

# SPECIFICATION

Shenzhen Guandetong Electronic Limited



*Shenzhen Guandetong Electronic Co., Ltd.*

2.4G/5.8G 5DB white antenna with SMA female

## Product Specification

|                          |  |                        |                              |
|--------------------------|--|------------------------|------------------------------|
| connection               |  | frequency range        | 2400-2500MHz<br>5200-5800MHZ |
| Frequency band wire name |  | edition                | A1                           |
| Customer part number     |  | Guandetong part number |                              |
| Guandetong No            |  |                        |                              |
| R F design               |  | RF Manager             |                              |
| Structural design        |  | Structure Manager      |                              |
| Technical Director       |  | Date                   | 2024-3-4                     |

Customer confirmation:

Does the assembly meet your company's requirements: ☐OK ☐NG

## catalogue

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1、 Product pictures



2、 Product parameters

| Product testing parameters  |                              |                     |                 |
|-----------------------------|------------------------------|---------------------|-----------------|
| Product name                | 2.4/5.8G 5DB antenna         | (Model Type)        | GDT-P2.4-5.8    |
| (Electrical Specifications) |                              |                     |                 |
| (Frenquency Range)          | 2400-2500MHz<br>5200-5800MHZ | (Polarization)      | perpendicular   |
| (Impedance)                 | 50 ohm                       | Radiation           | Omnidirectional |
| (VSWR)                      | ≦2.0                         | (Power)             | 50W             |
| (Gain)                      | 0.04-5.4dBi                  | (Bandwidth          | 100M            |
| (Mechanical Specifications) |                              |                     |                 |
| (Dimensions)                | 195mm±0.3mm                  | (Chassis Color)     | white           |
| (Connector)                 | SMA plug                     | (Chassis Material)  | ABS+TPE         |
| (Working Temperature)       | -40℃-+85℃                    | (Limit Temperature) | -40℃-+85℃       |

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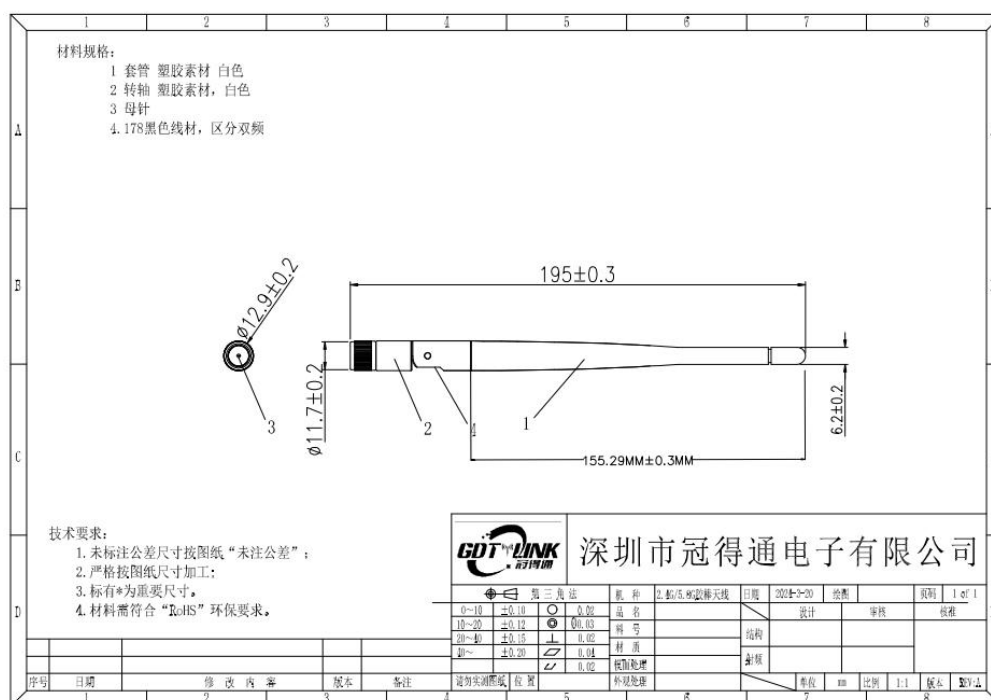
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### 3、S11(VSWR、Return、Smith)



