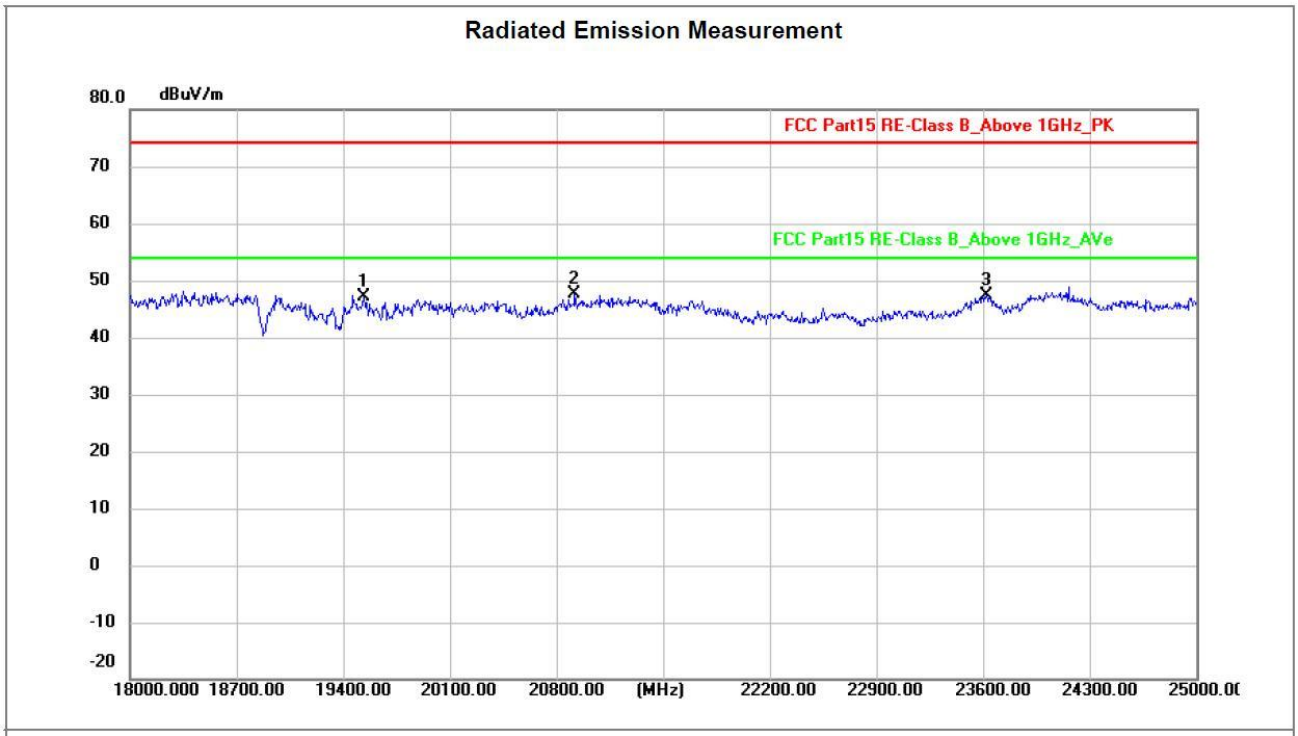
Horizontal



Site
Limit: FCC Part15 RE-Class B_Above 1GHz_PK
EUT:Smart EBike
M/N:Flux X26 PRO
Mode:GFSK CH39
Note:N/A

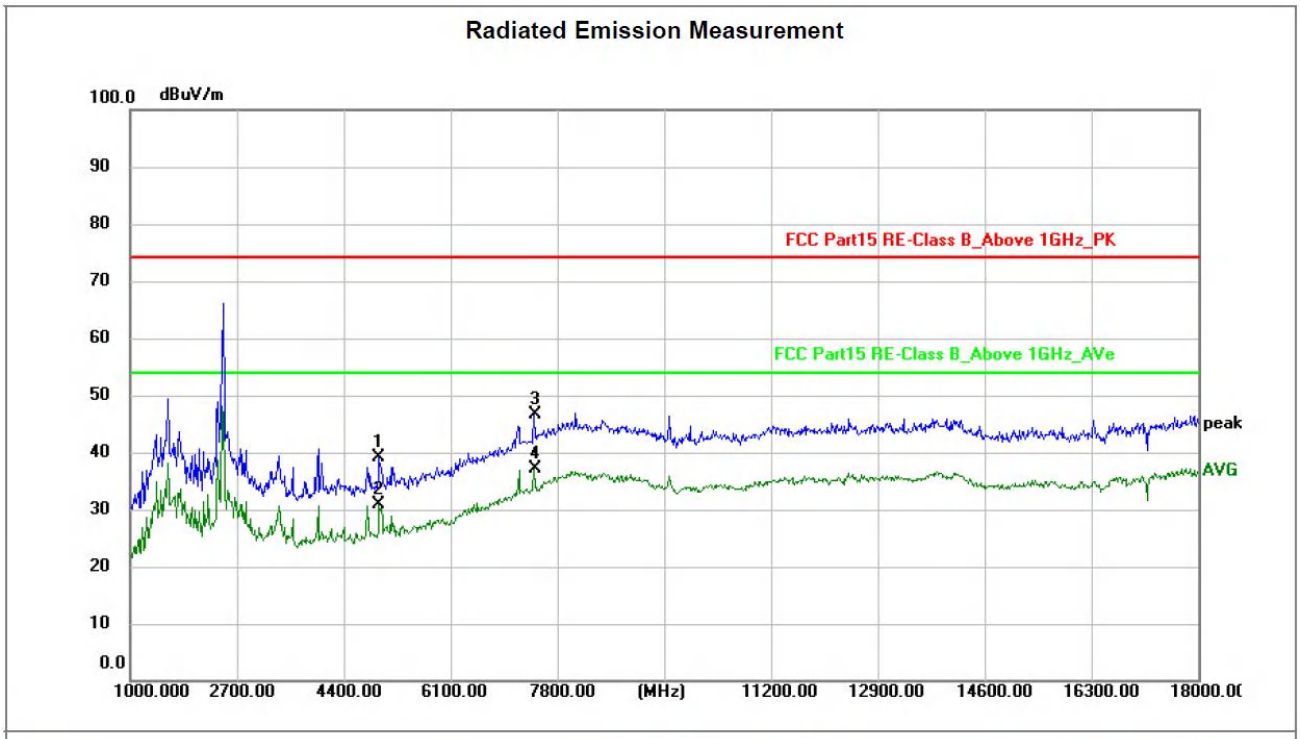
Polarization: ***Horizontal***
Power: AC120V/60Hz
Distance:

Temperature: 25.5 (C)
Humidity: 56 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	19533.000	41.50	5.64	47.14	74.00	-26.86	peak	100	216	P	
2 *	20919.000	41.25	6.28	47.53	74.00	-26.47	peak	100	195	P	
3	23621.000	39.90	7.59	47.49	74.00	-26.51	peak	100	358	P	

Note:1).Emission level (dBuV/m) =Raw Value (dBuV)+Correction Factor (dB/m)
2). Correction Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)- Pre-amplifier
3). Margin value = Limit value- Emission level

Vertical



Site
Limit: FCC Part15 RE-Class B_Above 1GHz_PK
EUT:Smart EBike
M/N:Flux X26 PRO
Mode:GFSK CH39
Note:N/A

