

# TECHNICAL REPORT



Report No.: TW2203478E

File reference No.: 2022-04-02

Applicant: Cherry Europe GmbH

Product: Dongle

Model No.: JR-2180

Trademark: CHERRY

Test Standards: FCC Part 15.249

Test result: It is herewith confirmed and found to comply with the requirements set up by ANSI C63.10 & FCC Part 15 Subpart C, Paragraph 15.249 regulations for the evaluation of electromagnetic compatibility

Approved By

A handwritten signature in black ink that reads "Terry Tang".

Terry Tang

Manager

Dated: April 02, 2022

**Results appearing herein relate only to the sample tested**

**The technical reports is issued errors and omissions exempt and is subject to withdrawal at**

**SHENZHEN TIMEWAY TESTING LABORATORIES**

**Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China**

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com



### **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

#### **CNAS-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO 17025:2017 General Requirements) for the Competence of testing Laboratories.

#### **FCC-Registration No.: 744189**

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 744189.

#### **Industry Canada (IC) —Registration No.:5205A**

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

#### **A2LA (Certification Number:5013.01)**

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

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## 1.0 General Details

### 1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TESTING LABORATORIES.  
Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China  
Telephone: (755) 83448688  
Fax: (755) 83442996  
Site on File with the Federal Communications Commission – United States  
Registration Number: 744189  
For 3m Anechoic Chamber

### 1.2 Applicant Details

Applicant: Cherry Europe GmbH  
Address: Cherrystraße 2, 91275 Auerbach i. d. OPf., Germany  
Telephone: --  
Fax: --

### 1.3 Description of EUT

Product: Dongle  
Manufacturer: Cherry Europe GmbH  
Address: Cherrystraße 2, 91275 Auerbach i. d. OPf., Germany  
Trademark: CHERRY  
Model Number: JR-2180  
Additional Model Name: N/A  
Rating: DC5.0V (from USB Port)  
Modulation Type: GFSK  
Operation Frequency: 2403-2480MHz  
Channel Number: 16  
Channel List (unit: MHz): 2403, 2426, 2441, 2463, 2407, 2422, 2445, 2466, 2414, 2436, 2459, 2473, 2419, 2439, 2453, 2480  
Hardware Version: 2516-AB RX V1  
Software Version: B3171  
Antenna Designation: PCB antenna with gain -1.66dBi Max (Declared by the Manufacturer)

### 1.4 Submitted Sample: 1 Sample

### 1.5 Test Duration

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2022-03-30 to 2022-04-02

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions below 1GHz Uncertainty =4.7dB

Radiated Emissions above 1GHz Uncertainty =6.0dB

Conducted Power Uncertainty =6.0dB

Occupied Channel Bandwidth Uncertainty =5%

Conducted Emissions Uncertainty =3.6dB

Note: The measurement uncertainty is for coverage factor of  $k=2$  and a level of confidence of 95%.

1.7 Test Engineer

The sample tested by \_\_\_\_\_

*Andy Xing*

Print Name: Andy Xing

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2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2021-06-18	2022-06-17
LISN	R&S	EZH3-Z5	100294	2021-06-18	2022-06-17
LISN	R&S	EZH3-Z5	100253	2021-06-18	2022-06-17
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2021-06-18	2022-06-17
Loop Antenna	EMCO	6507	00078608	2021-06-18	2024-06-17
Spectrum	R&S	FSIQ26	100292	2021-06-18	2022-06-17
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2021-07-02	2024-07-01
Horn Antenna	R&S	BBHA 9120D	9120D-631	2021-07-02	2024-07-01
Power meter	Anritsu	ML2487A	6K00003613	2021-06-18	2022-06-17
Power sensor	Anritsu	MA2491A	32263	2021-06-18	2022-06-17
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2021-07-02	2024-07-01
9*6*6 Anechoic	--	--	N/A	2021-07-02	2022-07-01
EMI Test Receiver	RS	ESVB	826156/011	2021-06-18	2022-06-17
EMI Test Receiver	RS	ESH3	860904/006	2021-06-18	2022-06-17
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2021-06-18	2022-06-17
Spectrum	HP/Agilent	E4407B	MY50441392	2021-06-18	2022-06-17
Spectrum	RS	FSP	1164.4391.38	2022-01-15	2023-01-14
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA	--	2021-06-18	2022-06-17
RF Cable	Zhengdi	7m	--	2021-06-18	2022-06-17
RF Switch	EM	EMSW18	060391	2021-06-18	2022-06-17
Pre-Amplifier	Schwarebeck	BBV9743	#218	2021-06-18	2022-06-17
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2021-06-18	2022-06-17
LISN	SCHAFFNER	NNB42	00012	2022-01-05	2023-01-04

## 2.2 Automation Test Software

### For Conducted Emission Test

Name	Version
EZ-EMC	Ver.EMC-CON 3A1.1

### For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

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### 3.0 Technical Details

#### 3.1 Summary of test results

<b>The EUT has been tested according to the following specifications:</b>			
<b>Standard</b>	<b>Test Type</b>	<b>Result</b>	<b>Notes</b>
<b>FCC Part 15, Paragraph 15.203</b>	<b>Antenna Requirement</b>	<b>Pass</b>	<b>Complies</b>
<b>FCC Part 15, Paragraph 15.207</b>	<b>Conducted Emission Test</b>	<b>Pass</b>	<b>Complies</b>
<b>FCC Part 15 Subpart C Paragraph 15.249(a) &amp; 15.249(b) Limit</b>	<b>Field Strength of Fundamental</b>	<b>Pass</b>	<b>Complies</b>
<b>FCC Part 15, Paragraph 15.209 and RSS-210</b>	<b>Radiated Emission Test</b>	<b>Pass</b>	<b>Complies</b>
<b>FCC Part 15 Subpart C Paragraph 15.249(d) Limit</b>	<b>Band Edge Test</b>	<b>Pass</b>	<b>Complies</b>

#### 3.2 Test Standards

**FCC Part 15 Subpart C, Paragraph 15.249 , ANSI C63.4 :2014 and ANSI C63.10 :2013**

#### 4.0 EUT Modification

**No modification by SHENZHEN TIMEWAY TESTING LABORATORIES**

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**5. Power Line Conducted Emission Test**

5.1 Schematics of the test



EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2014.

Test Voltage: 120V~, 60Hz

Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2014. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

16 channels are provided to the EUT

A. EUT

Device	Manufacturer	Model	FCC ID
Dongle	Cherry Europe GmbH	JR-2180	GDDJR-2180

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B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

Device	Manufacturer	Model	Rating
PC	ThinkPad	R4	--

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2014

A Setup the EUT and simulators as shown on follow

B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency (MHz)	Limits (dB $\mu$ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0~56.0*	56.0~46.0*
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

- Notes: 1. \*Decreasing linearly with logarithm of frequency.  
 2. The tighter limit shall apply at the transition frequencies

5.6 Test Results:

Pass



**A: Conducted Emission on Live Terminal (150kHz to 30MHz)**

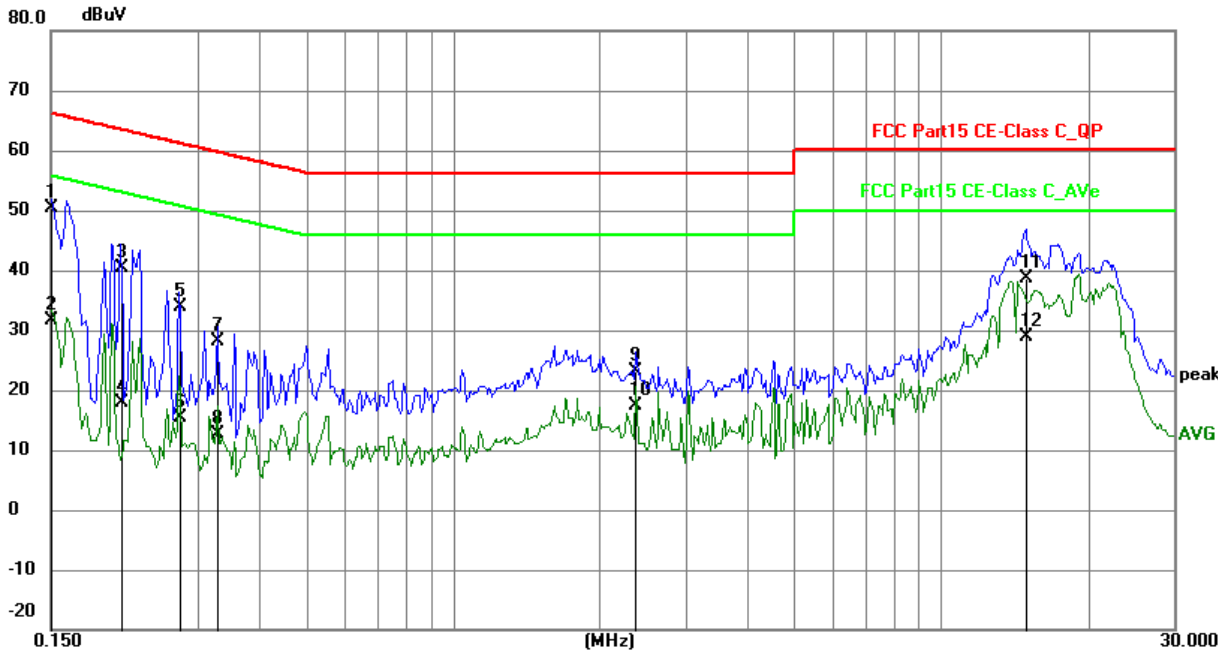
**EUT Operating Environment**

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting**

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1500	40.52	9.79	50.31	66.00	-15.69	QP	P
2	0.1500	21.76	9.79	31.55	56.00	-24.45	AVG	P
3	0.2085	30.65	9.75	40.40	63.26	-22.86	QP	P
4	0.2085	8.08	9.75	17.83	53.26	-35.43	AVG	P
5	0.2748	24.23	9.75	33.98	60.97	-26.99	QP	P
6	0.2748	5.52	9.75	15.27	50.97	-35.70	AVG	P
7	0.3294	18.40	9.76	28.16	59.47	-31.31	QP	P
8	0.3294	2.82	9.76	12.58	49.47	-36.89	AVG	P
9	2.3691	13.37	9.82	23.19	56.00	-32.81	QP	P
10	2.3691	7.63	9.82	17.45	46.00	-28.55	AVG	P
11	14.9223	28.36	10.38	38.74	60.00	-21.26	QP	P
12	14.9223	18.50	10.38	28.88	50.00	-21.12	AVG	P