### 4、Structural drawings



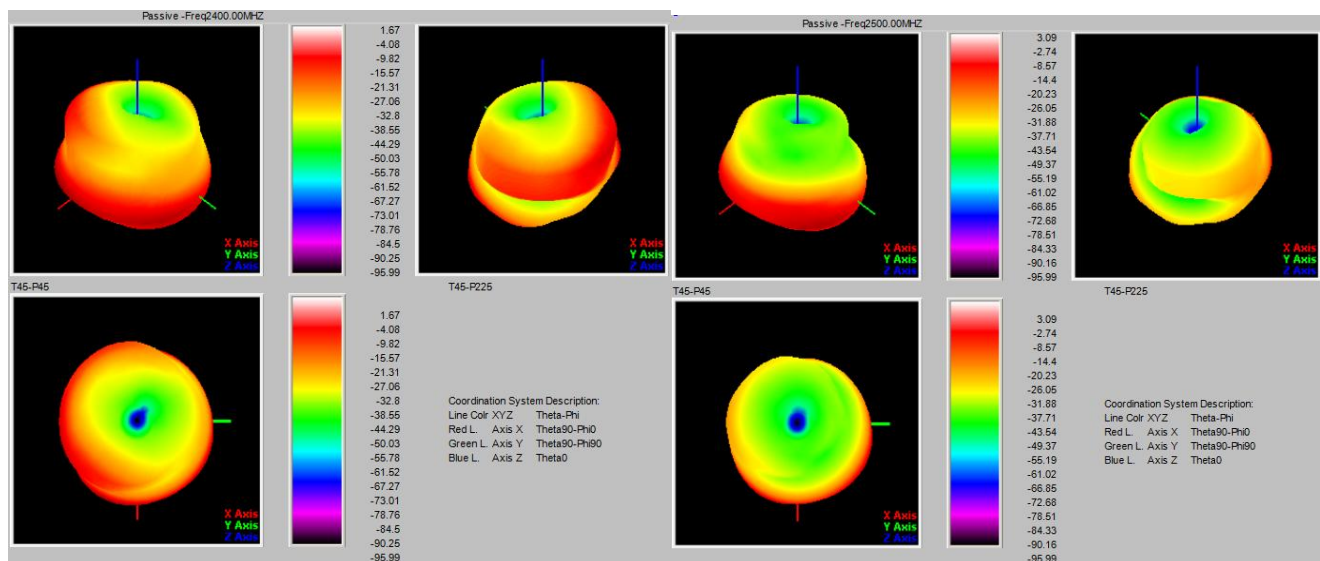
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## 5. Antenna gain and Apple plot

