

# FCC PART 15C TEST REPORT FOR CERTIFICATION

## On Behalf of

AUMOVIO Aftermarket GmbH

Car Radio

Model Number: ACR313UBA-IVE, TRW312UB-BU

Additional Model: CR313UBA-IVE, TR313UBA-IVE, TRDW312UB-PIA,  
TRDW313UB-BO, CRDW312UB-WH, CR313UB-MAN, TRDW311U-OR,  
TRDW312UB-OR, TRDW312UB-BU, TRDW312UB-OR/WAN,  
TRDW312UB-LIE, TRW311U-LIE, TRW312UB-LIE, TRW312UBM-BU,  
TRW312UB-OR, TRW312UB-OR/ISO, TRDW312UB-WH/KIO

FCC ID: 2AVAW-ACR313UBA-IVE

|                          |                                                                     |
|--------------------------|---------------------------------------------------------------------|
| Applicant :              | AUMOVIO Aftermarket GmbH                                            |
| Address:                 | Guerickestrasse 7, Frankfurt am Main, Germany, 60488                |
|                          |                                                                     |
| Prepared By:             | EST Technology Co., Ltd.                                            |
|                          | Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China |
| Tel: 86-769-83081888-808 |                                                                     |

|                 |                               |
|-----------------|-------------------------------|
| Report Number:  | ESTE-R2212023-3               |
| Date of Test:   | Nov. 19, 2025 ~ Nov. 28, 2025 |
| Date of Report: | Dec. 03, 2025                 |

## TABLE OF CONTENTS

| Description                                        | Page |
|----------------------------------------------------|------|
| TEST REPORT VERIFICATION .....                     | 3    |
| 1. GENERAL INFORMATION .....                       | 4    |
| 1.1. Description of Device (EUT) .....             | 4    |
| 1.2. Antenna Information .....                     | 4    |
| 1.3. Information of RF Cable .....                 | 4    |
| 1.4. Difference between Model Numbers .....        | 5    |
| 2. SUMMARY OF TEST .....                           | 6    |
| 2.1. Summary of test result .....                  | 6    |
| 2.2. Test Facilities .....                         | 7    |
| 2.3. Measurement uncertainty .....                 | 8    |
| 2.4. Assistant equipment used for test .....       | 8    |
| 2.5. Block Diagram .....                           | 8    |
| 2.6. Test mode .....                               | 9    |
| 2.7. Channel List .....                            | 10   |
| 2.8. Power Setting of Test Software .....          | 10   |
| 2.9. Test Equipment .....                          | 11   |
| 3. RADIATED SPURIOUS EMISSIONS AND BAND EDGE ..... | 12   |
| 3.1. Limit .....                                   | 12   |
| 3.2. Test Setup .....                              | 13   |
| 3.3. Spectrum Analyzer Setting .....               | 14   |
| 3.4. Test Procedure .....                          | 15   |
| 3.5. Test Result .....                             | 16   |
| 4. TEST SETUP PHOTO .....                          | 18   |
| 5. EUT PHOTO .....                                 | 19   |

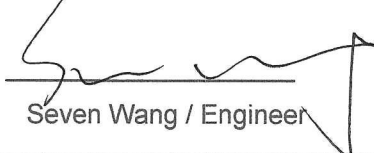
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| <b>Applicant:</b>          | AUMOVIO Aftermarket GmbH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                               |
| <b>Address:</b>            | Guerickestrasse 7, Frankfurt am Main, Germany, 60488                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                               |
| <b>Manufacturer:</b>       | Huizhou Foryou General Electronics Co., Ltd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                               |
| <b>Address:</b>            | No.2 District A, Foryou Industry Park, No. 1 North Shangxia Road, Dongjiang Hi tech Industry Park, 516005 Huizhou city, Guangdong Province, China(PROC)                                                                                                                                                                                                                                                                                                                                                                                       |                      |                               |
| <b>Factory:</b>            | Huizhou Foryou General Electronics Co., Ltd                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                               |
| <b>Address:</b>            | No.2 District A, Foryou Industry Park, No.1 North Shangxia Road, Dongjiang Hi tech Industry Park, 516005 Huizhou city, Guangdong Province, China(PROC)                                                                                                                                                                                                                                                                                                                                                                                        |                      |                               |
| <b>E.U.T:</b>              | Car Radio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                               |
| <b>Model Number:</b>       | ACR313UBA-IVE, TRW312UB-BU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |
| <b>Additional Model:</b>   | CR313UBA-IVE, TR313UBA-IVE, TRDW312UB-PIA, TRDW313UB-BO, CRDW312UB-WH, CR313UB-MAN, TRDW311U-OR, TRDW312UB-OR, TRDW312UB-BU, TRDW312UB-OR/WAN, TRDW312UB-LIE, TRW311U-LIE, TRW312UB-LIE, TRW312UBM-BU, TRW312UB-OR, TRW312UB-OR/ISO, TRDW312UB-WH/KIO<br>Note: Please refer to Section 1.4 for model differences.                                                                                                                                                                                                                             |                      |                               |
| <b>Power Supply:</b>       | DC 12V From Battery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                               |
| <b>Trade Name:</b>         | IVECO, PIAGGIO, FAYAT, Continental, Volkswagen , VDO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                               |
| <b>Date of Receipt:</b>    | Nov. 19, 2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Date of Test:</b> | Nov. 19, 2025 ~ Nov. 28, 2025 |
| <b>Test Specification:</b> | FCC Part 15 Subpart C (15.247)<br>ANSI C63.10:2020<br>FCC KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                               |
| <b>Test Result:</b>        | <p>The device described above is tested by EST Technology Co., Ltd. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC Rules and Regulations Part 15 Subpart C requirements.</p> <p>This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd.</p> |                      |                               |
| <b>Date:</b> Apr. 29, 2026 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                               |

Prepared by:

Zephyr Zhu

Zephyr Zhu/ Assistant

Reviewed by:



Seven Wang / Engineer

Approved by:



Iceman Hu / Manager

**Other Aspects:** This report is based on the previous report with report number: ESTE-R2212023-2. Four new models and the trademark have been added. Applicant information has been modified. So just re-tested Radiated Emissions (30-1000Mhz) in this report. Please refer to Section 1.4 for model differences. The test standard has been updated to the latest.

Abbreviations: OK/P=passed    fail/F=failed    n.a/N=not applicable    E.U.T=equipment under tested

This test report is based on a single evaluation of one sample of above mentioned products, It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd. The statement of compliance in this report is based on the limit in the test standard, the measurement uncertainty is not considered.

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

|                                                                                                                 |   |                                                                               |
|-----------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------|
| Product Name                                                                                                    | : | Car Radio                                                                     |
| Model Number                                                                                                    | : | ACR313UBA-IVE; TRW312UB-BU                                                    |
| Software Version                                                                                                | : | N/A                                                                           |
| Hardware Version                                                                                                | : | N/A                                                                           |
| Operation frequency                                                                                             | : | 2402MHz~2480MHz                                                               |
| Number of channel                                                                                               | : | 79                                                                            |
| Max Output Power (PEAK)                                                                                         | : | -1.44dBm                                                                      |
| Modulation Type                                                                                                 | : | BT BDR(1Mbps): GFSK<br>BT EDR(2Mbps): $\pi/4$ -DQPSK<br>BT EDR(3Mbps): 8-DPSK |
| Sample Type                                                                                                     | : | Prototype production                                                          |
| Note: The product information is provided by the manufacturer. The laboratory is not responsible for this data. |   |                                                                               |

### 1.2. Antenna Information

| Ant No.                                                                                                                    | Brand | Model Name | Antenna Type | Connector | Gain (dBi) |
|----------------------------------------------------------------------------------------------------------------------------|-------|------------|--------------|-----------|------------|
| 1                                                                                                                          | -     | -          | Internal     | -         | 1.06       |
| Note:                                                                                                                      |       |            |              |           |            |
| 1.The antenna gain is declared by the customer and the laboratory is not responsible for the accuracy of the antenna gain. |       |            |              |           |            |
| 2.The test results of this report only apply to the sample as received.                                                    |       |            |              |           |            |

### 1.3. Information of RF Cable

| Cable Loss(dB)                                                                                                                    | Provided by              |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1.0                                                                                                                               | AUMOVIO Aftermarket GmbH |
| Note:                                                                                                                             |                          |
| 1.The customer declared the loss value of the RF Cable. and the test results of this report only apply to the sample as received. |                          |
| 2.The laboratory is not responsible for the accuracy of the cable loss.                                                           |                          |

#### 1.4.Difference between Model Numbers

| Base model                                                                                                                                                                                                                                                                                                                                                                                             | Serial model No.                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACR313UBA-IVE                                                                                                                                                                                                                                                                                                                                                                                          | CR313UBA-IVE, TR313UBA-IVE, TRDW312UB-PIA, TRDW313UB-BO, CRDW312UB-WH, CR313UB-MAN, TRDW311U-OR, TRDW312UB-OR, TRDW312UB-BU, TRDW312UB-ORMAN, TRDW312UB-LIE, TRW311U-LIE, TRW312UB-LIE, TRW312UBM-BU, TRW312UB-BU, TRW312UB-OR, TRW312UB-OR/ISO,TRDW312UB-WH/KIO |
| Description of differences: Compared to the base model ACR313UBA-IVE, the five models TRW312UB-BU, TRW312UB-OR, TRW312UB-OR/ISO, TRDW312UB-WH/KIO, TRW312UBM-BU removal of DAB, CAN, Rear AUX, lane departure warning, and 30-day clock memory; changes to the LCD display mode, backlight, hardware and button lighting. Other models differ from the base model only in model number and appearance. |                                                                                                                                                                                                                                                                  |

## 2.SUMMARY OF TEST

### 2.1.Summary of test result

| No. | Description of Test Item                     | FCC Standard Section          | Results |
|-----|----------------------------------------------|-------------------------------|---------|
| 1   | Maximum Peak Output Power                    | 15.247(a)(1)                  | N/A     |
| 2   | 20dB Bandwidth                               | 15.247(a)(1)                  | N/A     |
| 3   | Carrier Frequency Separation                 | 15.247(a)(1)                  | N/A     |
| 4   | Number Of Hopping Channel                    | 15.247(a)(1)(iii)             | N/A     |
| 5   | Dwell Time                                   | 15.247(a)(1)(iii)             | N/A     |
| 6   | Conducted Band Edge                          | 15.247(d)                     | N/A     |
| 7   | Conducted Spurious Emissions                 | 15.247(d)                     | N/A     |
| 8   | Radiated Spurious Emissions<br>and Band Edge | 15.205<br>15.209<br>15.247(d) | PASS    |
| 9   | AC Power Line Conducted<br>Emissions         | 15.207                        | N/A     |
| 10  | Antenna Requirement                          | 15.203                        | N/A     |

Note: "N/A" denotes test is not applicable in this test report.

