

*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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Revision history

Revision	Date	Note
FPA-02-01-001-1 Rev.	2023-10-20	Initial Draft
FPA-02-01-001-2 Rev.	2024-03-13	Add The Back Image





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## 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

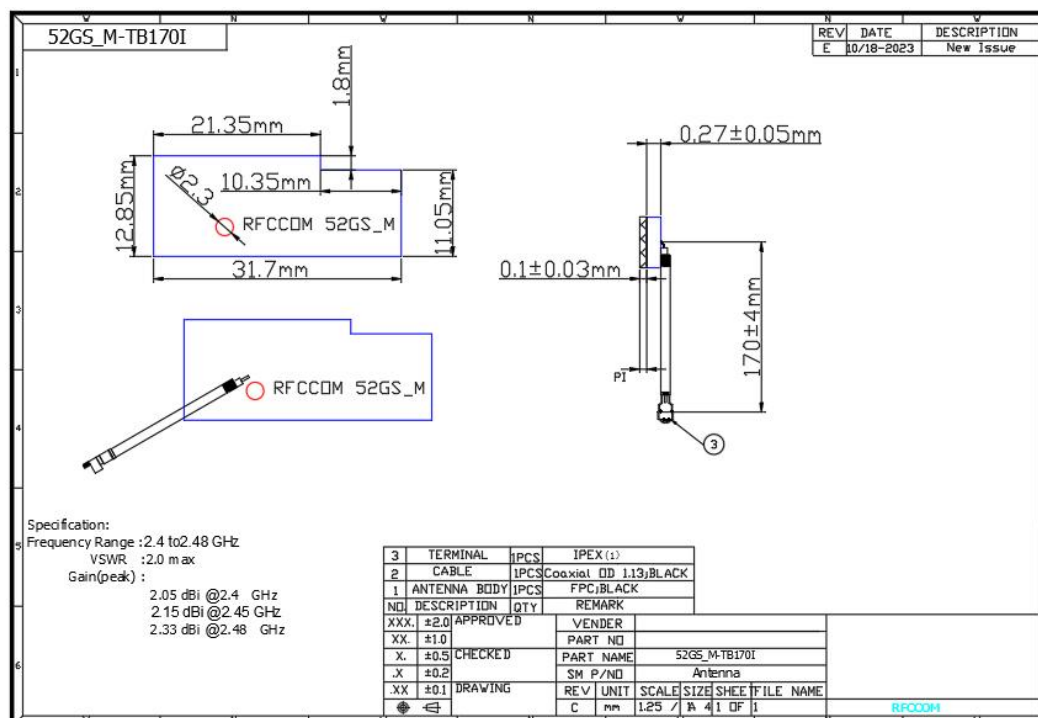
- ④ Wireless LAN
- ④ ISM band 2.4GHz wireless applications
- ④ Bluetooth
- ④ Zigbee



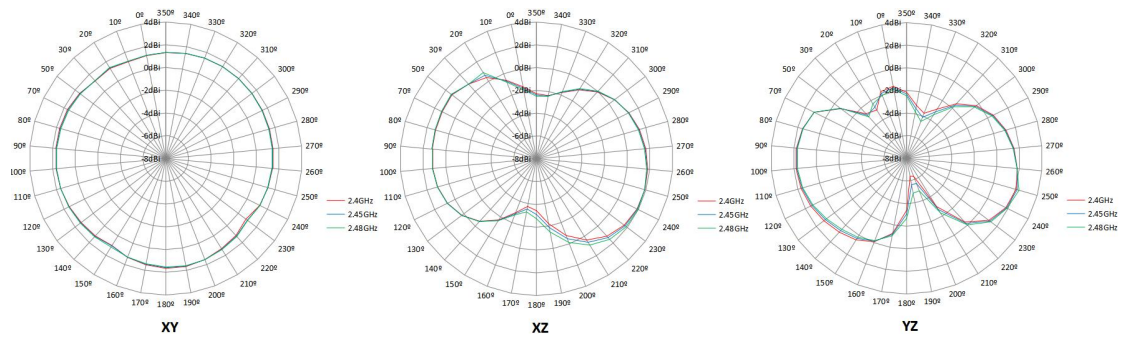
## 4、Electrical Specifications

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 2.15 dBi peak gain at 2.45 GHz 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) Storage: -40° C to +85° C (-40° F to +185° F)
Humidity range	0% to 95% non-condensing

## 5、Dimensions



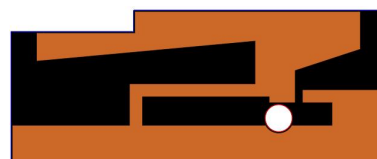
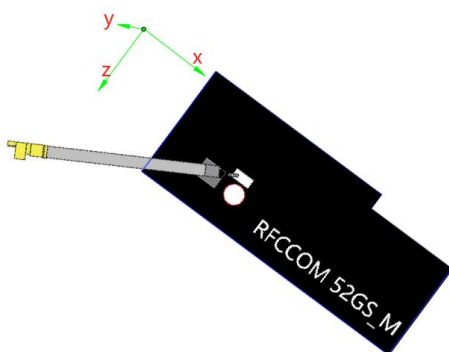
## 6、Radiation Patterns



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 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

