Features:

- Low profile, only 1.8” tall
- Up to 6-lead Configuration
  - LTE(2x) MIMO
  - WiFi(3x) MIMO-|2.4/5.x GHz
  - GPS/GNSS (1x)
- Frequency of Operation:
  - 698-960MHz, 1710-2690MHz
  - 2400-2500MHz, 5150-5925MHz
  - 1559-1606MHz

Applications:

- Telematics, Navigation
- First Responders (Police, Fire, Ambulance/EMS)
- Energy, Utility, Construction
- Fleet Management
- DSRC (Dedicated Short Range Communications)

Available Configurations:

- Black, White
- Direct, Magnetic, Adhes.Mount
**Description:** Vehicular Multiband Antenna with Direct Mount

**Series:** ARMADILLO

**PART NUMBER:** ARMXXXXXDM

This document covers all product variants of the following product family

<table>
<thead>
<tr>
<th>Product</th>
<th>Total Cable Leads</th>
<th>LTE Cable Leads</th>
<th>WiFi Cable Leads</th>
<th>GPS Cable Leads</th>
<th>Housing Color</th>
<th>Cable Length</th>
<th>Mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARM62311DM</td>
<td>6</td>
<td>2 (with SMA Male)</td>
<td>3 (with RP-SMA Male)</td>
<td>1 (with SMA Male)</td>
<td>Black</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM62312DM</td>
<td>6</td>
<td>2 (with SMA Male)</td>
<td>3 (with RP-SMA Male)</td>
<td>1 (with SMA Male)</td>
<td>White</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM52211DM</td>
<td>5</td>
<td>2 (with SMA Male)</td>
<td>2 (with RP-SMA Male)</td>
<td>1 (with SMA Male)</td>
<td>Black</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM52212DM</td>
<td>5</td>
<td>2 (with SMA Male)</td>
<td>2 (with RP-SMA Male)</td>
<td>1 (with SMA Male)</td>
<td>White</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM42111DM</td>
<td>4</td>
<td>2 (with SMA Male)</td>
<td>1 (with RP-SMA Male)</td>
<td>1 (with SMA Male)</td>
<td>Black</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM42112DM</td>
<td>4</td>
<td>2 (with SMA Male)</td>
<td>1 (with RP-SMA Male)</td>
<td>1 (with SMA Male)</td>
<td>White</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM32011DM</td>
<td>3</td>
<td>2 (with SMA Male)</td>
<td>0</td>
<td>1 (with SMA Male)</td>
<td>Black</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM32012DM</td>
<td>3</td>
<td>2 (with SMA Male)</td>
<td>0</td>
<td>1 (with SMA Male)</td>
<td>White</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM21011DM</td>
<td>2</td>
<td>1 (with SMA Male)</td>
<td>0</td>
<td>1 (with SMA Male)</td>
<td>Black</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM21012DM</td>
<td>2</td>
<td>1 (with SMA Male)</td>
<td>0</td>
<td>1 (with SMA Male)</td>
<td>White</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM21011DMTT</td>
<td>2</td>
<td>1 (with TNC Male)</td>
<td>0</td>
<td>1 (with TNC Male)</td>
<td>Black</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
<tr>
<td>ARM22001DM</td>
<td>2</td>
<td>2 (with SMA Male)</td>
<td>0</td>
<td>0</td>
<td>Black</td>
<td>17 FT or 5181mm</td>
<td>1. Direct Mount; 7/8&quot; Hole Required</td>
</tr>
</tbody>
</table>
Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXDM

This document covers all product variants of the following product family

Product Numbering
Vehicular Multiband Antenna with Direct Mount

(Part Number)  ARM  X  X  X  X  X  X  DM

<table>
<thead>
<tr>
<th>1</th>
<th>Product ID: ARMADILLO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Total Number of Cable leads</td>
</tr>
<tr>
<td>3</td>
<td>Total Number of LTE Cable Leads</td>
</tr>
<tr>
<td>4</td>
<td>Total Number of WiFi Cable Leads</td>
</tr>
<tr>
<td>5</td>
<td>Total Number of GPS Cable Leads</td>
</tr>
<tr>
<td>6</td>
<td>The Color of the Plastic Housing 1=Black; 2=White</td>
</tr>
<tr>
<td>7</td>
<td>Mounting: Direct Mount; 7/8&quot; Hole Required</td>
</tr>
</tbody>
</table>

Issue: 2034

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

For more information:

Pulse Worldwide Headquarters
15255 Innovation Drive #100
San Diego, CA 92128
USA
Tel: 1-858-674-8100

Pulse/Larsen Antennas
18110 SE 34th St Bldg 2 Suite 250
Vancouver, WA 98683
USA
Tel: 1-360-944-7551

Europe Headquarters
Pulse GmbH & Do, KG
Zeppelinstrasse 15
Herrenberg, Germany
Tel: 49 7032 7806 0

RoHS COMPLIANT

Pulse (Suzhou) Wireless Products Co, Inc.
99 Huo Ju Road/#29 Bldg,4th Phase
Suzhou New District
Jiangsu Province, Suzhou 215009 PR China
Tel: 86 512 6807 9998
**Description:** Vehicular Multiband Antenna with Direct Mount

**PART NUMBER:** ARMXXXXXDM

### ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td>698-960MHz, 1710-2690MHz, 2400-2500MHz, 5150-5925MHz</td>
</tr>
<tr>
<td><strong>Nominal Impedance</strong></td>
<td>50 Ω</td>
</tr>
<tr>
<td><strong>VSWR</strong></td>
<td>698-960MHz: &lt;2.5, 1710-2690MHz: &lt;2.5, 2400-2500MHz: &lt;2, 5150-5925MHz: &lt;2</td>
</tr>
<tr>
<td><strong>Isolation</strong></td>
<td>698-960MHz, 1710-2690MHz: -8dB, 2400-2500MHz, 5150-5925MHz: -12dB</td>
</tr>
<tr>
<td><strong>Average Peak Gain</strong></td>
<td>698-960MHz: 4.9dBi, 1710-2690MHz: 5.3dBi, 2400-2500MHz: 4.6dBi, 5150-5925MHz: 6.6dBi</td>
</tr>
<tr>
<td><strong>Polarization</strong></td>
<td>Vertical</td>
</tr>
</tbody>
</table>

*Test on 500mm ground plane with 17ft(5.2m) LMR195 cable

**Test on 500mm ground plane with 1ft(304.8) LMR195 cable**
### Description
Vehicular Multiband Antenna with Direct Mount

**PART NUMBER:** ARMXXXXXDM

### Series: ARMADILLO

### ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS Antenna</td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>1561.098±2.046MHz/</td>
</tr>
<tr>
<td></td>
<td>1575.42±1.023MHz/</td>
</tr>
<tr>
<td></td>
<td>1602.5625±4MHz</td>
</tr>
<tr>
<td>Nominal Impedance</td>
<td>50 Ω</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt;2</td>
</tr>
<tr>
<td>Gain (Radiating Element)</td>
<td>1 dBic±1 dB</td>
</tr>
<tr>
<td>Gain (LNA Gain)</td>
<td>30 dB± 2 dB</td>
</tr>
<tr>
<td>Polarization</td>
<td>RHCP</td>
</tr>
<tr>
<td>Out of Band Rejection</td>
<td></td>
</tr>
<tr>
<td>698 MHz</td>
<td>&gt;70 dB</td>
</tr>
<tr>
<td>960 MHz</td>
<td>&gt;65 dB</td>
</tr>
<tr>
<td>1710 MHz</td>
<td>&gt;60 dB</td>
</tr>
<tr>
<td>2170 MHz</td>
<td>&gt;65 dB</td>
</tr>
<tr>
<td>2400 MHz</td>
<td>&gt;65 dB</td>
</tr>
<tr>
<td>2700 MHz</td>
<td>&gt;65 dB</td>
</tr>
<tr>
<td>Noise Figure</td>
<td>&lt;2.4 dB</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>3.3 – 5 Vdc</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>&lt;15mA</td>
</tr>
</tbody>
</table>
## Description
Vehicular Multiband Antenna with Direct Mount

