# 深圳市永联无线科技有限公司

ShenZhen City Flink Wi Technology CO.,LTD.

# 产品承认书

SPECIFICATION FOR APPROVED

客户
CUSTOMER: _____

产品名称
PRODUCTS: YL5012H1R2G45

客户料号
PART NO: _____

产品型号
Spec.: _____

日期
Data: 2024.01.06

| 供应商 SUPPLIER | | |
|---|---|---|
| 拟制 PREPARED BY | 审核 CHECKED BY | 批准 APPROVED BY |
| | | |

| 客户 CUSTOMER | | |
|---|---|---|
| 承认 ACCEPTED BY | 审核 CHECKED BY | 批准 APPROVED BY |
| | | |

备注：承认盖章后请回复一份承认书（或复印件）给我司，其余由贵公司存档

REMARK:Please send us one(or copy)of this approval with stamp after accepting,other copies filed by the customer.

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电话 Tel: 18820170917 传真 Fax: 0755-26976277

# 2.4GHz Chip Antenna: YL5012H1R2G45

## Application:

WLAN, 802.11b/g, Bluetooth, etc…

## Features

SMD, high reliability, ultra Impact, Omni-directional…

## Part number

| YL | 5012 | H1 | R | 2G45 |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |

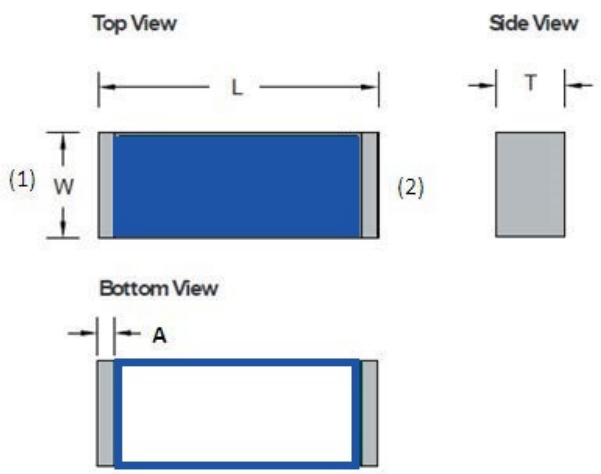
| | |
|---|---|
| (1)Product Type | Chip Antenna |
| (2) Size Code | 5.0x1.2mm |
| (3) Type Code | H1 |
| (4) Packing | Tape and reel |
| (5) Frequency | 2.45GHz |

## Electrical Specification

| | |
|---|---|
| Working Frequency Range | 2400 ~2484 MHz |
| Peak Gain | 3.22dBi (Typ.) |
| Impedance | 50 Ohm |
| Return loss | 10 dB ( Min) |
| Polarization | Linear |
| Azimuth Beamwidth | Omni-directional |
| Operation Temperature(℃) | -40 ~85℃ |

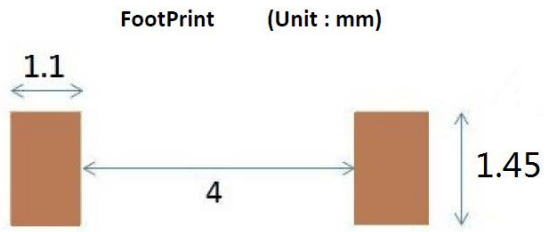
The specification is defined on EVB.

## Dimension and Terminal Configuration




| Dimension (mm) | |
|---|---|
| L | 5.0 +-0.20 |
| W | 1.2+- 0.20 |
| T | 1.20+-0.20 |
| A | 0.20+-0.20 |

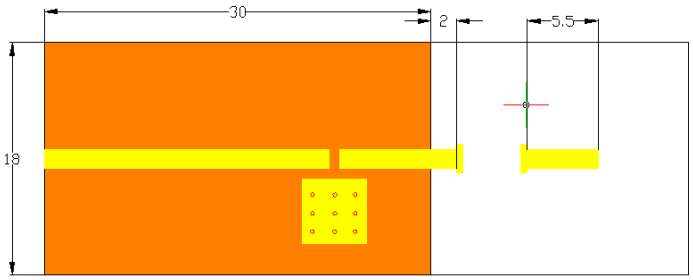
| No. | Terminal Name |
|---|---|
| 1 | Feeding |
| 2 | Soldering |



