

**TCB**

**GRANT OF EQUIPMENT  
AUTHORIZATION**

**TCB**

**Certification**

**Issued Under the Authority of the  
Federal Communications Commission**

**By:**

**Bay Area Compliance Laboratories Corp.  
1274 Anvilwood Avenue  
Sunnyvale, CA 94089**

**Date of Grant: 02/26/2024**

**Application Dated: 02/26/2024**

**PO FUNG ELECTRONIC (HK) INTERNATIONAL GROUP  
COMPANY LIMITED**

**Room 1508, 15/F, Office Tower II,  
Grand Plaza, 625 Nathan Road  
Kowloon,  
Hong Kong**

**Attention: Peter Wang**

**NOT TRANSFERABLE**

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

**FCC IDENTIFIER: 2AJGMUV17M**  
**Name of Grantee: PO FUNG ELECTRONIC (HK)  
INTERNATONAL GROUP COMPANY  
LIMITED**

**Equipment Class: Scanning Receiver**  
**Notes: Amateur Radio**

**Grant Notes**

**FCC Rule Parts**

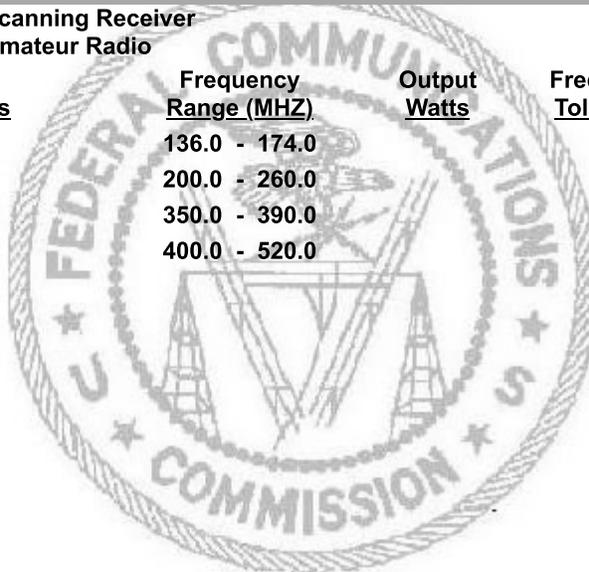
**15B  
15B  
15B  
15B**

**Frequency  
Range (MHZ)**  
**136.0 - 174.0  
200.0 - 260.0  
350.0 - 390.0  
400.0 - 520.0**

**Output  
Watts**

**Frequency  
Tolerance**

**Emission  
Designator**



## The Attestation Letter

To Whom It May Concern,

We hereby guarantee that the plots, were carefully reviewed and checked, and confirmed that all data in the test report # CR231165353-00A are from the raw plots data that were used by the test engineer.

We confirm that the raw data and plots are tested based on the EUT and attest that duplicate test data and/or plot(s) are not inadvertently used in any test reports.

Project No.: CR231165353

FCC ID: 2AJGMUV17M

Product Name: Amateur Radio

Product Model: UV-17M, AR-17M, TH-17M, RD-17M, BF-17M, MB-17M, M-17  
PRO, MK-17M, UV-17R PLUS

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)

The project engineer: *Silene Wu 伍惠霞*

The report reviewer: *Julie Tan 谭惠霞*

The report approver: *Sam Hong 钟德亮*

Date: 2024.2.1



**中认信通**

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



Certificate #6356.01

## TEST REPORT

**Applicant: PO FUNG ELECTRONIC (HK) INTERNATIONAL GROUP COMPANY LIMITED**

Address: Room 1508, 15/F, Office Tower II, Grand Plaza, 625 Nathan Road, Kowloon, Hong Kong

**Product Name: Amateur Radio**

**Standard(S): FCC PART 97  
ANSI C63.26-2015  
TIA-603-E-2016**

The above device has been tested and found compliance with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

**Report Number: CR231165353-00B**

**Date Of Issue: 2024/1/18**

**Reviewed By: Julie Tan**

Title: RF Engineer

*Julie Tan*

**Approved By: Sun Zhong**

Title: Manager

*Sun Zhong*

**Test Laboratory: China Certification ICT Co., Ltd (Dongguan)**

No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China

Tel: +86-769-82016888



## Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

## Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

This report cannot be reproduced except in full, without prior written approval of the Company.

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk “★”.

# CONTENTS

<b>DOCUMENT REVISION HISTORY .....</b>	<b>4</b>
<b>1. GENERAL INFORMATION .....</b>	<b>5</b>
<b>1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) .....</b>	<b>5</b>
<b>1.2 TECHNICAL SPECIFICATION .....</b>	<b>5</b>
<b>1.3 DESCRIPTION OF TEST CONFIGURATION .....</b>	<b>6</b>
1.3.2 Support Equipment List and Details.....	6
1.3.3 Support Cable List and Details.....	6
1.3.4 Block Diagram of Test Setup .....	6
<b>1.4 MEASUREMENT UNCERTAINTY .....</b>	<b>7</b>
<b>2. SUMMARY OF TEST RESULTS .....</b>	<b>8</b>
<b>3. REQUIREMENTS AND TEST PROCEDURES .....</b>	<b>9</b>
<b>3.1 RF OUTPUT POWER.....</b>	<b>9</b>
3.1.1 Applicable Standard.....	9
3.1.2 Test Procedure.....	9
<b>3.2 MODULATION CHARACTERISTIC: .....</b>	<b>9</b>
3.2.1 Applicable Standard.....	9
3.2.2 Test Procedure.....	9
<b>3.3 OCCUPIED BANDWIDTH &amp; EMISSION MASK:.....</b>	<b>9</b>
3.3.1 Applicable Standard.....	9
3.3.2 Test Procedure.....	9
<b>3.4 SPURIOUS EMISSIONS AT ANTENNA TERMINALS: .....</b>	<b>10</b>
3.4.1 Applicable Standard.....	10
3.4.2 Test Procedure.....	10
<b>3.5 RADIATED SPURIOUS EMISSIONS:.....</b>	<b>10</b>
3.5.1 Applicable Standard.....	10
3.5.2 Test Procedure.....	10
<b>3.6 FREQUENCY STABILITY: .....</b>	<b>10</b>
<b>3.6.1 APPLICABLE STANDARD .....</b>	<b>10</b>
3.6.2 Test Procedure.....	10
<b>4. Test DATA AND RESULTS .....</b>	<b>11</b>
<b>4.1 RF OUTPUT POWER.....</b>	<b>11</b>
<b>4.3 MODULATION CHARACTERISTIC: .....</b>	<b>14</b>
<b>4.4 OCCUPIED BANDWIDTH &amp; EMISSION MASK:.....</b>	<b>18</b>
<b>4.5 SPURIOUS EMISSIONS AT ANTENNA TERMINALS: .....</b>	<b>21</b>
<b>4.6 RADIATED SPURIOUS EMISSIONS:.....</b>	<b>28</b>
<b>4.7 FREQUENCY STABILITY .....</b>	<b>34</b>
<b>5– TEST SETUP PHOTOGRAPHS .....</b>	<b>37</b>
<b>6. EUT PHOTOGRAPHS .....</b>	<b>38</b>

**DOCUMENT REVISION HISTORY**

---

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR231165353-00B	Original Report	2024/1/18

## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment under Test (EUT)

<b>Product Name:</b>	Amateur Radio
<b>Test Model:</b>	UV-17M
<b>Multiple Models:</b>	AR-17M, TH-17M, RD-17M, BF-17M, MB-17M, M-17 PRO, MK-17M, UV-17R PLUS
<b>Rated Input Voltage:</b>	DC 7.4V from battery
<b>Serial Number:</b>	RE:2D9A-1 RF Conducted:2D99-1
<b>EUT Received Date:</b>	2023/11/7
<b>EUT Received Status:</b>	Good
Note: The multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

### Accessory Information:

No.

### Operation Frequency And Test Channel:

Operation Modes	Operation Frequency Range (MHz)	Test Frequency (MHz)
VHF Transmit	144-148	136.0125, 147.9875
UHF Transmit	420-450	420.0125, 435, 449.9875

### 1.2 Technical Specification

<b>Operation Frequency Range (MHz):</b>	<b>Transmit:</b>	144-148, 420-450
	<b>Receive:</b>	136-174,220-260, 350-390, 400-520
<b>Rated RF Output Power (Conducted) (W):</b>	<b>5</b>	
<b>Modulation Type:</b>	FM	
<b>Channel Spacing (kHz):</b>	12.5/25	

### 1.3 Description of Test Configuration

#### 1.3.1 EUT Operation Condition:

<b>EUT Operation Mode:</b>	The system was configured for testing in Engineering Mode, which was provided by the manufacturer <sup>▲</sup> .
<b>Equipment Modifications:</b>	No
<b>EUT Exercise Software:</b>	No

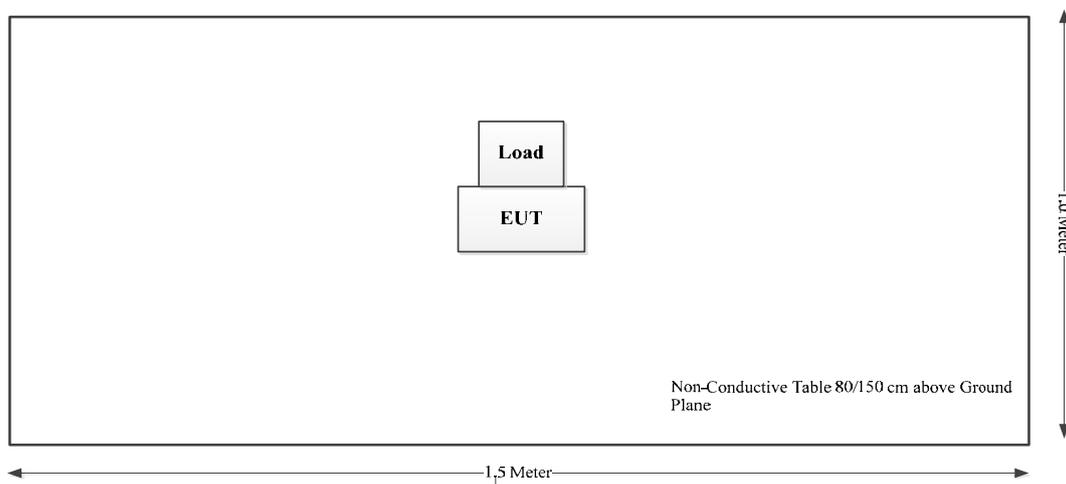
#### 1.3.2 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Fenfei	Load	N-J-2W	S1

#### 1.3.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
/	/	/	/	/	/

#### 1.3.4 Block Diagram of Test Setup



## 1.4 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Unwanted Emissions, radiated	30MHz ~ 1GHz: 5.85 dB 1G~26.5GHz: 5.23 dB
Unwanted Emissions, conducted	±1.5 dB
Temperature	±1 °C
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%

**2. SUMMARY OF TEST RESULTS**

FCC Rules	Description of Test	Results
§1.1307 §2.1093	RF Exposure	Compliance*
§2.1046 §97.313	RF Output Power	Compliance
§2.1047	Modulation Characteristic	Compliance
§2.1049 §97.305; §97.307	Occupied Bandwidth	Compliance
§2.1051 §97.307	Spurious Emission at Antenna Terminal	Compliance
§2.1053 §97.307	Spurious Radiated Emissions	Compliance
§2.1055	Frequency Stability	Compliance

Note:

Compliance\*: Please refer to the SAR report NO. : CR231165353-20.

## **3. REQUIREMENTS AND TEST PROCEDURES**

---

### **3.1 RF OUTPUT POWER**

#### **3.1.1 Applicable Standard**

FCC §2.1046, §97.313

#### **3.1.2 Test Procedure**

Conducted RF Output Power:

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

Spectrum Analyzer Setting:

R B/W	Video B/W
100 kHz	300 kHz

### **3.2 MODULATION CHARACTERISTIC:**

#### **3.2.1 Applicable Standard**

FCC §2.1047

- (a) Equipment which utilizes voice modulated communication shall show the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz. for equipment which is required to have a low pass filter, the frequency response of the filter, or all of the circuitry installed between the modulation limited and the modulated stage shall be supplied.
- (b) Equipment which employs modulation limiting, a curve showing the percentage of modulation versus the modulation input voltage shall be supplied.

#### **3.2.2 Test Procedure**

Test Method: TIA-603-E 2.2.3

### **3.3 OCCUPIED BANDWIDTH & EMISSION MASK:**

#### **3.3.1 Applicable Standard**

FCC §2.1049, §97.305 and §97.307

#### **3.3.2 Test Procedure**

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 100 Hz or 300 Hz and the spectrum was recorded in the frequency band  $\pm 50$  kHz from the carrier frequency.

### **3.4 SPURIOUS EMISSIONS AT ANTENNA TERMINALS:**

#### **3.4.1 Applicable Standard**

FCC §2.1051, and §97.307

#### **3.4.2 Test Procedure**

The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100kHz for below 1GHz, and 1MHz for above 1GHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

### **3.5 RADIATED SPURIOUS EMISSIONS:**

#### **3.5.1 Applicable Standard**

FCC §2.1053, and §97.307

#### **3.5.2 Test Procedure**

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to teeth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001)-the absolute level

### **3.6 FREQUENCY STABILITY:**

#### **3.6.1 Applicable Standard**

FCC §2.1055

#### **3.6.2 Test Procedure**

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a frequency counter via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the counter.

## 4. Test DATA AND RESULTS

### 4.1 RF OUTPUT POWER

Serial Number:	2D99-1	Test Date:	2023/11/15
Test Site:	RF	Test Mode:	Transmitting
Tester:	Morpheus Shi	Test Result:	Pass

#### Environmental Conditions:

Temperature: (°C)	24	Relative Humidity: (%)	41	ATM Pressure: (kPa)	101.7
----------------------	----	------------------------------	----	------------------------	-------

#### Test Equipment List and Details:

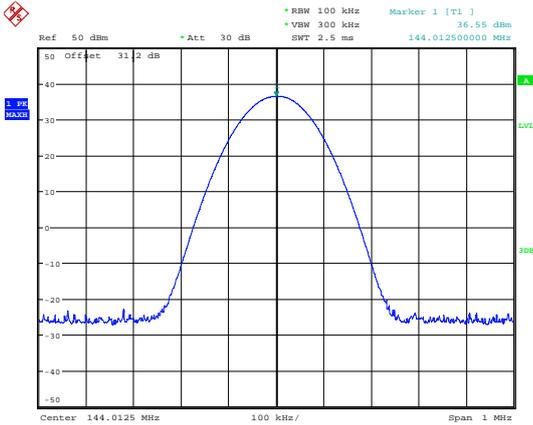
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200445	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Coaxial Attenuator	53-20-34	LN751	Each time	N/A
HP	RF Communications Test Set	8920A	3438A05209	2023/3/31	2024/3/30

\* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

#### Test Data:

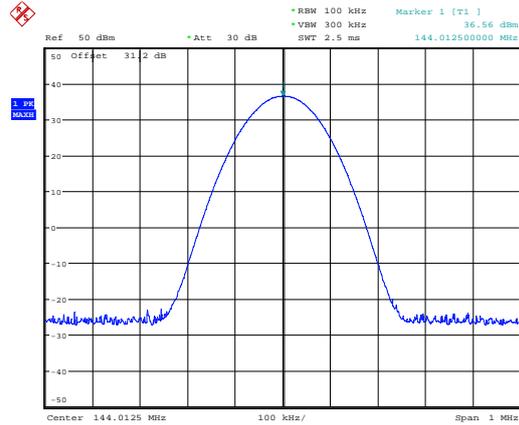
Channel Separation	Test Frequency	Reading
	MHz	dBm
12.5kHz	144.0125	36.55
	147.9875	36.36
	420.0125	36.39
	435	36.51
	449.9875	36.73
25kHz	144.0125	36.56
	147.9875	36.35
	420.0125	36.42
	435	36.51
	449.9875	36.72

### FM, 12.5kHz 144.0125 MHz High Power



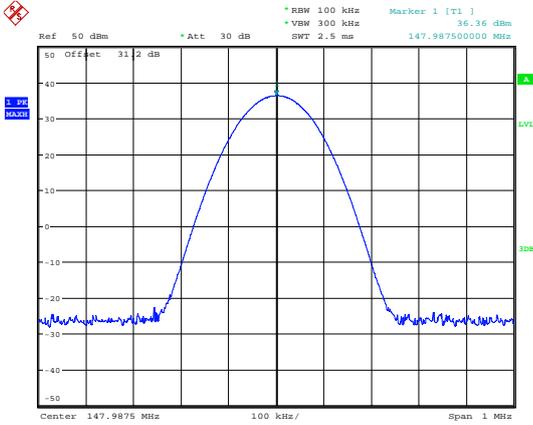
ProjectNo.:CR231165353-RP Tester:Morpheus Shi  
Date: 15.NOV.2023 11:53:06

### FM, 25kHz 144.0125 MHz High Power



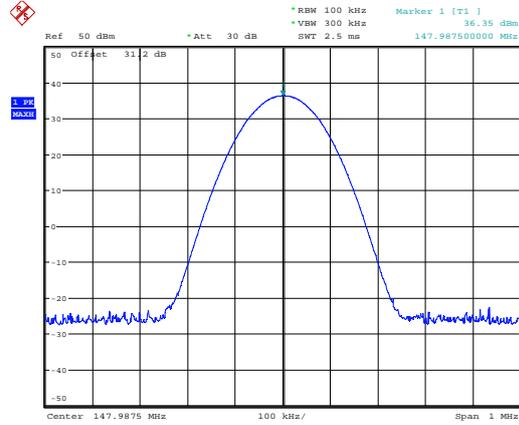
ProjectNo.:CR231165353-RP Tester:Morpheus Shi  
Date: 15.NOV.2023 11:53:49

### 147.9875MHz High Power



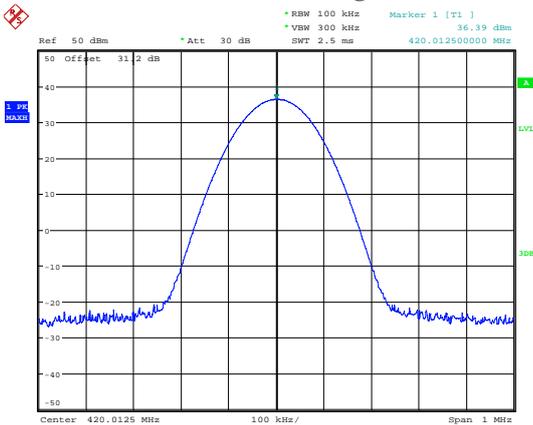
ProjectNo.:CR231165353-RP Tester:Morpheus Shi  
Date: 15.NOV.2023 11:55:08

