Laird™ CONNECTIVITY

Public Safety & Critical Communications

Catalog

UHF and VHF Antennas

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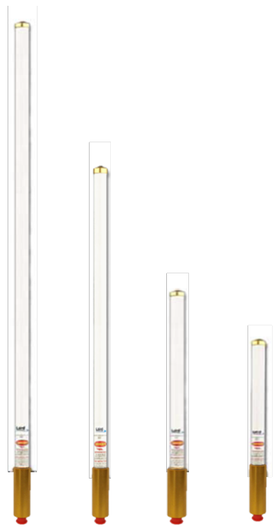
FG Series

Omnidirectional UHF Base Station Antenna (360 - 512 MHz)



FG4507 FG4505 FG4503 FG4500

- **High-density fiberglass:** Very durable
- **Collinear design with J-pole style element:** High performance
- **Doesn't require adjustment in the field:** Broadband 4 MHz
- **Treated for UV:** Resists sun damage
- **Fully tested with an analyzer:** Ensures the best performance
- **Gold anodized aluminum base and cap:** Will not oxidize

Electrical Characteristics

Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	2.0:1
Horizontal Beam Width (Azimuth)	360°
Input Power (W)	200
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Radiator Material	Copper Coated
Radome Material	Fiberglass
Base and Cap Material	Gold-anodized Aluminum
Color	White
Maximum Wind Resistance (KM/H)	201
Operating Temperature(°C)	-35 - 80
Diameter (cm)	3.33
Mounting (Optional)	FM2/FM2SP

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Center Frequency (MHz)	Vertical Beam Width	Height (cm)
360-380	FG3600	2	370	75	66
	FG3603	5	370	33	112
380-406	FG3800	2	385	75	66
	FG3803	5	385	33	112
406-416	FG4060	2	411	75	66
	FG4063	5	411	33	112
	FG4065	7	411	20	193
410-430	FG4100	2	420	75	66
410-420	FG4103	5	415	33	112
420-430	FG4203	5	425	33	112
	FG4205	7	425	20	193
430-450	FG4300	2	440	75	66
430-440	FG4303	5	435	33	112
	FG4305	7	435	20	193

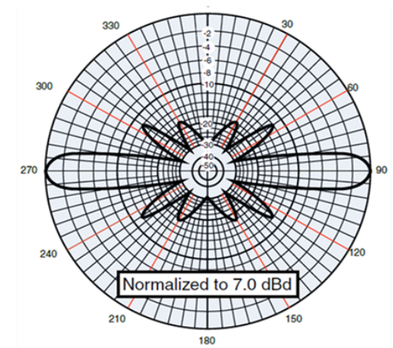
Ordering Information (Cont'd)

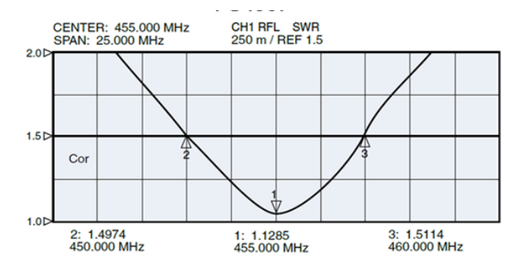
Frequency (MHz)	Part #	Gain (dBi)	Center Frequency (MHz)	Vertical Beam Width	Height (cm)
440-450	FG4400	2	445	75	66
	FG4403	5	445	33	112
	FG4405	7	445	20	193
450-470	FG4500	2	460	75	66
	FG4500PL	2	460	75	66
450-460	FG4503	5	455	33	112
	FG4505	7	455	20	193
450-470	FG4505W	7	460	20	193
450-460	FG4507	9	455	14	272
460-470	FG4603	5	465	33	112
	FG4605	7	465	20	193
	FG4607	9	465	14	272
470-490	FG4700	2	480	75	66
470-480	FG4705	7	475	20	193
	FG4707	9	475	14	272
480-490	FG4803	5	485	33	112
	FG4805	7	485	20	193
	FG4807	9	485	14	272
490-500	FG4900	2	495	75	66
	FG4903	5	495	33	112
	FG4905	7	495	20	193
	FG4905PL	7	495	20	193
	FG4907	9	495	14	272
500-512	FG5003	5	506	33	112
	FG5005	7	506	20	193

Radiation Patterns

FG4507

Elevation





FR Series

Omnidirectional UHF Base Station Antenna (380 - 490 MHz)

FRX380 FRX450 FR450

Electrical Characteristics

Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	1.5:1
Horizontal Beam Width (Azimuth)	360°
Input Power (W)	150
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Cable Length (cm)	30.5
Radome Material	Fiberglass
Finish	White
Maximum Wind Resistance (KM/H)	200

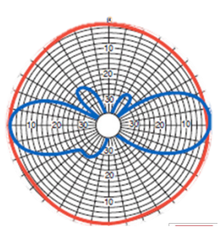
- **Low-profile fiberglass antenna:** Blends in to surroundings
- **Environmental resistance:** UV protection, built-in discharge, and excellent weather resistance
- **Effortless installation:** Comes fully assembled and does not require field adjustment or ground plane
- **Durable:** Highly reliable brass radiator
- **Selectable gain:** 3 dBi and 5dBi models
- **Mount included:** 30.3 cm cable with insulated N-Female connector
- **Mount included:** 30.3 cm cable with insulated N-Female connector

Ordering Information

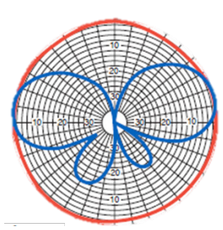
Frequency (MHz)	Part #	Gain (dBi)	Adjusted Band (MHz)	Vertical Beam Width	Height (cm)	Weight (kg)
380-400	FRX380	5	20	24	119	0.72
406-430	FRX406	5	24	24	117	0.50
430-450	FRX430	5	20	24	116	0.47
450-470	FR450	3	20	40	86	0.48
	FRX450	5	20	24	107	0.51
470-490	FRX470	5	20	24	107	0.47

Radiation Patterns

FRX-



FR-



Horizontal Plane

Vertical Plane

CRX Series

Omnidirectional UHF Base Station Antenna (450 - 512 MHz)

CR450 CRX450 CRX450B

Electrical Characteristics

Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	1.5:1
Horizontal Beam Width (Azimuth)	360°
Input Power (W)	250
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Radiator Material	Anodized Alumninum 6061-T6
Finish	Gold
Maximum Wind Resistance (KM/H)	160

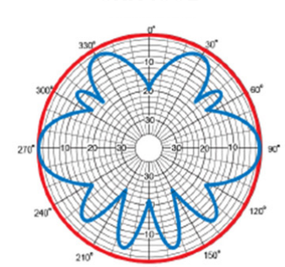
- **Collinear design:** high performance
- **Highly durable:** High-density fiberglass material
- **Specially UV Treated:** Resists sun damage
- **Fully tested with an analyzer:** ensures the best performance
- **Gold anodized aluminum base and cap:** Will not oxidize

Ordering Information

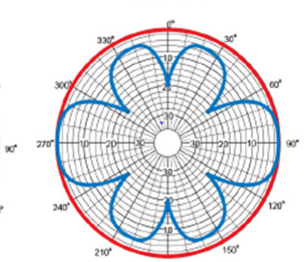
Frequency (MHz)	Part #	Gain (dBi)	Bandwidth (%)	Vertical Beam Width	Height (cm)	Weight (kg)
450-470	CR450	2	20	73	43	0.24
	CRX450	5	10	36	96.5	0.9
	CRX450B	7	8	30	137	1.2
490-512	CRX490	5	10	36	96.5	0.9

