



苏州硕贝德通讯技术有限公司

SUZHOU SPEED COMMUNICATION

TECHNOLOGY CO., LTD.

Antenna Specification

Customer Project		Flex Skycell-814	Frequency Band	2400~2500MHz,	
SCT P/N		F-0A-2F-0182-001-00	Version	T02	
Date		2025.12.11			
SPEED					
Checked by	RF	Hao Wu	Designed by	RF	Liyang Zhao
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	QC		Remark		
Manufacturer		Huizhou Speed Wireless Technology Co., Ltd.			
Address		138 Huize Road, Hi-Tech Industrial Park of East River, Zhongkai Hi-tech District, Huizhou, Guangdong			
Customer					
Date					
Confirmed by	RF				
	ME				
Remark					

Version	Content	Date
T01	First released version	20251128
T02	Add Manufacturer and Address	20251211

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1. Project Overview

This specification outlines the characteristics of the antenna for Flex Skycell-814. The antenna operates in 2400~2500MHz.

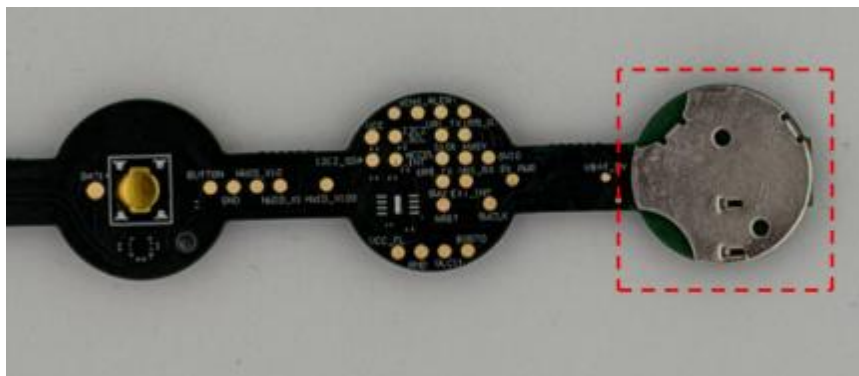


Figure 1: Proposed Antenna

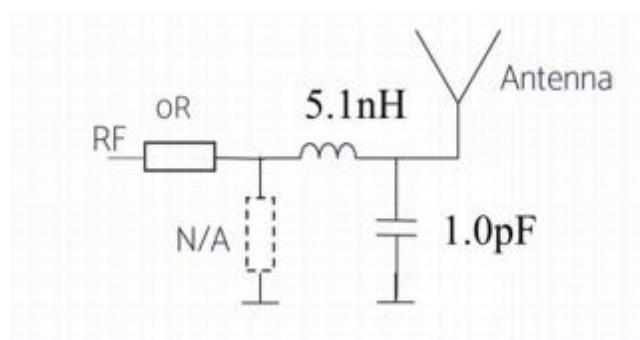


Figure 2: Matching Circuit

2. Antenna Specifications

Antenna Type	Stamped Metal
Operating Frequency	2400~2500 MHz
Return Loss	<-8.15dB
Peak Gain	0.02~ 1.15dBi@2400~2500MHz
Efficiency	-6.84~-5.91dB
Impute Impedance	50ohm
Polarization Mode	Linear
Antenna Size	As shown in the drawing
Manufacture	SPEED

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3. Antenna Test Environment

The testing equipment for antenna performance parameters, such as return loss, voltage standing wave ratio, and isolation, is the Keysight E5071C vector network analyzer. As shown in the following figure:



Figure 3: Keysight E5071C Vector Network Analyzer

The antenna's efficiency, gain, and radiation pattern were measured in a Satimo anechoic chamber. This chamber employs 64 probes to electronically scan the antenna's radiation characteristics, collect data, and process the results. It supports antenna testing within the frequency range of 400 MHz to 6 GHz



