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WELCOME

Pulse Electronics/Larsen Antennas is pleased to bring you the new, improved Antenna SourceBook (ASB), Volume 12. The goal of the ASB is to provide you with a “go to” source for all your antenna needs.

As the demand for wireless connectivity flourishes Pulse/Larsen is here with the needed solutions. We offer a unique far-reaching understanding of antenna and RF technology and have become the partner of choice for leading industry innovators. Pulse offers excellent value and outstanding quality products delivered from our high-volume production facilities. We offer a wide array of antennas covering 2G/3G/4G LTE, WLAN, (Wi-Fi), Zigbee, Bluetooth, GPS/Glonass/Compass, ISM, VHF, UHF, NFC and other custom applications.

You can rely on Pulse/Larsen to be your trusted antenna partner. We have been in the antenna business over 50 years and have exceeded over 2 Billion antennas shipped during that time. We supply consistent high-quality products by owning and fully controlling our own factories in both China and the United States. On the following pages you will find our more popular antennas. For an up-to-the-minute view of our offering visit our website at www.pulseantennas.com.

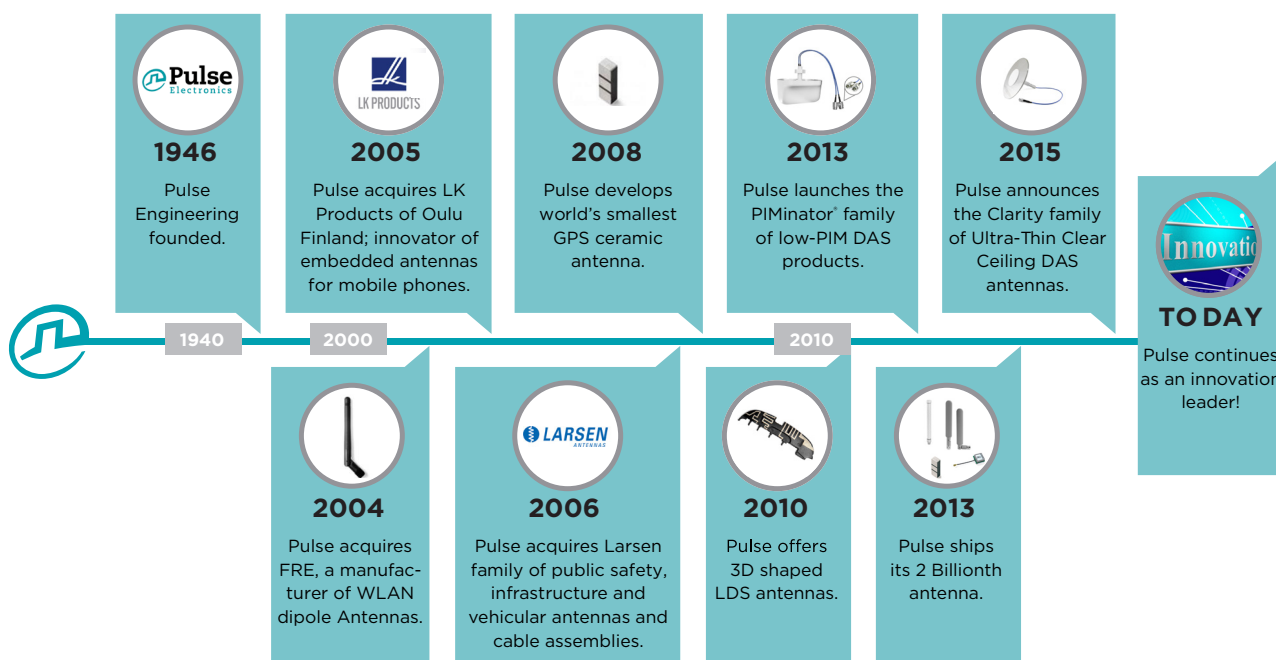
As always, your input and suggestions for improvement are important to us. Should you have questions or comments, please feel free to contact us.

PHONE: 1-800-ANTENNA (268-3662)
1-360-944-7551

WEB: www.pulseantennas.com

EMAIL: antennas.us@pulseelectronics.com

Your business is sincerely appreciated. We look forward to the opportunity to continue to serve your antenna requirements now and in the future.



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CAPABILITIES

Manufacturing Capabilities - Available Traditional Technologies

- Stamping
- Plastic injection molding
- Heatstaking
- Welding (Spot, USW, Induction)
- Plasma Treatment
- Acoustic Module Testing (THD, SPL)
- Flexible Printed Circuit
- PAD printing, Painting
- In-House Ceramic Process
- Any Cable Assemblies
- Any Connector Mounts
- PIM Testing
- SMD Process
- Automatic Cable Stripping
- Epoxy resins and Glue deposition
- Plastic Dipping
- RF Testing
- Any Connector Mounts
- Auto Packaging and Labeling

State of the Art - 3D Technologies

- Laser Direct Structuring (LDS): 3D techniques using LPKF laser processing and Plating.
- Pulse FLUIDANT: In-House 3d patented technology based on 3d deposition of conductive ink directly on plastic surface followed by low temperature curing process. Ideal process to build identical samples and mass production parts.

Prototyping Abilities Worldwide (AMERICAS, EMEA, ASIA)

- 3D printing plastic parts, FR4 or Stamping parts using LPKF machines, CNC, Plastisol Dipping techniques, Lathes, Milling machines...

Testing Services - Testing Capabilities for Product Qualification and Design Validation

ELECTRICAL

- 5-Parameters using VNA up to 14GHz
- Impedance
- Insertion Losses
- Isolation
- Acoustic Parameters (THD, SPL)
- S.A.R. using Daisy 4 & 5
- Body Loading using phantom Hands and Heads
- Portable VNA for on-site Tuning with customers
- 3D radiation Patterns using Worldwide anechoic chambers Satimo/ETS)
- 3D RF simulation tools (CST, Optenni, Ibwave, AWR)
- Wifi Throughout testing using IXIA Chariot
- Expertise in advance RF behaviours with/without body loading/ Embedded in device or in Free Space

MECHANICAL

- Ability to use Solidworks, Catia VS, Pro E, ProgeCAD
- 3d fitting and rendering
- Mechanical Shock
- Solderability
- Tensile Strength
- Pull Force
- Torque testing
- Surface Profilometer

ENVIRONMENTAL

- ESD environment for Production &/or Design
- Humidity (to 90% RH)
- Moisture Resistance
- Thermal Shock
- Thermal Cycling with/without salt mist
- Aging
- Vibrations

NOTE: Full EMC Standards Compliance Testing in Germany for any vehicle size (Truck, Car, Tractor, Escalator, Agricultural machines and IoT).

HOW TO ORDER

Distribution

Pulse/Larsen has partnered with the industry's leading wireless products distributors throughout North America and around the world. Our antennas are as close as your phone or fax. For a list of distributors visit our web site at www.pulseantennas.com.

Ordering

At Pulse/Larsen we understand managing your business in today's rapidly changing wireless communications market can be complicated. We want to make the process of doing business with us as easy as possible.

Whether it's your first order or you've been doing business with us for a while, each and every customer is equally important to us. From our experienced customer service associates to the latest in communications technologies, Pulse/Larsen strives to exceed your expectations with every transaction.

To order products, contact one of our authorized distributors. For a list of distributors, visit our web site at www.pulseantennas.com.

1-800-ANTENNA (268-3662)

When you need an antenna, what better way than to remember 1-800-ANTENNA (268-3662). Our knowledgeable Customer Support staff is available to assist you.

For our international customers (outside North America):

Phone: 360-944-7551

By Email:

Americas: antennas.us@pulseelectronics.com

Europe: antennas.eu@pulseelectronics.com

Asia: antennas.as@pulseelectronics.com



PULSE No-Nonsense™ Warranty

Every effort is made to assure the integrity and long life of each Pulse product. In the unfortunate event a problem does occur, you will find us ready to make it right!

Duration of warranty is one year from date of purchase

Pulse will repair or replace without charge any Larsen antenna product which fails for any reason during the warranty period. Pulse is not responsible for any incidental or consequential damages due to failure of the antenna under this warranty or any implied warranty. This exclusion may not apply to all areas of the USA or Canada.

* * * * *

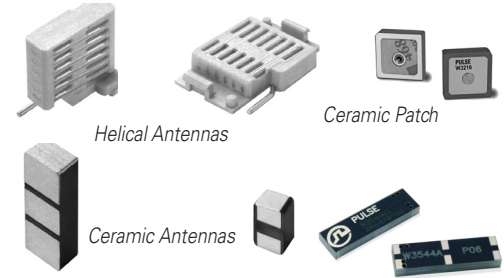
CHANGES / CONDITIONS: Continual research and development make it necessary for Pulse to reserve the right to make exceptions to or changes in policies, specifications and prices without notice.

* * * * *

EMBEDDED ANTENNAS

EMBEDDED ONTO / SOLDERED TO PCB

- Antenna Technology: Ceramic monopoles, ceramic PIFA, ceramic patch, helical; stamped metal, composite.
- Frequencies: WLAN(Wi-Fi), Zigbee, Bluetooth, ISM, GPS, 3G/4G LTE, Multi bands.
- Applications: OEM equipment, medical devices, security systems, tracking and monitoring devices, handhelds, meter reading, smart devices, sensors, wearables, fitness, beacons, and more.



Pulse offers a wide range of surface mount antennas (SMD) for wireless device applications. Pulse ceramic technology results in robust antenna designs that have outstanding performance. These antennas have an inherent immunity to surrounding antenna signals and hand-effect, which makes them exceptionally suitable solutions for small hand-held or wall-mount devices with multiple antennas. Pulse helical antenna technology provides high-performance antennas in a small package that can be easily deployed. Our composite antennas offer the most frequency bands per embedded technology. These ceramic, helical, and composite antennas require minimal ground plane removal for operation, which means saved board space and economical implementation. The SMD compatibility of Pulse's antenna products makes them simple and easy to mount.

CERAMIC								
Application	Part No.	Size ⁴ (mm)/ Type	Mount Type ³ (mm)	Frequency Range (MHz)	RHCP Gain ⁵ (dBic)	Max Gain (dBi)	Efficiency (%/dB)	Return Loss (dB MIN)
Zigbee, ISM Monopole	W3001 ⁵	10x3.2x4mm Ceramic	SMD, GC 10.8x6.25	2400 and other	N/A	1.5 (peak)	75/-1.25	-6
WLAN Dualband	W3006	10.0x3.2x1.5 Ceramic	SMD, GC area 11.60x6.00	2400-2483.5 5150-5850	N/A	3,2 (peak) 4,2 (peak)	70/-1,55 (peak) 80/-0,95 (peak)	-8 -10
Bluetooth/ WLAN/WiFi	W3008C	3.2x1.6x1.1 Ceramic	SMD, GC area 4.00x6.25	2400-2483.5	N/A	2,2 (peak)	75/-1,3 (peak)	-11
GPS	W3009	10.0x3.2x4.0 Ceramic	SMD, GC area 10.80x6.25	1575.42 ±10	0.7 (peak) 0.3 (band edges)	3 (peak)	80/-1,25 (peak)	-10
ISM	W3013	10x3.2x4 Ceramic	GC area 10.8x8.25	868-870	--	1.5	65	-11
WiFi & GPS	W3056	10x3.2x1.5 Ceramic	GC area 10.8x6.25 (Notch)	2400-2483.5 / 1575.42	--	3.2 / 2.5	80 / 75	-8 / -10
WiFi & GPS	W3064C	10x3.2x1.5 Ceramic	GC area 10.8x6.4 (Divided)	2400-2483.5 / 1575.42	--	-0.7 / -1	80 / 70	-11 / -15
GPS	W3213	13x13x4 Patch	--	1575.42	-1.5	--	--	-13
GPS	W3216	13x13x5 Patch	--	1575.42	-2	--	60	-7
GPS	W3099	25x25x4 Patch	--	1575.42	3.5	--	--	-14

1. All antennas are RoHS Compliant

2. Operating temperature -40°C to +85°C

3. GC = Ground Clearance, mm

4. Length x Width x Height

5. Monopole antenna performance is linked to different tuning circuit recommendations for the variety of applications. Consult the data sheet for more information

EMBEDDED ANTENNAS

ANTENNAS FOR EMBEDDED SURFACE MOUNTING APPLICATIONS (continued)

CERAMIC (CONTINUED)								
Application	Part No.	Size (mm)/ Type	Mount Type ³ (mm)	Frequency Range (MHz)	RHCP Gain (dBic)	Max Gain (dBi)	Efficiency (%/dB)	Return Loss (dB MIN)
GPS/Glonass & Beidou	W3062A	7X1.6X1.6 Ceramic	GC area 7.8x5.25	1559-1591 & 1598-1610	0	2.5	80 / -1	-10
Dual Band (EU)	W3070	10x3.2x2 Ceramic	GC area 40x10	880-960 / 1710-1880	--	1.2 / 2.5	65 / 60	-5.1 / -5.7
Dual WiFi	W3078	3.2x1.6x1.1 ceramic	GC area 11.15x6.4	2400-2483.5 / 4950-5850	--	1.7 / 4.3	65 / 80	-10 / -6
WiFi & GPS	W3095	10x3.2x1.5 Ceramic	GC area 17.8x6.45	2400-2483.5 / 4950-5850 / 1559-1610.5	--	2.7/3.7/1.7	85/53/62	-10/-6/-8
ISM, or GPS, or GPS/ Glonass/BD	W3000 ⁵	7x1.6x1.6 tuneable monopole	See datasheet	868-870; 1559-1591 & 1598-1610; 1575.4	See datasheet	See datasheet	See datasheet	See datasheet
GPS	W3010	10.0x3.2x2.0 Ceramic	SMD, GC area 10.80x6.25	1575.42 ±10	-0,2 (peak)	2,8 (peak)	75/-1,25 (peak)	-18
GPS	W3011/A	3.2x1.6x1.1 Ceramic	SMD 4x4.25/6.25	1575.42 ±10	0.85 (peak)	3.4 (peak)	85/-0.7 (peak)	-12
ISM 900	W3012	10x3.2x4 Ceramic	SMD GC area 10.80x8.25	868-870	N/A	2 (peak)	70/- 1.55 (peak)	-6
ISM 900 Monopole	W3014 ⁵	10x3.2x1.5 Ceramic	SMD GC area 40x16	868-870	N/A	1.55 (peak)	45/- 4.5 (peak)	-6

HELICAL								
Application	Part No.	Size (mm)/ Type	Mount Type ³ (mm)	Frequency Range (MHz)	RHCP Gain (dBic)	Max Gain (dBi)	Efficiency (%/dB)	Return Loss (dB MIN)
WiFi	W3108	5.0x2.5x5.5 Helical	SMD, GC area 7.50x5.50	2400- 2483.5	N/A	1.5	50/-3	-8
GPS	W3110	5.0x2.5x5.5 Helical	SMD, GC area 7.50x5.50	1575.42 ±10	-2,1 (peak) -2,4 (band edges)	1,3 (peak) 0,7 (band edges)	47/-3,3 (peak) 43/-3,7 (band edges)	-16
ISM	W3112A	2.5x8.0x8.0 Helical	SMD, GC area 6.00x11.00	902-928	N/A	0.9 (peak) -0.3 (band edges)	67/-1.7 (peak) 50/-3 (band edges)	-10
ISM	W3113	12.4x8.0x2.5 Helical	SMD, GC area 8.00x40.00	902-928	N/A	0.8 (peak) -0.3 (band edges)	66 /-1.8 (peak) 51/-2.9(band edges)	-10
ISM (315)	W3126	35.35x9.90 Helical	GC area 8x40	315	N/A	-5	--	-10
ISM (433)	W3127	35.35x9.90 Helical	GC area 8x40	433-435	N/A	-2.9	--	-15

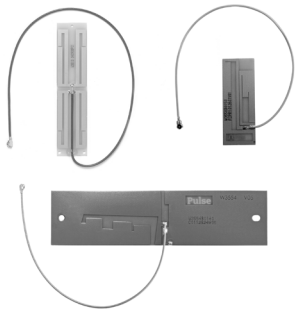
COMPOSITE								
Application	Part No.	Size (mm)/ Type	Mount Type ³ (mm)	Frequency Range (MHz)	RHCP Gain (dBic)	Max Gain (dBi)	Efficiency (%/dB)	Return Loss (dB MIN)
2G/3G	W3544A/B	26x7.65x3 Composite	SMD	824-960/1710-2170	N/A	-1	50%	-6 ave
2G/3G	W3073	10x3.2x4 Composite	SMD	824-894/1710-2170 or 880-960/1710-2170	N/A	2.9	50%	-6 ave
3G / 4G LTE	W3796	40 x 7 x 3	GC area 15 x 40	698 - 2700	N/A	1.5 / 2/ 5.5	55 / 70	-6

1. All antennas are RoHS Compliant
2. Operating temperature -40°C to +85°C
3. GC = Ground Clearance, mm

4. Millimeters (mm)
5. Monopole antenna performance is linked to different tuning circuit recommendations for the variety of applications. Consult the data sheet for more information

INTERNAL ANTENNAS

ANTENNAS FOR INTERNAL APPLICATIONS



- Located inside the device.
- Often connected by a short cable assembly to customer PCB.
- Technology: Flexible printed circuit (FPC), PCB, patch.
- Frequencies: WLAN, Bluetooth, Zigbee, ISM, GPS, 3G/4G LTE, Multi bands.
- Typical applications: Access points, industrial controls, utilities, Internet of Things, M2M, telemedicine, handheld devices, point-of-sale equipment, sensors, lighting, transportation and other devices.

PRINTED CIRCUIT BOARD ANTENNA SOLUTIONS

Application	Frequency	Part Number	Mechanical Dimensions (in/Mm)	Cable Length (mm) /Connector Type	Gain (dBi)	Efficiency (%/B)
2G / 3G	850/900/1800/1900	W3501	0.98 x 3.43 x .008 25 x 87 x 0.2	56/ I-PEX Connector	1.5 / 1.5 / 3.5 / 3.5	50 to 55 %
2G / 3G	850/900/1800/1901	W3502	1.69 x 0.67 x 0.02 43 x 17 x 0.5	27.5/ I-PEX Connector	2 / 1 / 1 / 2	40 to 60 %
WiFi	2.4 GHz	W3525Bxxx	0.42 x 1.88 x .031 10.7 x 47.7 x 0.8	Various cable lengths/ I-PEX Connector	2	70%
WiFi	2.4 & 5 GHz	W3513	0.63 x 2.76 x 0.04 16 x 70 x 0.9	250/ I-PEXConnector	2	50 to 72 %
WiFi	2.4 & 5 GHz	W3315B0100	0.23 x 1.8in / 6x45 mm	100, IPEX, MHF Series	-3.5 / -2.5	70
3G 4G LTE	698-960 / 1710-2170 / 2300-2700	W3554B0140	120 x 30 x 0.2	143 / IPX	2.5	60%
5 GHz Dipole	4900-5850	W3593B0100	45 x 7 x 0.8	109mm / IPX	2	50%

ANTENNAS FOR NEAR FIELD COMMUNICATIONS

Frequency (MHz)*	Part Number	Impedance (Ohms)*	Read Distance (mm)*	Size (mm)	SRF (MHz)**	Inductance (QH)**	Resistance (Ohms)**	Q **	Matched Q ***
13.56	W3579	50 / 80	40	35 x 50 x 0.30	42	1.6	3.6	37.8	5-30
13.56	W7001	50 / 80	40	25 x 25 x 0.12	100	0.9	1.55	49	5-30
13.56	W7002	50 / 80	40	94.6 x 56.8 x 3.65	89	0.65	0.95	57	5-30
13.56	W7013	50 / 80	20	25 x 30 x 0.23	-	-	-	-	-

* With Matching Network

** Coil Without Matching Network

*** With Matching Network (adjustable range)

EXTERNAL ANTENNAS

ANTENNAS FOR EXTERNAL APPLICATIONS



- Radome included - cosmetics may matter.
- Not for outdoor weatherproof environments
- Technology: Dipoles, blades, external patches.
- Cable assemblies or connector options.
- Frequencies: WLAN, 3G/4G LTE, ISM, GPS, Multi-bands.
- Typical applications: Access points, industrial controls, utilities, Internet of Things, M2M, telemedicine, handheld devices, point-of-sale equipment, sensors, lighting, transportation and other devices.