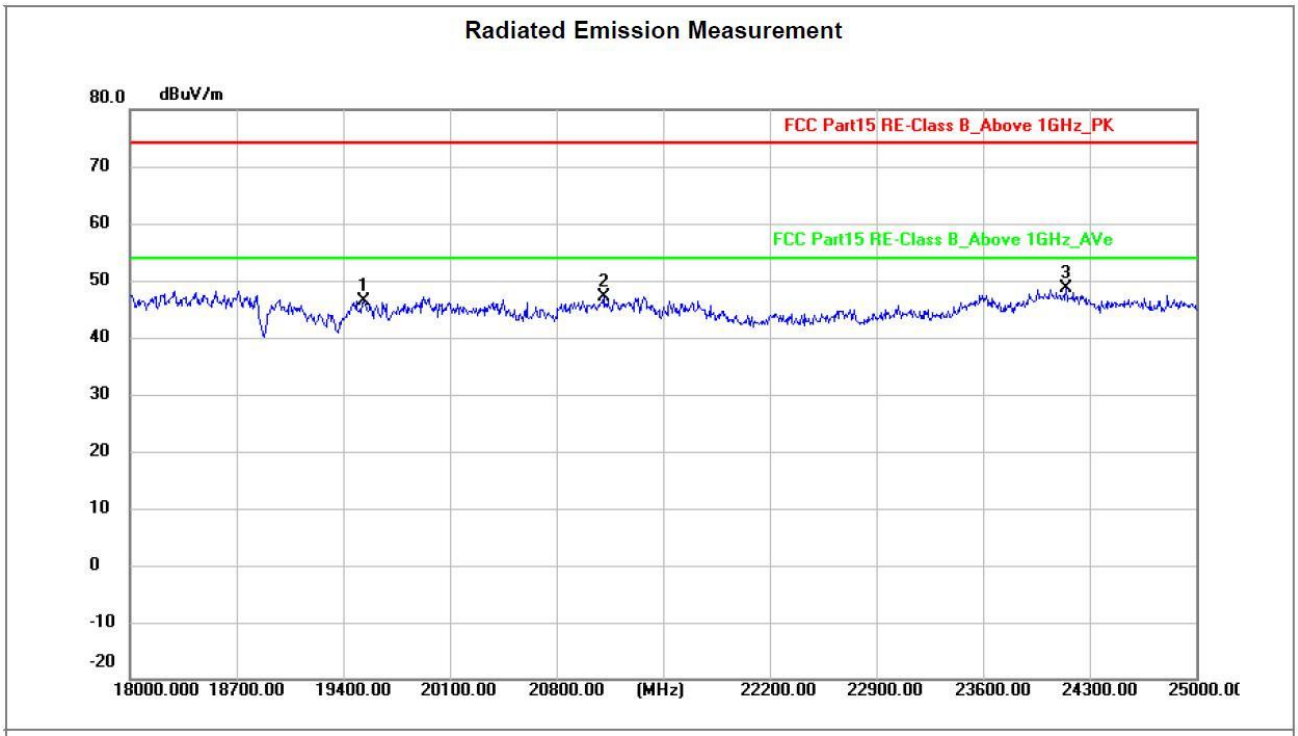
Polarization: *Vertical*
Power: AC120V/60Hz
Distance:

Temperature: 25.5 (C)
Humidity: 56 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4960.000	58.74	-19.53	39.21	74.00	-34.79	peak	100	44	P	
2	4960.000	50.40	-19.53	30.87	54.00	-23.13	AVG	100	44	P	
3	7440.000	59.71	-13.2	46.51	74.00	-27.49	peak	100	169	P	
4 *	7440.000	50.30	-13.2	37.10	54.00	-16.90	AVG	100	169	P	

Note:1).Emission level (dBuV/m) =Raw Value (dBuV)+Correction Factor (dB/m)
2). Correction Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)- Pre-amplifier
3). Margin value = Limit value- Emission level

Vertical



Site
Limit: FCC Part15 RE-Class B_Above 1GHz_PK
EUT:Smart EBike
M/N:Flux X26 PRO
Mode:GFSK CH39
Note:N/A

Polarization: *Vertical*
Power: AC120V/60Hz
Distance:

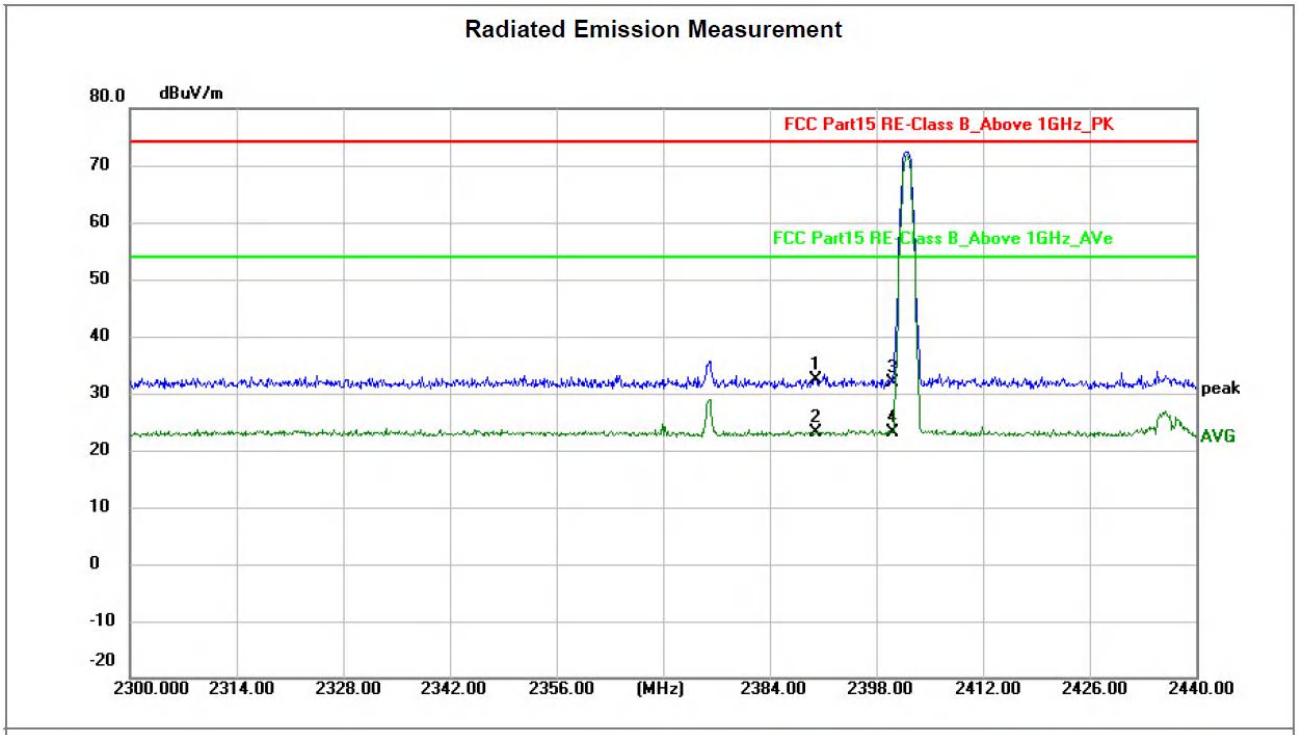
Temperature: 25.5 (C)
Humidity: 56 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	19533.000	40.83	5.64	46.47	74.00	-27.53	peak	100	334	P	
2	21108.000	40.75	6.40	47.15	74.00	-26.85	peak	100	75	P	
3 *	24146.000	40.88	7.82	48.70	74.00	-25.30	peak	100	277	P	

Note:1).Emission level (dBuV/m) =Raw Value (dBuV)+Correction Factor (dB/m)
2). Correction Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)- Pre-amplifier
3). Margin value = Limit value- Emission level