### 147.9875 MHz High Power



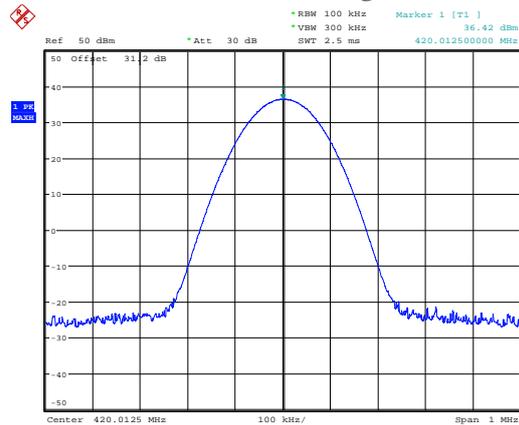
ProjectNo.:CR231165353-RP Tester:Morpheus Shi  
Date: 15.NOV.2023 11:55:41

### 420.0125 MHz High Power



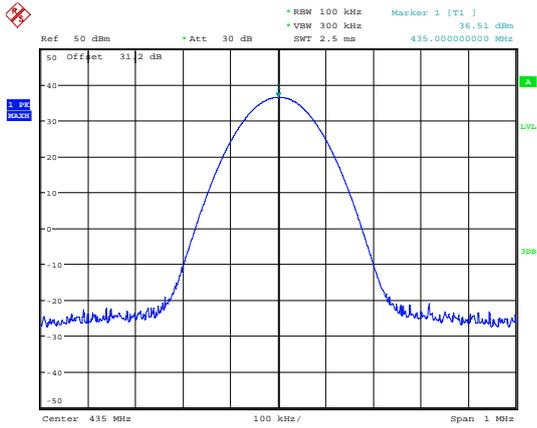
ProjectNo.:CR231165353-RP Tester:Morpheus Shi  
Date: 15.NOV.2023 11:56:59

### 420.0125 MHz High Power



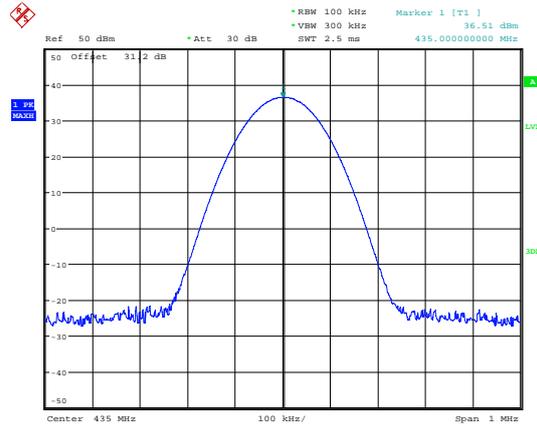
ProjectNo.:CR231165353-RP Tester:Morpheus Shi  
Date: 15.NOV.2023 11:57:24

### FM, 12.5kHz 435 MHz High Power



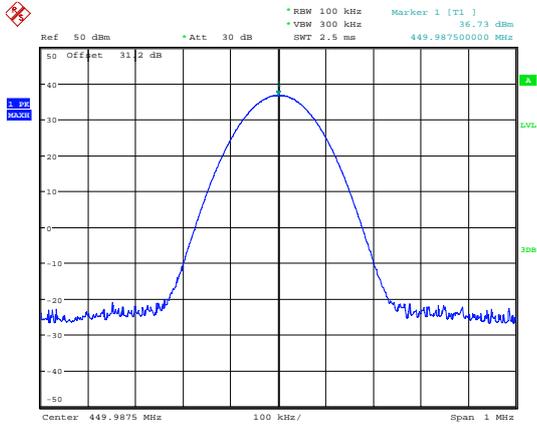
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 11:57:56

### FM, 25kHz 435 MHz High Power



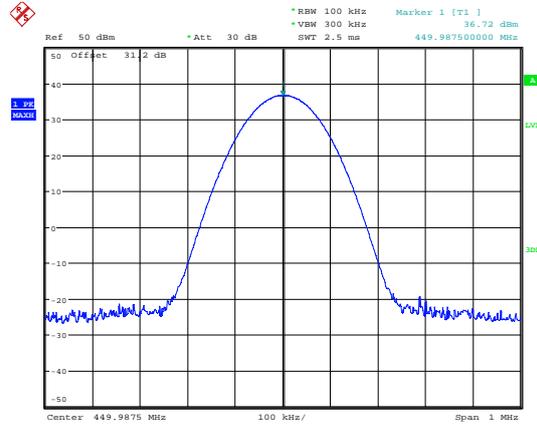
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 11:58:20

### 449.9875 MHz High Power



ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 11:58:51

### 449.9875 MHz High Power



ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 11:59:18

**4.3 MODULATION CHARACTERISTIC:**

Serial Number:	2D99-1	Test Date:	2023/11/15
Test Site:	RF	Test Mode:	Transmitting
Tester:	Morpheus Shi	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	24	Relative Humidity: (%)	41	ATM Pressure: (kPa)	101.7
----------------------	----	------------------------------	----	------------------------	-------

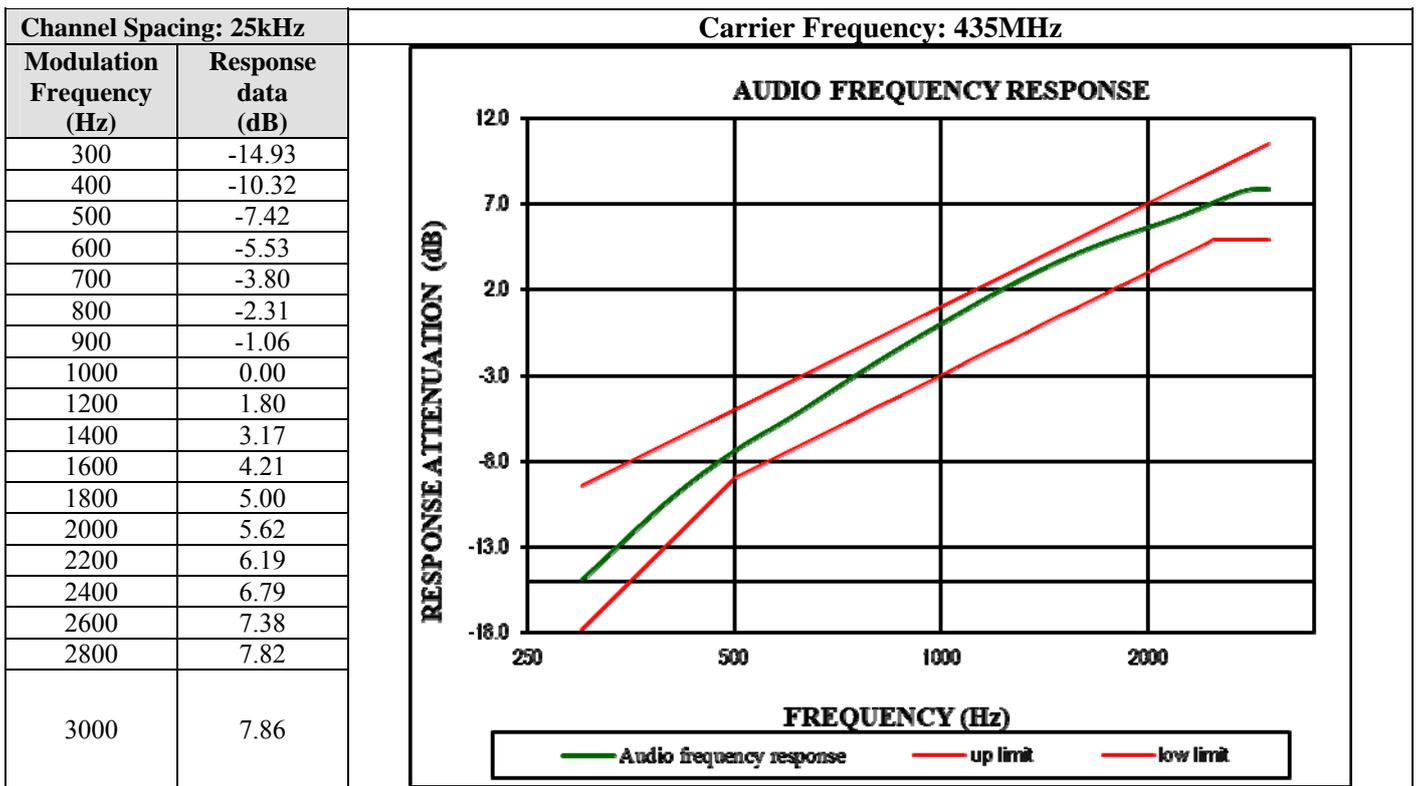
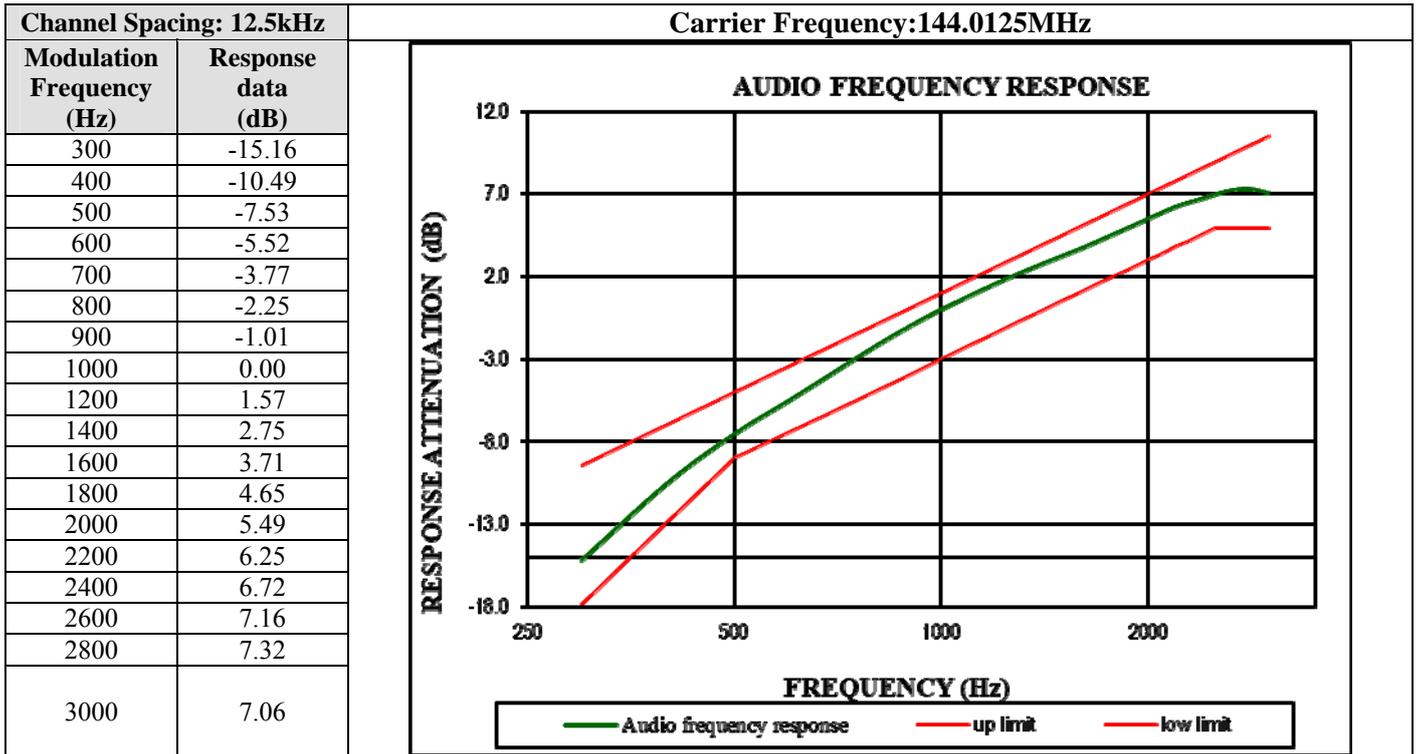
**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Coaxial Attenuator	53-20-34	LN751	Each time	N/A
HP	RF Communications Test Set	8920A	3438A05209	2023/3/31	2024/3/30

\* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

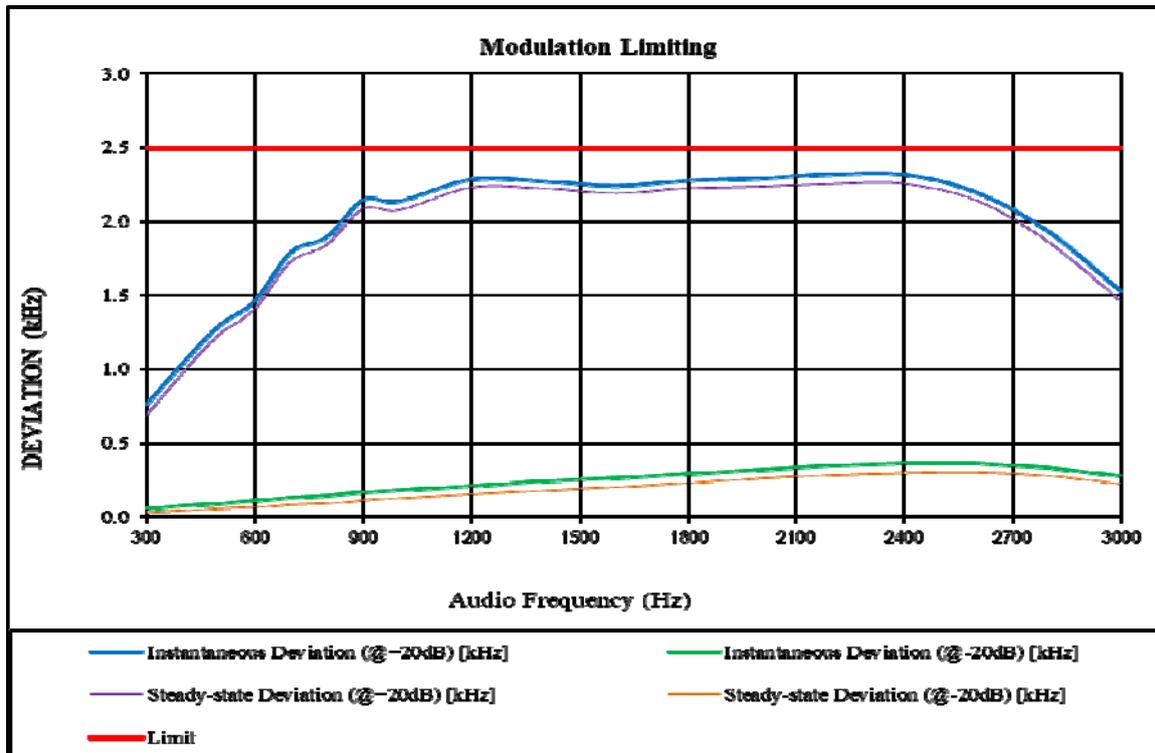
**Test Data:**

**Audio Frequency Response – High Power**

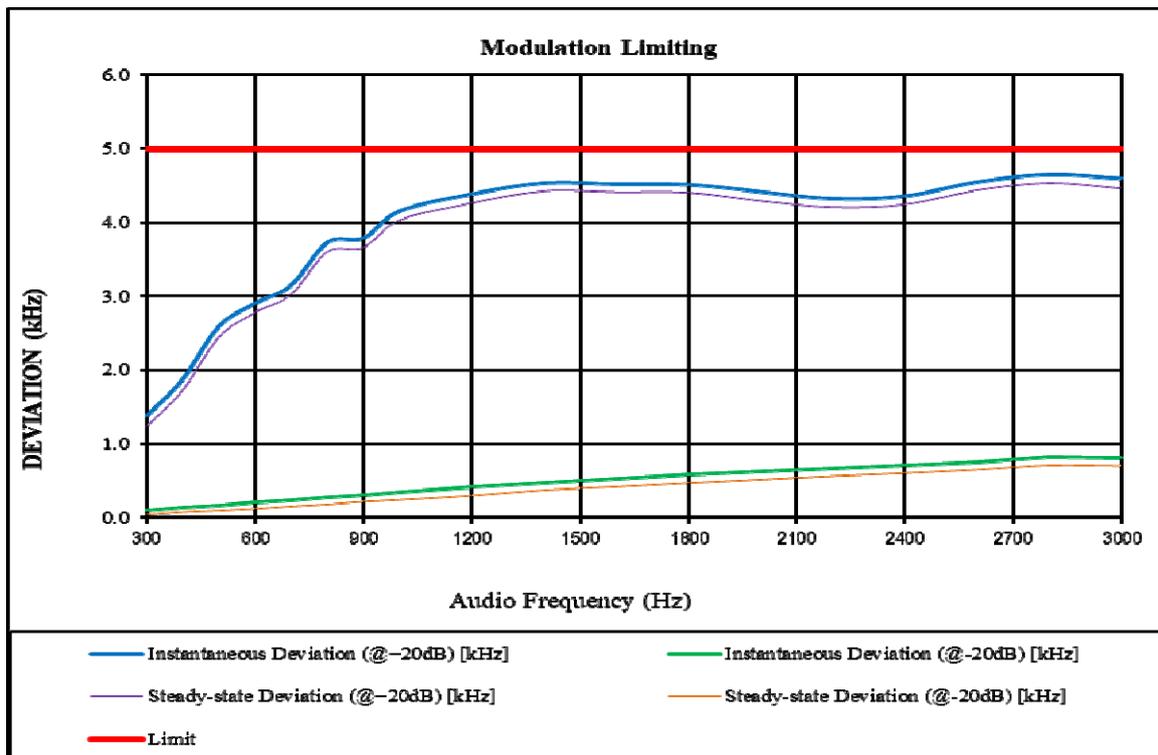


**Modulation Limiting – High Power**

Carrier Frequency:	144.0125	MHz			
Channel Separation:	12.5	kHz			
Audio Frequency (Hz)	Instantaneous		Steady-state		Limit [kHz]
	Deviation (@+20dB) [kHz]	Deviation (@-20dB) [kHz]	Deviation (@+20dB) [kHz]	Deviation (@-20dB) [kHz]	
300	0.759	0.058	0.684	0.032	2.5
400	1.040	0.077	0.971	0.044	2.5
500	1.294	0.094	1.232	0.058	2.5
600	1.463	0.111	1.407	0.067	2.5
700	1.794	0.133	1.730	0.086	2.5
800	1.897	0.148	1.845	0.093	2.5
900	2.146	0.167	2.088	0.114	2.5
1000	2.139	0.184	2.079	0.130	2.5
1200	2.285	0.212	2.233	0.155	2.5
1400	2.272	0.241	2.226	0.179	2.5
1600	2.243	0.268	2.195	0.203	2.5
1800	2.277	0.295	2.228	0.231	2.5
2000	2.293	0.322	2.239	0.264	2.5
2200	2.321	0.346	2.256	0.286	2.5
2400	2.319	0.364	2.257	0.298	2.5
2600	2.198	0.361	2.144	0.302	2.5
2800	1.932	0.335	1.865	0.281	2.5
3000	1.526	0.279	1.463	0.224	2.5



