Description: MiMo LTE, MiMo WiFi, GNSS
Vehicle Mount Antenna
PART NUMBER: GPSMB501

Features:

- Supports MIMO Cellular LTE 698-960/1695-2170/2300-2700/2900-3600MHz
- Supports MIMO WiFi and DSRC 2400-2500MHz/4900-5925MHz
- Supports Beidou, GPS, Galileo, GLONASS
- Direct Mount and optional Magnetic Mount features
- See GPSMBMM for magnetic mount details

Applications:

- Telematics
- Location based services
- First Responders (Police, Ambulance, Fire)
- Government
- Energy (Utility Vehicles)
- Fleet Management

All dimensions are in mm / inches

Issue: 1637

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## ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency (WiFi&amp;DSRC)</strong></td>
<td>1561.098±2.046 / 1575.42±1.023 / 1602.5625±4 MHz</td>
</tr>
<tr>
<td><strong>Nominal Impedance</strong></td>
<td>50 Ω</td>
</tr>
<tr>
<td><strong>VSWR (LTE)</strong></td>
<td>&lt; 1.5</td>
</tr>
<tr>
<td><strong>VSWR (WiFi&amp;DSRC)</strong></td>
<td>&lt; 1.4</td>
</tr>
<tr>
<td><em><em>Gain</em> (LTE antenna, &lt; 2170 MHz)</em>*</td>
<td>4 dBi ± 2.5 dB</td>
</tr>
<tr>
<td><em><em>Gain</em> (LTE antenna, &gt; 2170 MHz)</em>*</td>
<td>5 dBi ± 2 dB</td>
</tr>
<tr>
<td><em><em>Gain</em> (WiFi antenna, &lt; 2500 MHz)</em>*</td>
<td>4.5 dBi ± 1.5 dB</td>
</tr>
<tr>
<td><em><em>Gain</em> (WiFi antenna, &gt; 4900 MHz)</em>*</td>
<td>5 dBi ± 2 dB</td>
</tr>
<tr>
<td>**Isolation LTE to LTE **</td>
<td>15 or better dB</td>
</tr>
<tr>
<td>**Isolation WiFi to WiFi **</td>
<td>40 or better dB</td>
</tr>
<tr>
<td><strong>GNSS antenna RHCP gain</strong></td>
<td>1 dBi ± 2 dB</td>
</tr>
<tr>
<td><strong>LNA gain</strong></td>
<td>30 dB ± 2 dB</td>
</tr>
<tr>
<td><strong>Noise Figure</strong></td>
<td>2.5 (cascade) dB</td>
</tr>
<tr>
<td><strong>Current</strong></td>
<td>8 mA ± 2 mA</td>
</tr>
<tr>
<td><strong>Vdc</strong></td>
<td>3.5 Vdc</td>
</tr>
<tr>
<td><strong>LNA and filter attenuation</strong></td>
<td></td>
</tr>
<tr>
<td>@ 824 MHz</td>
<td>70 dB</td>
</tr>
<tr>
<td>@ 960 MHz</td>
<td>65 dB</td>
</tr>
<tr>
<td>@ 1710 MHz</td>
<td>60 dB</td>
</tr>
<tr>
<td>@ 2170 MHz</td>
<td>65 dB</td>
</tr>
</tbody>
</table>

*Measured on 2ft GND plane and with 4 inch cables

**In free space with 17ft cables
**Series:** Panther  

**Description:** MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna  

**PART NUMBER:** GPSMB501

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### ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector type(s)</td>
<td>SMA (LTE and GPS) / SMA-RP (WiFi)</td>
</tr>
<tr>
<td>Cable type(s)</td>
<td>RG-58 (LTE and WiFi) / RG-174 (GPS)</td>
</tr>
<tr>
<td>Length</td>
<td>17 FEET</td>
</tr>
</tbody>
</table>
**Description:** MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

**PART NUMBER:** GPSMB501

### MECHANICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic radome</td>
<td>ABS/PC Material UV Stabilized, UL-94HB</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
</tr>
<tr>
<td>Ingress Protection</td>
<td>IP67</td>
</tr>
<tr>
<td>Weight</td>
<td>~1340 g</td>
</tr>
<tr>
<td>Fixing system</td>
<td>Roof mounting (Also Magnet mounting accessory available, GPSMBMM) Recommended fastening torque 1518ft-lb (20-25Nm).</td>
</tr>
</tbody>
</table>

### ENVIRONMENTAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>MIL-STD 810G -40/+85°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>95%RH @ +25°C for 12h and 55°C for 12h</td>
</tr>
<tr>
<td>Vibration</td>
<td>MIL-STD 810G, section 514.6, 5-500 Hz, 60min/axis</td>
</tr>
<tr>
<td>Thermal Shocks</td>
<td>MIL-STD 810G, section 503.5, -40 to +85°C, 3 cycles</td>
</tr>
<tr>
<td>Drop Test</td>
<td>Minimum of one drop per axis – 4, 1 meter drops</td>
</tr>
</tbody>
</table>
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna
PART NUMBER: GPSMB501

MECHANICAL DRAWING

Issue: 1637
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Return Loss and isolation in free space, LTE antennas**

Return Loss and isolation in free space, WiFi antennas**
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna
PART NUMBER: GPSMB501

CHARTS

Return Loss and isolation, LTE antennas*

Return Loss and isolation, WiFi antennas*
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

GPS isolation to LTE 1 and LTE 2 antenna*

GPS isolation to WiFi 1 and WiFi 2 antenna*

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Issue: 1637
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna
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Isolation characteristics, LTE 1 to WiFi 1 and WiFi 2*

Isolation characteristics, LTE 2 to WiFi 1 and WiFi 2*

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Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna
PART NUMBER: GPSMB501

CHARTS

Isolation characteristics, LTE 1 to WiFi 1 and WiFi 2**

Isolation characteristics, LTE 2 to WiFi 1 and WiFi 2**
Description: MiMo LTE, MiMo WiFi, GNSS
Vehicle Mount Antenna
PART NUMBER: GPSMB501

CHARTS

GNSS LNA performance
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

LTE antenna total efficiency with 2ft metal plate and 4inch cables

Maximum 3D gain, LTE antenna with 2ft metal plate and 4inch cables
Description: MiMo LTE, MiMo WiFi, GNSS
Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

WiFi antenna total efficiency with 2ft metal plate and 4inch cables

Maximum 3D gain, WiFi antenna with 2ft metal plate and 4inch cables
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

LTE antenna radiation pattern at 850MHz with 2ft metal plate and 4inch cables

Horizontal plot

Vertical plot front view
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

Series: Panther

CHARTS

LTE antenna radiation pattern at 850MHz with 2ft metal plate and

Vertical plot side view
**Description:** MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

**PART NUMBER:** GPSMB501

---

**CHARTS**

LTE antenna radiation pattern at 1900MHz with 2ft metal plate and 4inch cables

**Horizontal plot**

**Vertical plot front view**
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

LTE antenna radiation pattern at 1900MHz with 2ft metal plate and 4inch cables

Vertical plot side view
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

LTE antenna radiation pattern at 2500MHz with 2ft metal plate and 4inch cables

Horizontal plot

Vertical plot front view
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

Series: Panther

CHARTS

LTE antenna radiation pattern at 2500MHz with 2ft metal plate and 4inch cables

Vertical plot side view
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

LTE antenna radiation pattern at 3250MHz with 2ft metal plate and 4inch cables

Horizontal plot

Vertical plot front view
Description: MiMo LTE, MiMo WiFi, GNSS
Vehicle Mount Antenna
PART NUMBER: GPSMB501

CHARTS

LTE antenna radiation pattern at 3250MHz with 2ft metal plate and 4inch cables

Vertical plot side view
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

WiFi antenna radiation pattern at 2440MHz with 2ft metal plate and 4inch cables

Horizontal plot

Vertical plot front view
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

WiFi antenna radiation pattern at 2440MHz with 2ft metal plate and 4inch cables

Vertical plot side view
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

WiFi antenna radiation pattern at 5500MHz with 2ft metal plate and 4inch cables

Horizontal plot

Vertical plot front view
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna
PART NUMBER: GPSMB501

CHARTS

WiFi antenna radiation pattern at 5500MHz with 2ft metal plate and 4inch cables

Vertical plot side view
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna
PART NUMBER: GPSMB501

CHARTS

BD2 RHCP patterns, measured with 4inch cables in free space

GPS & Galileo RHCP patterns, measured with 4inch cables in free space
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

/part number: GPSMB501

CHARTS

GLONASS RHCP patterns, measured with 4inch cables in free space
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB501

CHARTS

Envelope correlation coefficient – LTE 1 to LTE 2

Envelope correlation coefficient – WiFi 1 to WiFi 2
### Description:
MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

### Part Number:
GPSMB501

#### Packaging

One antenna pack in one PE bag, 6 antennae in one box