

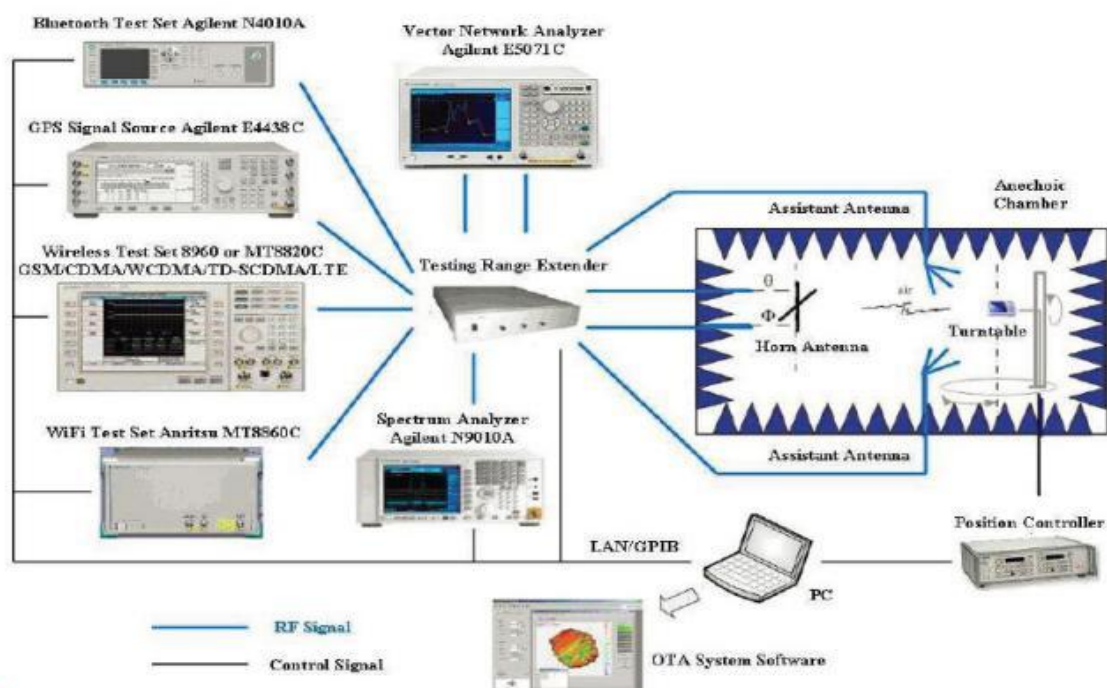
Antenna Specification for Approval

Customer Name	Chengdu Geeker Technology Co.Ltd		
Model	IPEX4		
Antenna Band	2.4 GHZ & 5GHz		
Antenna Type	WIFI & BT & 5G WiFi Antenna		
Antenna Material	FPC		
FPC Color	Black		
Material Number	F952BE-1L24B-100-A		
Supplier Confirmation Signature		Customer Confirmation Signature	
Structural		Purchase	
QC		Structural	
Radio		Engineering	
Audit		QC	
Date 2019.06.14	Stamp Area	Date 2019.06.14	Stamp Area

Contents

1. Device Support & Testable Antenna Types	3
2. Overview	4
(1) Antenna performance	4
(2) Mechanical Information	4
3. Match Circuit Diagrams, Machine Images, Antenna images	5
(1) Match Circuit	5
(2) Machine Image & Antenna Image	5
4. Antenna Standing Wave Ratio & Antenna Efficiency (VSWR)	6
5. 3D Pattern	7
6. Drawing Structure	8

