
 Limit: FCC Part15 (PK)                      Power:    Humidity: %RH  
 EUT: Haylou Purfree Lite  
 M/N: Haylou BC04  
 Mode: BLE-TX-M  
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2715.500	49.58	-2.39	47.19	74.00	-26.81	peak	
2		4884.000	38.94	4.46	43.40	74.00	-30.60	peak	
3		7326.000	38.07	8.36	46.43	74.00	-27.57	peak	
4		9768.000	36.61	11.11	47.72	74.00	-26.28	peak	
5	*	11351.75	38.68	13.11	51.79	74.00	-22.21	peak	
6		12409.25	38.44	12.60	51.04	74.00	-22.96	peak	

**Test Result: Pass**

[TestMode: TX middle channel]; [Polarity: Vertical]



Site:      Polarization: **Vertical**      Temperature: (C)  
 Limit: FCC Part15 (PK)      Power:      Humidity: %RH  
 EUT: Haylou Purfree Lite  
 M/N: Haylou BC04  
 Mode: BLE-TX-M  
 Note:

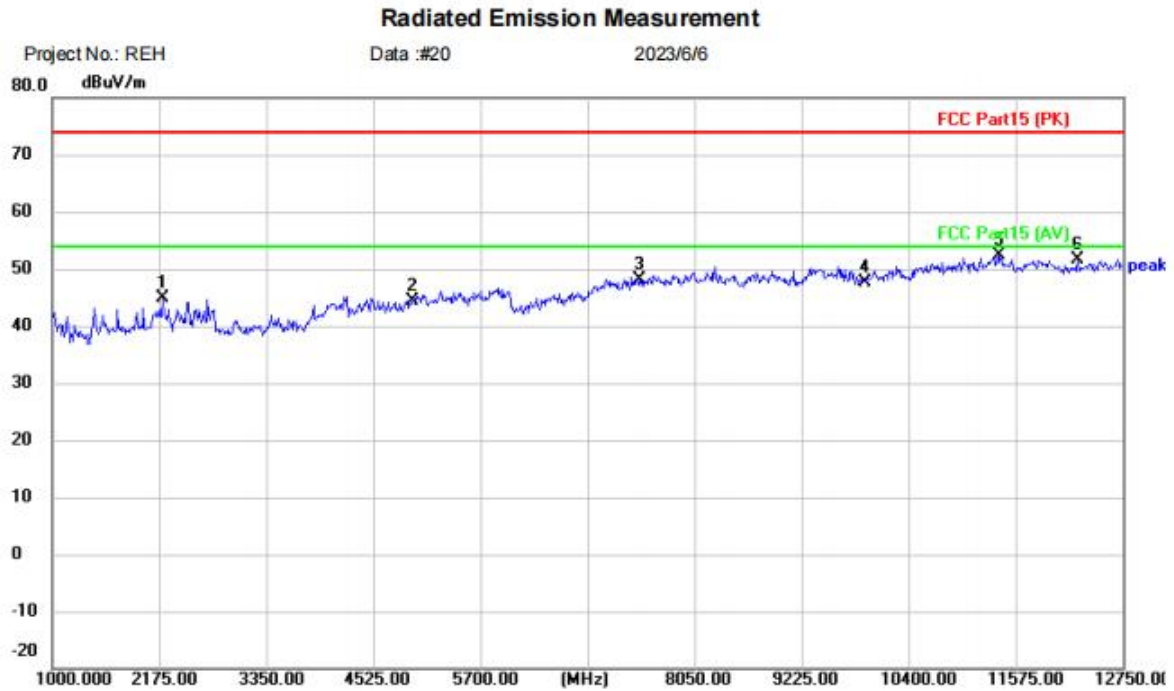
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2433.500	45.90	-0.96	44.94	74.00	-29.06	peak	
2		4884.000	40.33	4.46	44.79	74.00	-29.21	peak	
3		7326.000	38.05	8.36	46.41	74.00	-27.59	peak	
4		9768.000	36.59	11.11	47.70	74.00	-26.30	peak	
5	*	11304.75	39.49	13.09	52.58	74.00	-21.42	peak	
6		12491.50	38.28	12.80	51.08	74.00	-22.92	peak	

**Test Result: Pass**





[TestMode: TX High channel]; [Polarity: Vertical]