Pulse's new line of wireless access point antennas offers flexible and economical solutions for wireless device OEMs. These antennas offer superior transmission and reception between wireless access points. They are compatible with IEEE 802.11a/b/g/n/ac, Bluetooth, 3G/4G LTE, ZigBee and ISM frequency band applications. All wireless access point antennas are RoHS compliant. For high-volume orders, Pulse can custom design antennas for OEMs. This includes alternative frequencies and a variety of cable and connector options for antenna assemblies.

WIFI (WLAN) ANTENNAS^{1,2}

Part Number	Frequency	Max Gain (dBi)	Length (inches/mm)	Application/Standard
W1063	900 MHz	3.0	6.65 /169	ISM 868 & 915 MHz
W1010 ³	2.4 GHz	2.0	3.3/83	802.11b/g/n/ac, Bluetooth, ZigBee
W1030	2.4 GHz	2.0	3.25/82.5	802.11b/g/n/ac, Bluetooth, ZigBee
W1037	2.4 GHz	3.2	6.65/169	802.11b/g/n/ac, Bluetooth, ZigBee
W1038	2.4 GHz	4.9	6.65/169	802.11b/g/n/ac, Bluetooth, ZigBee
W1027	2.4 GHz	3.2	4.88/124	802.11b/g/n/ac, Bluetooth, ZigBee
SB24003	2.4 GHz	2.14	2.5/132	802.11b/g/n/ac, Bluetooth, ZigBee
W1043	2.4 & 5.8 GHz	2.0	4.59/117	802.11b/g/n/ac, Bluetooth, ZigBee
W1028B	5.15 & 5.85 GHz	2.0	4.88/124	802.11a/b/g/n/ac, ISM 5.8 GHz

1. Antennas come standard with R-SMA male connectors, unless otherwise specified.

2. These part numbers are lead-free and RoHS compliant. No additional suffix or identifier is required.

3. SMA male connector

*Antennas for External Applications table is continued on next page

WI-FI BROADBAND

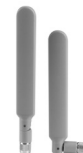
Model	Element Type	Frequency (MHz)	Gain (dbi)	Max Height (In)	VSWR
SPDA17RP2400/5900	PCB	2400-2500	2	6 (Bent)	2:1
		4900-5900	5	7 (Straight)	
SPDA17806/2170LAR	PCB	806-960	.5	6 (Bent)	2.5:1
		1710-2170	.5	7.5 (Straight)	
SPDA24700/2700	PCB	698-960	.6	9 (Straight)	2.5:1
		1710-2170	1.5		
		2500-2700	3.4		



SPDA17RP2400/5900



SPDA24700/2700



SPDA17806/2170LAR

EXTERNAL ANTENNAS

ANTENNAS FOR EXTERNAL APPLICATIONS (continued)

SINGLE-BAND EXTERNAL ANTENNAS WITH I-PEX

Part Number	Frequency	Mechanical Length	Cable Length ²	Photo
W1049B030	2.4GHz	3.25/82.5	3/76	
W1049B050	2.4GHz	3.25/82.5	5/127	
W1049B090	2.4GHz	3.25/82.5	9/229	
W1049B120	2.4GHz	3.25/82.5	12/305	

1. These part numbers are lead-free and RoHS compliant. No additional suffix or identifier is required.

2. Inches/millimeters

3. Max Gain (2dBi)

Pulse offers a wide variety of alternative wireless solutions for applications including machine-to-machine, public safety, hand-held radios, and telematics.

ADDITIONAL 3G/4G LTE, ISM, UHF, VHF, GPS

Part Number	Frequency (MHz)	Gain (dBi)	Description	Length (in/mm)	Coax	Connector
SPDA24918	863-973	0	Swivel Mount Dipole	8 / 202	N/A	SMA Male
W1900; W1902	824-960/ 1710-1990/ 1920-2170	1 / 2 / 2.5	Penta Rt Angle Stubby	2.1 / 49.5	N/A	SMA Male / RP-SMA Male
W1910; W1911	824-960/ 1710-1990 / 1920-2170	1 / 2 / 2.5	Penta Band Stubby	2 / 49	N/A	SMA Male / RP-SMA Male
W4000G197	1.574 GHz	1.5 dBic / 26dB LNA	GPS Ultra Thin	n/a	200 / 5meter	SMA Male
SPDA17RP2400/5900	2400-2500/4900-5900	1.6/5	Swivel Mount Dipole	7/182	N/A	RPTNC
SB450FME3	450-470	2.14	Stealth Blade	10/254	3' RG-174	FME
SB8003	806-896	2.14	Stealth Blade	2.5/132	3' RG-174	No Conn
SB9003	890-960	2.14	Stealth Blade	2.5/132	3' RG-174	No Conn
SPDA24850/1900	824-894/1850-1990	0/1.2	Swivel Mount Dipole	6.75/171	N/A	SMA
SPDA24700/2700	698-960 / 1710-2710 / 2500-2700	.6/1.5/3.4	LTE Swivel Mount Dipole	9 / 228	N/A	SMA Male
SPWB23150	136-174	-4.5	Wideband	6.75/171	N/A	SMA F T3
SPWH23832	782-882	0	Whip, Standard, ¼ Wave	3/76	N/A	SMA F T3
SPHS24832	800-864	0	Helical, Standard, ¼ Wave	3/76	N/A	SMA F T2
SPDA17806/2170LAR	806-960/1710-2170	.5/.5	Pentaband Swivel Mount Dipole	7.5/190.5	N/A	TNC Male
W1920GO915	806-960/1710-2170	1.5	Stealth Blade	4.3/110	3' RG-174	SMA Male
W1920G3658	806-960/1710-2170	1.5	Stealth Blade	4.3/110	9' RG-174	SMA Male



Now Available: IceBlade Transparent Antennas

- LTE Model with SMA : Pulse part : ICEBLADELS
- LTE Model with TNC : Pulse part : ICEBLADELT
- WiFi Model with SMA : Pulse part : ICEBLADEWS
- WiFi Model with TNC : Pulse part : ICEBLADEWT



See [PulseAntennas website](http://PulseAntennas.com) for performance data.

EXTERNAL ANTENNAS

STEALTH BLADES

Stealth Blade antennas have the following specifications:

Gain: 2.14 dBi
Maximum Power: 3 Watts
Polarization: Linear

Model	Frequency (MHz)	Bandwidth % @1.5/2.1	Dimensions L x W (In)	Coax	Connector
SB698SMA3	698-960/1710-2170/2300-2700	50/60	4.2 x 1	10' RG-316	SMA
SB8003	806-896	67/90	5.2 x .75	3' RG-174	No Conn
SB80012	806-896	67/90	5.2 x .75	12' RG-174	No Conn
SB800FME3	806-896	67/90	5.2 x .75	3' RG-174	FME
SB800FME12	806-896	67/90	5.2 x .75	12' RG-174	FME
SB800MPL3	806-896	67/90	5.2 x .75	3' RG-174	MPL
SB800MPL12	806-896	67/90	5.2 x .75	12' RG-174	MPL
SB800SMA3	806-896	67/90	5.2 x .75	3' RG-174	SMA
SB800TNC3	806-896	67/90	5.2 x .75	3' RG-174	TNC
SB800TNC12	806-896	67/90	5.2 x .75	12' RG-174	TNC
SB9003	890-960	67/90	5.2 x .75	3' RG-174	No Conn
SB90012	890-960	55/70	5.2 x .75	12' RG-174	No Conn
SB900SMA3	890-960	55/70	5.2 x .75	3' RG-174	SMA
SB900SMA12	890-960	55/70	5.2 x .75	12' RG-174	SMA
R380.900.323	806-960 / 1710-1990		5 X .8	10' RG-174	FME
R380.900.334	806-960 / 1710-1990		5 X .8	10' RG-174	SMA



MIMO LTE ANTENNA

MIMO External Antenna:

Frequencies: 700-960 / 1710-1990 / 2110-2170 / 2500-2700
Low Band Gain: 2.5 dBi Average
High Band Gain: 3.5 dBi Average

Pattern: Omni Directional

Part Number	Cable Type	Antenna Size (inches/mm)	Cable Length (inches/mm)	Connector
WA700/2700SMA	RG - 174	5.85 x 5 x 0.2 / 149 x 127 x 5.1	39.4 / 1000	SMA Male
WA700/2700RPSMA	RG - 174	5.85 x 5 x 0.2 / 149 x 127 x 5.1	39.4 / 1000	Reverse Polarity SMA



PORTABLE RADIO ANTENNAS

The following chart summarizes performance, size and cost parameters for various antenna types.

ANTENNA PERFORMANCE CHART

Type	Bandwidth	Performance	Length	Connector	Frequency	Pricing
Helical Short	6%	Poor (**)	Short	All	VHF/UHF	\$\$
Helical	8%	Average (***)	Shorter	All	Low/Mid/VHF/UHF	\$\$
Helical Quarter Wave	12%	Good (***)	Longer	All except SMA	VHF	\$\$
Whip	12%	Good (***)	Mid	All	UHF	\$
End Fed Half Wave	10%	Better (****)	Longer	Coaxial	800	\$\$\$
Half Wave Dipole	10%	Best (*****)	Longer	Coaxial	800	\$\$\$\$
Wide Band	25%	Good (***)	Longer	Coaxial	All	\$\$\$\$\$
Dual Band	2x8%	Average (***)	Mid	Coaxial	VHF/UHF	\$\$

Due to the high variability of use, measurements are difficult to make on portable antennas. All Larsen portable antenna designs are tested for gain and VSWR using a standard fixture for portable antennas. Gain measurements are determined based on range or chamber measurements. Performance ratings are determined using a VSWR standard of less than 2.0:1.

PORTABLE RADIO ANTENNAS



KuL DUCKIE® FREQUENCY COLOR CODE

VHF FREQUENCY	COLOR	UHF FREQUENCY	COLOR
136 - 140 MHz	Blue	406 - 420 MHz	Black
142 - 149 MHz	Green	450 - 469 MHz	Black
150 - 160 MHz	Yellow	470 - 512 MHz	Black
162 - 174 MHz	Red	150 / 450 MHz	Blue

Kulduckie®

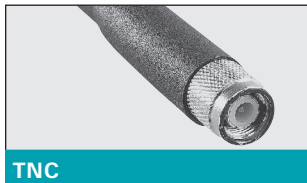
All factory tuned KuL DUCKIES® are ExacTuned to your specified frequency. To order, replace the FREQ, UHF or VHF designation with your desired center frequency.



1/4-32X3/16

Male stud type mount with skirt (MX type)
KD2/12

PART NUMBER	ELECTRICAL TYPE	FREQUENCY BAND	APPROX LENGTH
1/4-32x3/16			
KD2FREQHQ1	HQ Helical 1/4 λ	136 - 140 MHz	9 1/2"
KD2FREQHQ2	HQ Helical 1/4 λ	142 - 149 MHz	9 1/2"
KD2FREQHQ3	HQ Helical 1/4 λ	150 - 161 MHz	9 1/2"
KD2FREQHQ4	HQ Helical 1/4 λ	162 - 174 MHz	9 1/2"



TNC

TNC Male coaxial connector unskirted (TN type)
KD3/13

TNC MALE			
KD3FREQHQ1	HQ Helical 1/4 λ	136 - 140 MHz	9 1/2"
KD3FREQHQ2	HQ Helical 1/4 λ	142 - 149 MHz	9 1/2"
KD3FREQHQ3	HQ Helical 1/4 λ	150 - 161 MHz	9 1/2"
KD3FREQHQ4	HQ Helical 1/4 λ	162 - 174 MHz	9 1/2"
KD3FREQHQ5	HQ Helical 1/4 λ	220 - 222 MHz	9 1/2"
KD13(freq)	1/4 λ	406 - 960 MHz	6"
TNCQ	1/4 λ	136 - 512 MHz	Varies by freq



BNC

BNC Male coaxial connector unskirted
KD4/14

BNC MALE			
KD4UHF	Helical 1/4 λ	406 - 512 MHz	3"
KD4VHF1	Helical 1/4 λ	136 - 141 MHz	8"
KD4VHF2	Helical 1/4 λ	142 - 149 MHz	8"
KD4VHF3	Helical 1/4 λ	150 - 161 MHz	8"
KD4VHF4	Helical 1/4 λ	162 - 174 MHz	8"
KD4FREQHQ1	HQ Helical 1/4 λ	136 - 140 MHz	9 1/2"
KD4FREQHQ2	HQ Helical 1/4 λ	142 - 149 MHz	9 1/2"
KD4FREQHQ3	HQ Helical 1/4 λ	150 - 161 MHz	9 1/2"
KD4FREQHQ4	HQ Helical 1/4 λ	162 - 174 MHz	9 1/2"
KD4150T	Helical 1/4 λ	130 - 180 MHz	Varies by freq
KD14(freq)	1/4 λ	406 - 960 MHz	6"
KD14FREQHW1	HW UHF 1/2 λ	315 - 409 MHz	16 1/2"
KD14FREQHW2	HW UHF 1/2 λ	416 - 504 MHz	16 1/2"
BNCQ	1/4 λ	136 - 512 MHz	Varies by freq

PORTABLE RADIO ANTENNAS

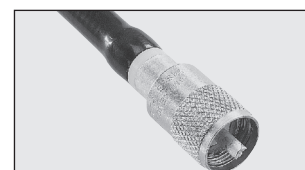
PART NUMBER	ELECTRICAL TYPE	FREQUENCY BAND	APPROX LENGTH
5/16-32X3/8			
KD7FREQHQ1	HQ Helical 1/4 λ	136 - 140 MHz	9 1/2"
KD7FREQHQ2	HQ Helical 1/4 λ	142 - 149 MHz	9 1/2"
KD7FREQHQ3	HQ Helical 1/4 λ	150 - 161 MHz	9 1/2"
KD7FREQHQ4	HQ Helical 1/4 λ	162 - 174 MHz	9 1/2"



5/16-32X3/8

Male stud type mount
(KR type)
KD7

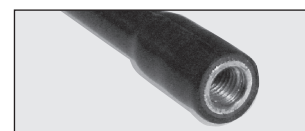
PL-259			
KD9FREQHQ1	HQ Helical 1/4 λ	136 - 140 MHz	9 1/2"
KD9FREQHQ2	HQ Helical 1/4 λ	142 - 149 MHz	9 1/2"
KD9FREQHQ3	HQ Helical 1/4 λ	150 - 161 MHz	9 1/2"
KD9FREQHQ4	HQ Helical 1/4 λ	162 - 174 MHz	9 1/2"
KD19(freq)	1/4 λ	406 - 512 MHz	6"
PQ	1/4 λ	144 - 512 MHz	Varies by freq



PL-259

Standard UHF Connector
Male
KD9/19

5/16-24 THDS Female			
KD22VHF1	Helical 1/4 λ	136 - 141 MHz	8"
KD22VHF2	Helical 1/4 λ	142 - 149 MHz	8"
KD22VHF3	Helical 1/4 λ	150 - 161 MHz	8"
KD22VHF4	Helical 1/4 λ	162 - 174 MHz	8"
KD22FREQHQ1	HQ Helical 1/4 λ	136 - 140 MHz	9 1/2"
KD22FREQHQ2	HQ Helical 1/4 λ	142 - 149 MHz	9 1/2"
KD22FREQHQ3	HQ Helical 1/4 λ	150 - 161 MHz	9 1/2"
KD22FREQHQ4	HQ Helical 1/4 λ	162 - 174 MHz	9 1/2"



5/16-24THDS Female

Female threaded
KD22

PORTABLE RADIO ANTENNAS

SPOTS!

SPOTS! FREQUENCY COLOR CODE

(SEE COLOR SPOT ON ANTENNA TOP)

VHF	CENTER FREQUENCY	COLOR
144	(138 - 150 MHz)	Gray
156	(150 - 162 MHz)	Orange
160	(154 - 166 MHz)	Green
167	(160 - 174 MHz)	Red

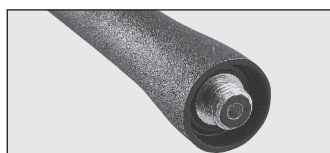
UHF	CENTER FREQUENCY	COLOR
420	(403 - 437 MHz)	Blue
450	(432 - 468 MHz)	Yellow
470	(450 - 490 MHz)	Red
490	(470 - 510 MHz)	Green

800 / 900	CENTER FREQUENCY	COLOR
832	(795 - 870 MHz)	Blue
918	(872 - 964 MHz)	Red
1800	(1710 - 1850 MHz)	Black
1900	(1850 - 1990 MHz)	Black
2400	(2400 - 2500 MHz)	Black



SPOTS! CODE ANTENNA SELECTION GUIDE BY CONNECTOR TYPE

Determine connector type on the following pages and select the proper antenna based on frequency and type below. Field tunable antennas come with a cutting chart and cap to allow for tuning to exact frequency.



1/4-32X3/16

Male stud type mount with skirt (MX type)

Supported

Motorola, Kenwood, Maxon, Midland, Wilson, G.E., Vertex

1/4-32X3/16 - MALE STUD CONNECTOR (MX TYPE)

CODE 10

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPHL10156	150 - 162	Helical Standard 1/4 λ	8"
SPHS10156	152 - 160	Helical Short 1/4 λ	4"
SPHL10160	154 - 166	Helical Standard - 1/4 λ	8"
SPHL10160IC**	CC to 157	Helical Standard 1/4 λ	8"
SPHL10167	160 - 174	Helical Standard 1/4 λ	8"
SPHL10167IC**	CC to 167	Helical Standard 1/4 λ	8"
SPWH10420	395 - 445	Whip Standard 1/4 λ	6"
SPHS10420	403 - 437	Helical Short 1/4 λ	3"
SPWH10450	425 - 475	Whip Standard 1/4 λ	6"
SPHS10450	432 - 468	Helical Short 1/4 λ	3"
SPWH10470	450 - 490	Whip Standard 1/4 λ	6"
SPHS10470	452 - 488	Helical Short 1/4 λ	3"
SPHL10FT	Field Tunable 136 - 221	Helical Standard 1/4 λ	8"
SPWH10FT	Field Tunable 400 - 512	Whip Standard 1/4 λ	6"

** This antenna is designed with a longer "skirt" for use with newer ICOM radios.

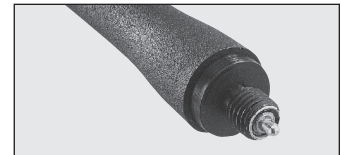
PORTABLE RADIO ANTENNAS

SPOTS!

M7 X 1.00 METRIC CONNECTOR (MD TYPE)

CODE 14

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPEN14832	806 - 866	Whip - 1/2 λ End Fed	7"
SPWH14832	782 - 882	Whip - Standard - 1/4 λ	3"
SPHS14832	800 - 865	Helical - Short - 1/4 λ	2.75 "
SPEN14918	890 - 960	Half λ End Fed	6"
SPHL14FT	Field Tunable 136 - 221	Helical - Standard - 1/4 λ	7"



M7.0X1.0

Male stud type connector unskirted (MD type)

Popular Brands Supported

G.E., Ericsson

BNC CONNECTOR (BN TYPE)

CODE 15

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPHS15450	432 - 468	Helical - Short - 1/4 λ	3"
SPHL15FT	Field Tunable 136 - 221	Helical - Standard - 1/4 λ	8"
SPWH15FT	Field Tunable 400 - 512	Whip - Standard - 1/4 λ	6"



BNC

BNC Male coaxial connector unskirted

Popular Brands Supported

G.E., Kenwood, Motorola, Maxon, Johnson

BNC CONNECTOR COVERED TYPE (BNX TYPE)

CODE 16

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPHL16FT	Field Tunable 136 - 221	Helical - Standard - 1/4 λ	8"
SPWH16FT	Field Tunable 400 - 512	Whip - Standard - 1/4 λ	6"



BNC-S

BNC Male coaxial connector fully skirted (BNX type)

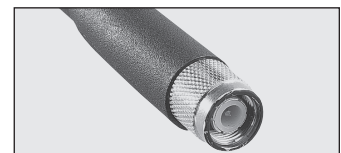
Popular Brands Supported

Ericsson

TNC CONNECTOR - STANDARD (TN TYPE)

CODE 17

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPDA17806/2170LAR	806 - 960 / 1710 - 2170	Center Fed Dipole	8"
SPDA17832	824 - 894	Center Fed Dipole	8"
SPDA17850/1900	824 - 894 / 1850 - 1990	Center Fed Dipole	7.5"
SPDA17918	890 - 960	Center Fed Dipole	8"
SPDA171800	1710 - 1850	Center Fed Dipole	6.5"
SPDA171900	1850 - 1990	Center Fed Dipole	6.5"
SPDA172400	2400 - 2500	Center Fed Dipole	6"
SPDA17RP2400	2400 - 2500	Center Fed Dipole	6"
SPDA17RP2400/5900	2400 - 2500 / 4900 - 5900	Center Fed Dipole	6"
SPDA17RP918	890 - 960	Center Fed Dipole	8"
SPHL17FT	Field Tunable 136 - 221	Helical - Standard - 1/4 λ	8"
SPWH17FT	Field Tunable 400 - 512	Whip - Standard - 1/4 λ	6"
ICEBLADELT	698 - 960 / 1710 - 2170 / 2500 - 2700	Multiband	9"
ICEBLADEWT	698 - 960 / 1710 - 2170 / 2500 - 2700	Multiband	9"



TNC

TNC Male coaxial connector unskirted (TN type)

Popular Brands Supported

Icom, Standard

PORTABLE RADIO ANTENNAS

SPOTS!