Radiation Patterns

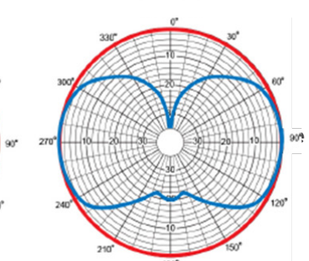
CRX450B



CRX450



CR450



Horizontal Plane

Vertical Plane

Voyager Series

Omnidirectional UHF Base Station Antenna (406 - 512 MHz)

VG4505

- **Economical:** Magnificent design and manufacturing at a low price
- **N-Female connector in gold anodized aluminum base sheath:** Provides protective cover and a strong mount
- **Patented internal adapter:** Does not freeze, corrode, or de-tune
- **Rubber and plastic coated adapter:** Vibration and moisture resistent
- **UV protected:** Does not crack, deteriorate, or break from sun exposure
- **Thick wall mount:** More durable, safe installation
- **Broadband:** Easily adjusted and operated in wide range of channels and frequencies
- **Field adjustable:** For quicker deployment
- **Telescopic radiating elements:** Easy to transport
- **Fully tested:** reliable performance

Electrical Characteristics

Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	1.5:1
Input Power (W)	250
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Radiator Material	Anodized aluminum 6061-T6
Finish	Dorado
Maximum Wind Resistance (KM/H)	160

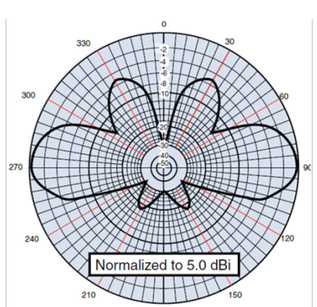
Ordering Information

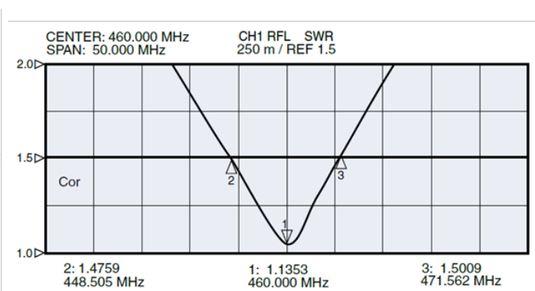
Frequency (MHz)	Part #	Gain (dBi)	Horizontal Beam Width	Vertical Beam Width	Front to Back Ratio (db)	# of Elements
406-450	VG4065	5	2.5%	35	89	0.68
450-512	VG4505	5	2.5%	35	89	0.68

Radiation Patterns

VG4505

Elevation





YDA Series

4-Dipole UHF Base Station Antenna (450 - 470 MHz)

YDA4504

- **Quality construction:** Boom and radiator constructed of aluminum 6061-T6
- **High quality power splitter:** Maximum performance across the frequency band
- **Welded elements:** Eliminate pattern degradation, maintain dimensional stability, and resist corrosion
- **Gold anodized:** Durable and corrosion resistant
- **Nickel-plated N-Female brass connector:** Provides durable performance
- **Pre-tuned to medium frequency:** Doesn't require field adjustment
- **Designed for effortless installation:** comes pre-assembled and includes YM78 assembly for each element

Electrical Characteristics

Radiation Pattern	Omnidirectional/Directional
Polarization	Vertical
VSWR	1.5:1
Horizontal Beam Width	15°, 24°, 39°, 360°
Input Power (W)	300
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Radiator Material	Anodized aluminum 6061-T6
Boom Material	Anodized aluminum 6061-T6
Finish	Chrome
Maximum Wind Resistance (KM/H)	160

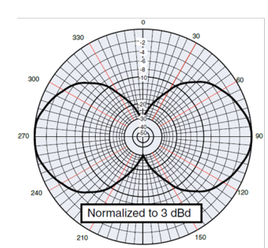
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)			
		@ 90° Beam Width	@ 39° Beam Width	@ 24 Beam Width	@ 15° Beam Width
450-470	YDA4504	2	5	8	11

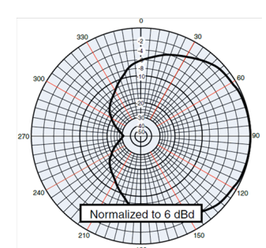
Radiation Patterns

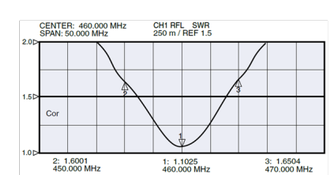
YDA4504

Omnidirectional Pattern



Directional Pattern





P Series

Directional Yagi UHF Base Station Antenna (406 - 470 MHz)

P4573

PE4576

- **Economical:** Affordable high-gain antenna
- **Quality elements:** Aluminum 5005-H19 elements
- **Quality boom:** 2.2 cm diameter aluminum 6063-T832 boom

Electrical Characteristics

Radiation Pattern	Directional
Polarization	Vertical/Horizontal
VSWR	<2.0:1
Input Power (W)	250
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

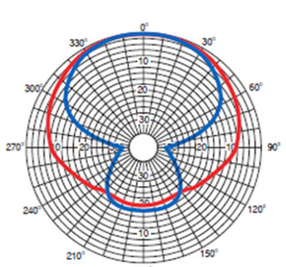
Connectory Type	N-Female
Element Material	Aluminum 5005-H19
Boom Material	Aluminum 6063-T832
Boom Diameter (cm)	2.2
Finish	Chrome
Maximum Wind Resistance (KM/H)	200
Maximum Mast Diameter (cm)	5.4

Ordering Information

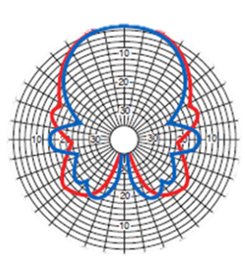
Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back ratio (dB)	# of Elements	Length (cm)	Weight (kg)
406-420	**P4063**	8	100	65	18	3	39	.68
450-470	**P4573**	8	100	65	18	3	39	.68
	PE4576	10	59	50	12	6	91	1.1

Radiation Patterns

PE4573



PE4576



Horizontal Plane

Vertical Plane

PLC Series

Directional Yagi UHF Base Station Antenna (406 - 470 MHz)

PLC406

PLC4510

- **Robust construction:** With 6 and 10 element configurations
- **Anodized elements:** Solid 6063-T832 aluminum with 1.3 cm diameter
- **Solid boom:** 6063-T832 aluminum with 2.9 cm diameter
- **Flexible:** Can be installed in parallel to increase gain
- **Quick installation:** Assembled and tuned in produce for fast, easy installation

Electrical Characteristics

Radiation Pattern	Directional
Polarization	Vertical/Horizontal
VSWR	1.5:1
Input Power (W)	250
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

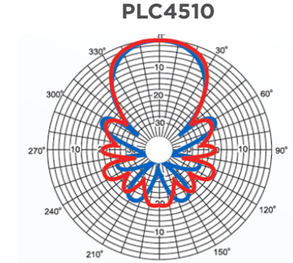
Connectory Type	UHF or N-Female
Element Material	Anodized Aluminum 6063-T6832
Boom Material	Anodized Aluminum 6063-T6832
Element Diameter (cm)	1.3
Boom Diameter (cm)	2.9
Maximum Mast Diameter (cm)	5.4
Finish	Chrome
Maximum Wind Resistance (KM/H)	200

Ordering Information

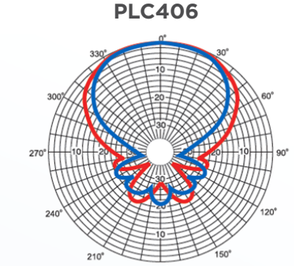
Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back ratio (dB)	# of Elements	Element Length (cm)	Weight (kg)
406-420	**PLC406**	9,5	74	53	25	6	79.4	1.7
	PLC406N	9,5	74	53	25	6	79.4	1.7
	PLC4010N	13,5	42	37	25	10	167	2.38
450-470	**PLC456**	9,5	74	53	25	6	79.4	1.7
	PLC456N	9,5	74	53	25	6	79.4	1.7
	PLC4510	13,5	42	37	25	10	167	2.38
	PLC4510N	13,5	42	37	25	10	167	2.38

