

# XQ491\_GH4911

## Specification of Antenna

### CATALOGUE

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## 1. DESCRIBE

This specification applies to XQ491-GH4911 main antenna, diversity antenna, BT/WIFI/GPS antenna

The antenna is in the form of built-in antenna PIFA

The antenna is made of FPC

## 2. ELECTRICAL SPECIFICATION

### 2.1. Frequency band

| Band                                                                  | Operation Frequency Range(MHz)                                                         |
|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| GSM850/900/1800/1900 WCDMA Band2/4/5/8<br>LTE2/3/4/5/7/12/20/28/66/71 | 617-698; 699~ 746 ;791~ 862; 824~894;880-960; 1710~1990; 1850-1990;1710-2155;2500~2690 |
| BT/WIFI                                                               | 2.4~2.5GHz, 5.15~5.85GHz                                                               |
| GPS                                                                   | 1575.42MHz                                                                             |

### 2.2. impedance

50  $\Omega$

### 2.3. VSWR&RL

Test equipment: Agilent E5071C

test method:

- 1、 Install the main antenna on the test prototype;
- 2、 Weld the RF test point on the PCB with 50  $\omega$  coaxial line, and then connect it to the network analyzer;
- 3、 ensure that the mobile phone away from the surrounding metal at least 20cm above.

Test result:

Main antenna voltage standing wave ratio



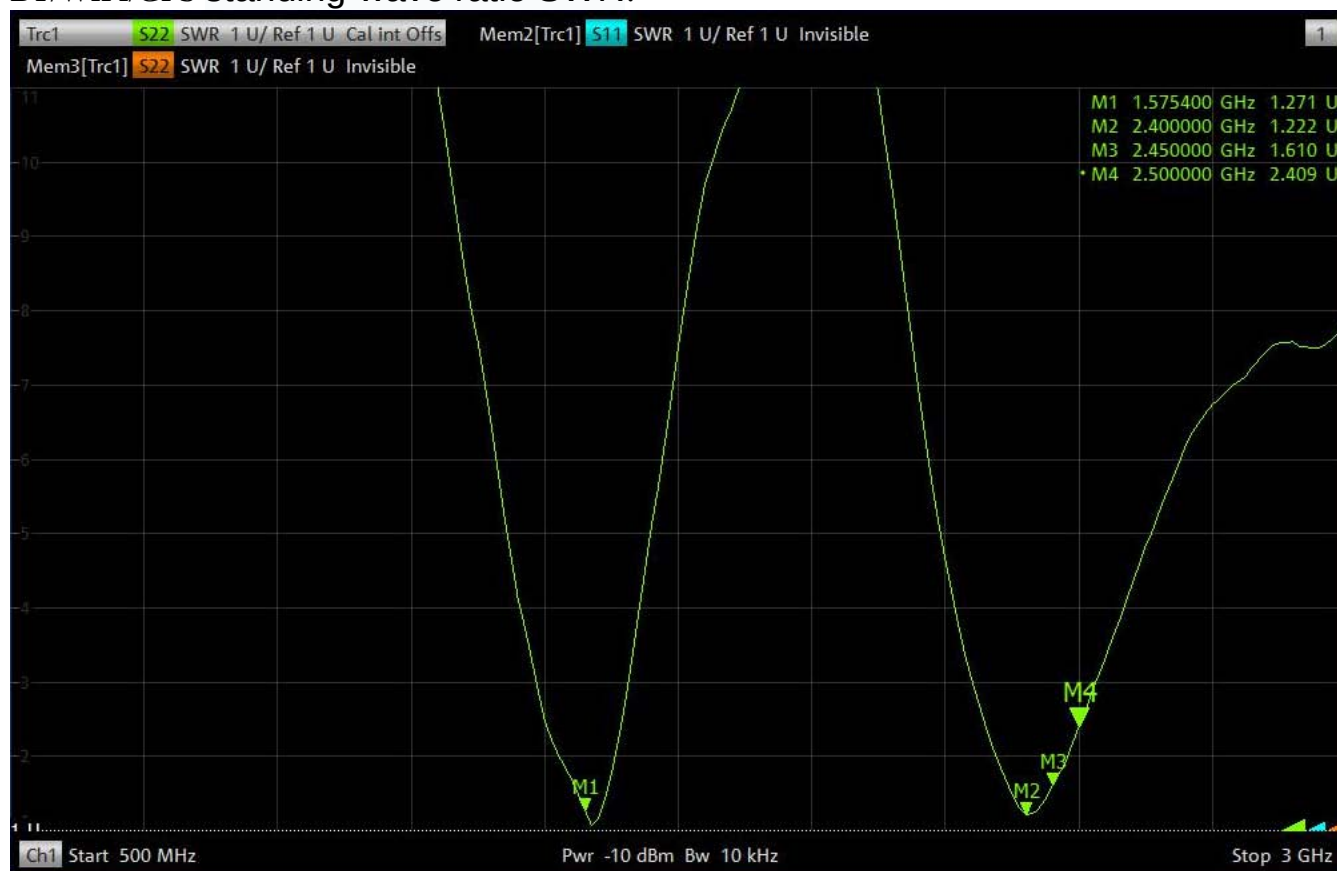
| Frequency (MHz) | 600  | 700  | 824  | 1710 | 1990 | 2170 | 2690 |
|-----------------|------|------|------|------|------|------|------|
| VSWR            | 4.45 | 2.73 | 4.92 | 1.32 | 2.84 | 1.47 | 2.36 |

