



# Antenna Data Sheet

|                                      |                                                                                                          |                  |           |               |                   |
|--------------------------------------|----------------------------------------------------------------------------------------------------------|------------------|-----------|---------------|-------------------|
| Manufacturer                         | Shenzhen kenhaitong antenna technology co, ltd                                                           |                  |           |               |                   |
| Address                              | 3rd floor,west of No.1 Building,Hezhou Zhongnuo Industrial Park,Hangcheng Street,Bao'anDistrict,Shenzhen |                  |           |               |                   |
| Sample Name                          |                                                                                                          |                  |           |               |                   |
| Part Number                          | 2BNSM-S70                                                                                                |                  |           |               |                   |
| Specification                        |                                                                                                          |                  |           |               |                   |
| Inspection Item                      | Performance                                                                                              | Total Appearance | structure | Others        | Inspection Result |
|                                      |                                                                                                          |                  |           |               |                   |
| Remark                               |                                                                                                          |                  |           |               |                   |
| QA Audit                             |                                                                                                          | Engineer Audit   |           | Sales Confirm |                   |
| The following are filled by Customer |                                                                                                          |                  |           |               |                   |
| Customer Evaluation                  |                                                                                                          |                  |           |               |                   |
| Signation/<br>Chapter<br>by Customer | date:                                                                                                    |                  |           |               |                   |

## 2.4GHz 3216 Chip Antenna: RAN3216F0P2G45

### Application:

WLAN, 802.11b/g, Bluetooth, etc...

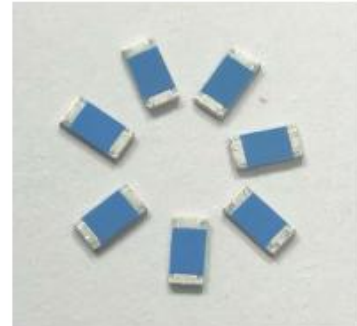
### Features

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

### Part number

RAN 3216 - F0 P 2G45  
(1) (2) (3) (4) (5)

|                 |              |
|-----------------|--------------|
| (1)Product Type | Chip Antenna |
| (2)Size Code    | 3.2x1.6mm    |
| (3)Type Code    | F0           |
| (4)Packing      | Paper Tape   |
| (5)Frequency    | 2.45GHz      |

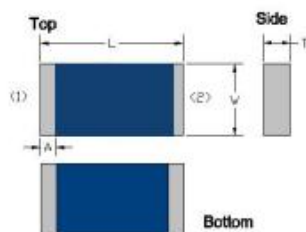


### Electrical Specification

|                           |                  |
|---------------------------|------------------|
| Working Frequency Range   | 2400 ~2484 MHz   |
| Peak Gain                 | 2.58 dBi (Typ.)  |
| Impedance                 | 50 Ohm           |
| Return loss               | 10 dB ( Min)     |
| Polarization              | Linear           |
| Azimuth Beamwidth         | Omni-directional |
| Operation Temperature(°C) | -40 ~85°C        |

The specification is defined on EVB.

### Dimension and Terminal Configuration

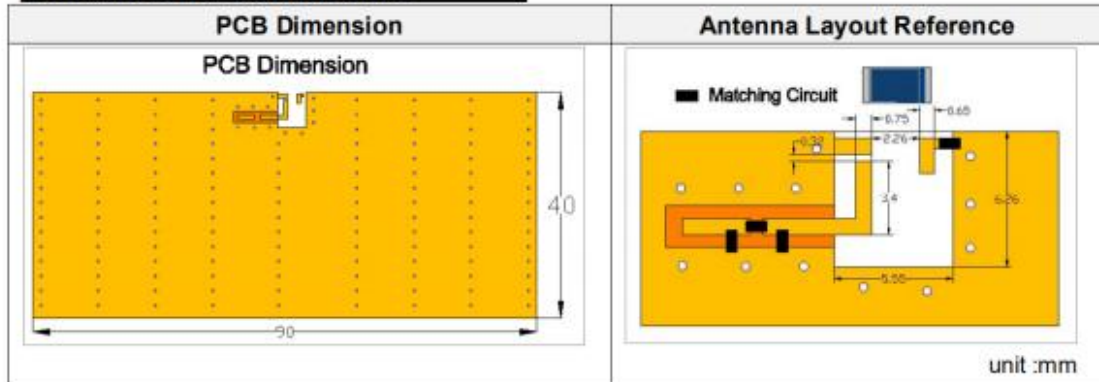


| Dimension (mm) |           |
|----------------|-----------|
| L              | 3.15±0.15 |
| W              | 1.55±0.15 |
| T              | 0.50±0.10 |
| A              | 0.35±0.10 |