Carrier Frequency:	435	MHz			
Channel Separation:	25	kHz			
Audio Frequency (Hz)	Instantaneous		Steady-state		Limit [kHz]
	Deviation (@+20dB) [kHz]	Deviation (@-20dB) [kHz]	Deviation (@+20dB) [kHz]	Deviation (@-20dB) [kHz]	
300	1.377	0.100	1.235	0.041	5
400	1.876	0.139	1.732	0.078	5
500	2.592	0.173	2.448	0.097	5
600	2.905	0.206	2.781	0.122	5
700	3.150	0.242	3.029	0.156	5
800	3.729	0.277	3.604	0.183	5
900	3.788	0.313	3.662	0.220	5
1000	4.157	0.352	4.033	0.244	5
1200	4.386	0.419	4.265	0.301	5
1400	4.536	0.481	4.427	0.378	5
1600	4.520	0.535	4.414	0.422	5
1800	4.512	0.584	4.406	0.473	5
2000	4.417	0.622	4.293	0.518	5
2200	4.323	0.663	4.211	0.567	5
2400	4.357	0.711	4.245	0.605	5
2600	4.549	0.759	4.438	0.652	5
2800	4.648	0.827	4.535	0.713	5
3000	4.595	0.810	4.462	0.706	5



**4.4 OCCUPIED BANDWIDTH & EMISSION MASK:**

Serial Number:	2D99-1	Test Date:	2023/11/15
Test Site:	RF	Test Mode:	Transmitting
Tester:	Morpheus Shi	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	24	Relative Humidity: (%)	41	ATM Pressure: (kPa)	101.7
----------------------	----	------------------------------	----	------------------------	-------

**Test Equipment List and Details:**

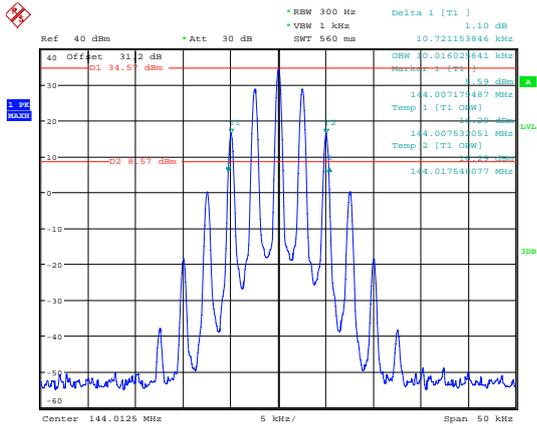
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200445	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Coaxial Attenuator	53-20-34	LN751	Each time	N/A
HP	RF Communications Test Set	8920A	3438A05209	2023/3/31	2024/3/30

\* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

**Test Data:**

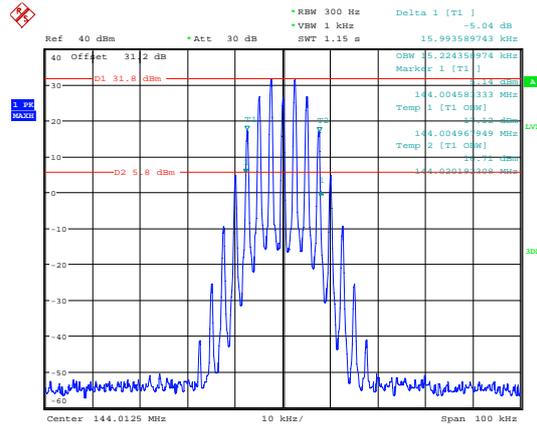
Test Mode	Test Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB Emission Bandwidth (kHz)
FM 12.5kHz	144.0125	10.016	10.721
	147.9875	10.016	10.721
	420.0125	10.016	10.721
	435	10.016	10.721
	449.9875	10.016	10.721
FM 25kHz	144.0125	15.224	15.994
	147.9875	15.224	15.994
	420.0125	15.064	16.154
	435	15.064	16.154
	449.9875	15.064	16.154

### FM, 12.5kHz 144.0125 MHz High Power



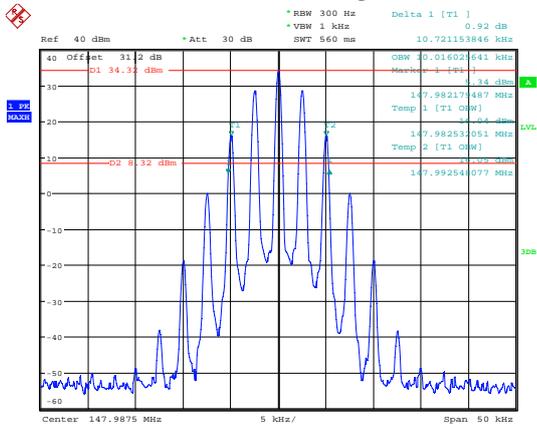
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 13:14:14

### FM, 25kHz 144.0125 MHz High Power



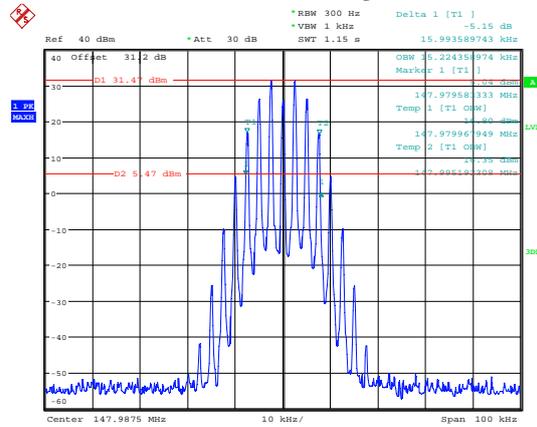
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 13:22:04

### 147.9875 MHz High Power



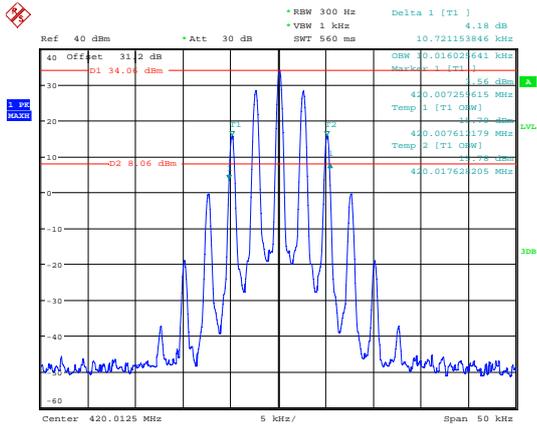
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 13:15:33

### 147.9875 MHz High Power



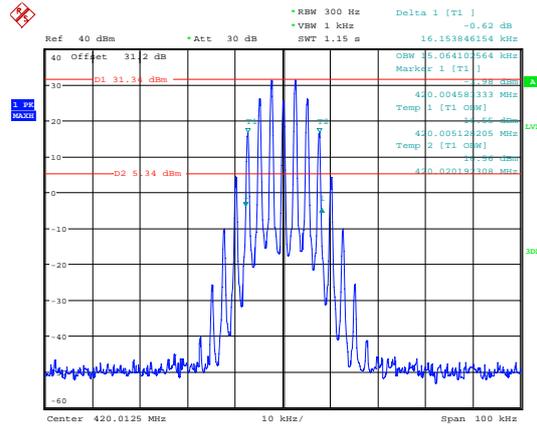
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 13:23:23

### FM, 12.5kHz 420.0125 MHz High Power



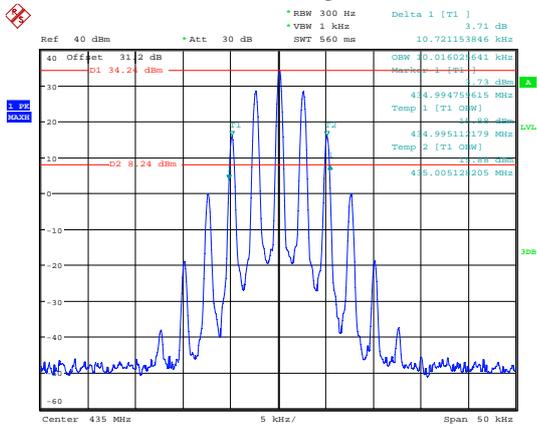
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 13:16:42

### FM, 25kHz 420.0125 MHz High Power



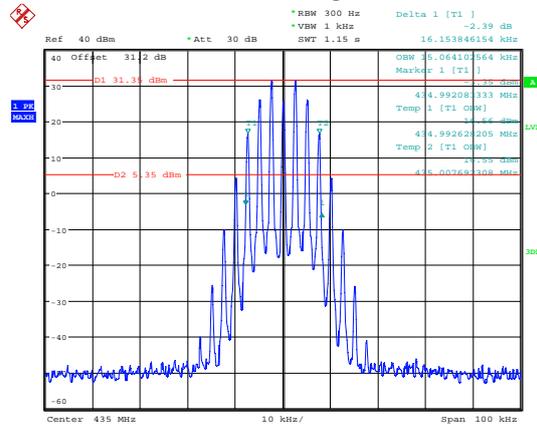
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 13:24:48

### 435MHz High Power



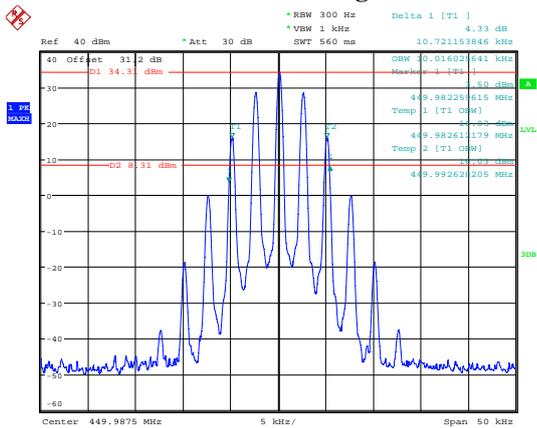
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 13:18:17

### 435 MHz High Power



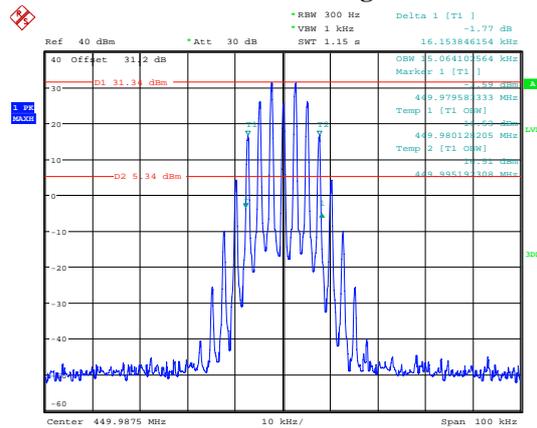
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 13:25:51

### 449.9875 MHz High Power



ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 13:20:28

### 449.9875 MHz High Power



ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 13:27:22

**4.5 SPURIOUS EMISSIONS AT ANTENNA TERMINALS:**

Serial Number:	2D99-1	Test Date:	2023/11/15
Test Site:	RF	Test Mode:	Transmitting
Tester:	Morpheus Shi	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	24	Relative Humidity: (%)	41	ATM Pressure: (kPa)	101.7
----------------------	----	------------------------------	----	------------------------	-------

**Test Equipment List and Details:**

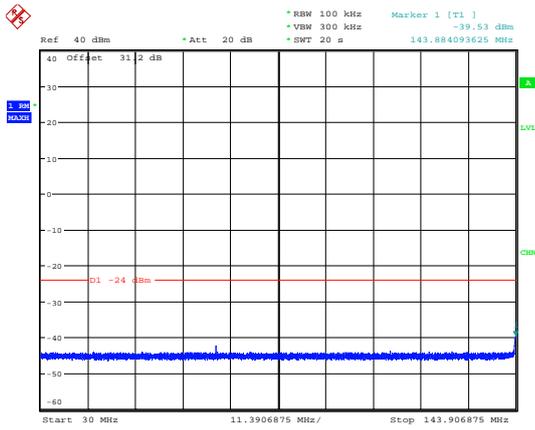
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200445	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Coaxial Attenuator	53-20-34	LN751	Each time	N/A
HP	RF Communications Test Set	8920A	3438A05209	2023/3/31	2024/3/30

\* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

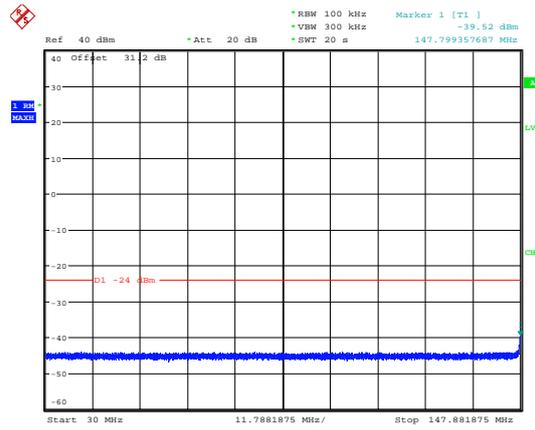
**Test Data:**

FM, 12.5kHz:

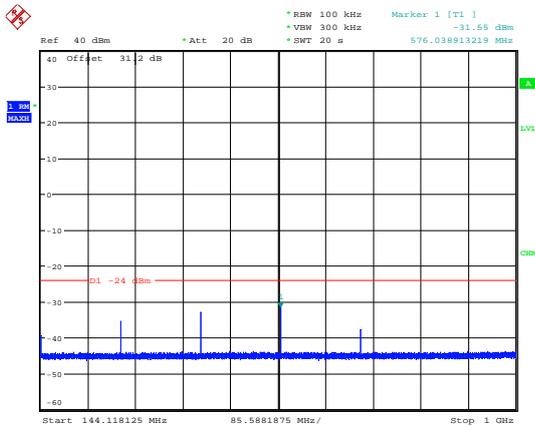
144.0125MHz



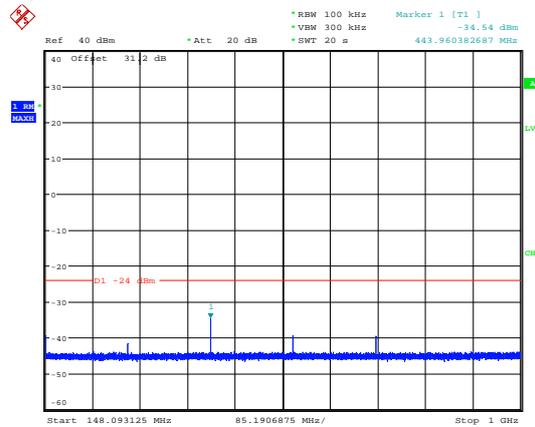
147.9875 MHz



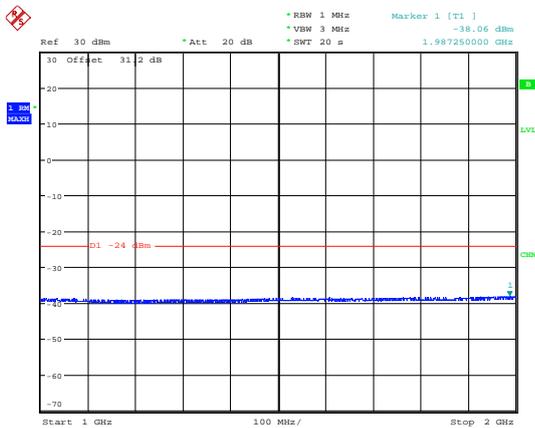
ProjectNo.:CR231165353-RF Tester:Morpheus Shi Date: 15.NOV.2023 14:06:10



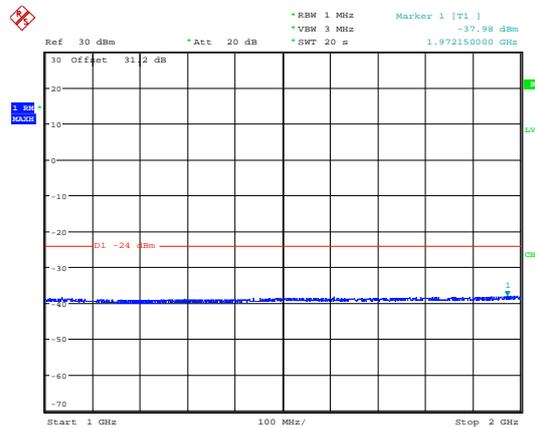
ProjectNo.:CR231165353-RF Tester:Morpheus Shi Date: 15.NOV.2023 14:15:50



ProjectNo.:CR231165353-RF Tester:Morpheus Shi Date: 15.NOV.2023 14:08:08



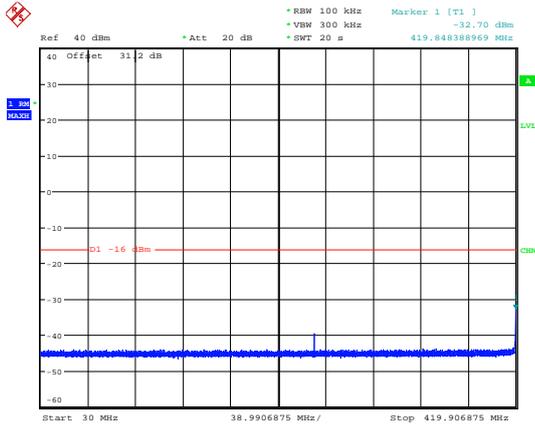
ProjectNo.:CR231165353-RF Tester:Morpheus Shi Date: 15.NOV.2023 14:17:38



ProjectNo.:CR231165353-RF Tester:Morpheus Shi Date: 15.NOV.2023 14:09:40

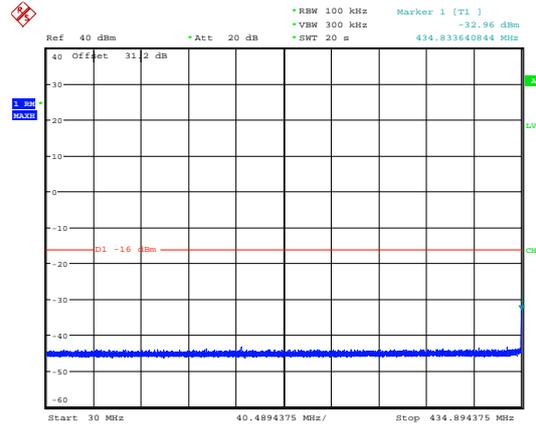
ProjectNo.:CR231165353-RF Tester:Morpheus Shi Date: 15.NOV.2023 14:18:38