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**B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)**

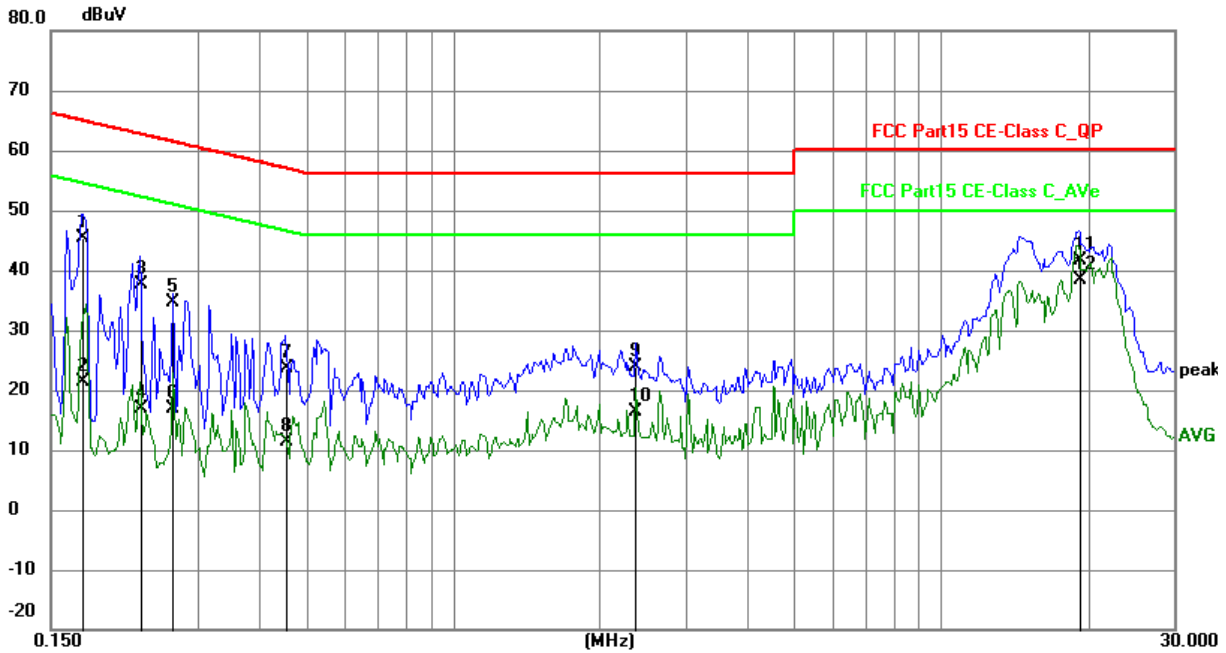
**EUT Operating Environment**

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting**

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1734	35.55	9.77	45.32	64.80	-19.48	QP	P
2	0.1734	11.65	9.77	21.42	54.80	-33.38	AVG	P
3	0.2280	27.84	9.75	37.59	62.52	-24.93	QP	P
4	0.2280	7.09	9.75	16.84	52.52	-35.68	AVG	P
5	0.2670	24.93	9.75	34.68	61.21	-26.53	QP	P
6	0.2670	7.10	9.75	16.85	51.21	-34.36	AVG	P
7	0.4542	13.77	9.77	23.54	56.80	-33.26	QP	P
8	0.4542	1.73	9.77	11.50	46.80	-35.30	AVG	P
9	2.3691	13.97	9.82	23.79	56.00	-32.21	QP	P
10	2.3691	6.61	9.82	16.43	46.00	-29.57	AVG	P
11	19.1967	31.00	10.63	41.63	60.00	-18.37	QP	P
12	19.1967	27.81	10.63	38.44	50.00	-11.56	AVG	P

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## 6 Radiated Emission Test

### 6.1 Test Method and test Procedure:

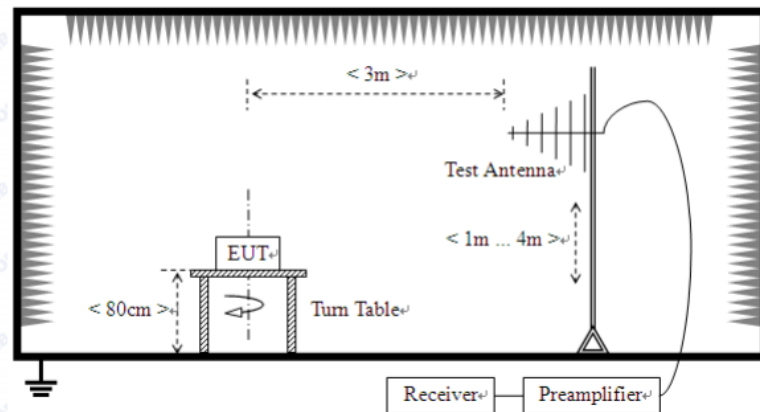
- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz (Note: for Fundamental frequency radiated emission measurement, RBW=6MHz, VBW=10MHz). Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) The antenna polarization: Vertical polarization and Horizontal polarization.

#### Block diagram of Test setup

For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to 1GHz



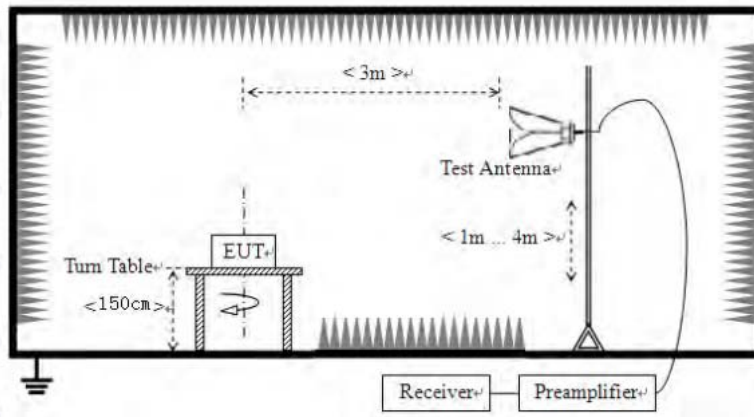
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For radiated emissions above 1GHz



6.2 Configuration of The EUT

Same as section 5.3 of this report

6.3 EUT Operating Condition

Same as section 5.4 of this report.

6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

**A FCC Part 15 Subpart C Paragraph 15.249(a) Limit**

Fundamental Frequency (MHz)	Field Strength of Fundamental (3m)		Field Strength of Harmonics (3m)		
	mV/m	dBuV/m	uV/m	dBuV/m	
2400-2483.5	50	94 (Average) 114 (Peak)	500	54 (Average)	74 (Peak)

- Note:
1. RF Field Strength (dBuV) = 20 log RF Voltage (uV)
  2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
  3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

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**B. Frequencies in restricted band are complied to limit on Paragraph 15.209.**

Frequency Range (MHz)	Distance (m)	Field strength (dB $\mu$ V/m)
0.009-0.490	3	$20\log(2400/F(\text{kHz})) + 40\log(300/3)$
0.490-1.705	3	$20\log(24000/F(\text{kHz})) + 40\log(30/3)$
1.705-30	3	69.5
30-80	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

- Note:
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
  2. In the Above Table, the tighter limit applies at the band edges.
  3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
  4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz.As to 1G-25G, the final emission level got using PK. For fundamental measurement, PK detector used.
  5. For radiated emissions from 9kHz to 30MHz, the emission level is much less than the limit for more than 20dB. No necessary to take down the record.

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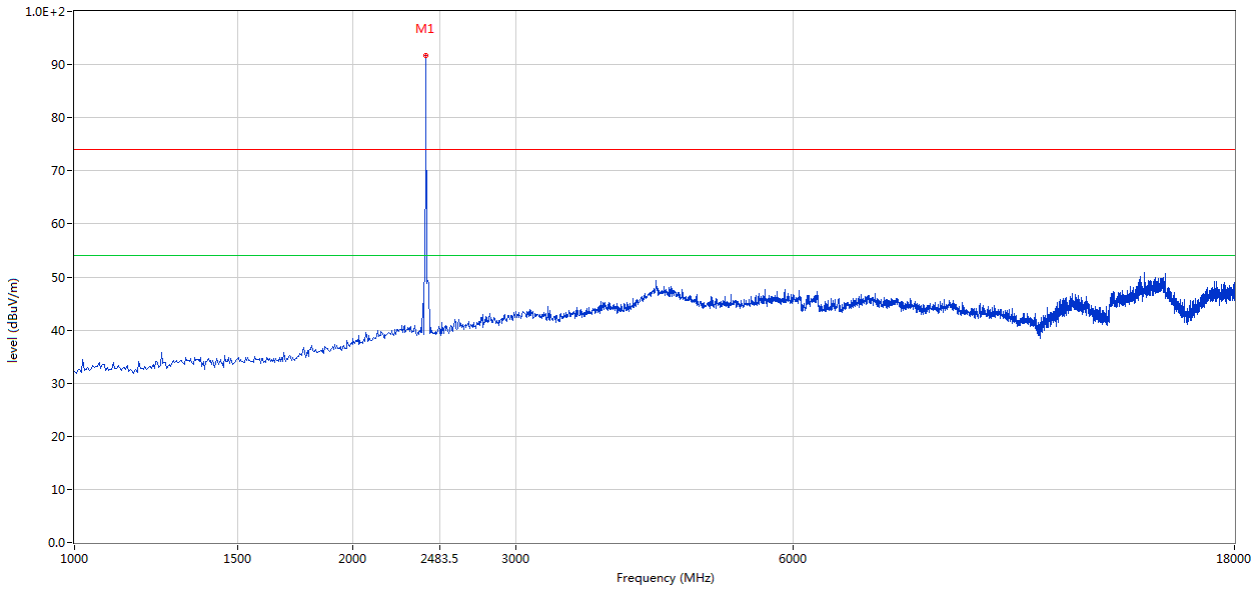
**6.5 Test result**

**A Fundamental & Harmonics Radiated Emission Data**

Please refer to the following test plots for details: Low Channel-2403MHz

**Horizontal**

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2403	92.69	-3.57	114.0	-21.31	Peak	223.00	100	Horizontal	Pass

The report refers only to the sample tested and does not apply to the bulk.

