2JF0302Pa
2.4/5.0 GHz ISM MIMO Adhesive Mount Flexible Polymer Embedded Antenna

Key Features
Cable 1 - 2: 2.4/5.0 GHz ISM
- 2410-2490 MHz
- 4920-5925 MHz
Self-Adhesive
Flexible Material
Compact Size
Embedded Antenna
Ground Plane Independent
High Performance
Customizable Cable and Connector
Dimensions: 22.4 x 20.6 x 0.2 mm
1. Antenna Description

2JF0302Pa

One of the smallest ISM MIMO flexible self-adhesive embedded antennas on the market

At only 22x20mm size, this flexible self-adhesive embedded antenna is one of the only designs providing a MIMO solution for 2.4GHz-5.0GHz Dual-Band WiFi ISM bands. The 2JF0302P is ready to support any throughput sensitivity, speed and reliability demanded by any ISM application. The 2JF0302P does not fall short of the high efficiency and performance with its 2 antennas along the side packed on one PCB of the size of a coin.

Applications

Implementing an omnidirectional design the 2JF0302P is ideal for IoT and automotive wireless systems as it provides 360° of coverage. Applications can range from WiFi hotspots, dash cameras, routers, infotainment systems and any others that require contact connection with large data demand. Where the 2JF0302P exceeds is particularly based on its MIMO design capability. One of the top applications for this antenna is data actually intensive integrations, such as connected cars, self-driving cars and self-driving systems such as manufacturing autonomous robots and other logistical applications. This system is compatible with a large number of standards such as WiFi, Bluetooth, BLE, ISM, DSRC, V2V, V2X, Sigfox, LoRa, ZigBee, RPMA and LPWAN.

Typical applications

- Infotainment systems
- WiFi hotspot
- HD video transmission
- Dash cameras
- Connected cars
- Self-driving cars
- Fleet management
- Gateways
- Routers
- Public transportation
- Logistics
- And others

Key Features

- Flexible ultra-small and thin PCB for convenient integration
- Self-Adhesive back side aiding easy installation
- Eco-friendly in Size
- High-Efficiency MIMO Embedded Antenna
- Ground Plane Independent
- Customizable Cable and Connector

Fully Customizable

With an ultra-thin and flexible PCB compact design, this antenna comes equipped with a self-adhesive peel-and-stick installation option. Connectors can be customized based on application and design.

Compatibility Standards

2.4/5.0 Cables
- WiFi, Bluetooth, BLE, ISM
- DSRC, V2V, V2X
- Sigfox, LoRa, ZigBee, RPMA, LPWAN

www.2j-antennae.com  www.2j-antennasusa.com
## 2. Antenna and electrical specifications

### 2.4/5.0 GHz ISM Antenna

<table>
<thead>
<tr>
<th>Parameters</th>
<th>2.4 GHz</th>
<th>5.0 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band (MHz)</td>
<td>2.4 GHz</td>
<td>5.0 GHz</td>
</tr>
<tr>
<td>Frequency (MHz)</td>
<td>2410-2490</td>
<td>4920-5925</td>
</tr>
<tr>
<td>Return Loss (dB)</td>
<td>~-8.3</td>
<td>~-12.6</td>
</tr>
<tr>
<td>VSWR</td>
<td>~2.4:1</td>
<td>~2.2:1</td>
</tr>
<tr>
<td>Efficiency (%)</td>
<td>~53</td>
<td>~64</td>
</tr>
<tr>
<td>Peak Gain (dBi)</td>
<td>~3.2</td>
<td>~5.0</td>
</tr>
<tr>
<td>Average Gain (dB)</td>
<td>~2.8</td>
<td>~1.9</td>
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<tr>
<td>Impedance (Ohm)</td>
<td>50</td>
<td></td>
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<tr>
<td>Polarisation</td>
<td>Linear</td>
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</tr>
<tr>
<td>Radiation Pattern</td>
<td>Omni-Directional</td>
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<tr>
<td>Max. Input Power (W)</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Connector Type</td>
<td>U.FL Standard (Other Connectors Available)</td>
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</tr>
<tr>
<td>Cable Length</td>
<td>100mm Standard (Any Cable Length Available)</td>
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</tr>
<tr>
<td>Cable Type</td>
<td>1.37mm Mini-Coax Standard (Other Cables Available)</td>
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</tbody>
</table>

### Antenna Measurement Conditions:
- Mounted on 30 x 30 x 0.25 cm ABS Plate
- 100 mm of 1.37 mm Mini-Coax Cable
- Measured in Certified CTIA 3D Anechoic Chamber
## 3. Mechanical and environmental specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>2JF0302Pa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting Type</td>
<td>Self-Adhesive</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>22.4 x 20.6 x 0.2</td>
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<tr>
<td>Adhesive Type</td>
<td>3M 467</td>
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<tr>
<td>Material</td>
<td>Flexible Polymer</td>
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<tr>
<td>Operating Temperature (C)</td>
<td>-40 to +85</td>
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<tr>
<td>Storage Temperature (C)</td>
<td>-40 to +85</td>
</tr>
<tr>
<td>Substance Compliance</td>
<td>RoHS</td>
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</tbody>
</table>
4. Antenna parameters

Cable 1: 2.4/5.0 GHz ISM

![Return Loss Graph](image1)

![VSWR Graph](image2)
Cable 2: 2.4/5.0 GHz ISM

Return Loss (dB)

Frequency (MHz)

VSWR

Frequency (MHz)
ISOLATION FOR CABLES 1 AND 2

ENVELOPE CORRELATION COEFFICIENT FOR CABLES 1 AND 2
Cable 1: 2.4/5.0 GHz ISM

2450 and 5500 MHz Radiation pattern
Cable 2: 2.4/5.0 GHz ISM

2450 and 5500 MHz Radiation pattern
5. Antenna drawings

UFL connector’s orientation

max. 1.51

0.2

116

20.6

7.8

22.4

100 ±3

17

2

2
6. Antenna Images

2.4/5.0 GHz ISM Bands
2JF0302Pa