### 420.0125MHz

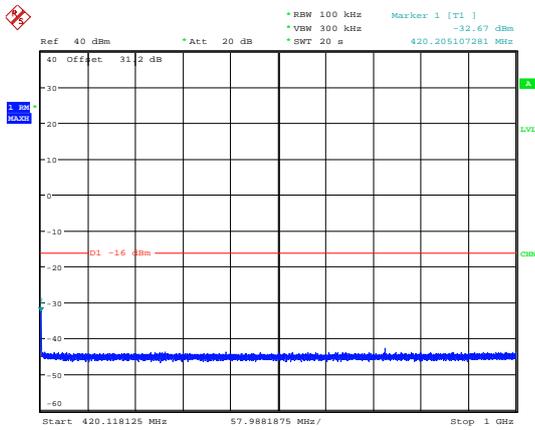


ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:27:07

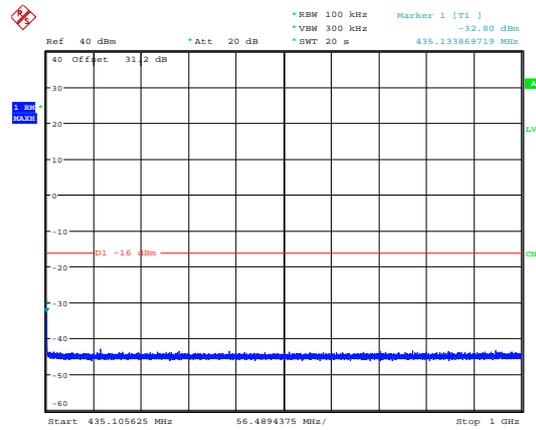
### 435 MHz



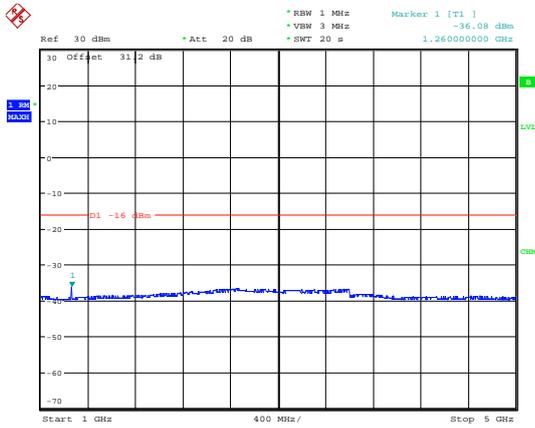
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:37:32



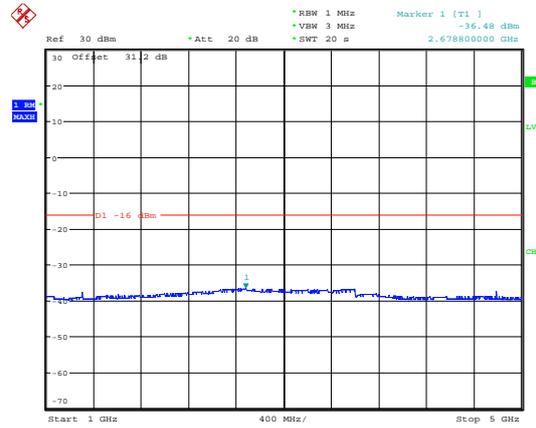
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:28:49



ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:39:37

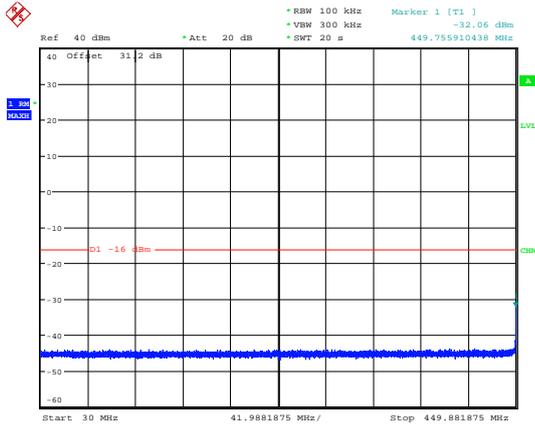


ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:30:11

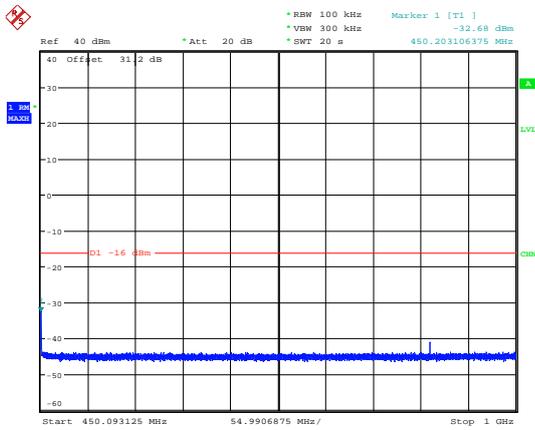


ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:40:53

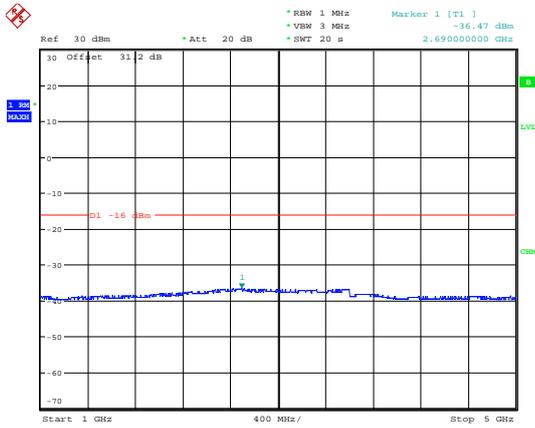
### 449.9875MHz



ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:47:17



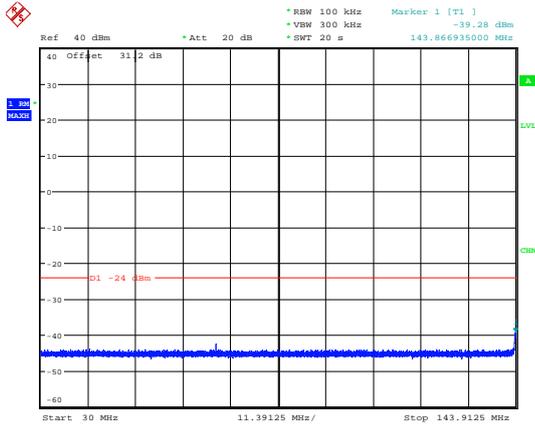
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:49:37



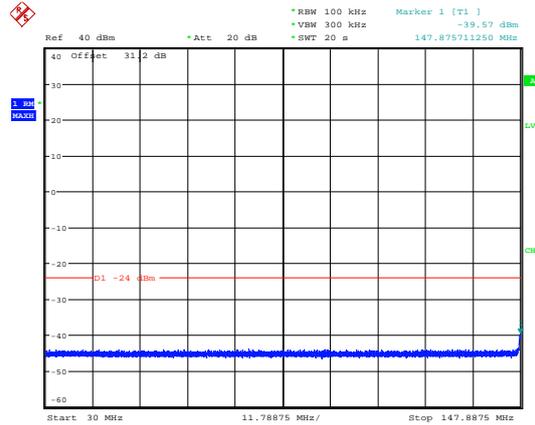
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:51:13

FM, 25kHz:

144.0125MHz

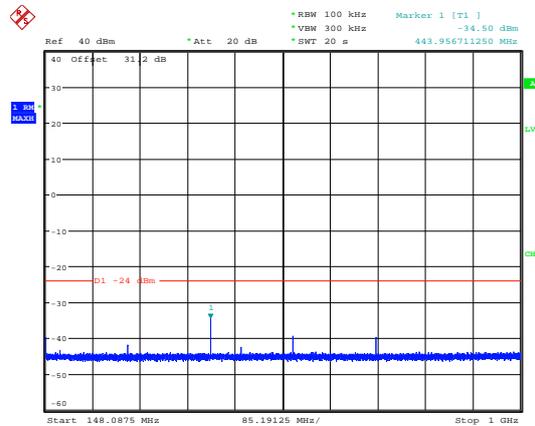
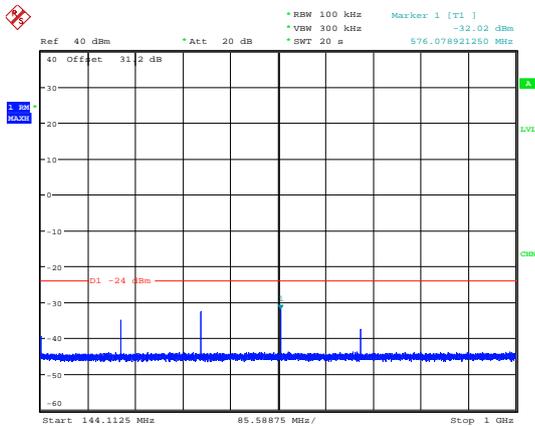


147.9875 MHz



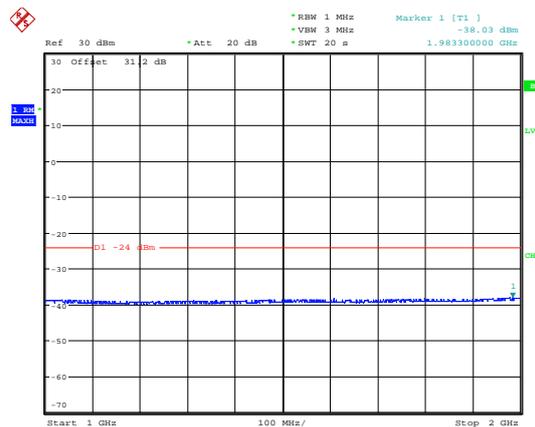
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:11:28

ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:20:29



ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:13:07

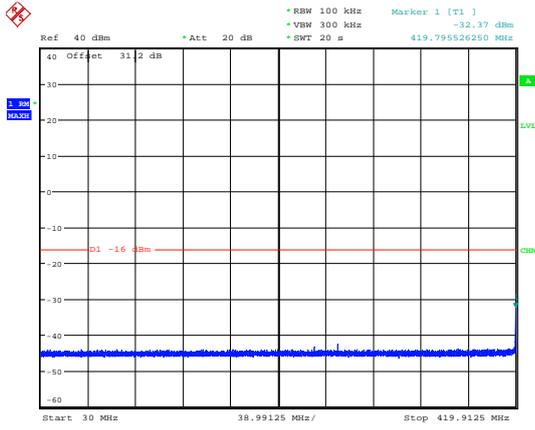
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:21:49



ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:14:07

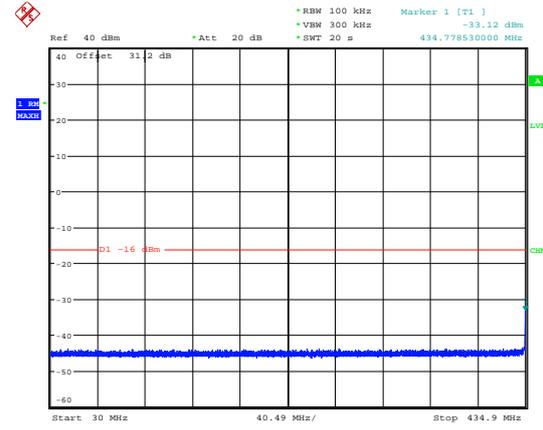
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:23:11

### 420.0125MHz

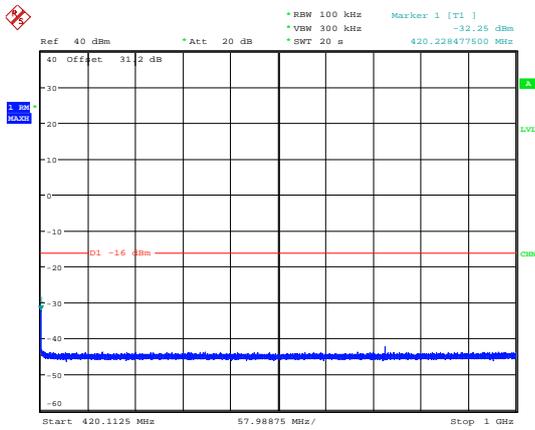


ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:32:22

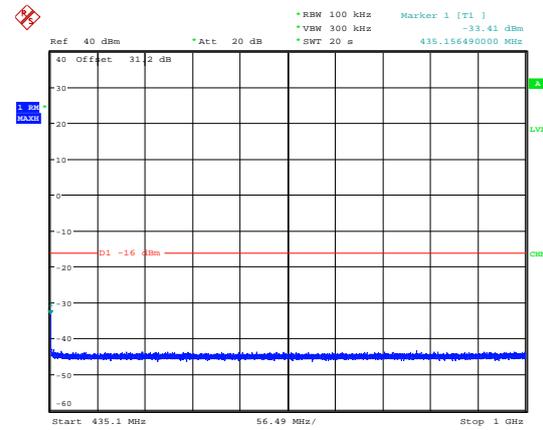
### 435 MHz



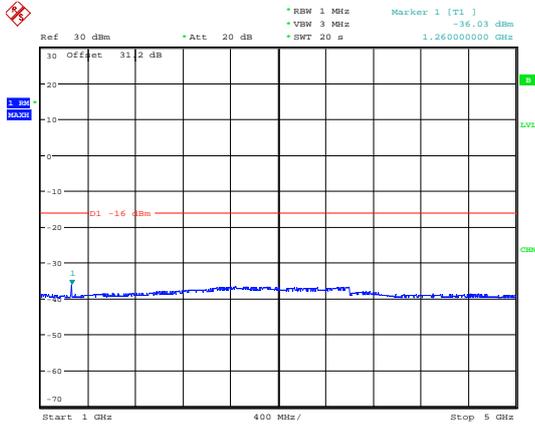
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:42:41



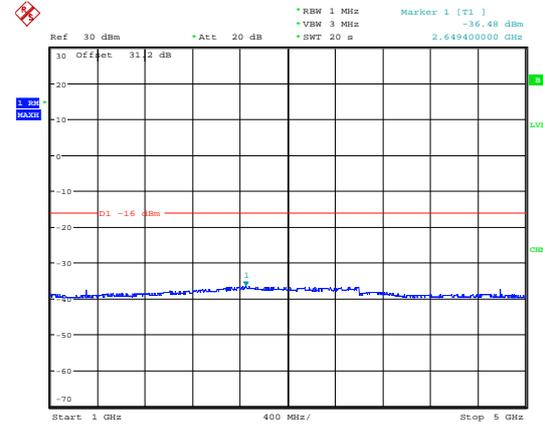
ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:34:09



ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:44:41

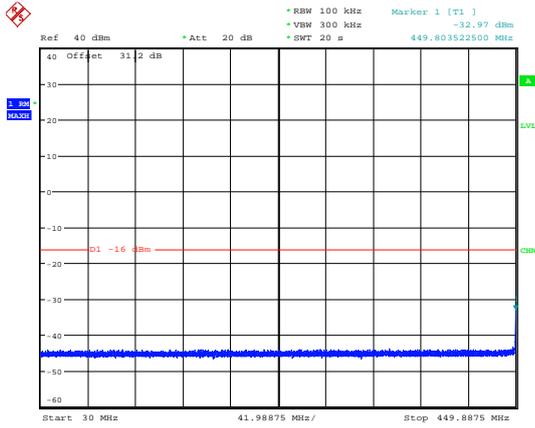


ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:35:26

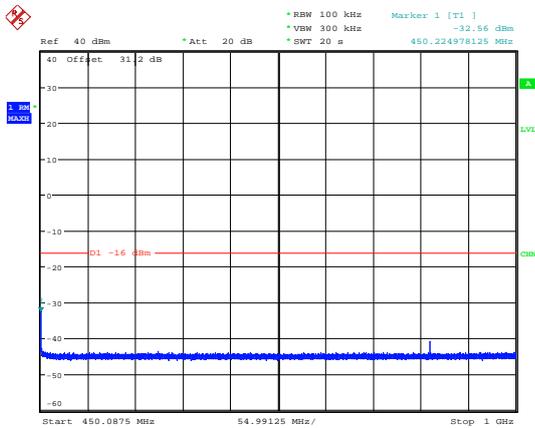


ProjectNo.:CR231165353-RF Tester:Morpheus Shi  
Date: 15.NOV.2023 14:45:54

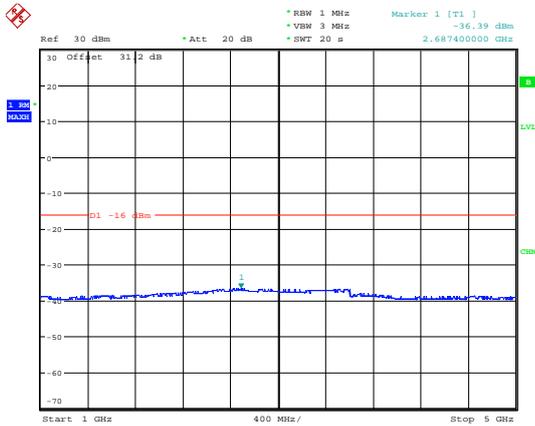
### 449.9875MHz



ProjectNo.:CR231165353-RF    Tester:Morpheus Shi  
Date: 15.NOV.2023 14:53:03



ProjectNo.:CR231165353-RF    Tester:Morpheus Shi  
Date: 15.NOV.2023 14:54:54



ProjectNo.:CR231165353-RF    Tester:Morpheus Shi  
Date: 15.NOV.2023 14:56:37

**4.6 RADIATED SPURIOUS EMISSIONS:**

Serial Number:	2D9A-1	Test Date:	2023/11/22~2023/12/23
Test Site:	966-1/966-2	Test Mode:	Transmitting
Tester:	Jeff Luo, Mack Huang	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.2~26	Relative Humidity: (%)	45~58	ATM Pressure: (kPa)	101~101.3
----------------------	---------	---------------------------	-------	---------------------------	-----------

**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-6	2023/9/18	2026/9/17
R&S	EMI Test Receiver	ESR3	102724	2023/03/31	2024/03/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/07/16	2024/07/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/07/16	2024/07/15
EMCO	Adjustable Dipole Antenna	3121C	9109-756	N/A	N/A
MICRO-COAX	Coaxial Cable	UFA210B-0-0720- 300300	99G1448	2023/07/16	2024/07/15
Agilent	Signal Generator	E8247C	MY43321352	2023/11/17	2024/11/16
AH	Double Ridge Guide Horn Antenna	SAS-571	1394	2023/2/22	2026/2/21
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200- 70U300	217423-008	2023/8/6	2024/8/5
MICRO-COAX	Coaxial Cable	UFA210A-1-2362- 300300	235780-001	2023/8/6	2024/8/5
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2023/11/8	2024/11/7
AH	Double Ridge Guide Horn Antenna	SAS-571	1396	2021/10/18	2024/10/17

\* **Statement of Traceability:** China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