## 2.2. Test Facilities

EMC Lab : Accredited by CNAS, CHINA  
Registration No.: L5288  
This Accreditation is valid until: November 12, 2029

Recognized by FCC, USA  
Designation Number: CN1215  
This Recognition is valid until: January 31, 2028

Accredited by A2LA, USA  
Registration No.: 4366.01  
This Accreditation is valid until: January 31, 2028

Recognized by Industry Canada  
CAB identifier No.: CN0035  
This Recognition is valid until: January 31, 2028

Recognized by VCCI, Japan  
Registration No.: C-14103; T-20073; R-13663;  
R-20103; G-20097  
Date of registration: Apr. 20, 2026  
This Recognition is valid until: Apr. 19, 2029

Recognized by TUV Rheinland, Germany  
Registration No.: UA 50413872 0001  
Date of registration: July 31, 2018

Recognized by Intertek  
Registration No.: 2011-RTL-L2-64  
Date of registration: November 08, 2018

Name of Firm : EST Technology Co., Ltd.

Site Location : Chilingxiang, Qishantou, Santun, Houjie, Dongguan,  
Guangdong, China

## 2.3.Measurement uncertainty

| Test Item                                               | Uncertainty                       |
|---------------------------------------------------------|-----------------------------------|
| Uncertainty for Conduction emission test                | $\pm 3.48\text{dB}$               |
| Uncertainty for spurious emissions test (Below 30MHz)   | $\pm 1.62\text{ dB}$              |
| Uncertainty for spurious emissions test (30MHz-1GHz)    | $\pm 4.60\text{ dB(Polarize: H)}$ |
|                                                         | $\pm 4.68\text{ dB(Polarize: V)}$ |
| Uncertainty for spurious emissions test (1GHz to 25GHz) | $\pm 4.96\text{dB}$               |
| Uncertainty for radio frequency                         | $7 \times 10^{-8}$                |
| Uncertainty for conducted RF Power                      | $1.08\text{dB}$                   |
| Uncertainty for Power density test                      | $0.26\text{dB}$                   |

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

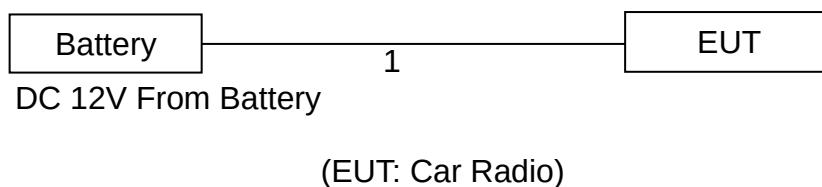
## 2.4.Assistant equipment used for test

| Item | Equipment | Brand | Model Name/Type No. | FCC ID | Series No. |
|------|-----------|-------|---------------------|--------|------------|
| -    | -         | -     | -                   | -      | -          |

| Item | Shielded Type | Ferrite Core | Length | Note     |
|------|---------------|--------------|--------|----------|
| 1    | NO            | NO           | 0.5m   | DC Cable |

## 2.5.Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 (or 1.5) meter high above ground. EUT was beset into Bluetooth test mode by software before test.



## 2.6. Test mode

Combining all the rates, modulations, and packet types, the Pre-scans had been carried out. The worst case test mode was selected for the final test as listed below.

| Test Item                               | Modulation Type              | Operating Mode | Packet Type | Test Channel    |
|-----------------------------------------|------------------------------|----------------|-------------|-----------------|
| Radiated Spurious Emissions(Below 1GHz) | GFSK&8-DPSK & $\pi/4$ -DQPSK | Non Hopping    | DH5         | Low/Middle/High |

Note: In radiated measurement, the EUT had been pre-scan on the positioned of each 3 axis(X,Y,Z), the worst case was found when positioned on **X-plane**.

## 2.7.Channel List

| Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) |
|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| 0           | 2402            | 1           | 2403            | 2           | 2404            | 3           | 2405            |
| 4           | 2406            | 5           | 2407            | 6           | 2408            | 7           | 2409            |
| 8           | 2410            | 9           | 2411            | 10          | 2412            | 11          | 2413            |
| 12          | 2414            | 13          | 2415            | 14          | 2416            | 15          | 2417            |
| 16          | 2418            | 17          | 2419            | 18          | 2420            | 19          | 2421            |
| 20          | 2422            | 21          | 2423            | 22          | 2424            | 23          | 2425            |
| 24          | 2426            | 25          | 2427            | 26          | 2428            | 27          | 2429            |
| 28          | 2430            | 29          | 2431            | 30          | 2432            | 31          | 2433            |
| 32          | 2434            | 33          | 2435            | 34          | 2436            | 35          | 2437            |
| 36          | 2438            | 37          | 2439            | 38          | 2440            | 39          | 2441            |
| 40          | 2442            | 41          | 2443            | 42          | 2444            | 43          | 2445            |
| 44          | 2446            | 45          | 2447            | 46          | 2448            | 47          | 2449            |
| 48          | 2450            | 49          | 2451            | 50          | 2452            | 51          | 2453            |
| 52          | 2454            | 53          | 2455            | 54          | 2456            | 55          | 2457            |
| 56          | 2458            | 57          | 2459            | 58          | 2460            | 59          | 2461            |
| 60          | 2462            | 61          | 2463            | 62          | 2464            | 63          | 2465            |
| 64          | 2466            | 65          | 2467            | 66          | 2468            | 67          | 2469            |
| 68          | 2470            | 69          | 2471            | 70          | 2472            | 71          | 2473            |
| 72          | 2474            | 73          | 2475            | 74          | 2476            | 75          | 2477            |
| 76          | 2478            | 77          | 2479            | 78          | 2480            | -           | -               |

## 2.8.Power Setting of Test Software

| Software Name         | ISRT Ver:2.1.28.4678 |      |      |
|-----------------------|----------------------|------|------|
| Frequency(MHz)        | 2402                 | 2441 | 2480 |
| GFSK(1Mbps) Setting   | 4                    | 4    | 4    |
| $\pi/4$ -DQPSK(2Mbps) | 4                    | 4    | 4    |
| 8-DPSK(3Mbps) Setting | 4                    | 4    | 4    |

Note: This information is provided by the applicant.

## 2.9. Test Equipment

| For radiated emission test(9kHz-30MHz) |                 |              |            |                  |            |            |
|----------------------------------------|-----------------|--------------|------------|------------------|------------|------------|
| Equipment                              | Manufacturer    | Model No.    | Serial No. | Calibration Body | Last Cal.  | Next Cal.  |
| EMI Test Receiver                      | Rohde & Schwarz | ESR7         | EST-E047   | LISAI            | June 11,25 | June 10,26 |
| Active Loop Antenna                    | SCHWABE BECK    | FMZB 1519B   | EST-E054   | LISAI            | June 11,25 | June 10,26 |
| Test Software                          | Audix           | e3-6.111221a | N/A        | N/A              | N/A        | N/A        |
| 9kHz-30MHz Cable                       | N/A             | EST-001      | N/A        | N/A              | N/A        | N/A        |

| For radiated emissions test (30MHz-1000MHz) |                 |              |            |                  |            |            |
|---------------------------------------------|-----------------|--------------|------------|------------------|------------|------------|
| Equipment                                   | Manufacturer    | Model No.    | Serial No. | Calibration Body | Last Cal.  | Next Cal.  |
| EMI Test Receiver                           | Rohde & Schwarz | ESR7         | EST-E047   | LISAI            | June 11,25 | June 10,26 |
| Bilog Antenna                               | Teseq           | CBL 6111D    | EST-E034   | LISAI            | June 11,25 | June 10,26 |
| Test Software                               | Audix           | e3-6.111221a | N/A        | N/A              | N/A        | N/A        |
| 30-1000MHz Cable                            | N/A             | EST-002      | N/A        | N/A              | N/A        | N/A        |

### 3. RADIATED SPURIOUS EMISSIONS AND BAND EDGE

#### 3.1. Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

#### 15.205 Restricted frequency band

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 0.495 - 0.505 | 16.69475 - 16.69525   | 608 - 614       | 5.35 - 5.46      |
| 2.1735 - 2.1905            | 16.80425 - 16.80475   | 960 - 1240      | 7.25 - 7.75      |
| 4.125 - 4.128              | 25.5 - 25.67          | 1300 - 1427     | 8.025 - 8.5      |
| 4.17725 - 4.17775          | 37.5 - 38.25          | 1435 - 1626.5   | 9.0 - 9.2        |
| 4.20725 - 4.20775          | 73 - 74.6             | 1645.5 - 1646.5 | 9.3 - 9.5        |
| 6.215 - 6.218              | 74.8 - 75.2           | 1660 - 1710     | 10.6 - 12.7      |
| 6.26775 - 6.26825          | 108 - 121.94          | 1718.8 - 1722.2 | 13.25 - 13.4     |
| 6.31175 - 6.31225          | 123 - 138             | 2200 - 2300     | 14.47 - 14.5     |
| 8.291 - 8.294              | 149.9 - 150.05        | 2310 - 2390     | 15.35 - 16.2     |
| 8.362 - 8.366              | 156.52475 - 156.52525 | 2483.5 - 2500   | 17.7 - 21.4      |
| 8.37625 - 8.38675          | 156.7 - 156.9         | 2690 - 2900     | 22.01 - 23.12    |
| 8.41425 - 8.41475          | 162.0125 - 167.17     | 3260 - 3267     | 23.6 - 24.0      |
| 12.29 - 12.293             | 167.72 - 173.2        | 3332 - 3339     | 31.2 - 31.8      |
| 12.51975 - 12.52025        | 240 - 285             | 3345.8 - 3358   | 36.43 - 36.5     |
| 12.57675 - 12.57725        | 322 - 335.4           | 3600 - 4400     | ( <sup>2</sup> ) |

#### 15.209 Limit

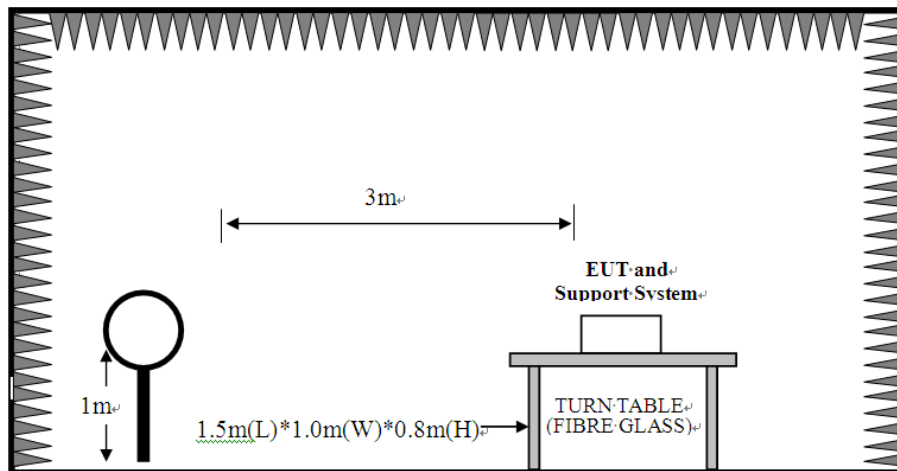
| Frequency (MHz) | Field Strength( $\mu$ V/m) | Distance(m) |
|-----------------|----------------------------|-------------|
| 0.009-0.490     | 2400/F(kHz)                | 300         |
| 0.490-1.705     | 24000/F(kHz)               | 30          |
| 1.705-30        | 30                         | 30          |
| 30-88           | 100                        | 3           |
| 88-216          | 150                        | 3           |
| 216-960         | 200                        | 3           |
| Above 960       | 500                        | 3           |

