

## Approval Sheet

**Customer :** \_\_\_\_\_

**ZC.P/N :** ZCD0915-13W9208NM

**Description :** Lora Fiberglass Antenna

<b>Checked By</b>		
<b>Audit</b>	<b>Producer</b>	<b>Date</b>
KUI LIU	ZLB	2021.04.13

<b>Customer signature</b>		
<b>Quality</b>	<b>Engineer</b>	<b>Purchasing</b>

**Product Number: ZCD0915-13W9208NM**  
**Product Name:Lora Fiberglass Antenna**

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**Product Name:Lora Fiberglass Antenna**


### **1. Revision History**

<b>Revision</b>	<b>Date</b>	<b>Change Notification</b>	<b>Description</b>
1.0	2021.04.13	First Edition	

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## 2. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	900~930 MHz
V.S.W.R.	$\leq 2.0$ @ 900~930 MHz
Antenna Gain	7.0 +/- 0.8 dBi @ 900~930 MHz
Efficiency(%)	$\geq 60$ % @ 900~930MHz
Radiation Pattern	Omni-Directional
Max Input Power	$\geq 2$ W
Polarization	Linear polarization/Vertical
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	CU
Material of Plastic	FRP (white light)
Cable Type	RG-141 50 $\Omega$
Connector Type	N-J Double tooth connector
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 65 °C
Antenna Color Storage life	< 2 year

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### 3. Characteristics and Reliability Test

Test Items		Test Condition and Procedure	Requirements
C1	S.W.R.	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
M1	Vibration	GB / T2423 . 48-1997 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol.<= 5%
M2	Random Drop	GB / T2423.8-1995 Height: 1.0 Meter; 3 directions; 1 time for each direction	1. No parts separated 2. Frequency Tol.<= 5%
M3	Solderability	GB 2423 . 28- 82 Solder iron: 260±5°C; Duration: 5 seconds	1. Mounted on PCB 2. No Visual Damage
M4	Terminal-Pull Test	Holding with individual specification; force applied to axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M5	Terminal-Torque Test	Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M6	Dimension	Inspection of dimension, color, material, package, surface process	Directive DUT specification
E1	Salt Spray	GB / T 2423 . 17- 93 Temp: 35°C; RH: >= 95%; NaCl solution: >= 5%; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E2	Humidity	GB / T 2423 . 4 - 93 Temp: 80°C / 12 H; -40°C / 12H RH: >= 90%; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E3	Thermal Shock	GB / T 2423 . 22 - 87 1 Cycle: - 40°C (30 minutes) to + 80°C (30 minutes) Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E4	Life (High Temp.)	GB /T 2423 . 2 - 89 Temp: 80°C; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
R1	RoHS	With Reference to IEC 62321:2008 with flow chart	Directive RoHS 2011/65/EU
R2	PFOS	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2006/122/EC
R3	PFOA	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2006/122/EC

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#### 4. Antenna - S Parameter Test Data



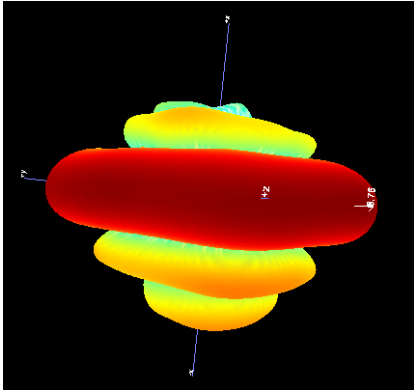
频率	增益 (dBi)	效率
902MHz	5.28	74.28%
903MHz	5.34	74.71%
904MHz	5.46	74.70%
905MHz	5.57	74.44%
906MHz	5.70	73.97%
907MHz	5.79	73.53%
908MHz	5.87	73.08%
909MHz	5.96	73.10%
910MHz	6.07	73.48%
911MHz	6.17	73.77%
912MHz	6.27	74.19%
913MHz	6.38	74.75%
914MHz	6.51	75.72%
915MHz	6.63	76.61%
916MHz	6.75	77.04%
917MHz	6.82	77.18%
918MHz	6.87	77.08%
919MHz	6.93	77.09%
920MHz	6.95	76.55%
921MHz	6.94	75.86%
922MHz	6.94	75.17%
923MHz	6.94	74.89%
924MHz	6.98	75.09%
925MHz	6.95	75.58%
926MHz	7.09	76.13%
927MHz	7.15	77.08%
928MHz	7.22	78.26%
929MHz	7.28	79.11%
930MHz	7.29	79.37%

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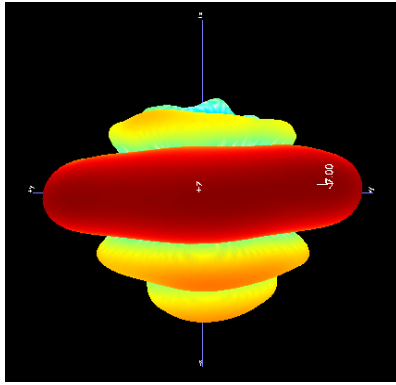
Product Name:Lora Fiberglass Antenna