**30MHz - 5GHz:**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
FM 12.5kHz, Frequency: 144.0125MHz								
288.025	H	46.51	-64.49	0.00	0.33	-64.82	-23.00	41.82
288.025	V	33.28	-76.05	0.00	0.33	-76.38	-23.00	53.38
432.038	H	39.06	-69.40	0.00	0.40	-69.80	-23.00	46.80
432.038	V	41.45	-63.63	0.00	0.40	-64.03	-23.00	41.03
576.050	H	41.77	-63.53	0.00	0.46	-63.99	-23.00	40.99
576.050	V	56.19	-47.28	0.00	0.46	-47.74	-23.00	24.74
720.063	H	46.41	-57.74	0.00	0.49	-58.23	-23.00	35.23
720.063	V	44.38	-56.39	0.00	0.49	-56.88	-23.00	33.88
864.075	H	43.03	-57.36	0.00	0.57	-57.93	-23.00	34.93
864.075	V	33.94	-63.32	0.00	0.57	-63.89	-23.00	40.89
1008.088	H	38.16	-65.39	7.12	0.64	-58.91	-23.00	35.91
1008.088	V	38.68	-65.10	7.12	0.64	-58.62	-23.00	35.62
1152.100	H	61.15	-41.14	7.53	0.61	-34.22	-23.00	11.22
1152.100	V	54.14	-48.77	7.53	0.61	-41.85	-23.00	18.85
1296.113	H	61.15	-41.59	7.93	0.70	-34.36	-23.00	11.36
1296.113	V	56.60	-46.61	7.93	0.70	-39.38	-23.00	16.38
1440.125	H	53.42	-50.18	8.33	0.74	-42.59	-23.00	19.59
1440.125	V	49.86	-53.81	8.33	0.74	-46.22	-23.00	23.22
FM 25kHz, Frequency: 144.0125MHz								
288.025	H	46.92	-64.08	0.00	0.33	-64.41	-23.00	41.41
288.025	V	31.92	-77.41	0.00	0.33	-77.74	-23.00	54.74
432.038	H	40.25	-68.21	0.00	0.40	-68.61	-23.00	45.61
432.038	V	42.07	-63.01	0.00	0.40	-63.41	-23.00	40.41
576.050	H	47.09	-58.21	0.00	0.46	-58.67	-23.00	35.67
576.050	V	55.72	-47.75	0.00	0.46	-48.21	-23.00	25.21
720.063	H	46.48	-57.67	0.00	0.49	-58.16	-23.00	35.16
720.063	V	44.41	-56.36	0.00	0.49	-56.85	-23.00	33.85
864.075	H	43.98	-56.41	0.00	0.57	-56.98	-23.00	33.98
864.075	V	34.55	-62.71	0.00	0.57	-63.28	-23.00	40.28
1008.088	H	38.68	-64.87	7.12	0.64	-58.39	-23.00	35.39
1008.088	V	38.32	-65.46	7.12	0.64	-58.98	-23.00	35.98
1152.100	H	60.88	-41.41	7.53	0.61	-34.49	-23.00	11.49
1152.100	V	52.12	-50.79	7.53	0.61	-43.87	-23.00	20.87
1296.113	H	58.68	-44.06	7.93	0.70	-36.83	-23.00	13.83
1296.113	V	52.89	-50.32	7.93	0.70	-43.09	-23.00	20.09
1440.125	H	51.57	-52.03	8.33	0.74	-44.44	-23.00	21.44
1440.125	V	44.68	-58.99	8.33	0.74	-51.40	-23.00	28.40

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
FM 12.5kHz, Frequency: 147.9875MHz								
295.975	H	47.22	-63.59	0.00	0.33	-63.92	-23.00	40.92
295.975	V	34.66	-74.32	0.00	0.33	-74.65	-23.00	51.65
443.963	H	36.63	-71.55	0.00	0.43	-71.98	-23.00	48.98
443.963	V	42.10	-62.56	0.00	0.43	-62.99	-23.00	39.99
591.950	H	43.43	-61.55	0.00	0.49	-62.04	-23.00	39.04
591.950	V	58.36	-45.27	0.00	0.49	-45.76	-23.00	22.76
739.938	H	45.77	-57.93	0.00	0.55	-58.48	-23.00	35.48
739.938	V	41.93	-58.34	0.00	0.55	-58.89	-23.00	35.89
887.925	H	43.28	-56.39	0.00	0.62	-57.01	-23.00	34.01
887.925	V	33.59	-63.12	0.00	0.62	-63.74	-23.00	40.74
1035.913	H	43.35	-59.63	7.20	0.65	-53.08	-23.00	30.08
1035.913	V	41.50	-61.78	7.20	0.65	-55.23	-23.00	32.23
1183.900	H	61.48	-41.19	7.61	0.66	-34.24	-23.00	11.24
1183.900	V	56.70	-46.67	7.61	0.66	-39.72	-23.00	16.72
1331.888	H	58.70	-44.34	8.03	0.76	-37.07	-23.00	14.07
1331.888	V	53.94	-49.43	8.03	0.76	-42.16	-23.00	19.16
1479.875	H	54.53	-48.96	8.44	0.76	-41.28	-23.00	18.28
1479.875	V	47.26	-56.32	8.44	0.76	-48.64	-23.00	25.64
FM 25kHz, Frequency:147.9875MHz								
295.975	H	46.89	-63.92	0.00	0.33	-64.25	-23.00	41.25
295.975	V	34.23	-74.75	0.00	0.33	-75.08	-23.00	52.08
443.963	H	36.40	-71.78	0.00	0.43	-72.21	-23.00	49.21
443.963	V	42.51	-62.15	0.00	0.43	-62.58	-23.00	39.58
591.950	H	43.26	-61.72	0.00	0.49	-62.21	-23.00	39.21
591.950	V	57.75	-45.88	0.00	0.49	-46.37	-23.00	23.37
739.938	H	45.82	-57.88	0.00	0.55	-58.43	-23.00	35.43
739.938	V	41.63	-58.64	0.00	0.55	-59.19	-23.00	36.19
887.925	H	43.15	-56.52	0.00	0.62	-57.14	-23.00	34.14
887.925	V	33.77	-62.94	0.00	0.62	-63.56	-23.00	40.56
1035.913	H	41.61	-61.37	7.20	0.65	-54.82	-23.00	31.82
1035.913	V	40.11	-63.17	7.20	0.65	-56.62	-23.00	33.62
1183.900	H	60.03	-42.64	7.61	0.66	-35.69	-23.00	12.69
1183.900	V	53.81	-49.56	7.61	0.66	-42.61	-23.00	19.61
1331.888	H	57.48	-45.56	8.03	0.76	-38.29	-23.00	15.29
1331.888	V	51.74	-51.63	8.03	0.76	-44.36	-23.00	21.36
1479.875	H	53.34	-50.15	8.44	0.76	-42.47	-23.00	19.47
1479.875	V	46.05	-57.53	8.44	0.76	-49.85	-23.00	26.85

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
FM 12.5kHz, Frequency:420.0125MHz								
840.025	H	51.74	-49.38	0.00	0.60	-49.98	-16.00	33.98
840.025	V	46.20	-51.62	0.00	0.60	-52.22	-16.00	36.22
1260.038	H	78.11	-24.67	7.83	0.68	-17.52	-16.00	1.52
1260.038	V	75.85	-27.50	7.83	0.68	-20.35	-16.00	4.35
1680.050	H	65.62	-38.69	8.72	0.86	-30.83	-16.00	14.83
1680.050	V	58.47	-45.95	8.72	0.86	-38.09	-16.00	22.09
2100.063	H	42.71	-59.17	9.16	0.91	-50.92	-16.00	34.92
2100.063	V	36.76	-65.07	9.16	0.91	-56.82	-16.00	40.82
2520.075	H	41.20	-59.33	9.43	1.01	-50.91	-16.00	34.91
2520.075	V	37.70	-62.83	9.43	1.01	-54.41	-16.00	38.41
2940.088	H	39.83	-59.33	10.10	1.11	-50.34	-16.00	34.34
2940.088	V	36.47	-62.79	10.10	1.11	-53.80	-16.00	37.80
3360.100	H	38.56	-58.75	10.34	1.17	-49.58	-16.00	33.58
3360.100	V	37.68	-59.53	10.34	1.17	-50.36	-16.00	34.36
3780.113	H	38.28	-57.82	10.68	1.27	-48.41	-16.00	32.41
3780.113	V	35.92	-60.03	10.68	1.27	-50.62	-16.00	34.62
4200.125	H	38.08	-57.86	10.78	1.34	-48.42	-16.00	32.42
4200.125	V	37.04	-58.87	10.78	1.34	-49.43	-16.00	33.43
FM 25kHz, Frequency: 420.0125MHz								
840.025	H	51.49	-49.63	0.00	0.60	-50.23	-16.00	34.23
840.025	V	45.31	-52.51	0.00	0.60	-53.11	-16.00	37.11
1260.038	H	78.55	-24.23	7.83	0.68	-17.08	-16.00	1.08
1260.038	V	75.33	-28.02	7.83	0.68	-20.87	-16.00	4.87
1680.050	H	67.39	-36.92	8.72	0.86	-29.06	-16.00	13.06
1680.050	V	62.89	-41.53	8.72	0.86	-33.67	-16.00	17.67
2100.063	H	48.79	-53.09	9.16	0.91	-44.84	-16.00	28.84
2100.063	V	45.40	-56.43	9.16	0.91	-48.18	-16.00	32.18
2520.075	H	43.13	-57.40	9.43	1.01	-48.98	-16.00	32.98
2520.075	V	40.18	-60.35	9.43	1.01	-51.93	-16.00	35.93
2940.088	H	42.04	-57.12	10.10	1.11	-48.13	-16.00	32.13
2940.088	V	40.32	-58.94	10.10	1.11	-49.95	-16.00	33.95
3360.100	H	39.78	-57.53	10.34	1.17	-48.36	-16.00	32.36
3360.100	V	36.98	-60.23	10.34	1.17	-51.06	-16.00	35.06
3780.113	H	41.10	-55.00	10.68	1.27	-45.59	-16.00	29.59
3780.113	V	38.74	-57.21	10.68	1.27	-47.80	-16.00	31.80
4200.125	H	38.75	-57.19	10.78	1.34	-47.75	-16.00	31.75
4200.125	V	41.04	-54.87	10.78	1.34	-45.43	-16.00	29.43

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
FM 12.5kHz, Frequency:435MHz								
870.000	H	51.67	-48.54	0.00	0.58	-49.12	-16.00	33.12
870.000	V	45.97	-51.15	0.00	0.58	-51.73	-16.00	35.73
1305.000	H	77.97	-24.81	7.95	0.71	-17.57	-16.00	1.57
1305.000	V	72.84	-30.38	7.95	0.71	-23.14	-16.00	7.14
1740.000	H	65.20	-38.77	8.79	0.85	-30.83	-16.00	14.83
1740.000	V	63.03	-41.10	8.79	0.85	-33.16	-16.00	17.16
2175.000	H	45.31	-56.92	9.21	0.94	-48.65	-16.00	32.65
2175.000	V	43.79	-58.50	9.21	0.94	-50.23	-16.00	34.23
2610.000	H	33.89	-66.05	9.58	1.03	-57.50	-16.00	41.50
2610.000	V	41.13	-58.68	9.58	1.03	-50.13	-16.00	34.13
3045.000	H	43.36	-54.82	10.22	1.13	-45.73	-16.00	29.73
3045.000	V	41.25	-56.94	10.22	1.13	-47.85	-16.00	31.85
3480.000	H	37.04	-60.79	10.39	1.16	-51.56	-16.00	35.56
3480.000	V	36.94	-60.84	10.39	1.16	-51.61	-16.00	35.61
3915.000	H	39.92	-56.19	10.82	1.27	-46.64	-16.00	30.64
3915.000	V	38.37	-57.70	10.82	1.27	-48.15	-16.00	32.15
4350.000	H	42.04	-53.90	10.69	1.38	-44.59	-16.00	28.59
4350.000	V	42.98	-52.92	10.69	1.38	-43.61	-16.00	27.61
FM 25kHz, Frequency: 435MHz								
870.000	H	52.03	-48.18	0.00	0.58	-48.76	-16.00	32.76
870.000	V	45.41	-51.71	0.00	0.58	-52.29	-16.00	36.29
1305.000	H	78.30	-24.48	7.95	0.71	-17.24	-16.00	1.24
1305.000	V	74.03	-29.19	7.95	0.71	-21.95	-16.00	5.95
1740.000	H	65.93	-38.04	8.79	0.85	-30.10	-16.00	14.10
1740.000	V	64.47	-39.66	8.79	0.85	-31.72	-16.00	15.72
2175.000	H	46.62	-55.61	9.21	0.94	-47.34	-16.00	31.34
2175.000	V	46.44	-55.85	9.21	0.94	-47.58	-16.00	31.58
2610.000	H	39.81	-60.13	9.58	1.03	-51.58	-16.00	35.58
2610.000	V	41.13	-58.68	9.58	1.03	-50.13	-16.00	34.13
3045.000	H	43.54	-54.64	10.22	1.13	-45.55	-16.00	29.55
3045.000	V	42.09	-56.10	10.22	1.13	-47.01	-16.00	31.01
3480.000	H	38.32	-59.51	10.39	1.16	-50.28	-16.00	34.28
3480.000	V	37.22	-60.56	10.39	1.16	-51.33	-16.00	35.33
3915.000	H	41.08	-55.03	10.82	1.27	-45.48	-16.00	29.48
3915.000	V	39.77	-56.30	10.82	1.27	-46.75	-16.00	30.75
4350.000	H	42.16	-53.78	10.69	1.38	-44.47	-16.00	28.47
4350.000	V	42.93	-52.97	10.69	1.38	-43.66	-16.00	27.66

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
FM 12.5kHz, Frequency: 449.9875MHz								
899.975	H	49.14	-50.16	0.00	0.63	-50.79	-16.00	34.79
899.975	V	45.38	-51.05	0.00	0.63	-51.68	-16.00	35.68
1349.963	H	68.70	-34.52	8.08	0.79	-27.23	-16.00	11.23
1349.963	V	62.58	-40.89	8.08	0.79	-33.60	-16.00	17.60
1799.950	H	61.40	-42.10	8.86	0.90	-34.14	-16.00	18.14
1799.950	V	58.96	-44.73	8.86	0.90	-36.77	-16.00	20.77
2249.938	H	42.56	-59.58	9.25	0.93	-51.26	-16.00	35.26
2249.938	V	42.94	-59.14	9.25	0.93	-50.82	-16.00	34.82
2699.925	H	39.81	-60.17	9.72	1.04	-51.49	-16.00	35.49
2699.925	V	39.16	-60.78	9.72	1.04	-52.10	-16.00	36.10
3149.913	H	41.45	-55.90	10.26	1.14	-46.78	-16.00	30.78
3149.913	V	38.93	-58.23	10.26	1.14	-49.11	-16.00	33.11
3599.900	H	38.56	-58.99	10.50	1.24	-49.73	-16.00	33.73
3599.900	V	38.20	-59.21	10.50	1.24	-49.95	-16.00	33.95
4049.888	H	39.01	-56.87	10.87	1.32	-47.32	-16.00	31.32
4049.888	V	38.39	-57.38	10.87	1.32	-47.83	-16.00	31.83
4499.875	H	43.00	-52.78	10.60	1.38	-43.56	-16.00	27.56
4499.875	V	45.39	-50.13	10.60	1.38	-40.91	-16.00	24.91
FM 25kHz, Frequency: 449.9875MHz								
899.975	H	49.18	-50.12	0.00	0.63	-50.75	-16.00	34.75
899.975	V	44.93	-51.50	0.00	0.63	-52.13	-16.00	36.13
1349.963	H	69.45	-33.77	8.08	0.79	-26.48	-16.00	10.48
1349.963	V	63.30	-40.17	8.08	0.79	-32.88	-16.00	16.88
1799.950	H	61.81	-41.69	8.86	0.90	-33.73	-16.00	17.73
1799.950	V	59.39	-44.30	8.86	0.90	-36.34	-16.00	20.34
2249.938	H	44.10	-58.04	9.25	0.93	-49.72	-16.00	33.72
2249.938	V	44.18	-57.90	9.25	0.93	-49.58	-16.00	33.58
2699.925	H	40.22	-59.76	9.72	1.04	-51.08	-16.00	35.08
2699.925	V	39.34	-60.60	9.72	1.04	-51.92	-16.00	35.92
3149.913	H	42.12	-55.23	10.26	1.14	-46.11	-16.00	30.11
3149.913	V	39.03	-58.13	10.26	1.14	-49.01	-16.00	33.01
3599.900	H	37.68	-59.87	10.50	1.24	-50.61	-16.00	34.61
3599.900	V	37.64	-59.77	10.50	1.24	-50.51	-16.00	34.51
4049.888	H	38.59	-57.29	10.87	1.32	-47.74	-16.00	31.74
4049.888	V	39.05	-56.72	10.87	1.32	-47.17	-16.00	31.17
4499.875	H	42.97	-52.81	10.60	1.38	-43.59	-16.00	27.59
4499.875	V	44.87	-50.65	10.60	1.38	-41.43	-16.00	25.43

Note 1:

The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.