Site	Polarization: <b>Vertical</b>	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Haylou Purfree Lite		
M/N: Haylou BC04		
Mode: BLE-TX-H		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2210.250	47.50	-2.59	44.91	74.00	-29.09	peak	
2		4960.000	39.20	5.30	44.50	74.00	-29.50	peak	
3		7440.000	39.42	8.62	48.04	74.00	-25.96	peak	
4		9920.000	36.34	11.25	47.59	74.00	-26.41	peak	
5	*	11387.00	39.14	13.13	52.27	74.00	-21.73	peak	
6		12256.50	38.75	12.76	51.51	74.00	-22.49	peak	

**Test Result: Pass**

### 13 ANTENNA REQUIREMENT

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	N/A

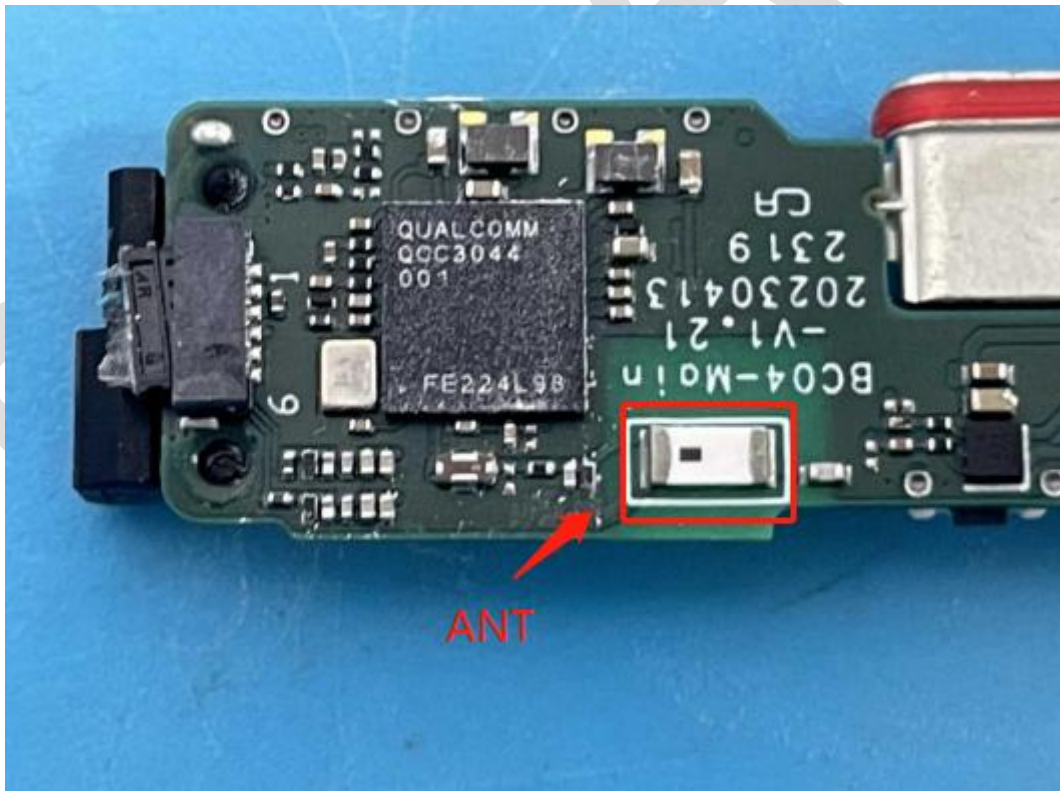
#### 13.1 CONCLUSION

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.5dBi.