Radiation Patterns

PLC4510



PLC406



Horizontal Plane

Vertical Plane

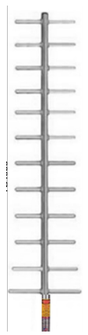
YS Series

Directional Yagi UHF Base Station Antenna (340 - 512 MHz)

YS4503

YS4505

YS4506



YS45012

- **Boom terminates in N-Female connector:** Feeds elements via internal line
- **Internal harmonization:** 4 MHz bandwidth and weather resistance
- **Anodized in gold and black:** Will not corrode
- **Economical:** Mounting kit model YM78
- **Fully tested on an analyzer:** Provides best performance and VSWR

Electrical Characteristics

Radiation Pattern	Directional
Polarization	Vertical
VSWR	1.5:1
Input Power (W)	300
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Element Material	Anodized Aluminum 6061-T6
Boom Material	Anodized Aluminum 6061-T6
Boom Diameter (cm)	2.2
Maximum Mast Diameter (cm)	4.1
Fixture of Elements to Boom	Screw
Finish	Chrome
Maximum Wind Resistance (KM/H)	200

Ordering Information

Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back ratio (dB)	# of Elements	Element Length (cm)	Boom Diameter (cm)
340-360	**YS3405**	11	110	113	20	5	94	2.22
360-380	**YS3606**	12	67	58	20	6	112	2.22
380-406	**YS3803**	9,1	115	114	17	3	51	2.22
	YS3805	11	110	113	20	5	94	2.22
	YS3806	12	67	58	20	6	112	2.22
406-430	**YS4063**	9,1	115	114	17	3	51	2.22
	YS4065	11	110	113	20	5	94	2.22
	YS4066	12	67	58	20	6	112	2.22
430-450	**YS4303**	9,1	115	114	17	3	51	2.22
	YS4305	11	110	113	20	5	94	2.22
	YS4306	12	67	58	20	6	112	2.22

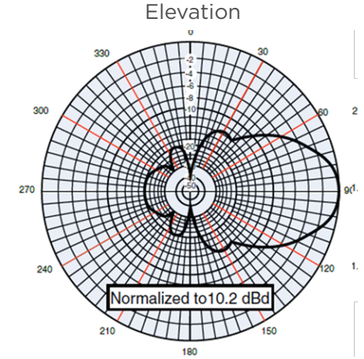
Ordering Information (Cont'd)

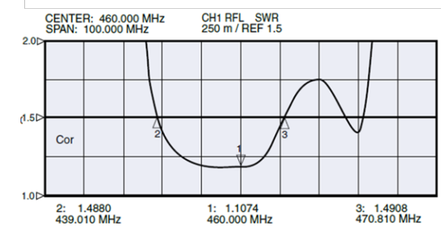
Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back ratio (dB)	# of Elements	Element Length (cm)	Boom Diameter (cm)
450-470	**YS4503**	9,1	115	114	17	3	51	2.22
	YS4503PL	9,1	115	114	17	3	51	2.22
	YS4505	11	110	113	20	5	94	2.22
	YS4506	12	67	58	20	6	112	2.22
	YS45012	13	33	37	20	12	183	3.17
470-490	**YS4703**	9,1	115	114	17	3	51	2.22
	YS4705	11	110	113	20	5	94	2.22
	YS4706	12	67	58	20	6	112	2.22
	YS47012	13	33	37	20	12	183	3.17
490-512	**YS4906**	12	67	58	20	6	112	2.22

Radiation Patterns

YS4506

Elevation





Y Series

Directional Yagi UHF Base Station Antenna (350 - 512 MHz)

YB4703

Y4505

YB4506

Y45012

Electrical Characteristics

Radiation Pattern	Directional
Polarization	Vertical/Horizontal
VSWR	1.5:1
Input Power (W)	300
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Element Material	Anodized Aluminum 6061-T6
Boom Material	Anodized Aluminum 6061-T6
Boom Diameter (cm)	2.2
Boom Elements	Welded, 360°
Finish	Gold-anodized or Black
Maximum Wind Resistance (KM/H)	200

- **Boom with N-Female Connector:** Feeds elements via internal transmission line
- **Internal Harmonization:** Broadband performance and weather resistant
- **Welded 360° elements anodized in gold/black:** Eliminates corrosion
- **Economical:** Includes mounting kit (YM78HD)
- **Quick installation:** Comes fully assembled, requires no field adjustment

Ordering Information

Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back ratio (dB)	# of Elements	Element Length (cm)	Boom Diameter (cm)
380-406	Y3803	9,1	115	114	17	3	51	2.22
	YB3803	9,1	115	114	17	3	51	2.22
	YB3805	11	110	113	20	5	94	2.22
	Y3806	12	67	58	20	6	112	2.22
	YB3806	12	67	58	20	6	112	2.22
384-394	YB3846	12	67	58	20	6	112	2.22
406-430	Y4063	9,1	115	114	17	3	51	2.22
	Y40612	13	33	37	20	12	183	3.17
406-430	YB4063	9,1	115	114	17	3	51	2.22
	Y4065	11	110	113	20	5	94	2.22
	Y4066	12	67	58	20	6	112	2.22
	YB4066	12	67	58	20	6	112	2.22
430-450	Y4303	9,1	115	114	17	3	51	2.22
	Y4306	12	67	58	20	6	112	2.22

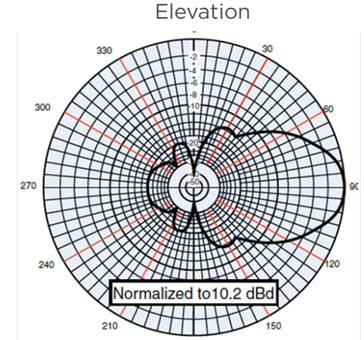
Ordering Information (Cont'd)

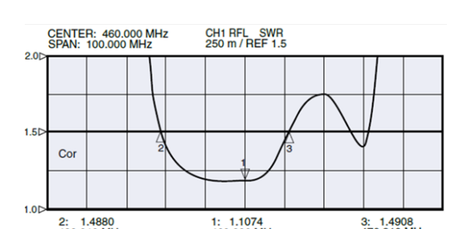
Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back ratio (dB)	# of Elements	Element Length (cm)	Boom Diameter (cm)
	YB4306	12	67	58	20	6	112	2.22
	YB43012	13	33	37	20	12	183	3.17
450-470	Y4503	9,1	115	114	17	3	51	2.22
	Y4505	11	110	113	20	5	94	2.22
	YB4506	12	67	58	20	6	112	2.22
	Y45010	13	33	37	20	12	183	3.17
	Y45012	13	33	37	20	12	183	3.17
470-490	Y47012	13	33	37	20	12	183	3.17
470-512	YB4703	9,1	115	114	17	3	51	2.22
	Y4705	11	110	113	20	5	94	2.22
	YB4705	11	110	113	20	5	94	2.22
	Y4706	12	67	58	20	6	112	2.22

Radiation Patterns

Y4506

Elevation





YF Series

Directional Yagi UHF Base Station Antenna (450 - 490 MHz)

YF45018

YF450112

- **IP67 Rated:** Protected against dust and water
- **Boom with RG213 cable and N-female connector:** Feeds elements via internal transmission line
- **Internal Harmonization:** Broadband performance and weather resistant
- **Welded 360° elements anodized in gold:** Eliminates corrosion
- **Economical:** Includes mounting kit (YM78HD)
- **Fully tested on an analyzer:** Provides best performance and VSWR
- **Quick installation:** Comes fully assembled, requires no field adjustment