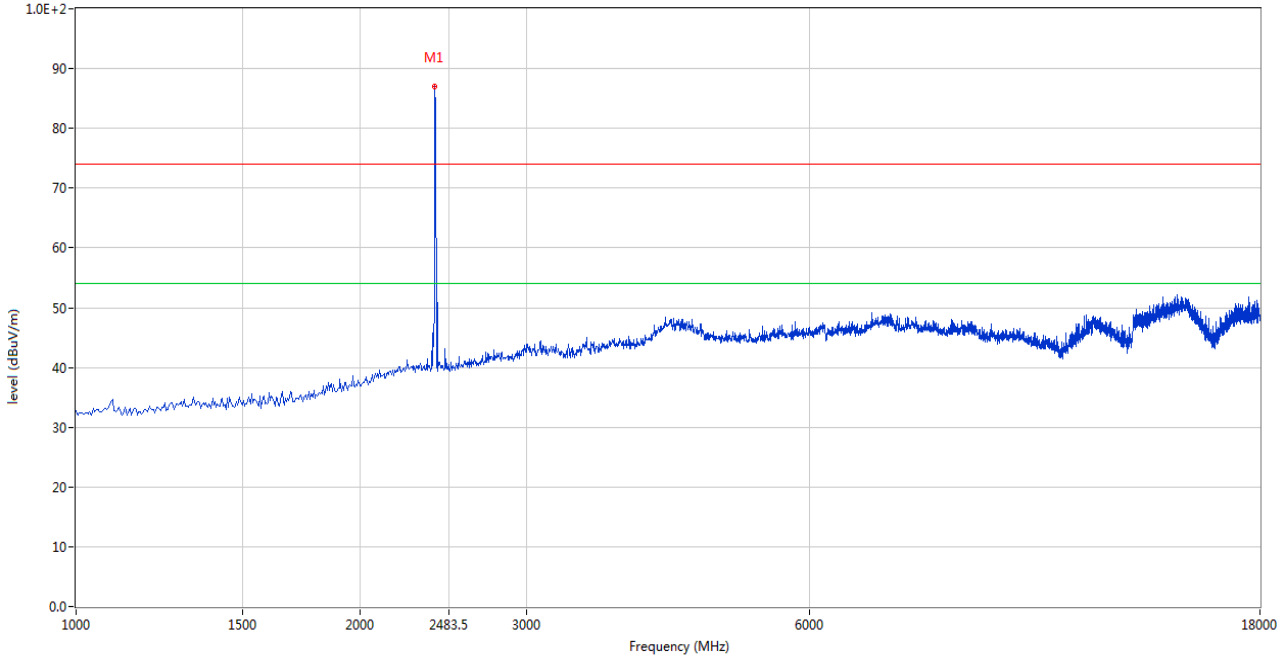
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**Vertical**

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2403	87.17	-3.57	114.0	-26.83	Peak	360.00	100	Vertical	Pass

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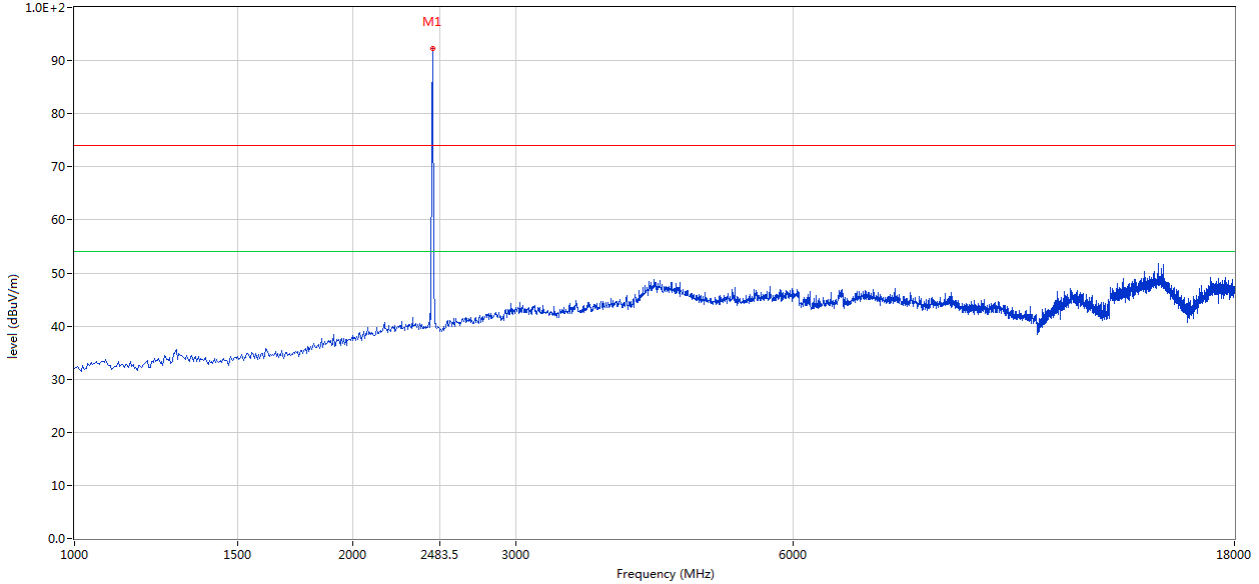




Please refer to the following test plots for details: Middle Channel-2441MHz

**Horizontal**

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2441	92.27	-3.57	114.0	-21.73	Peak	224.00	100	Horizontal	Pass

The report refers only to the sample tested and does not apply to the bulk.

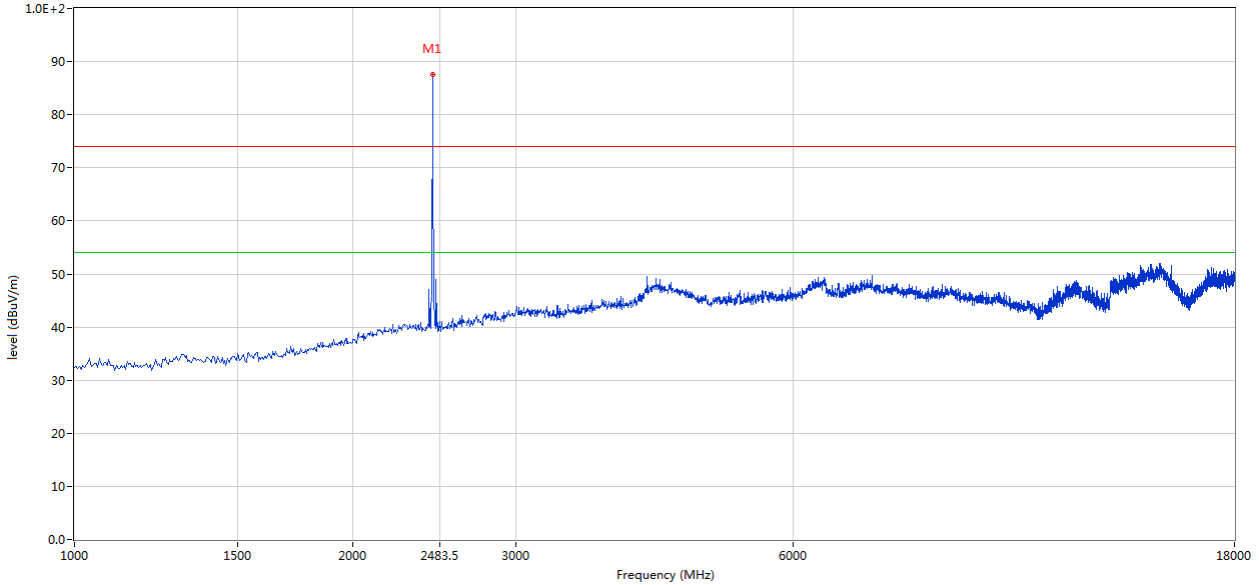
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**Vertical**

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2441	87.59	-3.57	114.0	-26.41	Peak	46.00	100	Vertical	Pass

The report refers only to the sample tested and does not apply to the bulk.

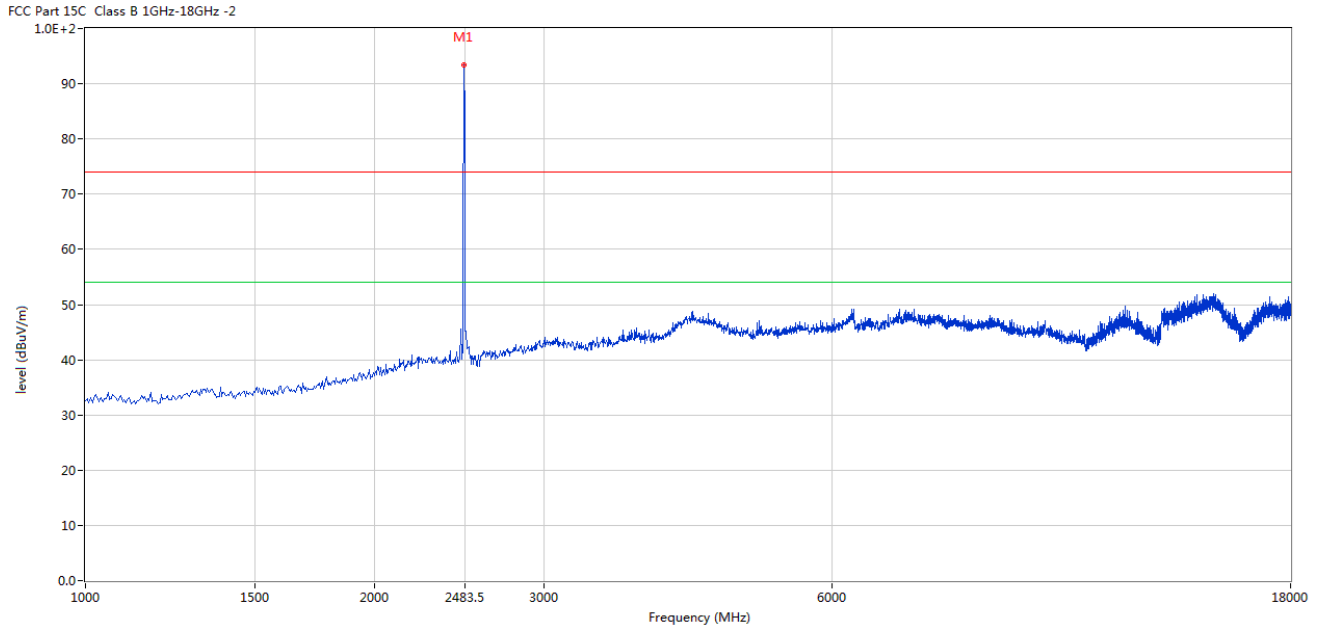
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Please refer to the following test plots for details: High Channel-2480MHz