Note:

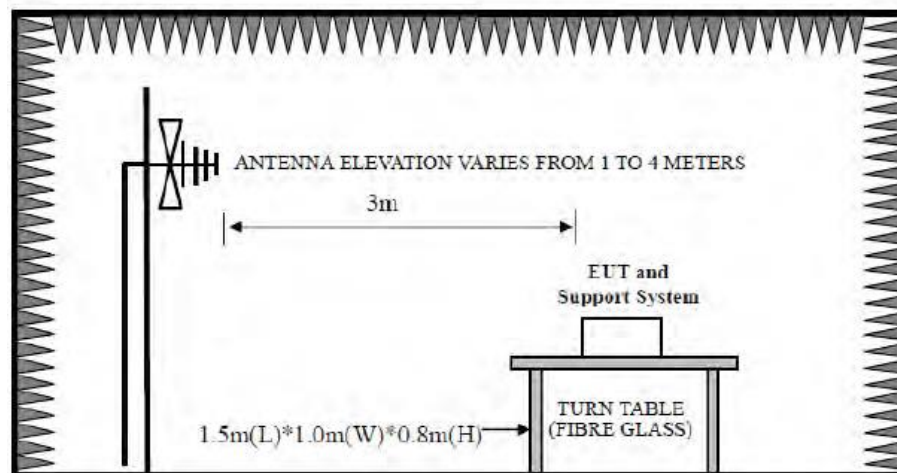
- (1) Emission level dB $\mu$ V = 20 log Emission level  $\mu$ V/m.
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

## 3.2. Test Setup

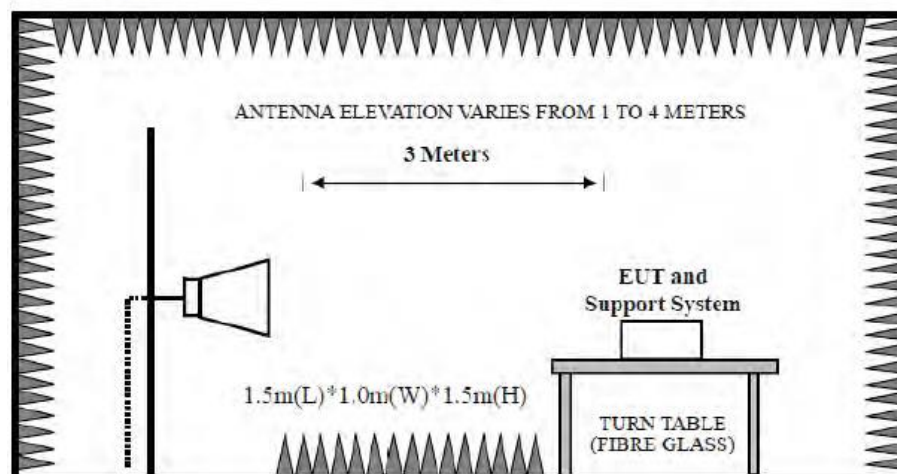
9kHz~30MHz



30~1000MHz



Above 1GHz



### 3.3. Spectrum Analyzer Setting

#### For 9KHz-150KHz

| Spectrum Parameters | Setting                                 |
|---------------------|-----------------------------------------|
| RBW                 | 300Hz(for Peak&AVG)/CISPR 200Hz(for QP) |
| VBW                 | 300Hz(for Peak&AVG)/CISPR 200Hz(for QP) |
| Start frequency     | 9KHz                                    |
| Stop frequency      | 150KHz                                  |
| Sweep Time          | Auto                                    |
| Detector            | PEAK/QP/AVG                             |
| Trace Mode          | Max Hold                                |

#### For 150KHz-30MHz

| Spectrum Parameters | Setting  |
|---------------------|----------|
| RBW                 | 9KHz     |
| VBW                 | 9KHz     |
| Start frequency     | 150KHz   |
| Stop frequency      | 30MHz    |
| Sweep Time          | Auto     |
| Detector            | QP       |
| Trace Mode          | Max Hold |

#### For 30MHz-1GHz

| Spectrum Parameters | Setting  |
|---------------------|----------|
| RBW                 | 120KHz   |
| VBW                 | 300KHz   |
| Start frequency     | 30MHz    |
| Stop frequency      | 1GHz     |
| Sweep Time          | Auto     |
| Detector            | QP       |
| Trace Mode          | Max Hold |

#### For Above 1GHz

| Spectrum Parameters | Setting          |                         |
|---------------------|------------------|-------------------------|
| RBW                 | 1MHz             |                         |
| VBW                 | PEAK Measurement | AVG Measurement         |
|                     | 3MHz             | Duty cycle≥98%,VBW=10Hz |
|                     |                  | Duty cycle<98%,VBW≥1/T  |
| Start frequency     | 1GHz             |                         |
| Stop frequency      | 25GHz            |                         |
| Sweep Time          | Auto             |                         |
| Detector            | PEAK             |                         |
| Trace Mode          | Max Hold         |                         |

### 3.4. Test Procedure

- a. EUT was placed on a turn table, which is 0.8 meter high above ground for below 1GHz test, and which is 1.5 meter high above ground for above 1GHz test.
- b. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
- c. Set the EUT transmit continuously with maximum output power.
- d. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
- e. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.
- f. Spectrum analyzer setting parameters in accordance with section 10.3.
- g. Repeat above procedures until all channels and test modes were measured.
- h. Record the results in the test report.

Note:

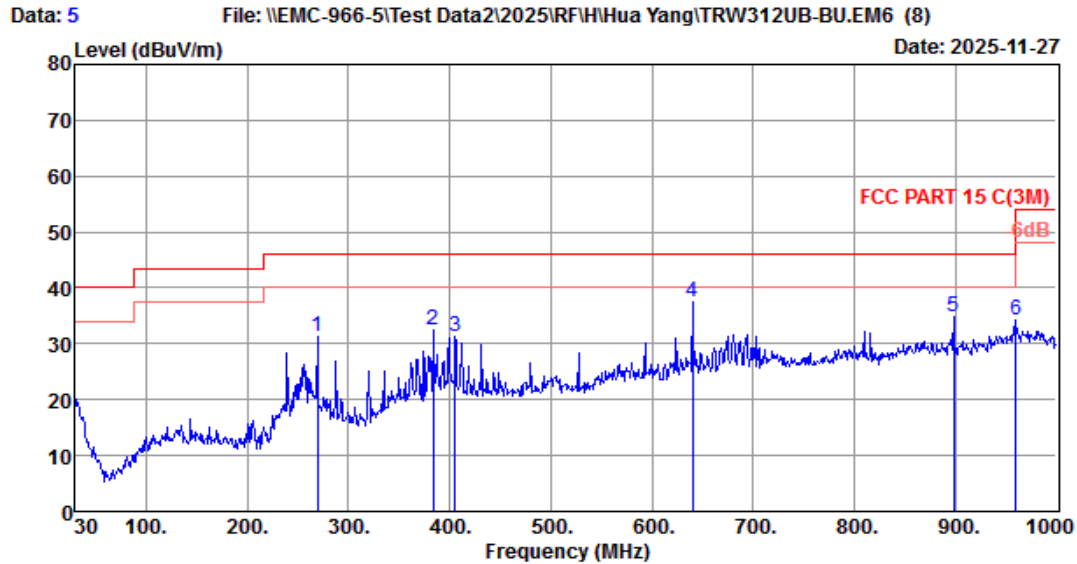
1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
2. The frequency 2402MHz ,2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

## 3.5. Test Result

## Radiated Emissions Below 1GHz

EST Technology

Chilingxiang, Qishantou, Santun,  
Houjie, Dongguan, Guangdong, China  
Tel: +86-769-83081888  
Fax: +86-769-83081878



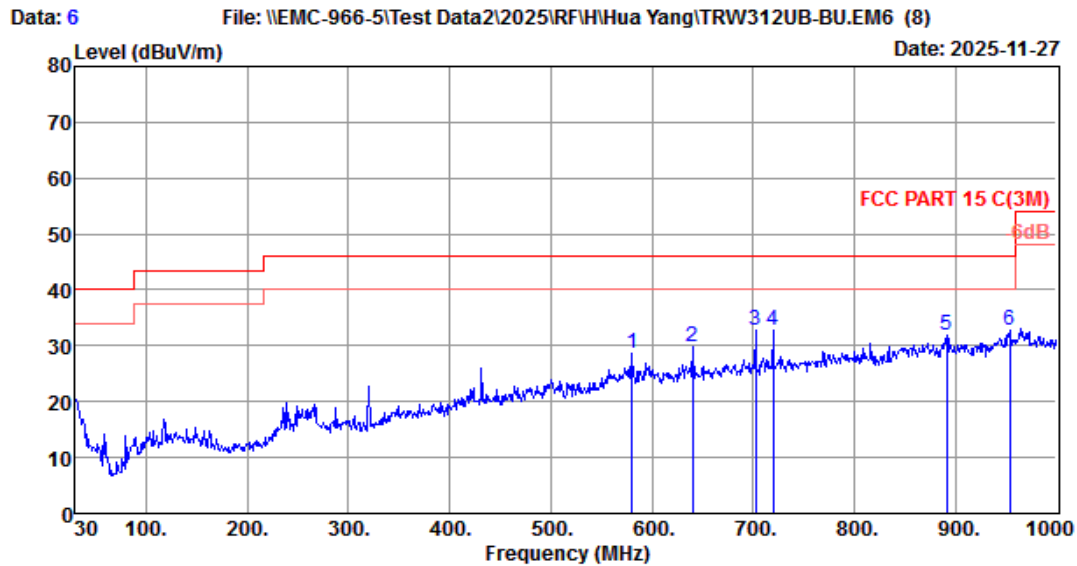
Site no. : 5# 966 Chamber Data no. : 5  
Dis. / Ant. : 3m 54681 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 C(3M)  
Env. / Ins. : Temp:22.6°C;Humi:51.5%;Press:101.55kPa  
Engineer : Wind Li  
EUT : Car Radio  
Power : DC 12V From Battery  
M/N : TRW312UB-BU  
Test Mode : TX Mode  
Sample No : EST-251119024-001

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 269.59         | 13.40                   | 2.91                  | 14.87             | 31.18                         | 46.00             | 14.82          | QP     |
| 2 | 384.05         | 14.88                   | 3.54                  | 13.91             | 32.33                         | 46.00             | 13.67          | QP     |
| 3 | 405.39         | 15.85                   | 3.64                  | 11.69             | 31.18                         | 46.00             | 14.82          | QP     |
| 4 | 640.13         | 20.30                   | 4.64                  | 12.43             | 37.37                         | 46.00             | 8.63           | QP     |
| 5 | 898.15         | 22.67                   | 5.58                  | 6.66              | 34.91                         | 46.00             | 11.09          | QP     |
| 6 | 960.23         | 24.40                   | 5.79                  | 4.17              | 34.36                         | 54.00             | 19.64          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. Margin= Limit - Emission Level.  
3. The emission levels that are 20dB below the official limit are not reported.