Note 2:

Absolute Level = Substituted Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

**4.7 FREQUENCY STABILITY**

Serial Number:	2D99-1	Test Date:	2023/11/15
Test Site:	RF	Test Mode:	Transmitting
Tester:	Morpheus Shi	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	24	Relative Humidity: (%)	41	ATM Pressure: (kPa)	101.7
----------------------	----	------------------------------	----	------------------------	-------

**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200445	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Coaxial Attenuator	53-20-34	LN751	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

\* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

**Test Data:**

Reference Frequency: 144.0125 MHz, 12.5 kHz			
Temperature	Voltage	Reading	Frequency Error
°C	V <sub>DC</sub>	MHz	ppm
-30	7.4	144.0125659	0.46
-20		144.0125578	0.40
-10		144.0125513	0.36
0		144.0125446	0.31
10		144.0125377	0.26
20		144.0125321	0.22
30		144.0125244	0.17
40		144.0125185	0.13
50		144.0125102	0.07
20		6.8	144.0125397
20	8.4	144.0125226	0.16

Reference Frequency: 144.0125 MHz, 25 kHz			
Temperature	Voltage	Reading	Frequency Error
°C	V <sub>DC</sub>	MHz	ppm
-30	7.4	144.0125879	0.61
-20		144.0125756	0.52
-10		144.0125644	0.45
0		144.0125528	0.37
10		144.0125415	0.29
20		144.0125321	0.22
30		144.0125202	0.14
40		144.0125076	0.05
50		144.0124953	-0.03
20		6.8	144.0125457
20	8.4	144.0125178	0.12

Reference Frequency: 147.9875 MHz, 12.5 kHz			
Temperature	Voltage	Reading	Frequency Error
°C	V <sub>DC</sub>	MHz	ppm
-30	7.4	147.9875697	0.47
-20		147.9875622	0.42
-10		147.9875536	0.36
0		147.9875465	0.31
10		147.9875398	0.27
20		147.9875321	0.22
30		147.9875244	0.16
40		147.9875169	0.11
50		147.9875073	0.05
20		6.8	147.9875426
20	8.4	147.9875215	0.15

Reference Frequency: 147.9875 MHz, 25 kHz			
Temperature	Voltage	Reading	Frequency Error
°C	V <sub>DC</sub>	MHz	ppm
-30	7.4	147.9875946	0.64
-20		147.9875813	0.55
-10		147.9875694	0.47
0		147.9875578	0.39
10		147.9875437	0.30
20		147.9875321	0.22
30		147.9875195	0.13
40		147.9875072	0.05
50		147.9874949	-0.03
20		6.8	147.9875473
20	8.4	147.9875178	0.12

Reference Frequency: 435 MHz, 12.5 kHz			
Temperature	Voltage	Reading	Frequency Error
°C	V <sub>DC</sub>	MHz	ppm
-30	7.4	435.0002481	0.57
-20		435.0002224	0.51
-10		435.0001987	0.46
0		435.0001738	0.40
10		435.0001495	0.34
20		435.0001282	0.29
30		435.0001016	0.23
40		435.0000775	0.18
50		435.0000539	0.12
20		6.8	435.0001558
20	8.4	435.0001004	0.23

Reference Frequency: 435 MHz, 25 kHz			
Temperature	Voltage	Reading	Frequency Error
°C	V <sub>DC</sub>	MHz	ppm
-30	7.4	435.0003067	0.71
-20		435.0002684	0.62
-10		435.0002349	0.54
0		435.0001988	0.46
10		435.0001605	0.37
20		435.0001282	0.29
30		435.0000883	0.20
40		435.0000506	0.12
50		435.0000121	0.03
20		6.8	435.0001677
20	8.4	435.0000815	0.19

## 5- TEST SETUP PHOTOGRAPHS

**Radiated Emission Below 1GHz View**



**Radiated Emission Above 1GHz View**



## **6. EUT PHOTOGRAPHS**

---

Please refer to the attachment CR231165353-EXP EUT EXTERNAL PHOTOGRAPHS and CR231165353-INP EUT INTERNAL PHOTOGRAPHS

**\*\*\*\*\* END OF REPORT \*\*\*\*\***

**EUT EXTERNAL PHOTOGRAPHS**



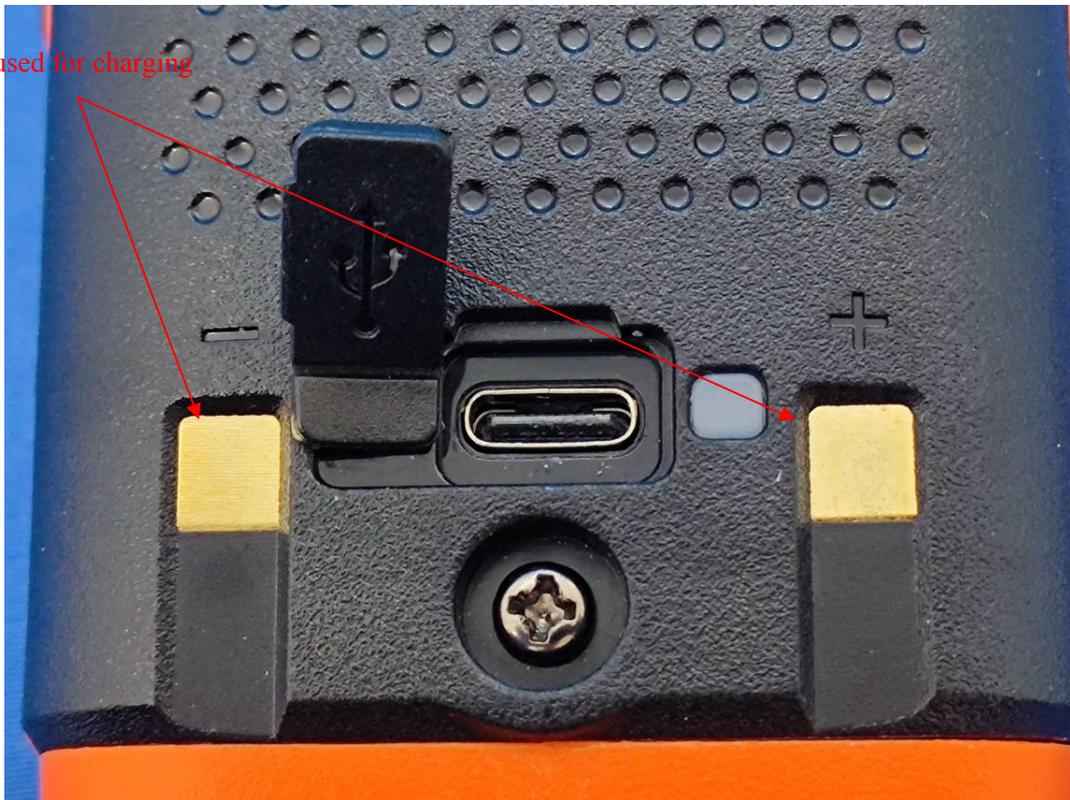






Port

No used for charging



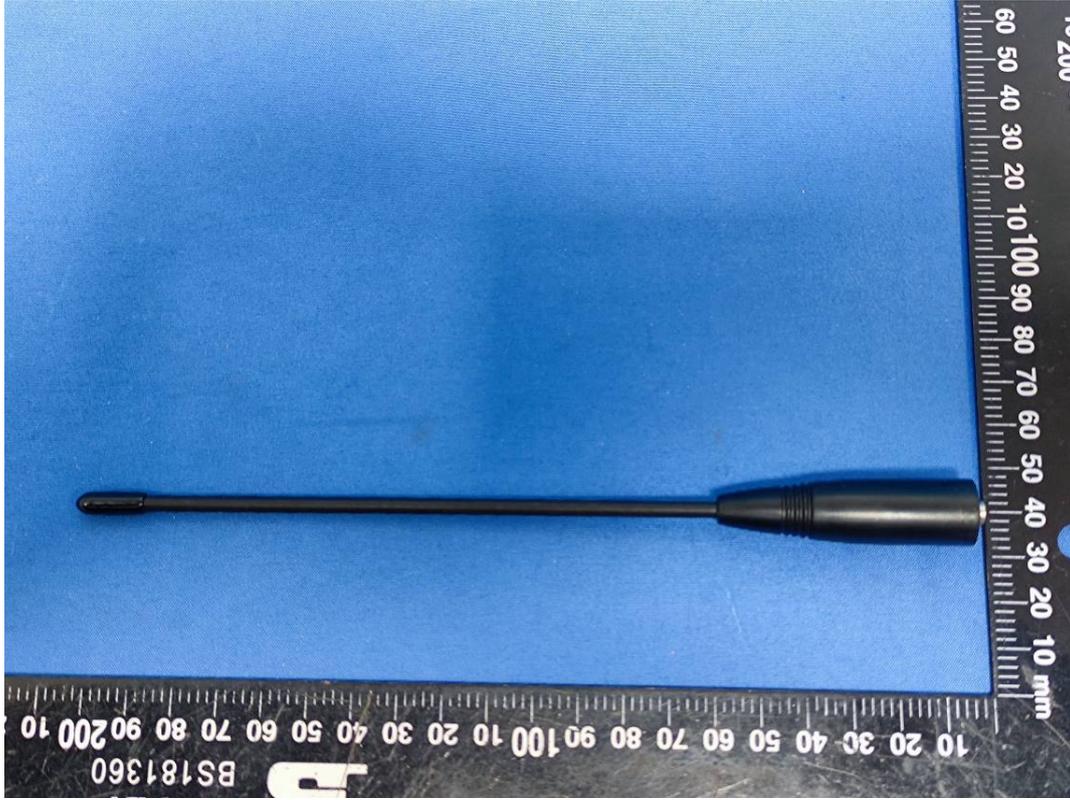
Port



Port

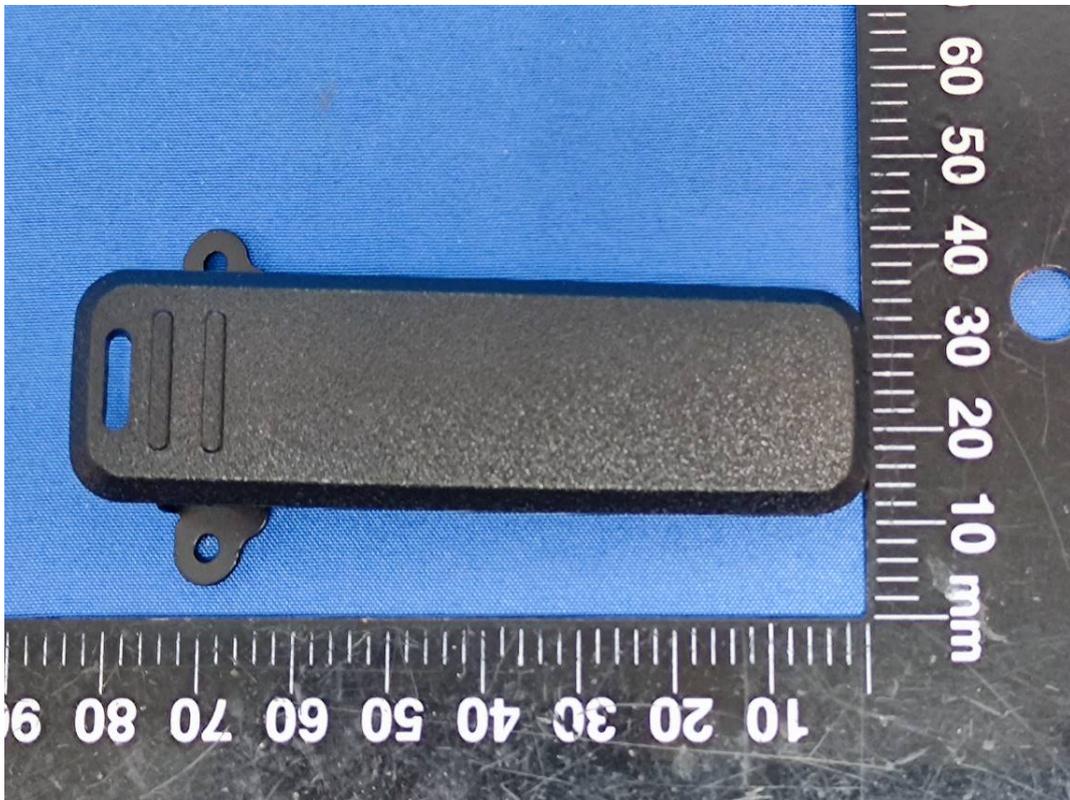
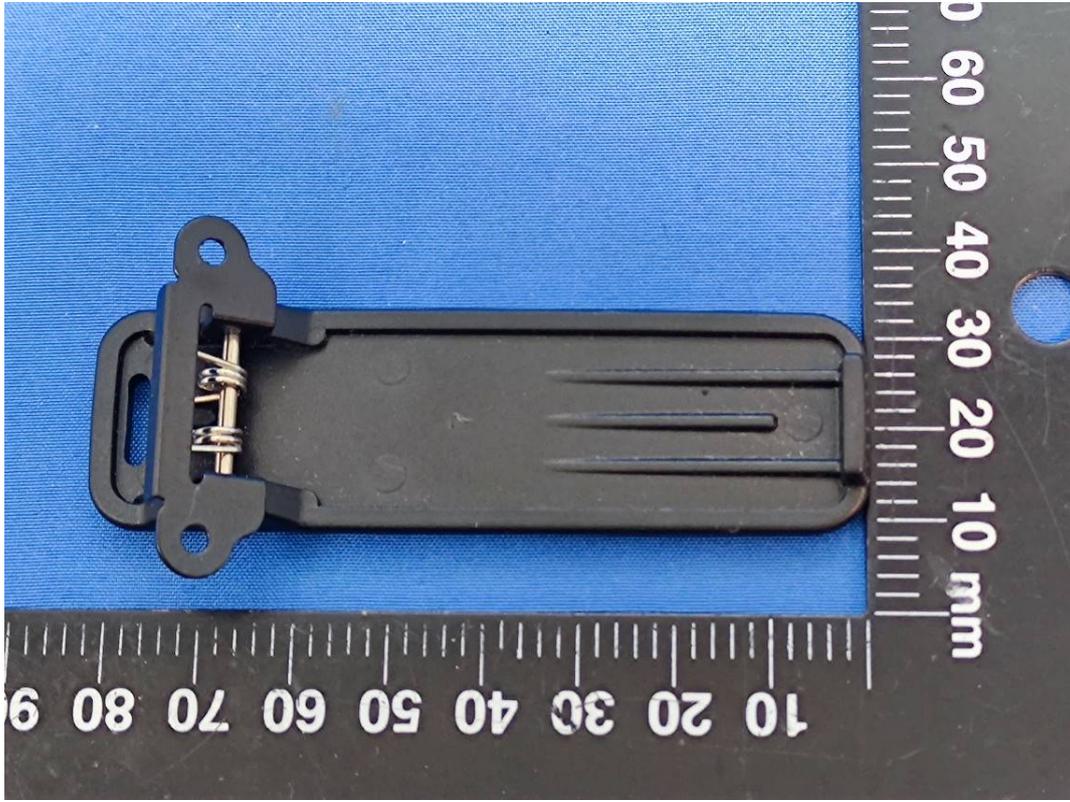