**Horizontal**



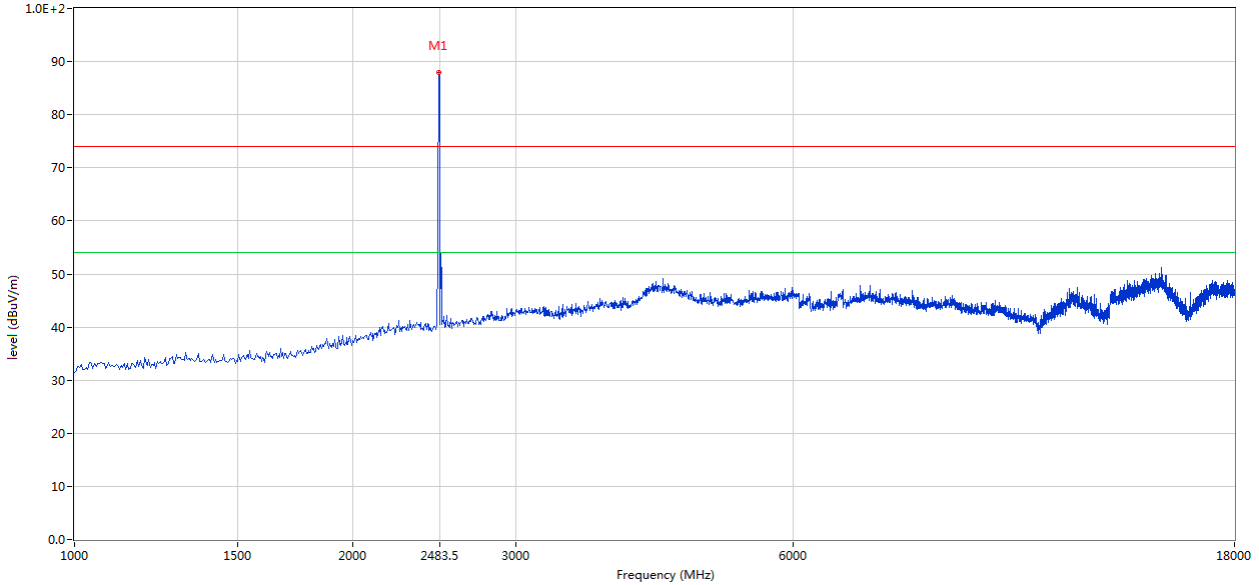
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480	93.50	-3.57	114.0	-20.50	Peak	354.00	100	Horizontal	Pass

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**Vertical**

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480	87.92	-3.57	114.0	-26.08	Peak	248.00	100	Vertical	Pass

- Note:
- (2) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier
  - (3) Margin=Emission-Limits
  - (4) According to section 15.35(b), the peak limit is 20dB higher than the average limit
  - (5) For test purpose, keep EUT continuous transmitting
  - (5) For emission above 18GHz and Below 30MHz, It is only the floor noise. No necessary to take down.
  - (6) the measured PK value less than the AV limit.

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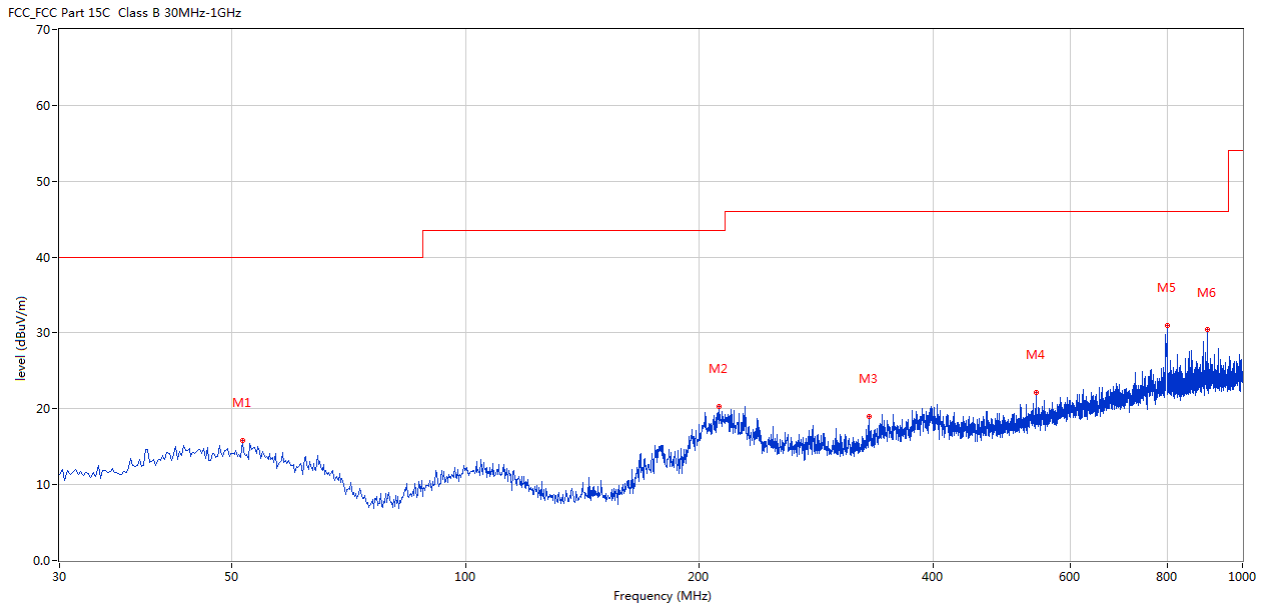


**B. General Radiated Emission Data**  
**Radiated Emission In Horizontal (30MHz----1000MHz)**

EUT set Condition: Keep Tx transmitting

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	51.577	15.81	-11.41	40.0	-24.19	Peak	357.00	100	Horizontal	Pass
2	212.072	20.34	-13.68	43.5	-23.16	Peak	266.00	100	Horizontal	Pass
3	330.867	18.95	-10.17	46.0	-27.05	Peak	337.00	100	Horizontal	Pass
4	542.517	22.14	-6.36	46.0	-23.86	Peak	297.00	100	Horizontal	Pass
5	799.745	30.92	-2.97	46.0	-15.08	Peak	31.00	100	Horizontal	Pass
6	900.357	30.39	-1.88	46.0	-15.61	Peak	146.00	100	Horizontal	Pass

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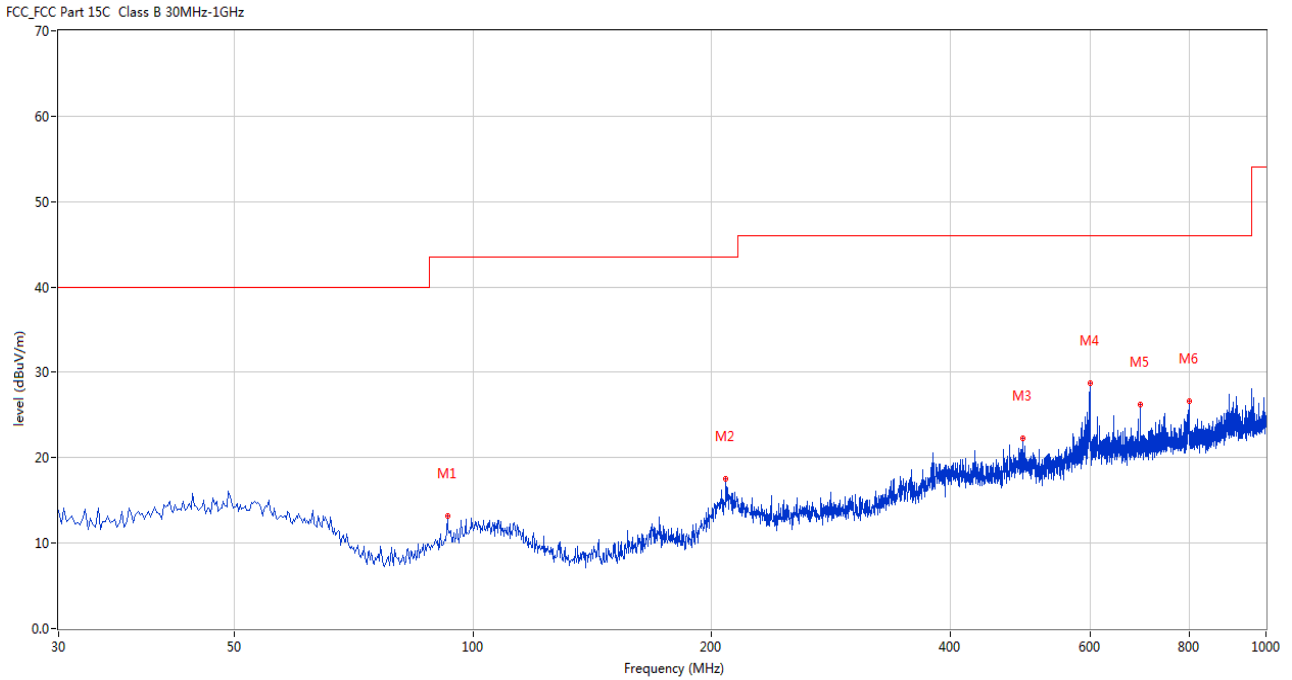


**Radiated Emission In Vertical (30MHz----1000MHz)**

EUT set Condition: Keep Tx transmitting

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	92.792	13.21	-14.52	43.5	-30.29	Peak	355.00	100	Vertical	Pass
2	208.435	17.52	-13.69	43.5	-25.98	Peak	335.00	100	Vertical	Pass
3	494.029	22.29	-7.12	46.0	-23.71	Peak	332.00	100	Vertical	Pass
4	599.975	28.70	-4.95	46.0	-17.30	Peak	158.00	100	Vertical	Pass
5	694.284	26.27	-4.38	46.0	-19.73	Peak	118.00	100	Vertical	Pass
6	799.745	26.60	-2.97	46.0	-19.40	Peak	210.00	100	Vertical	Pass

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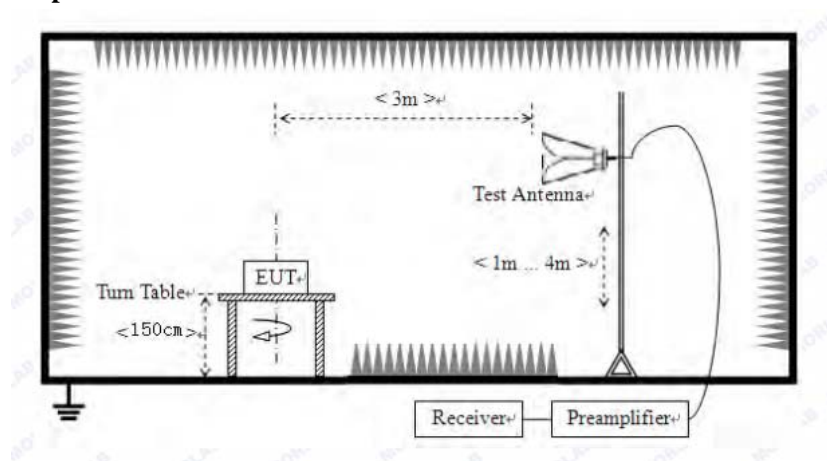
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## 7. Band Edge

### 7.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.10–2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) Set Spectrum as RBW=1MHz, VBW=3MHz and Peak detector used for PK value. RBW=1MHz, VBW=10Hz and Peak detector used for AV value.
- (3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (4) The antenna polarization: Vertical polarization and Horizontal polarization.

