

Series: ARMADILLO

Description: Vehicular Multiband Antenna with Direct Mount

PART NUMBER: ARMXXXXXDM





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

Issue: 2034

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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 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



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This document covers all product variants of the following product family

Product	Total Cable Leads	LTE Cable Leads	WiFi Cable Leads	GPS Cable Leads	Housing Color	Cable Length	Mounting
ARM62311DM	6	2 (with SMA Male)	3 (with RP-SMA Male)	1 (with SMA Male)	Black	17 FT	 Direct Mount; 7/8" Hole Required Mounting Surface thickness < 0.25"
ARM62312DM	6	2 (with SMA Male)	3 (with RP-SMA Male)	1 (with SMA Male)	White		
ARM52211DM	5	2 (with SMA Male)	2 (with RP-SMA Male)	1 (with SMA Male)	Black		
ARM52212DM	5	2 (with SMA Male)	2 (with RP-SMA Male)	1 (with SMA Male)	White		
ARM42111DM	4	2 (with SMA Male)	1 (with RP-SMA Male)	1 (with SMA Male)	Black		
ARM42112DM	4	2 (with SMA Male)	1 (with RP-SMA Male)	1 (with SMA Male)	White		
ARM32011DM	3	2 (with SMA Male)	0	1 (with SMA Male)	Black		
ARM32012DM	3	2 (with SMA Male)	0	1 (with SMA Male)	White		
ARM21011DM	2	1 (with SMA Male)	0	1 (with SMA Male)	Black		
ARM21012DM	2	1 (with SMA Male)	0	1 (with SMA Male)	White		
ARM21011DMTT	2	1 (with TNC Male)	0	1 (with TNC Male)	Black		
ARM22001DM	2	2 (with SMA Male)	0	0	Black		

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Product Numbering

Vehicular Multiband Antenna with Direct Mount

(Part Number)



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ELECTRICAL SPECIFICATIONS				
Frequency	698-960MHz, 1710-2690MHz			
	2400-2500MHz, 5150-5925MHz			
Nominal Impedance	50 Ω			
VSWR*				
698-960MHz	<2.5			
1710-2690MHz	<2.5			
2400-2500MHz	<2			
5150-5925MHz	<2			
Isolation*				
698-960MHz, 1710-2690MHz	-8dB			
2400-2500MHz, 5150-5925MHz	-12dB			
Average Peak Gain**				
698-960MHz;	4.9dBi			
1710-2690MHz	5.3dBi			
2400-2500MHz	4.6dBi			
5150-5925MHz	6.6dBi			
Polarization	Vertical			

*Test on 500mm ground plane with 17ft(5.2m) LMR195 cable **Test on 500mm ground plane with 1ft(304.8) LMR195 cable

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ELECTRICAL SPECIFICATIONS

GPS Antenna	
Frequency	1561.098±2.046MHz/ 1575.42±1.023MHz/ 1602.5625±4MHz
Nominal Impedance	50 Ω
VSWR	<2
Gain (Radiating Element)	1 dBic±1 dB
Gain (LNA Gain)	30 dB± 2 dB
Polarization	RHCP
Out of Band Rejection	
698 MHz	>70 dB
960 MHz	>65 dB
1710 MHz	>60 dB
2170 MHz	>65 dB
2400 MHz	>65 dB
2700 MHz	>65 dB
Noise Figure	<2.4 dB
Operating Voltage	3.3 – 5 Vdc
Current Consumption	<15mA

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MECHANICAL SPECIFICATIONS

Overall Length Weight Antenna Color / Material Connector type Cable type Cable length 202.3mm X 88.5mm X 45mm 1.15 Kg Black or White Refer to Page 2 Refer to Page 2 Refer to Page 2

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature Storage Temperature Ingress Protection RoHS Compliant

-40 ~ +85° C -40 ~ +85° C IP67 Yes

OTHER SPECIFICATIONS

Total cable assembly loss for 5.2m (17') LMR-195 @850MHz	2.1dB
Total cable assembly loss for 5.2m (17') LMR-100 @1575MHz	5.9dB
Total cable assembly loss for 5.2m (17') LMR-195 @1930MHz	3.2dB
Total cable assembly loss for 5.2m (17') LMR-195 @2450MHz	3.6dB
Total cable assembly loss for 5.2m (17') LMR-195 @2500MHz	3.7dB
Total cable assembly loss for 5.2m (17') LMR-195 @5350MHz	5.5dB



