

## HF012Project antenna specification

### Address

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### Change Content CV:

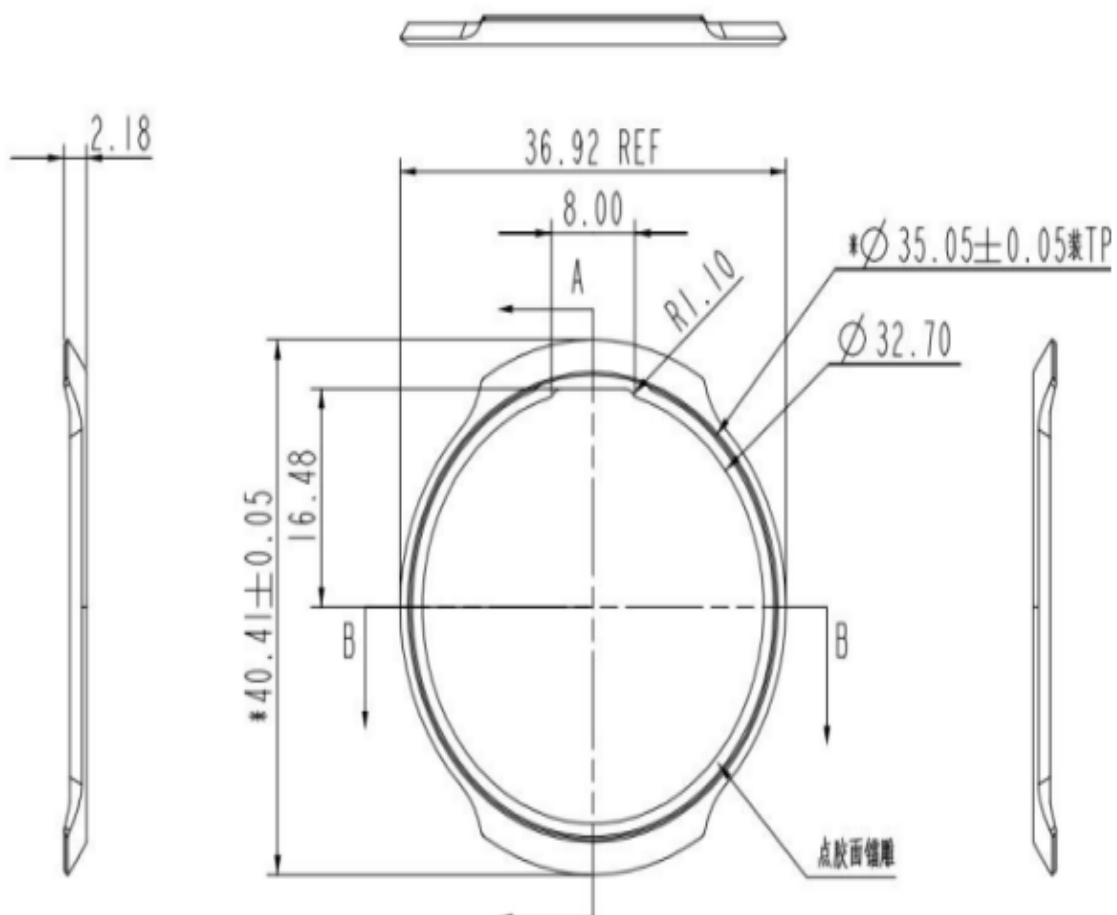
| order<br>number | edition            | state              | Start and end<br>date | person<br>liable | page<br>number | remarks |
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| 1               | editio<br>princeps | editio<br>princeps | 2025-05-06            | Li Jieyi         | 11             |         |
|                 |                    |                    |                       |                  |                |         |

### The Supplier acknowledges the signature that:

| Responsible person / date |  | IQC/ date | Review / Date | Approval / Date |
|---------------------------|--|-----------|---------------|-----------------|
| MD                        |  |           |               |                 |
| RF                        |  |           |               |                 |

### The Demander acknowledges the signature (please send it back after confirmation):

| The demander's judgment result: <input type="checkbox"/> qualified <input type="checkbox"/> unqualified |                     |                             |  |
|---|---------------------|-----------------------------|--|
| Development & Design<br>Engineer / Date   | SQE Engineer / Date | Purchasing Leader /<br>Date | Development Manager<br>approval / date |
|   |                     |                             |  |



## 1. Overview

### 1.1 Scope of application

This requirement applies to the LS26 Antenna type selection, test, and acceptance.