Results of Band Edges Test (Radiated)

Horizontal



Site
Limit: FCC Part15 RE-Class B_Above 1GHz_PK
EUT:Smart EBike
M/N:Flux X26 PRO
Mode:GFSK CH00
Note:N/A

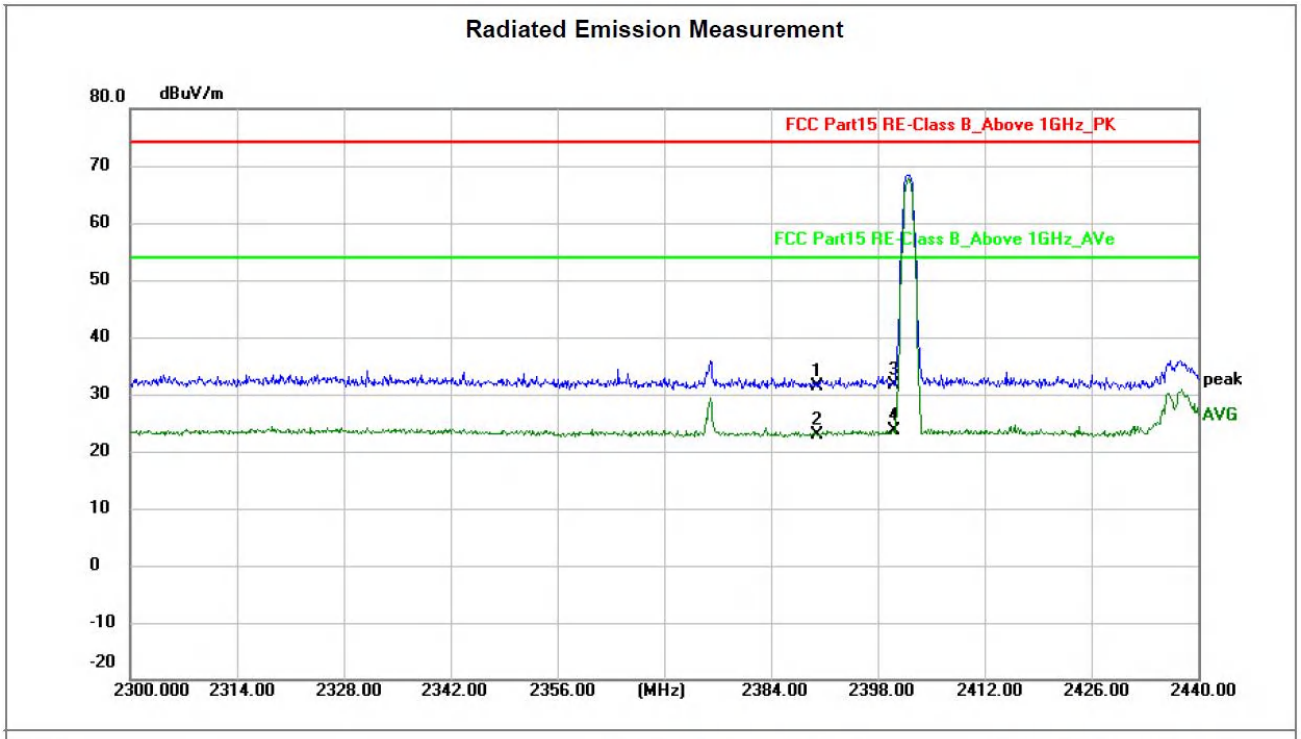
Polarization: ***Horizontal***
Power: AC120V/60Hz
Distance:

Temperature: 25.5 (C)
Humidity: 56 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2390.000	57.11	-24.72	32.39	74.00	-41.61	peak	150	65	P	
2	2390.000	47.75	-24.72	23.03	54.00	-30.97	AVG	150	65	P	
3	2400.000	56.25	-24.26	31.99	74.00	-42.01	peak	150	14	P	
4 *	2400.000	47.45	-24.26	23.19	54.00	-30.81	AVG	150	14	P	

Note:1).Emission level (dBuV/m) =Raw Value (dBuV)+Correction Factor (dB/m)
2). Correction Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)- Pre-amplifier
3). Margin value = Limit value- Emission level

Vertical



Site
Limit: FCC Part15 RE-Class B_Above 1GHz_PK
EUT:Smart EBike
M/N:Flux X26 PRO
Mode:GFSK CH00
Note:N/A

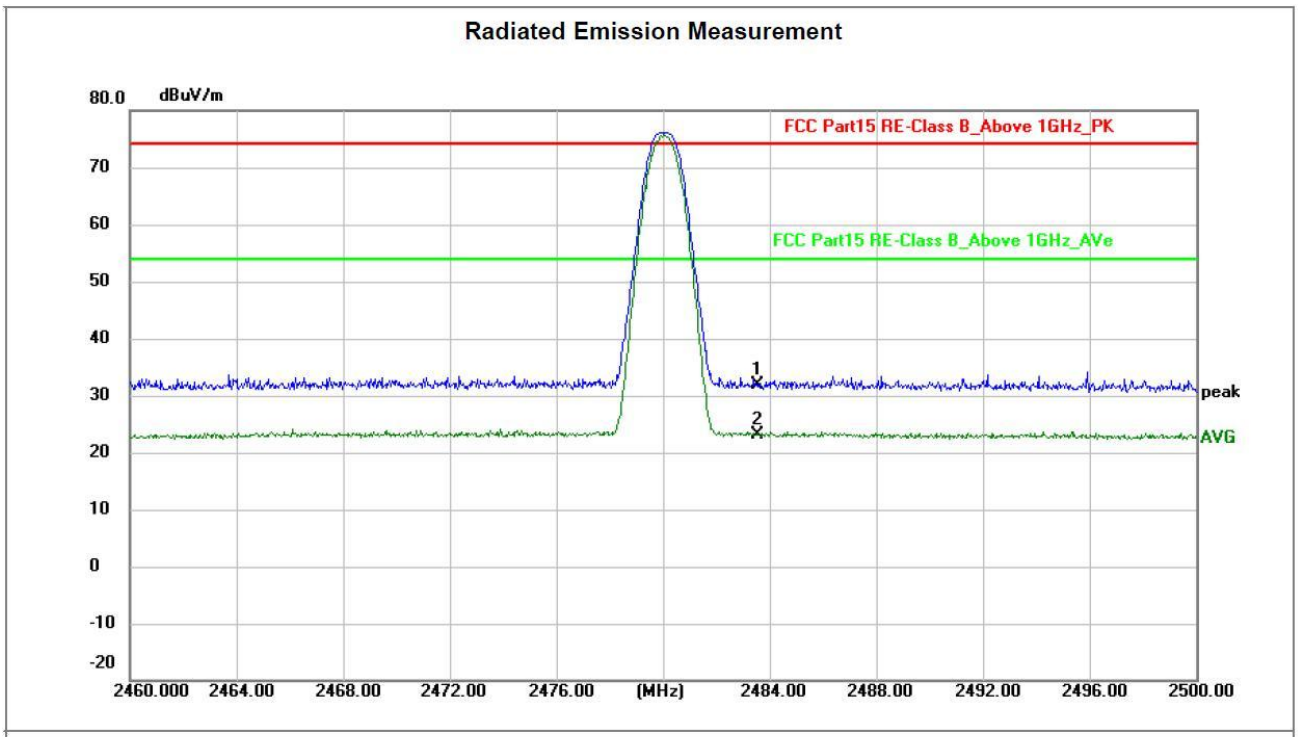
Polarization: *Vertical*
Power: AC120V/60Hz
Distance:

Temperature: 25.5 (C)
Humidity: 56 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2390.000	56.01	-24.72	31.29	74.00	-42.71	peak	150	99	P	
2	2390.000	47.64	-24.72	22.92	54.00	-31.08	AVG	150	99	P	
3	2400.000	55.90	-24.26	31.64	74.00	-42.36	peak	150	284	P	
4 *	2400.000	47.86	-24.26	23.60	54.00	-30.40	AVG	150	284	P	

Note:1).Emission level (dBuV/m) =Raw Value (dBuV)+Correction Factor (dB/m)
2). Correction Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)- Pre-amplifier
3). Margin value = Limit value- Emission level

Horizontal



Site
Limit: FCC Part15 RE-Class B_Above 1GHz_PK
EUT:Smart EBike
M/N:Flux X26 PRO
Mode:GFSK CH39
Note:N/A

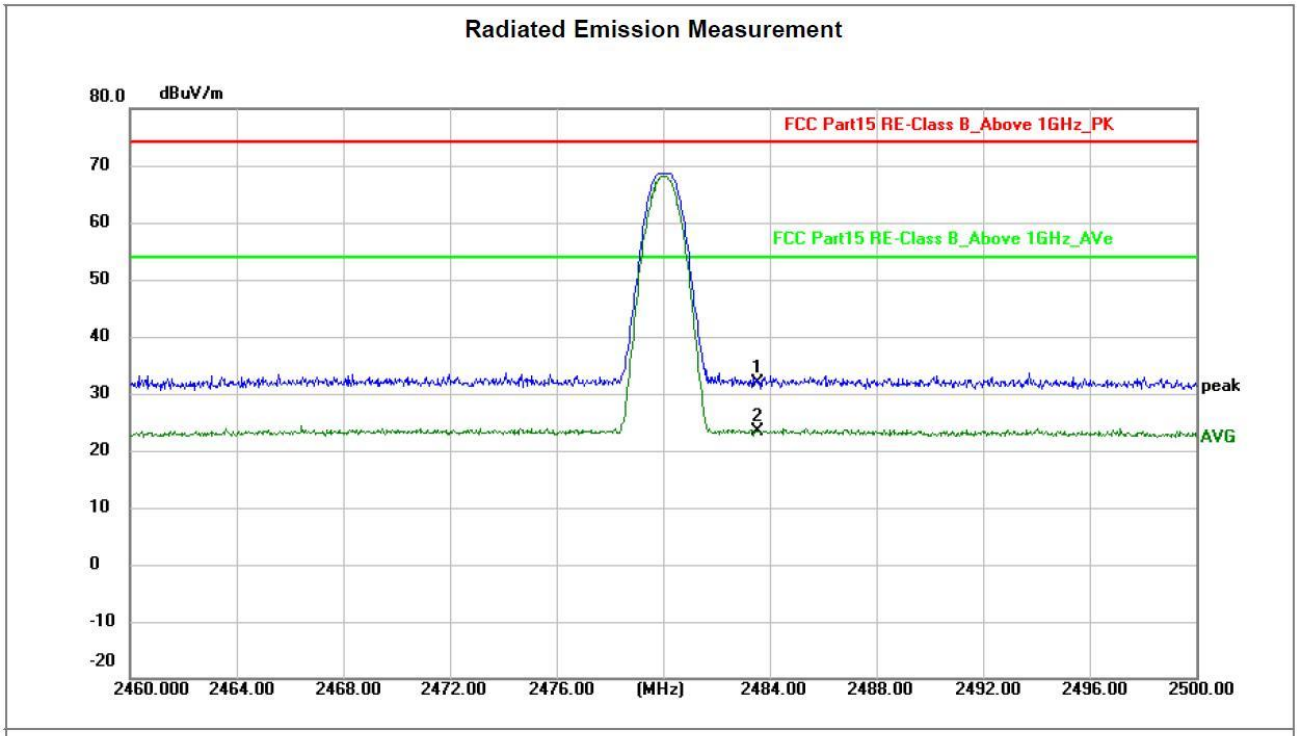
Polarization: *Horizontal*
Power: AC120V/60Hz
Distance:

Temperature: 25.5 (C)
Humidity: 56 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2483.500	56.41	-24.57	31.84	74.00	-42.16	peak	150	89	P	
2 *	2483.500	47.80	-24.57	23.23	54.00	-30.77	AVG	150	89	P	

Note:1).Emission level (dBuV/m) =Raw Value (dBuV)+Correction Factor (dB/m)
2). Correction Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)- Pre-amplifier
3). Margin value = Limit value- Emission level

Vertical



Site
Limit: FCC Part15 RE-Class B_Above 1GHz_PK
EUT:Smart EBike
M/N:Flux X26 PRO
Mode:GFSK CH39
Note:N/A

Polarization: ***Vertical***
Power: AC120V/60Hz
Distance:

Temperature: 25.5 (C)
Humidity: 56 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2483.500	56.55	-24.57	31.98	74.00	-42.02	peak	150	266	P	
2 *	2483.500	47.87	-24.57	23.30	54.00	-30.70	AVG	150	266	P	

Note:1).Emission level (dBuV/m) =Raw Value (dBuV)+Correction Factor (dB/m)
2). Correction Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)- Pre-amplifier
3). Margin value = Limit value- Emission level

4.3 Maximum Peak Output Power

Limit

The Maximum Peak Output Power Measurement is 30dBm.

Test Procedure

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power sensor.
Method PM is Measurement using an RF Peak power sensor. The procedure for this method is as follows:
1. The testing follows the ANSI C63.10 Section 11.9.1.2
2. The maximum peak conducted output power may be measured using a broadband peak RF power sensor.
3. The power sensor shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

Test Configuration

Test Results

Type	Channel	Output power (dBm)	Limit (dBm)	Result
GFSK	00	-5.07	30.00	Pass
	19	-3.60		
	39	-3.78		

Note: 1.The test results including the cable loss.

4.4 Power Spectral Density

Limit

The resulting peak PSD level shall not be greater than 8 dBm/3KHz.

Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW ≥ 3 kHz.
3. Set the VBW ≥ 3× RBW.
4. Set the span to 1.5 times the DTS channel bandwidth.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum power level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
11. The resulting peak PSD level shall not be greater than 8 dBm/3KHz.