TNC-S

TNC Coaxial connector fully skirted (TNX type)

Popular Brands Supported

Vertex

TNC CONNECTOR - COVERED (TNX TYPE)

CODE 18

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPHL18FT	Field Tunable 136 - 221	Helical - Standard - 1/4 λ	8"
SPWH18FT	Field Tunable 400 - 512	Whip - Standard - 1/4 λ	6"



SMA MALE T1

SMA Male extended base (SMS Type)

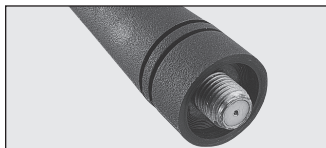
Popular Brands Supported

Standard

SMA MALE STANDARD - EXTENDED BASE - T1 (SMS TYPE)

CODE 20

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPWH20832	782 - 882	Whip - Standard - 1/4 λ	3"
SPHS20832	800 - 864	Helical - Short - 1/4 λ	2.75"
SPWH20918	863 - 973	Whip - Standard - 1/4 λ	3"
SPHS20918	872 - 954	Helical - Short - 1/4 λ	2.75"
SPHL20FT	Field Tunable 136 - 221	Helical - Standard - 1/4 λ	8"
SPWH20FT	Field Tunable 400 - 512	Whip - Standard - 1/4 λ	6"



SMA F T1

SMA Female flush insulator & partial skirt (SF Type)

Popular Brands Supported

Motorola

SMA FEMALE - NON STANDARD MOTOROLA TYPE (SF TYPE)

CODE 21

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPWB21150	136 - 174	Helical - Standard - 1/4 λ	6.75"
SPHL21156	150 - 162	Helical - Standard - 1/4 λ	8"
SPHS21156	152 - 160	Helical - Short - 1/4 λ	4"
SPHL21167	160 - 174	Helical - Standard - 1/4 λ	8"
SPHS21167	162 - 172	Helical - Short - 1/4 λ	4"
SPWH21450	425 - 475	Whip - Standard - 1/4 λ	6"
SPHS21450	432 - 468	Helical - Short - 1/4 λ	3"
SPHS21490	475 - 512	Helical - Short - 1/4 λ	3"
SPWH21832	782 - 882	Whip - Standard - 1/4 λ	3"
SPHS21832	800 - 864	Helical - Short - 1/4 λ	2.75"
SPWH21918	863 - 973	Whip - Standard - 1/4 λ	3"
SPHS21918	872 - 954	Helical - Short - 1/4 λ	2.75"
SPHL21FT	Field Tunable 136 - 221	Helical - Standard - 1/4 λ	8"
SPWH21FT	Field Tunable 400 - 512	Whip - Standard - 1/4 λ	6"

PORTABLE RADIO ANTENNAS

SPOTS!

SMA FEMALE STANDARD - FLUSH BASE - T2 (SFJ TYPE)

CODE 22

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPWB22150	136 - 174	Helical - Standard - 1/4 λ	6.75"
SPHL22156	150 - 162	Helical - Standard - 1/4 λ	8"
SPHL22167	160 - 174	Helical - Standard - 1/4 λ	8"
SPWH22450	425 - 475	Whip - Standard - 1/4 λ	6"
SPHS22450	432 - 468	Helical - Short - 1/4 λ	3"
SPWH22470	450 - 490	Whip - Standard - 1/4 λ	6"
SPHS22470	452 - 468	Helical - Short - 1/4 λ	3"
SPHS22490	475 - 512	Helical - Short - 1/4 λ	3"
SPWH22832	782 - 882	Whip - Standard - 1/4 λ	3"
SPHS22832	800 - 864	Helical - Short - 1/4 λ	2.75"
SPWH22918	863 - 973	Whip - Standard - 1/4 λ	3"
SPHS22918	872 - 954	Helical - Short - 1/4 λ	2.75"
SPHL22FT	Field Tunable 136 - 221	Helical - Standard - 1/4 λ	8"
SPWH22FT	Field Tunable 400 - 512	Whip - Standard - 1/4 λ	6"



SMA F T2

SMA Female recessed insulator & partial (short) skirt (SFJ type)

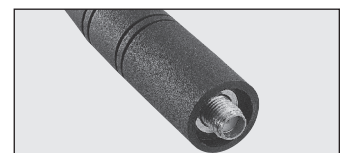
Popular Brands Supported

EF Johnson, Kenwood

SMA FEMALE STANDARD - HALF SKIRT BASE - T3 (SFU TYPE)

CODE 23

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPWB23150	136 - 174	Helical - Standard - 1/4 λ	6.75"
SPHL23167	160 - 174	Helical - Standard - 1/4 λ	8"
SPWH23450	425 - 475	Whip - Standard - 1/4 λ	6"
SPHS23450	432 - 468	Helical - Short - 1/4 λ	3"
SPWH23470	450 - 490	Whip - Standard - 1/4 λ	6"
SPHS23470	452 - 488	Helical - Short - 1/4 λ	3"
SPWH23490	470 - 512	Whip - Standard - 1/4 λ	6"
SPHS23490	475 - 512	Helical - Short - 1/4 λ	3"
SPWH23832	782 - 882	Whip - Standard - 1/4 λ	3"
SPWH23918	863 - 973	Whip - Standard - 1/4 λ	3"
SPHS23918	872 - 954	Helical - Short - 1/4 λ	2.75"
SPHL23FT	Field Tunable 136 - 221	Helical - Standard - 1/4 λ	8"
SPWH23FT	Field Tunable 400 - 512	Whip - Standard - 1/4 λ	6"



SMA F T3

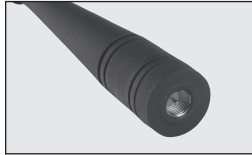
SMA Female recessed insulator & partial (long) skirt (SFU type)

Popular Brands Supported

Kenwood (2005 and newer models), Uniden, King

PORTABLE RADIO ANTENNAS

SPOTS!



SMA MALE T2

SMA Male flush base
(SM Type)

Popular Brands

G.E., Technophone,
Relm

SMA MALE - FLUSH BASE - T2 (SM TYPE)

CODE 24

PART NUMBER	CONNECTOR	FREQUENCY BAND (MHz)	ANTENNA TYPE	APPROX LENGTH
SPDA24700/2700	SMA Male	698-960/1710-2170/2500-2700	Multiband	9"
SPDA24832	SMA	824 - 894	Center Fed Dipole	9"
SPDA24850/1900	SMA	824 - 894 / 1850 - 1990	Center Fed Dipole	7.5"
SPDA24918	SMA M T2	890 - 960	Center Fed Dipole	8"
SPDA241800	SMA M T2	1710 - 1880	Center Fed Dipole	6.5"
SPDA241900	SMA M T2	1850 - 1990	Center Fed Dipole	6.5"
SPDA242400	SMA	2400 - 2500	Center Fed Dipole	6"
SPDA24RP918	SMA M T2 RP	890 - 960	Center Fed Dipole	8"
SPDA24RP 2400	SMA M T2 RP	2400 - 2500	Center Fed Dipole	6"
SPDP24832	SMA M T2	824 - 894	Center Fed Dipole	8"
SPDP24918	SMA M T2	890 - 960	Center Fed Dipole	
SPDP242400	SMA M T2	2400 - 2500	Center Fed Dipole	3.5"
SPEN24815	SMA M T2	760 - 870	Whip - End Fed - 1/2 λ	7
SPHS24832	SMA M T2	800 - 864	Helical - Short - 1/4 λ	2.75"
SPHS24918	SMA M T2	872 - 954	Helical - Short - 1/4 λ	2.75"
SPWB24150	SMA M T2	136 - 174	Wideband	7.5"
SPWB24425	SMA M T2	380 - 470	Wideband	6.5"
SPWB24480	SMA M T2	440 - 520	Wideband	6"
SPWH24815	SMA M T2	760 - 870	Whip - Short - 1/4 Wave	3.5
SPWH24918	SMA M T2	863 - 973	Whip - Standard - 1/4 λ	3"
SPHL24FT	SMA M T2	Field Tunable 136 - 221	Helical - Standard - 1/4 λ	8"
SPWH24FT	SMA M T2	Field Tunable 400 - 512	Whip - Standard - 1/4 λ	6"
ICEBLADELT	SMA Male	698-960/1710-2170/2500-2700	Multiband	9"
ICEBLADEWS	SMA Male	698-960/1710-2170/2500-2700	Multiband	9"



SPDA



SPDP



SPEN



SPHS



SPWB



SPWH



SPHL



ICE

LOW/MID BAND 27-136 MHz

LOW BAND COILS/WHIPS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly/Mount
NMO27BCO	Loaded 1/4 λ	27-30		4	150	Coil Only	Order Separately
NMO27B	Loaded 1/4 λ	27-30	0/2	52.5	150	Black	Order Separately
NMO27C	Loaded 1/4 λ	27-30	0/2	52.5	150	Stainless	Order Separately
NMO30BCO	Loaded 1/4 λ	30-34		4	150	Coil Only	Order Separately
NMO30B	Loaded 1/4 λ	30-34	0/2	57.5	150	Black	Order Separately
NMO30C	Loaded 1/4 λ	30-34	0/2	57.5	150	Stainless	Order Separately
NMO34BCO	Loaded 1/4 λ	34-40		4	150	Coil Only	Order Separately
NMO34B	Loaded 1/4 λ	34-40	0/2	57.5	150	Black	Order Separately
NMO34C	Loaded 1/4 λ	34-40	0/2	57.5	150	Stainless	Order Separately
NMO40BCO	Loaded 1/4 λ	40-50		3.5	150	Coil Only	Order Separately
NMO40B	Loaded 1/4 λ	40-50	0/2	57.5	150	Black	Order Separately
NMO40C	Loaded 1/4 λ	40-50	0/2	57.5	150	Stainless	Order Separately
NMOWB40C	Loaded 1/4 λ	40-50	0/2	55	150	Stainless	Order Separately
NMO50BCO	Loaded 1/4 λ	47-54		3.5	150	Coil Only	Order Separately
NMO50B	Loaded 1/4 λ	47-54	0/2	52.5	150	Black	Order Separately
NMO50C	Loaded 1/4 λ	47-54	0/2	52.5	150	Stainless	Order Separately
NMOQ52C	1/4 λ	52-88	0/2	55	150	Stainless	Order Separately
NMOQ88C	1/4 λ	88-136	0/2	35	150	Stainless	Order Separately
Q52	1/4 λ	52-88	0/2	55	200	Stainless	Order Separately
Q88	1/4 λ	88-136	0/2	35	200	Stainless	Order Separately



NMO Low Band



NMOQ Low Band



NMOWB Low Band



Q Series Low Band

The most commonly used cable assembly/mount is the NMOKHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

NOTE: Larsen springs (SPRING or SPRINGB) can be added to most mobile antennas.



VHF 136-220 MHz

VHF COILS/WHIPS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly/ Mount	Connector
MHW150BCO	1/2 λ	144-174	0/2	2.5	200	Coil Only	Order Separately	
MHW150C	1/2 λ	144-174	0/2	51.5	200	Stainless	Order Separately	
NMO150BCO	5/8 λ	144-174		2.5	200	Coil Only	Order Separately	
NMO150B	5/8 λ	144-174	3/5.14	51.5	200	Black	Order Separately	
NMO150C	5/8 λ	144-174	3/5.14	51.5	200	Stainless	Order Separately	
NMO150BK	5/8 λ	144-174	3/5.14	51.5	200	Black	17' RG-58A/U	PL-259
NMO150CK	5/8 λ	144-174	3/5.14	51.5	200	Stainless	17' RG-58A/U	PL-259
NMO150HWBCO	5/8 λ	144-174		2.5	200	Coil Only	Order Separately	
NMO150BHW	1/2 λ	144-174	0/2	51.5	200	Black	Order Separately	
NMO150CHW	1/2 λ	144-174	0/2	51.5	200	Stainless	Order Separately	
NMOU150D	Loaded 1/4 λ	150-165	0/2	18	200	Black	Order Separately	
NMOU155D	Loaded 1/4 λ	155-170	0/2	18	200	Stainless	Order Separately	
NMOWB150BCO	Wideband 1/2 λ	135-174		2.75	100	Coil Only	Order Separately	
NMOWB150B	Wideband 1/2 λ	135-174	0/2	51.75	100	Black	Order Separately	
NMOWB150C	Wideband 1/2 λ	135-174	0/2	51.75	100	Stainless	Order Separately	
NMOWB150BK	Wideband 1/2 λ	135-174	0/2	51.75	100	Black	17' RG-58A/U	PL-259
NMOWBQB	Wideband 1/4 λ	150-170	0/2	20	200	Black	Order Separately	
NMOWBQC	Wideband 1/4 λ	150-170	0/2	20	200	Stainless	Order Separately	
NMOQW144	1/4 λ	144-152	0/2	19	200	Stainless	Order Separately	
NMOQW152	1/4 λ	152-162	0/2	19	200	Stainless	Order Separately	
LM150BCO	5/8 λ	144-174		2.75	200	Coil Only	Order Separately	
LM150B	5/8 λ	144-174		51.75	200	Black	Order Separately	
LM150C	5/8 λ	144-174		51.75	200	Stainless	Order Separately	
LMWBQ	Wideband 1/4 λ	150-170	0/2	18.5	200	Stainless	Order Separately	
LMWBQB	Wideband 1/4 λ	150-170	0/2	18.5	200	Black	Order Separately	
PO150BCO	5/8 λ	144-174	0/2	2.5	200	Coil Only	Order Separately	
PO150B	5/8 λ	144-174	0/2	51.5	200	Black	Order Separately	
PO150C	5/8 λ	144-174	0/2	51.5	200	Black	Order Separately	



The most commonly used cable assembly/mount is the NMOKHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

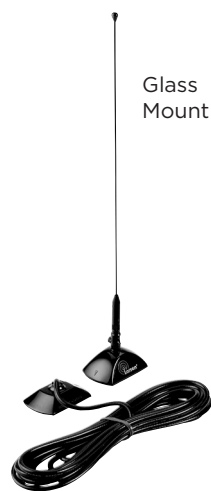
NOTE: Larsen springs (SPRING or SPRINGB) can be added to most mobile antennas.



VHF 136-220 MHz

VHF GLASS MOUNT

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly/ Mount	Connector
KGFFREQUDPL2	VHF Disguise	140-149	0/2	20	100	Black	14' RG-58/U	PL-259
KGFFREQUDPL3	VHF Disguise	150-159	0/2	20	100	Black	14' RG-58/U	PL-259
KGFFREQUDPL4	VHF Disguise	160-170	0/2	20	100	Black	14' RG-58/U	PL-259
KG144O/S	1/2 λ	144-160	0/2	48	100	Black	Order Separately	
KG144UD	1/2 λ	144-160	0/2	48	100	Black	14' RG-58/U	No Conn
KG144UDPL	1/2 λ	144-160	0/2	48	100	Black	14' RG-58/U	PL-259
KG160O/S	1/2 λ	160-174	0/2	47	100	Black	Order Separately	
KG160UD	1/2 λ	160-174	0/2	47	100	Black	14' RG-58/U	No Conn
KG160UDPL	1/2 λ	160-174	0/2	47	100	Black	14' RG-58/U	PL-259
KGVHFUDI/S	Inside Cable Unit	144-174			100		14' RG-58/U	No Conn



Glass Mount



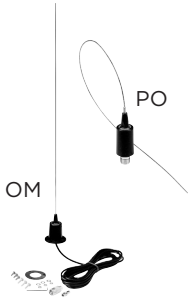
Low Profile

VHF LOW PROFILE

Model	Frequency (MHz)	Gain (dBd/dBi)	Size H x DIA (In)	Power Rating (Watts)	Color	Cable Assembly/ Mount
LP152NMO	151.02-152.98	0/2	3.75 x 4.5	60	Black	Order Separately
LP154NMO	152.96-155.04	0/2	3.75 x 4.5	60	Black	Order Separately
LP156NMO	154.42-156.58	0/2	3.75 x 4.5	60	Black	Order Separately
LP158NMO	156.38-158.62	0/2	3.75 x 4.5	60	Black	Order Separately
LP160NMO	158.33-160.67	0/2	3.75 x 4.5	60	Black	Order Separately
LP162NMO	160.29-162.71	0/2	3.75 x 4.5	60	Black	Order Separately
LP164NMO	162.75-165.25	0/2	3.75 x 4.5	60	Black	Order Separately
LP167NMO	165.21-167.79	0/2	3.75 x 4.5	60	Black	Order Separately
LP169NMO	167.68-170.32	0/2	3.75 x 4.5	60	Black	Order Separately
LP171NMO	170.16-172.84	0/2	3.75 x 4.5	60	Black	Order Separately
LP174NMO	172.14-174.86	0/2	3.75 x 4.5	60	Black	Order Separately

The most commonly used cable assembly/mount is the NMOKHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

VHF 136-220 MHz



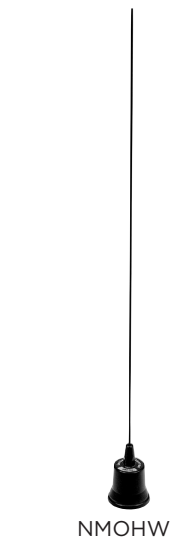
VHF DIRECT MOUNTS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly	Connector
OM150BCO	1/2 λ	144-174		3	200	Coil Only	17' RB-58A/U	PL-259
OM150CK	1/2 λ	144-174	0/2	51.75	200	Stainless	17' RB-58A/U	PL-259
PHW150BCO	1/2 λ	144-174	0/2	2.5	200	Coil Only	Order Separately	
PHW150C	1/2 λ	144-174	0/2	56.5	200	Stainless	Order Separately	



VHF MAGNETIC MOUNTS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly	Connector
MSTFME	Tunable 1/4 λ	144-965	0/2	21	50	Black	12' RG-174	FME Crimp



VHF 220 MHz

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly/Mount
NMO220BCO	5/8 λ	220-225	3/5.2	2.5	200	Coil Only	Order Separately
NMO220B	5/8 λ	220-225	3/5.2	30	200	Black	Order Separately
NMO220C	5/8 λ	220-225	3/5.2	30	200	Stainless	Order Separately
NMO220HWBCO	1/2 λ	220-225		3	200	Coil Only	Order Separately
NMO220CHW	1/2 λ	220-225	0/2	30	200	Stainless	Order Separately

The most commonly used cable assembly/mount is the NMOKHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

NOTE: Larsen springs (SPRING or SPRINGB) can be added to most mobile antennas.