### 1.2 Project basic information

|                    |                        |
|--------------------|------------------------|
| Antenna name:      | <b><u>LS26</u></b>     |
| Antenna frequency: | GPS+BT:1575.42MHz/2.4G |
| Antenna material:  | Metal frame            |

## 2. Technical index requirements

### 2.1 Introduction of test items and equipment

| inventory   | test item | equipment                             |
|-------------|-----------|---------------------------------------|
| Active test | TRP,TIS   | Integrated tester, microwave darkroom |

### 2.2 Active Reporting

#### 2.2.1 Test instructions

Test tools: Agilent8960 instrument, R & SCMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program

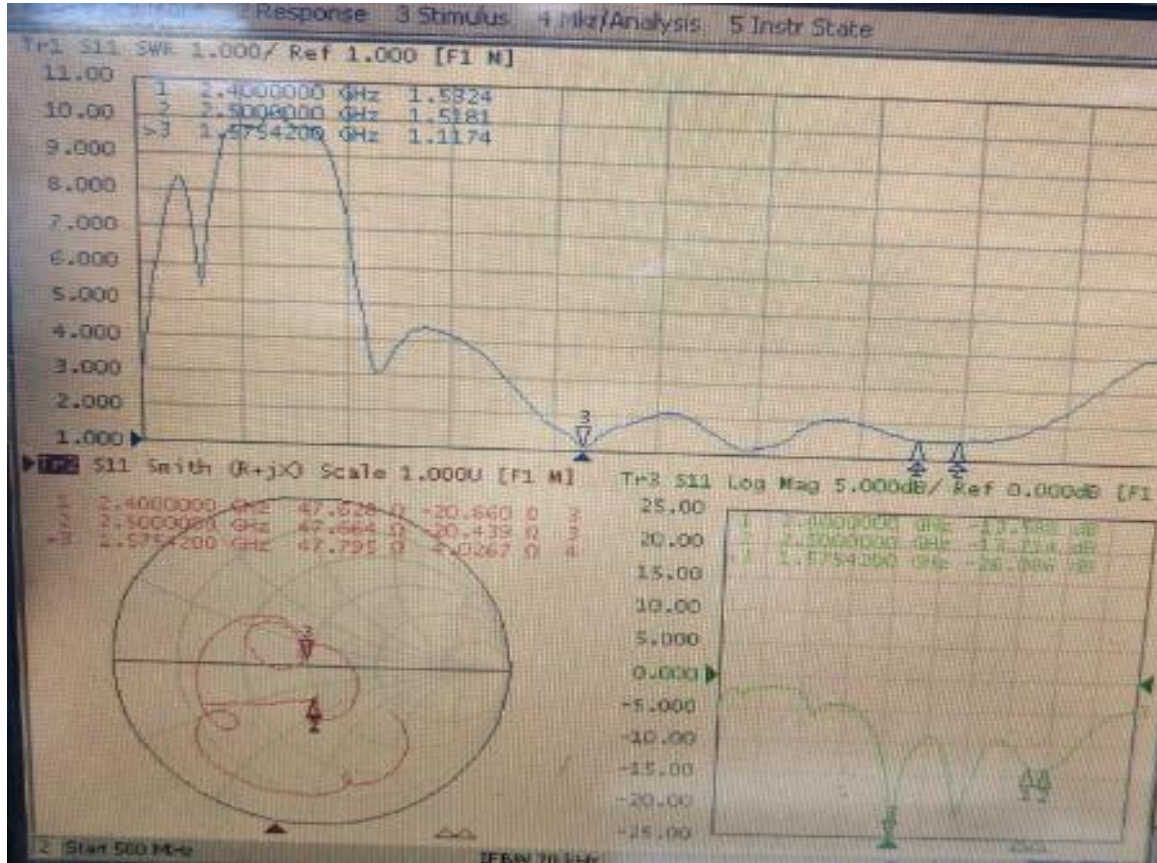
Test environment: temperature  $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , humidity  $50\% \pm 15\%$