## Series
ARmadillo

## Part Number
ARMXXXDM

### Mechanical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Length</td>
<td>202.3mm x 88.5mm x 45mm</td>
</tr>
<tr>
<td>Weight</td>
<td>1.15 Kg</td>
</tr>
<tr>
<td>Antenna Color / Material</td>
<td>Black or White</td>
</tr>
<tr>
<td>Connector Type</td>
<td>Refer to Page 2</td>
</tr>
<tr>
<td>Cable Type</td>
<td>Refer to Page 2</td>
</tr>
<tr>
<td>Cable Length</td>
<td>Refer to Page 2</td>
</tr>
</tbody>
</table>

### Environmental Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-40 ~ +85°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 ~ +85°C</td>
</tr>
<tr>
<td>Ingress Protection</td>
<td>IP67</td>
</tr>
<tr>
<td>RoHS Compliant</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Other Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cable assembly loss for 5.2m (17') LMR-195 @850MHz</td>
<td>2.1dB</td>
</tr>
<tr>
<td>Total cable assembly loss for 5.2m (17') LMR-100 @1575MHz</td>
<td>5.9dB</td>
</tr>
<tr>
<td>Total cable assembly loss for 5.2m (17') LMR-195 @1930MHz</td>
<td>3.2dB</td>
</tr>
<tr>
<td>Total cable assembly loss for 5.2m (17') LMR-195 @2450MHz</td>
<td>3.6dB</td>
</tr>
<tr>
<td>Total cable assembly loss for 5.2m (17') LMR-195 @2500MHz</td>
<td>3.7dB</td>
</tr>
<tr>
<td>Total cable assembly loss for 5.2m (17') LMR-195 @5350MHz</td>
<td>5.5dB</td>
</tr>
</tbody>
</table>
Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXDM
Series: ARMADILLO

**Description:** Vehicular Multiband Antenna with Direct Mount

**PART NUMBER:** ARMXXXXXDM

---

**MECHANICAL DRAWING**

![Diagram of the Vehicular Multiband Antenna with Direct Mount]

**TABLE:**

<table>
<thead>
<tr>
<th>Port</th>
<th>Cable Type</th>
<th>Cable Length</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LTE-1 Cable Assy</td>
<td>LMR-195*</td>
<td>SMA Male</td>
</tr>
<tr>
<td>2</td>
<td>LTE-2 Cable Assy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>WiFi-1 Cable Assy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>WiFi-2 Cable Assy</td>
<td>LMR-195°</td>
<td>RP-SMA Male</td>
</tr>
<tr>
<td>5</td>
<td>WiFi-3 Cable Assy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>GPS Cable Assy</td>
<td>LMR-100°</td>
<td>SMA Male</td>
</tr>
</tbody>
</table>

* or equivalent

---

**TABLE:**

<table>
<thead>
<tr>
<th>Port</th>
<th>Cable Type</th>
<th>Cable Length</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LTE-1 Cable Assy</td>
<td>LMR-195*</td>
<td>TNC Male</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>WiFi-1 Cable Assy</td>
<td>LMR-195 mm / 204° / 17 FT</td>
<td>TNC Male</td>
</tr>
<tr>
<td>5</td>
<td>WiFi-2 Cable Assy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>WiFi-3 Cable Assy</td>
<td>LMR-100°</td>
<td>TNC Male</td>
</tr>
</tbody>
</table>

* or equivalent

---

**Issue:** 2034

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.
**Series:** ARMADILLO

**Description:** Vehicular Multiband Antenna with Direct Mount

**PART NUMBER:** ARMXXXXXDM

---

**TEST SETUP**

Antenna tested on a Ø500mm ground plane.