## EST Technology

Chilingxiang, Qishantou, Santun,  
Houjie, Dongguan, Guangdong, China  
Tel: +86-769-83081888  
Fax: +86-769-83081878



Site no. : 5# 966 Chamber Data no. : 6  
Dis. / Ant. : 3m 54681 Ant. pol. : VERTICAL  
Limit : FCC PART 15 C(3M)  
Env. / Ins. : Temp:22.6°C;Humi:51.5%;Press:101.55kPa  
Engineer : Wind Li  
EUT : Car Radio  
Power : DC 12V From Battery  
M/N : TRW312UB-BU  
Test Mode : TX Mode  
Sample No : EST-251119024-001

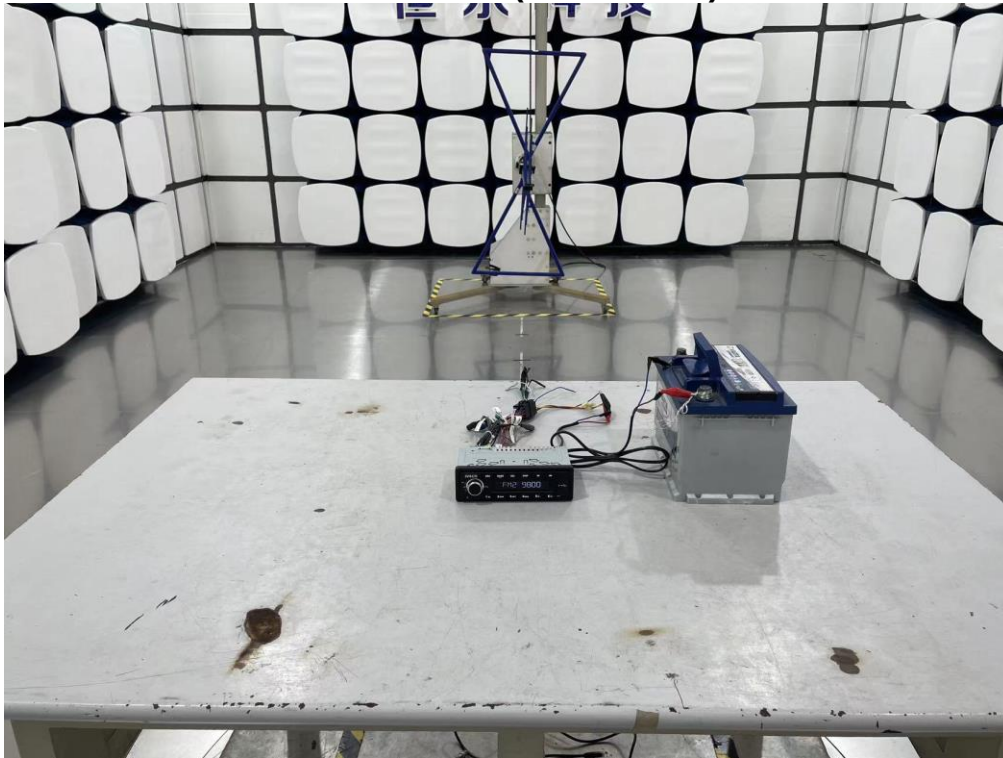
|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 579.99         | 19.50                   | 4.40                  | 4.72              | 28.62                         | 46.00             | 17.38          | QP     |
| 2 | 640.13         | 20.30                   | 4.64                  | 4.74              | 29.68                         | 46.00             | 16.32          | QP     |
| 3 | 702.21         | 20.23                   | 4.88                  | 7.64              | 32.75                         | 46.00             | 13.25          | QP     |
| 4 | 719.67         | 20.84                   | 4.95                  | 6.85              | 32.64                         | 46.00             | 13.36          | QP     |
| 5 | 891.36         | 22.46                   | 5.56                  | 3.97              | 31.99                         | 46.00             | 14.01          | QP     |
| 6 | 953.44         | 24.26                   | 5.76                  | 2.76              | 32.78                         | 46.00             | 13.22          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. Margin= Limit - Emission Level.  
3. The emission levels that are 20dB below the official limit are not reported.

1. The amplitude of 9KHz to 30MHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
2. All test mode had been pre-test, only the worst case was reported.

#### 4. TEST SETUP PHOTO

Radiated Test (Below 1GHz)



## 5. EUT PHOTO

**External Photos**  
M/N: ACR313UBA-IVE

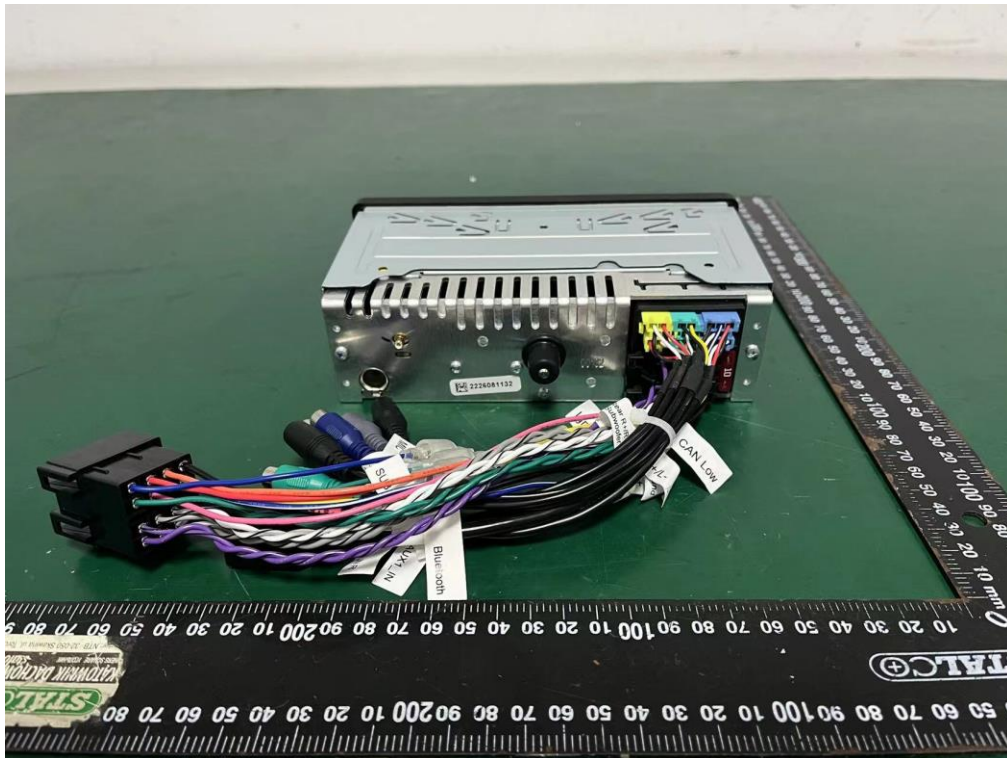


# **External Photos** M/N: ACR313UBA-IVE



## External Photos

M/N: ACR313UBA-IVE



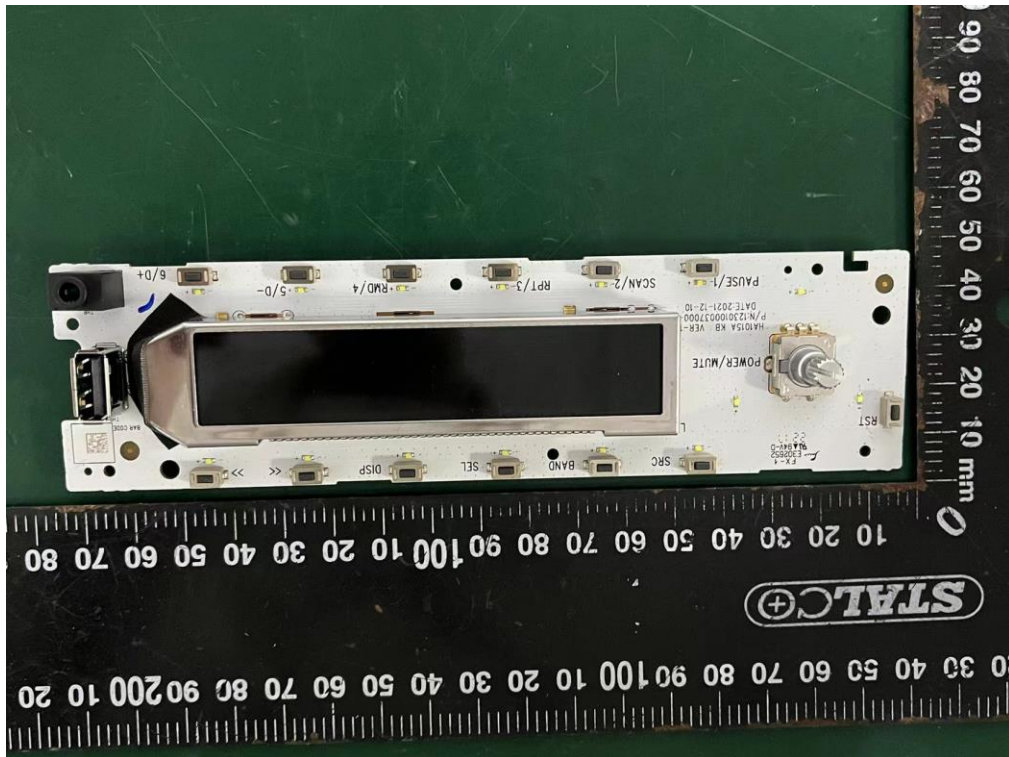
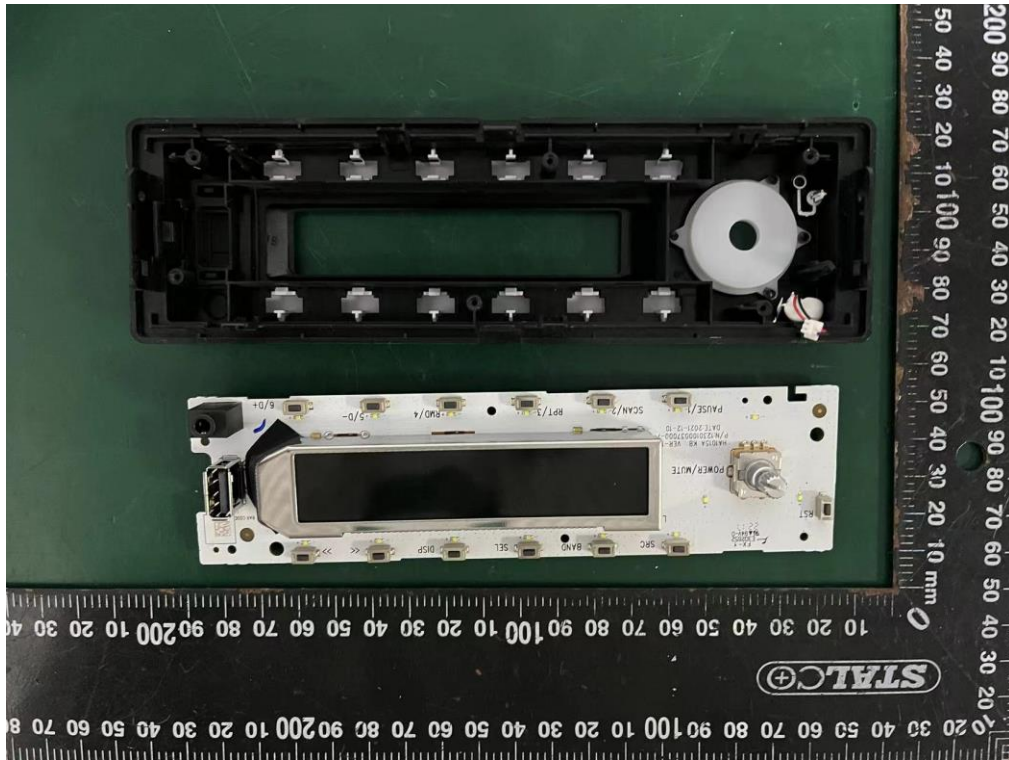
**External Photos**  
M/N: ACR313UBA-IVE