UHF 406-512 MHz

UHF COILS/WHIPS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly
LMUHFBASEB	Base Only	406-512		2	200	Coil Only	Order Separately
LM406C	5/8 over 1/2 λ	406-420	3.5/5.6	33	200	Stainless	Order Separately
LM440C	5/8 over 1/2 λ	440-460	3.5/5.6	33	200	Stainless	Order Separately
LM450C	5/8 over 1/2 λ	450-470	3.5/5.6	33	200	Stainless	Order Separately
NMO4063CS	5/8 λ	406-430	3/5.14	19	200	Stainless	Order Separately
NMO4303CS	5/8 λ	430-450	3/5.14	19	200	Stainless	Order Separately
NMO4503CS	5/8 λ	450-470	3/5.14	19	200	Stainless	Order Separately
NMO4703CS	5/8 λ	470-490	3/5.14	19	200	Stainless	Order Separately
NMO4903CS	5/8 λ	490-512	3/5.14	19	200	Stainless	Order Separately
NMO406B	5/8 over 1/2 λ	406-420	3.5/5.6	33	200	Black	Order Separately
NMO406C	5/8 over 1/2 λ	406-420	3.5/5.6	33	200	Stainless	Order Separately
NMO420B	5/8 over 1/2 λ	420-440	3.5/5.6	33	200	Black	Order Separately
NMO420C	5/8 over 1/2 λ	420-440	3.5/5.6	33	200	Stainless	Order Separately
NMO440B	5/8 over 1/2 λ	440-460	3.5/5.6	33	200	Black	Order Separately
NMO440C	5/8 over 1/2 λ	440-460	3.5/5.6	33	200	Stainless	Order Separately
NMO450B	5/8 over 1/2 λ	450-470	3.5/5.6	33	200	Black	Order Separately
NMO450C	5/8 over 1/2 λ	450-475	3.5/5.6	33	200	Stainless	Order Separately
NMO470C	5/8 over 1/2 λ	470-490	3.5/5.6	33	200	Stainless	Order Separately
NMO490B	5/8 over 1/2 λ	490-512	3.5/5.6	33	200	Black	Order Separately
NMO490C	5/8 over 1/2 λ	490-512	3.5/5.6	33	200	Stainless	Order Separately
NMO406HWBCO	Base Only	406-420		2.5	200	Coil Only	Order Separately
NMO406CHW	1/2 λ Collinear	406-420	3.4/5.5	35.5	200	Stainless	Order Separately
NMO420CHW	1/2 λ Collinear	420-440	3.4/5.5	35.5	200	Stainless	Order Separately
NMO440CHW	1/2 λ Collinear	440-460	3.4/5.5	35.5	200	Stainless	Order Separately
NMO450HWBCO	Base Only	420-512		2.5	200	Coil Only	Order Separately
NMO450CHW	1/2 λ Collinear	450-470	3.4/5.5	35.5	200	Stainless	Order Separately
NMOQBASE1B	Base Only	Whip Size .070		2	200	Coil Only	Order Separately
NMOQBASE2B	Base Only	Whip Size .100		2	200	Coil Only	Order Separately
NMOQBASE3B	Base Only	Whip Size .125		2	200	Coil Only	Order Separately
NMOUHBBASEB	Base Only	Whip Size .100		2	200	Coil Only	Order Separately
NMOQW406	1/4 λ	406-430	0/2	7	200	Stainless	Order Separately
NMOQW450	1/4 λ	450-470	0/2	7	200	Stainless	Order Separately
NMOWB406BCO	Wide Band Coil	406-512		2.5	200	Coil Only	Order Separately
NMOWB406C	Wide Band	406-430	3.4/5.5	35.5	200	Stainless	Order Separately
NMOWB430C	Wide Band	430-455	3.4/5.5	35.5	200	Stainless	Order Separately
NMOWB450C	Wide Band	450-475	3.4/5.5	35.5	200	Stainless	Order Separately
NMOWB470C	Wide Band	470-495	3.4/5.5	35.5	200	Stainless	Order Separately
NMOWB490C	Wide Band	490-515	3.4/5.5	35.5	200	Stainless	Order Separately



The most commonly used cable assembly/mount is the NMOKHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

NOTE: Larsen springs (SPRING or SPRINGB) can be added to most mobile antennas.



UHF 406-512 MHz

UHF GLASS MOUNT

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly/ Mount	Connector
KG406O/S	1/2 λ	406-420	0/2	15	100	Black	Order Separately	
KG406UD	1/2 λ	406-420	0/2	15	100	Black	14' RG-58/U	No Conn
KG406UDPL	1/2 λ	406-420	0/2	15	100	Black	14' RG-58/U	PL-259
KG420O/S	1/2 λ	420-440	0/2	15	100	Black	Order Separately	
KG420UDPL	1/2 λ	420-440	0/2	15	100	Black	14' RG-58/U	PL-259
KG450O/S	1/2 λ	450-470	0/2	15	100	Black	Order Separately	
KG450UD	1/2 λ	450-470	0/2	15	100	Black	14' RG-58/U	No Conn
KG450UDPL	1/2 λ	450-470	0/2	15	100	Black	14' RG-58/U	PL-259
KG470O/S	1/2 λ	470-490	0/2	15	100	Black	Order Separately	
KG470UD	1/2 λ	470-490	0/2	15	100	Black	14' RG-58/U	No Conn
KG490O/S	1/2 λ	490-512	0/2	15	100	Black	Order Separately	
KG490UD	1/2 λ	490-512	0/2	15	100	Black	14' RG-58/U	No Conn
KGUHFUDI/S	Inside Coupler Only 406-512				100		14' RG-58/U	No Conn



UHF LOW PROFILE

Model	Frequency (MHz)	Gain (dBd/dBi)	Size H x DIA (In)	Power Rating (Watts)	Color	Cable Assembly/ Mount
LP406NMO	406-420	0/2	1.5 x 4.5	100	Black	Order Separately
LP406NMOW	406-420	0/2	1.5 x 4.5	100	Black	Order Separately
LP420NMO	416-430	0/2	1.5 x 4.5	100	Black	Order Separately
LP420NMOW	416-430	0/2	1.5 x 4.5	100	Black	Order Separately
LP450NMO	450-470	0/2	1.5 x 4.5	100	Black	Order Separately
LP450NMOW	450-470	0/2	1.5 x 4.5	100	Black	Order Separately
LP470NMO	470-490	0/2	1.5 x 4.5	100	Black	Order Separately
LP470NMOW	470-490	0/2	1.5 x 4.5	100	Black	Order Separately
LP490NMO	490-512	0/2	1.5 x 4.5	100	Black	Order Separately
LP490NMOW	490-512	0/2	1.5 x 4.5	100	Black	Order Separately
LPT450NMO	450-470	0/2	4.5 x 1.5	100	Black	Order Separately



The most commonly used cable assembly/mount is the NMOKHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

UHF 406-512 MHz

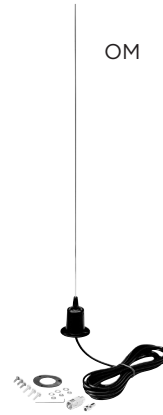
UHF DIRECT MOUNTS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Size (In)	Power Rating (Watts)	Whip Color	Cable Assembly	Connector
LP450	Low Profile	450-470	0/2	1.25H x 5.25D	100	N/A	17' RG-58/U	No Conn
OM406BCO	1/2 λ	406-440		4	100	Coil Only	17' RG-58A/U	PL259
OM450BCO	1/2 λ	440-512		4	100	Coil Only	17' RG-58A/U	PL259
OM406CK	1/2 λ Collinear	406-420	3.4/5.5	35.5	100	Stainless	17' RG-58A/U	PL259
OM420CK	1/2 λ Collinear	420-440	3.4/5.5	35.5	100	Stainless	17' RG-58A/U	PL259
OM450CK	1/2 λ Collinear	450-470	3.4/5.5	35.5	100	Stainless	17' RG-58A/U	PL259
OM470CK	1/2 λ Collinear	470-490	3.4/5.5	35.5	100	Stainless	17' RG-58A/U	PL259

LP Direct Mount



OM



UHF MAGNETIC MOUNTS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly	Connector
MSTFME	Tunable 1/4 λ	144-965	0/2	21	50	Black	12' RG-174	FME Crimp
MSTBNCFT	Tunable 1/4 λ	144-965	0/2	21	50	Black	12' RG-174	TNC

MST



UHF STEALTH BLADES

Stealth Blade antennas have a gain of 2.14 dBi, a maximum power of 3 Watts and linear polarization.

Model	Frequency (MHz)	Bandwidth % @1.5/2.1	Dimensions L x W (In)	Coax	Connector
SB450FME12	450-470	20/30	10" x 0.75"	12' RG-316	FME

SB



MULTI BAND VHF/UHF

MULTI BAND COILS/WHIPS

Model	Type	Frequency (MHz)	Gain (dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly
NMO2/70BCO	Dual Band Coil	144-148 / 440-450			100	Coil Only	Order Separately
NMO2/70B	VHF: Center Loaded 1/2 λ	144-148	3.8	34.5	100	Black	Order Separately
	UHF: Collinear	440-450	5.2				
NMO2/70SH	VHF: Center Loaded 1/2 λ	144-148	2.14	19	200	Stainless	Order Separately
	UHF: Center Loaded 3/4 λ	440-450	4				
NMO150/450C	VHF: Center Loaded 1/2 λ	150-154	3.8	37.25	100	Stainless	Order Separately
	UHF: Collinear	450-460	5.2				
NMO150/450/800	Tri Band	150-165 / 450-470 / 806-940	2.14	16.5	100	Black	Order Separately



NMO2/70



NMO2/70SH



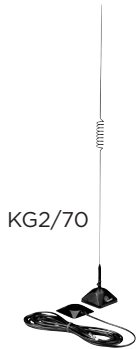
NMO150/450C



NMO150/450/800

MULTI BAND VHF/UHF GLASS MOUNT

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly	Connector
KG2/70CXPL	1/2 λ Collinear	144-148 / 442-448	0/2	32.75	100	Black	14' RG-58A/U	PL-259
KG2/70CXFME	1/2 λ Collinear	144-148 / 442-448	0/2	32.75	100	Black	14' RG-58A/U	FME

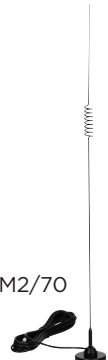


KG2/70

MULTI BAND VHF/UHF MAGNETIC MOUNTS

Model	Type	Frequency (MHz)	Gain (dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly	Connector
MM2/70PL	VHF: Center Loaded 1/4 λ	144-148	2	21	50	Black	12' RG-58A/U	PL-259
	UHF: Center Loaded 3/4 λ	442-448	4					

MM2/70

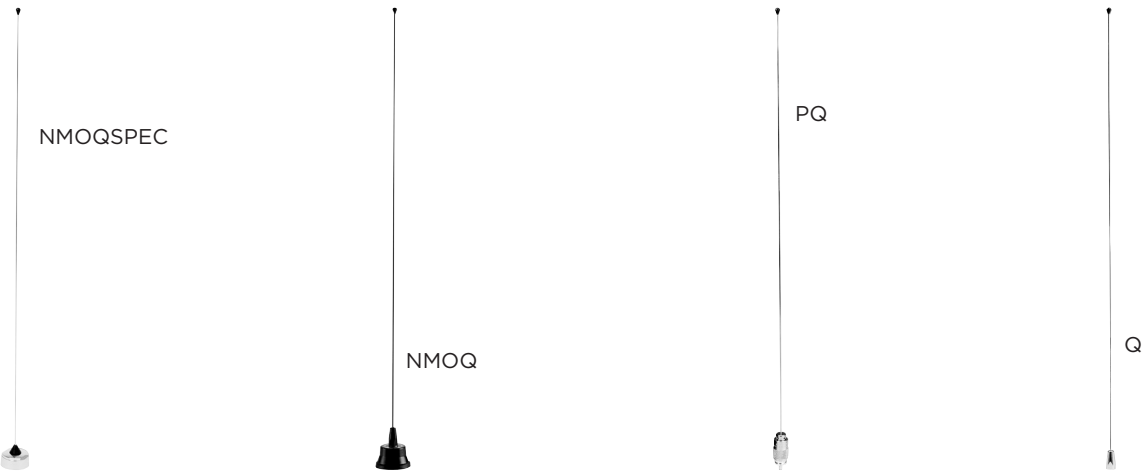


The most commonly used cable assembly/mount is the NMOKHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

TUNABLE 1/4 WAVE 136-960 MHz

TUNABLE 1/4 WAVE COILS/WHIPS

Model	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly
NMOQSPEC	136-960	0/2	22	200	Stainless	Order Separately
NMOQSPECB	136-960	0/2	22	200	Black	Order Separately
NMOQC	136-512	0/2	23	200	Stainless	Order Separately
NMOQB	136-512	0/2	23	200	Black	Order Separately
PQ	136-512	0/2	22	200	Stainless	Order Separately
Q	136-512	0/2	22	200	Stainless	Order Separately
QB	136-512	0/2	22	200	Black	Order Separately



TUNABLE 1/4 WAVE MAGNETIC MOUNTS

Model	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly	Connector
MSTFME	144-965	0/2	21	50	Black	12' RG-174	FME Crimp



The most commonly used cable assembly/mount is the NMOKHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

700/800/900/1850 MHz

700/800/900/1850 MHZ COILS/WHIPS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly and Connector
LM800	5/8 over 1/2 λ	806-866	3.5/5.6	14.5	200	Stainless	Order Separately
LM825	5/8 over 1/2 λ	824-896	3.5/5.6	14.5	200	Stainless	Order Separately
LM900	5/8 over 1/2 λ	890-960	3.5/5.6	14.5	200	Stainless	Order Separately
NMOQW700	1/4 λ	740-806	0/2	3	200	Stainless	Order Separately
NMOQW800	1/4 λ	806-896	0/2	3	200	Stainless	Order Separately
NMOQW900	1/4 λ	890-970	0/2	3	200	Stainless	Order Separately
NMQSPEC800B	1/4 λ	806-896	0/2	4	200	Black	Order Separately
NMQSPEC900B	1/4 λ	890-970	0/2	4	200	Black	Order Separately
NMQ700B	1/4 λ	740-806	0/2	4.5	200	Black	Order Separately
NMQ800B	1/4 λ	806-896	0/2	4.5	200	Black	Order Separately
NMQ900B	1/4 λ	890-960	0/2	4.5	200	Black	Order Separately
NMOSPEC800	5/8 over 1/4 λ	806-866	3.3/5.4	13.5	200	Stainless	Order Separately
NMOSPEC825	5/8 over 1/4 λ	824-896	3.3/5.4	13.5	200	Stainless	Order Separately
NMOSPEC900	5/8 over 1/4 λ	890-960	3.3/5.4	13.5	200	Stainless	Order Separately
NMO3HD800B	5/8 over 1/4 λ	806-866	3.3/5.4	13.75	200	Black	Order Separately
NMO3HD825B	5/8 over 1/4 λ	824-896	3.3/5.4	13.75	200	Black	Order Separately
NMO3HD800B	5/8 over 1/4 λ	890-960	3.3/5.4	13.75	200	Black	Order Separately
NMO3E700B	5/8 over 1/4 λ	740-806	3.3/5.4	13.5	200	Black	Order Separately
NMO3E800B	5/8 over 1/4 λ	806-866	3.3/5.4	13.5	200	Black	Order Separately
NMO3E825B	5/8 over 1/4 λ	824-896	3.3/5.4	13.5	200	Black	Order Separately
NMO3E900B	5/8 over 1/4 λ	890-960	3.3/5.4	13.5	200	Black	Order Separately
NMO700	5/8 over 1/2 λ	740-806	3.5/5.6	12.75	200	Stainless	Order Separately
NMO800	5/8 over 1/2 λ	806-866	3.5/5.6	12.75	200	Stainless	Order Separately
NMO825	5/8 over 1/2 λ	824-896	3.5/5.6	12.75	200	Stainless	Order Separately
NMO900	5/8 over 1/2 λ	890-960	3.5/5.6	12.75	200	Stainless	Order Separately
NMO800B	5/8 over 1/2 λ	806-866	3.5/5.6	12.75	200	Black	Order Separately
NMO825B	5/8 over 1/2 λ	824-896	3.5/5.6	12.75	200	Black	Order Separately
NMO900B	5/8 over 1/2 λ	890-960	3.5/5.6	12.75	200	Black	Order Separately
NMO5T800B	5/8 over 5/8 over 1/4 λ	806-866	5/7.2	18	200	Black	Order Separately
NMO5T825B	5/8 over 5/8 over 1/4 λ	824-896	5/7.2	18	200	Black	Order Separately
NMO5T900B	5/8 over 5/8 over 1/4 λ	890-960	5/7.2	18	200	Black	Order Separately
NMO5E825B	5/8 over 5/8 over 1/4 λ	824-896	5/7.2	19	200	Black	Order Separately
NMO5E900B	5/8 over 5/8 over 1/4 λ	890-960	5/7.2	19	200	Black	Order Separately
Q800	1/4 λ	806-866	0/2	3.5	200	Stainless	Order Separately
Q900	1/4 λ	890-960	0/2	3.5	200	Stainless	Order Separately



The most commonly used cable assembly/mount is the NMOKHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

700/800/900/1850 MHz

700/800/900/1850 MHZ COILS/WHIPS (CONTINUED)

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly	Conn
NMOC/P3E	5/8 over 1/4 λ	824-960 1850-1990	1.9/4	4.7	10	Black	Order Separately	
NMOC/P3EUD	5/8 over 1/4 λ	824-960 1850-1990	1.9/4	4.7	10	Black	17' RG-58/U	No Conn
NMOC/P3EUDFME	5/8 over 1/4 λ	824-960 1850-1990	1.9/4	4.7	10	Black	17' RG-58/U	FME
NMOC/P3EUDMPL	5/8 over 1/4 λ	824-960 1850-1990	1.9/4	4.7	10	Black	17' RG-58/U	MPL
NMOC/P3EUDSMA	5/8 over 1/4 λ	824-960 1850-1990	1.9/4	4.7	10	Black	17' RG-58/U	SMA
NMOC/P3EUDTNC	5/8 over 1/4 λ	824-960 1850-1990	1.9/4	4.7	10	Black	17' RG-58/U	TNC



NMOC/P3E



KG3E



KGI

700/800/900/1850 MHZ GLASS MOUNT

Optimum glass thickness 0.138" through 0.158"

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Height (In)	Rating (Watts)	Whip Color	Cable Assembly	Connector
KG3E825UD	5/8 over 1/2 λ	806-896	3/5.14	13	60	Black	14' RG-58/U	No Conn
KG3E825UDFME	5/8 over 1/2 λ	806-896	3/5.14	13	60	Black	14' RG-58/U	FME
KG3E825UDMPL	5/8 over 1/2 λ	806-896	3/5.14	13	60	Black	14' RG-58/U	MPL
KG3E825UDTNC	5/8 over 1/2 λ	806-896	3/5.14	13	60	Black	14' RG-58/U	TNC
KG3E900UD	5/8 over 1/2 λ	890-960	3/5.14	13	60	Black	14' RG-58/U	No Conn
KG3E900UDFME	5/8 over 1/2 λ	890-960	3/5.14	13	60	Black	14' RG-58/U	FME
KG3E900UDMPL	5/8 over 1/2 λ	890-960	3/5.14	13	60	Black	14' RG-58/U	MPL
KG3E825O/S	5/8 over 1/2 λ	806-896	3/5.14	13	60	Black	Outside Coupler Only	
KG3E900O/S	5/8 over 1/2 λ	890-960	3/5.14	13	60	Black	Outside Coupler Only	
KGI825	1/4 λ Dipole	806-896	0/2		60	Black	14' RG-58/U	No Conn
KGC/P3EUD	Cellular: Collinear PCS: 5/8 over 5/8 over 1/2 λ	824-896 1850-1990	3/5.14 3/5.14	13	7	Black	15' RB-58/U	No Conn
KGC/P3EUDFME	Cellular: Collinear PCS: 5/8 over 5/8 over 1/2 λ	824-896 1850-1990	3/5.14 3/5.14	13	7	Black	15' RB-58/U	FME

The most commonly used cable assembly/mount is the NMOKHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

700/800/900/1850 MHz

700/800/900/1850 MHZ NMO MOUNT LOW PROFILE

Model	Frequency (MHz)	Gain (dBd/dBi)	Size H x DIA (In)	Power Rating (Watts)	Color	Cable Assembly
LP800NMO	806-960	0/2	1.5 x 4.5	100	Black	Order Separately
LP800NMOW	806-960	0/2	1.5 x 4.5	100	White	Order Separately
LPT700/800NMO	740-866	0/2	3.25 x 1.5	100	Black	Order Separately
LPT800/900NMO	806-960	0/2	3.25 x 1.5	100	Black	Order Separately
LPT825/19NMOHF	806-960 1710-2170 2400	.8/3 .8/3 1.9/4	3 x 1.75	10	Black	Order Separately Requires NMOHF Mount
SLPT698/960NMO	698-960	2.35/4.5	3 x 1.5	10	Black	Order Separately
SLPT698/2170NMOHF	698-960 1710-2170 2400-2700	2.35/4.5 3.45/5.6 1.85/4	3 x 1.75	10	Black	Order Separately Requires NMOHF Mount

