

# Antenna acknowledgment

Customer name: Link Chuangxun Technology Co., LTD

Antenna band: 2.4-2.5

Antenna type: LCX-ZJ1200-003 Onboard antenna

manufacturer: Link Chuangxun Technology Co., LTD

Address: 6th Floor, Building C, Gate 2, Northwest  
Edimonto Industrial Park, Songbai Road, Guangming  
District, Shenzhen

Date of issue: October 9, 2023

Manufacturer acknowledges column:

| fiction | examine | Give permission to |
|---------|---------|--------------------|
|         |         |                    |

Customer recognition field:

| verify | examine | Give permission to |
|--------|---------|--------------------|
|        |         |                    |

## 一、Antenna specification sheet

### Specification

#### 1. Electrical Properties

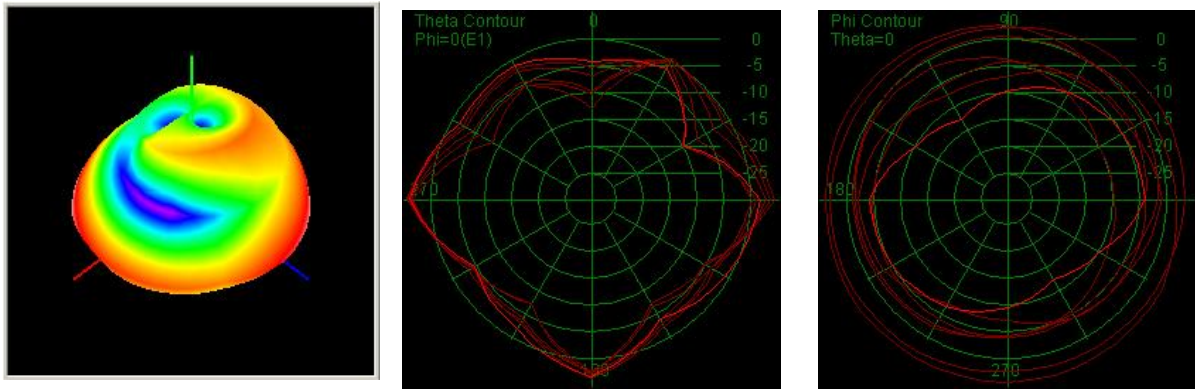
- 1.1 Frequency Range-----2.4-2.5GHz
- 1.2 Impedance----- 50  $\Omega$
- 1.3 VSWR----- 2.0
- 1.4 Return Loss----- 5dB or Less
- 1.5 Radiation----- Omni-directional
- 1.6 Gain ----- 2dBi
- 1.7 Polarization ----- Linear polarization
- 1.8 Admitted Power----- 1W

#### 2. Physical Properties

- 2.1 Antenna material-----FR-4
- 2.2 Operating Temp----- -10°C~+60°C
- 2.3 Storage Temp----- -10°C~+70°C
- 2.4 Color----- black



# 2D、3DRaditation Pattern:



2.4GHz      Gain: 2.21dBi      Efficiency:64.5%

## 四、Material requirement

| 1.Ontology Body: ■FR-4       |                                                                          |                                  |                     |
|------------------------------|--------------------------------------------------------------------------|----------------------------------|---------------------|
| 2.Rf line impedance: 50 ohms |                                                                          |                                  |                     |
| item                         | Test methods and conditions                                              | Specifications and requirements  | Experimental result |
| 1.Characteristic impedance   | The antenna characteristic impedance was measured by TDR                 | Impedance 50 EUR<br>$\pm 10$ EUR | OK                  |
| 2.Standing-wave ratio        | At 2.4-2.5GHz, the standing wave ratio is tested with a network analyzer | VSWR standing wave ratio 2.0MAX  | OK                  |
| 3. Return loss               | At 2.4-2.5GHz, test return                                               | Return loss -10dB                | OK                  |

|         |                                                                           |                                                      |    |
|---------|---------------------------------------------------------------------------|------------------------------------------------------|----|
|         | loss with a network analyzer                                              | MAX                                                  |    |
| 4. gain | The gain and field pattern were tested in a 2.4-2.5GHz microwave darkroom | The gain of the field graph meets the specifications | OK |

## 七、Reliability test

| item            | Test methods and conditions                                                                                | Specifications and requirements                                                                                  | Experimental result |
|-----------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------|
| Salt spray test | Brine concentration 50+/-10g/l (about 5%); PH6.5-7.2; Test temperature 35+/-1 degrees; Corrosion time 16H. | Determination method: observation with 20x magnifying glass after test; No adverse oxidation; Instant acceptance | OK                  |
| Vibration test  | Frequency 10-2000-10Hz<br>Amplitude 1.52mm 10 times in each X.Y.Z direction                                | There is no obvious change in appearance<br>The electrical parameters meet the specification error               | OK                  |
| Drop test       | Fell about 1 meter onto the board                                                                          | There is no obvious change in appearance<br>The electrical parameters                                            | OK                  |

|                                        |                                                                                                                                                                                    |                                                                                                    |    |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----|
|                                        |                                                                                                                                                                                    | meet the specification error                                                                       |    |
| Temperature cycle test                 | High temperature: 70 °C ;<br>Low temperature: -20°C<br>Duration: Each temperature lasts 30 minutes<br>Transfer time: 10 minutes<br>Number of cycles: 5<br>Recovery time: 4 to 6hrs | There is no obvious change in appearance<br>The electrical parameters meet the specification error | OK |
| Constant temperature and humidity test | Temperature and humidity: 40 ° C ± 2° C,90-95%RH<br>Duration: 500hrs<br>Recovery time: 4 to 6hrs<br>Test time: 240 & 500hrs                                                        | There is no obvious change in appearance<br>The electrical parameters meet the specification error | OK |
| High temperature test                  | Temperature: 85° C<br>Duration: 240hrs<br>Recovery time: 4 to 6hrs<br>Test time: 240 hrs                                                                                           | There is no obvious change in appearance<br>The electrical parameters meet the specification error | OK |
| Low temperature test                   | Temperature: -20° C<br>Duration: 240hrs<br>Recovery time: 4 to 6hrs<br>Test time: 240 hrs                                                                                          | There is no obvious change in appearance<br>The electrical parameters meet the specification error | OK |