Diversity antenna voltage standing wave ratio:



|                 |      |      |      |      |      |
|-----------------|------|------|------|------|------|
| Frequency (MHz) | 880  | 824  | 1880 | 2350 | 2690 |
| VSWR            | 8.21 | 5.49 | 1.81 | 2.08 | 5.18 |

BT/WIFI/GPS standing-wave ratio SWR:



|                 |         |      |      |      |
|-----------------|---------|------|------|------|
| Frequency (MHz) | 1575.42 | 2400 | 2450 | 2500 |
| VSWR            | 1.27    | 1.22 | 1.61 | 2.40 |

## 2.4. Maximum of antenna gain

Main antenna:

GSM850: -2dBi

GSM900: -1.0dBi

DCS 1800: 0dBi

PCS1900: 2dBi

WCDMA BAND2: 2dBi

WCDMA BAND4: 0dBi

WCDMA BAND5: -2dBi

WCDMA BAND8: -1.0dBi

LTE BAND2: 2.0dBi

LTE BAND4: 0dBi

LTE BAND5: -2dBi

LTE BAND7: 2dBi

LTE BAND12: -3dBi

LTE BAND20: -0.5dBi

LTE BAND28: -2dBi

LTE BAND66: 0dbi

LTE BAND71: -4dbi

DRX antenna:

WCDMA BAND2: -0.5dBi

WCDMA BAND4: -1.0dBi

WCDMA BAND5: -1.0dBi

WCDMA BAND8: -1.5dBi

LTE BAND2: -1.0dBi

LTE BAND4: -1.5dBi

LTE BAND5: -2.0dBi

LTE BAND7: -2.5dBi

LTE BAND12: -1.5dBi

LTE BAND20: -2.0dBi

LTE BAND12: -1.5dBi

Bluetooth/2.4G Wi-Fi/5G Wi-Fi: 1.2dBi

GPS: 2dBi

## 2.5. TRP&TIS

OTA test result:

| Band         | Channel | TRP Limit Value | TRP Test Value(dBm) |
|--------------|---------|-----------------|---------------------|
|              |         |                 | FS                  |
| GSM850       | 128     | 27              | 27.5                |
|              | 190     |                 | 27.8                |
|              | 251     |                 | 27.6                |
| GSM900       | 975     | NA              | 28.2                |
|              | 37      |                 | 28.3                |
|              | 124     |                 | 26.9                |
| DCS1800      | 512     | NA              | 25.8                |
|              | 698     |                 | 25.6                |
|              | 885     |                 | 25.6                |
| PCS1900      | 512     | 24.5            | 26.5                |
|              | 661     |                 | 27.3                |
|              | 810     |                 | 27.4                |
| WCDMA Band 2 | 9262    | 20              | 20.2                |
|              | 9400    |                 | 20.3                |
|              | 9538    |                 | 20.4                |
| WCDMA Band 4 | 1312    | 20              | 20.1                |
|              | 1413    |                 | 20.5                |
|              | 1513    |                 | 20.3                |
| WCDMA Band 5 | 4132    | 18              | 18.4                |
|              | 4183    |                 | 18.8                |
|              | 1233    |                 | 19.1                |
| LTE Band2    | 18650   | 20              | 20.1                |
|              | 18900   |                 | 20.5                |
|              | 19150   |                 | 20.6                |
| LTE Band4    | 20000   | 20              | 20.1                |
|              | 20175   |                 | 20.4                |
|              | 20350   |                 | 20.5                |
| LTE Band5    | 20450   | 18              | 18.3                |
|              | 20525   |                 | 18.6                |
|              | 20600   |                 | 18.4                |
| LTE Band7    | 20800   | NA              | 17.2                |
|              | 21100   |                 | 17.5                |
|              | 21400   |                 | 17.8                |
| LTE Band12   | 23060   | 18              | 18.4                |
|              | 23095   |                 | 18.7                |
|              | 23130   |                 | 18.8                |
| LTE Band28   | 27260   | 18              | 18.4                |
|              | 27435   |                 | 18.6                |
|              | 27610   |                 | 19.0                |
| Band         | Channel | TIS Limit Value | TRP Test Value(dBm) |
|              |         |                 | FS                  |