# 2.4GHz 2.45HHz Chip Antenna:YL5012H1R2G45

## Evaluation Board Reference

### PCB Dimension & Antenna Layout Reference

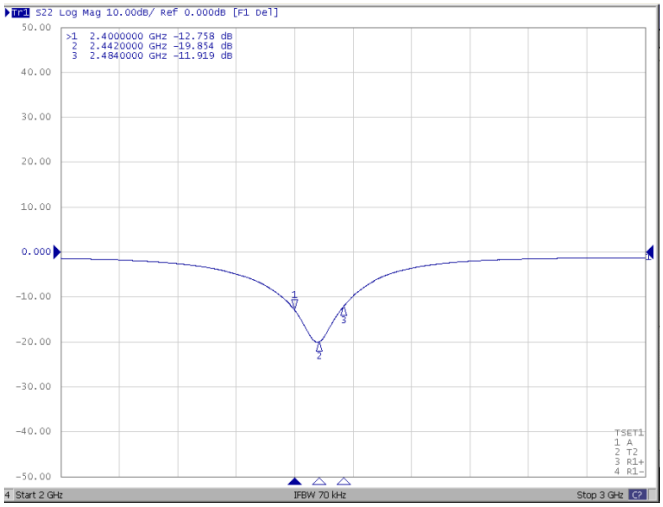



unit :mm

## Electrical Characteristics

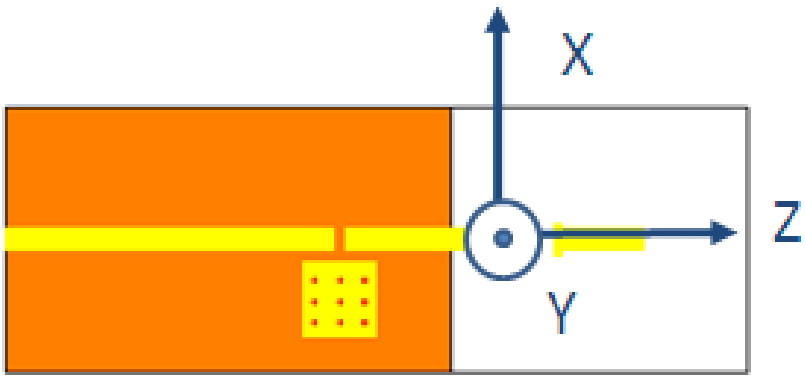
### Return Loss & Radiation

#### Return Loss



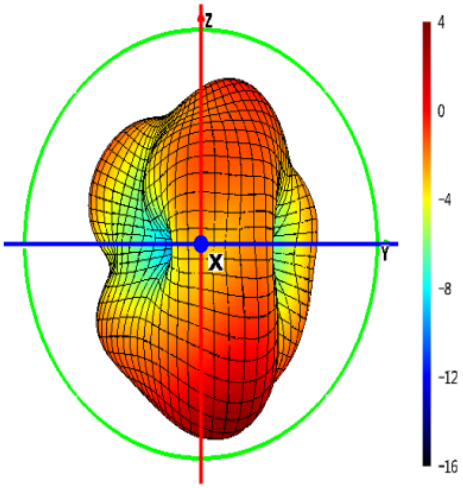

| Frequency (MHz) | S11 (dB) |
|---|---|
| 2400 | -12.8 |
| 2442 | -19.8 |
| 2484 | -11.9 |

