SPECIFICATION

PATENT PENDING

Part No: **FXUB63.07.0150C**

Product Name: LTE Wide Band Flex Antenna 698MHz - 3000 MHz

Features:

- Patent Pending
- Ground Plane Independent
- 698-3000 MHz
- >45% Efficiency on All bands
- 5 dBi Peak Gain
- 96*21*0.2 mm size
- IPEX MHFI (U.FL Compatible)

**RoHS Compliant**
1. INTRODUCTION

The patent pending FXUB63 flexible ultra wideband antenna has been designed to cover all working frequencies in the 698-3000 MHz spectrum, covering all Cellular, 2.4GHz Wi-Fi, ISM and AGPS. The antenna is delivered with a flexible body with excellent efficiencies on all bands, ground independent, with cable and connector for easy installation.

The FXUB63 flexible polymer antenna, at 96*21*0.2mm, is ultra thin and truly ultra wideband with high efficiencies across the bands. It is assembled by a simple “peel and stick” process, attaching securely to non-metal surfaces via 3M adhesive. It enables designers to use only one antenna that covers all common LTE frequencies.

The FXUB63 antenna is a durable flexible polymer antenna that has a peak gain of 5dBi, an efficiency of more than 45% across the bands and is designed to be mounted directly onto a plastic or glass cover. It is an ideal choice for any device maker that needs to keep manufacturing costs down over the lifetime of a product. It is ground plane independent and delivered with a cable and connector for easy connecting to the wireless module or customer PCB.

Cables and Connectors are customizable. Like all such antennas, care should be taken to mount the antenna at least 10mm from metal components or surfaces, and ideally 20mm for best Radiation efficiency.
## 2. SPECIFICATION

<table>
<thead>
<tr>
<th>Band</th>
<th>700/850/900</th>
<th>1575</th>
<th>1700/1800/1900</th>
<th>2100</th>
<th>2400</th>
<th>2600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>CELL</td>
<td>GPS</td>
<td>CELL</td>
<td>CELL</td>
<td>ISM</td>
<td>CELL</td>
</tr>
<tr>
<td>Frequency (MHz)</td>
<td>698-960</td>
<td>1575.42</td>
<td>1710-1990</td>
<td>1755-2170</td>
<td>2400-2500</td>
<td>2500-2690</td>
</tr>
<tr>
<td>Max VSWR</td>
<td>2:1</td>
<td>2:1</td>
<td>1.8:1</td>
<td>1.7:1</td>
<td>1.7:1</td>
<td>2.3:1</td>
</tr>
<tr>
<td>Max Return Loss (dB)</td>
<td>-10</td>
<td>-10</td>
<td>-11</td>
<td>-12</td>
<td>-12</td>
<td>-8</td>
</tr>
<tr>
<td>Peak Gain (dBi)</td>
<td>1</td>
<td>2.5</td>
<td>3.5</td>
<td>5</td>
<td>5</td>
<td>4.5</td>
</tr>
<tr>
<td>Efficiency (%)</td>
<td>50</td>
<td>75</td>
<td>78</td>
<td>65</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>Average Gain (dB)</td>
<td>-3</td>
<td>-2</td>
<td>-2</td>
<td>-2.5</td>
<td>-2</td>
<td>-2</td>
</tr>
</tbody>
</table>

**Radiation Properties**
- Omni-directional

**Max Input Power (Watts)**
- 5

**Polarization**
- Linear

**Impedance (Ohms)**
- 50 Ohms

*Antenna measured on plastic plate of 3 mm thickness.

### MECHANICAL

<table>
<thead>
<tr>
<th>Dimensions (mm)</th>
<th>96<em>21</em>0.2 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Flexible Polymer</td>
</tr>
<tr>
<td>Connector and Cable</td>
<td>U.FL and 1.37 mm mini coax</td>
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<tr>
<td>Cable Length</td>
<td>150 mm</td>
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</tbody>
</table>

### ENVIRONMENTAL

<table>
<thead>
<tr>
<th>Operation Temperature</th>
<th>-40°C to 85°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Temperature</td>
<td>-40°C to 85°C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>40% to 95%</td>
</tr>
<tr>
<td>RoHs Compliant</td>
<td>Yes</td>
</tr>
</tbody>
</table>
3. ANTENNA PARAMETERS

3.1. Return Loss

![Return Loss Graph]

*Figure 1. Return loss of FXUB63 Antenna.*

3.2. VSWR

![VSWR Graph]

*Figure 2. VSWR of FXUB63 Antenna.*
3.3. Peak Gain

![Figure 3](image1.png)

*Figure 3.* Peak Gain of FXUB63 Antenna.

3.4. Efficiency

![Figure 4](image2.png)

*Figure 4.* Efficiency of FXUB63 Antenna.
3.5. Average Gain

Figure 5. Average Gain of FXUB63 Antenna.

3.6. Radiation Pattern

Figure 6. Radiation Pattern Reference of FXUB63 Antenna.
Figure 7. Radiation Pattern at 750 MHz of FXUB63 Antenna.

Figure 8. Radiation Pattern at 850 MHz of FXUB63 Antenna.
Figure 9. Radiation Pattern at 925 MHz of FXUB63 Antenna.

Figure 10. Radiation Pattern at 1400 MHz of FXUB63 Antenna.
Figure 11. Radiation Pattern at 1575 MHz of FXUB63 Antenna.

Figure 12. Radiation Pattern at 1750 MHz of FXUB63 Antenna.
Figure 13. Radiation Pattern at 1850 MHz of FXUB63 Antenna.

Figure 14. Radiation Pattern at 1950 MHz of FXUB63 Antenna.
Figure 15. Radiation Pattern at 2100 MHz of FXUB63 Antenna.

Figure 16. Radiation Pattern at 2450 MHz of FXUB63 Antenna.
Figure 17. Radiation Pattern at 2600 MHz of FXUB63 Antenna.
4. MECHANICAL DRAWING

**Figure 18.** Mechanical drawing of FXUB63 Antenna.
5. Packaging

- **100 pcs FXUB63.07.0150C per PE bag**
  - PE Bag Dimensions: 350x100 mm
  - Weight: 150g

- **1000 pcs FXUB63.07.0150C per large PE bag**
  - PE Bag Dimensions: 460x280 mm
  - Weight: 1500g

- **4000 pcs FXUB63.07.0150C per carton**
  - Carton Dimensions: 320x250x230 mm
  - Weight: 6 Kg

- **Pallet Dimensions 1100*1100*1300 mm**
  - 65 Cartons per Pallet
  - 13 Cartons per layer
  - 5 Layers
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