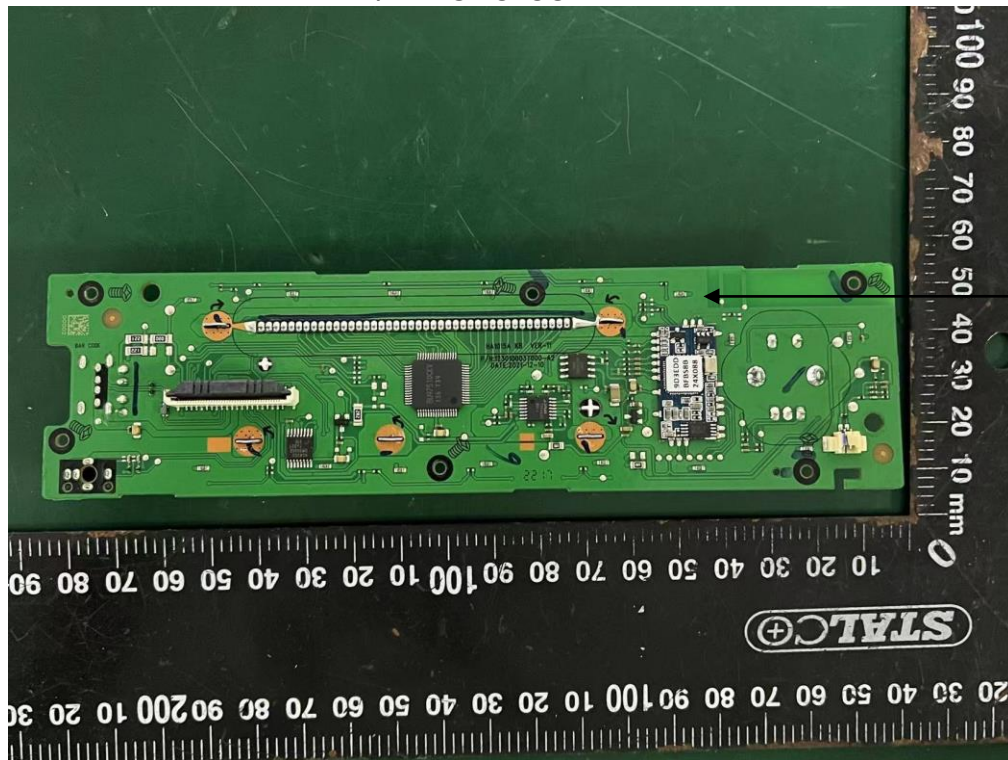
# Internal Photos M/N: ACR313UBA-IVE



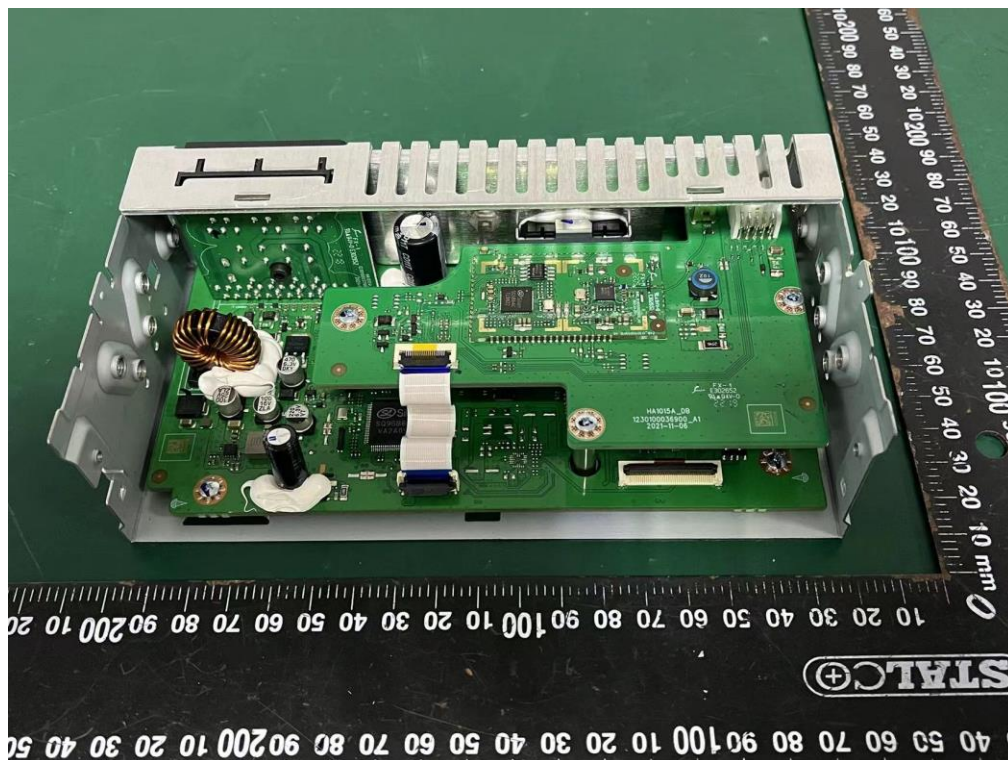
# Internal Photos M/N: ACR313UBA-IVE



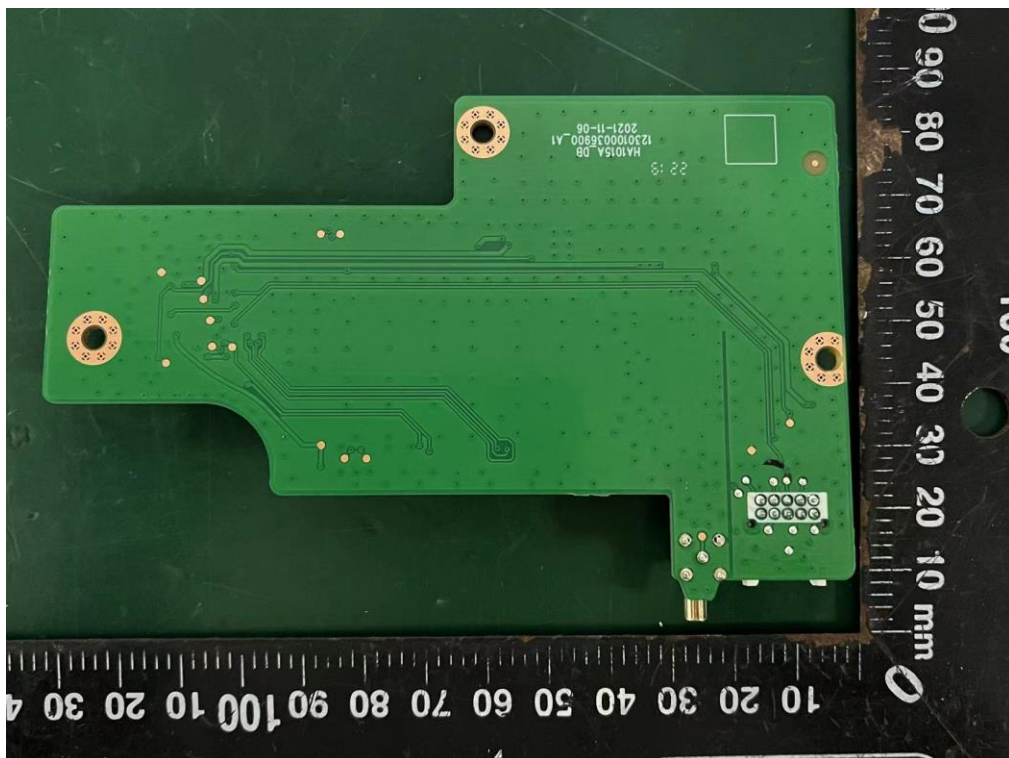
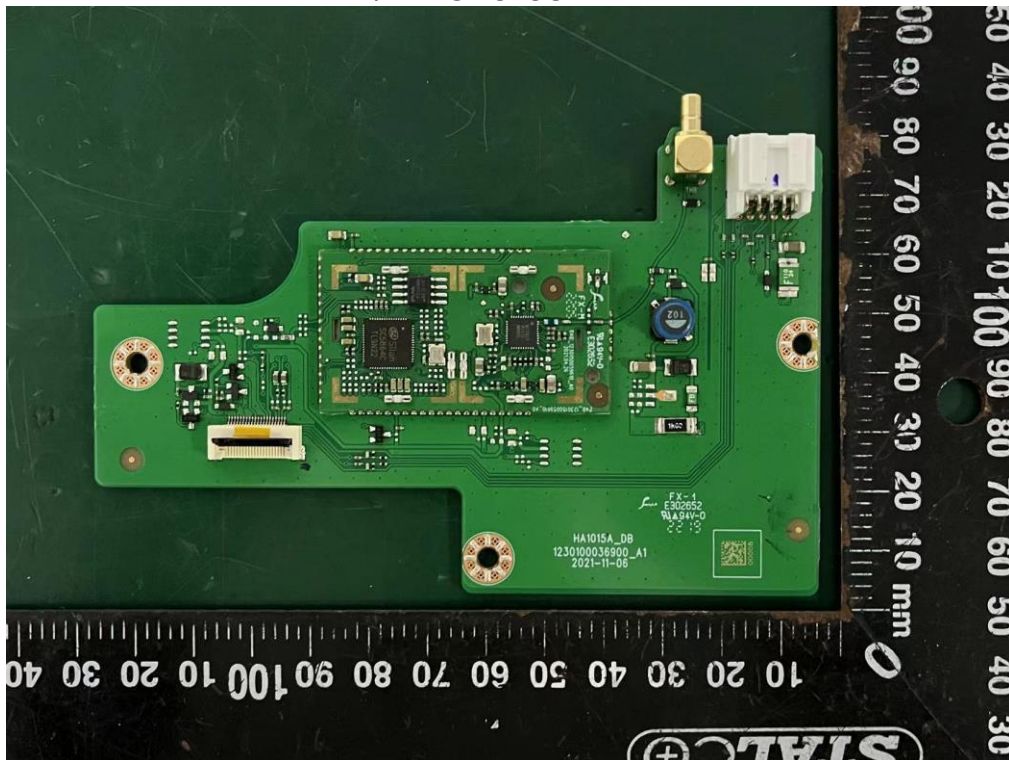
# Internal Photos M/N: ACR313UBA-IVE