### 7.2 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing

### 7.3 Configuration of The EUT

Same as section 5.3 of this report

### 7.4 EUT Operating Condition

Same as section 5.4 of this report.

### 7.5 Band Edge Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

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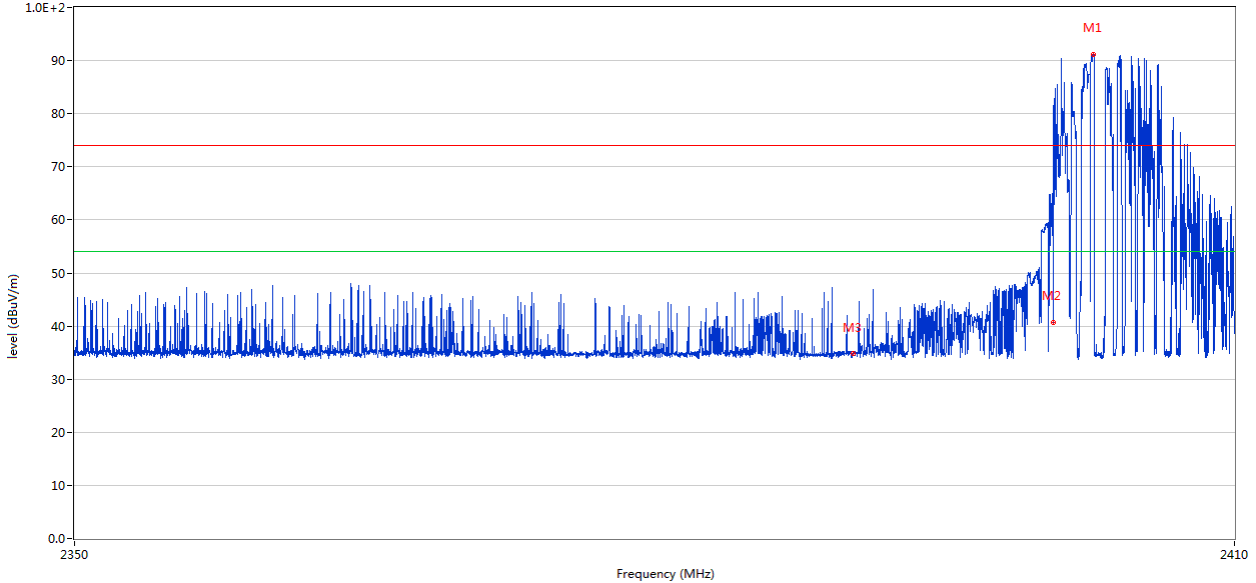
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**7.6 Test Result**

Product:	Dongle	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	DC5.0V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC Part 15C Class B 1GHz-18GHz -2  
 1.0E+2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402.637	92.17	-3.57	74.0	18.17	Peak	360.00	100	Horizontal	N/A
2	2400.537	41.72	-3.57	74.0	-32.28	Peak	320.00	100	Horizontal	Pass
3	2390.130	36.56	-3.53	74.0	-37.44	Peak	111.00	100	Horizontal	Pass

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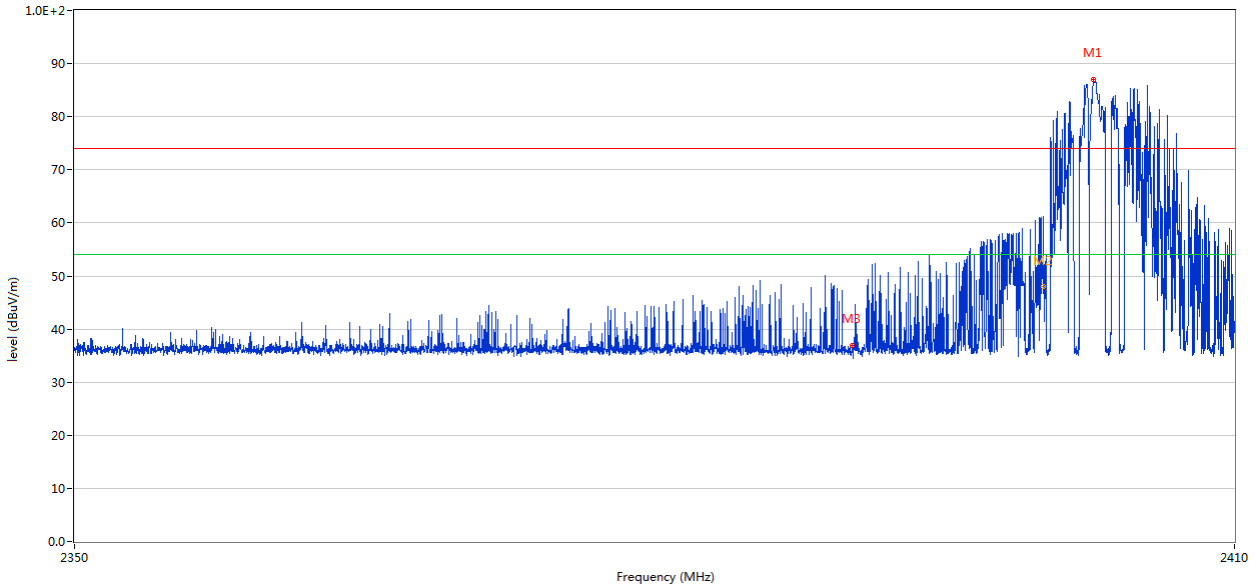
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Product:	Dongle	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	DC5.0V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402.622	87.09	-3.57	74.0	13.09	Peak	20.00	100	Vertical	N/A
2	2400.012	61.29	-3.57	74.0	-12.71	Peak	316.00	100	Vertical	Pass
2**	2400.012	48.08	-3.57	54.0	-5.92	AV	316.00	100	Vertical	Pass
3	2390.055	36.92	-3.53	74.0	-37.08	Peak	267.00	100	Vertical	Pass

The report refers only to the sample tested and does not apply to the bulk.

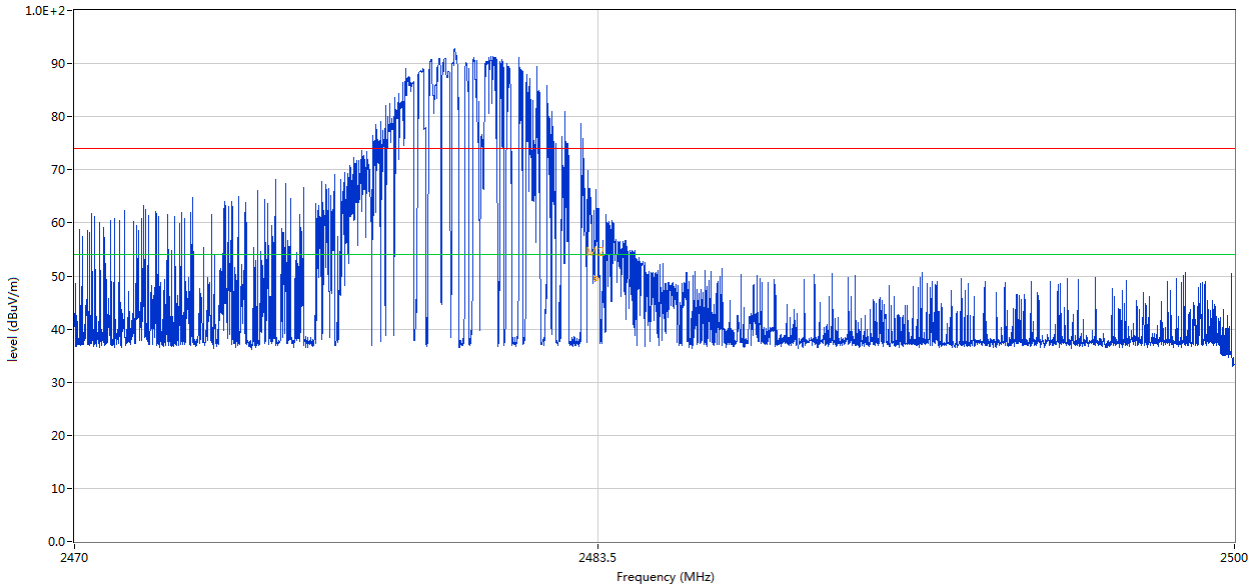
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Product:	Dongle	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	DC5.0V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.793	92.77	-3.57	74.0	18.77	Peak	135.00	100	Horizontal	N/A
2	2483.437	61.29	-3.57	74.0	-12.71	Peak	32.00	100	Horizontal	Pass
2**	2483.437	49.54	-3.57	54.0	-4.46	AV	32.00	100	Horizontal	Pass

The report refers only to the sample tested and does not apply to the bulk.