Electrical Characteristics

Radiation Pattern	Directional
Polarization	Vertical/Horizontal
VSWR	<1.5:1
Input Power (W)	250
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Cable	RG213, 61 cm
Boom Material	Anodized Aluminum 6063-T6832
Finish	Anodized in Gold
Ingress Protection	IP67
Boom Diameter (cm)	3.8
Maxiumum Mast Diameter (cm)	5.4
Operating Temperature	-30 to 70° C
Boom Elements	Welded, 360°
Maximum Wind Resistance (KM/H)	219

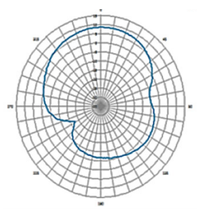
Ordering Information

Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back ratio (dB)	# of Elements	Element Length (cm)	Weight (kg)
450-490	**YF45018-61NF**	9.1	90	62	15	3	46	.68
	YF450112-61NF	12.2	56	46	20	7	107	1.26

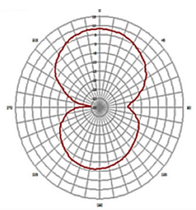
Radiation Patterns

YF45018-61NF - 450MHz

Horizontal

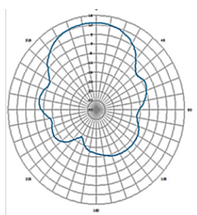


Elevation



YF450112-61NF - 450MHz

Horizontal



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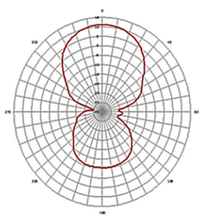

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A Series

A450 AB450

A450S AB450S

- **1/4 Wavelength**
- **Economical**
- **Requires Ground Plane**
- **403-490 MHz Frequency:** adjustable by cutting
- **Gain:** 2 dBi
- **Stainless steel radiating element:** 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission
- **Adjustable whip:** allows greater adjustment of frequency without cutting antenna
- **Robust molded ABS base:** extreme power retention

Omnidirectional UHF Mobile Antenna (403 - 490 MHz)

Electrical Characteristics

Antenna Style	Whip
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<1.5:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

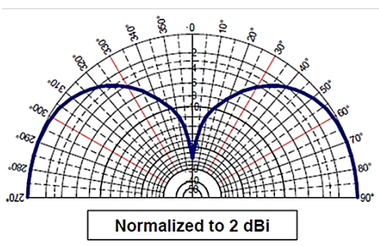
Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Color	Bright Chrome or Black
Connector	NMO

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
403-470	**A403S**	3	Chrome	15
450-470	**A450**	2	Chrome	13,6
	AB450	2	Black	13,6
	A450S	2	Chrome	13,6
	AB450S	2	Black	13,6
470-490	**A470**	2	Chrome	12,7
	AB470	2	Black	12,7
	A470S	2	Chrome	12,7
118-896	**AFT**	3	Chrome	63,5
	ABFT	3	Black	63,5
	AFTS	3	Cromo	63,5
	ABFTS	3	Black	63,5

Radiation Patterns

Elevation



AFT

A Series - Collinear

A4503 AB4503 A4503S AB4503S

A4503B AB4503C A4503CS AB4503CS

- **Wavelength:** Collinear
- **Economical**
- **Requires Ground Plane**
- **380-490 MHz Frequency:** adjustable by cutting
- **Gain:** 2 dBi
- **Stainless steel radiating element:** Alloy 302
- **Gold anodized connector:** Corrosion-resistant and better transmission
- **Open or closed coil**
- **Stainless steel spring option**
- **Adjustable whip:** allows greater adjustment of frequency without cutting antenna
- **Robust molded ABS base:** extreme power retention

Omnidirectional UHF Mobile Antenna (380 - 490 MHz)

Electrical Characteristics

Antenna Style	Whip
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<1.5:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 302
Base Material	ABS
Color	Bright Chrome or Black
Connector	NMO

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
380-406	**A3803**	3	Chrome	18
	AB3803	3	Black	18
450-470	**A4503**	3	Chrome	13.6
	AB4503	3	Black	13.6
	A4503S	3	Chrome	13.6
	AB4503S	3	Black	13.6
	A4503C	3	Chrome	13.6
	AB4503C	3	Black	13.6
	A4503CS	3	Chrome	13.6
	AB4503CS	3	Black	13.6
470-490	**A4703**	3	Chrome	12.7
	AB4703	3	Black	12,7

B Series - Broadband

B3803W B3803WR B3803WS

BB3803W BB3803WR BB3803WS

Omnidirectional UHF Mobile Antenna (380 - 520 MHz)

Electrical Characteristics

Antenna Style	Whip w/ charging coil in base
Radiation Pattern	Omnidirectional
Polarization	Vertical
Tuning	Requires no adjustment, broadband
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Vertical Beam Width	100°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Color	Bright Chrome or Black
Connector	NMO
Base Diameter (cm)	3.65
Weight (kg)	.22

- **Wavelength:** 1/4
- **Low loss base load coil**
- **Requires Ground Plane**
- **380-520 MHz Frequency:** adjustable by cutting
- **Gain:** 3 dBi
- **Stainless steel radiating element:** Alloy 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission

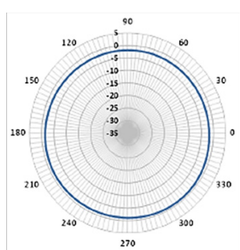
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
380-520	B3803W	3	Chrome	23
	BB3803W	3	Black	23
	B3803WR	3	Chrome	23
	BB3803WR	3	Black	23
	B3803WS	3	Chrome	23
	BB3803WS	3	Black	23

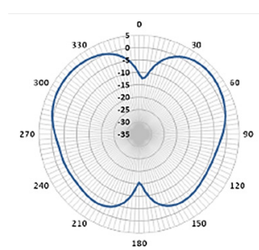
Radiation Patterns

B3803W

Horizontal, 450MHz



Elevation 0°, 450MHz



B Series - 5/8 Wavelength

B4503 B4503S B4503R

BB4503 BB4503S BB4503R

Omnidirectional UHF Mobile Antenna (300 - 512 MHz)

Electrical Characteristics

Antenna Style	Whip w/ charging coil in base
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Color	Bright Chrome or Black
Connector	NMO
Base Diameter (cm)	3.65
Weight (kg)	.22

- **Wavelength:** 5/8
- **Low loss base load coil**
- **Requires Ground Plane**
- **300-512 MHz Frequency:** adjustable by cutting
- **Gain:** 3 dBi
- **Stainless steel radiating element:** Alloy 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
300-340	B3003	3	Chrome	42
	B3003S	3	Chrome	42
380-400	B3803	3	Chrome	40
	B3803S	3	Chrome	40
406-430	B4063	3	Chrome	38
	BB4063	3	Black	38
	B4063S	3	Chrome	38
430-450	B4303	3	Chrome	35
	BB4303	3	Black	35
	B4303S	3	Chrome	35
	BB4303S	3	Black	35
450-470	B4503	3	Chrome	33
	BB4503	3	Black	33
	B4503R	3	Chrome	33
	BB4503R	3	Black	33
	B4503S	3	Chrome	33
	BB4503S	3	Black	33
470-490	B4703	3	Chrome	32
	BB4703	3	Black	32
	B4703R	3	Chrome	32
	BB4703R	3	Black	32
	B4703S	3	Chrome	32
	BB4703S	3	Black	32
490-512	B4903	3	Chrome	32
	B4903S	3	Chrome	32
	BB4903S	3	Black	32

B Series - Collinear

B4505C B4505CS B4505CR

BB4505C BB4505CS BB4505CR

- **Wavelength:** 5/8
- **Low loss base load coil**
- **Requires Ground Plane**
- **300-512 MHz Frequency:** adjustable by cutting
- **Gain:** 5 dBi
- **Stainless steel radiating element:** Alloy 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional UHF Mobile Antenna (300 - 512 MHz)