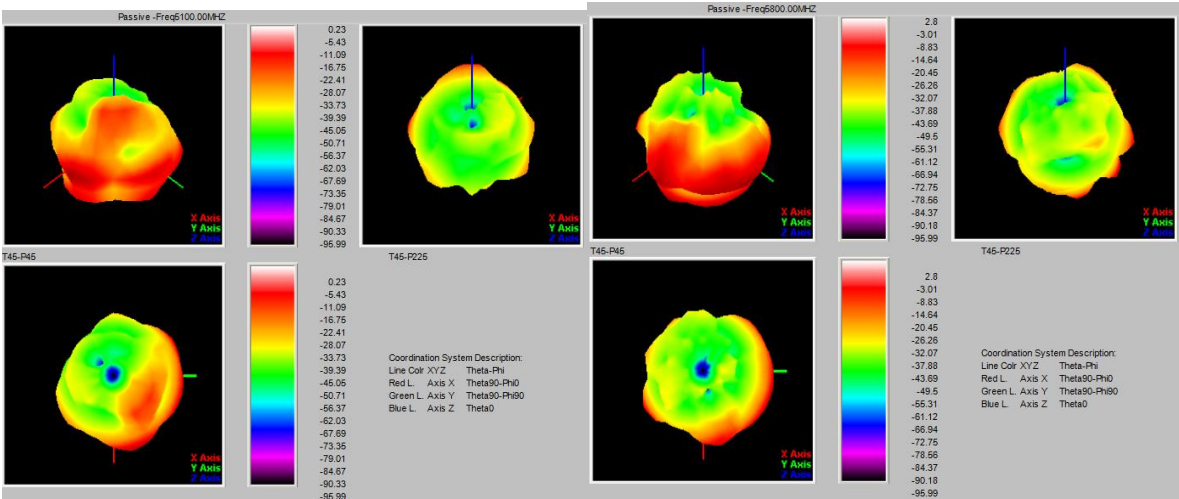
| Test Point ID | Freq. (MHz) | TRP (dBm) | Gain (dBi) | Directivity (dBi) | Efficiency (%) | Efficiency (dB) | Max (dBm) | Theta of Max | Phi of Max | Min (dBm) | Theta of Min | Phi of Min | AVG (dBm) | Max/Min (dB) | Max/AVG (dB) | Min/AVG (dB) |
|---------------|-------------|-----------|------------|-------------------|----------------|-----------------|-----------|--------------|------------|-----------|--------------|------------|-----------|--------------|--------------|--------------|
| 1             | 2400.0      | 2400.00   | 1.67       | 5.87              | 38.0%          | -4.20           | 1.67      | 9000         | 16680      | -95.99    | 0            | 0          | -5.04     | 97.66        | 6.70         | -90.95       |
| 2             | 2410.0      | 2410.00   | 1.97       | 6.17              | 38.0%          | -4.20           | 1.97      | 9000         | 16680      | -95.99    | 0            | 0          | -4.84     | 97.96        | 6.81         | -91.15       |
| 3             | 2420.0      | 2420.00   | 2.35       | 6.47              | 38.8%          | -4.11           | 2.35      | 9000         | 16680      | -95.99    | 0            | 0          | -4.52     | 98.34        | 6.87         | -91.47       |
| 4             | 2430.0      | 2430.00   | 2.95       | 6.73              | 41.8%          | -3.78           | 2.95      | 9000         | 16680      | -95.99    | 0            | 0          | -4.05     | 98.93        | 7.00         | -91.94       |
| 5             | 2440.0      | 2440.00   | 2.81       | 6.71              | 40.8%          | -3.90           | 2.81      | 9000         | 16680      | -95.99    | 0            | 0          | -4.25     | 98.80        | 7.06         | -91.74       |
| 6             | 2450.0      | 2450.00   | 2.73       | 6.72              | 39.9%          | -3.99           | 2.73      | 9000         | 16680      | -95.99    | 0            | 0          | -4.37     | 98.72        | 7.09         | -91.62       |
| 7             | 2460.0      | 2460.00   | 2.91       | 6.80              | 40.8%          | -3.89           | 2.91      | 9000         | 6000       | -95.99    | 0            | 0          | -4.30     | 98.89        | 7.20         | -91.69       |
| 8             | 2470.0      | 2470.00   | 3.01       | 6.78              | 42.0%          | -3.77           | 3.01      | 9000         | 6000       | -95.99    | 0            | 0          | -4.40     | 99.00        | 7.41         | -91.59       |
| 9             | 2480.0      | 2480.00   | 2.94       | 6.63              | 42.8%          | -3.69           | 2.94      | 9000         | 6000       | -95.99    | 0            | 0          | -4.71     | 98.93        | 7.65         | -91.28       |
| 10            | 2490.0      | 2490.00   | 3.05       | 6.76              | 42.5%          | -3.71           | 3.05      | 9000         | 6000       | -95.99    | 0            | 0          | -4.81     | 99.04        | 7.85         | -91.18       |
| 11            | 2500.0      | 2500.00   | 3.09       | 6.78              | 42.7%          | -3.69           | 3.09      | 9000         | 6000       | -95.99    | 0            | 0          | -4.84     | 99.07        | 7.92         | -91.15       |
| 12            | 5100.0      | 5100.00   | 0.23       | 7.41              | 19.1%          | -7.19           | 0.23      | 7500         | 1500       | -95.99    | 0            | 0          | -7.35     | 96.22        | 7.57         | -88.64       |
| 13            | 5120.0      | 5120.00   | 0.11       | 7.49              | 18.3%          | -7.38           | 0.11      | 7500         | 1500       | -95.99    | 0            | 0          | -7.73     | 96.10        | 7.84         | -88.26       |
| 14            | 5140.0      | 5140.00   | 1.10       | 7.36              | 23.7%          | -6.26           | 1.10      | 7500         | 1500       | -95.99    | 0            | 0          | -6.56     | 97.09        | 7.66         | -89.43       |
| 15            | 5160.0      | 5160.00   | 0.92       | 7.06              | 24.3%          | -6.15           | 0.92      | 7500         | 1500       | -95.99    | 0            | 0          | -6.68     | 96.91        | 7.60         | -89.31       |
| 16            | 5180.0      | 5180.00   | 0.96       | 6.88              | 25.6%          | -5.92           | 0.96      | 7500         | 1500       | -95.99    | 0            | 0          | -6.55     | 96.95        | 7.51         | -89.44       |
| 17            | 5200.0      | 5200.00   | 1.11       | 6.74              | 27.4%          | -5.63           | 1.11      | 7500         | 1500       | -95.99    | 0            | 0          | -6.64     | 97.10        | 7.75         | -89.35       |
| 18            | 5220.0      | 5220.00   | 0.04       | 6.24              | 24.0%          | -6.20           | 0.04      | 7500         | 1500       | -95.99    | 0            | 0          | -7.38     | 96.03        | 7.41         | -88.61       |
| 19            | 5240.0      | 5240.00   | 0.99       | 6.75              | 26.6%          | -5.76           | 0.99      | 7500         | 1500       | -95.99    | 0            | 0          | -6.86     | 96.98        | 7.85         | -89.13       |
| 20            | 5260.0      | 5260.00   | 1.10       | 7.11              | 25.1%          | -6.01           | 1.10      | 7500         | 1500       | -95.99    | 0            | 0          | -6.78     | 97.08        | 7.87         | -89.21       |
| 21            | 5280.0      | 5280.00   | 1.41       | 6.28              | 32.6%          | -4.87           | 1.41      | 7500         | 1500       | -95.99    | 0            | 0          | -5.57     | 97.40        | 6.98         | -90.42       |
| 22            | 5300.0      | 5300.00   | 2.17       | 6.36              | 38.1%          | -4.20           | 2.17      | 10500        | 1500       | -95.99    | 0            | 0          | -4.85     | 98.16        | 7.02         | -91.14       |