LP



LPT



SLPT NMO



700/800/900/1850 MHZ DIRECT MOUNTS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Size (In)	Power Rating (Watts)	Color	Cable Assembly	Connector
LP800	Low Profile	806-960	0/2	1.25H x 5.25D	100	Black	17' RG-58/U	No Conn
LPT698/2700DMN		698-960 1710-2170 2300-2700	3.1/4.4/5	1.6 x 4.2		Black	Order Separately	N Female
OM800UD	5/8 over 1/2 λ	806-866	1/3.2	15.5 H	60	Black	14' RG-58/U	No Conn
OM800UDMPL	5/8 over 1/2 λ	806-866	1/3.2	15.5 H	60	Black	14' RG-58/U	MPL
OM800UDTNC	5/8 over 1/2 λ	806-866	1/3.2	15.5 H	60	Black	14' RG-58/U	TNC
OM825UD	5/8 over 1/2 λ	824-896	1/3.2	15.5 H	60	Black	14' RG-58/U	No Conn
OM825UDMPL	5/8 over 1/2 λ	824-896	1/3.2	15.5 H	60	Black	14' RG-58/U	MPL
OM825UDTNC	5/8 over 1/2 λ	824-896	1/3.2	15.5 H	60	Black	14' RG-58/U	TNC
OM900UD	5/8 over 1/2 λ	890-960	1/3.2	15.5 H	60	Black	14' RG-58/U	No Conn
SLPT698/869DMN	Low Profile	698-869	2.35/4.5	3 x 1.5	10	Black	Order Separately	N Female
SLPT806DMN	Low Profile	806-960	2.35/4.5	3 x 1.5	10	Black	Order Separately	N Female
SLPT698/2170DMN	Low Profile	Cellular: 698-960 PCS: 1710-2170 ISM: 2400-2700	2.35/4.5 3.45/5.6 1.85/4	3 x 1.75	10	Black	Order Separately	N Female

OM



SLPT DM



LP Direct Mount



LPT

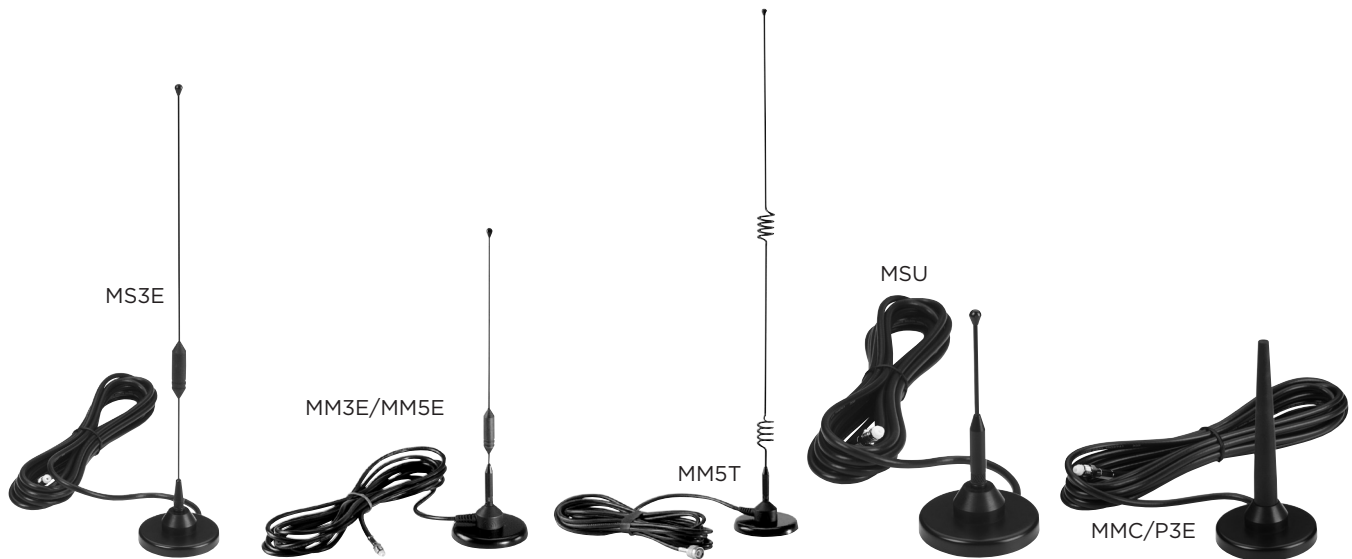


The most commonly used cable assembly/mount is the NMOHFUD (27 MHz to 6 GHz) with 17' of UD (RG-58/U Dual Shield).

700/800/900/1850 MHz

700/800/900/1850 MHZ MAGNETIC MOUNTS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Cable Assembly	Connector
MS3E800FME	5/8 over 1/2 λ	806-896	3.5/5.6	13	60	Black	12' RG-58A/U	FME
MS3E800MPL	5/8 over 1/2 λ	806-896	3.5/5.6	13	60	Black	12' RG-58A/U	MPL
MS3E800TNC	5/8 over 1/2 λ	806-896	3.5/5.6	13	60	Black	12' RG-58A/U	TNC
MS3E900MPL	5/8 over 1/2 λ	890-960	3.5/5.6	13	60	Black	12' RG-58A/U	MPL
MS3E900TNC	5/8 over 1/2 λ	890-960	3.5/5.6	13	60	Black	12' RG-58A/U	TNC
MS3E900SMA	5/8 over 1/2 λ	890-960	3.5/5.6	13	40	Black	12' RG-58A/U	SMA
MM5E900BNC	5/8 over 5/8 over 1/4 λ	890-960	5/7.12	16.5	60	Black	12' RG-58A/U	BNC
MM5T900SMA	5/8 over 5/8 over 1/4 λ	890-960	5/7.2	18	60	Black	12' RG-58A/U	SMA
MM5T900SMARP	5/8 over 5/8 over 1/4 λ	890-960	5/7.2	18	60	Black	12' RG-58A/U	SMA RP
MSU800FME	1/2 λ	806-896	0/2	4	40	Black	12' RG-58A/U	FME
MSU900FME	1/2 λ	890-960	0/2	4	40	Black	12' RG-58A/U	FME
MMC/P3EFME	5/8 over 1/4 λ	824-960 1850-1990	1.9/4 1.9/4	5	7	Black	12' RG-58/U	FME
MMC/P3EMPL	5/8 over 1/4 λ	824-960 1850-1990	1.9/4 1.9/4	5	7	Black	12' RG-58/U	MPL
MMC/P3ETNC	5/8 over 1/4 λ	824-960 1850-1990	1.9/4 1.9/4	5	7	Black	12' RG-58/U	TNC
MMC/P3ESMA	5/8 over 1/4 λ	824-960 1850-1990	1.9/4 1.9/4	5	7	Black	12' RG-58/U	SMA



GPS DIRECT MOUNTS

GPSDM



GPS single band direct mount antennas have the following specifications:

Frequency:	1575.4	Polarization:	Right-Hand Circular
Gain:	5 dBic	Coax:	17' RG-174
LNA Gain:	28 dB $\pm$ 2 dB	Voltage:	5 V DC
Pattern:	Hemispherical	Color:	Black
Mounting:	Direct Feed 5/8" hole	Size:	.7" H x 2.5" Dia

Model	Connector	Color
GPSDM02	MCX	Black
GPSDM04	MMCX	Black
GPSDM06	SMB	Black
GPSDM08	SMA	Black

GPS COMBI WHIP DIRECT MOUNTS

GPSCW



GPSCW3E



GPS combi whip direct mount antennas have the following specifications:

LNA Gain:	26 dB $\pm$ 2 dB	Pattern:	Hemispherical / Omni
Polarization:	Right-Hand Circular / Vertical	Coax:	16.4' RG-174 / 16.4' RG-174
Mounting:	Direct Feed 5/8" hole	Voltage:	5 V DC
Color:	Black	Base Size:	2" W x 2.3" L x 0.7" H

Model	Frequency (MHz)	Gain (dBi/dBic)	Whip Length (in)	Connector
GPSCW1502	136-174 / 1575.42	2.14/5	22	SMA/SMB
GPSCW4501	406-512 / 1575.42	2.14/5	6.25	SMA/SMA
GPSCW4502	406-512 / 1575.42	2.14/5	6.25	SMA/SMB
GPSCW3E8001	806-896 / 1575.42	5/5	11.5	SMA/SMA
GPSCW3E8003	806-896 / 1575.42	5/5	11.5	FME/SMA

GPS DIRECT MOUNT

GPSDM26B0500



GPS single band direct mount antennas have the following specifications:

Frequency:	1575.4	Polarization:	Right-Hand Circular
Gain:	4 dBic	Coax:	LMR-195
LNA Gain:	25 dB $\pm$ 2 dB	Voltage:	3V-5V DC
Pattern:	Hemispherical	Color:	GRAY (PANTONE 427)
Mounting:	Direct Feed 5/8" hole	Size:	.87" H x 1.97" Dia

Model	Cable Length	Connector
GPSDM26B0500	19.68" (500mm)	SMA

GPS

GLASS MOUNT

GPS glass mount single band antennas have the following specifications:

Frequency:	1575.4 MHz	Gain:	1.5 dBi
Pattern:	Hemispherical	LNA Gain:	26 dB $\pm$ 2 dB
Polarization:	Right-Hand Circular	VSWR:	1.5:1
Mounting:	Double Sided Tape	Voltage:	3V or 5V DC

Model	Size H x L x W (In)	Color	Cable	Connector
GPSGMSMA	.2 x 3 x 1.2	Black	16.4' RG-174	SMA
GPSGMSMB	.2 x 3 x 1.2	Black	16.4' RG-174	SMB



GPSGM

GPS LOW PROFILE SINGLE BAND

GPS low profile single band antennas have the following specifications:

Frequency:	1575.4 MHz	Gain:	5 dBic
Pattern:	Hemispherical	LNA Gain:	28 dB $\pm$ 2 dB
Polarization:	Right-Hand Circular	VSWR:	2.0:1
Mounting:	NMO Mount	Voltage:	5V DC

Model	Size H x D (In)	Color	Cable	Connector
GPSNMO01	1.3 x 2.9	White	Order Separately	Order Separately
GPSNMO02	1.3 x 2.9	Black	Order Separately	Order Separately
GPSNMO07	1.3 x 2.9	White	17' RG-58/U	SMB
GPSNMO08	1.3 x 2.9	Black	17' RG-58/U	SMB
GPSNMO09	1.3 x 2.9	White	17' RG-58/U	SMA
GPSNMO10	1.3 x 2.9	Black	17' RG-58/U	SMA



GPS LOW PROFILE

GPS LTE DIRECT MOUNTS

Model	Frequency (MHz)	Gain (dBd/dBi)	Polarization	VSWR	Mounting	Voltage	Size H x Dia (In)	Cable	Conn
GPSDM700/2500FFS	698-960/1710-2170/2300-2700	.9/3	Linear Vertical	2.0:1	3/4" Hole	3 or 5	3.5 x 4.16	17' RG-58	FME
	2400-2485/5150-5850	3.9/6	Linear Vertical					17' RG-58	FME
	1575.42	5 dBic	RHCP					17' RG-174	SMA

MODEL	LTE		WIFI		GPS	
	CABLE	CONN.	CABLE	CONN.	CABLE	CONN.
GPSDM700/5800SSS	17' RG-58	SMA	17' RG-58	SMA	17' RG-174	SMA
GPSDM700/5800GGT	17' RG-58	SMA	17' RG-58	RP-SMA	17' RG-174	SMA
GPSDMW700/5800SSS	17' RG-58	SMA	17' RG-58	SMA	17' RG-174	SMA



GPSDM700/2500FFS

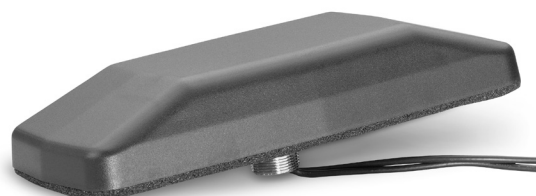
GPSDM700/5800SSS

GPS & CELLULAR COMBO DIRECT MOUNT

Direct mount antennas have the following specifications:

Frequency: 824-960 / 1710-2170 / 1575.4 MHz
VSWR: <2.0:1
Gain: 2 dBi / 2 dBi / 5 dBic
LNA Gain: 26 dB $\pm$ 2 dB
Pattern: Omni / Omni / Hemispherical
Voltage: 3V or 5V DC
Polarization: Vertical / Vertical / Right-Hand Circular
Coax: 16.4' RG-174 / 16.4' RG-174
Mounting: Direct Feed 3/4" hole

Model	Size		Color	Connector
	L x W x D (In)			
GPSCP00	7.6 x 3.4 x 1.3		Black	TNC/SMA
GPSCP01	7.6 x 3.4 x 1.3		White	No Conn
GPSCP02	7.6 x 3.4 x 1.3		Black	No Conn/SMA
GPSCP03	7.6 x 3.4 x 1.3		White	No Conn/SMA
GPSCP04	7.6 x 3.4 x 1.3		Black	No Conn/SMB
GPSCP05	7.6 x 3.4 x 1.3		White	No Conn/SMB
GPSCP06	7.6 x 3.4 x 1.3		Black	SMA/SMA
GPSCO07	7.6 x 3.4 x 1.3		White	SMA/SMA
GPSCP08	7.6 x 3.4 x 1.3		Black	MPL/SMA
GPSCP09	7.6 x 3.4 x 1.3		White	MPL/SMA
GPSCP10	7.6 x 3.4 x 1.3		Black	TNC/BNC
GPSCWCP00	3.9 x 2.3 x 3.2		Black	TNC/SMA
GPSCWCP01	3.9 x 2.3 x 3.2		Black	No Conn/SMA
GPSCWCP02	3.9 x 2.3 x 3.2		Black	No Conn/SMB
GPSCWCP03	3.9 x 2.3 x 3.2		Black	SMA/MPL
GPSCWCP04	3.9 x 2.3 x 3.2		Black	SMA/SMA
GPSCWCP05	3.9 x 2.3 x 3.2		Black	TNC/TNC



GPSCP



GPSCW



GPS DIRECT MOUNT

NMOHFGPS mount have the following specifications:

Frequency:	1575.4 - 1576.4 MHz	Gain:	5 dBic
Polarization:	Right-Hand Circular / Vertical	LNA Gain:	26 dB $\pm$ 2 dB
Cable:	16.4' RG-174 (GPS)	VSWR:	Less than 2:1
	16.4' RG-58 (NMOHF)	Voltage:	3V or 5V DC
Size:	.5 x 2 x 4.5	Color:	Black
Mounting:	5/8" Hole		

Model	Connectors	Color
NMOHFGPSFMENOCNN	FME/No Connector	Black
NMOHFGPSFMESMA	FME/SMA	Black
NMOHFGPSNOCNN	No Connectors	Black
NMOHFGPSSMASMA	SMA/SMA	Black

NOTE: Specifications listed refer to GPS performance. Additional antenna specifications are dependent on the antenna mounted on the NMO side.



GPS Single
Band Mag
Mount

GPS MAGNETIC MOUNT

GPS single band magnetic mount antennas have the following specifications:

Frequency:	1575.4 MHz	Gain:	5 dBic
Pattern:	Hemispherical	LNA Gain:	26 dB $\pm$ 2 dB
Polarization:	Right-Hand Circular	VSWR:	Less than 2:1
Cable:	17' RG-174	Voltage:	5V DC

Model	Size	Color	Connector
	H x L x W (In)		
GPS0002	0.5 x 1.75 x 1.5	Black	MCX
GPS0006	0.5 x 1.75 x 1.5	Black	SMB
GPS0008	0.5 x 1.75 x 1.5	Black	No Conn
GPS0010	0.5 x 1.75 x 1.5	Black	SMA
GPS0012	0.5 x 1.75 x 1.5	Black	BNC



GPS Multi
Band Mag
Mount

GPS MAGNETIC MOUNT

GPS & Cellular combo magnetic mount antennas have the following specifications:

Frequency:	824-960 / 1710-2170 / 1575.4 MHz
Gain:	2 dBi / 2 dBi / 5 dBic
LNA Gain:	26 dB $\pm$ 2 dB
Pattern:	Omni / Omni / Hemispherical
Polarization:	Vertical / Vertical / Right-Hand Circular
VSWR:	Less than 2:1
Cable:	17' RG-174
Voltage:	3V or 5V DC

Model	Size	Color	Connector
	H x L x W (In)		
GPSCPMM00	1.3 x 7.6 x 3.4	Black	TNC/SMA
GPSCPMM02	1.3 x 7.6 x 3.4	Black	No Conn/SMA

GPS & CELLULAR COMBO STEALTH BLADES ADHESIVE MOUNT

Model	Frequency (MHz)	Gain	Dimensions L x W x D (In)	Polarization	Voltage	Color	Coax	Conn
GPSSB800/2170FS	806 - 960	0 dBi	5.4 x 1.5 x .6	Linear Vert	3V or 5V DC	Black	16.4' RG-174	FME
	1710 - 2170	0 dBi		RHCP			16.4' RG-174	SMA
	1575.4	26 (LNA)						



GPS DIRECT MOUNT

GPS single band direct mount antennas have the following specifications:

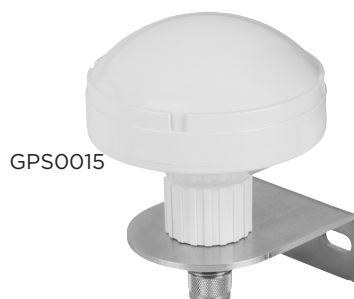
Frequency:	1575.4	Polarization:	Right-Hand Circular
Gain:	4 dBic	Coax:	LMR-195
LNA Gain:	25 dB $\pm$ 2 dB	Voltage:	3V-5V DC
Pattern:	Hemispherical	Color:	Gray (Pantone 427)
Mounting:	Direct Feed 5/8" hole	Size:	.87" H x 1.97" Dia

Model	Cable Length	Connector	Color
GPSDM26B0500	19.68" (500mm)	SMA	Gray (Pantone 427)



GPS TIMING ANTENNA

Model	Frequency (MHz)	LNA Gain (3 2 dB)	Dimensions H x W (In)	Polarization	Voltage	Color	Mounting	Connector
GPS0015	1575.42 $\pm$ 1.023	25	4 x 4.5	RHCP	4V-15V DC	White	Bracket	N Male



OUTDOOR VEHICULAR: GPS, LTE, 4G, BROADBAND

NOTE: All NMO mount antennas listed in this catalog section require the NMOHF-style (high frequency 27 MHz - 6 GHz) mount.

PUBLIC SAFETY AND WIFI BROADBAND ANTENNAS

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	VSWR	Cable Assembly
EF2405NMO	Elevated Feed	2400-2500	2.9/5	16	<1.5:1	Order Separately
EF4905NMO	Elevated Feed	4900-5000	2.9/5	12	<1.5:1	Order Separately
NMO4E4900B	Elevated Feed	4900-5350	1.9/4	4.5	2:1	Order Separately
NMO4E5350B	Elevated Feed	5350-5925	4.9/4	4.5	2:1	Order Separately
NMO5E2400B	Collinear	2400-2500	2.95	8.5	1.5:1	Order Separately



EF



NMO4E



NMO5E

PANTHER SERIES - DIRECT MOUNTS

Model	Application	Frequency (MHz)	Gain (dBi)	VSWR	Mount	Size (in.)	Cable	Conn.
GPSMB501 (5 CABLES)	LTE1, LTE2	698-960 1695-2170 2300-2700 2900-3600	4 (LB) 5 (UB)	1.5:1	7/8" Hole (M22 Nut)	6.5x6x3	17' RG-58	SMA SMA
	WiFi1, WiFi2	2400-2500 4900-5900	4.5 / 5	1.5:1	7/8" Hole (M22 Nut)	6.5x6x3	17' RG-58	RP-SMA RP-SMA
	GPS, GLONASS	1564-1610	1.5 (dBic)	1.5:1	7/8" Hole (M22 Nut)	6.5x6x3	17' RG-174	SMA
GPSMB301 (3 CABLE)	LTE, LTE2	698-960 1695-2170 2300-2700 2900-3600	6 (LB) 5.5 (UB)	1.7:1	7/8" Hole (M22 Nut)	6.5x6x3	17' RG-58 17' RG-58	SMA SMA
	GPS, GLONASS	1575-1609	1.5 (dBic)	1.7:1	7/8" Hole (M22 Nut)	6.5x6x3	17' RG-174	SMA



GPSMB501

NOTE: GPSMBMM is a magnetic base for GPSMB501 and GPSMB301.