### 5. Antenna - Radiation Pattern Test Data

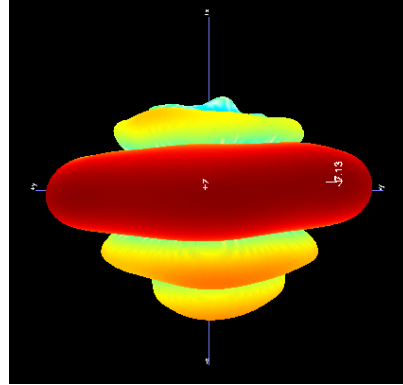
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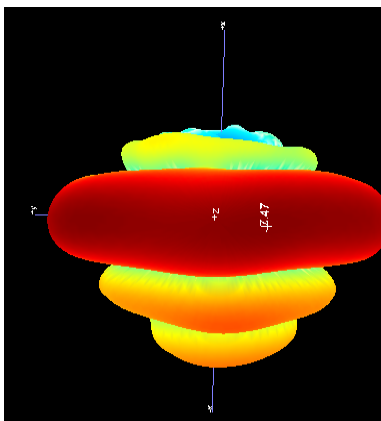
900



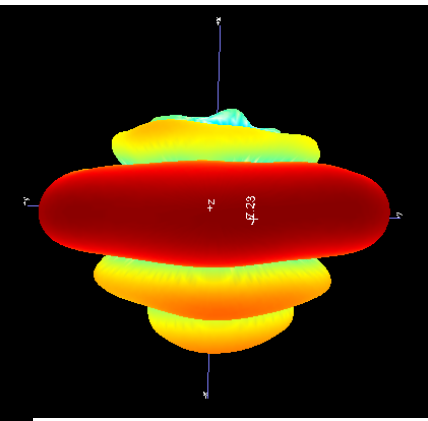
902



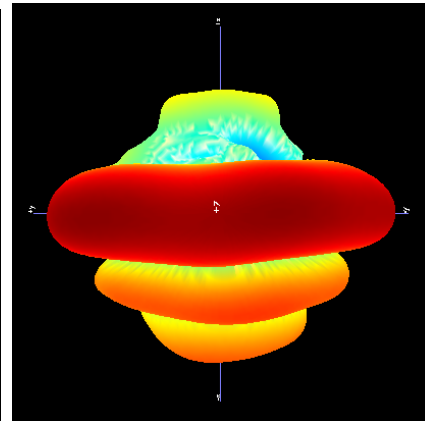
903



915



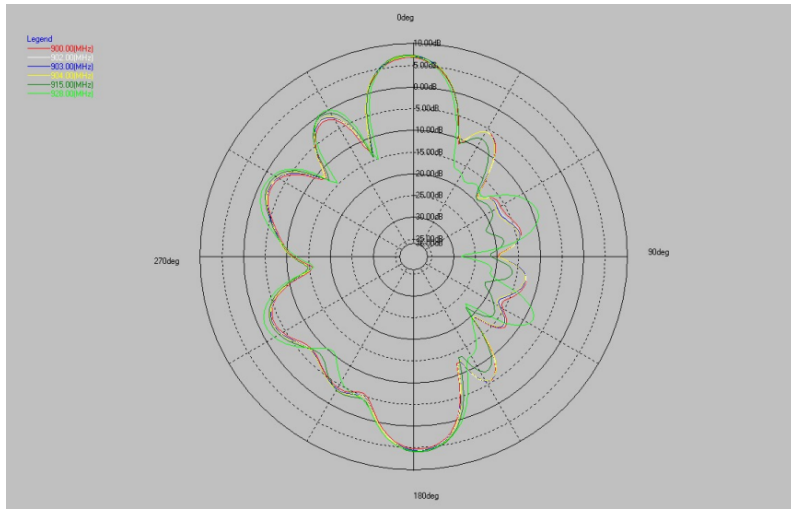
928



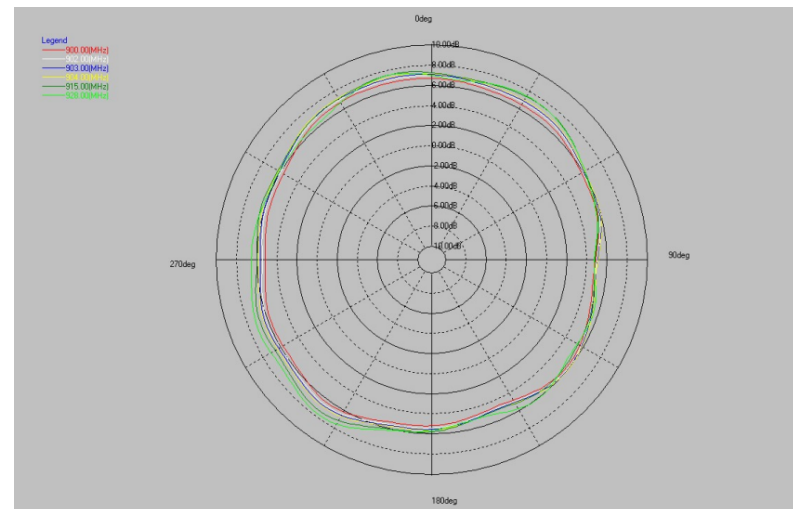
930

## 7. Material Description

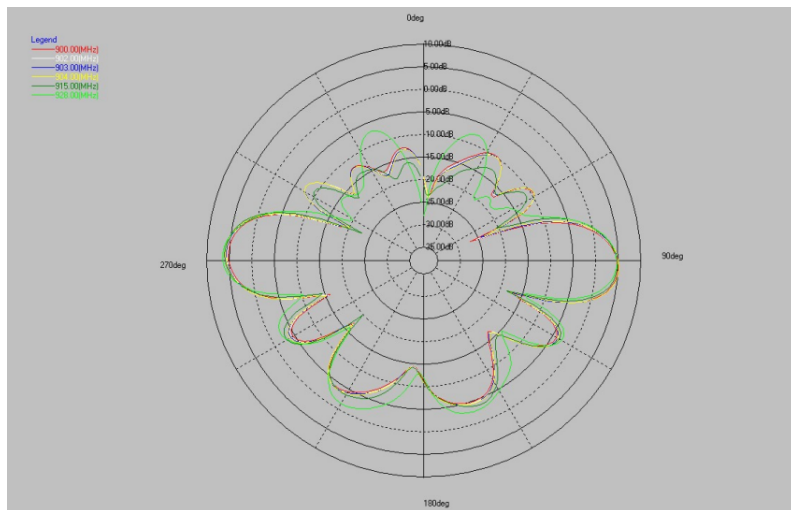
See attached files



**PIN=0**



**PIN=90**



**THETA=90**

## 6. Mechanical Drawing

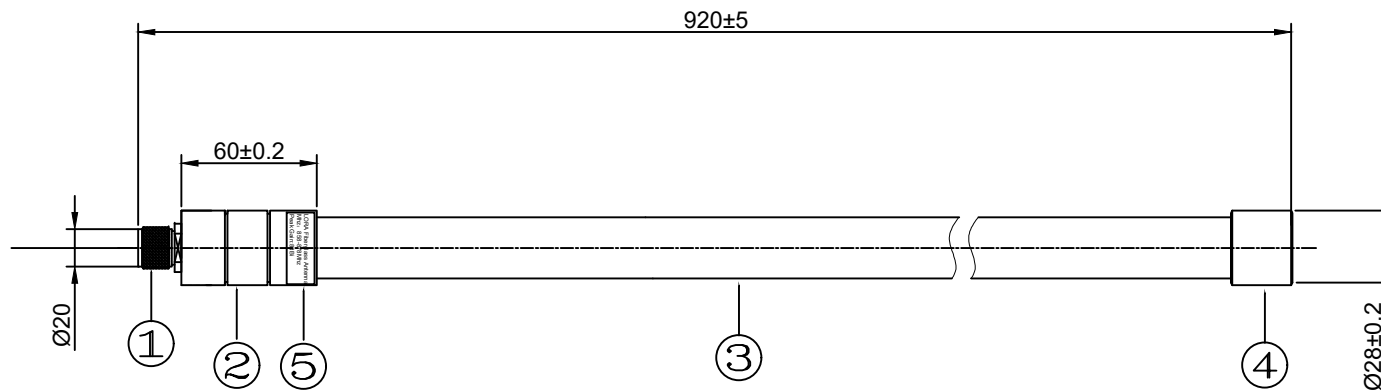
See attached files



# RoHS

## Compatible

SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



**Note:**

1. Mark \* is important dimension; "CpK" identify for process control (CpK ≥ 1.33).
2. Tolerance: Unmarked tolerance refer to the standard tolerance please.

No.	Part Number	Description	Material	Finish	Q'ty
5		Stickers			
4	R-HG02-02	Cover	Plastic	ABS	1
3	HG02-20308	Glass Fiber Tube	Glass Fiber	L=Ø25*890mm	1
2	HG02-01B	Al Sleeve	A Alloyl	Ø29*60mm	1
1	R-00N-FN8	N Jack	Cu	Nickel Plated	1



Dongguan Zhongchi Electronics Co. Ltd.

TITLE: 902-930Mhz

PART NO.: ZCD0915-13W9208NM CUSTOMER P/N: /

APP BY	CHK BY	RF BY	DES BY	Tolerance
JANUS		JINF	ZLB	X.X ±0.5
2021/04/13		2021/04/12	2021/04/12	X.XX ±0.2
				X° ±1

UNITS: mm  
SCALE: 1/1  
REVISION: A