## 14 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS

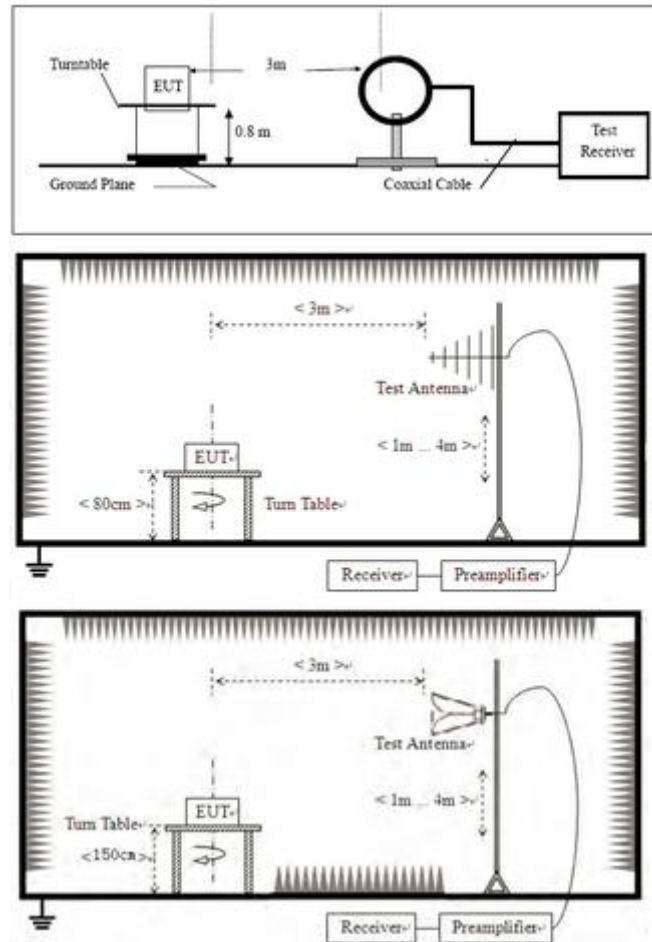
<b>Test Standard</b>	47 CFR Part 15, Subpart C 15.247
<b>Test Method</b>	ANSI C63.10 (2013) Section 6.10.5
<b>Test Mode (Pre-Scan)</b>	TX
<b>Test Mode (Final Test)</b>	TX
<b>Tester</b>	Charlie
<b>Temperature</b>	25°C
<b>Humidity</b>	60%

### 14.1 LIMITS

<b>Frequency(MHz)</b>	<b>Field strength(microvolts/meter)</b>	<b>Measurement distance(meters)</b>
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

## 14.2 BLOCK DIAGRAM OF TEST SETUP



## 14.3 PROCEDURE

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

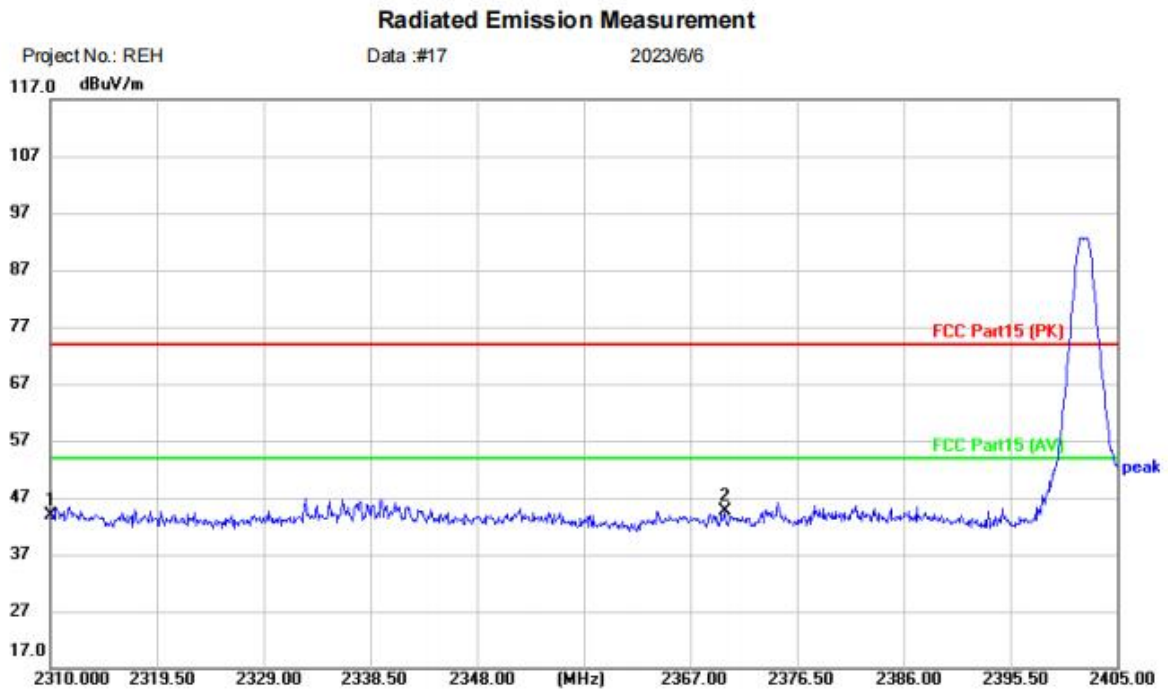
Remark 1:  $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamp Factor}$

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

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### 14.4 TEST DATA

[TestMode: TX low channel]; [Polarity: Horizontal]