Figure 4: Satimo Chamber Testing System

4. Measured Results

4.1 Return Loss

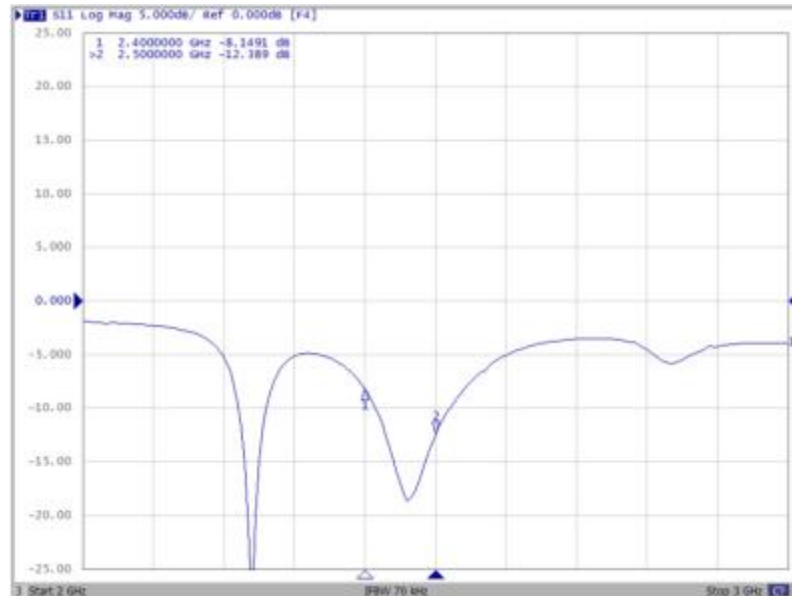


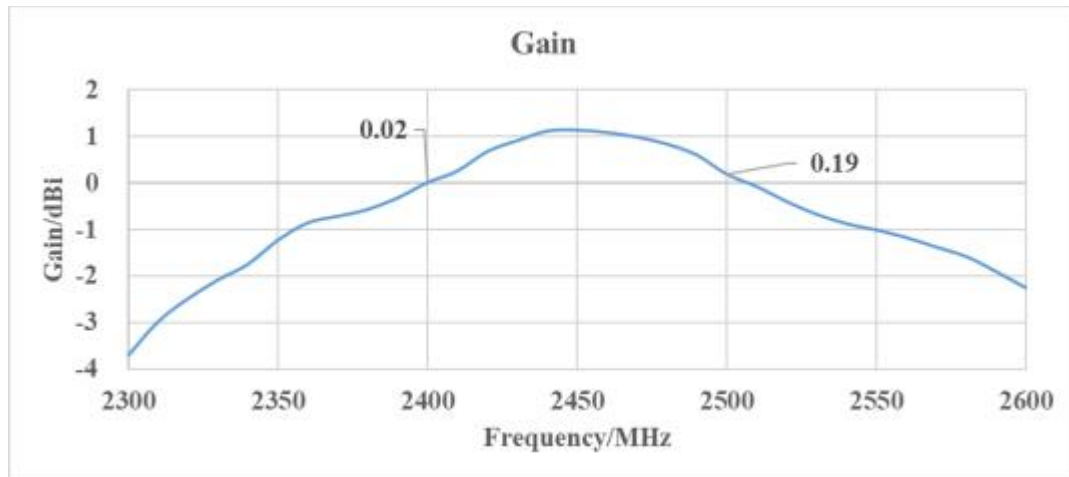
Figure 5: Return Loss

4.2 Efficiency & Peak Gain

Frequency Range	2400~2500MHz
Peak Gain	0.02~1.15dBi
Efficiency	-6.84~-5.91dB



(a) Antenna Efficiency



(b) Peak Gain

Figure 6: Efficiency & Peak Gain

5 Antenna Radiation Pattern(2D&3D)

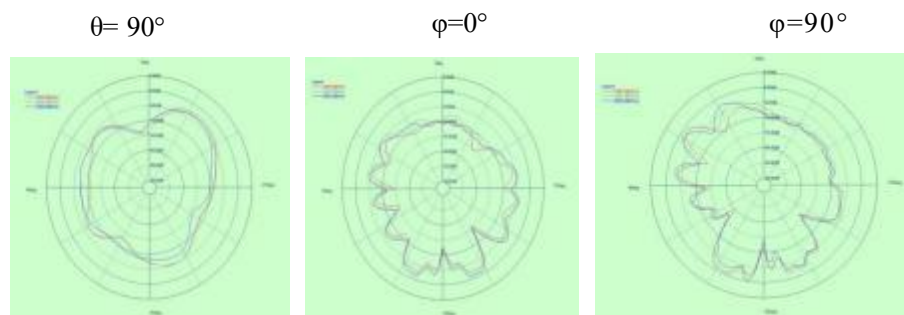


Figure 7: Radiation Pattern(2D)