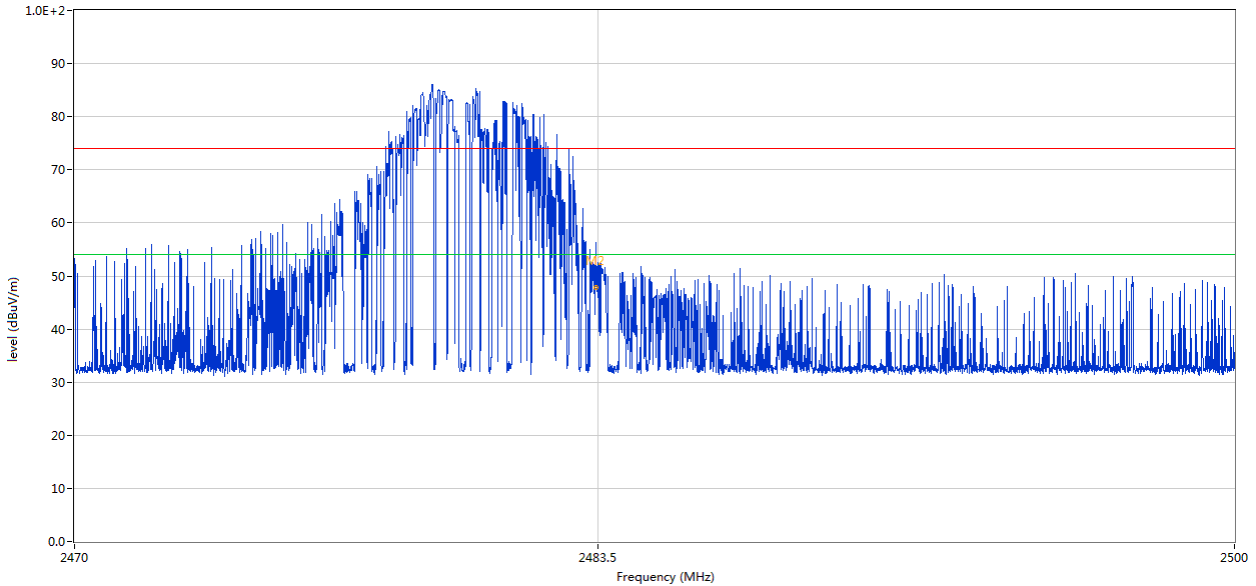
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Product:	Dongle	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	DC5.0V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.238	87.13	-3.57	74.0	13.13	Peak	55.00	100	Vertical	N/A
2	2483.444	56.22	-3.57	74.0	-17.78	Peak	61.00	100	Vertical	Pass
2**	2483.444	47.89	-3.57	54.0	-6.11	AV	61.00	100	Vertical	Pass

Note: 1. The PK emission level less than the AV limit. No necessary to record the AV emission level.

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## 8.0 Antenna Requirement

### Applicable Standard

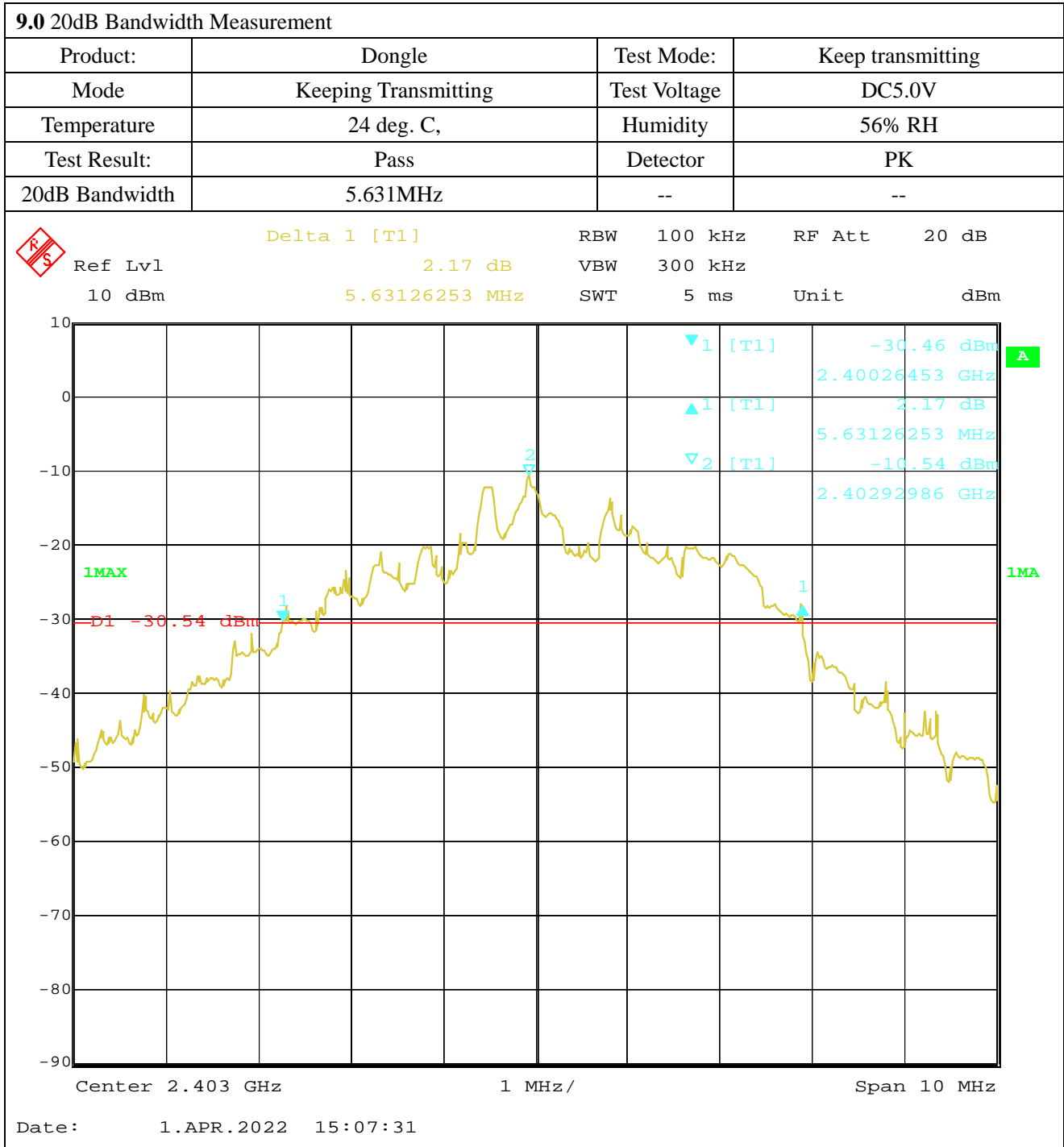
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

This product has a PCB antenna. The antenna gain is -1.66dBi Max. It fulfills the requirement of this section.  
Test Result: Pass

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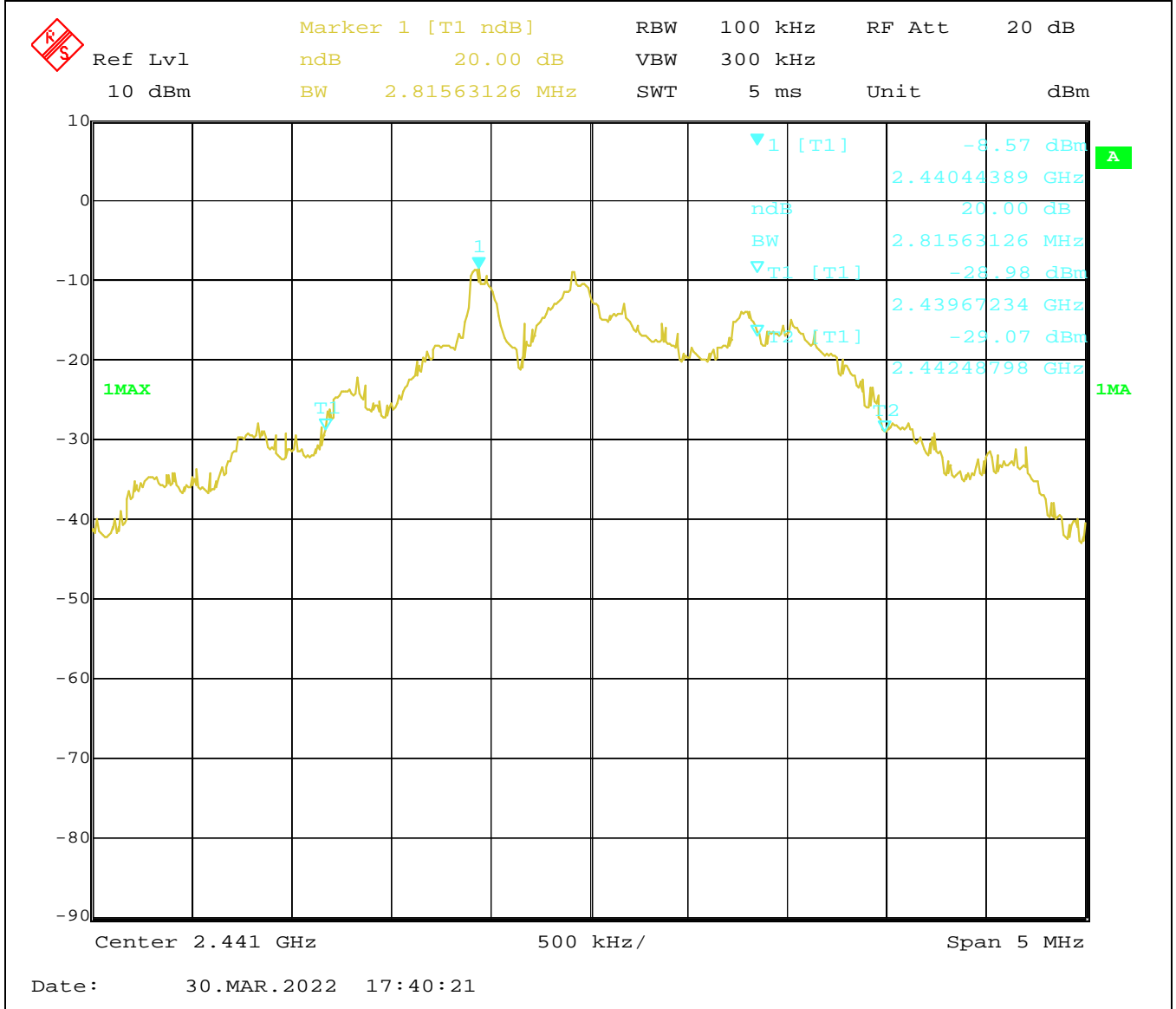
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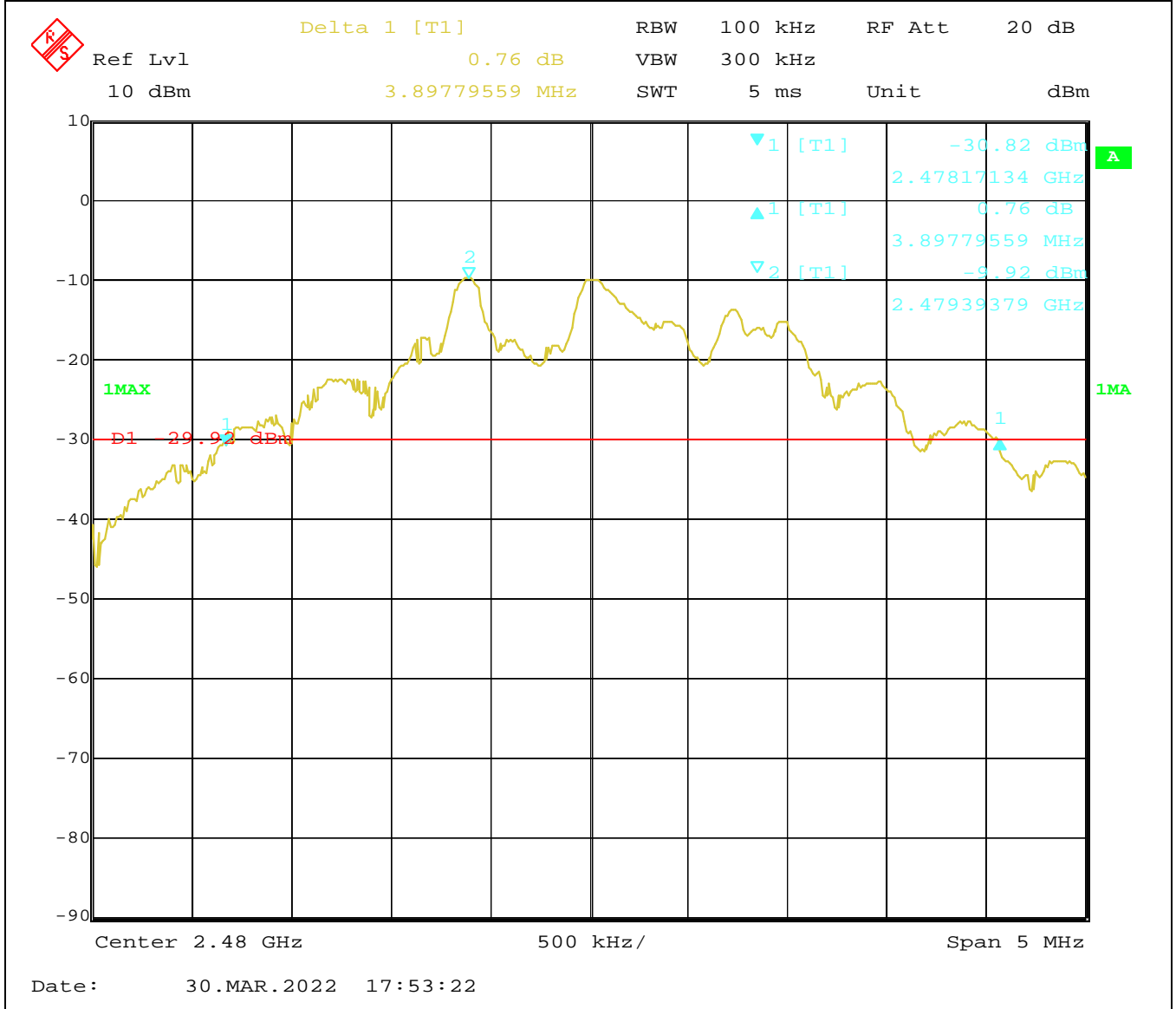
Product:	Dongle	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC5.0V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	2.816MHz	--	--