Electrical Characteristics

Antenna Style	Whip w/ charging coil in base
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Color	Bright Chrome or Black
Connector	NMO
Base Diameter (cm)	3.65
Weight (kg)	.22

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
380-400	**B3805C**	5	Chrome	104
	BB3805C	5	Black	104
	B3805CS	5	Chrome	104
	BB3805CS	5	Black	104
406-430	**B4065C**	5	Chrome	100
	BB4065C	5	Black	100
	B4065CS	5	Chrome	100
	BB4065CS	5	Black	100
430-450	**B4305C**	5	Chrome	91
	BB4305C	5	Black	91
450-470	**B4505C**	5	Chrome	89
	BB4505C	5	Black	89
	B4505CR	5	Chrome	89
	BB4505CR	5	Black	89
	B4505CS	5	Chrome	89
	BB4505CS	5	Black	89

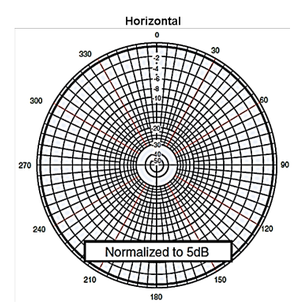
Ordering Information, Continued

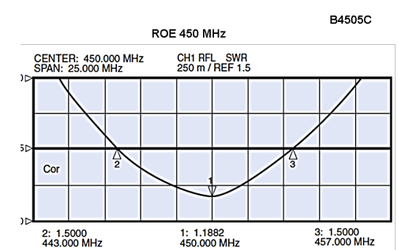
Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
470-490	**B4705C**	5	Chrome	84
	BB4705C	5	Black	84
	B4705CR	5	Chrome	84
	B4705CS	5	Chrome	84
490-512	**B4905C**	5	Chrome	79
	BB4905C	5	Black	79
	B4905CS	5	Chrome	79

Radiation Patterns

B4505C

Horizontal





B Series - No Ground Plane Required

B4502N B4502NS B4502NR BB4502N

B4502NS B4502NR B4505CN B4505CNR

B4505CN BB4505CN BB4505CNS

- **Wavelength:** 1/2, 5/8, collinear
- **Low loss base load coil**
- **Doesn't require a ground plane**
- **340-512 MHz Frequency:** adjustable by cutting
- **Gain:** 2-5 dBi
- **Stainless steel radiating element:** Alloy 17-7 PH
- **Choice of stainless steel spring or low-loss rubber**
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional UHF Mobile Antenna (340 - 512 MHz)

Electrical Characteristics

Antenna Style	Whip w/ charging coil in base
Radiation Pattern	Omnidirectional
Tuning	Adjustable by cutting
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Color	Bright Chrome or Black
Connector	NMO
Base Diameter (cm)	3.65
Weight (kg)	.22

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
	1/2 Wavelength			
406-430	**B4062N**	2	Chrome	36
	BB4062N	2	Black	36
	B4062NS	2	Chrome	36
430-450	**B4302N**	2	Chrome	32
	BB4302N	2	Black	32
	B4302NS	2	Chrome	32
450-470	**B4502N**	2	Chrome	32
	BB4502N	2	Black	32
	B4502NR	2	Chrome	32
	BB4502NR	2	Black	32
	B4502NS	2	Chrome	32
	BB4502NS	2	Black	32
470-490	**B4702NS**	2	Chrome	30
490-512	**B4902N**	2	Chrome	30
	B4902NS	2	Chrome	30
	5/8 Wavelength			
340-360	**B3403N**	3	Chrome	95
	BB3403N	3	Black	95
	B3403NS	3	Chrome	95

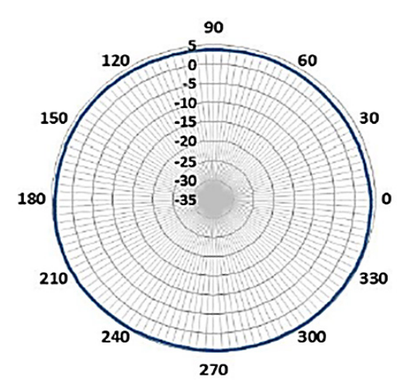
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
	Collinear			
380-400	**B3805CN**	5	Chrome	95
	BB3805CN	5	Black	95
406-430	**B4065CN**	5	Chrome	91
	B4065CNS	5	Chrome	91
430-450	**B4305CN**	5	Chrome	90
	BB4305CN	5	Black	90
	B4305CNS	5	Chrome	90
	BB4305CNS	5	Black	90
450-470	**B4505CN**	5	Chrome	82
	BB4505CN	5	Black	82
	B4505CNR	5	Chrome	82
	B4505CNS	5	Chrome	82
	BB4505CNS	5	Black	82
470-490	**B4705CN**	5	Chrome	77
	B4705CNR	5	Chrome	77
	B4705CNS	5	Chrome	77
490-512	**B4905CN**	5	Chrome	74

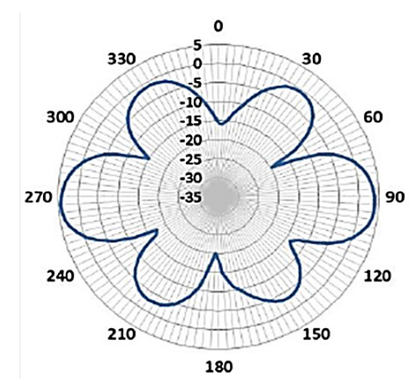
Radiation Patterns

B4505CN

Horizontal, 450 MHz



Elevation, 450 MHz



QW Series

QW450

QWB450

QWFT120

QWFTB120

- **1/4 Wavelength**
- **Economical**
- **Requires Ground Plane**
- **380-512 MHz Frequency:** adjustable by cutting
- **Gain:** 2 dBi
- **Stainless steel radiating element:** 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional UHF Mobile Antenna (370 - 512 MHz)

Electrical Characteristics

Antenna Style	Whip
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	Triple Chrome Plated Brass
Color	Bright Chrome or Black
Connector	NMO

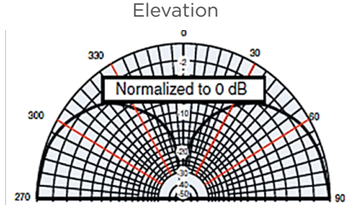
Ordering Information

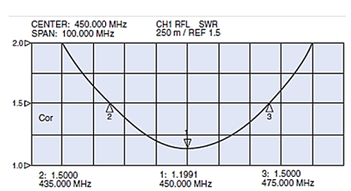
Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
370-390	QW370	2	Chrome	20
	QWB370	2	Black	20
380-400	QW380	2	Chrome	19
	QWB380	2	Black	19
406-430	QW406	2	Chrome	18
	QWB406	2	Black	18
430-450	QW430	2	Chrome	16,5
	QWB430	2	Black	16,5
450-470	QW450	2	Chrome	15
	QWB450	2	Black	15
470-490	QW470	2	Chrome	14,6
	QWB470	2	Black	14,6
490-512	QW490	2	Chrome	14
	QWB490	2	Black	14
118-970	QWFT120	2	Chrome	61
	QWFTB120	2	Black	61

Radiation Patterns

QW450

Elevation





CW Series - Collinear

CW4405C

CWB4405C

CW4405CS

CWB4405CS

- **Collinear wavelength**
- **Base coil per circuit**
- **Requires ground plane**
- **406-470 MHz frequency:** adjustable by cutting
- **Broadband:** Does not require adjustment
- **Gain:** 2 dBi
- **Stainless steel radiating element:** 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional UHF Mobile Antenna (406 - 470 MHz)

Electrical Characteristics

Antenna Style	Whip w/ base load per circuit
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Base Diameter (cm)	3.65
Weight (kg)	.22
Color	Bright Chrome or Black
Connector	NMO