Test method: DUT is fixed in the center of the turntable with H plane, on the same horizontal line as the center of the horn antenna.

The positioning system enables the DUT to rotate in the whole sphere to satisfy the high-precision 3 D positioning. Each RF instrument and turntable controller communicate with the PC with automatic test software through the GPIB interface.

### 3.Develop test reports

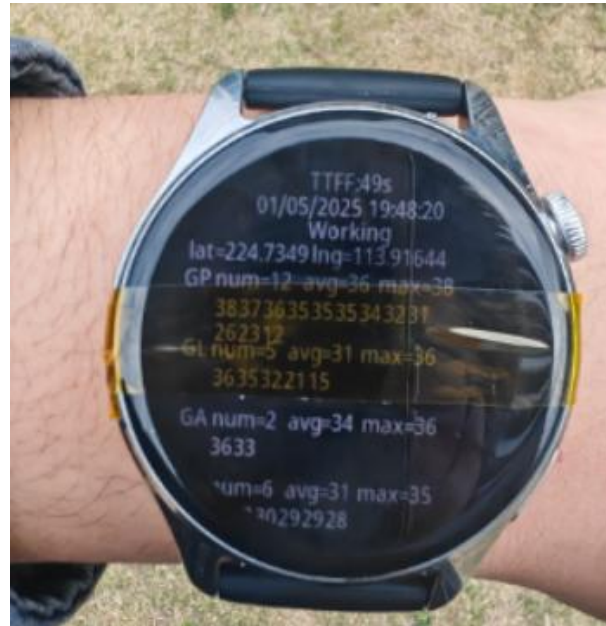
#### 3.1 Antenna passive parameters



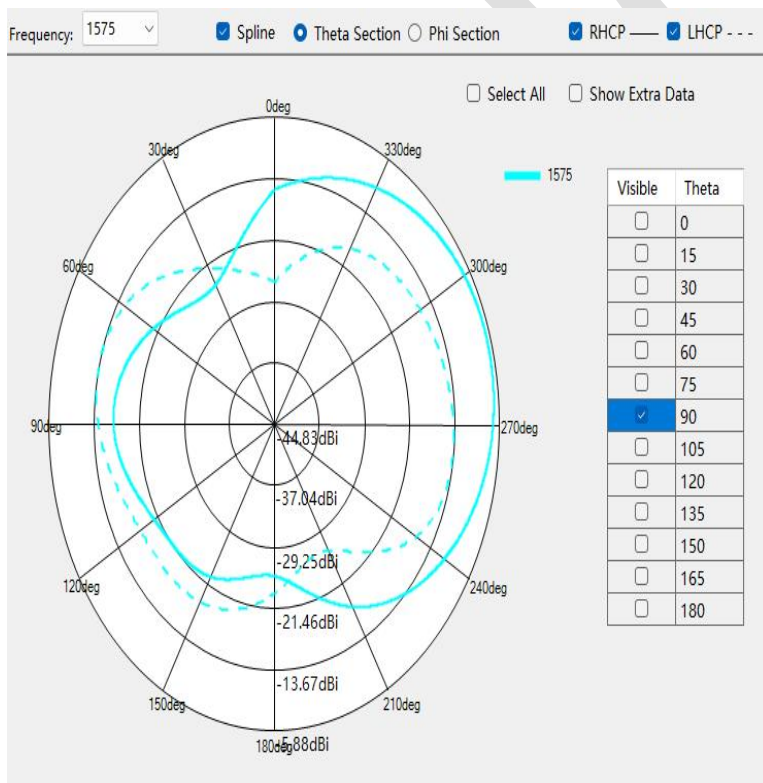
| Freq (MHz) | Effi (%) | Gain (dBi) |
|------------|----------|------------|
| 1550       | 6.18     | -6.40      |
| 1560       | 6.25     | -6.21      |
| 1570       | 6.27     | -5.98      |
| 1575       | 6.39     | -5.63      |
| 1580       | 6.45     | -5.25      |
| 1590       | 6.28     | -5.01      |