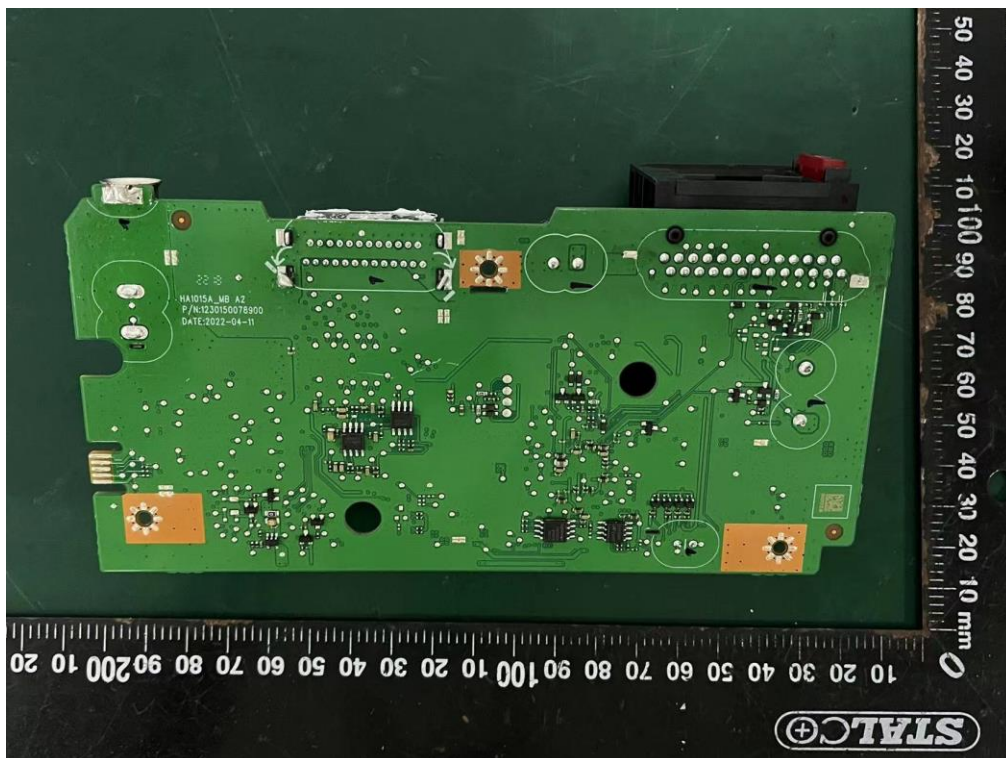
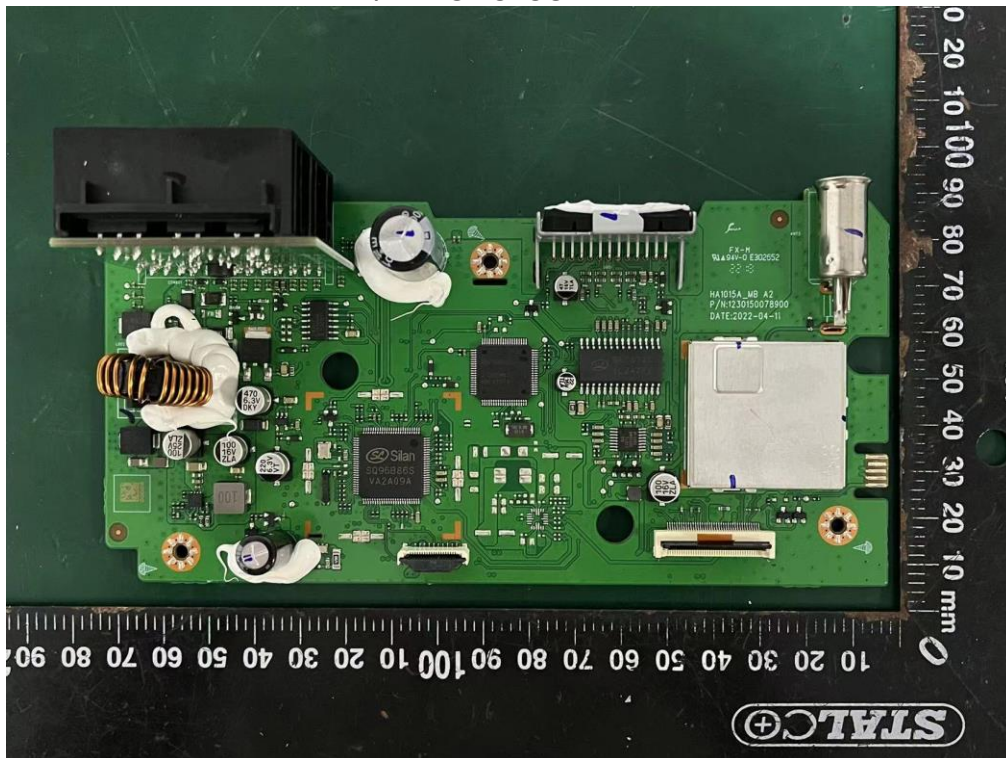
Bluetooth  
Antenna