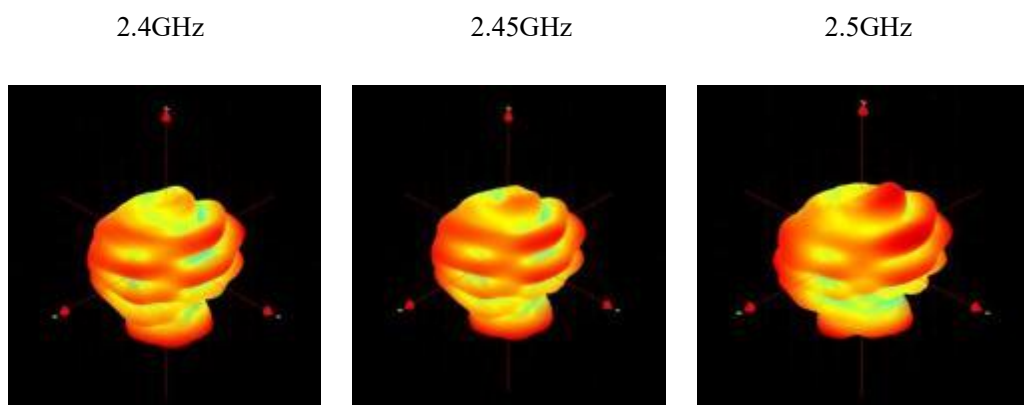


Figure 8: Radiation Pattern(3D)

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6 Antenna Structure Diagram

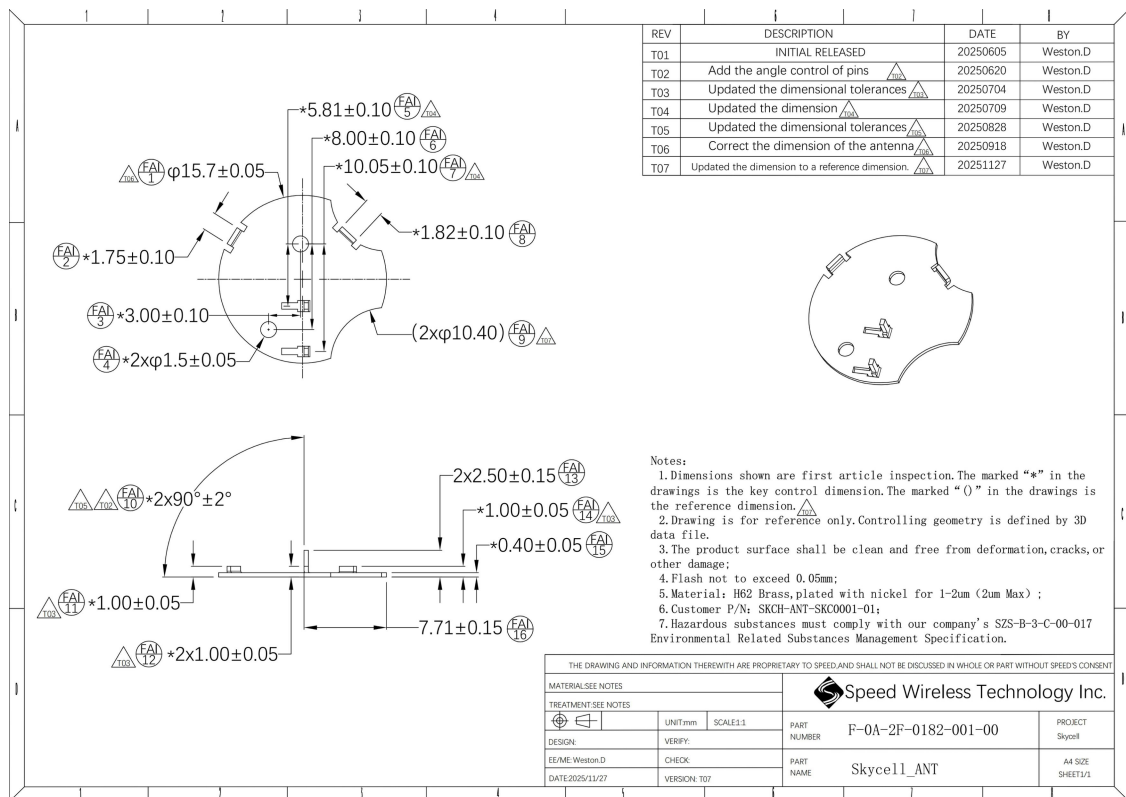


Figure 9: Antenna Structure Diagram