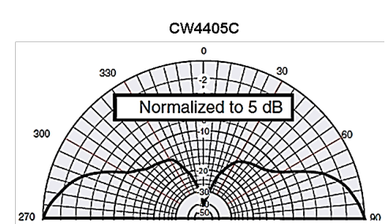
Ordering Information

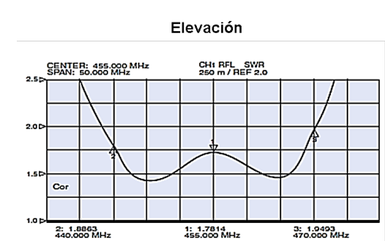
Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
406-430	CW4065C	5	Chrome	95
	CW4065CS	5	Chrome	95
440-470	CW4405C	5	Chrome	90
	CWB4405C	5	Black	90
	CW4405CS	5	Chrome	90
	CWB4405CS	5	Black	90

Radiation Patterns

CW4405C

Elevation





E Series

E4503C

EB4500

- **Wavelength: 1/4 or collinear**
- **Internal circuit load:** high performance and stability
- **Raised radiating element:** improves coverage on vehicle roof
- **Doesn't require ground plane**
- **Long splint:** allows rod to be moved for better tuning flexibility
- **Broadband:** Does not require adjustment
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional UHF Mobile Antenna (406 - 512MHz)

Electrical Characteristics

Wavelength	1/4 or collinear
Antenna Style	Whip - high radiant load per circuit
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Vertical Beam Width	70°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	Fiberglass
Base Diameter (cm)	3.65
Weight (kg)	.22
Color	Bright Chrome or Black
Connector	NMO

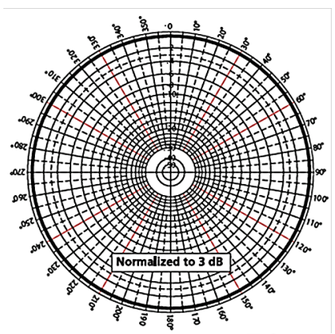
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
406-430	EB4063C	3	Black	102
430-450	E4300	0	Chrome	102
	EB4303C	3	Black	102
450-470	E4503C	3	Chrome	102
	EB4503C	3	Black	102
450-512	EB4500	0	Black	102

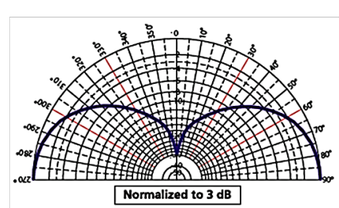
Radiation Patterns

E4503C

Horizontal



Elevation



Phantom Elite Series

ETRA4503

ETRAB4503

ETRA4503P

ETRAB4503P

- **Low profile:** 8.9 cm high
- **Robust construction**
- **Ground plane and no ground plane options**
- **Broadband:** Does not require adjustment
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional UHF Mobile Antenna (380 - 512 MHz)

Electrical Characteristics

Bandwidth	20 MHz
Antenna Style	Low Profile
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	150
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiatint Element Material	Radiant Circuit
Base Material	ABS
Base Diameter (cm)	3.65
Weight (kg)	.095
Color	Black or White
Connector	NMO or N

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
380-400	ETRAB3803	3	Black	8.6
406-425	ETRA4063	3	White	8.6
	ETRAB4063	3	Black	8.6
410-430	ETRA4103	3	White	8.6
	ETRAB4103	3	Black	8.6
430-450	ETRA4303	3	White	8.6
	ETRAB4303	3	Black	8.6
	ETRA4303P	3	White	8.6
	ETRAB4303P	3	Black	8.6
450-470	ETRA4503	3	White	8.6
	ETRAB4503	3	Black	8.6
	ETRA4500N	0	White	8.6
	ETRAB4500N	0	Black	8.6
	ETRA4503P	3	White	8.6
	ETRAB4503P	3	Black	8.6
470-490	ETRA4703	3	White	8.6
	ETRAB4703	3	Black	8.6
	ETRA4703P	3	White	8.6
490-512	ETRA4903	3	White	8.6
	ETRAB4903	3	Black	8.6

Phantom Series

TRA4503

TRAB4503

TRA4503P

TRAB4503P

- **Low profile:** 8.9 cm high
- **Robust construction**
- **Ground plane and no ground plane options**
- **Broadband:** Does not require adjustment
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional UHF Mobile Antenna (380 - 600 MHz)

Electrical Characteristics

Bandwidth	20 MHz
Antenna Style	Low Profile
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	150
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Solid Brass
Base Material	ABS
Base Diameter (cm)	3.65
Weight (kg)	.095
Color	Black or White
Connector	NMO or N

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
380-400	**TRA3803**	3	White	8.9
	TRAB3803	3	Black	8.9
	TRA3803P	3	White	8.9
	TRAB3803P	3	Black	8.9
410-430	**TRA4103**	3	White	8.9
	TRAB4103	3	Black	8.9
	TRA4103P	3	White	8.9
	TRAB4103P	3	Black	8.9
420-430	**TRA4203**	3	White	8.9
	TRAB4203	3	Black	8.9
430-450	**TRA4303**	3	White	8.9
	TRAB4303	3	Black	8.9
	TRA4303P	3	White	8.9
	TRAB4303P	3	Black	8.9
450-470	**TRA4503**	3	White	8.9
	TRAB4503	3	Black	8.9
	TRA4503P	3	White	8.9
	TRA4500N	0	White	8.9
	TRAB4500N	0	Black	8.9
	TRA4500NP	0	White	8.9
	TRAB4500NP	0	Black	8.9

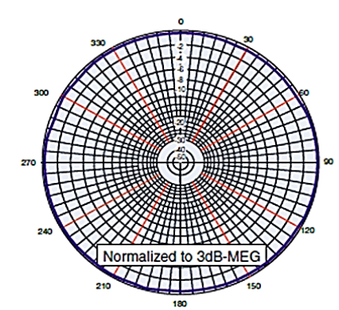
Ordering Information, Continued

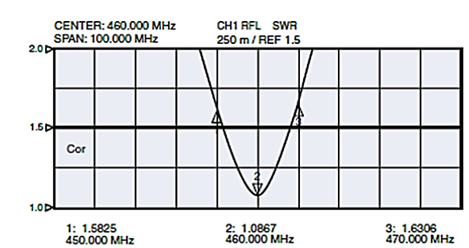
Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
470-490	**TRA4703**	3	White	8.9
	TRAB4703	3	Black	8.9
	TRA4703P	3	White	8.9
	TRAB4703P	3	Black	8.9
490-512	**TRA4903**	3	White	8.9
	TRAB4903	3	Black	8.9
	TRA4903P	3	White	8.9
	TRAB4903P	3	Black	8.9
500-520	**TRA5003**	3	White	8.9
	TRAB5003	3	Black	8.9
560-600	**TRA5603**	3	White	8.9
	TRAB5603	3	Black	8.9

Radiation Patterns

TRA4503

Horizontal, 460 MHz





Ultra Phantom Series

UTRA3802S1NB

UTRA3802S1NW

- **Low profile:** 8.6 cm high
- **Robust construction**
- **IP67 rated**
- **Requires ground plane**
- **Broadband:** Does not require adjustment
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional UHF Mobile Antenna (380 - 512 MHz)

Electrical Characteristics

Bandwidth	<65 MHz
Antenna Style	Low Profile
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.5:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	150
Impedance (Ohms)	50