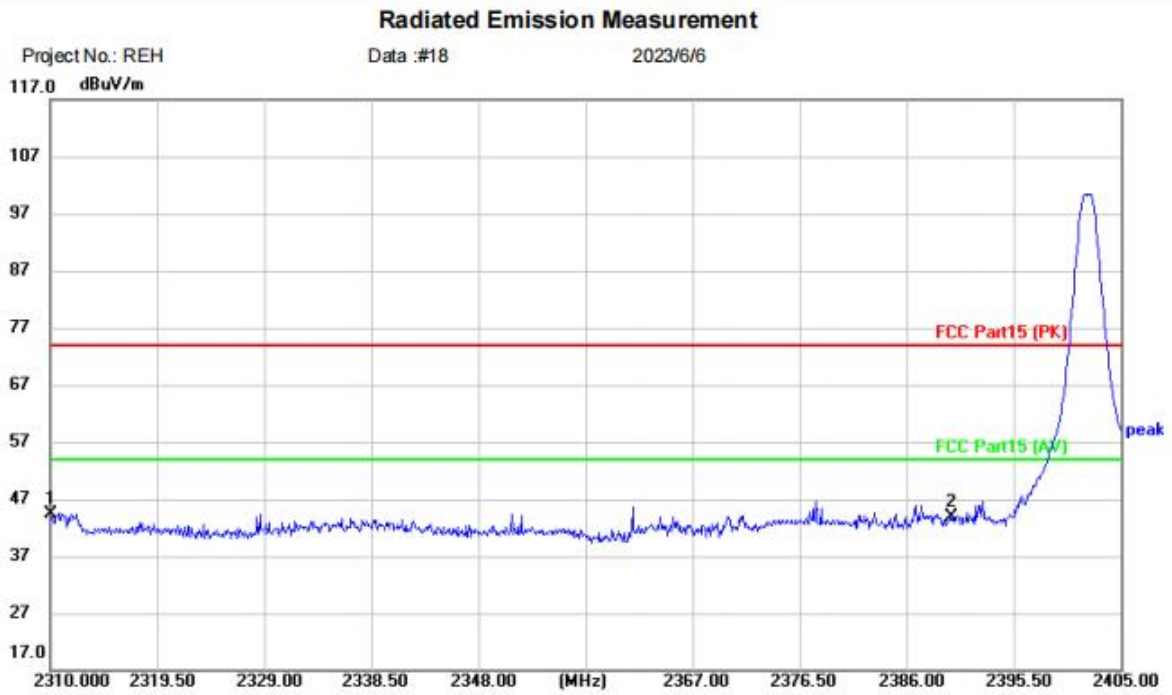


Site	Polarization: <b>Horizontal</b>	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Haylou Purfree Lite		
M/N: Haylou BC04		
Mode: BLE-TX-L		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2310.000	47.25	-3.42	43.83	74.00	-30.17	peak	
2	*	2370.040	47.98	-3.28	44.70	74.00	-29.30	peak	

**Test Result: Pass**

[TestMode:TX low channel]; [Polarity: Vertical]