New GPSLPMB401 Low profile multi-band available soon. LTE1, LTE2, WiFi, GPS.

GPS LTE WI-FI MULTI BAND DIRECT MOUNTS

Model	Frequency (MHz)	Gain (dBd/dBi)	Polarization	VSWR	Mounting	Voltage	Size H x Dia (In)	Cable	Conn
GPSDM700/2500FFS (3 CABLE)	698-960/1710-2170/2300-2700	.9/3	Linear Vertical	2.0:1	3/4" Hole	3 or 5	3.5 x 4.16	17' RG-58	FME
	2400-2485/5150-5850	3.9/6	Linear Vertical					17' RG-58	FME
	1575.42	5 dBic	RHCP					17' RG-174	SMA

MODEL	LTE		WIFI		GPS	
	CABLE	CONN.	CABLE	CONN.	CABLE	CONN.
GPSDM700/5800SSS	17' RG-58	SMA	17' RG-58	SMA	17' RG-174	SMA
GPSDM700/5800GGT	17' RG-58	SMA	17' RG-58	RP-SMA	17' RG-174	SMA
GPSDMW700/5800SSS	17' RG-58	SMA	17' RG-58	SMA	17' RG-174	SMA



GPSDM700/2500
GPSDM700/5800

OUTDOOR VEHICULAR: LTE, 4G, BROADBAND

NOTE: All NMO mount antennas listed in this catalog section require the NMOHF-style (high frequency 27 MHz - 6 GHz) mount.

700/800/900/1850 MHZ LOW PROFILE

Model	Frequency (MHz)	Gain (dBd/dBi)	Mount	Size H x DIA (In)	Power Rating (Watts)	Color	Cable Assembly
LPT825/19NMOHF	Cellular: 806-960 PCS: 1710-2170 ISM: 2400	.8/3 .8/3 1.9/4	NMOHF	3 x 1.75	10	Black	Order Separately
LPT2400NMOHF	2400-2500	2.9/5	NMOHF	3 x 1.75	10	Black	Order Separately
SLPT698/2170NMOHF	LTE: 698-960 PCS: 1710-2170 ISM: 2400-2700	2.35/4.5 3.45/5.6 1.85/4	NMOHF	3 x 1.75	10	Black	Order Separately
SLPT2400NMOHF	2400-2500	2.15/4.3	NMOHF	2.6 x 1.5	10	Black	Order Separately
SLPT4900NMOHF	4900-5900	3.35/5.5	NMOHF	2.6 x 1.5	10	Black	Order Separately
SLPT2400/5900NMOHF	2400-2500 4900-5900	2.15/4.3 3.35/5.5	NMOHF	2.6 x 1.5	10	Black	Order Separately
SLPT698/2170DMN	LTE: 698-960 PCS: 1710-2170 ISM: 2400-2700	2.35/4.5 3.45/5.6 1.85/4	Direct (N Female)	3 x 1.75	10	Black	Order Separately
SLPT2400DMN	2400-2500	2.15/4.3	Direct (N Female)	2.6 x 1.5	10	Black	Order Separately
SLPT4900DMN	4900-5900	3.35/5.5	Direct (N Female)	2.6 x 1.5	10	Black	Order Separately
SLPT2400/5900DMN	2400-2500 4900-5900	2.15/4.3 3.35/5.5	Direct (N Female)	2.6 x 1.5	10	Black	Order Separately



WIFI, BROADBAND STEALTH BLADES

Stealth Blade antennas have a gain of 2.14 dBi, a maximum power of 3 Watts and linear polarization

Model	Frequency (MHz)	Type	Dimensions L x W (In)	Color	Coax	Connector
SB24003	2400-2500	Dipole	3 x .75	Black	3' RG-174	No Conn
SB24006	2400-2500	Dipole	3 x .75	Black	6' RG-174	No Conn
SB2400SMA3	2400-2500	Dipole	3 x .75	Black	3' RG-174	SMA
SB2400SMA6	2400-2500	Dipole	3 x .75	Black	6' RG-174	SMA
SB2400SMB3	2400-2500	Dipole	3 x .75	Black	3' RG-174	SMB
SB2400SMB6	2400-2500	Dipole	3 x .75	Black	6' RG-174	SMB
SB2400MMCX3	2400-2500	Dipole	3 x .75	Black	3' RG-174	MMCX
SB2400MMCX6	2400-2500	Dipole	3 x .75	Black	6' RG-174	MMCX



OUTDOOR ANTENNAS

LTE, 4G, BROADBAND RADOME OMNIS

Radome Enclosure: Pultruded Fiberglass (UV Protected)

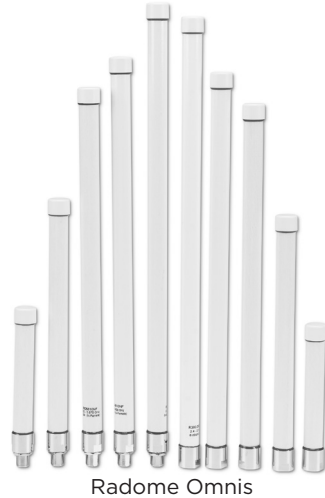
VSWR: 2.0:1

Power Rating: 20 Watts

Ingress Protection: IP67

Polarization: Vertical

Suggested mounting brackets for N Female connectors are FB2BRACKET or FB3BRACKET. See Page 45 for FB brackets.



Radome Omnis

Model	Frequency (MHz)	Gain (dBd/dBi)	Length (In)	Connector
RO17102NM	1710-2170	2	4.5	N Female
RO2404NM	2400-2500	1.9/4	11.5	N Male
RO2406NF	2400-2500	3.9/6	11.5	N Female
RO2406NM	2400-2500	3.9/6	11.5	N Male
RO2408NF	2400-2500	5.9/8	20	N Female
RO2408NM	2400-2500	5.9/8	20	N Male
RO2408NFD (downtilt)	2400-2500	5.9/8	20	N Female
RO2408NMD (downtilt)	2400-2500	5.9/8	20	N Male
RO2408NFU (uptilt)	2400-2500	5.9/8	20	N Female
RO2408NMU (uptilt)	2400-2500	5.9/8	20	N Male
RO4910NF	4940-4990	7.8/10	18	N Female
RO4910NM	4940-4990	7.8/10	18	N Male
RO5206NF	5150-5350	3.9/6	6.75	N Female
RO5410NF	5470-5725	7.8/10	16.5	N Female
RO5210NF	5150-5350	7.8/10	16.5	N Female
RO5210NM	5150-5350	7.8/10	16.5	N Male
RO5410NM	5470-5725	7.8/10	16.5	N Male
RO5805NF	5150-5825	2.8/5	6.75	N Female
RO5805NM	5150-5825	2.8/5	6.75	N Male
RO5806NF	5725-5875	3.9/6	6.75	N Female
RO5810NF	5725-5875	7.8/10	16.5	N Female
RO5810NM	5725-5875	7.8/10	16.5	N Male
RO8063/21704NM	806-960 1710-2170	3 4	16.5	N Male
RO8061/21702NM	806-960 1710-2170	1 2	16.5	N Male
W5030	2400-2500 5150-5875	4 6	6.8	N Male
RO3ISMNM	430-440 860-930	2 2.5	21.3	N Male

YAGIS

Construction: Fully Welded Elements

VSWR: 2.0:1

Power Rating: 300 Watts

Wind Load:

Feed Connection:

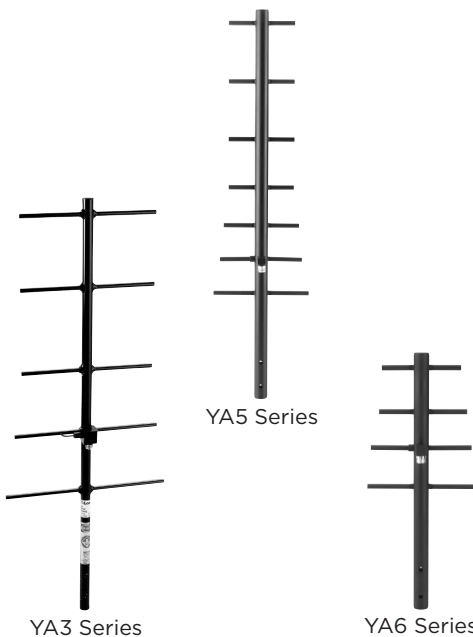
Mounting Hardware:

100 mph

N Female

Included

Model	# of Elements	Frequency (MHz)	Gain (dBd/dBi)	Length (In)
YA3406WN	5	406-430	9/11	42.25
YA3450WN	5	450-470	9/11	36.25
YA5740W	7	740-806	9/11	32.75
YA6740W	4	740-806	6/8	19.25
YA5800W	7	806-866	9/11	31.25
YA6800W	4	806-866	6/8	17.5
YA5825W	7	824-896	9/11	31.25
YA6825	4	824-896	6/8	17.5
YA5900W	7	890-960	9/11	30
YA6900W	4	890-960	6/8	17.5



YA3 Series

YA5 Series

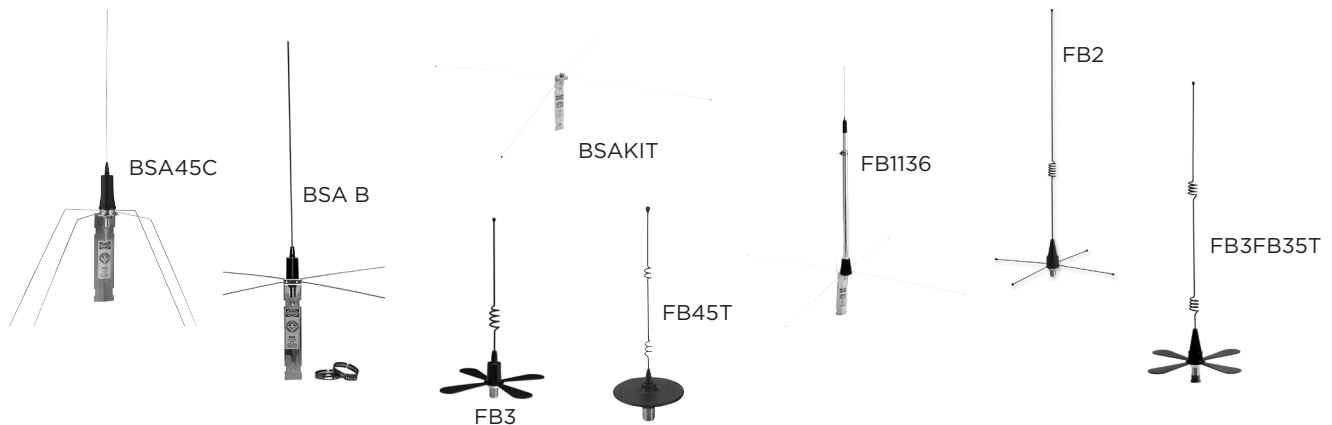
YA6 Series

BASE STATION ANTENNAS

OMNI BASE STATION ANTENNAS

Omni Base Station part numbers ending in "WA" do not include mounting hardware. All others include the appropriate FB2BRACKET or FB3BRACKET for mounting. See Page 45 for FB brackets.

Model	Type	Frequency (MHz)	Gain (dBd/dBi)	Max Height (In)	Power Rating (Watts)	Whip Color	Feed Connection
BSA45C	Base Loaded 1/4 λ	45-50	0/2	51.75	200	Stainless	N Female
BSA118B	5/8 λ	118-121	3/5.2	64	200	Black	UHF Female
BSA132B	5/8 λ	131-135	3/5.2	54.5	200	Black	UHF Female
BSA150B	5/8 λ	144-174	3/5.2	51.75	200	Black	UHF Female
BSA150C	5/8 λ	144-174	3/2.5	51.75	200	Black	UHF Female
BSA220C	5/8 λ	200-225	3/5.2	33.75	200	Stainless	UHF Female
BSA406C	5/8 over 1/2 λ	406-420	3.5/5.6	32	200	Stainless	UHF Female
BSA440C	5/8 over 1/2 λ	440-460	3.5/5.6	32	200	Stainless	UHF Female
BSA450C	5/8 over 1/2 λ	450-470	3.5/5.6	32	200	Stainless	UHF Female
BSAKIT	Base Station Ground Plane Kit				200		UHF Female
FB1136	5/8 over 1/2 λ	136-230	3.5/5.6	96	200	Stainless	UHF Female
FB2406	5/8 over 1/4 λ	406-420	3.2/5.4	32.5	200	Black	N Female
FB2450	5/8 over 1/4 λ	450-470	3.2/5.4	32.5	200	Black	N Female
FB2406W/A	5/8 over 1/4 λ	406-420	3.2/5.4	32.25	200	Black	N Female
FB2420W/A	5/8 over 1/4 λ	420-440	3.2/5.4	32.25	200	Black	N Female
FB2450W/A	5/8 over 1/4 λ	450-470	3.2/5.4	32.25	200	Black	N Female
FB3800	5/8 over 1/4 λ	806-866	3.2/5.4	16	150	Black	N Female
FB3825	5/8 over 1/4 λ	824-896	3.2/5.4	16	150	Black	N Female
FB3740WA	5/8 over 1/4 λ	740-806	3.2/5.4	16	150	Black	N Female
FB3800WA	5/8 over 1/4 λ	806-866	3.2/5.4	16	150	Black	N Female
FB3825WA	5/8 over 1/4 λ	824-896	3.2/5.4	16	150	Black	N Female
FB35T800	5/8 over 5/8 over 1/4 λ	806-866	3.2/5.4	32	150	Black	N Female
FB35T825	5/8 over 5/8 over 1/4 λ	824-896	3.2/5.4	32	150	Black	N Female
FB35T800WA	5/8 over 5/8 over 1/4 λ	806-866	5/7.2	32	150	Black	N Female
FB35T825WA	5/8 over 5/8 over 1/4 λ	824-896	5/7.2	32	150	Black	N Female
FB900	5/8 over 1/4 λ	890-960	3.2/5.4	16	150	Black	N Female
FB3900WA	5/8 over 1/4 λ	890-960	3.2/5.4	16	150	Black	N Female
FB35T900	5/8 over 5/8 over 1/4 λ	890-960	5/7.2	23	150	Black	N Female
FB35T900WA	5/8 over 5/8 over 1/4 λ	890-960	5/7.2	23	150	Black	N Female
FB45T2400	5/8 over 5/8 over 1/4 λ	2400-2485	5/7.2	16.5	100	Black	N Female
FB45T2400WA	5/8 over 5/8 over 1/4 λ	2400-2485	5/7.2	9	100	Black	N Female



DAS SOLUTIONS

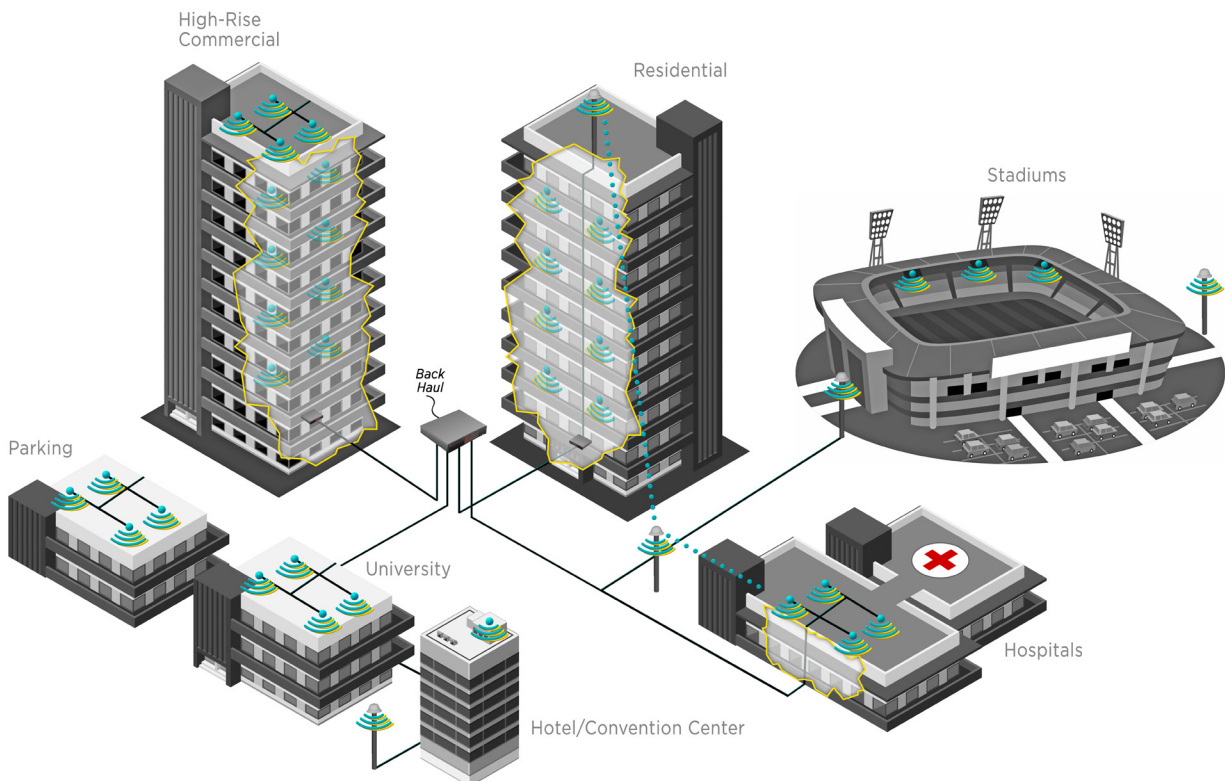
From Your **PIMinator™** Low-Pim Solutions Expert

Distributed Antenna Systems: As consumers switch to a lifestyle of constant internet connection, the demand on wireless networks increases dramatically. The carrier networks are switching from one of coverage to capacity. Previously coverage came via cellular base stations with tower-mounted antennas with vast reach to many consumers. The future networks need to fulfill capacity demands through bringing those networks closer to the consumer, with greater data throughput reaching customers in smaller coverage areas. To meet these very high data rates it's critical to have high quality innovative components such as Pulse Electronics PIMinator™ line of in-building low-PIM antennas, splitters and accessory components.

The DAS Network

DAS networks come in a variety of configurations enabled by the Pulse PIMinator™ family of antennas, splitters and accessory components. These networks contain a series of antennas precisely configured to match the areas within a building that require boosted wireless coverage. By splitting the wireless signal to multiple antennas each serving smaller coverage areas, the ideal, high-capacity network is created; while minimizing dead coverage areas. The DAS network can be configured for a single wireless carrier, or multiple carriers; and can often support public safety radio requirements. These DAS networks can be owned by the network operator, owned by the building owner, or even a 3rd party. A neutral host configuration can accommodate multiple wireless carriers on a single system. The DAS system is typically fed by a macro or micro base station radio through DAS Interface units, bi-directional amplifiers, fiber distribution units, and coaxial splitters and directional couplers. A DAS network is different from a small cell network in that the Small Cell radio is often integrated with the antenna. This distinction is evolving as new products come onto the market. As a critical component vendor, Pulse works closely with DAS system designers and wireless carriers to provide the necessary innovative antennas, RF splitters and accessory solutions.