1. Device Support & Testable Antenna Types



Antenna Functions	Frequency Range	Testing Instruments	Testing Methods	Testing Standards
2G Antenna (GSM)	824MHz-960MHz, 1710MHz-1990MHz	5071B, 8960, OTA Dark Room	Active Testing, Passive Testing	Supplier Standards, Customer Requirements
3G Antenna (WCDMA / TDSCDMA / CDMA-EVDO / 2000)	824MHz-960MHz, 1710MHz-2170MHz	5071B, 8960, OTA Dark Room	Active Testing, Passive Testing	Supplier Standards, Customer Requirements
4G Antenna (LTE-FDD / LTE-TDD)		5071B, CMW500, SP8011, OTA Dark Room	Active Testing, Passive Testing	Supplier Standards, Customer Requirements
WiFi Antenna	2.4GHz-2.48GHz, 5.15GHz-5.35GHz, 5.725GHz-5.825GHz	5071B, CMW500, OTA Dark Room, Router, PC	Active Testing, Passive Testing, APK Measurements, Throughput Testing	Supplier Standards, Customer Requirements
BT Antenna	2.4GHz-2.48GHz	5071B, OTA Dark Room, Bluetooth Speaker	Passive Testing, Actual Measurement	Supplier Standards, Customer Requirements
Positioning Antenna (GPS, GLONASS, Beidou, Galileo)	1575.42MHz±10MHz, 1602MHz+0.5625MHz, 1561MHz+2.046MHz	5071B, OTA Dark Room, APK	Passive Testing, Actual Measurement	Supplier Standards, Customer Requirements
NFC Antenna	13.56MHz	5071B, Dedicated Test Fixture, OTA Dark Room, APK	Passive Testing, Actual Measurement	Supplier Standards, Customer Requirements
Remote Control Antenna	433MHz	5071B, OTA Dark Room	Passive Testing, Actual Measurement	Supplier Standards, Customer Requirements

2. Overview

(1) Antenna performance

1. This approval sheet supports for MID project. FPC antennas include in this project. This report is for the performance of WIFI&BT antenna.
2. Antenna shape size: Meet the requirement of MID
3. Antenna band: 2.4GHz~5GHz
4. Antenna material: Antenna material meet the requirement of MID
5. Adhesive performance: Adhesive performance meet the requirement of MID
6. Antenna performance meet the spec below:

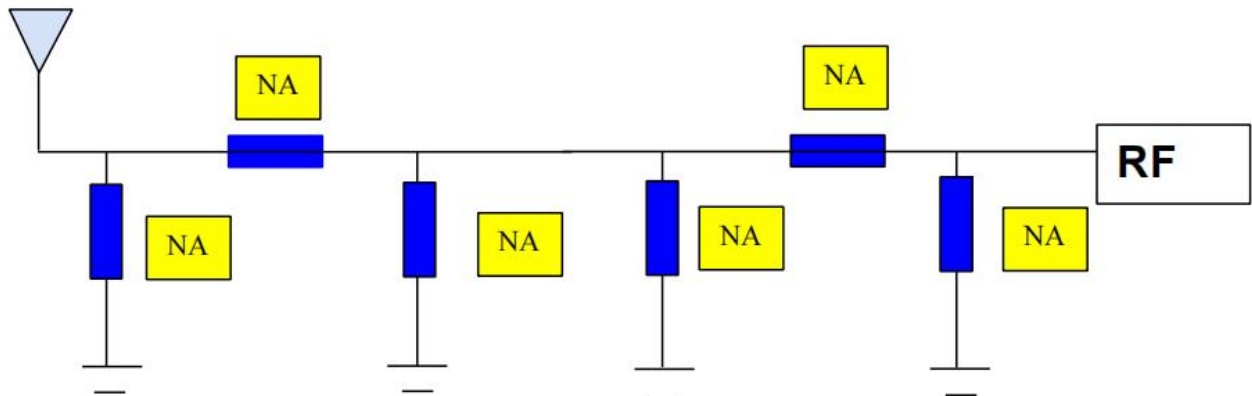
Description	2.4GHz~5GHz	Units
VSWR	≤ 2.0	
Average Antenna Gain	≥ -4.5	dB
Antenna Efficiency	≥ 40	%
Feed Impedance	50 ohms	
Operating Temperature	-40 to +85 deg C	
Polarization / Azimuth	Linear / Omni-directional	

(2) Mechanical Information

Mechanical Dimension	
Cable Length	100mm/BLACK
Description	WIFI&BT antenna
Material	FPC
Coaxial Cable	500hm/0. D. 0. 81mm
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