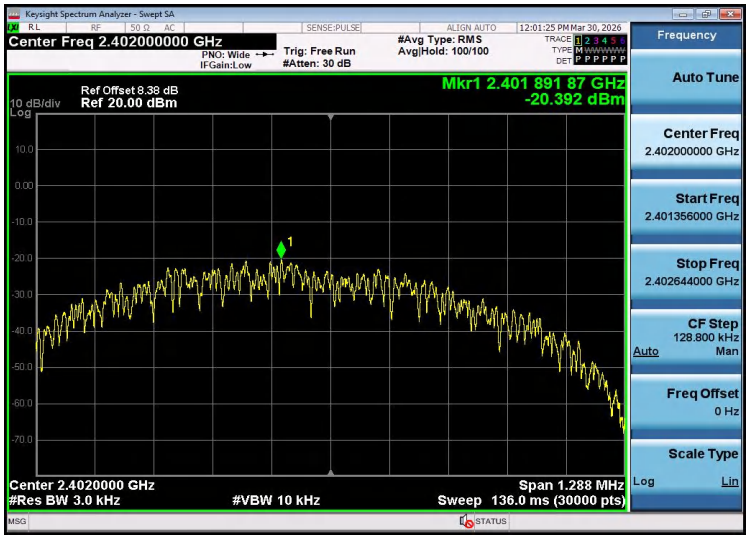
Test Configuration

Test Results

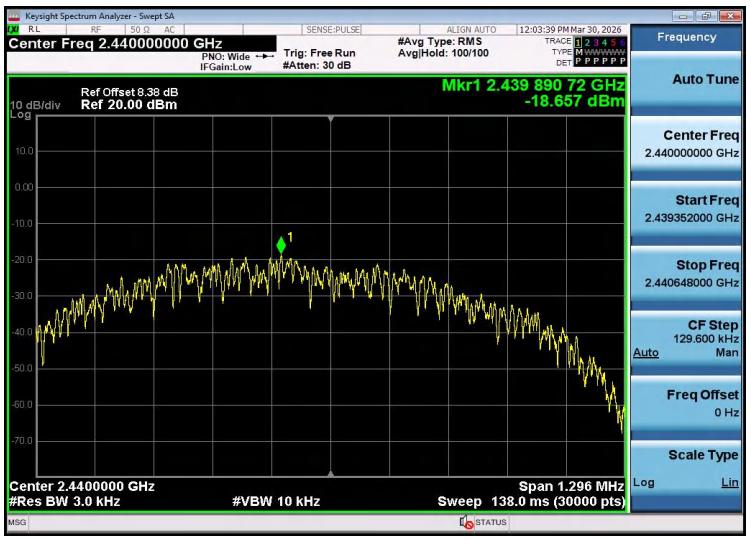
Type	Channel	Power Spectral Density (dBm/3KHz)	Limit (dBm/3KHz)	Result
GFSK	00	-20.39	8.00	Pass
	19	-18.66		
	39	-18.93		

Test plot as follows:

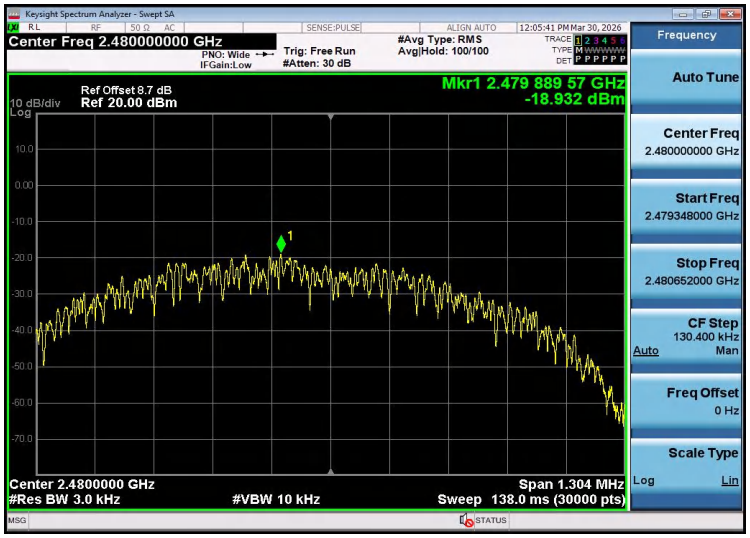
GFSK



CH00



CH19



CH39

4.5 6dB Bandwidth

Limit

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz

Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 KHz RBW and 300 KHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

Test Configuration

Test Results

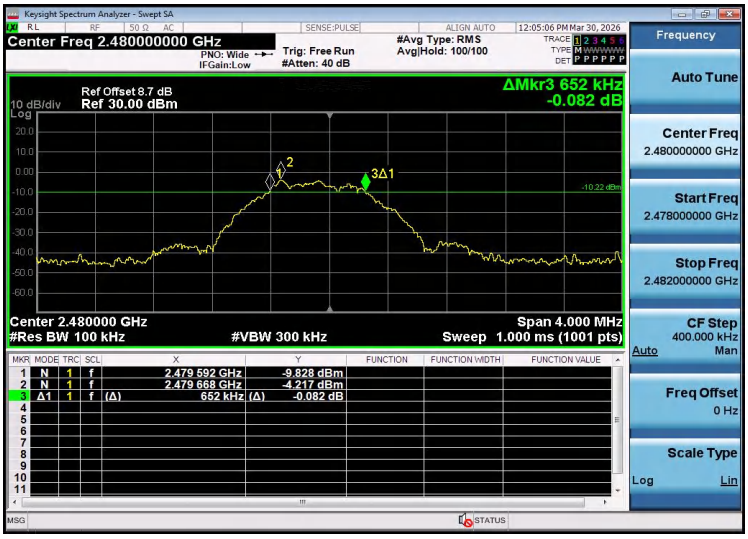
Type	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
GFSK	00	0.644	≥500	Pass
	19	0.648		
	39	0.652		

Test plot as follows:

GFSK

CH00

CH19



CH39

4.6 Out-of-band Emissions

Limit

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 con-ducted or a radiated measurement, pro-vided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter com-plies 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.

Test Procedure

Connect the transmitter output to spectrum analyzer using a low loss RF cable, and set the spectrum analyzer to RBW=100 kHz, VBW= 300 kHz, peak detector , and max hold. Measurements utilizing these setting are made of the in-band reference level, bandedge and out-of-band emissions.