Pulse PIMinator Antennas, Splitters and Accessories Improve a Typical DAS Network



EXTERNAL ANTENNAS

DAS PRODUCTS



Clarity Series - Transparent Antennas and Reflector



Reflector

PIMINATOR™ PRODUCT FAMILY

Ultra-Thin Clear Ceiling Antennas ¹	Pulse Part Number	Freq. (MHz)	PIM Rating, dBc	Connector / Cable
Clarity Family	DASUTCC500NF	608-960/1695-2200/2300-2700MHz, Antenna Only	-155	N Female / 500mm
Clarity Family	DASUTCCR500NF	608-960/1695-2200/2300-2700MHz, with Reflector	-155	N Female / 500mm
Clarity Family	DASUTCC500MD	608-960/1695-2200/2300-2700MHz, Antenna Only	-155	4.1-9.5 Mini-Din Female / 500mm
Clarity Family	DASUTCCR500MD	608-960/1695-2200/2300-2700MHz, with Reflector	-155	4.1-9.5 Mini-Din Female / 500mm
Clarity Family	DASUTCC5004310	608-960/1695-2200/2300-2700MHz, Antenna Only	-155	4.3 -10 Female / 500mm
Clarity Family	DASUTCCR5004310	608-960/1695-2200/2300-2700MHz, with Reflector	-155	4.3 -10 Female / 500mm
Clarity Family	DASUTCCACC1	Reflector	N/A	N/A

1. Contact Pulse/Larsen for optional opaque white ultra-thin ceiling antennas.

2. Contact Pulse/Larsen for additional information on the Reflector.



Antennas	Pulse Part Number	Freq. (MHz)	PIM Rating (dBc)	Connector / Cable
MIMO Ceiling Mount	DASLTE500NFMIMO	698-960/1710-2170/2300-2700/4900-5900	-155	N Female / 500mm (2x)
MIMO Ceiling Mount	DAS500MDMIMO	698-960/1710-2170/2300-2700/4900-5900	-155	4.1-9.5 Mini-Din Female / 500mm
SISO Ceiling Mount	DASLTE500NF	698-960/1710-2170/2300-2700/4900-5900	-155	N Female / 500mm
SISO Ceiling Mount	DASLTENF	698-960/1710-2170/2300-2700/4900-5900	-155	N Female / 500mm
SISO Ceiling Mount	DASLTEMINIDIN	698-960/1710-2170/2300-2700/4900-5900	-155	4.1-9.5 Mini-Din Female / 500mm
SISO Ceiling Mount	DASLTEDIN	698-960/1710-2170/2300-2700/4900-5900	-155	DIN 7-16



RF Splitters	Pulse Part Number	Freq. (MHz)	PIM Rating (dBc)	Connector
Power Splitter, 2-Way, 300W	DASSPLIT2WDIN	698-2700	-155	DIN
Power Splitter, 2-Way, 300W	DASSPLIT2WNF	698-2700	-155	N Female
Power Splitter, 3-Way, 300W	DASSPLIT3WNF	698-2700	-155	N Female
Power Splitter, 4-Way, 300W	DASSPLIT4WNF	698-2700	-155	N Female

ACCESSORIES				
Items	Pulse Part Number	Function	Material, Size	Comments
Above-Ceiling Antenna Holder	DASACHOLDER	Support antennas above ceiling tile rails.	Polycarbonate; 618x192x122 mm (24.4x7.6x4.4 inch)	Low PIM; Rigid Construction
Clarity Installation Adapter	DASCLINSERT	Blind-hole installation of Clarity Antennas.	94 mm dia (3.7 inch dia)	Low PIM Installation
PIM-Blocker Absorber	DASACABSORBER	System PIM Reduction	500x500x50mm (19.7x12.7x1.97 inch)	Up to 30dB PIM Improvement

Above-Ceiling Antenna Holder



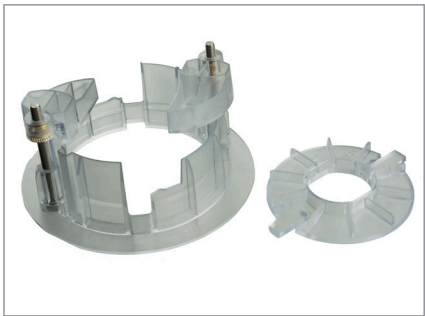
Above-Ceiling Antenna Holder
(Shown with Antenna Installed)



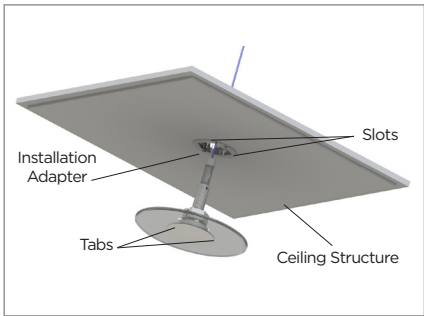
DAS PIM-Blocker Absorber



Clarity Installation Adapter



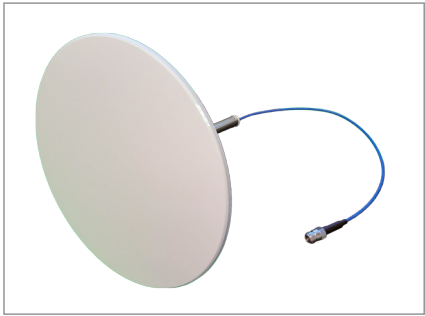
Typical Assembly using the
Clarity Installation Adapter



PUBLIC SAFETY DAS PRODUCTS					
Clarity-Pearl Series	Pulse Part Number	FREQ MHz	PIM Rating dBc	Connector	Color
Public Safety DAS Antenna	PSUTWCNF	380-570; 698-960	N/A	N-Female	White

Note: Clarity family shown on page 42 also works great for many public safety installations that operate in the 700-960 Mhz bands.

Public Safety DAS Antenna



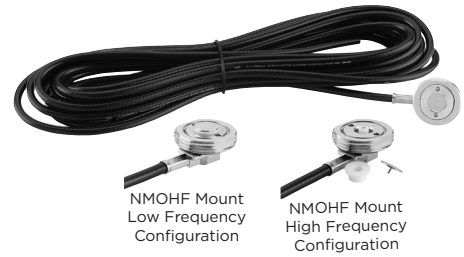
CABLE ASSEMBLIES/MOUNTS

All Larsen NMOHF (high frequency 27 MHz to 6 GHz) mounts convert from low frequency applications to high frequency applications and back by pulling or replacing the center pin and insulator.

NMOHF mounts require a 3/4" hole for mounting and include 17' of coax. NMOHF mounts accommodate roof surfaces from 0.1" to .03". NMOHFTHK (thick) mounts accommodates roof surfaces up to 1/2" thick.

NMO 3/4" HIGH FREQUENCY MOUNTS

Model	Coax	Connector
NMOKHFCX	CX (RG-58A/U)	No Conn
NMOKHFCXFME	CX (RG-58A/U)	FME CRIMP
NMOKHFCXMPL	CX (RG-58A/U)	MPL
NMOKHFCXPL	CX (RG-58A/U)	PL-259
NMOKHFDSD	DS (RG-58A/U Dual Shield)	No Conn
NMOKHFUD	UD (RG-58U Dual Shield)	No Conn
NMOKHFUDFME	UD (RG-58U Dual Shield)	FME
NMOKHFUDMPL	UD (RG-58U Dual Shield)	MPL
NMOKHFUDSMA	UD (RG-58U Dual Shield)	SMA
NMOKHFUDTNC	UD (RG-58U Dual Shield)	TNC
NMOKHF200SMAI	LMR200	SMA Installed



NMO 3/4" HIGH FREQUENCY MID-SIZE MOUNTS

Model	Coax	Connector
NMOKHFMIDCX	CX (RG-58A/U)	No Conn
NMOKHFMIDDS	DS (RG-58A/U Dual Shield, Low Loss)	No Conn
NMOKHFMIDUD	UD (RG-58U, Dual Shield)	No Conn

NMO 3/4" HIGH FREQUENCY THICK MOUNTS

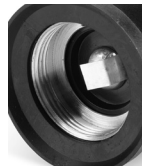
Model	Coax	Connector
NMOKHFCXTHK	CX (RG-58A/U)	No Conn
NMOKHFDSTHK	DS (RG-58A/U Dual Shield)	No Conn

If your antenna has a "tab" or "pin" connector, use the NMOHF mount in the low frequency configuration - leave the center pin and insulator in place as it arrives from the factory.

"Pin" connector



"Tab" connector



If your antenna has a "high frequency" (HF) connector, use the NMOHF mount in the high frequency configuration - remove the center pin and insulator.

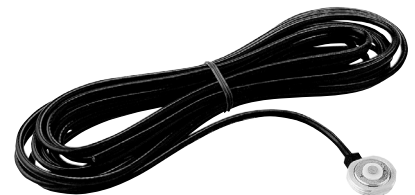
"HF" connector



NMO 3/4" STANDARD MOUNTS

NMO 3/4" standard mounts require a 3/4" hole for mounting and include 17' of coax.

Model	Coax	Connector
NMOKNOCONN	CX (RG-58A/U)	No Conn
NMOK	CX (RG-58A/U)	PL-259
NMOKFME	CX (RG-58A/U)	FME
NMOKMPL	CX (RG-58A/U)	MPL Crimp
NMOKDS	DS (RG-58A/U Dual Shield)	No Conn
NMOKDSFME	DS (RG-58A/U Dual Shield)	FME
NMOKUD	UD (RG-58U Dual Shield)	No Conn
NMOKUDFME	UD (RG-58U Dual Shield)	FME
NMOKUDPL	UD (RG-58U Dual Shield)	PL-259T
NMOKUDTNC	UD (RG-58U Dual Shield)	TNC



CABLE ASSEMBLIES/MOUNTS

All Larsen NMOHF (high frequency 27 MHz to 6 GHz) mounts convert from low frequency applications to high frequency applications and back by pulling or replacing the center pin and insulator.



NMO HIGH FREQUENCY MAGNETIC MOUNTS

NMOHF round magnetic mounts have the following specifications:

Size: 3.5" Diameter
Cable Length: 12'
Pull Strength: 80 lbs

Model	Coax	Connector
NMOMMRNOCONN	CX (RG-58A/U)	No Conn
NMOMMR	CX (RG-58A/U)	58FCP
NMOMMRFME	CX (RG-58A/U)	FME Crimp
NMOMMRPL	CX (RG-58A/U)	PL-259
NMOMMRMPL	CX (RG-58A/U)	MPL Crimp
NMOMMRTNC	CX (RG-58A/U)	TNC Crimp
NMOMMRBNC	CX (RG-58A/U)	BNC Crimp
NMOMMRN	CX (RG-58A/U)	N Crimp
NMOMMRDS	DS (RG-58A/U Dual Shield)	No Conn
NMOMMRDSFME	DS (RG-58A/U Dual Shield)	FME
NMOMMRDSMPL	DS (RG-58A/U Dual Shield)	MPL Crimp
NMOMMRDSN	DS (RG-58A/U Dual Shield)	N Crimp
NMOMMRDSSMA	DS (RG-58A/U Dual Shield)	SMA
NMOMMRDSSMAR/P	DS (RG-58A/U Dual Shield)	SMARP
NMOMMRDSPL	DS (RG-58A/U Dual Shield)	PL-259T
NMOMMRDSTNC	DS (RG-58A/U Dual Shield)	TNC
NMOMMT200NOCONN	LMR200	No Conn
NMOMMR200SMA	LMR200	SMA
NMOMMR200N	LMR200	N



NMO 3/8" THICK MOUNTS

NMO3/8" mounts have the following specifications:

Mounting: 3/4" hole
Mounting Surface: 0.15" to 0.22" thickness
Cable Length: 17'

Model	Coax	Connector
NMOKCX38THK	CX (RG-58A/U)	No Conn
NMOKUD38THK	DS (RG-58A/U Dual Shield)	No Conn

CABLE ASSEMBLIES/MOUNTS

All Larsen NMOHF (high frequency 27 MHz to 6 GHz) mounts convert from low frequency applications to high frequency applications and back by pulling or replacing the center pin and insulator.

GPS LTE DIRECT MOUNTS

NMOHFGPS mounts have the following specifications:

Frequency:	1575.4 - 1576.4 MHz	Gain:	5 dBic
Polarization:	Right-Hand Circular / Vertical	LNA Gain:	26 dB $\pm$ 2 dB
Cable:	16.4' RG-174 (GPS)	VSWR:	Less than 2:1
	16.4' RG-58 (NMOHF)	Size:	.5 x 2 x 4.5
Voltage:	3 or 5 V DC	Color:	Black
Mounting:	5/8" Hole		

Model	Connectors
NMOHFGPSFMENOCNN	FME/No Connector
NMOHFGPSFMESMA	FME/SMA
NMOHFGPSNOCNN	No Connectors
NMOHFGPSSMASMA	SMA/SMA

NOTE: Specifications listed refer to GPS performance. Additional antenna specifications are dependent on the antenna mounted on the NMO side.



NMO SQUARE MAGNETIC MOUNTS

NMO square magnetic mounts have the following specifications:

Size:	3.5" x 3"
Cable Length:	12'
Pull Strength:	50 lbs

Model	Coax	Connector
NMOMMNOCONN	CX (RG-58A/U)	No Conn
NMOMMMPL	CX (RG-58A/U)	MPL
NMOMM	CX (RG-58A/U)	58FCP
NMOMMBNC	CX (RG-58A/U)	BNC
NMOMMPL	CX (RG-58A/U)	PL-259
NMOMMFME	CX (RG-58A/U)	FME
NMOMMDSFME	DS (RG-58A/U Dual Shield)	FME



NMO TRUNK LID MOUNTS

NMO trunk lid mounts have the following specifications:

Size:	2.5" x 2"
Cable Length:	17'

Model	Coax	Connector
NMOTLP	CX (RG-58A/U)	PL-259
NMOTLPFME	CX (RG-58A/U)	FME



CABLE ASSEMBLIES/MOUNTS



LM MOUNTS

Model	Coax	Connector
LMKNOCONN	CX (RG-58A/U)	No Conn
LMKFME	CX (RG-58A/U)	FME
LMK	CX (RG-58A/U)	PL-259
LMKDS	DS (RG-58A/U Dual Shield)	No Conn
LMKDSFME	DS (RG-58A/U Dual Shield)	FME
LMKUD	UD (RG-58U Dual Shield)	No Conn
LMKUDFME	UD (RG-58U Dual Shield)	FME

LMMM MAGNETIC MOUNTS

LM magnetic mounts have the following specifications:

Size: 3.5" x 3" **Cable Length:** 12'
Type: 5/16" x 24 THDS **Pull Strength:** 50 lbs

Model	Coax	Connector
LMMMFME	CX (RG-58A/U)	FME Crimp
LMMMPL	CX (RG-58A/U)	MPL Crimp
LMMM	CX (RG-58A/U)	58FCP
LMMMBNC	CX (RG-58A/U)	BNC Crimp
LMMMPL	CX (RG-58A/U)	PL-259
LMMMDS	DS (RG-58A/U Dual Shield)	No Conn
LMMMSDFME	DS (RG-58A/U Dual Shield)	FME

LM TRUNK LID MOUNTS

LM trunk lid mounts have the following specifications:

Size: 2.5" x 2" **Cable Length:** 17'
Type: 5/16" x 24 THDS

Model	Coax	Connector
LMTLP	CX (RG-58A/U)	PL-259
LMTLPDS	DS (RG-58A/U Dual Shield)	Order Separately

PO MOUNTS

Model	Coax	Connector
POKNOCONN	CX (RG-58A/U)	No Conn

PO MAGNETIC MOUNTS

PO magnetic mounts have the following specifications:

Size: 3.5" x 3" **Cable Length:** 12'
Type: SO-239 Female **Pull Strength:** 50 lbs

Model	Coax	Connector
POMM	CX (RG-58A/U)	58FCP

CONNECTORS

SMA CONNECTORS



MODEL	DESCRIPTION
SMACP58	SMA Crimp Plug 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
SMACJ	SMA Crimp Jack 58/U
CABLE GROUP	58

BNC CONNECTORS



MODEL	DESCRIPTION
BNCCRIMP	BNC Crimp Plug 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
BNCCJ58	BNC Crimp Jack 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
BNC174	BNC Crimp Plug 174/U
CABLE GROUP	174

N CONNECTORS



MODEL	DESCRIPTION
NCRIMP	N Crimp Plug 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
N8	N Clamp Plug 8/U
CABLE GROUP	8



MODEL	DESCRIPTION
NCBJ58	N Crimp Blk Jack 58/U
CABLE GROUP	58

CONNECTORS

TNC CONNECTORS



MODEL	DESCRIPTION
TNCCRIMP	TNC Crimp Plug 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
TNC	TNC Clamp Plug 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
TNCCJ	TNC Crimp Jack 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
TNCCBJ	TNC Crimp Blk Jack 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
TNCAP	TNC Angle Plug 58/U
CABLE GROUP	58

CONNECTORS

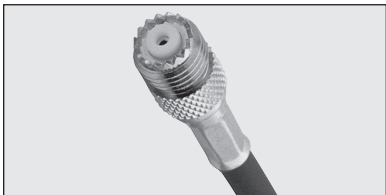
UHF CONNECTORS



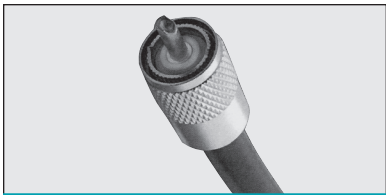
MODEL	DESCRIPTION
MPLCRIMP	M/UHF Crimp Plug 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
MPLCP	M/UHF Crimp Plug 174/U
CABLE GROUP	174



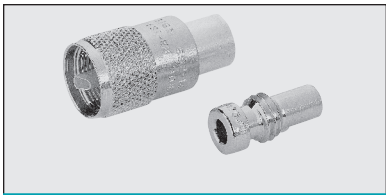
MODEL	DESCRIPTION
MPLCJ58	M/UHF Crimp Jack 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
PL2598PHN	UHF Solder Plug PL 259/U
CABLE GROUP	8



MODEL	DESCRIPTION
PL259T	UHF Solder Plug PL259/U Teflon & Silver UG175 adapter
CABLE GROUP	8/58



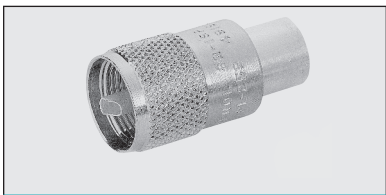
MODEL	DESCRIPTION
PL259	UHF Solder Plug PL259/U with UG 175 adapter
CABLE GROUP	8/58



MODEL	DESCRIPTION
PLCP	UHF Crimp Plug 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
58FCP	UHF FCP Plug 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
PL2598	UHF Solder Plug PL259/U, Teflon & Silver Plate
CABLEGROUP	8/58



MODEL	DESCRIPTION
UG175	UHF Reducing adapter 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
PL258	UHF adapter J/J



MODEL	DESCRIPTION
UHFBJJ	UHF bulkhead

CONNECTORS

FME CONNECTORS



MODEL	DESCRIPTION
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FMECP58	FME Crimp Plug 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
-------	-------------

FMECRIMP	FME Crimp Jack 58/U
CABLE GROUP	58



MODEL	DESCRIPTION
-------	-------------

FMECJ174	FME Crimp Jack 174/U
CABLE GROUP	174



MODEL	DESCRIPTION
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FB	FME adapter to BNC plug
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MODEL	DESCRIPTION
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FT	FME adapter to TNC plug
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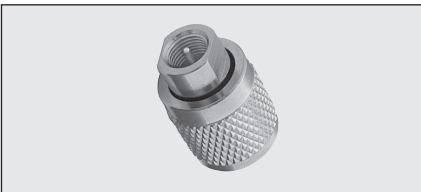
MODEL	DESCRIPTION
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FM	FME adapter to mini-UHF plug
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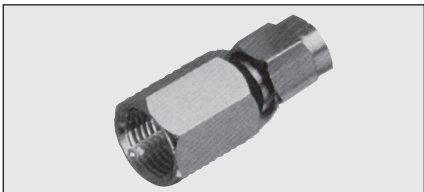
MODEL	DESCRIPTION
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FN	FME adapter to N plug
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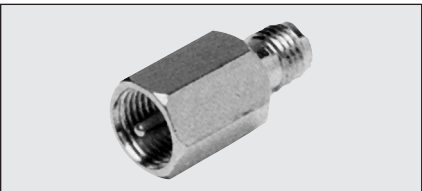
MODEL	DESCRIPTION
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FP	FME adapter to UHF plug
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MODEL	DESCRIPTION
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FSM	FME adapter to SMA plug
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MODEL	DESCRIPTION
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FSF	FME adapter to SMA jack
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PARTS/ACCESSORIES