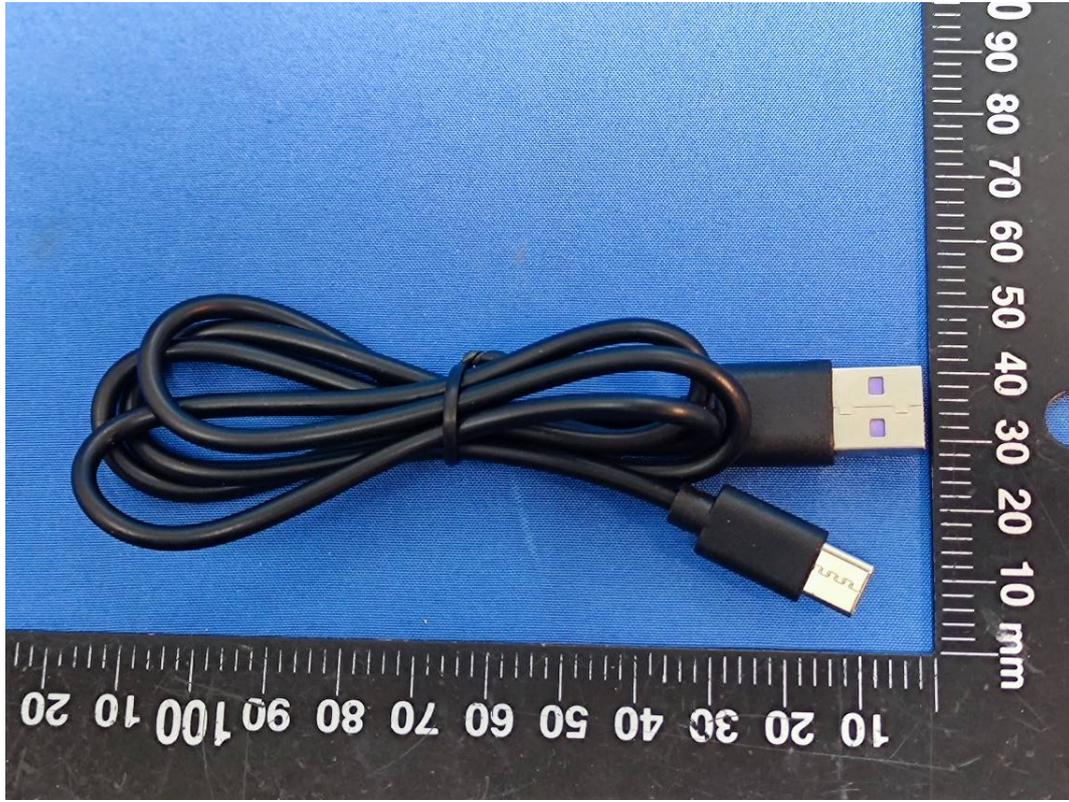
Antenna



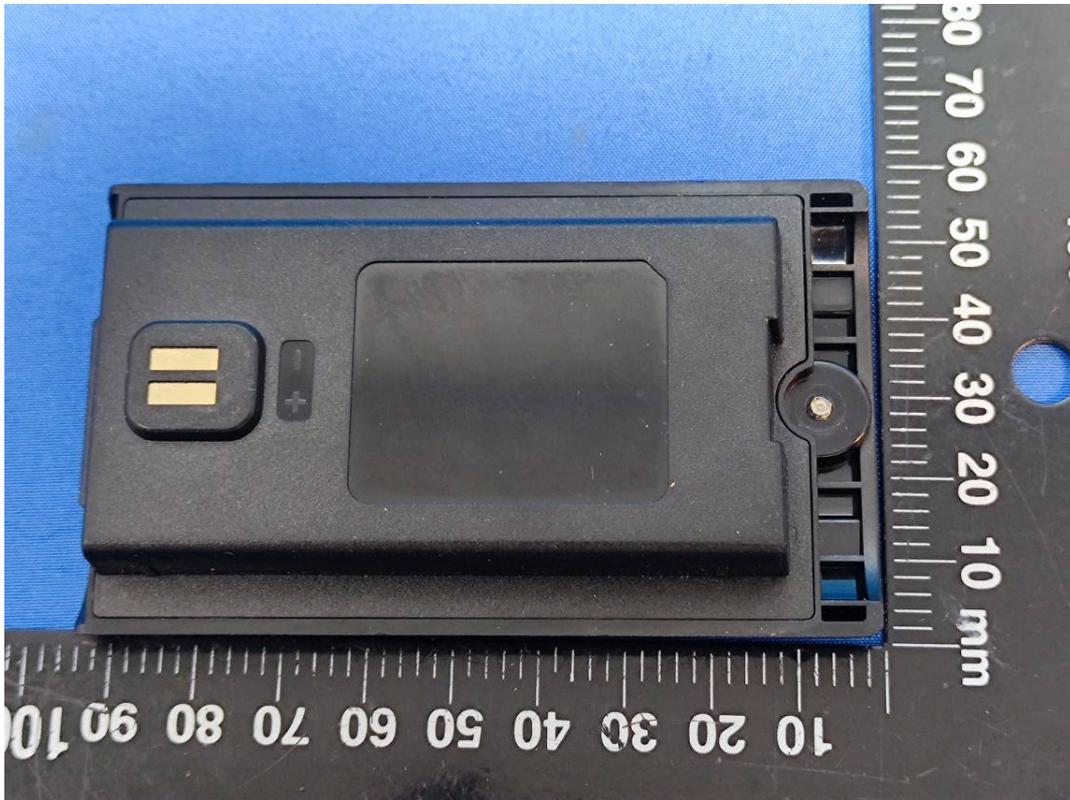
Port



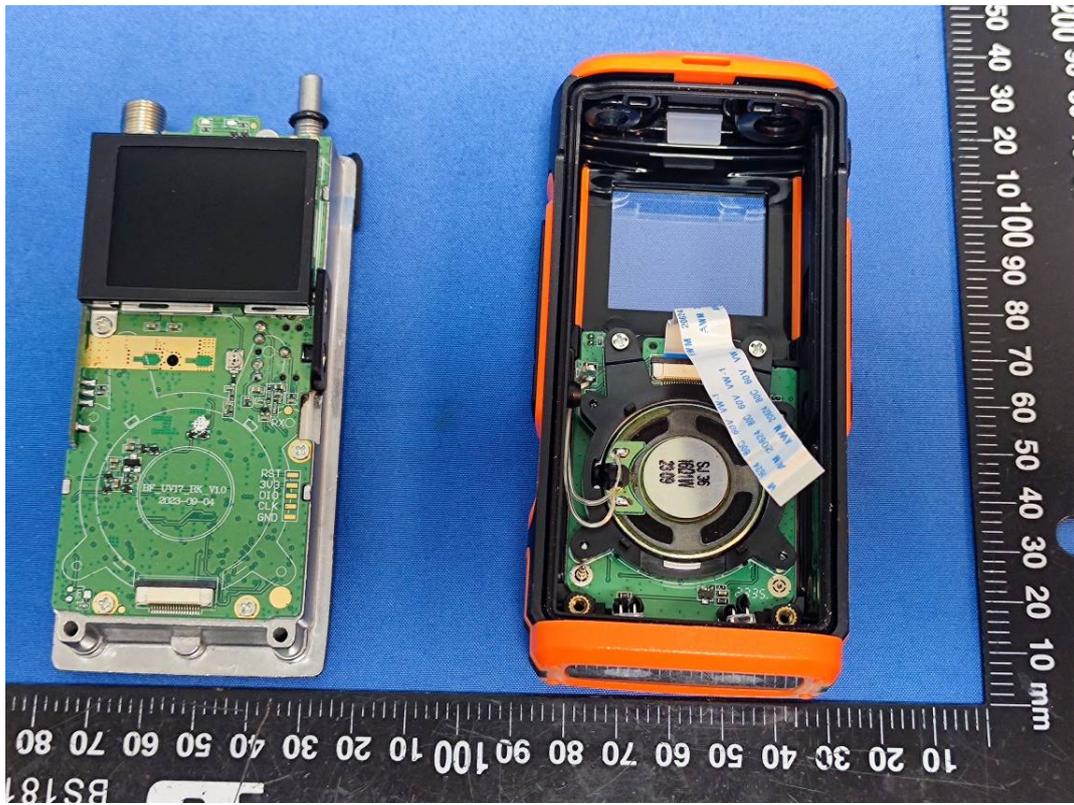


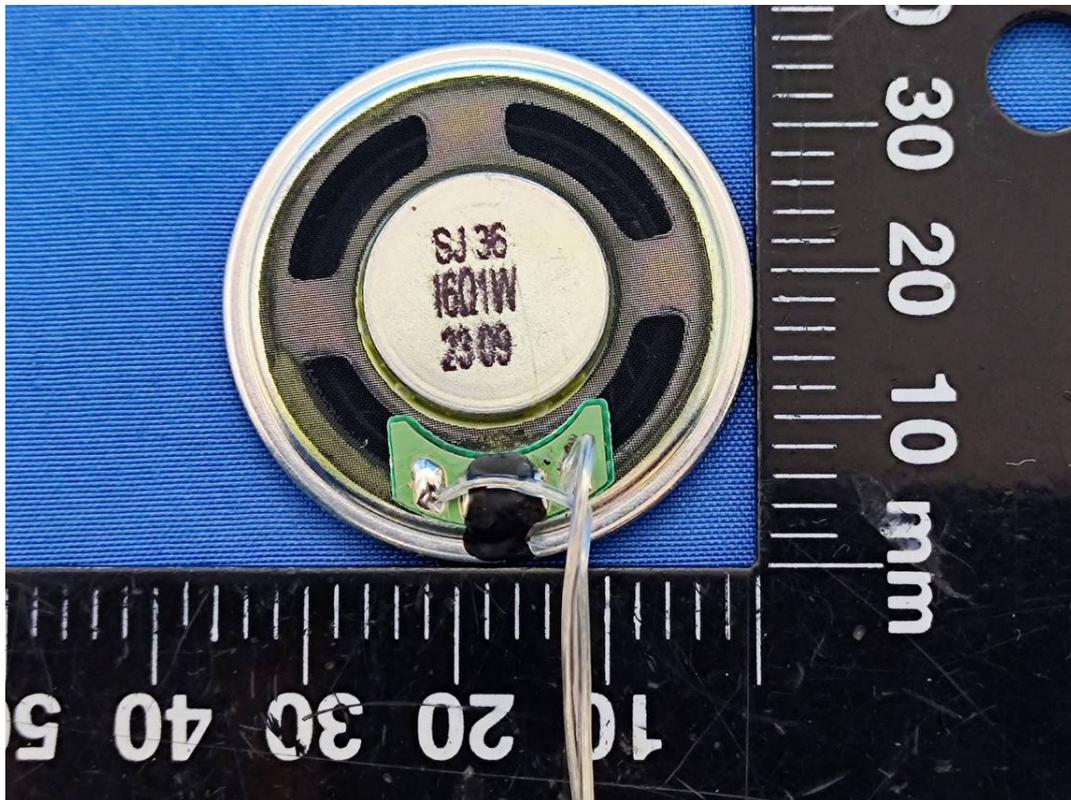
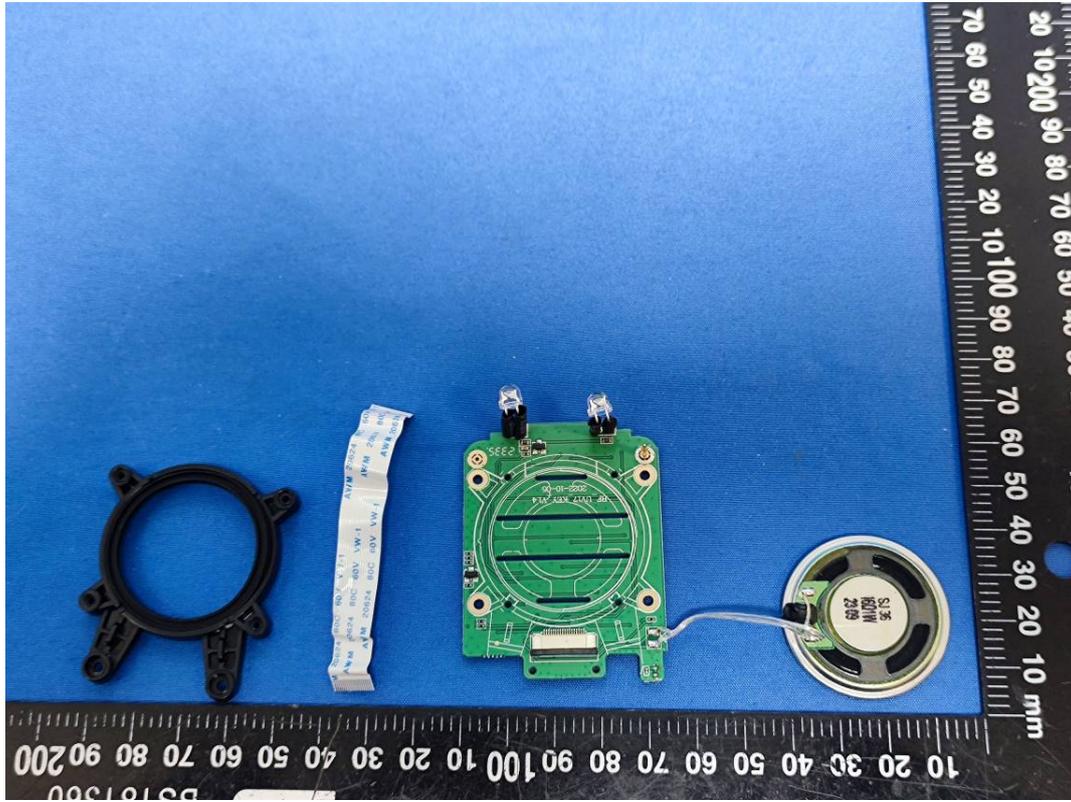


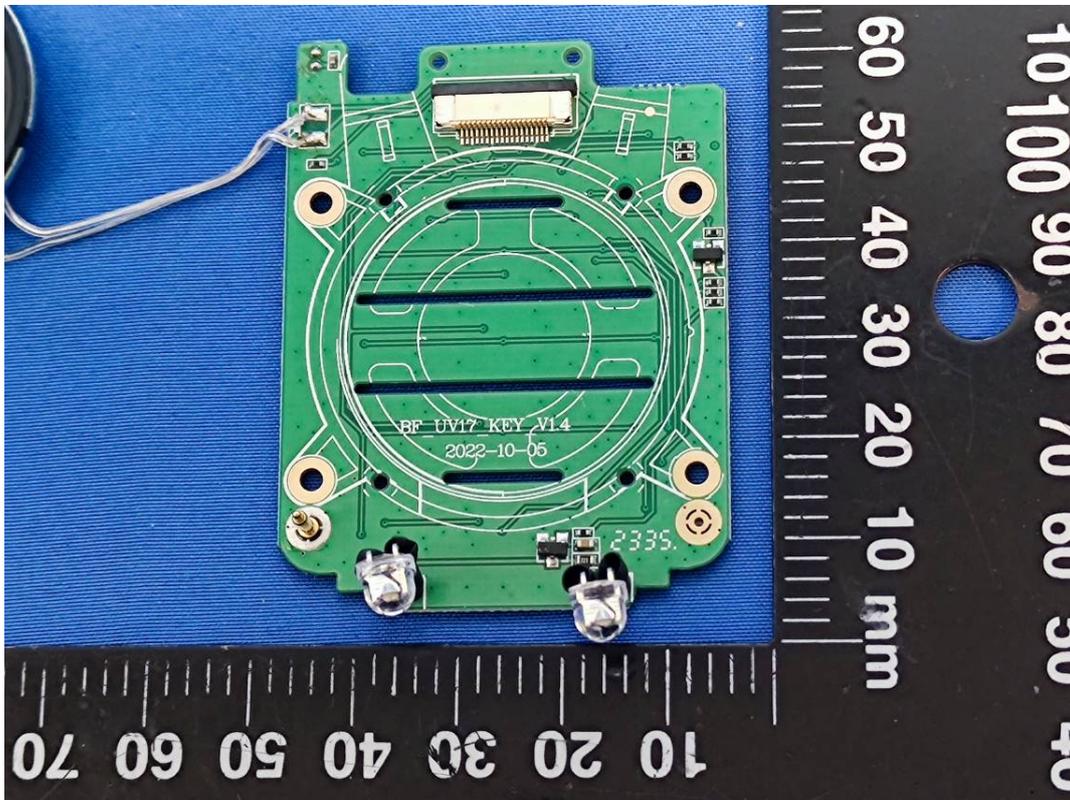
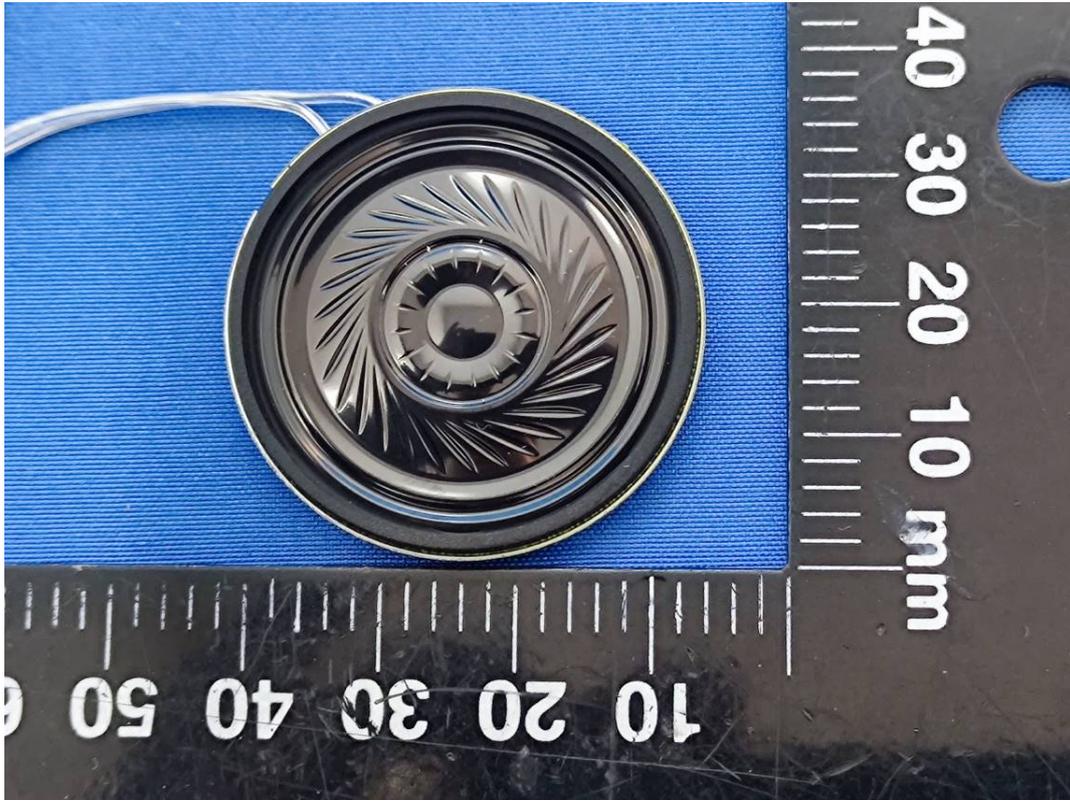
**EUT INTERNAL PHOTOGRAPHS**

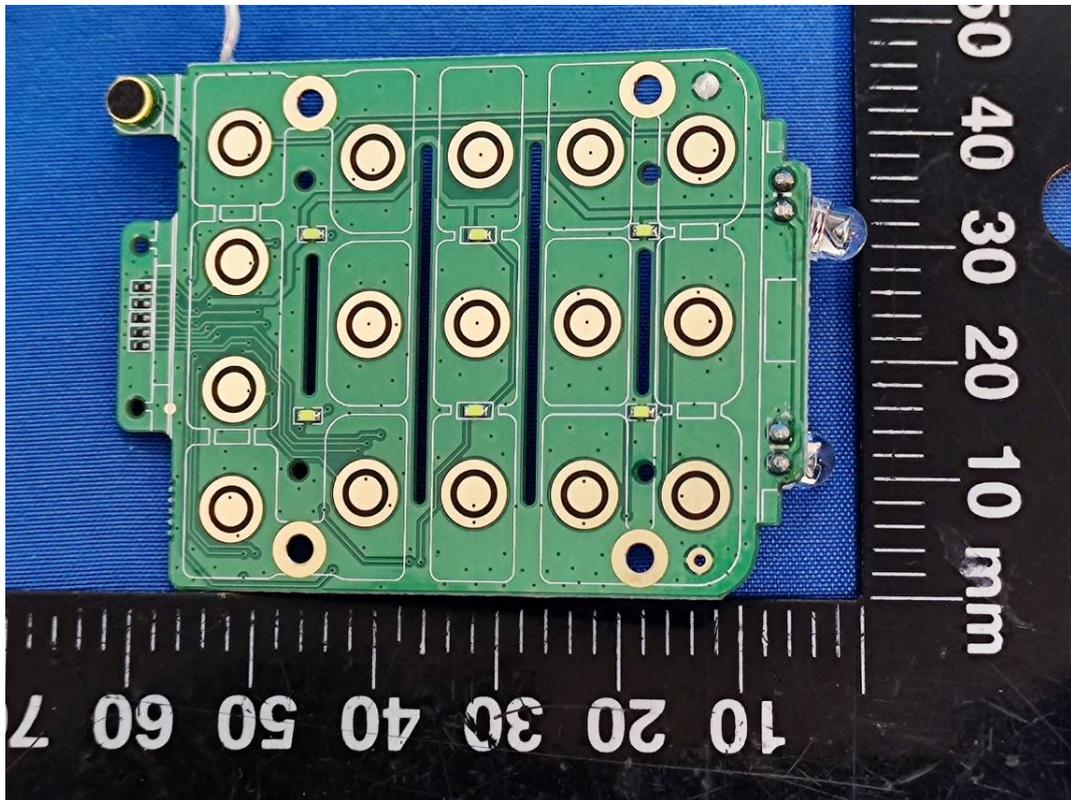
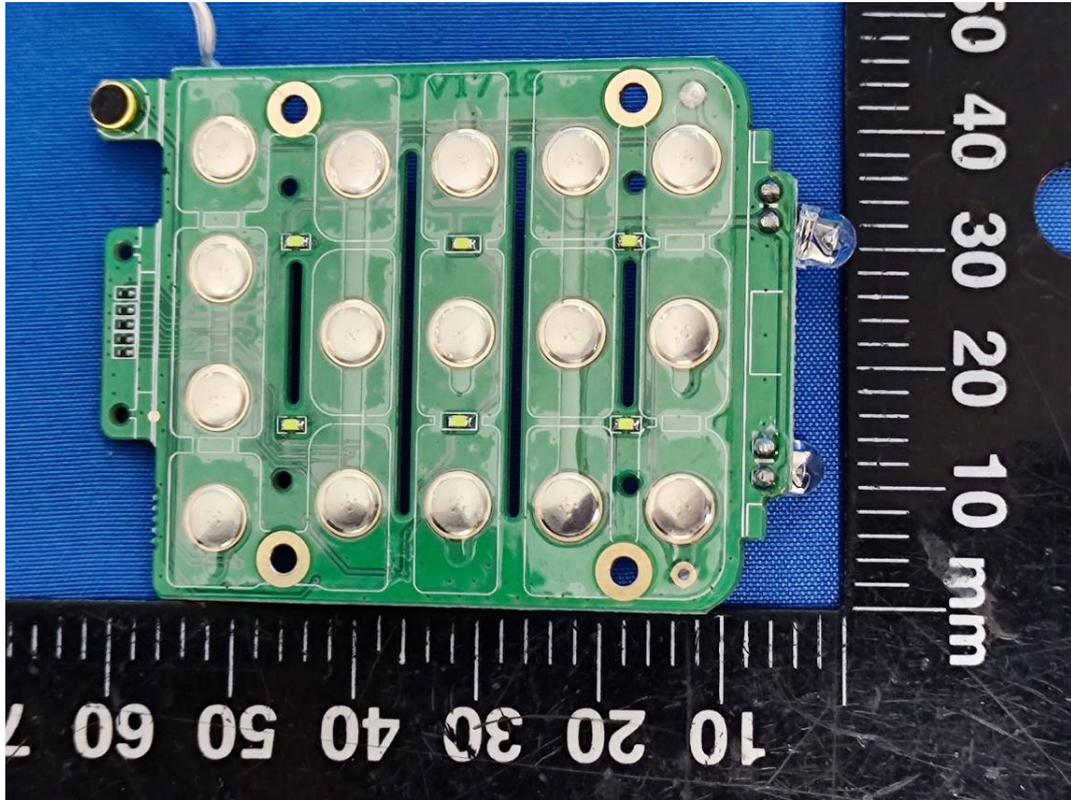