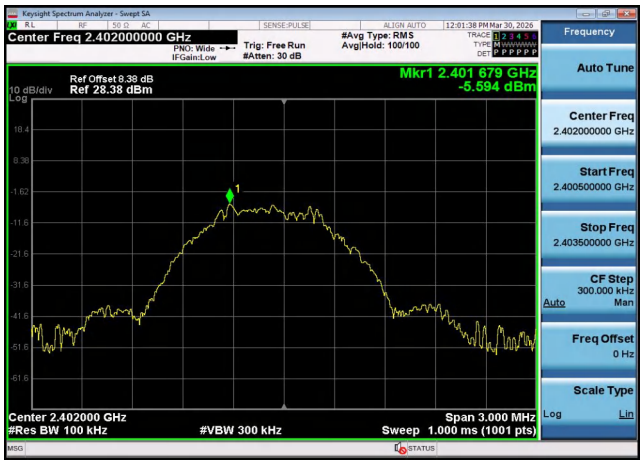
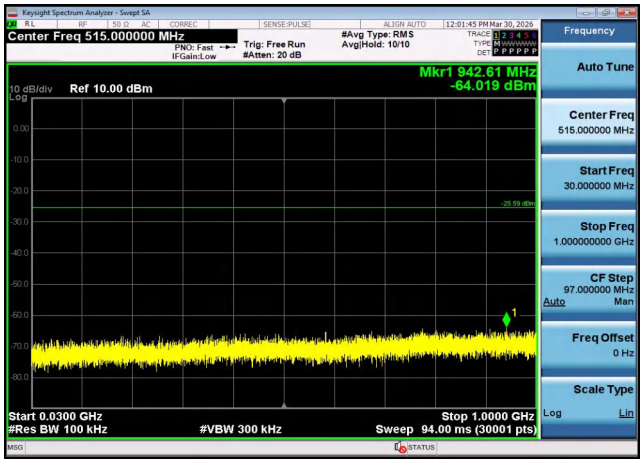
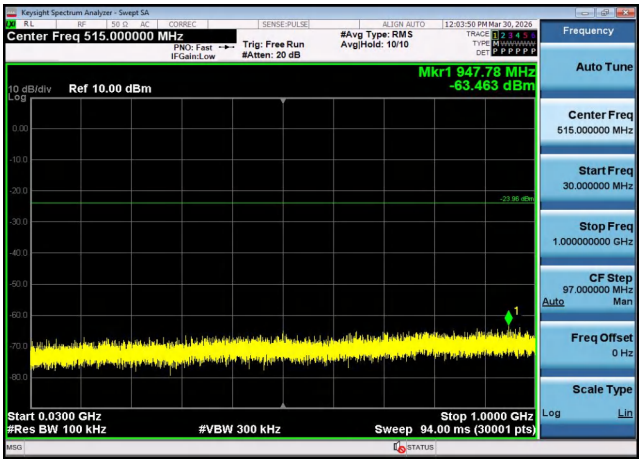
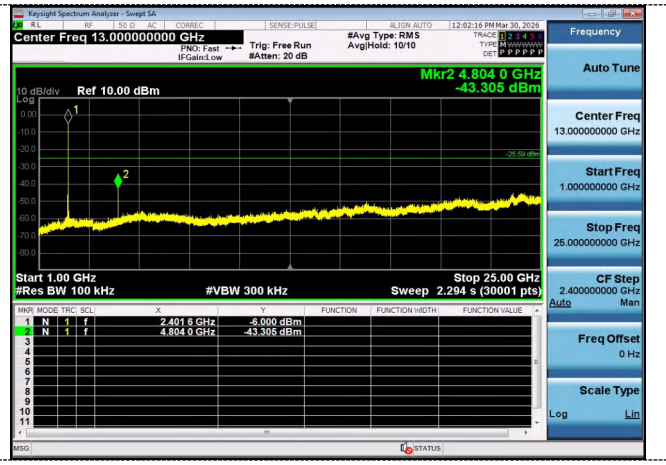
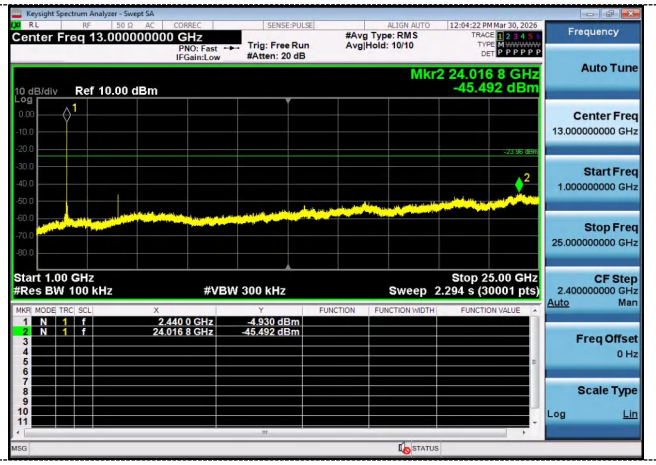
Test Configuration

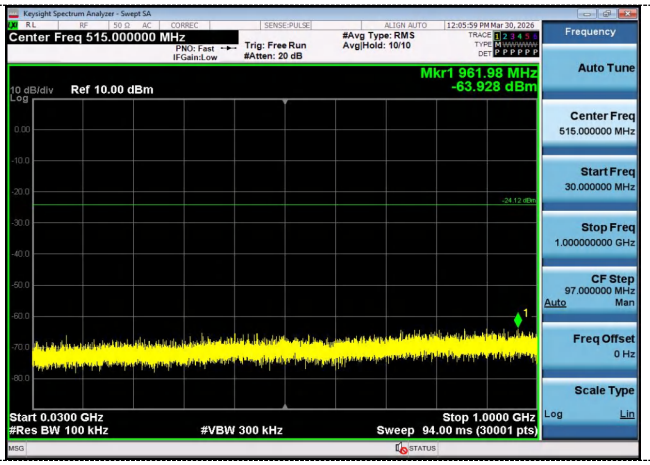
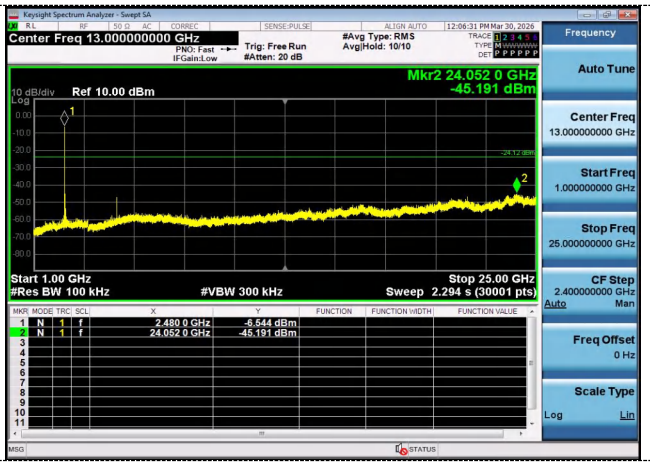
Test Results

Remark: The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandage measurement data.

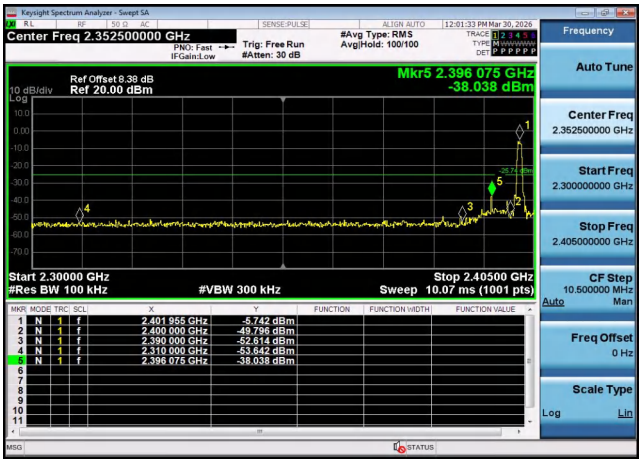
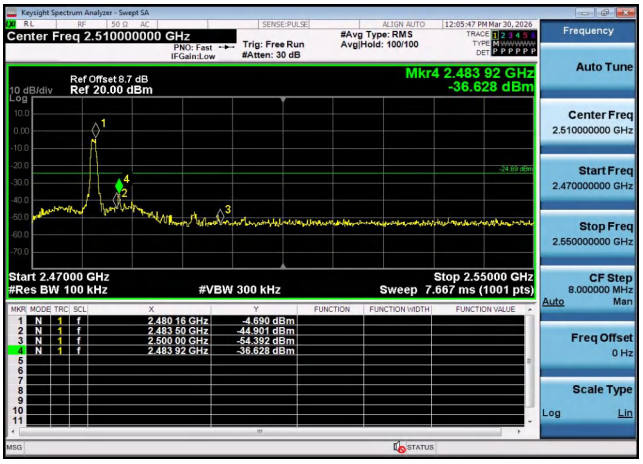
The test results including the cable loss + power divider loss.