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Product:	Dongle	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC5.0V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	3.898MHz	--	--



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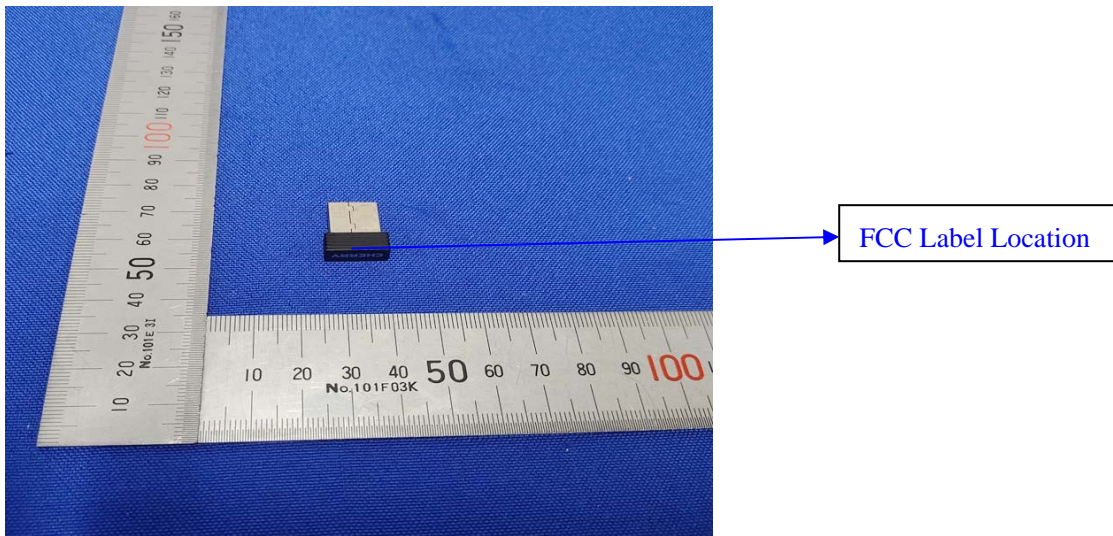


## 10.0 FCC ID Label

**FCC ID: GDDJR-2180**

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

### Mark Location:



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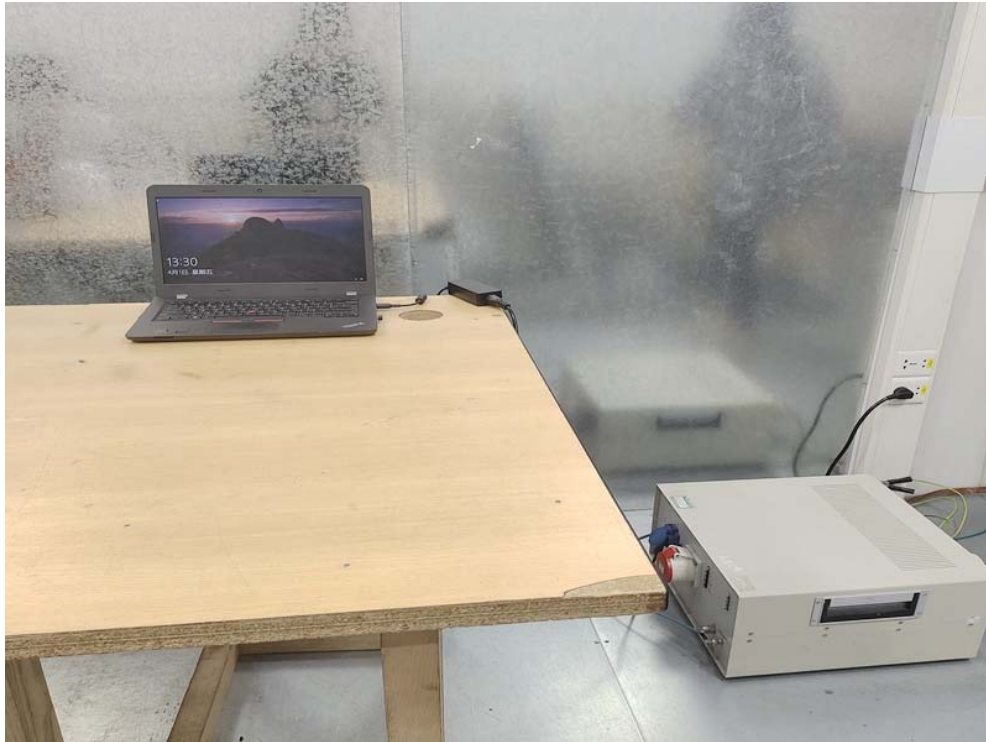
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**11.0** Photo of testing

**11.1** Conducted test View



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Radiated emission test view



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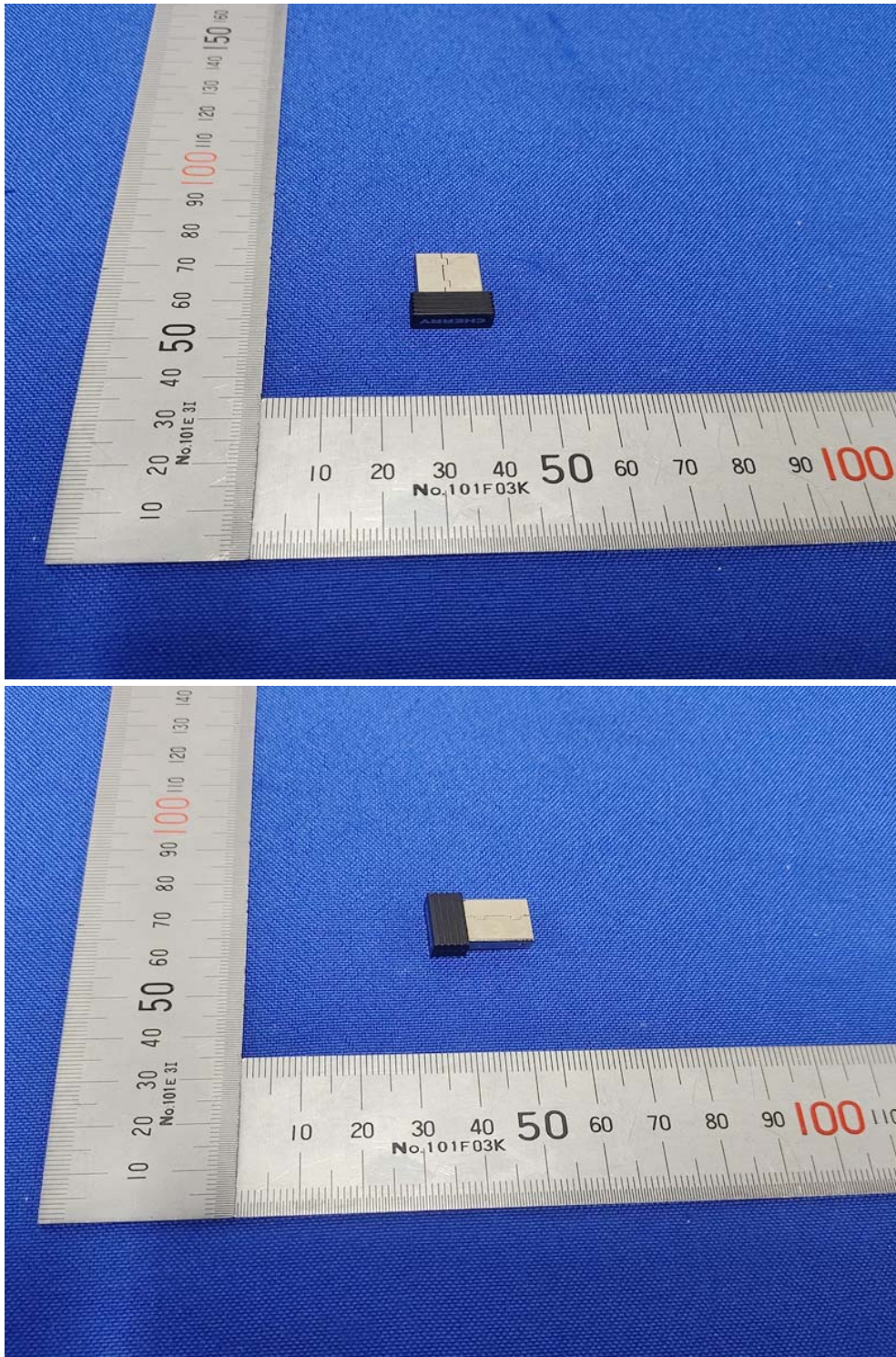
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11.2 Photographs – EUT