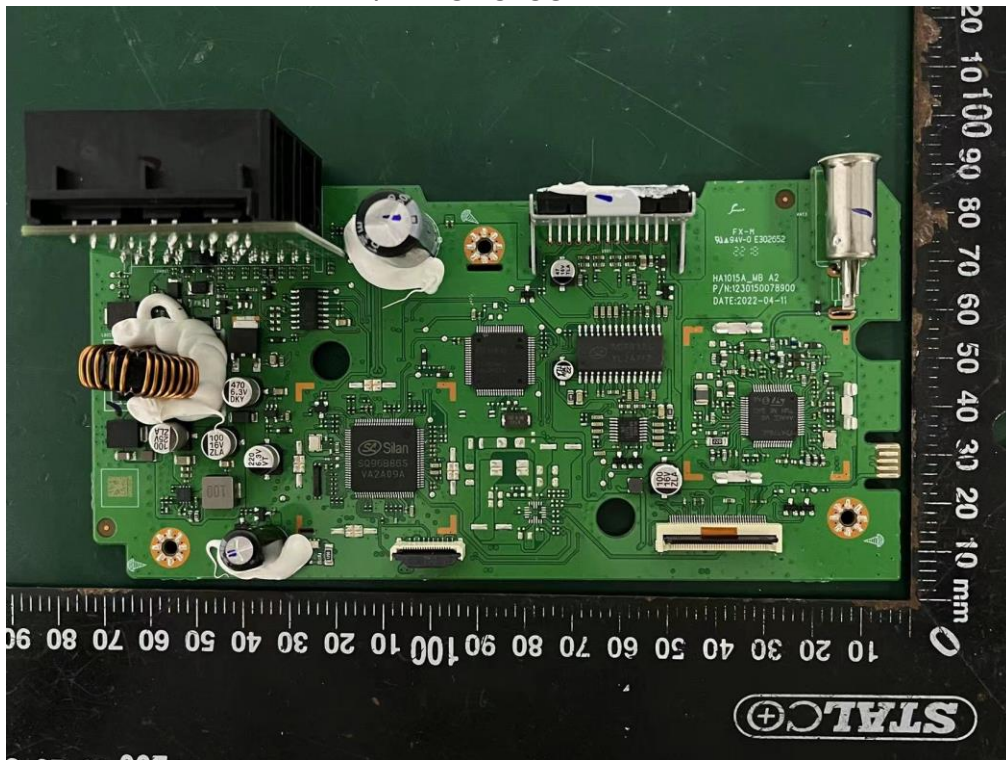
# Internal Photos M/N: ACR313UBA-IVE



# Internal Photos M/N: ACR313UBA-IVE



**Internal Photos**  
M/N: ACR313UBA-IVE



**New Photos**  
**External Photos**  
M/N: TRW312UB-BU



## External Photos

M/N: TRW312UB-BU



**External Photos**  
M/N: TRW312UB-BU



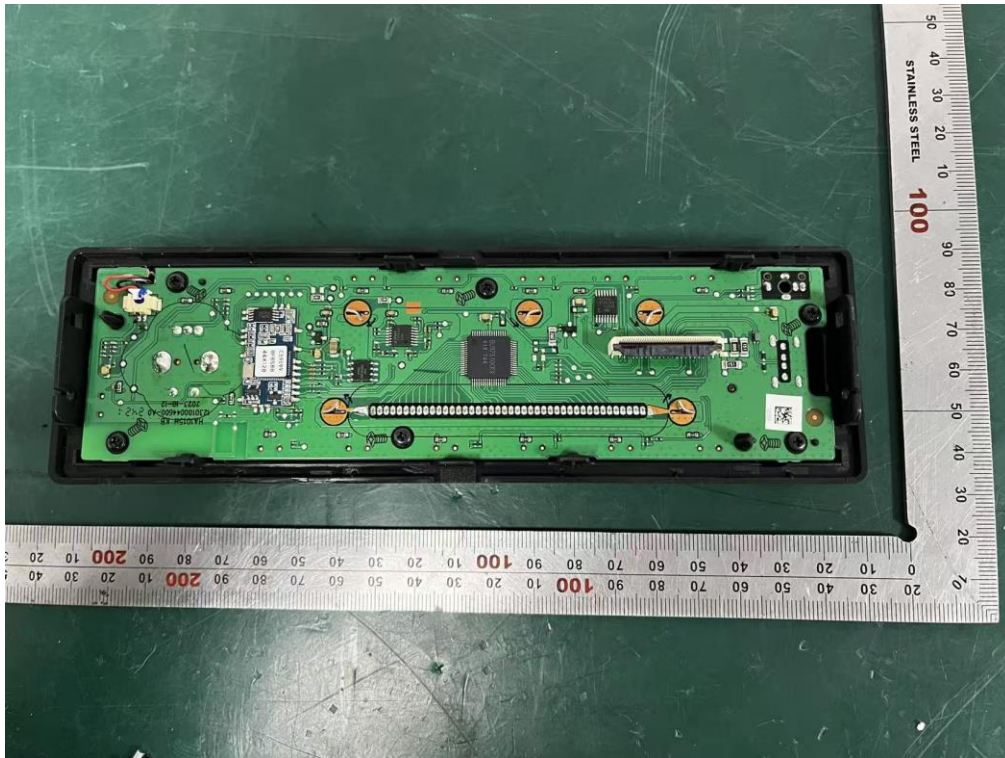
**External Photos**  
M/N: TRW312UB-BU



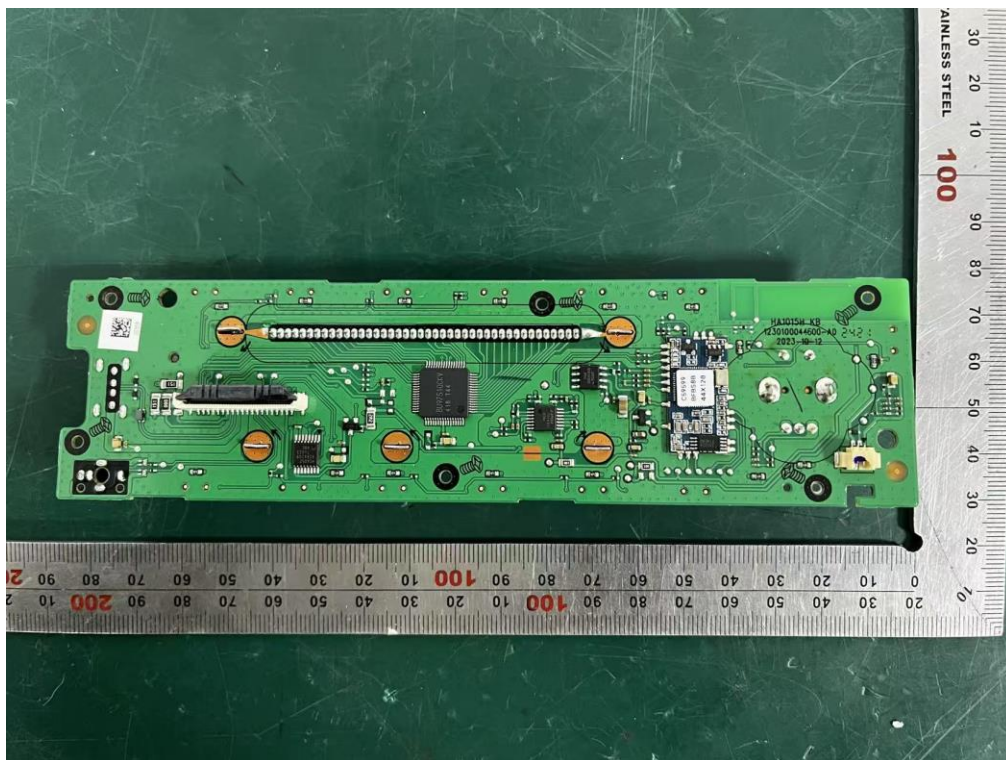
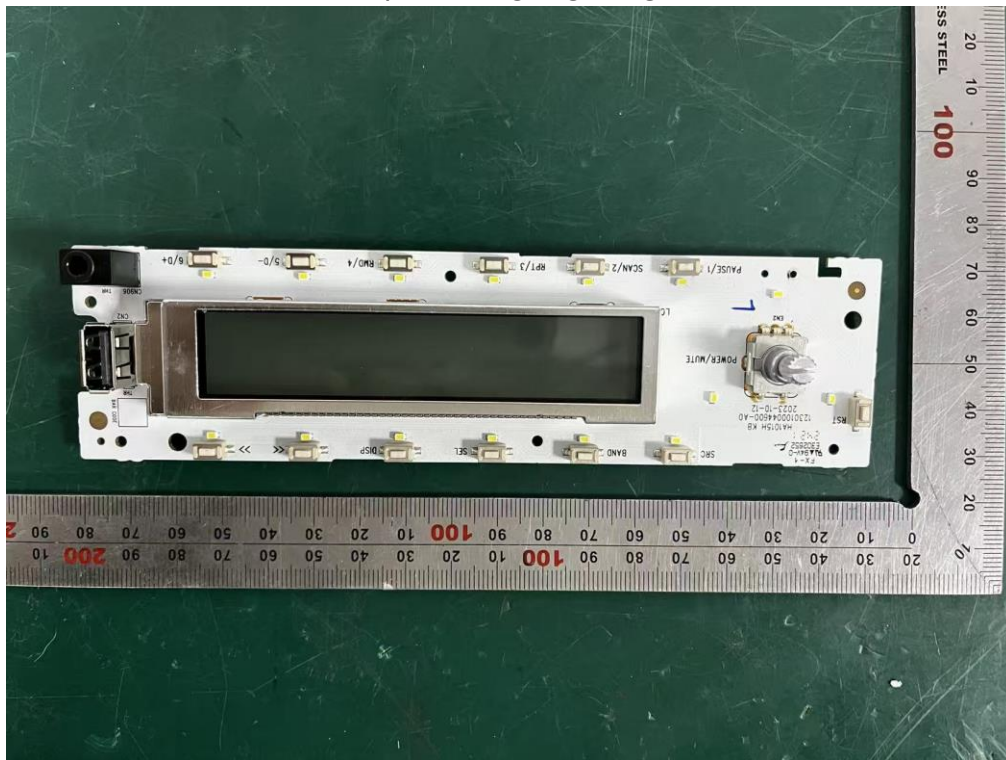
**Internal Photos**  
M/N: TRW312UB-BU