#### Radiation



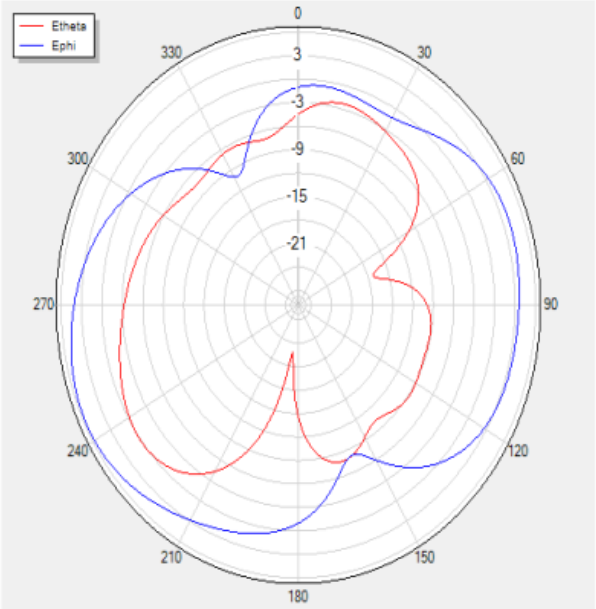
# 2.4GHz 3216 Chip Antenna: YL5012H1R2G45

## 3D&2D Radiation Drawing

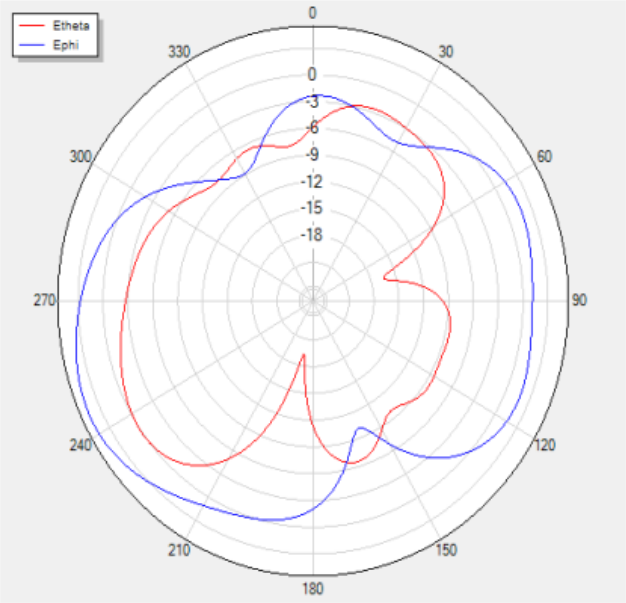



| Gain&Efficiency 增益、效率 | | |
|---|---|---|
| frequency 频率(MHz) | gain 增益(dBi) | efficiency 效率(%) |
| 2400 | 2.87 | 62.02 |
| 2410 | 2.67 | 63.66 |
| 2420 | 2.93 | 63.42 |
| 2430 | 2.87 | 66.31 |
| 2440 | 3.22 | 69.07 |
| 2450 | 2.92 | 65.81 |
| 2460 | 2.65 | 63.29 |
| 2470 | 2.03 | 62.65 |
| 2480 | 2.34 | 62.83 |
| 2490 | 2.24 | 60.27 |