| Freq (MHz) | Effi (%) | Gain (dBi) |
|------------|----------|------------|
| 2400       | 5.60     | -5.31      |
| 2420       | 5.32     | -5.39      |
| 2440       | 5.20     | -5.47      |
| 2450       | 5.21     | -5.00      |
| 2460       | 5.47     | -5.87      |
| 2480       | 5.27     | -5.82      |

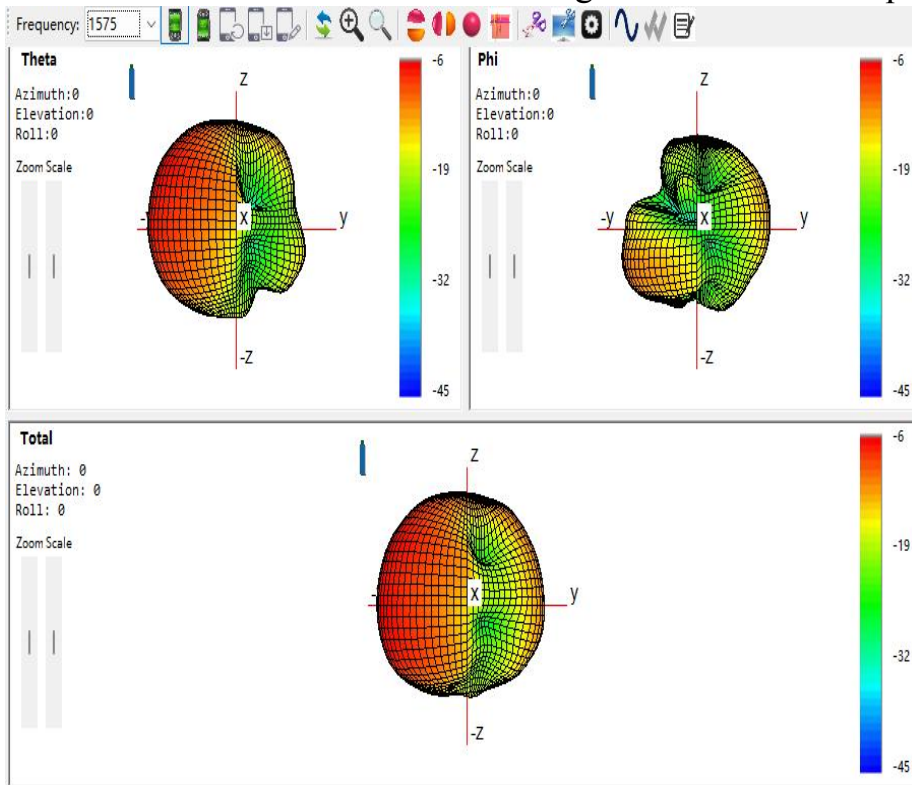