Test plot as follows:

GFSK (CH00)	GFSK (CH19)
	
reference	reference
	
30MHz-1G	30MHz-1G
	
1G-25G	1G-25G

GFSK (CH39)	
reference	
	
30MHz-1G	
	
1G-25G	

Band-edge Measurements for RF Conducted Emissions:

GFSK	
	
Left bandedge	Right bandedge

4.7 Antenna Requirement

Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203:

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 a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1) (I):

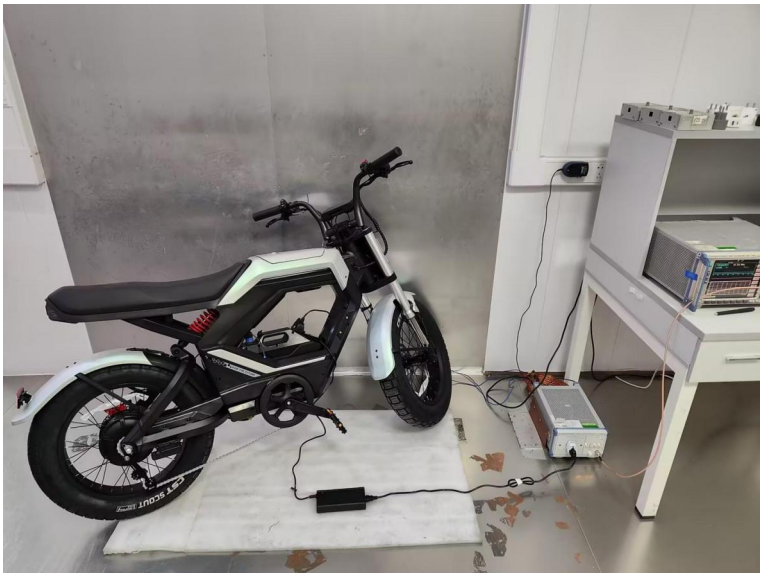
(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

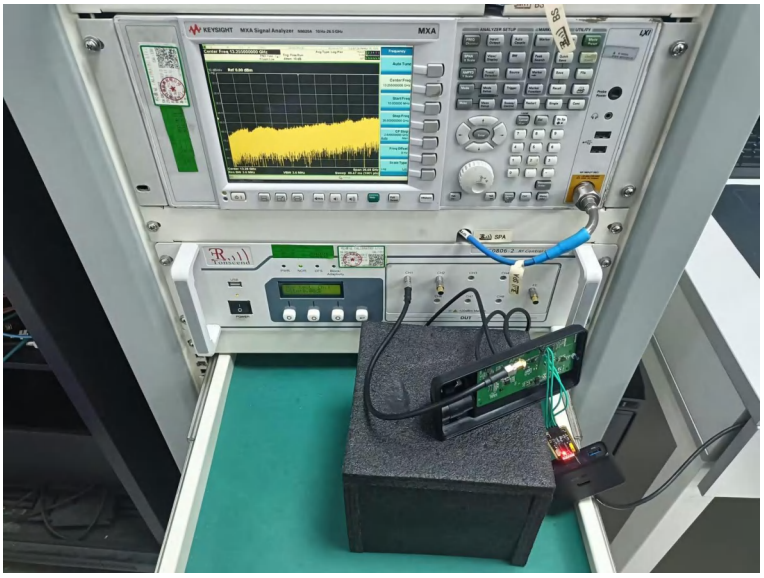
Antenna Connected Construction

The maximum gain of antenna was 2.48 dBi.

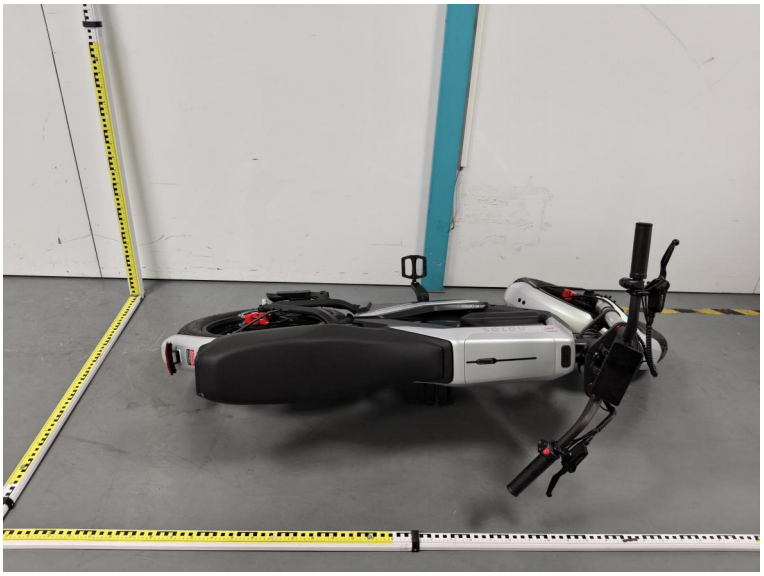
Remark:The antenna gain is provided by the customer , if the data provided by the customer is not accurate, Shenzhen GUOREN Certification Technology Service Co., Ltd. does not assume any responsibility.

