Document	Datasheet
Type	Quadrifilar Spiral Antenna
Application	UHF RFID
Part No.	AQUA920S-4510F-RDR
Revision	0

DATASHEET

AQUA920S Series

Application

UHF RFID

Features

High Efficiency
High Front-Back Ratio
Wide bandwidth
Pb-free Condition
RoHS Compliant

ACTENNA

Notes
The contents of this datasheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

Table of Content

1. FEATURES

- UHF RFID Reader Circular Polarization Antenna
- Square Quadrifilar Sprial Antenna (* Patent Registration)
- Wide Beamwidth, Wide Bandwidth
- Small Antenna Element
- Low Weight, Compact Size
- Low Frequency Shift by Platform Size
- Immunity from User Proximity and Handling
- Easy Application and Save Development Time
- OEM / ODM

2. SPECIFICATIONS

1. Electrical Specifications

No	Item	Min	Typ.	Max	Remark
1	Operating Frequency [MHz]		917~924		
2	Polarization		RHCP		
3	Peak Gain [dBic]	-5.5		-3.5	
4	Axial Ratio		<1.5		
5	Bandwidth (-10dB R.L.) [MHz]		200		
6	Beamwidth (degrees)		>130		
7	Impedance (Ω)		50		

2. Mechanical Specifications

No	Item	Spec.	Remark
1	Dimensions (L x W x H)	45 x 45 x 10 mm^3	
2	Operating Temperature	-40 ~ +90 ℃	

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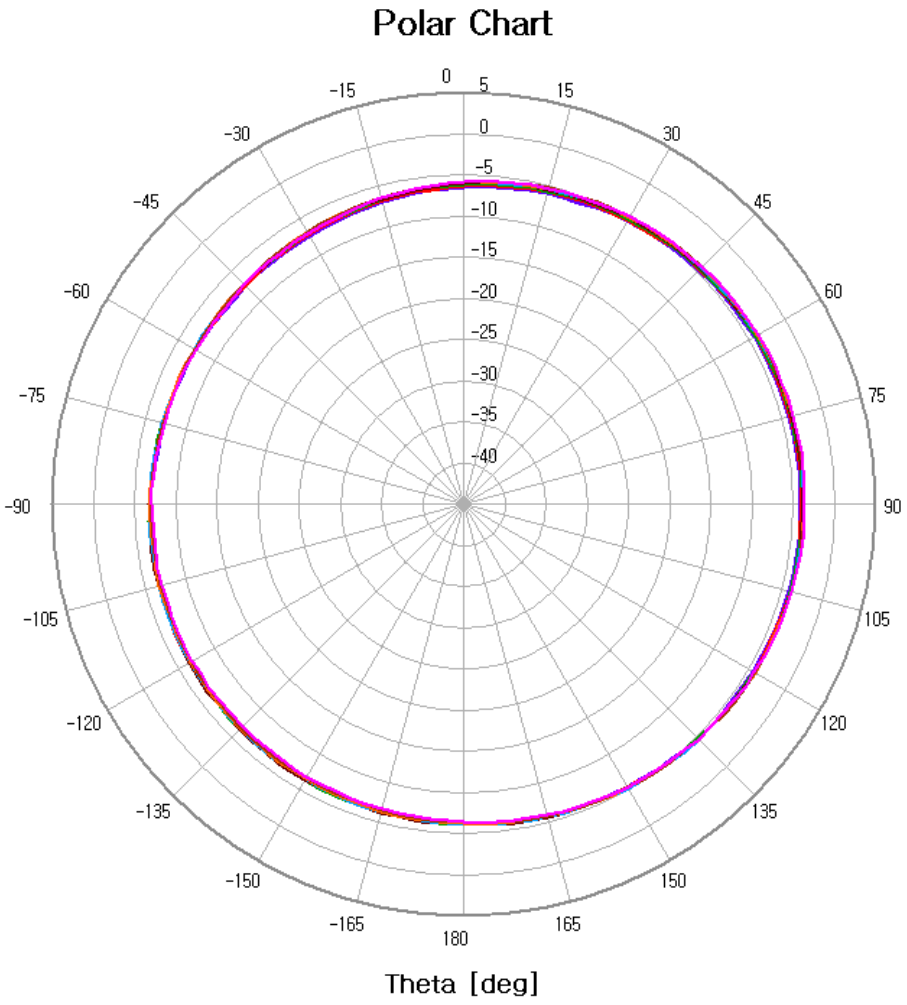
3. MEASUREMENT RESULT

3-1 E-Plane



Freq. [MHz]	Polarization	Axis	Beam Peak	
			Value	[deg]
917,000			-4,137	78,000
918,000			-3,968	84,000
919,000			-3,855	84,000
920,000			-3,734	84,000
921,000			-3,679	81,000
922,000			-3,632	87,000
923,000			-3,571	78,000
924,000			-3,597	81,000