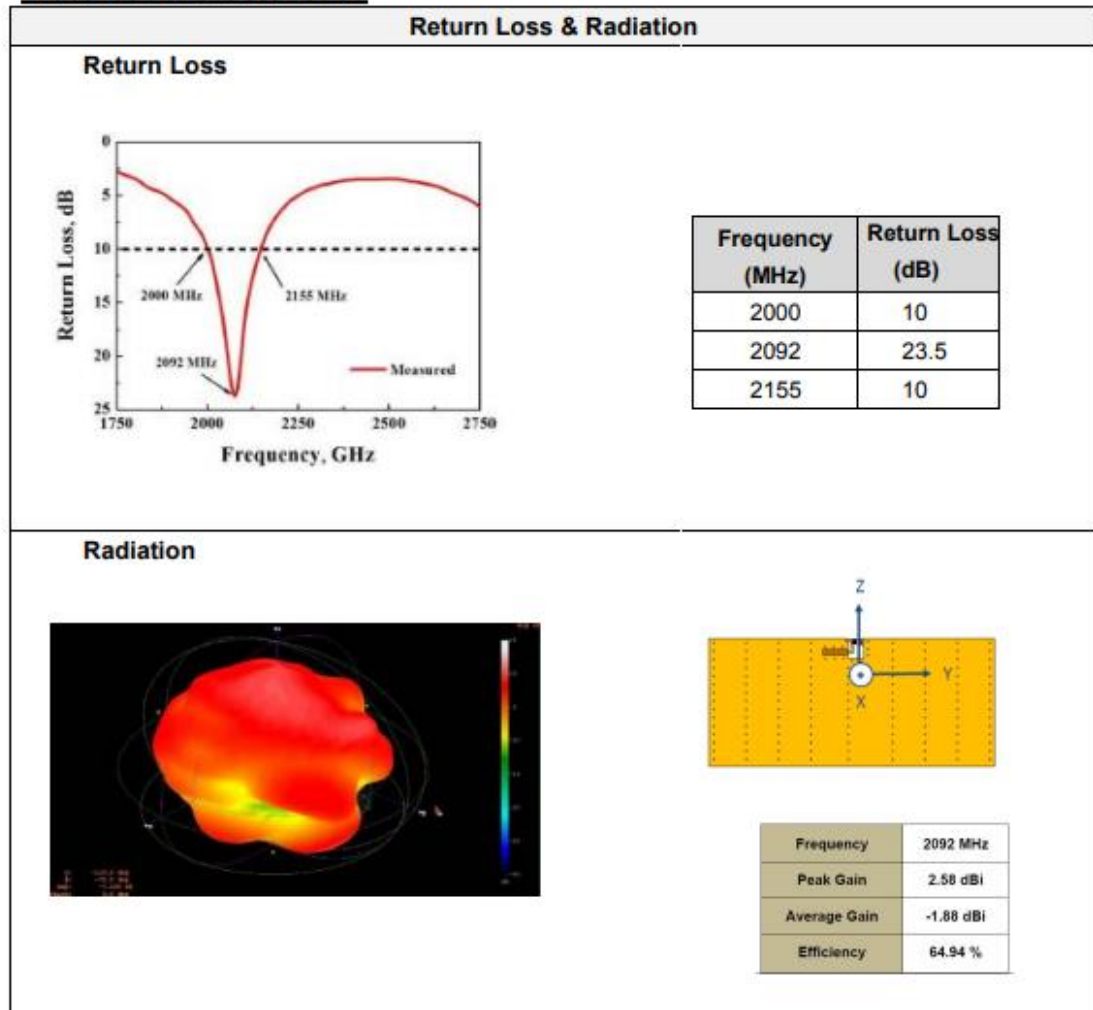
| No. | Terminal Name |
|-----|---------------|
| 1   | Feeding point |
| 2   | GND           |

## 2.4GHz 3216 Chip Antenna: RAN3216F0P2G45

### Evaluation Board Reference



### Electrical Characteristics



## 2.4GHz 3216 Chip Antenna: RAN3216F0P2G45

### Taping Specifications

## Reel and Taping Specification

### Reel Specification

| TYPE | SIZE |         | A             | $\phi B$       | $\phi C$     | $\phi D$     | W              | $\phi M$      |
|------|------|---------|---------------|----------------|--------------|--------------|----------------|---------------|
| 3216 | 7"   | 5K/Reel | 2.0 $\pm$ 0.5 | 13.5 $\pm$ 1.0 | 21 $\pm$ 1.0 | 60 $\pm$ 1.0 | 11.5 $\pm$ 2.0 | 178 $\pm$ 2.0 |

### Taping Specification

| Packaging  | Type | A               | B               | W              | E               | F              | G              | H              | T               | $\phi D$                            | P             |
|------------|------|-----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|-----------------|-------------------------------------|---------------|
| Paper Type | 3216 | 1.90 $\pm$ 0.20 | 3.50 $\pm$ 0.20 | 8.0 $\pm$ 0.20 | 1.75 $\pm$ 0.10 | 3.5 $\pm$ 0.05 | 4.0 $\pm$ 0.10 | 2.0 $\pm$ 0.05 | 0.75 $\pm$ 0.10 | 1.50 <sup>+0.10</sup> <sub>-0</sub> | 4.0 $\pm$ 0.1 |

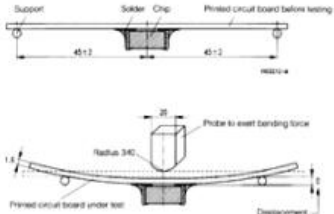
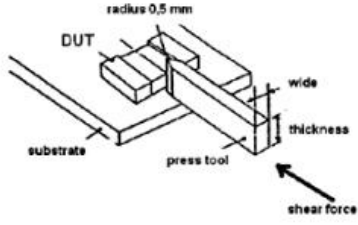


## 2.4GHz 3216 Chip Antenna: RAN3216F0P2G45

### Reliability Table

| Test Item                             | Procedure                                                                                                                                                                                                                                                                                             | Requirements<br>Ceramic Type                                                | Remark<br>(Reference)     |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------|
| Electrical<br>Characterization        |                                                                                                                                                                                                                                                                                                       | Fulfill the electrical<br>specification                                     | User Spec.                |
| Thermal<br>Shock                      | 1. Preconditioning:<br>50 ± 10 °C / 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 °C to +85 °C; 100 cycles;<br>15 minutes at Lower category temperature;<br>15 minutes at Upper category temperature. | No Visible Damage.<br>Fulfill the electrical<br>specification.              | MIL-STD-202<br>107        |
| Temperature<br>Cycling                | 1. Initial measure: Spec: refer Initial spec.<br>2. 100 Cycles (-30 °C to +85 °C), Soak Mode=1 (2 Cycle/hours).<br>3. Measurement at 24 ± 2Hours after test condition.                                                                                                                                | No Visible Damage.<br>Fulfill the electrical<br>specification.              | JESD22<br>JA104           |
| High Temperature<br>Exposure          | 1. Initial measure: Spec: refer Initial spec.<br>2. Unpowered; 500hours @ T=+85 °C.<br>3. Measurement at 24 ± 2 hours after test.                                                                                                                                                                     | No Visible Damage.<br>Fulfill the electrical<br>specification.              | MIL-STD-202<br>108        |
| Low Temperature<br>Storage            | 1. Initial measure: Spec: refer Initial spec.<br>2. Unpowered; 500hours @ T= -30 °C.<br>3. Measurement at 24 ± 2 hours after test.                                                                                                                                                                    | No Visible Damage.<br>Fulfill the electrical<br>specification.              | MIL-STD-202<br>108        |
| Solderability<br>(SMD Bottom Side)    | Dipping method:<br>a. Temperature: 235 ± 5 °C<br>b. Dipping time: 3 ± 0.5s                                                                                                                                                                                                                            | The solder should cover<br>over 95% of the critical<br>area of bottom side. | IEC 60384-21/22<br>4.10   |
| Soldering Heat<br>Resistance<br>(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<br>side and 2 secure points at corners of opposite sides. Parts<br>mounted within 2" from any secure point. Test from 10-2000<br>Hz                                                | No Visible Damage.                                                          | MIL-STD-202<br>Method 204 |
| Mechanical<br>Shock                   | Three shocks in each direction shall be applied along the three<br>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<br>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<br>specification.              | MIL-STD-202<br>Method 106 |

## 2.4GHz 3216 Chip Antenna: RAN3216F0P2G45

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