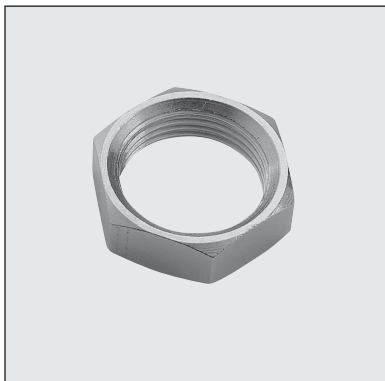
MODEL	DESCRIPTION
6 x 32	Set Screws
8 x 32	Set Screws



MODEL	DESCRIPTION
A4	BSA/BA/SO-239 to NMO mount adapter



MODEL	DESCRIPTION
BA	Bulkhead mount adapter with hardware



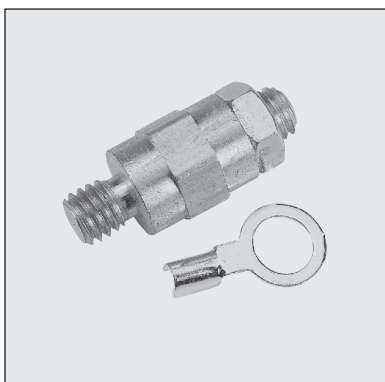
MODEL	DESCRIPTION
BAHEXNUT	Hex nut for BA



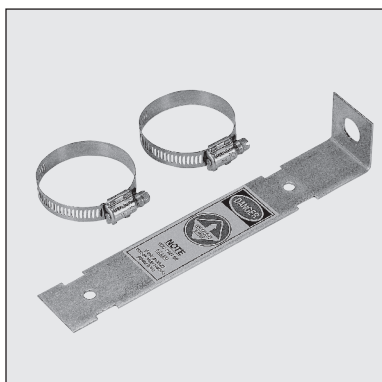
MODEL	DESCRIPTION
BALL1B	Black teardrop rod tip for W490, W540 tapered rods
BALL2B	Black teardrop rod tip for Q and NMOQ antennas
BALL3B	Black teardrop rod tip for .100 diameter non-tapered rods
BALL4	Rod tip WBQ800 antennas



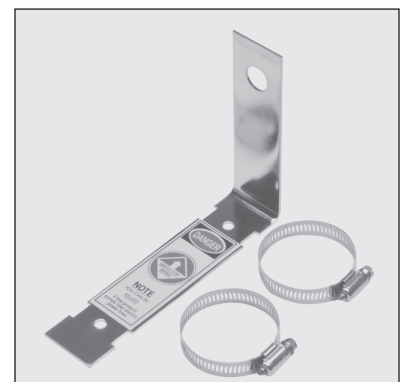
MODEL	DESCRIPTION
BANOHardware	Bulkhead mount adapter without hardware



MODEL	DESCRIPTION
BATTBOLT	Battery bolt with terminals, 3/8" ring leads



MODEL	DESCRIPTION
FB2BRACKET	Mounting bracket and hardware for FB2 series



MODEL	DESCRIPTION
FB3BRACKET	Mounting bracket and hardware for blade and round FB antennas

PARTS/ACCESSORIES



MODEL DESCRIPTION

GROMMETS Qty 100 plastic grommet secures/centers coax, 3/4" hole



MODEL DESCRIPTION

HP34 Plastic hole plug for 3/4" hole
HP38 Plastic hole plug for 3/8" hole



MODEL DESCRIPTION

HS1 3/4" hole saw fits 3/8" or larger drills



MODEL DESCRIPTION

HSBLADE Replacemeng blades for HS1



MODEL DESCRIPTION

KGREINSTALL KG glassmount reinstallation kit die cut tape



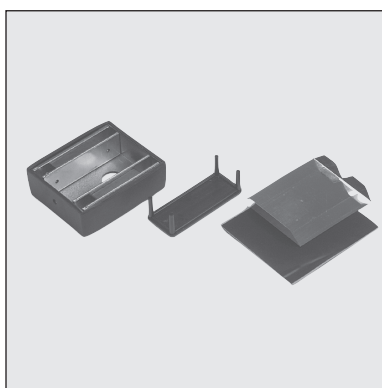
MODEL DESCRIPTION

KGREINSTALLDC KG glass mount reinstallation kit die cut tape



MODEL DESCRIPTION

KGSWIVEL.073 KG swivel mount assembly, .073 dia
KGSWIVEL.100 KG swivel mount assembly, .100 dia



MODEL DESCRIPTION

MM34 Rectangular mag mount housing, 3/4" hole



MODEL DESCRIPTION

NMOBRASSRING Nickel plated brass ring for NMO and NMOHF mounts

PARTS/ACCESSORIES



MODEL	DESCRIPTION
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NMOCAPB	Rain cap for NMO mount
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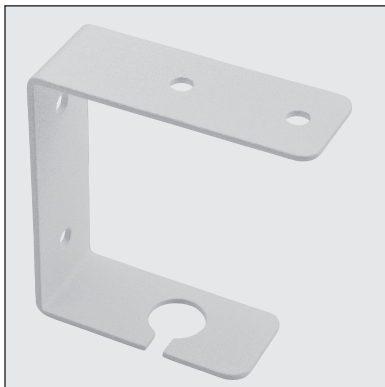
MODEL	DESCRIPTION
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HFCENTERCONTACT	NMOHF Center Contacts and Insulators - 10 each
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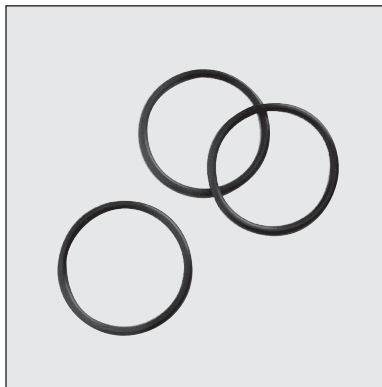
MODEL	DESCRIPTION
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NMOTEST1	Test adapter for NMO mount
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MODEL	DESCRIPTION
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OCBRACKET	3" Tall bracket for ceiling or wall mount, Cool Grey
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MODEL	DESCRIPTION
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OLMMNT	O ring for LM mount
ONMOANT	O ring for NMO antennas/bases
ONMOMNT	O ring for NMO mount
OPOMNT	O ring for PO mount



MODEL	DESCRIPTION
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QCONE.073	Chrome Q cone / Q base, .073 dia.
QCONE.100	Chrome Q cone / Q base, .100 dia.
QCONE.125	Chrome Q cone / Q base, .125 dia.



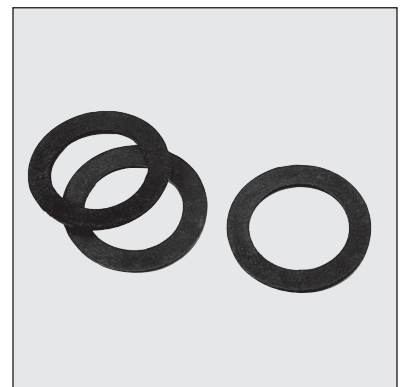
MODEL	DESCRIPTION
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QCONE.073B	Black Q cone / Q base, .073 dia.
QCONE.100B	Black Q cone / Q base, .100 dia.
QCONE.125B	Black Q cone / Q base, .125 dia.



MODEL	DESCRIPTION
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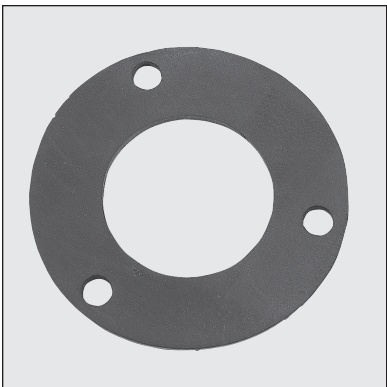
RGFB1ANT	Rubber gaskets for FBI antenna
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MODEL	DESCRIPTION
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RGNMOANT	Rubber gasket for NMO coil/bases
RGPOMNT	Rubber gasket for PO mounts

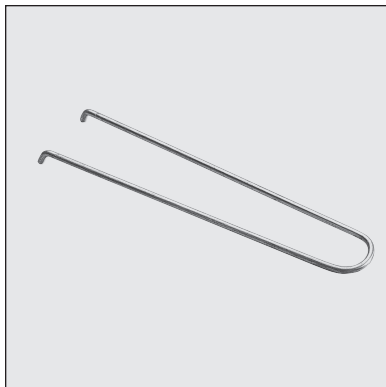
PARTS/ACCESSORIES



MODEL	DESCRIPTION
RGOMANT	Rubber gasket for OM bases



MODEL	DESCRIPTION
RGSS	Rubber SuperSeal gasket for MakroBlend® coils / bases



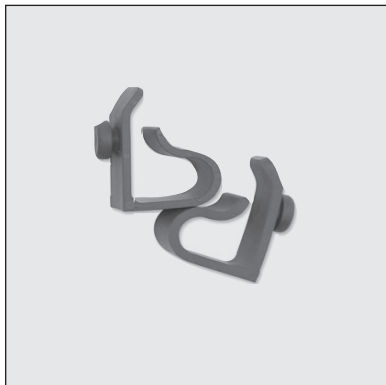
MODEL	DESCRIPTION
SPANNER	Spanner wrench for PO and NMOK mounts



MODEL	DESCRIPTION
SPRING	Chrome shock spring



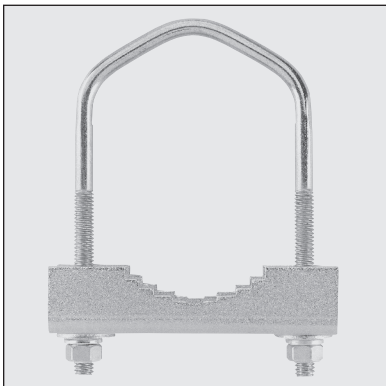
MODEL	DESCRIPTION
SPRINGB	Black shock spring



MODEL	DESCRIPTION
WACLIP	Mounting clips for WA700/2700 Series - 2 per package



MODEL	DESCRIPTION
WASUCTIONCUP	Suction cup mounts for WA700/2700 Series - 2 per package



MODEL	DESCRIPTION
YAGIKITHD	Mounting hardware for 2 1/2" pipe for YA3, YA5 and YA6 antennas

COAXIAL CABLES

COAX TYPES/PART NUMBERS



RG-174 - Small Diameter Coax

RG-174 is the industry standard for applications requiring a small diameter, highly flexible coax. Frequently used in mobile mag mount applications. Subject to higher losses at higher frequencies. Good performance for environmental variations but lower in overall ruggedness.

Recommended Applications

Mobile/Portable less than 900 MHz where flexibility and small diameter is important.

Larsen Part Number: RG-174
Stocking Lengths: 1000'/Spool
Cut to order



RG-213 - Stranded Bare Braid - Mil Spec QPI

This RG-8-sized cable uses a stranded center conductor with a polyethylene dielectric and PVC jacket. Built to Mil Specs this cable is used in all Larsen UHF/VHF products targeted for outdoor installation.

Recommended Applications

For lower frequency applications requiring high ruggedness.

Larsen Part Number: RG-213
Stocking Lengths: 500' or
1000'/Spool
Cut to order



RG-58U - Low Loss Dual Shield with Solid Center Conductor (UD)

This is Larsen's premium coax for 800 and 900 MHz applications. The solid center conductor (20 AWG) is easy to use with all connectors. Digital applications benefit from the 100% Duofoil aluminum shield. The shield is not glued to the dielectric making it easier to peel back for connector installation. The braid is 95% coverage. This cable is standard for most mounting kits over 800 MHz and can be special ordered with other frequencies. Uses standard RG-58 connectors.

Recommended Applications

For all applications at 800 MHz and above

Larsen Part Number: UD Coax
Stocking Lengths: 1000'/Spool
Cut to order



RG-58A/U - CX Standard Coax

The industry standard in quality, value-priced coax. Stranded center conductor offers good flexibility and long-life under most conditions. Not typically recommended for applications above 512 MHz due to higher losses. Uses standard RG-58 connectors.

Recommended Applications

General applications under 512 MHz. First choice for value priced coax.

Larsen Part Number: CX Coax
Stocking Lengths: 1000'/Spool
Cut to order



RG-58A/U - "Digi-Shield"™ Low Loss Braided Center

Employs two shields, consisting of a full aluminum/mylar wrap covered by a braid. This combination of shields, plus low-loss dielectric material and stranded center conductor makes an excellent choice for mobile applications. Performance features include low-loss and high flexibility. Uses standard RG-58 connectors.

Recommended Applications

Higher performance applications where lower loss and flexibly are important. Recommended for applications above 800 MHz.

Larsen Part Number: DS Coax
Stocking Lengths: 1000'/Spool
Cut to order

COAXIAL CABLES

COAX SPECIFICATION COMPARISON

TECHNICAL CHARACTERISTICS OF INSULATION AND JACKET COMPOUNDS

PVC	POLYETHYLENE (SOLID AND FOAM)	TEFLON
Sometimes referred to as vinyl or polyvinyl chloride. Extremely high or low temperature properties cannot be found in one formulation. Certain formulations may have -55° C to +105° C rating. Other common vinyls may have -20° C to +60° C. There are many formulations for the variety of different applications. The many varieties of PVC also differ in pliability and electrical properties. The price range can vary accordingly. Typical dielectric constant values can vary from 3.5 to 6.5.	A very good insulation in terms of electrical properties. Low dielectric constant, a stable dielectric constant over all frequencies, very high insulation resistance. In terms of flexibility, polyethylene can be rated stiff to very hard, depending on molecular weight and density — low-density being the most flexible, and high-density, high-molecular weight formulation being very hard. Moisture resistance is rated excellent. Correct Brown and Black formulations have excellent weather resistance. The dielectric constant is 2.3 for solid insulation and 1.64 for foam designs. Flame retardant formulations are available with dielectric constants ranging from about 1.7 for foam flame retardant to 2.58 solid flame retardant polyethylene.	This material has excellent electrical properties, temperature range and chemical resistance. It is not suitable where subjected to nuclear radiation and does not have good high voltage characteristics. FEP Teflon is extrudable in a manner similar to PVC and polyethylene. This means long wire and cable lengths are available. TFE Teflon is extrudable in hydraulic ram-type process. Lengths are limited due to amount of material in the ram, thickness of the insulation and preform size. TFE must be extruded over a silver- or nickel-coated wire. The nickel- and silver-coated designs are rated 260° C and 200° C maximum, respectively. The cost of Teflon is approximately 8 to 10 times more per pound than PVC compounds.

TYPE CATEGORY	LARSEN PART#	SUPPLIER	BELDEN PART#	DESCRIPTION	STANDARD LENGTH (FT)	WEIGHT (1000 LBS)	AWG STRANDING	WIRE DIAMETER
RG-174	RG174	Belden	8216	26 Solid Foil/Braid-Poly-Miniature Cable OD.054	1000	9	26	0.019 Bare Copper
RG-316	RG316	Belden	83284	26 Stranded Braid/Braid TEF Teflon	500/1000	10.5	26	0.020 Silver Coated Copper Covered Steel
RG-58A/U	CX	Belden	YR27132	20 Stranded Braid/Poly	1000	24	20	0.035 Tinned Copper
RG-58/U	UD	Belden	YR29741	20 Solid Foil/Braid-Poly-Low Loss-2500 MHz	1000	25	20 (solid)	Bare Copper
RG-58A/U	DS	Belden	YR22688	20 Stranded Foil/Braid-Low Loss	1000	21.6	20	0.037 Tinned Copper
RG-58/U	DT	Belden	YR29777	20 Solid Bare-Teflon	1000	30	20	0.031 BC
RG-213	RG213	Belden	8267	13 Stranded Bare Braid-Poly-Mil Spec Q.P.I.	500/1000	111.1	13	0.089 Bare Copper Covered Steel

COAXIAL CABLES

Comparative Properties of Insulation and Jacket

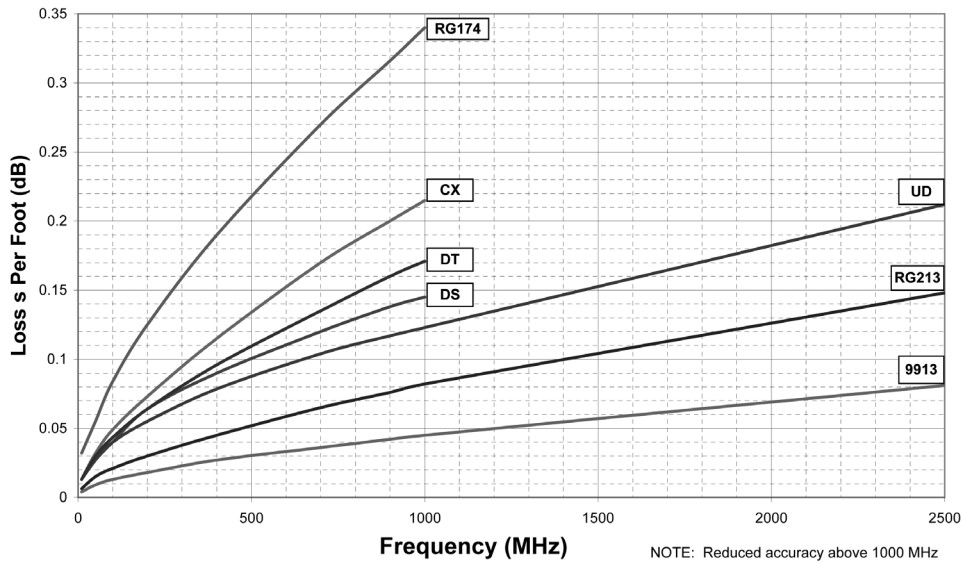
PVC Low-density Polyethylene		
Oxidation Resistance	E	E
Heat Resistance	G-E	G
Oil Resistance	F	G-E
Low Temperature Flexibility	P-G	E
Weather, Sun Resistance	G-E	E
Ozone Resistance	E	E
Abrasion Resistance	F-G	G
Electrical Properties	F-G	E
Flame Resistance	E	P
Nuclear Radiation Resistance	F	G-E
Water Resistance	F-G	E
Acid Resistance	G-E	G-E
Alkali Resistance	G-E	G-E
Gasoline, Kerosene, Etc. (Aliphatic Hydrocarbons) Resistance	P	G-E
Benzol, Toluol, Etc., (Aromatic Hydrocarbons) Resistance	P-F	P
Degreaser Solvents (Halogenated Hydrocarbons) Resistance	P-F	G
Alcohol Resistance	G-E	E
Underground Burial	P-G	G

P = Poor F = Fair G = Good E = Excellent

Nominal Temperature Range/Insulating and Jacketing Compounds

Compound	Normal Low	Normal High	Special Low	Special High
Polyethylene - Solid	-60° C	80° C	--	--
Polyethylene - Foam	-60° C	80° C	--	--
FEP Teflon	-70° C	200° C	--	--
PVC	-20° C	80° C	-55° C	105° C
TFE Teflon	-70° C	260° C	--	--

Cable Attenuation



NOMINAL DC RESISTANCE (OHMS/1000')	INSULATION	INSULATOR NOMINAL CORE O.D. (IN)	NOMINAL O.D. (INS)	SHIELD MATERIAL	SHIELD COVERAGE	SHIELD NOMINAL RESISTANCE	JACKET MATERIAL	NOMINAL IMPEDANCE (OHMS)	NOMINAL VEL OF PROP	NOMINAL CAPACITANCE PF/FT
9.7	POLYETHYLENE	0.05	0.11	Tinned Copper Braid	90%	10.3	Black PVC	50	66%	30.8a
84.1	TFE Teflon	0.06	0.098	Silver Coated Copper Braid	95%	6.5	White FEP	50	69.5%	29.2
21.5	Solid Polyethylene	0.11	0.193	Tinned Copper Braid	95%	4.1	Black PVC	50	66%	30.8
12.6	Polyethylene	0.116	0.195	100% Duofoil & 95 Tinned Copper Braid	100%	3.8	Black PVC	50	66%	30.9
14.5	Foam Polyethylene	0.114	0.198	Duofoil + 85% Tinned Copper Braid	100%	5.6	Black PVC	50	78%	26
15.5	Solid FEP Teflon	0.112	0.19	Tinned Copper Braid	95%	4.4	Black PVC	53.5 ± 2.5	69.5%	28.5
1.7	Polyethylene	0.285	0.405	Copper Braid	97%	1.2	Black PVC	50	66%	30.8



Technology

downloading
router mouse
podcast modem
sign mobile
public signal
global
website
electrical
display
tower data
smart

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