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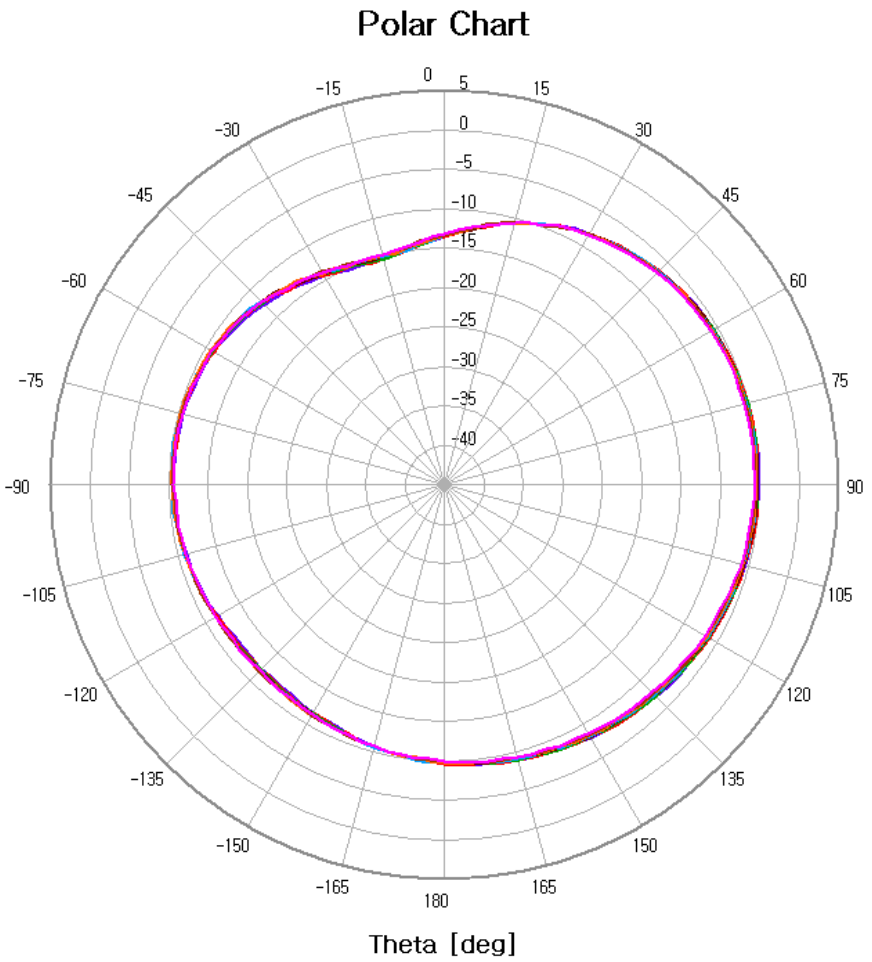
3-2 H-Plane



Freq. [MHz]	Polarization	Axis	Beam Peak	
			Value	[deg]
917,000			-5,082	81,000
918,000			-5,086	84,000
919,000			-5,114	87,000
920,000			-5,184	84,000
921,000			-5,247	84,000
922,000			-5,333	78,000
923,000			-5,436	81,000
924,000			-5,611	90,000

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4 SOLERING

- Manual Soldering (By Iron) – Pb free
- Soldering Temperature : 300℃ ±5℃, 5sec max. (Solder : Sn/Ag/Cu:96.5/3.0/0.5)
- Must comply with above soldering condition to prevent from degradation of antenna performance.

5 RELIABILITY

No	Item	Test Condition	Requirement
1	Drop Test	1. Place antenna on set 2. 1.5 m height 3. Drop 5 times	1. No visible defect 2. S11 satisfy
2	Vibration Test	1. 5-55-5Hz, 1 octive/min Amp. = 1.5mm, acceleration=2g Crossover Freq.=18Hz, Holdtime=2H.R	1. No visible defect 2. S11 satisfy
3	Humidity	1. 60℃, 95%RH, 96Hr	1. No visible defect 2. S11 satisfy
4	Thermal Shock	1. +80℃(30min)→5min→-40℃(30min) 2. 10 cycle	1. No visible defect 2. S11 satisfy
5	High Temperature Resistance	1. +90℃, 96Hr	1. No visible defect 2. S11 satisfy
6	Low Temperature Resistance	1. -40℃, 96Hr	1. No visible defect 2. S11 satisfy
7	Adhesion Strength of Soldering	1. Used of pull push gauge	1. Spec (min. 5kgf)