### 3.2 GPS search for stars



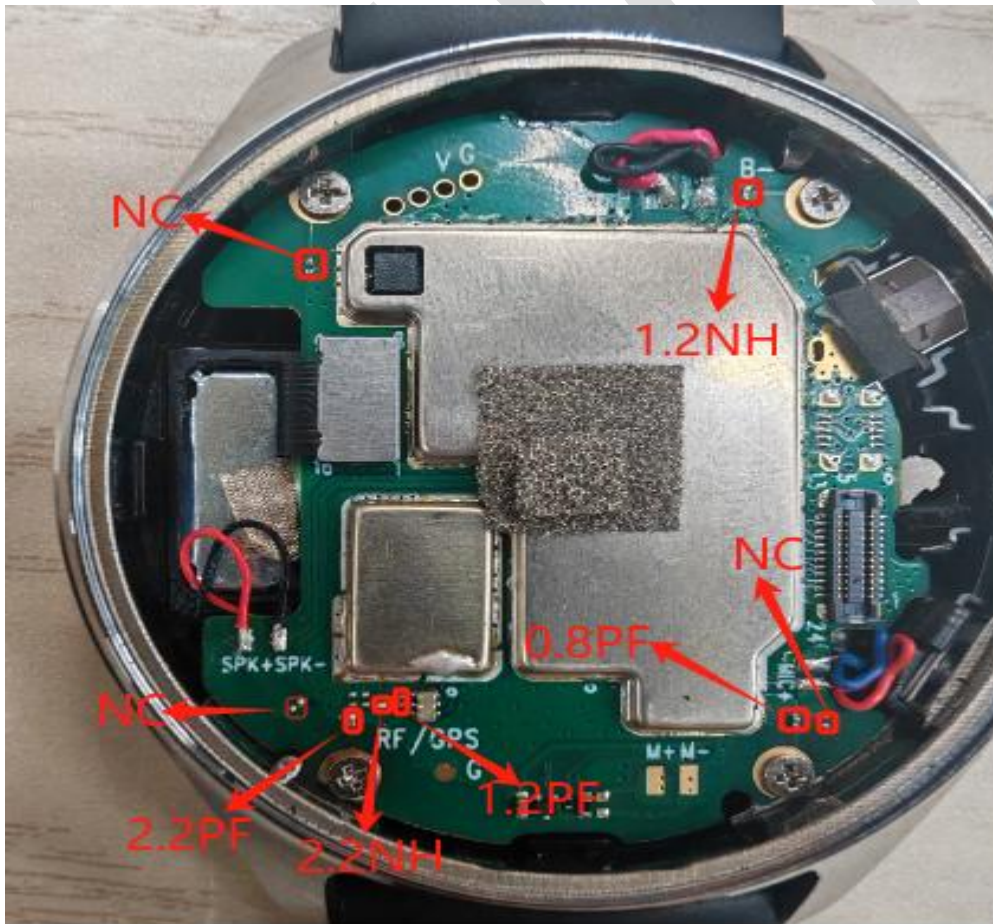
### 3.3 GPS Apple map/direction map-arm



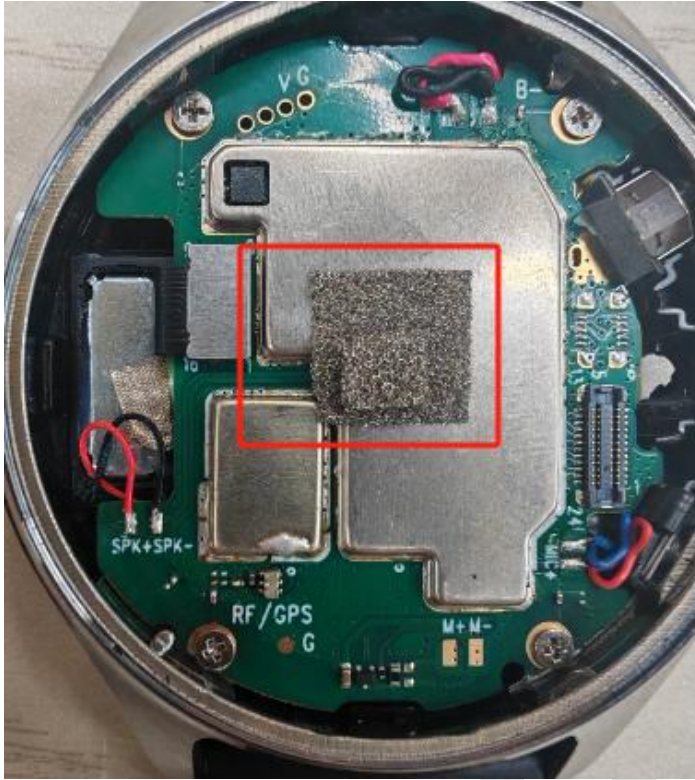




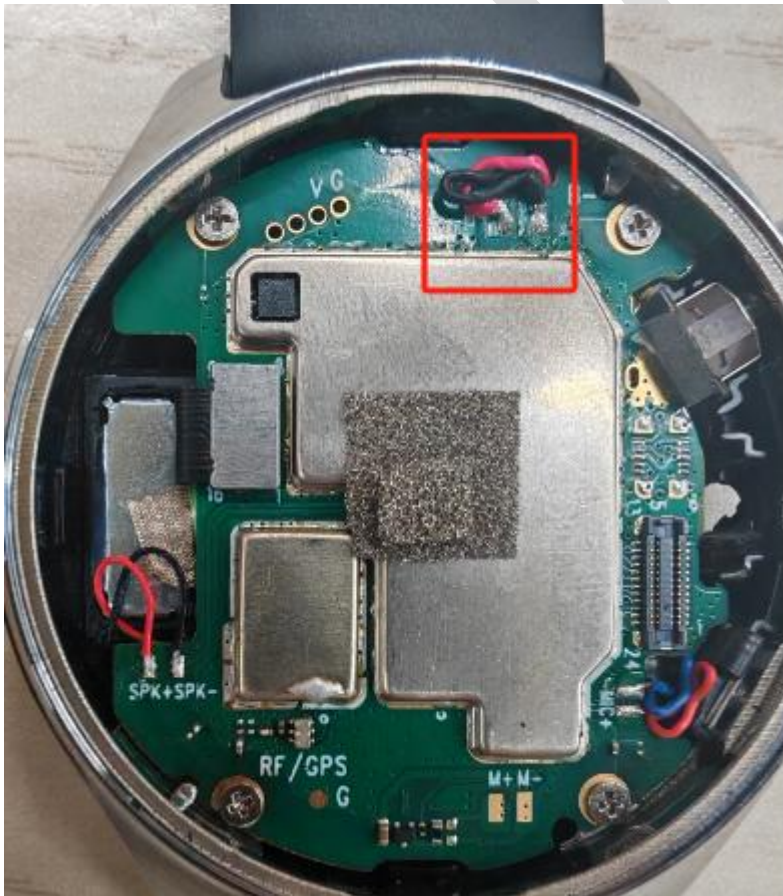
### 3.4 Antenna loading coil



### 3.5 Antenna environment processing



The motherboard shield is replaced with a conductive foam above

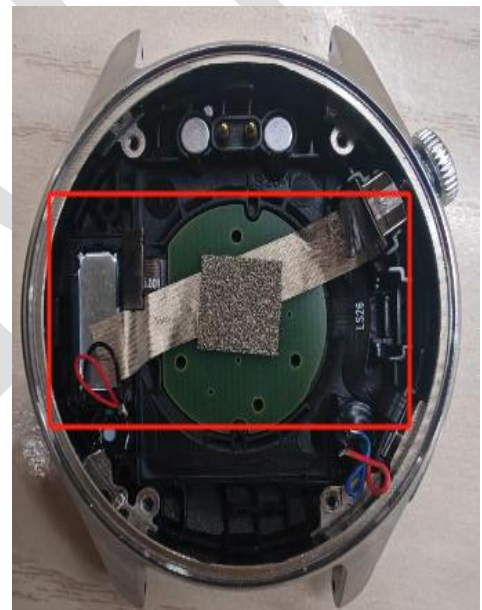


The excess wire of the battery line should be folded back above the motherboard and not close to the metal frame





The screen needs to be covered with conductive cloth



The battery needs to be wrapped with conductive cloth, the copper area of the motherboard needs to be covered with conductive foam, and the speakers and buttons need to be covered with conductive cloth to connect the battery with the motherboard.