| 23            | 5320.0      | 5320.00   | 2.68       | 6.02              | 46.4%          | -3.33           | 2.68      | 9000         | 10500      | -95.99    | 0            | 0          | -4.33     | 98.67        | 7.01         | -91.66       |
| 24            | 5340.0      | 5340.00   | 2.55       | 5.69              | 48.5%          | -3.15           | 2.55      | 9000         | 10500      | -95.99    | 0            | 0          | -4.04     | 98.54        | 6.58         | -91.95       |
| 25            | 5360.0      | 5360.00   | 2.73       | 5.74              | 50.1%          | -3.01           | 2.73      | 9000         | 10500      | -95.99    | 0            | 0          | -3.85     | 98.72        | 6.58         | -92.14       |
| 26            | 5380.0      | 5380.00   | 2.44       | 5.68              | 47.4%          | -3.24           | 2.44      | 7500         | 1500       | -95.99    | 0            | 0          | -3.88     | 98.43        | 6.32         | -92.11       |
| 27            | 5400.0      | 5400.00   | 2.55       | 6.33              | 41.9%          | -3.78           | 2.55      | 9000         | 10500      | -95.99    | 0            | 0          | -4.33     | 98.54        | 6.88         | -91.65       |
| 28            | 5420.0      | 5420.00   | 2.66       | 6.59              | 40.4%          | -3.93           | 2.66      | 4500         | 3000       | -95.99    | 0            | 0          | -4.16     | 98.65        | 6.82         | -91.83       |
| 29            | 5440.0      | 5440.00   | 3.27       | 7.01              | 42.2%          | -3.75           | 3.27      | 4500         | 3000       | -95.99    | 0            | 0          | -3.88     | 99.26        | 7.15         | -92.11       |
| 30            | 5460.0      | 5460.00   | 3.67       | 7.51              | 41.3%          | -3.84           | 3.67      | 4500         | 3000       | -95.99    | 0            | 0          | -3.90     | 99.66        | 7.57         | -92.09       |
| 31            | 5480.0      | 5480.00   | 3.67       | 7.35              | 42.9%          | -3.68           | 3.67      | 4500         | 3000       | -95.99    | 0            | 0          | -3.98     | 99.66        | 7.65         | -92.01       |
| 32            | 5500.0      | 5500.00   | 4.80       | 7.55              | 53.0%          | -2.76           | 4.80      | 4500         | 3000       | -95.99    | 0            | 0          | -3.13     | 100.78       | 7.93         | -92.86       |
| 33            | 5520.0      | 5520.00   | 4.39       | 6.91              | 56.0%          | -2.52           | 4.39      | 4500         | 3000       | -95.99    | 0            | 0          | -3.11     | 100.38       | 7.50         | -92.88       |
| 34            | 5540.0      | 5540.00   | 3.87       | 7.10              | 47.6%          | -3.22           | 3.87      | 4500         | 3000       | -95.99    | 0            | 0          | -3.96     | 99.86        | 7.83         | -92.03       |
| 35            | 5560.0      | 5560.00   | 3.71       | 6.96              | 47.4%          | -3.24           | 3.71      | 4500         | 3000       | -95.99    | 0            | 0          | -4.06     | 99.70        | 7.78         | -91.93       |
| 36            | 5580.0      | 5580.00   | 3.58       | 6.71              | 48.6%          | -3.13           | 3.58      | 4500         | 3000       | -95.99    | 0            | 0          | -3.85     | 99.57        | 7.43         | -92.14       |
| 37            | 5600.0      | 5600.00   | 3.88       | 6.93              | 49.6%          | -3.05           | 3.88      | 4500         | 3000       | -95.99    | 0            | 0          | -3.98     | 99.87        | 7.86         | -92.01       |
| 38            | 5620.0      | 5620.00   | 2.64       | 5.92              | 46.9%          | -3.29           | 2.64      | 7500         | 1500       | -95.99    | 0            | 0          | -4.02     | 98.63        | 6.66         | -91.97       |
| 39            | 5640.0      | 5640.00   | 3.87       | 6.73              | 51.7%          | -2.87           | 3.87      | 7500         | 1500       | -95.99    | 0            | 0          | -3.59     | 99.86        | 7.46         | -92.40       |
| 40            | 5660.0      | 5660.00   | 3.83       | 6.36              | 55.8%          | -2.54           | 3.83      | 6000         | 1500       | -95.99    | 0            | 0          | -3.39     | 99.82        | 7.22         | -92.60       |
| 41            | 5680.0      | 5680.00   | 4.67       | 6.57              | 64.5%          | -1.90           | 4.67      | 12000        | 7500       | -95.99    | 0            | 0          | -3.00     | 100.66       | 7.67         | -92.99       |
| 42            | 5700.0      | 5700.00   | 5.40       | 7.57              | 60.6%          | -2.17           | 5.40      | 12000        | 6000       | -95.99    | 0            | 0          | -3.06     | 101.39       | 8.45         | -92.93       |
| 43            | 5720.0      | 5720.00   | 4.89       | 7.02              | 61.2%          | -2.13           | 4.89      | 12000        | 6000       | -95.99    | 0            | 0          | -2.86     | 100.88       | 7.75         | -93.13       |
| 44            | 5740.0      | 5740.00   | 4.26       | 6.63              | 57.9%          | -2.37           | 4.26      | 12000        | 1500       | -95.99    | 0            | 0          | -3.24     | 100.25       | 7.49         | -92.75       |
| 45            | 5760.0      | 5760.00   | 3.86       | 6.41              | 55.6%          | -2.55           | 3.86      | 12000        | 6000       | -95.99    | 0            | 0          | -3.38     | 99.85        | 7.24         | -92.61       |
| 46            | 5780.0      | 5780.00   | 3.30       | 5.96              | 54.1%          | -2.67           | 3.30      | 9000         | 7500       | -95.99    | 0            | 0          | -3.55     | 99.29        | 6.85         | -92.44       |
| 47            | 5800.0      | 5800.00   | 2.80       | 6.09              | 46.9%          | -3.29           | 2.80      | 12000        | 1500       | -95.99    | 0            | 0          | -4.49     | 98.79        | 7.29         | -91.50       |