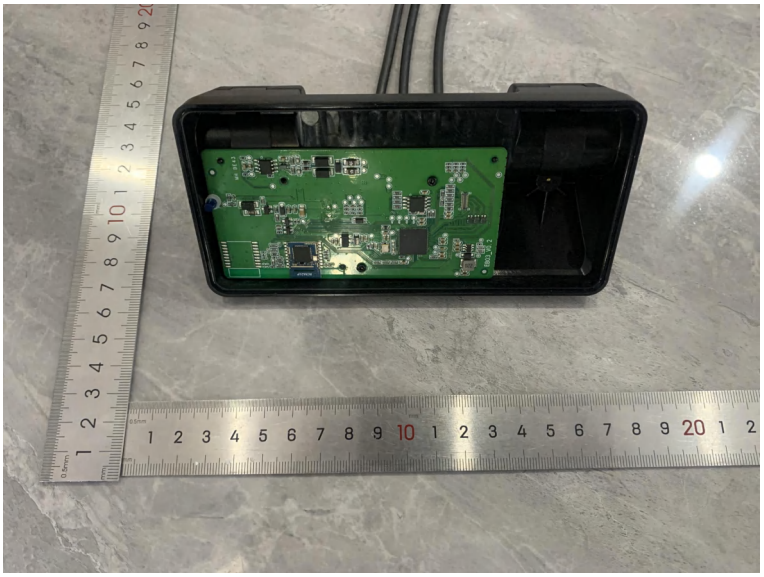
5 Test Setup Photos of the EUT

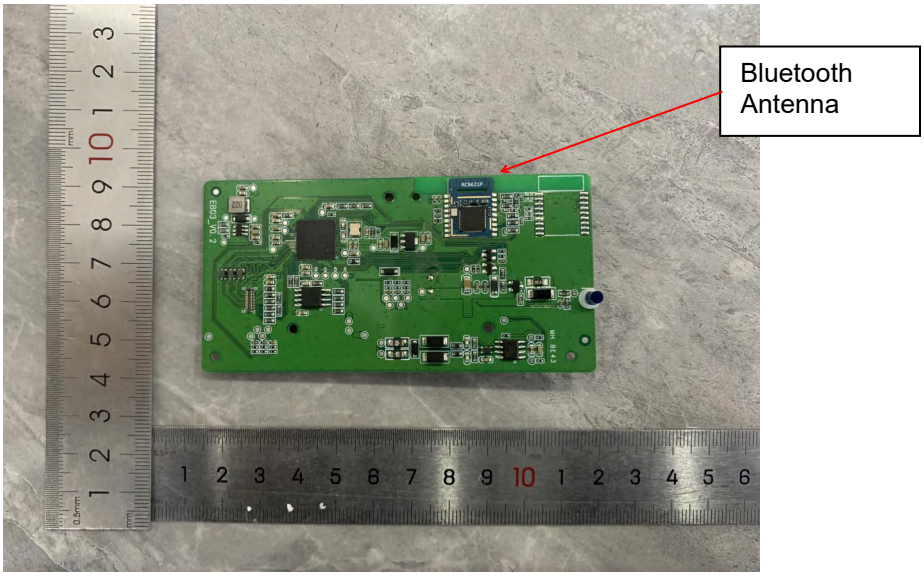


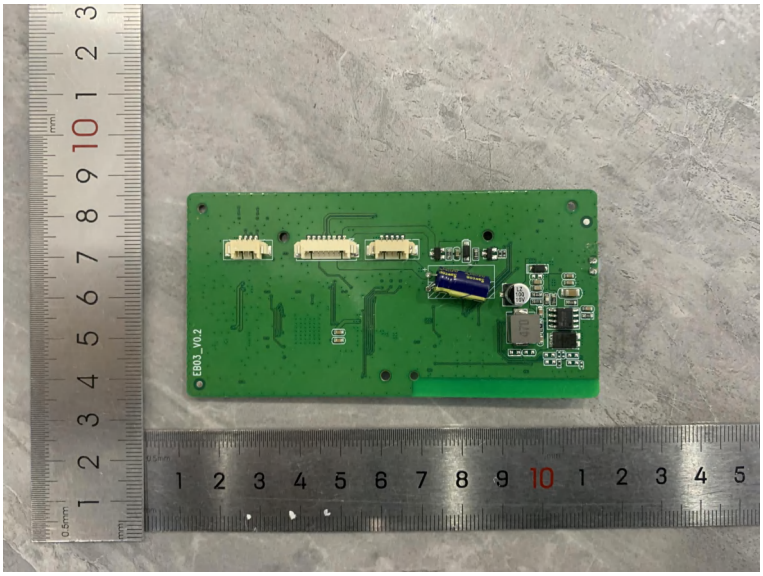

KEYSIGHT
MXA Signal Analyzer
MXA

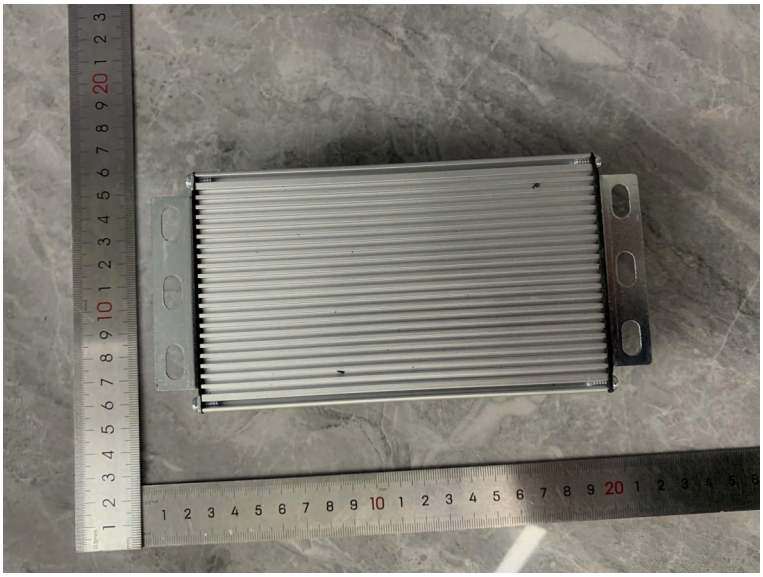
6 Photos of the EUT

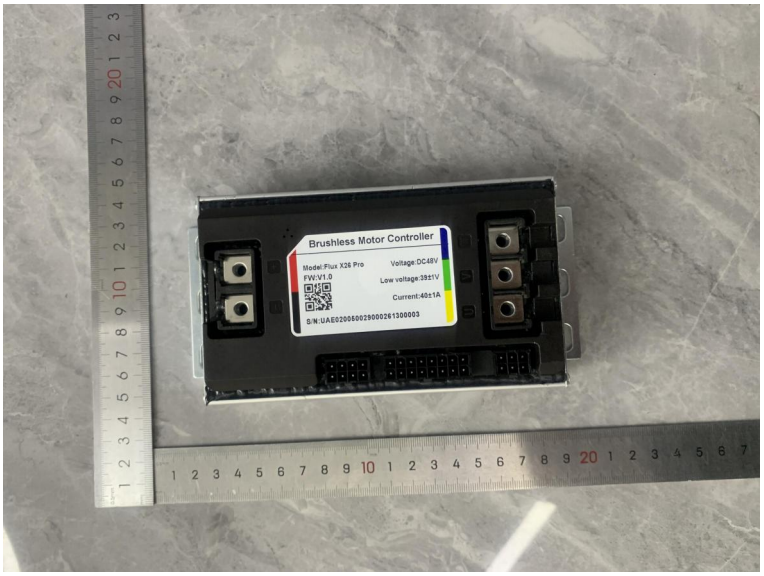


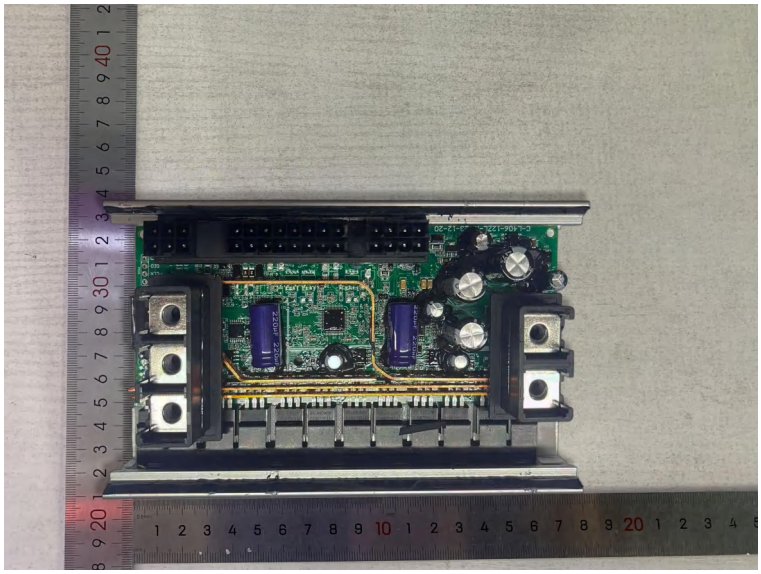


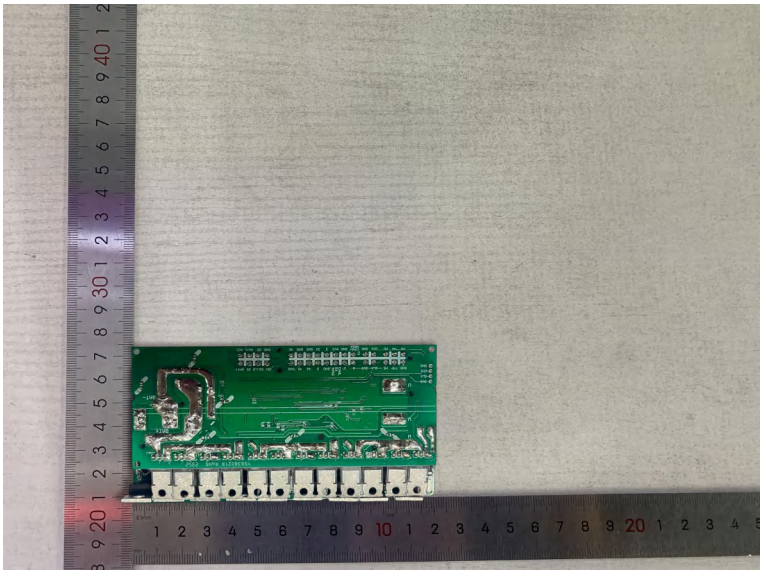

Bluetooth
Antenna






Brushless Motor Controller
Model:Flux X26 Pro
FW:V1.0
Voltage:DC48V
Low voltage:35±1V
Current:40±1A
S/N:UAE0200500290002613000003





********** End of Report **********