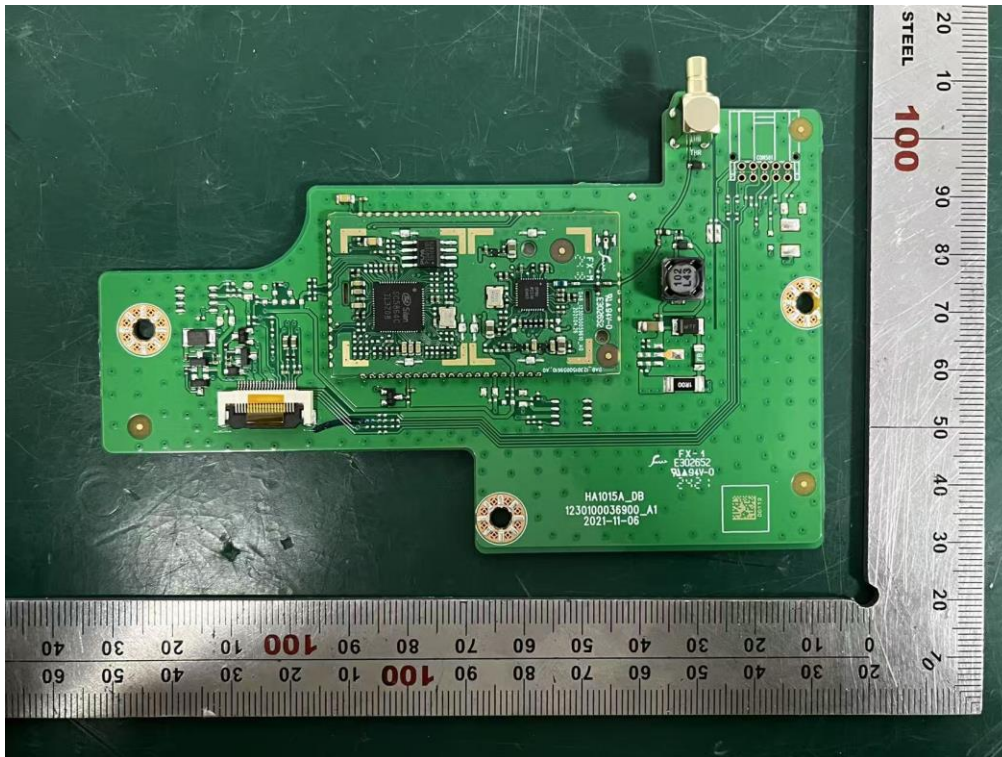
# **Internal Photos** M/N: TRW312UB-BU



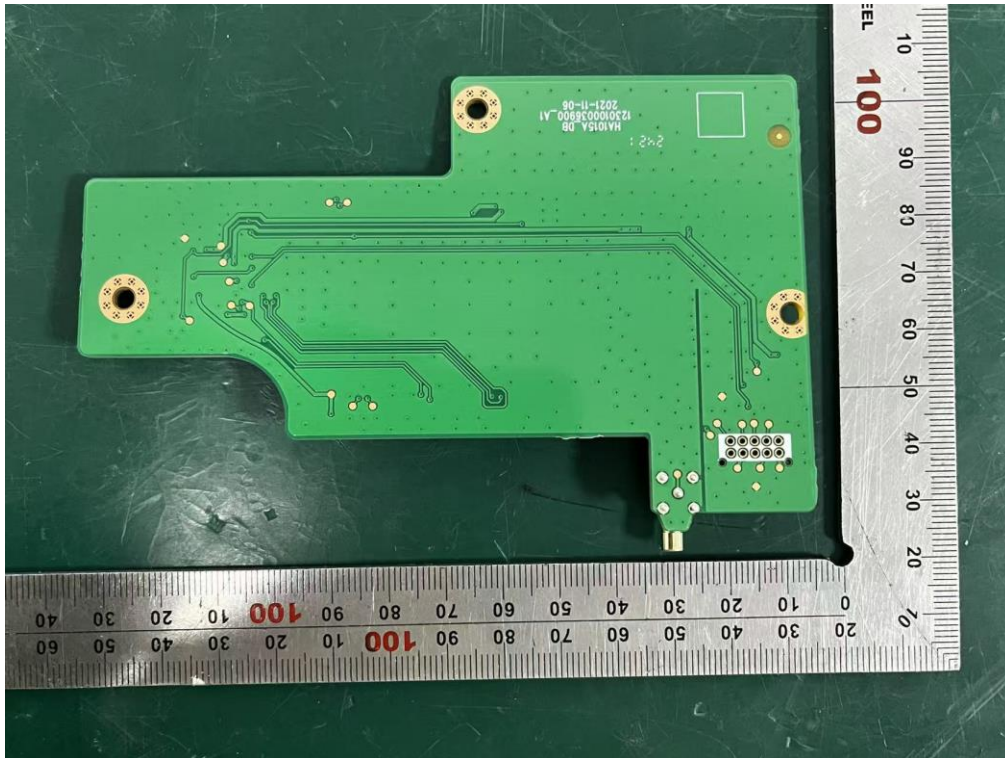
# Internal Photos M/N: TRW312UB-BU



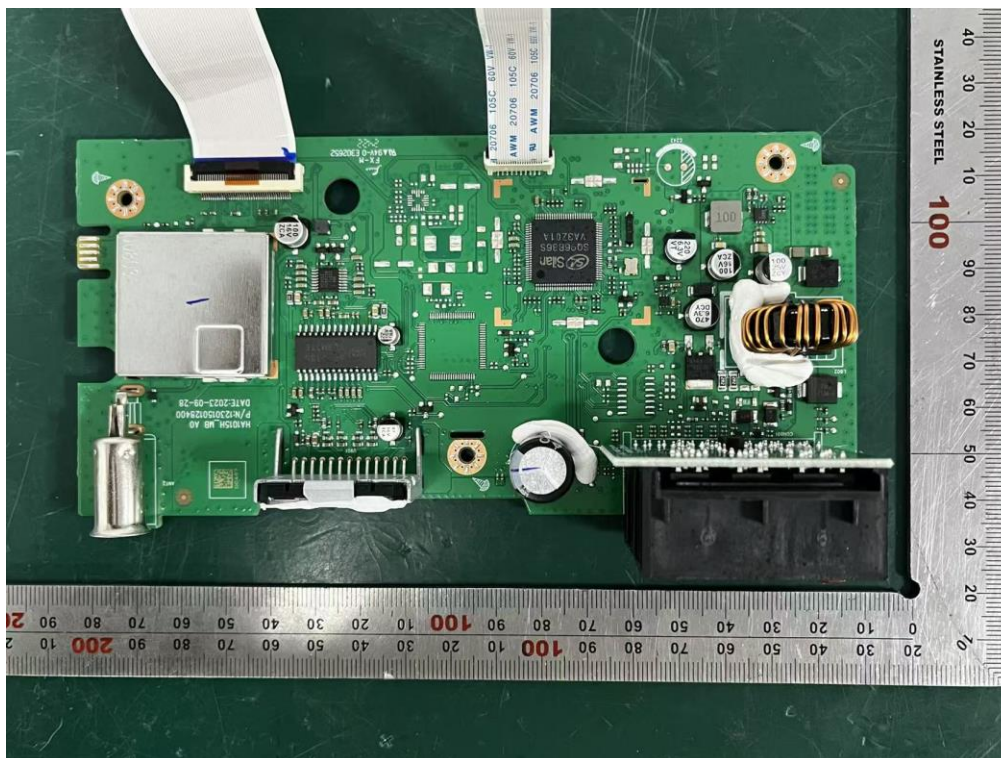
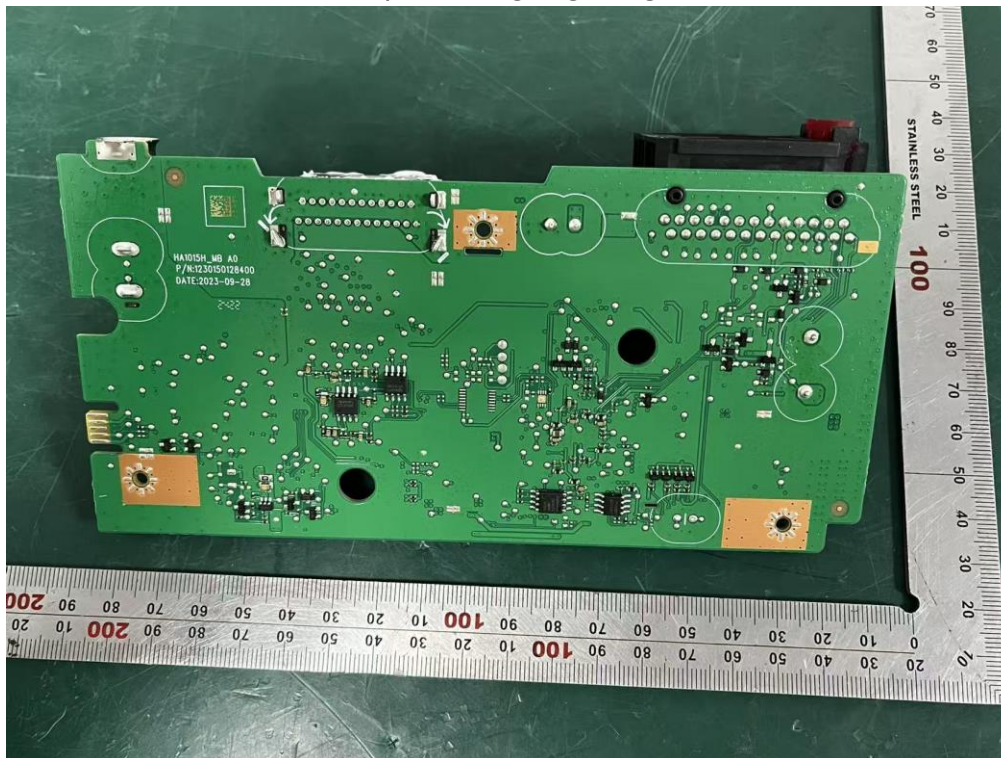
# **Internal Photos** M/N: TRW312UB-BU



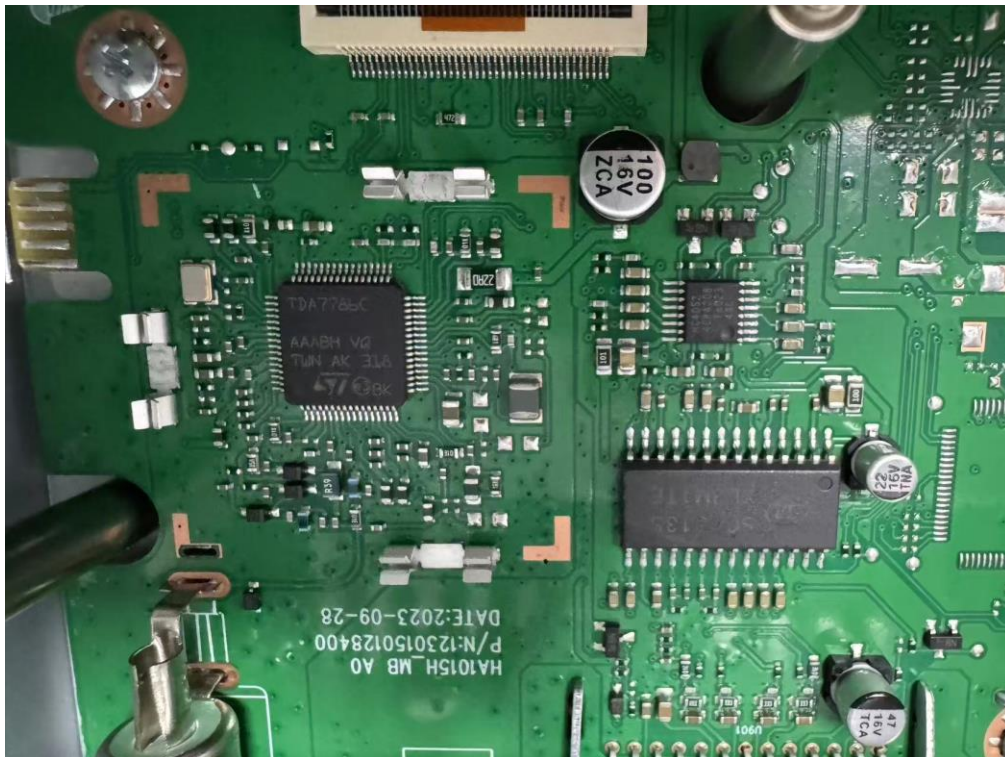
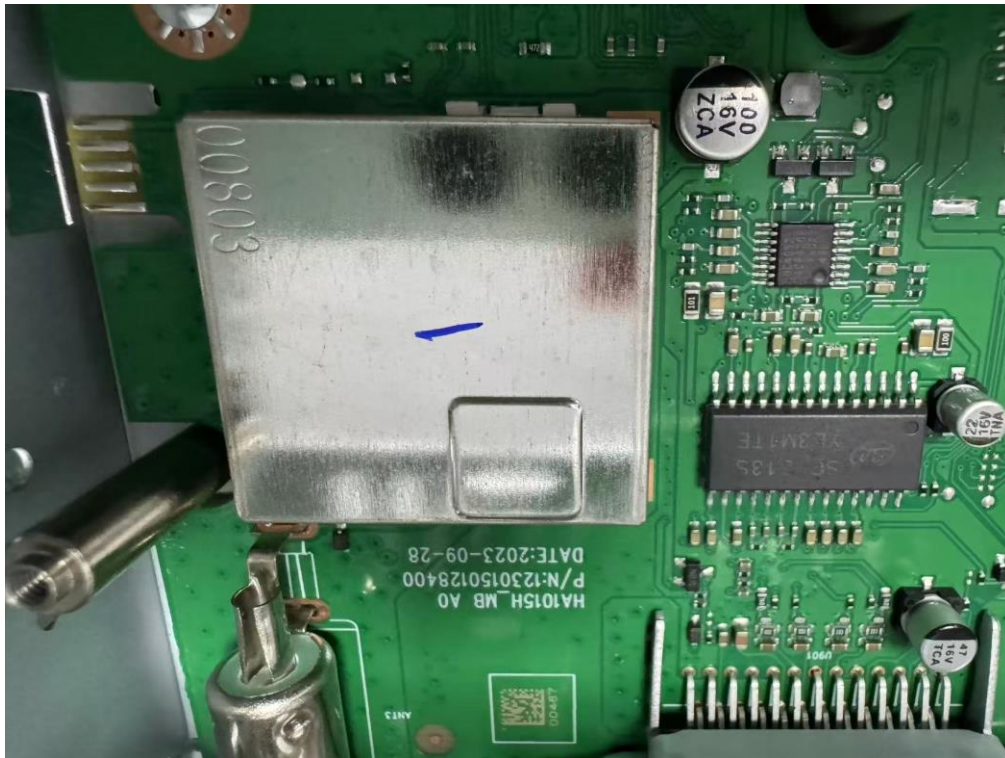
# Internal Photos M/N: TRW312UB-BU



# Internal Photos M/N: TRW312UB-BU



# **Internal Photos** M/N: TRW312UB-BU



**End of Test Report**