| GSM850          | 128  | -104 |        |
|-----------------|------|------|--------|
|                 | 190  |      |        |
|                 | 251  |      | -104.5 |
| GSM900          | 975  | NA   |        |
|                 | 37   |      |        |
|                 | 124  |      | -101.5 |
| DCS1800         | 512  | NA   |        |
|                 | 698  |      |        |
|                 | 885  |      | -106.9 |
| PCS1900         | 512  | -104 |        |
|                 | 661  |      |        |
|                 | 810  |      | -107.4 |
| WCDMA Band<br>2 | 9662 | -104 |        |
|                 | 9800 |      |        |
|                 | 9938 |      | -106.2 |
| WCDMA Band<br>4 | 1537 | -104 |        |
|                 | 1638 |      |        |
|                 | 1738 |      | -107.1 |
| WCDMA Band<br>5 | 4357 | -103 |        |
|                 | 4410 |      |        |
|                 | 4458 |      | -107.5 |
| LTE Band2       | 650  | -94  |        |
|                 | 900  |      |        |
|                 | 1150 |      | -96.8  |
| LTE Band4       | 2000 | -94  |        |
|                 | 2175 |      |        |
|                 | 2350 |      | -98.1  |
| LTE Band5       | 2450 | -94  |        |
|                 | 2525 |      |        |
|                 | 2600 |      | -96.1  |
| LTE Band7       | 2800 | NA   |        |
|                 | 3100 |      |        |
|                 | 3400 |      | -93.2  |
| LTE Band12      | 5060 | -94  |        |
|                 | 5090 |      |        |
|                 | 5130 |      | -95.2  |
| LTE Band28      | 9260 | -94  |        |
|                 | 9435 |      |        |
|                 | 9610 |      | -95.1  |

### 3. Antenna Dimensions

#### 3.1 AERIAL IMAGES

main antenna:

The latest version is V03, and the screen print on the main test prototype sent out now is V02. Only the screen printing is different

Our company did not inform to change the screen printing, the supplier changed the screen printing, the wire is not moved.

Our company has confirmed that the antenna of the main test machine sent out is only different from that of the later standby machine.



Diversity antenna:

The latest one is V04, and the screen print on the main test prototype sent out at present is V02.

The V02 antenna on the main test prototype is only different from the V04 on the standby plane sent out later.

The antenna of the main test machine has been cut by hand, and the internal wiring is consistent with that of V04.



### GPS/BT/WIFI Antenna

The latest version is V03, and the screen print on the main test prototype sent out now is V02. Only the screen printing is different.