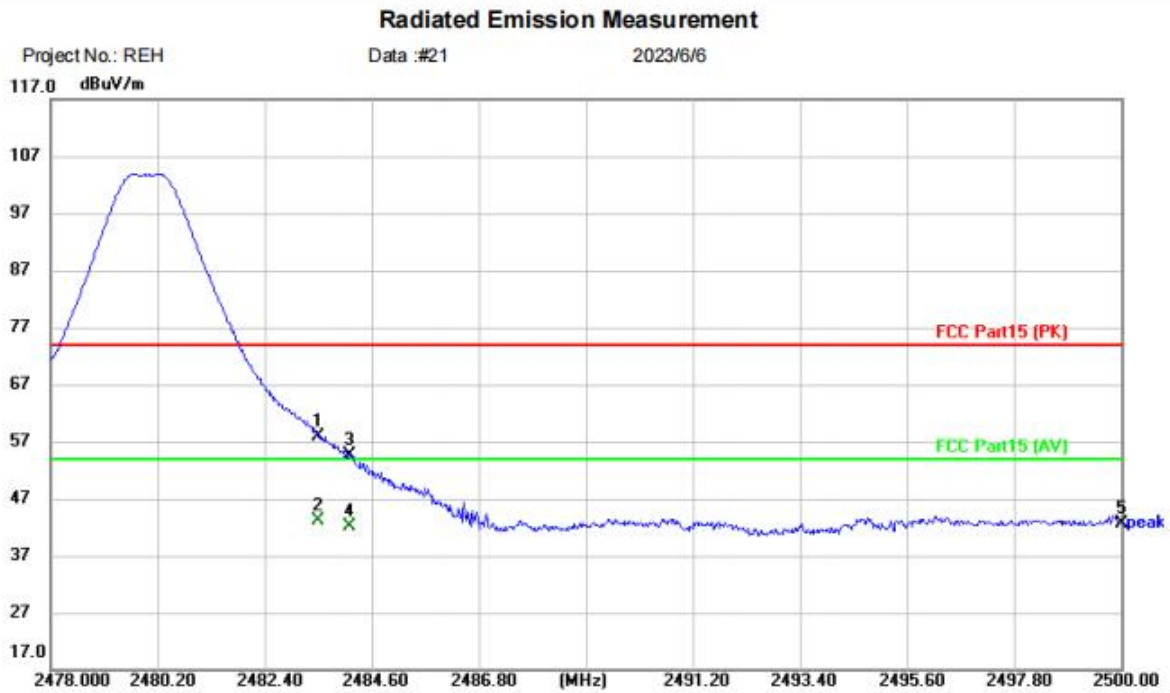
Site	Polarization: <b>Vertical</b>	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Haylou Purfree Lite		
M/N: Haylou BC04		
Mode: BLE-TX-L		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	2310.000	47.71	-3.42	44.29	74.00	-29.71	peak	
2		2390.000	47.23	-3.25	43.98	74.00	-30.02	peak	

**Test Result: Pass**



[TestMode: TX High channel]; [Polarity: Horizontal]

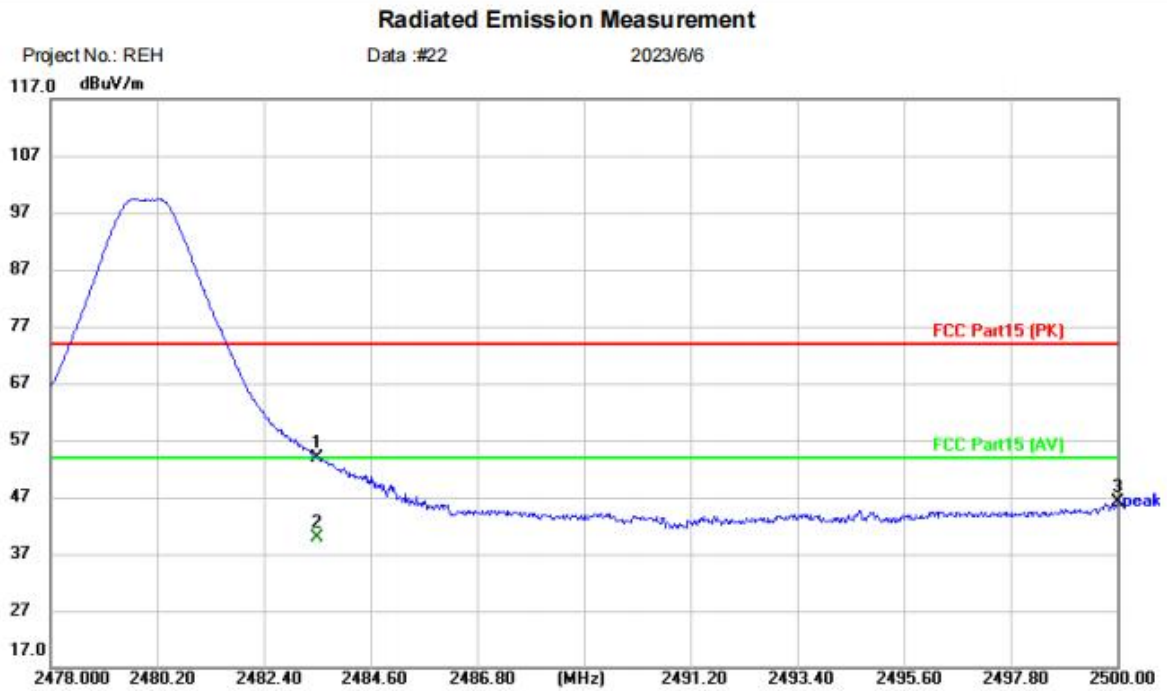


Site	Polarization: <b>Horizontal</b>	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Haylou Purfree Lite		
M/N: Haylou BC04		
Mode: BLE-TX-H		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	61.28	-3.51	57.77	74.00	-16.23	peak	
2	*	2483.500	46.74	-3.51	43.23	54.00	-10.77	AVG	
3		2484.138	58.21	-3.51	54.70	74.00	-19.30	peak	
4		2484.138	45.72	-3.51	42.21	54.00	-11.79	AVG	
5		2500.000	46.33	-3.60	42.73	74.00	-31.27	peak	

**Test Result: Pass**

[TestMode:TX High channel]; [Polarity: Vertical]



Site	Polarization: <b>Vertical</b>	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Haylou Purfree Lite		
M/N: Haylou BC04		
Mode: BLE-TX-H		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2483.500	57.29	-3.51	53.78	74.00	-20.22	peak	
2	*	2483.500	43.46	-3.51	39.95	54.00	-14.05	AVG	
3		2500.000	49.64	-3.60	46.04	74.00	-27.96	peak	

**Test Result: Pass**

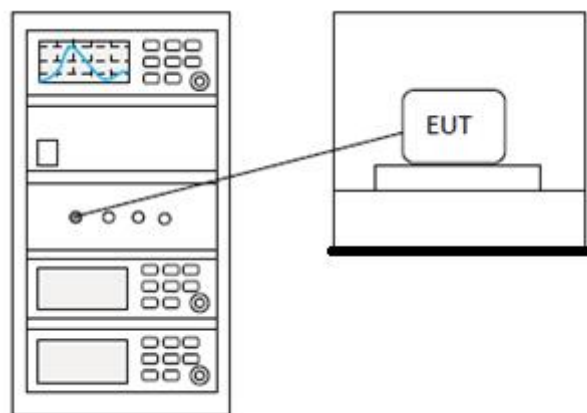
## 15 CONDUCTED SPURIOUS EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25°C
Humidity	60%

### 15.1 LIMITS

<b>Limit:</b>	<p>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).</p>
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### 15.2 BLOCK DIAGRAM OF TEST SETUP



### 15.3 TEST DATA

**Pass: Please Refer To Appendix: Appendix1 For Details**

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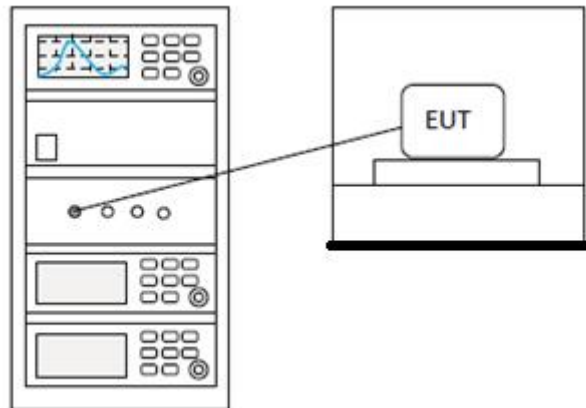
## 16 POWER SPECTRUM DENSITY

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 11.10.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25°C
Humidity	60%

### 16.1 LIMITS

**Limit:**  $\leq 8\text{dBm}$  in any 3 kHz band during any time interval of continuous transmission

### 16.2 BLOCK DIAGRAM OF TEST SETUP



### 16.3 TEST DATA

**Pass: Please Refer To Appendix: Appendix1 For Details**



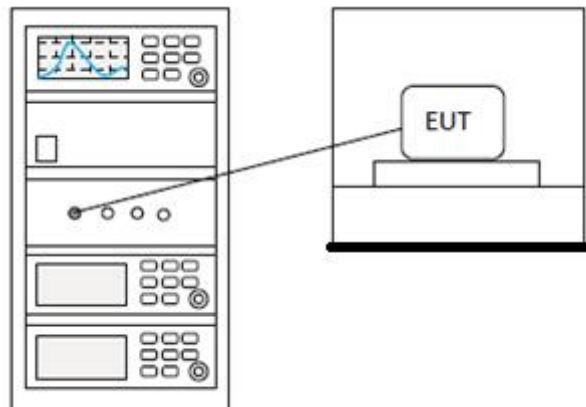
## 17 CONDUCTED PEAK OUTPUT POWER

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25°C
Humidity	60%

### 17.1 LIMITS

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for $\geq 50$ hopping channels
	0.25 for $25 \leq$ hopping channels $< 50$
	1 for digital modulation
2400-2483.5	1 for $\geq 75$ non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

### 17.2 BLOCK DIAGRAM OF TEST SETUP



### 17.3 TEST DATA

**Pass: Please Refer To Appendix: Appendix1 For Details**

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