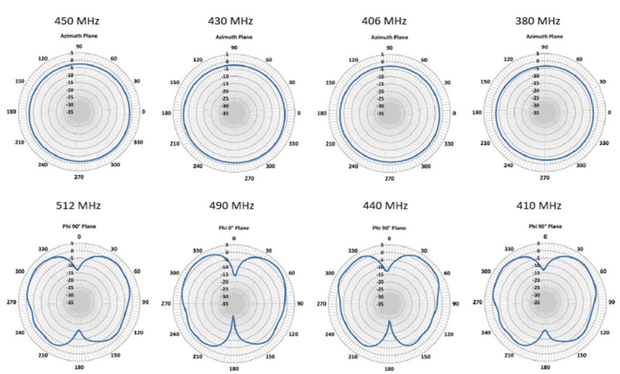
Mechanical Characteristics

Contact Material	Gold Plated
Radiating Element Material	Radiant Circuit
Base Material	ABS
Base Diameter (cm)	3.55
Weight (kg)	.163
Color	Black or White
Connector	NMO

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
380-410	UTRA3802S1NB-001	2	White	8.6
	UTRA3802S1NW-001	2	Black	8.6
406-440	UTRA4061S2NB-001	2.9	White	8.6
	UTRA4061S2NW-001	2.9	Black	8.6
430-490	UTRA4301S3NB-001	3.6	White	8.6
	UTRA4301S3NW-001	3.6	Black	8.6
450-512	UTRA4502S3NB-001	4.1	White	8.6
	UTRA4502S3NW-001	4.1	Black	8.6

Radiation Patterns



Base A Series

A150/450C

AB150/450C

A150/450CS

AB150/450CS

- **Multiband antenna:** UHF and VHF
- **Frequency:** 144-174 MHz / 440-470 MHz
- **Wavelength:** 1/2 (VHF), 5/8 (UHF)
- **Encapsulated tempered silver brass coil**
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omni Multiband UHF Mobile Antenna (144-174/440-470 MHz)

Electrical Characteristics

Wavelength	1/2 (VHF), 5/8 to 1/2 (UHF)
Bandwidth	20 MHz
Antenna Style	Encapsulated Coil Whip
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiating Element Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Base Diameter (cm)	3.2
Finish	Chrome or Black
Connector	NMO

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
144-148 / 440-450	A144/440C	2	Chrome	97
	AB144/440C	2	Black	97
150-174 / 450-470	A150/450C	2	Chrome	97
	AB150/450C	2	Black	97
	A150/450CS	2	Chrome	97
	AB150/450CS	2	Black	97

Base C Series

C150/450C

CB150/450C

C150/450CS

CB150/450CS

- **Multiband antenna:** UHF and VHF
- **Frequency:** 144-174 MHz / 440-470 MHz
- **Wavelength:** 1/2 (VHF), 5/8 (UHF)
- **Encapsulated tempered silver brass coil**
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omni Multiband UHF Mobile Antenna (144-174/440-470 MHz)

Electrical Characteristics

Wavelength	1/2 (VHF), 5/8 to 1/2 (UHF)
Antenna Style	Encapsulated Coil Whip
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<1.5:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiating Element Material	Slainless Steel Alloy 17-7 PH
Encapsulated Coil Material	Tempered Silver-Plated Brass
Base Material	ABS
Base Diameter (cm)	3.2
Finish	Chrome or Black
Connector	NMO

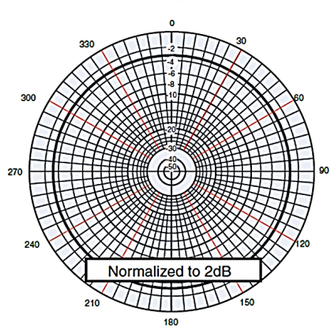
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
144-148 / 440-450	**C144/440C**	2/5	Chrome	97
	CB144/440C	2/5	Black	97
	C144/440CS	2/5	Chrome	97
	CB144/440CS	2/5	Black	97
150-174 / 450-470	**C150/450C**	2/5	Chrome	97
	CB150/450C	2/5	Black	97
	C150/450CS	2/5	Chrome	97
	CB150/450CS	2/5	Black	97

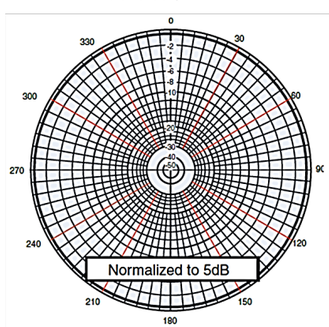
Radiation Patterns

C150/450

Vertical, VHF



Vertical, VHF



Phantom Fin Series

FHQ69273CD

- **Multiband antenna:** UHF, Cellular/PCS/LTE, Wi-Fi, GPS
- **Doesn't require adjustment in field**
- **IP67 rated**
- **A single hole needed for mounting:** allows passage of all four cables

Omni UHF Mobile Antenna (380-520/698-2700/2400-5875 MHz + GPS)

Electrical Characteristics

Antenna Style	Multiband shark fin with GPS
Frequency	380-430 / 430-520 (UHF) 698-960 / 1710-2700 (Cellular/PCS/LTE) 2400-2500 / 4900-5875 (Wi-Fi) 1575.42 (GPS)
Gain (dBi)	2 (UHF) 4 (Cellular/PCS/LTE) 6 (Wi-Fi) 29 (GPS)
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	10
Impedance (Ohms)	50

Mechanical Characteristics

Base Radome Material	PC/ASA
Base Surface Material	Aluminum
Cable Material	LRM-100
Finish	Black
Ingress Protection	IP67
Base Diameter (cm)	7 x 16
Weight (kg)	0.52
Connector Type	PL259 or GME (UHF) SMA-Male (Cellular/PCS/LTE and GPS) SMA-Male or RP-SMA (Wi-Fi)

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
380-430	**FHQ69273CD**	2.6	Black	9.8
698-2700		6.4		
2400-5875		7.8		
1575.42		27		
430-520	**FHQ69273CE**	2.5	Black	9.8
698-2700		7.1		
2400-5875		8.2		
1575.42		27		

WPD136M6C-001

WPD136M6C-001

- **Multiband antenna:** UHF, VHF
- **Doesn't require adjustment in field**
- **IP66 rated**
- **A single hole needed for mounting:** allows passage of all four cables

Omni UHF Mobile Antenna (136-174/380-520/760-870 MHz)

Electrical Characteristics

Antenna Style	Encapsulated Coil Whip
Wavelength	1/2 (VHF), 5/8 (UHF)
Frequency	136-174 (VHF) 380-520 (UHF) 760-870 (Cellular)
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.5:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	100
Impedance (Ohms)	50

Mechanical Characteristics

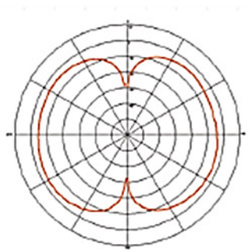
Contact Material	Gold-anodized
Radiator Material	Slainless Steel Alloy 17-7 PH
Encapsulated Coil Material	Tempered Silver-Plated Brass
Base Material	ABS
Finish	Black
Ingress Protection	IP66
Base Diameter (cm)	6.35
Connector Type	NMO

Ordering Information

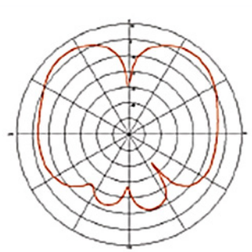
Frequency (MHz)	Part #	Peak Gain (dBi)	Color	Height (cm)
136-174	**WPD136M6C-001**	0.2	Black	51
380-520		4.8		
760-870		8.1		

Radiation Patterns

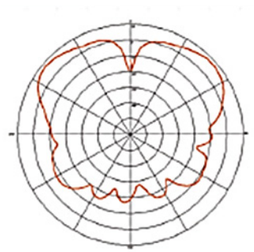
Vertical, 156 MHz



Vertical, 440 MHz



Vertical, 815 MHz



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FG Series

Omnidirectional VHF Base Station Antenna (136 - 174 MHz)

FG1520 FG1523

- **High-density fiberglass:** Very durable
- **Collinear design with J-pole style element:** High performance
- **Doesn't require adjustment in the field:** Broadband 4 MHz
- **Treated for UV:** Resists sun damage