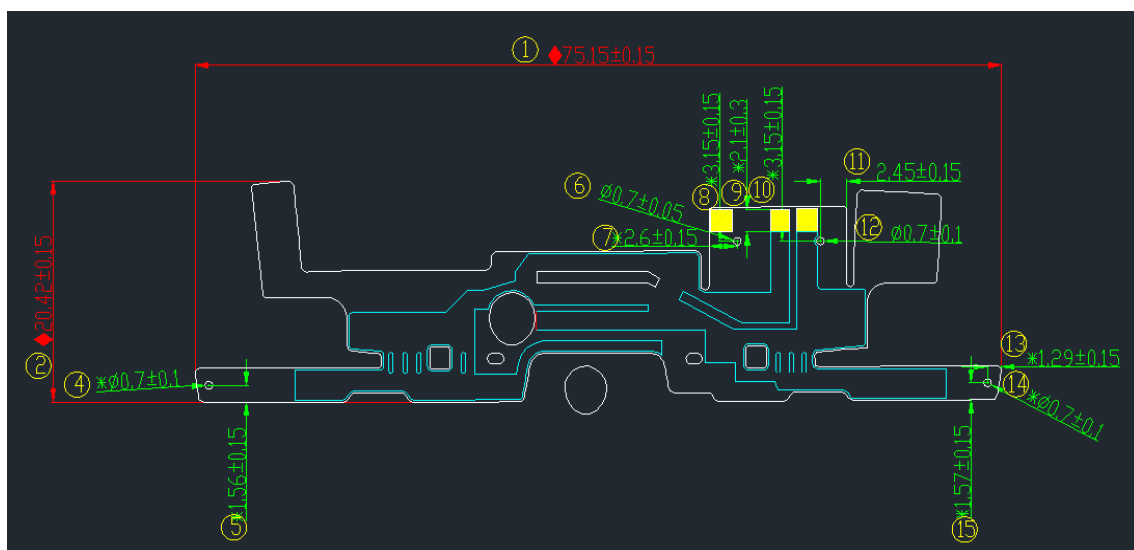
Our company did not inform to change the screen printing, the supplier changed the screen printing, the wire is not moved.

Our company has confirmed that the antenna of the main test machine sent out is only different from that of the later standby machine

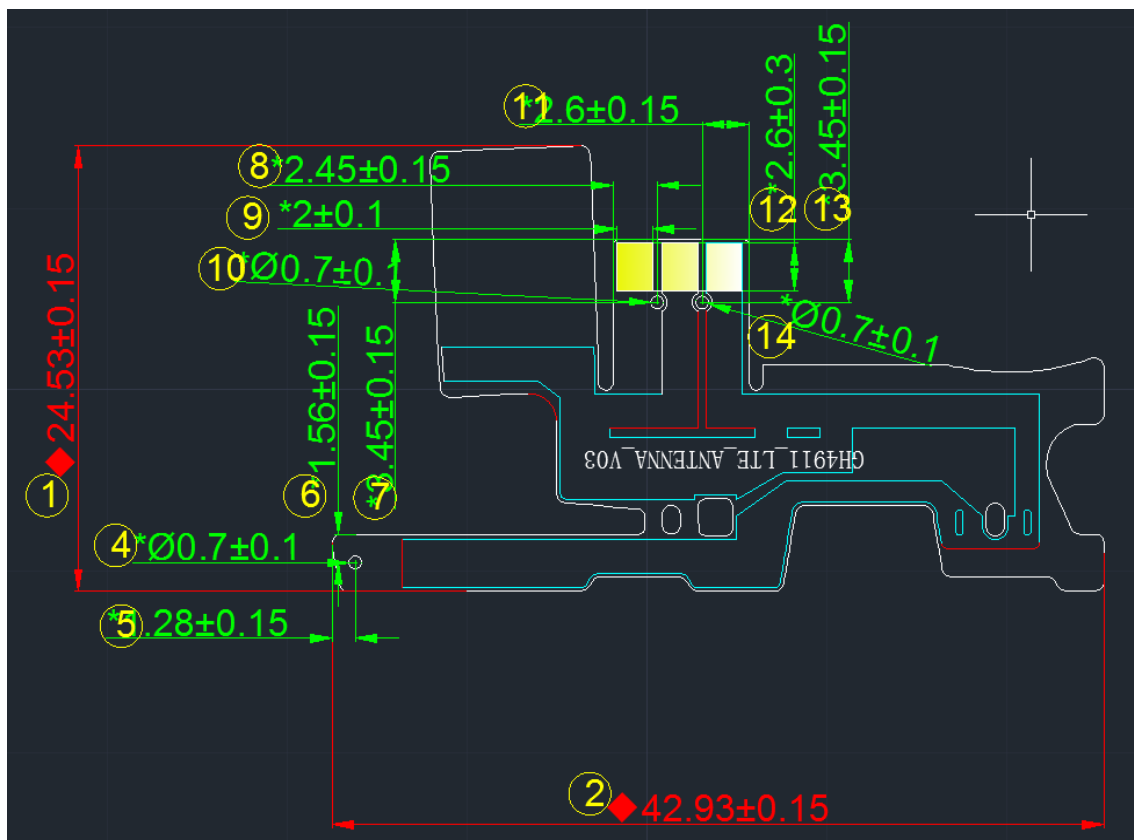


### 3.2 STRUCTURE SIZE

main antenna:



diversity antenna:



GPS/BT/wifi:

