

*RFCCOM*

***ShenZhenShi BeiGuangLianHe Technology Co. Ltd.***

**Profile Series**  
**52GS\_M-TB170I**

**RFCCOM Embedded Antenna**

**Preliminary Engineering Data Sheet**

***CREATE  
VALUE FOR  
CUSTOMERS***



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# Contents

1、Descriptions ..... 3

2、Features ..... 3

3、Applications ..... 3

4、Electrical Specifications ..... 4

5、Dimensions ..... 4

6、Radiation Patterns ..... 4

7、Cable Datasheet ..... 6

8、Packaging ..... 7





## 1、Descriptions

This embedded antenna is designed for 2.4GHz Band. Both of wireless Lan IEEE 802.11b/g/n ,Bluetooth and Zigbee .This Antenna provides a high efficiency and a good performance.

## 2、Features

The 52GS\_M-TB170I Embedded Antenna is defined by the following features:

- ④ IEEE 802.11 b/g/n standards
- ④ 2.05 dBi peak gain at 2.4 GHz
- ④ 2.15 dBi peak gain at 2.45 GHz
- ④ 2.33 dBi peak gain at 2.48 GHz
- ④ Cable route and Case mount
- ④ Easy integration

## 3、Applications

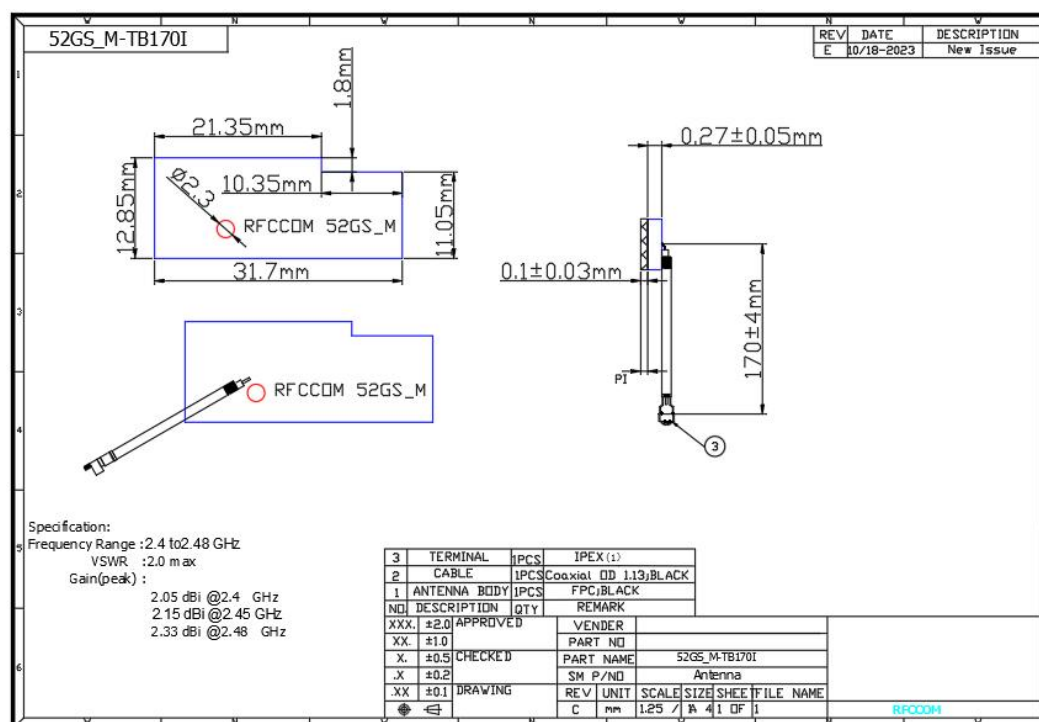
- ④ Wireless LAN
- ④ ISM band 2.4GHz wireless applications
- ④ Bluetooth
- ④ Zigbee



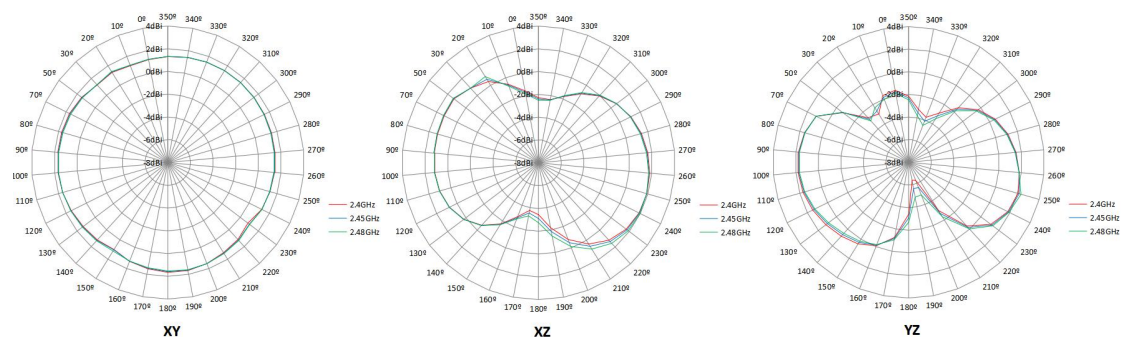
## 4、Electrical Specifications

|                    |                                                                                                                                         |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Standard           | IEEE 802.11n and 802.11 b/g                                                                                                             |
| Frequency range    | 2.4 to 2.48GHz                                                                                                                          |
| Peak gain          | 2.05 dBi peak gain at 2.4 GHz<br>2.15 dBi peak gain at 2.45 GHz<br>2.33 dBi peak gain at 2.48 GHz                                       |
| VSWR               | 2:1                                                                                                                                     |
| Feed impedance     | 50 ohms                                                                                                                                 |
| Power handling     | 30 dBm                                                                                                                                  |
| Interface          | 50 ohms, 1.13 mm diameter, micro coax cable (available with optional U.FL-compatible cable connector and/or cable-mounted EMI ferrites) |
| Antenna dimensions | 31.7 x 12.85 x 0.37mm (L x W x H)                                                                                                       |
| Temperature range  | Operating: -40° C to +75° C (-40° F to +167° F)<br>Storage: -40° C to +85° C (-40° F to +185° F)                                        |
| Humidity range     | 0% to 95% non-condensing                                                                                                                |

## 5、Dimensions



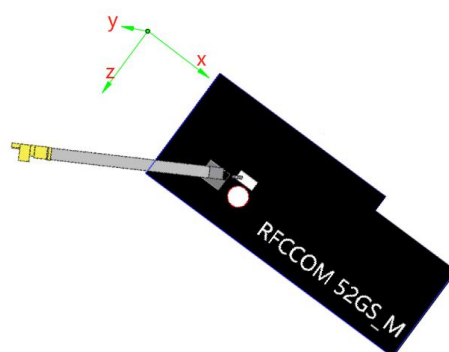
## 6、Radiation Patterns



| XY | Frequency (GHz) | Max             | Min  | Avg  |
|----|-----------------|-----------------|------|------|
|    |                 | Peak gain (dBi) |      |      |
|    | 2.4             | 1.73            | 0.84 | 0.92 |
|    | 2.45            | 1.68            | 1.00 | 0.93 |
|    | 2.48            | 1.65            | 1.03 | 0.91 |

| XZ | Frequency (GHz) | Max             | Min   | Avg   |
|----|-----------------|-----------------|-------|-------|
|    |                 | Peak gain (dBi) |       |       |
|    | 2.4             | 1.91            | -3.75 | -0.49 |
|    | 2.45            | 1.91            | -3.52 | -0.44 |
|    | 2.48            | 1.97            | -3.27 | -0.39 |

| YZ | Frequency (GHz) | Max             | Min   | Avg   |
|----|-----------------|-----------------|-------|-------|
|    |                 | Peak gain (dBi) |       |       |
|    | 2.4             | 2.05            | -6.33 | -1.19 |
|    | 2.45            | 2.15            | -5.62 | -1.21 |
|    | 2.48            | 2.33            | -4.91 | -1.23 |



## 7、Cable Datasheet

| Structure characteristics    |                                       |             |                    |                             |
|------------------------------|---------------------------------------|-------------|--------------------|-----------------------------|
| Structure                    | Item                                  |             | Standard value     |                             |
| ①Inner conductor             | Material                              |             | Tinned copper wire |                             |
|                              | Makeup:total / O.D. of every wire(mm) |             | 7/0.08             |                             |
|                              | (Intertwist)NOM. O.D. (mm)            |             | 0.24±0.02          |                             |
| ②Insulation                  | Material                              |             | FEP                |                             |
|                              | Color                                 |             | Clarity            |                             |
|                              | NOM. O.D. (mm)                        |             | 0.7±0.03           |                             |
| ③Outer conductor             | Material                              |             | Tinned copper wire |                             |
|                              | Makeup:total / O.D. of every wire(mm) |             | 4/0.05             |                             |
|                              | NOM. O.D. (mm)                        |             | 0.92±0.05          |                             |
|                              | Coverage ratio(%)                     |             | 90±5               |                             |
| ④Jacket                      | Material                              |             | FEP                |                             |
|                              | Color                                 |             | Black              |                             |
|                              | NOM. O.D. (mm)                        |             | 1.13±0.05          |                             |
| Electrical characteristics   |                                       |             |                    |                             |
| Item                         | Standard value                        | Item        | Frequency          | Standard value<br>Unit:dB/m |
| Capacitance (pF/m)           | 98                                    | Attenuation | 1GHz               | ≤2.2                        |
| Velocity(%)                  | 70                                    |             | 2GHz               | ≤3.1                        |
| Impedance (Ω )               | 50±2                                  |             | 3GHz               | ≤3.8                        |
| Standing wave ratio          | ≤1.3@0~6GHz                           |             | 4GHz               | ≤4.4                        |
| Max.operating voltage(V)     | 1000                                  |             | 5GHz               | ≤4.9                        |
| Max.operating frequency(GHz) | 6                                     |             | 6GHz               | ≤5.4                        |
| Dependability                |                                       |             |                    |                             |
| Item                         |                                       | Unit        | Standard value     |                             |
| Min.bending radius static    |                                       | mm          | 4                  |                             |
| Operating temperature        |                                       | ℃           | -55~+150           |                             |



## 8、Packaging