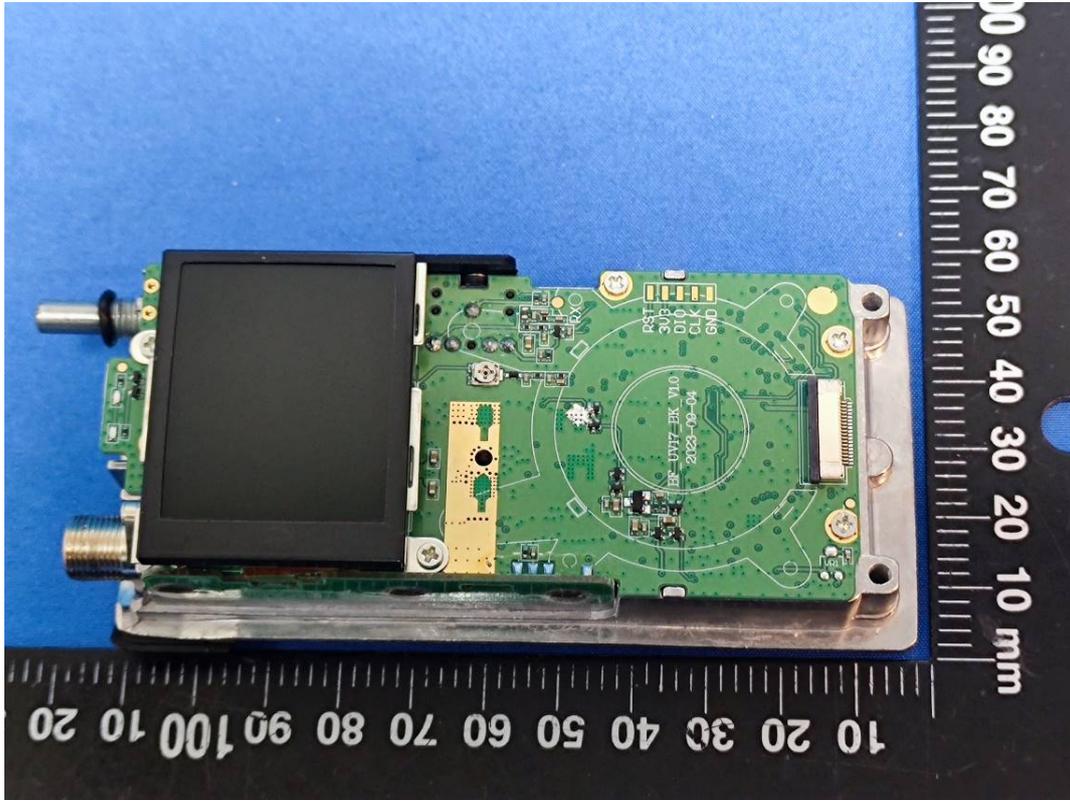


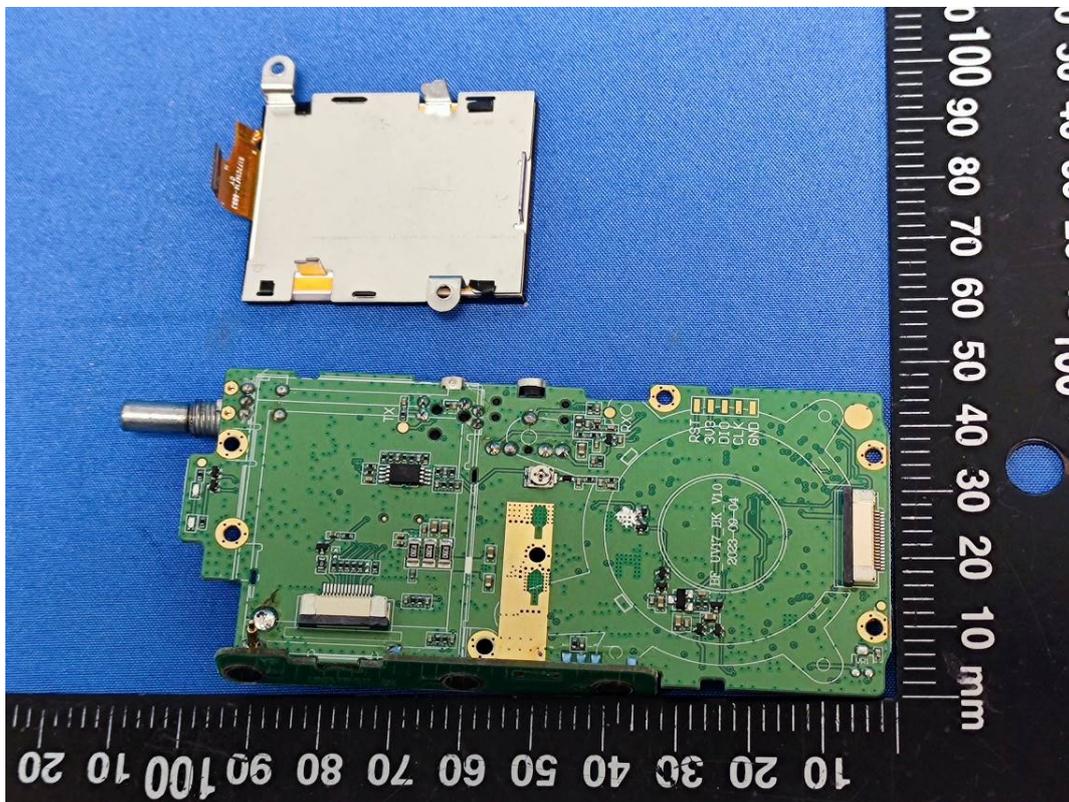
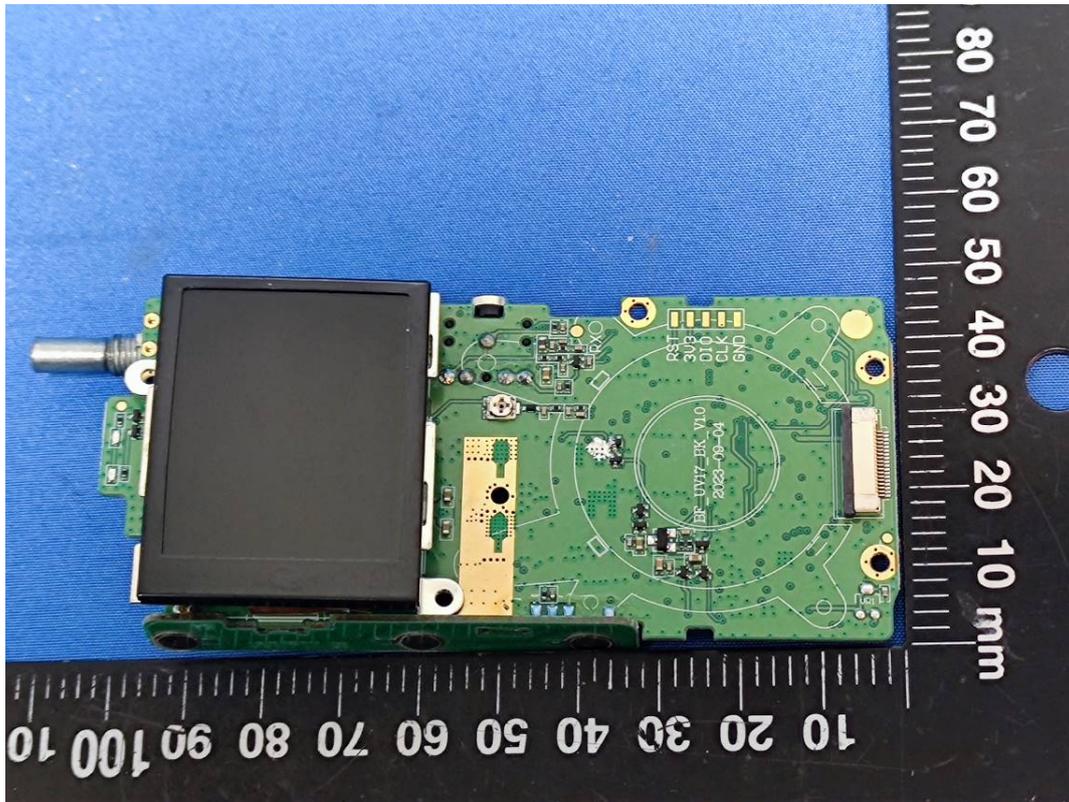


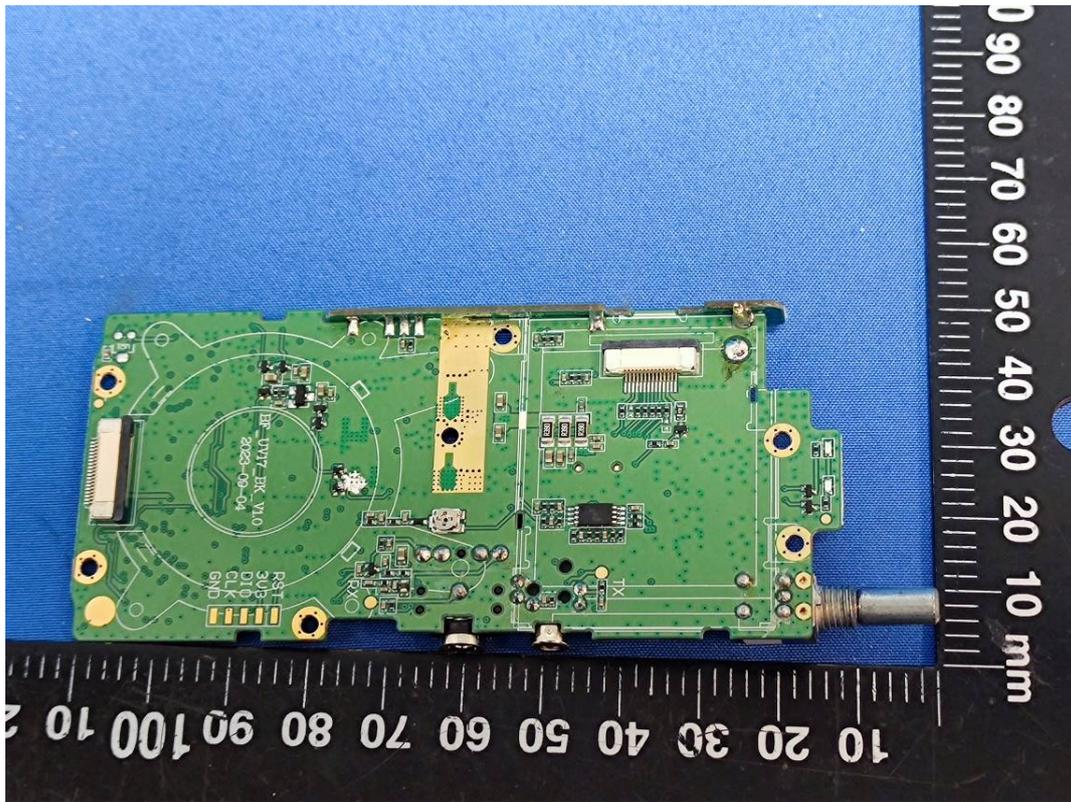




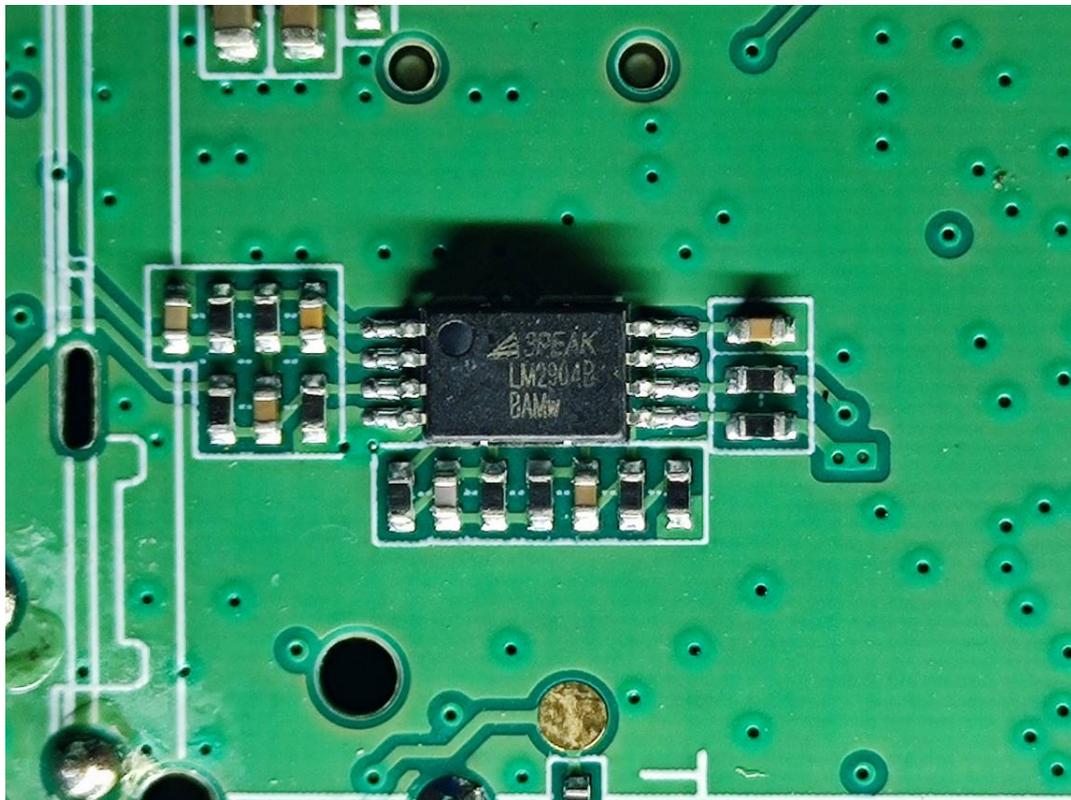


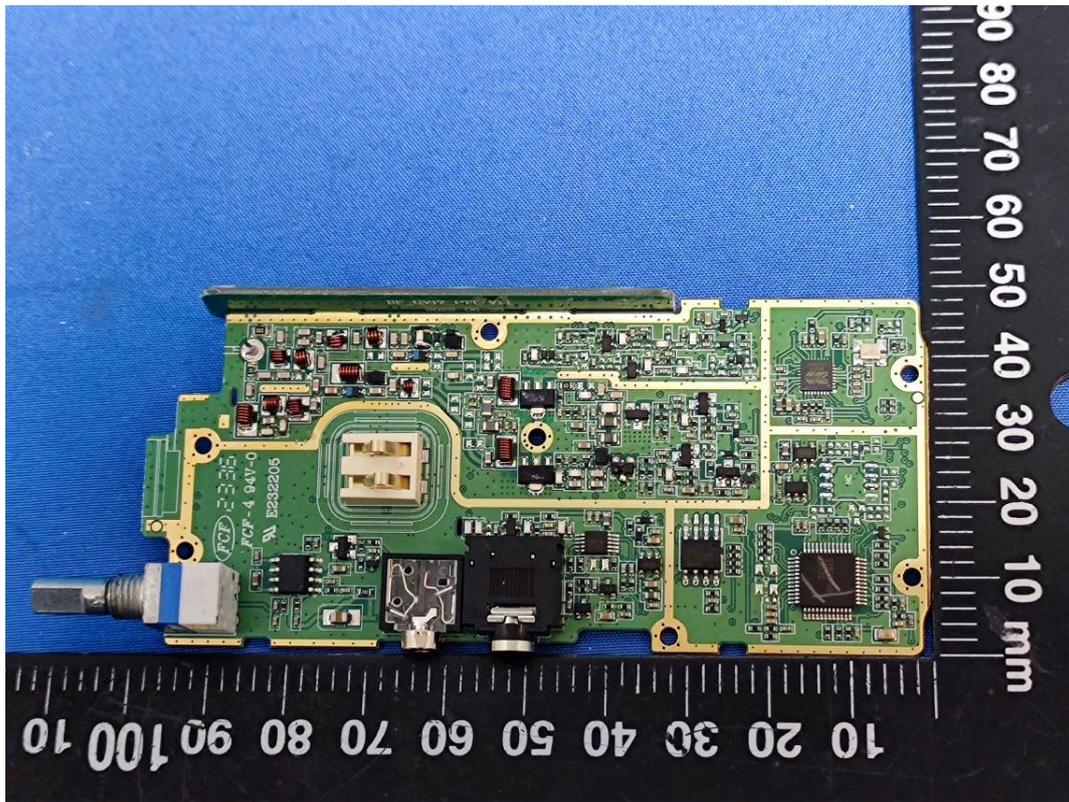




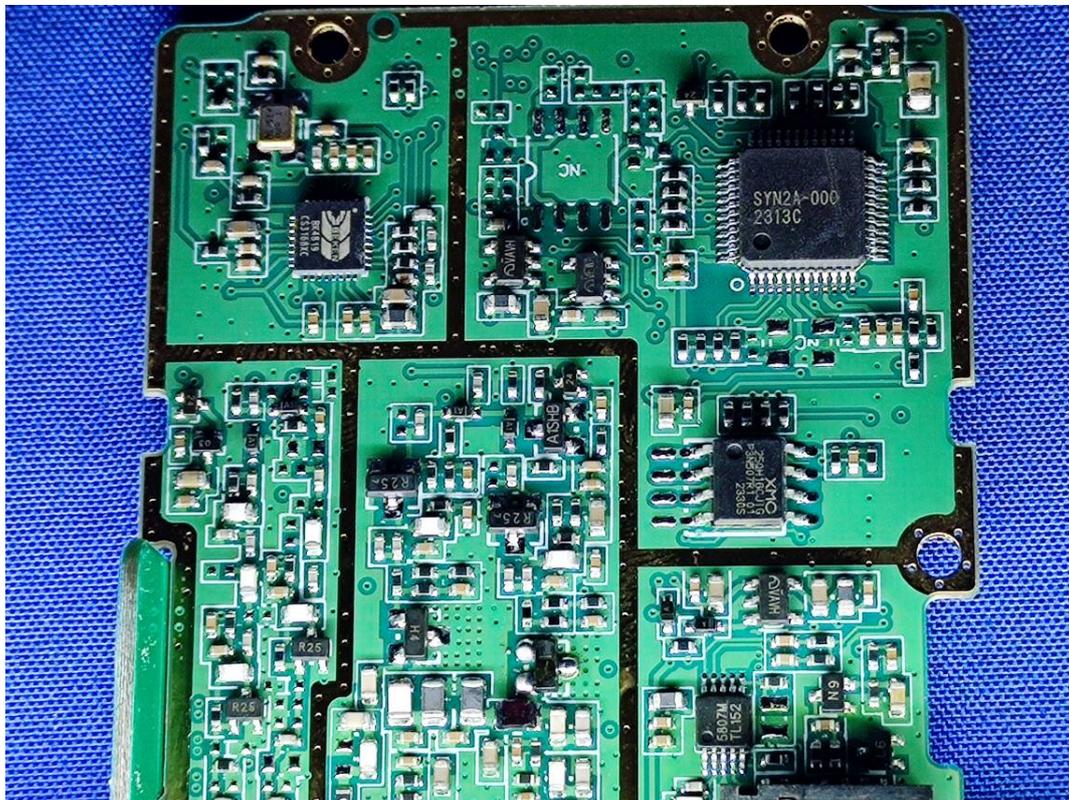


Chip





Chip



Chip