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MECHANICAL DRAWING



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MECHANICAL DRAWING





	ARM62311DM	CABLE	CABLE LENGTH	CONNECTOR	
1	LTE-1 Cable Assy	LMR-195 *		CMA Mala	
2	LTE-2 Cable Assy		5181 mm / 204" / 17 FT	SMA Male	
3	WiFi-1 Cable Assy			RP-SMA Male	
4	WiFi-2 Cable Assy	LMR-195*			
5	WiFi-3 Cable Assy				
6	GPS Cable Assy	LMR-100*		SMA Male	

* or equivalent

	ARM21011DMTT	CABLE	CABLE LENGTH	CONNECTOR
1	LTE-1 Cable Assy	LMD 105 *		TNC Mala
2		LMR-195 *		TNC Male
3			5181 mm /	
4			204" /	
5			17 FT	
6	GPS Cable Assy	LMR-100*		TNC Male

* or equivalent



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TEST SETUP

Antenna tested on a Ø500mm ground plane.



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Series: ARMADILLO

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PART NUMBER: ARMXXXXDM

<mark>CHARTS</mark> VSWR (LTE)



Isolation (LTE)



Note : Antenna tested with 5m cable on 500mm (dia) ground plane

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CHARTS Radiation Efficiency (LTE)



Peak Gain (LTE)



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

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ROHS 11



Series: ARMADILLO

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PART NUMBER: ARMXXXXDM

CHARTS VSWR (WIFI)



Isolation (WIFI)



Note : Antenna tested with 5m cable on 500mm (dia) ground plane

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Series: ARMADILLO

Description: Vehicular Multiband Antenna with Direct Mount

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CHARTS Radiation Efficiency (WIFI)



Peak Gain (WIFI)



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

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ROHS 13



Series: ARMADILLO

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CHARTS



LTE1 XY plane radiation pattern



LTE2 XY plane radiation pattern

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CHARTS



LTE1 ZX plane radiation pattern



LTE2 ZX plane radiation pattern

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CHARTS



LTE1 YZ plane radiation pattern



LTE2 YZ plane radiation pattern

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CHARTS



LTE1 XY plane radiation pattern



LTE2 XY plane radiation pattern

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CHARTS



LTE1 ZX plane radiation pattern



LTE2 ZX plane radiation pattern

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CHARTS



LTE1 YZ plane radiation pattern



LTE2 YZ plane radiation pattern

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CHARTS





WiFi1 XY plane radiation pattern

WiFi2 XY plane radiation pattern



WiFi3 XY plane radiation pattern

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CHARTS



WiFi1 ZX plane radiation pattern

WiFi2 ZX plane radiation pattern



WiFi3 ZX plane radiation pattern

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CHARTS



 VZ Plane
 Z400MHz

 4000 Hz
 2,66

 4,07
 2,66

 4,07
 2,66

 4,07
 2,66

 4,07
 2,66

 4,07
 2,00

 4,00
 46,5

 2,25
 46,5

 2,25
 46,5

 2,26
 2,72

 4,07,3
 3 (deg) = 4,6,5

 2,00
 Hz

 4,08
 1,27,4

 Arg,3
 3 (deg) = 5,4,5

 Peak (dB) = 2,4,2
 2,42

 Arg,3
 (deg) = 5,2,5

WiFi1 YZ plane radiation pattern

WiFi2 YZ plane radiation pattern



WiFi3 YZ plane radiation pattern

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PART NUMBER: ARMXXXXXDM

CHARTS



WiFi1 XY plane radiation pattern



WiFi2 XY plane radiation pattern



WiFi3 XY plane radiation pattern

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Series: ARMADILLO

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PART NUMBER: ARMXXXXXDM

CHARTS



WiFi1 ZX plane radiation pattern

WiFi2 ZX plane radiation pattern



WiFi3 ZX plane radiation pattern

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CHARTS



WiFi1 YZ plane radiation pattern

WiFi2 YZ plane radiation pattern



WiFi3 YZ plane radiation pattern

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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.

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