500 mm
Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMxxxxxxDM

CHARTS

VSWR (LTE)

Isolation (LTE)

Note: Antenna tested with 5m cable on 500mm (dia) ground plane
**Description:** Vehicular Multiband Antenna with Direct Mount

**PART NUMBER:** ARMXXXXXDM

### CHARTS

#### Radiation Efficiency (LTE)

![Efficiency Chart]

#### Peak Gain (LTE)

![Peak Gain Chart]

*Note: Antenna tested with 1ft (304.8mm) cable on 500mm (dia) ground plane*
Series: ARMADILLO

PART NUMBER: ARMXXXXXDM

Description: Vehicular Multiband Antenna with Direct Mount

VSWR (WIFI)

Isolation (WIFI)

Note: Antenna tested with 5m cable on 500mm (dia) ground plane
Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXDM

Series: ARMADILLO

CHARTS

Radiation Efficiency (WIFI)

Peak Gain (WIFI)

Note: Antenna tested with 1ft (304.8mm) cable on 500mm (dia) ground plane
Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXDM

CHARTS

LTE1 XY plane radiation pattern

LTE2 XY plane radiation pattern

Issue: 2034

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.
**Description:** Vehicular Multiband Antenna with Direct Mount

**Series:** ARMADILLO

**PART NUMBER:** ARMXXXXXXXDM

### CHARTS

#### LTE1 ZX plane radiation pattern

#### LTE2 ZX plane radiation pattern
Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXXXDM

CHARTS

LTE1 YZ plane radiation pattern

LTE2 YZ plane radiation pattern
Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXXXDM

CHARTS

LTE1 XY plane radiation pattern

LTE2 XY plane radiation pattern
Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXDM

CHARTS

LTE1 ZX plane radiation pattern

LTE2 ZX plane radiation pattern
Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXXDM

CHARTS

LTE1 YZ plane radiation pattern

LTE2 YZ plane radiation pattern
Series: ARMADILLO

Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXXDM

CHARTS

WiFi1 XY plane radiation pattern

WiFi2 XY plane radiation pattern

WiFi3 XY plane radiation pattern
Series: ARMADELLO

PART NUMBER: ARMXXXXXDM

CHARTS

WiFi1 ZX plane radiation pattern

WiFi2 ZX plane radiation pattern

WiFi3 ZX plane radiation pattern
Series: ARMADILLO

**Technical Data Sheet**

**Description:** Vehicular Multiband Antenna with Direct Mount

**Part Number:** ARMXXXXXXDM

**Charts**

**WiFi1 YZ plane radiation pattern**

**WiFi2 YZ plane radiation pattern**

**WiFi3 YZ plane radiation pattern**

---

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.
Series: ARMADILLO

Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXDM

CHARTS

WiFi1 XY plane radiation pattern

WiFi2 XY plane radiation pattern

WiFi3 XY plane radiation pattern
Series: ARMADILLO

PART NUMBER: ARMXXXXXDM

Description: Vehicular Multiband Antenna with Direct Mount

CHARTS

WiFi1 ZX plane radiation pattern

WiFi2 ZX plane radiation pattern

WiFi3 ZX plane radiation pattern
Series: ARMADILLO

PART NUMBER: ARMXXXXXDM

Description: Vehicular Multiband Antenna with Direct Mount

CHARTS

WiFi1 YZ plane radiation pattern

WiFi2 YZ plane radiation pattern

WiFi3 YZ plane radiation pattern
Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXDM

PACKAGING

Each antennas packed in Bubble Bag

6 bags of antennas (Total 6pcs) packed in a cardboard box

1 label on each box with quantity, part number, date code.