3. Match Circuit Diagrams, Machine Images, Antenna images

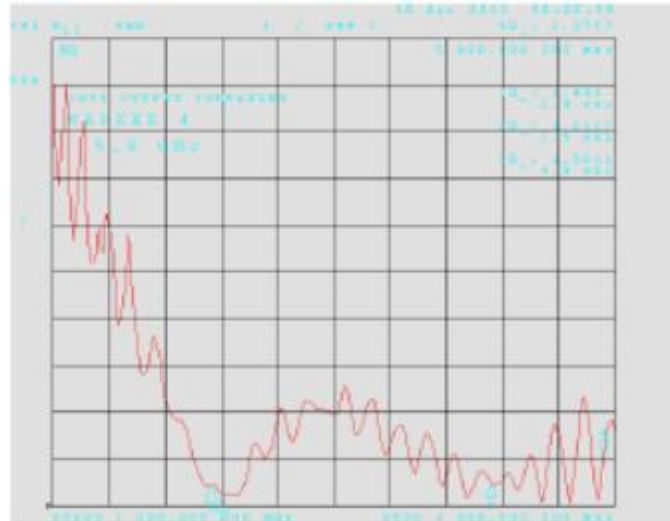
(1) Match Circuit



(2) Machine Image & Antenna Image



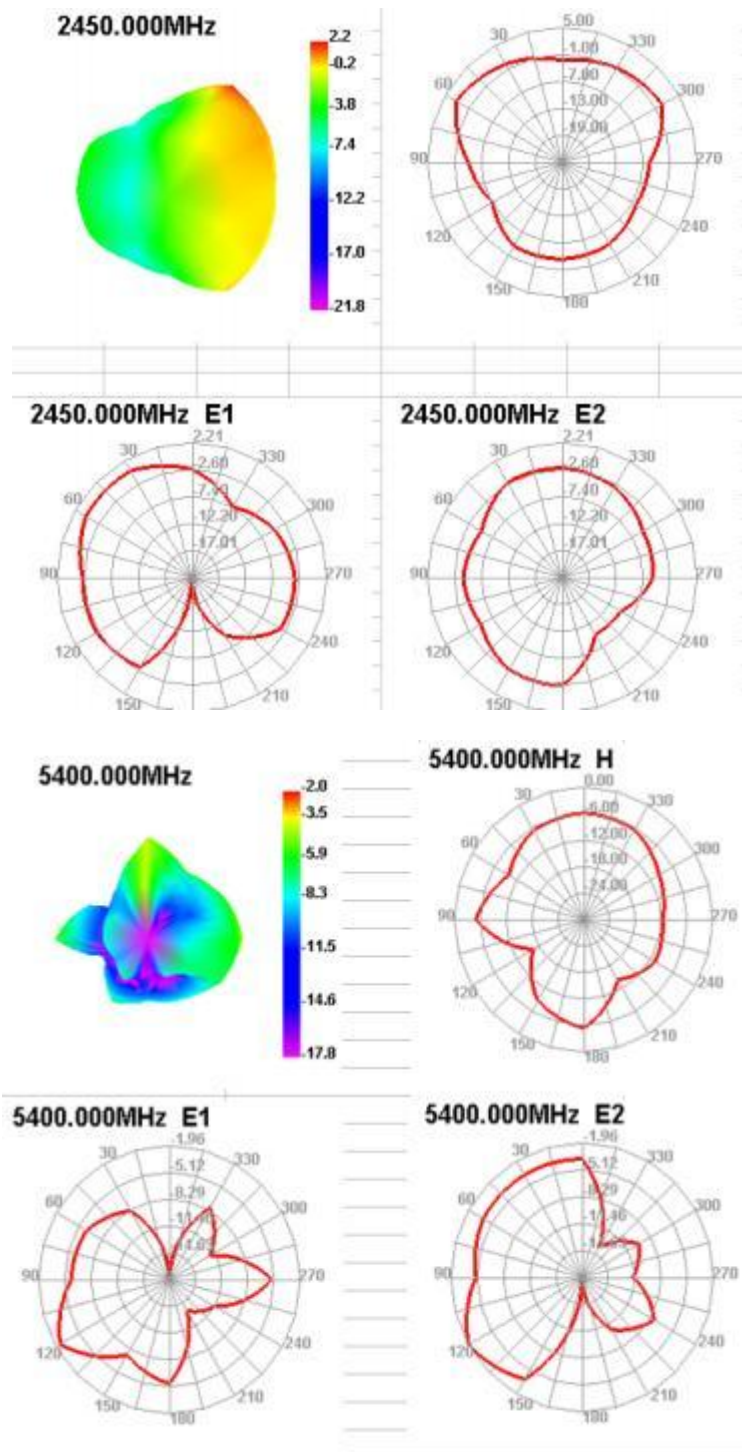
4. Antenna Standing Wave Ratio & Antenna Efficiency (VSWR)



Frequency(MHz)	VSWR
2400	1.25
2450	1.18
2500	1.16
5400	1.50

Frequency	Efficiency (%)	Average GAIN(dB)	Peak GAIN (dBi)
2400	40.43	-4.23	1.33
2450	39.43	-4.21	1.56
2500	39.21	-4.11	1.42
5100	31.04	-5.08	0.67
5400	29.77	-7.26	-2.31
5900	27.92	-5.54	0.53

5. 3D Pattern



6. Drawing Structure

Size unit:mm