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6、 Environmental performance test

| project                            | Project test conditions                                                                                                                                                                                                                                                                        | Specifications                                                                    |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Storage environment                | <p>The test temperature, humidity and air pressure are as follows when there is no specific condition:</p> <ol style="list-style-type: none"><li>1. The temperature is - 30 °C~+80 °C</li><li>2. Relative humidity: 45% - 85%</li><li>3. The air pressure is 86kpa-106kpa</li></ol>            | Normal electrical and mechanical performance                                      |
| High and low temperature test      | 5 cycles between 70 ° C and 40 ° C, then under normal conditions1-2H, check the appearance quality.                                                                                                                                                                                            | The size shall meet the requirements and<br>Mechanical and electrical performance |
| Constant damp heat resistance test | <p>Relative humidity: 95 ± 3%, test temperature: 40 °C. After lasting for 2h,</p> <p>The electrical performance shall be measured within 5 minutes after the test object is taken out, and the test object shall be within the normal range</p> <p>Part 1-2H, check the appearance quality</p> | The size shall meet the requirements and<br>Mechanical and electrical performance |
| vibration test                     | <p>Vibration frequency range: 10-55HZ, displacement amplitude: 0.35MM, acceleration amplitude:</p> <p>50.0M/s, frequency sweep cycles: 30 times</p>                                                                                                                                            | Normal electrical and mechanical performance                                      |
| Drop test                          | Free fall for 3 times in the direction of mutually perpendicular axes at a height of 1M                                                                                                                                                                                                        | Normal electrical and mechanical performance                                      |

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