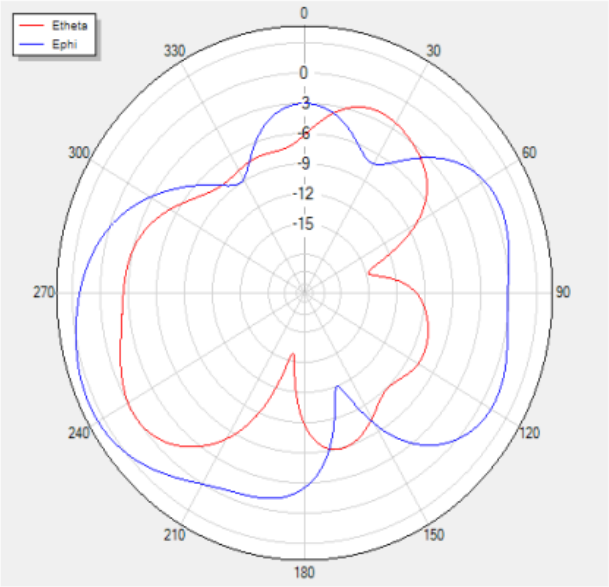
H Theta=90 freq=2400MHz




H Theta=90 freq=2450MHz



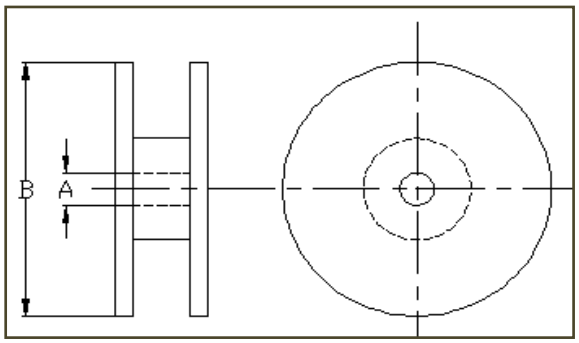

H Theta=90 freq=2480MHz



# 2.4GHz 2.45HHz Chip Antenna: YL5012H1R2G45

## Taping Specifications

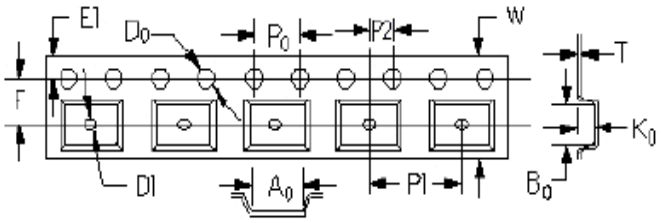
### Reel




| Checking note | Index | Spec (mm) |
|---|---|---|
| Internal diameter of reel | A | 60.20 ± 0.50 |
| External diameter of reel | B | 178 ± 1.00 |

| | |
|---|---|
| Quantity/per reel | 2500 pcs |
| Tape material | Plastic (embossed) |

### Taping Blister Tape



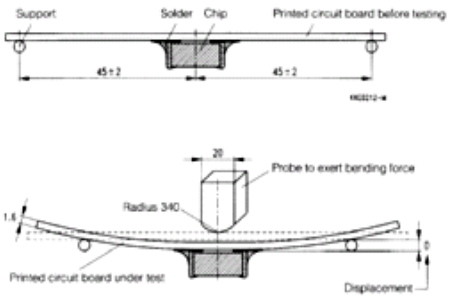
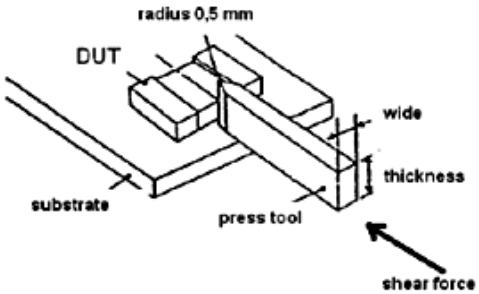

| Checking note | Index | Spec (mm) |
|---|---|---|
| Sprocket hole | D0 | 1.50 +0.10/-0.00 |
| Distance sprocket hole to outside | E1 | 1.75 ± 0.10 |
| Distance sprocket hole to pocket | F | 5.50 ± 0.05 |
| Distance sprocket hole to sprocket hole | P0 | 4.00 ± 0.10 |
| Distance pocket to pocket | P1 | 4.00 ± 0.10 |
| Distance sprocket hole to pocket | P2 | 2.00 ± 0.05 |
| Tape width | W | 12.00 +0.30/-0.10 |
| Pocket width nominal clearance | A0 | 2.28 ± 0.13 |
| Pocket length nominal clearance | B0 | 5.70 ± 0.13 |
| Pocket depth minimum clearance | K0 | 1.58 ± 0.10 |
| Thickness of tape | T | 0.23 ± 0.02 |