Outside View



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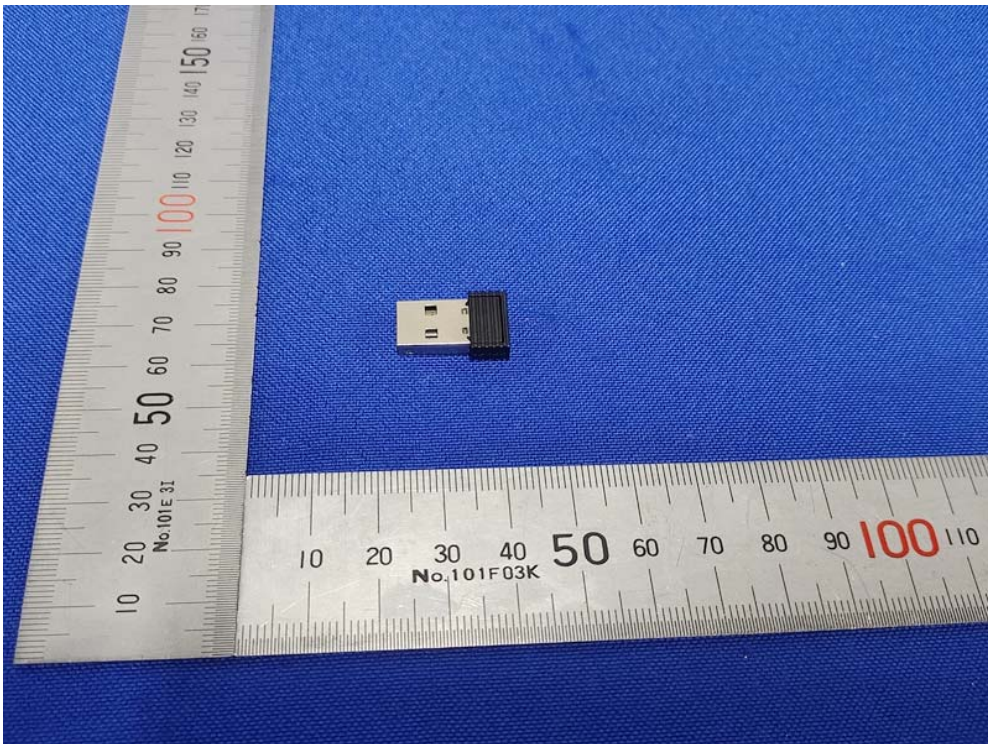
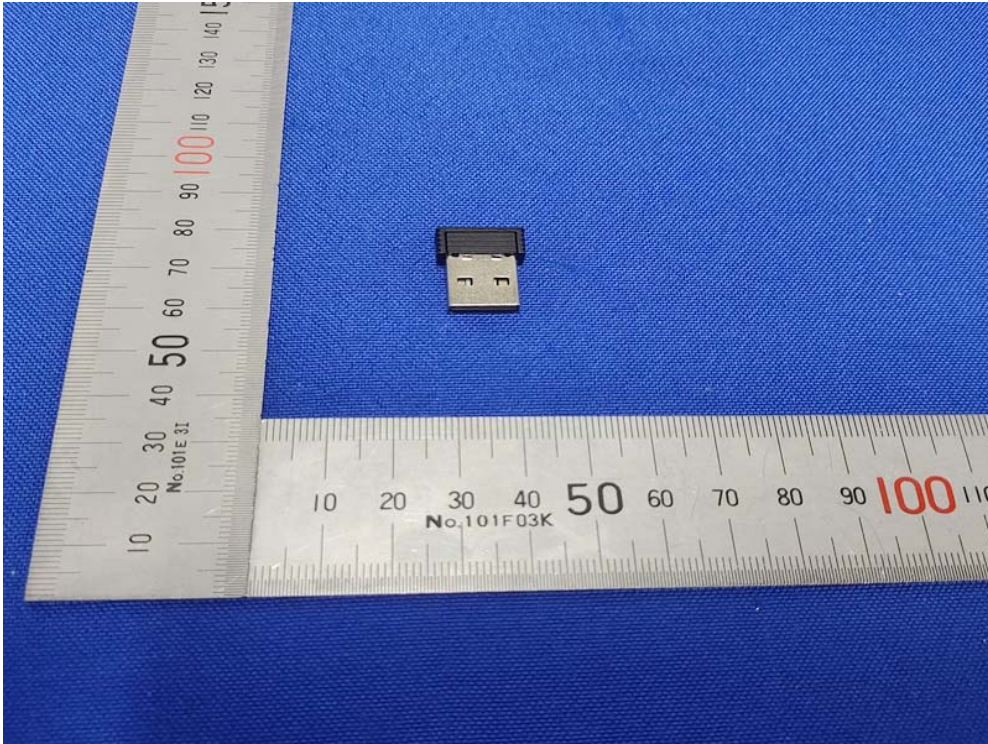
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Outside View



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Outside View



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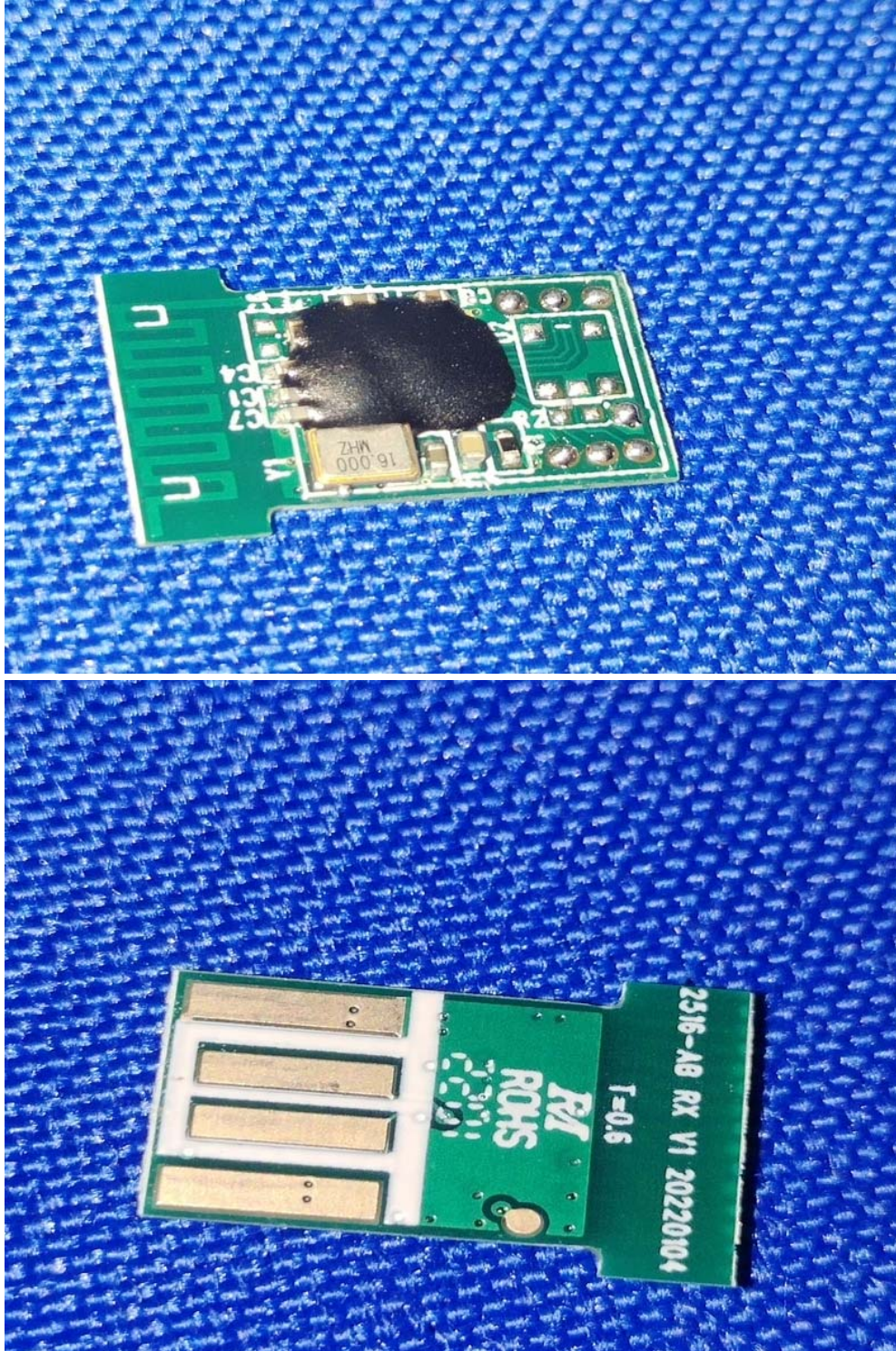
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Inside view



--End of the report--

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