# 2.4GHz 2.45HHz Chip Antenna: YL5012H1R2G45

## Reliability Table

| Test Item | Procedure | Requirements Ceramic Type | Remark (Reference) |
|---|---|---|---|
| **Electrical Characterization** | | Fulfill the electrical specification | User Spec. |
| **Thermal Shock** | 1. Preconditioning:<br>50 ± 10℃ / 1 hr , then keep for 24 ± 1 hrs at room temp.<br>2. Initial measure: Spec: refer Initial spec.<br>3. Rapid change of temperature test:<br>-30℃ to +85℃; 100 cycles;<br>15 minutes at Lower category temperature;<br>15 minutes at Upper category temperature. | No Visible Damage.<br>Fulfill the electrical specification. | MIL-STD-202<br>107 |
| **Temperature Cycling** | 1. Initial measure: Spec: refer Initial spec.<br>2. 100 Cycles (-30℃ to +85℃), Soak Mode=1 (2 Cycle/hours).<br>3. Measurement at 24 ± 2Hours after test condition. | No Visible Damage.<br>Fulfill the electrical specification. | JESD22<br>JA104 |
| **High Temperature Exposure** | 1. Initial measure: Spec: refer Initial spec.<br>2. Unpowered; 500hours @ T=+85℃.<br>3. Measurement at 24 ± 2 hours after test. | No Visible Damage.<br>Fulfill the electrical specification. | MIL-STD-202<br>108 |
| **Low Temperature Storage** | 1. Initial measure: Spec: refer Initial spec.<br>2. Unpowered: 500hours @ T= -30℃.<br>3. Measurement at 24 ± 2 hours after test. | No Visible Damage.<br>Fulfill the electrical specification. | MIL-STD-202<br>108 |
| **Solderability (SMD Bottom Side)** | Dipping method:<br>a. Temperature: 235 ± 5°C<br>b. Dipping time: 3 ± 0.5s | The solder should cover over 95% of the critical area of bottom side. | IEC 60384-21/22<br>4.10 |
| **Soldering Heat Resistance (RSH)** | Preheating temperature: 150 ± 10°C.<br>Preheating time: 1~2 min.<br>Solder temperature: 260 ± 5°C.<br>Dipping time: 5 ± 0.5s | No Visible Damage. | IEC 60384-21/22<br>4.10 |
| **Vibration** | 5g's for 20 min., 12 cycles each of 3 orientations<br>Note: Use 8"X5" PCB .031" thick 7 secure points on, one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10-2000 Hz. | No Visible Damage. | MIL-STD-202<br>Method 204 |
| **Mechanical Shock** | Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks)<br>Peak value: 1,500g's<br>Duration: 0.5ms<br>Velocity change: 15.4 ft/s<br>Waveform: Half-sine | No Visible Damage. | MIL-STD-202<br>Method 213 |
| **Humidity Bias** | 1. Humidity: 85% R.H., Temperature: 85 ± 2 °C.<br>2. Time: 500 ± 24 hours.<br>3. Measurement at 24 ± 2hrs after test condition. | No Visible Damage.<br>Fulfill the electrical specification. | MIL-STD-202<br>Method 106 |

# 2.4GHz 2.45HHz Chip Antenna: YL5012H1R2G45

| | | | |
|---|---|---|---|
| **Board Flex (SMD)** | 1. Mounting method:<br>IR-Reflow. PCB Size (L:100 × W:40 × T:1.6mm)<br>2. Apply the load in direction of the arrow until bending reaches 2 mm.<br>  | No Visible Damage. | AEC-Q200 005 |
| **Adhesion** | Force of 1.8Kg for 60 seconds.<br>  | No Visible Damage Magnification of 20X or greater may be employed for inspection of the mechanical integrity of the device body terminals and body/terminal junction. | AEC-Q200 006 |
| **Physical Dimension** | Any applicable method using x10 magnification, micrometers, calipers, gauges, contour projectors, or other measuring equipment, capable of determining the actual specimen dimensions. | In accordance with specification. | JESD22 JB100 |

## Revision History

| Revision | Date | Content |
|---|---|---|
| 1 | 2021/7/20 | New issue |