Electrical Characteristics

Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	2.0:1
Horizontal Beam Width (Azimuth)	360°
Input Power (W)	150
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Radiator Material	Copper Coated
Radome Material	Fiberglass
Base and Cap Material	Gold-anodized Aluminum
Color	White
Maximum Wind Resistance (KM/H)	201
Operating Temperature(C)	-35 - 80
Diameter (cm)	3.33
Mounting (Optional)	FM2/FM2SP

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Bandwidth (MHz)	Vertical Beam Width	Height (cm)
136-139	**FG1360**	2	4	75	234
137-139	**FG1373**	5	4	33	272
140-144	**FG1400**	2	4	75	234
	FG1403	5	4	33	272
144-148	**FG1440**	2	4	75	234
	FG1443	5	4	33	272
148-152	**FG1480**	2	4	75	173
	FG1483	5	4	33	272

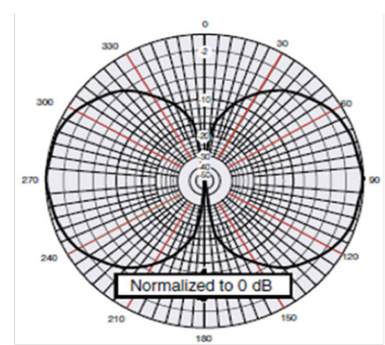
Ordering Information (Cont'd)

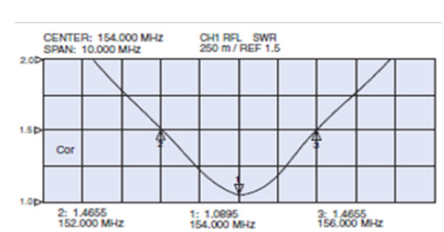
Frequency (MHz)	Part #	Gain (dBi)	Bandwidth (MHz)	Vertical Beam Width	Height (cm)
152-156	**FG1520**	2	4	75	173
	FG1523	5	4	33	272
156-162	**FG1560**	2	4	75	173
	FG1563	5	4	33	272
162-168	**FG1620**	2	4	75	173
	FG1623	5	4	33	272
168-174	**FG1680**	2	4	75	173
	FG1683	5	4	33	272

Radiation Patterns

FG1520

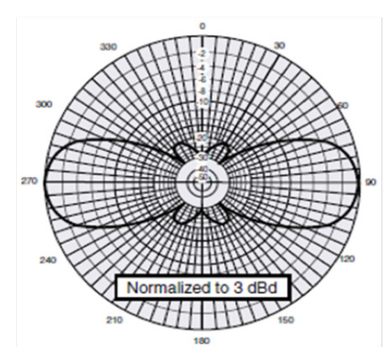
Elevation

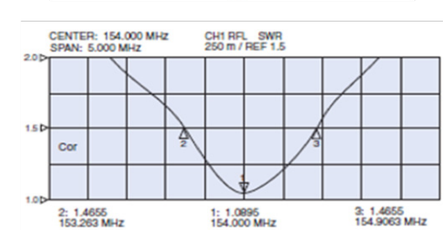




FG1523

Elevation





CRX Series

Omnidirectional VHF Base Station Antenna (150 - 174 MHz)

CRS150 CRX150 CRX150B

Electrical Characteristics

Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	1.5:1
Horizontal Beam Width (Azimuth)	360°
Input Power (W)	250
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	UHF-Female
Radiator Material	Aluminum 6063-T832
Finish	Chrome plated
Maximum Wind Resistance (KM/H)	128
Diameter (cm)	2.2

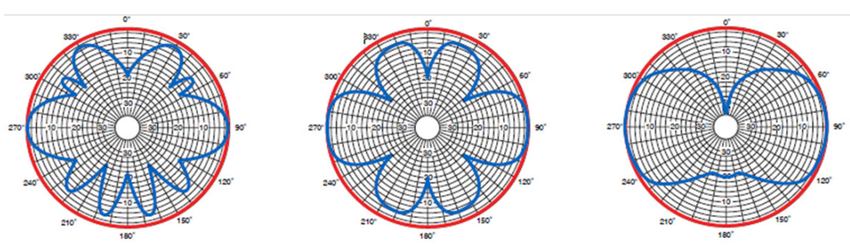
- **High-density fiberglass:** Very durable
- **Collinear design:** High performance
- **Treated for UV:** Resists sun damage
- **Fully tested with an RF analyzer:** Ensures the best performance
- **Gold anodized aluminum base and cap:** Will not rust

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Adjusted Band (MHz)	Vertical Beam Width	Height (cm)	Weight (kg)
150-174 (Tunable)	CRS150	2	7	73	114	0.9
	CRX150	5	6	36	294	2.2
	CRX150B	7	4	30	412	3.2

Radiation Patterns

CRX150B CRX150 CRS150



Horizontal Plane Vertical Plane

P Series

Directional Yagi VHF Base Station Antenna (138 - 174.5 MHz)

P1544

Electrical Characteristics

Radiation Pattern	Omnidirectional
Polarization	Vertical & Horizontal
VSWR	2.0:1
Input Power (W)	400
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	UHF
Radiator Material	Aluminum 6063-T832
Radome Material	Aluminum 6063-T832
Boom Diameter (cm)	2.2
Base and Cap Material	Gold-anodized Aluminum
Finish	Chrome
Maximum Wind Resistance (KM/H)	200
Element Dimensions (cm)	110
Weight (kg)	1.2
Maximum Mast Diameter (cm)	5.2

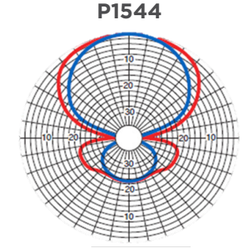
- **Economical 4-element antenna:** Provides 8.5 dBi of gain
- **Solid elements:** 6063-T832 aluminum with .48 cm diameter
- **Solid boom:**6063-T832 aluminum with 2.2 cm diameter
- **Can be placed in parallel:** Increased gain
- **Pre-assembled and frequency adjusted:** Quick and easy installation

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Horizontal Beam Width	Vertical Beam Width	Front to Back Ratio (db)	# of Elements
138-142.5	P1424	8.5	80	65	18	4
146-150.5	P1504	8.5	80	65	18	4
150-154.5	P1544	8.5	80	50	18	4
154-158.5	P1584	8.5	80	65	18	4
158-162.5	P1624	8.5	80	65	18	4
162-166.5	P1664	8.5	80	65	18	4
170-174.5	P1744	8.5	80	65	18	4

Radiation Patterns

P1544

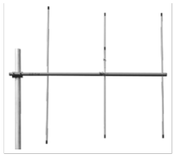


Horizontal Plane

Vertical Plane

YS Series

Directional Yagi VHF Base Station Antenna (150 - 250 MHz)



YS1503

YS1505

Electrical Characteristics

Radiation Pattern	Directional
Polarization	Vertical/Horizontal
VSWR	<2.0:1
Input Power (W)	300
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Radiator Material	Aluminum 6061-T6
Boom Material	Aluminum 6061-T6
Boom Diameter (cm)	2.2
Fixture of Elements to Boom	Screw
Finish	Chrome
Maximum Wind Resistance (KM/H)	200
Maximum Mast Diameter (cm)	5.08

Ordering Information

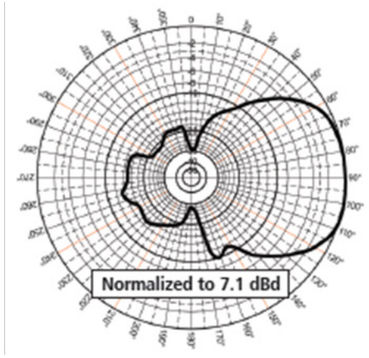
Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back ratio (dB)	# of Elements	Length (cm)	Boom Diameter (cm)
150-174	YS1503	9.25	78	74	17	3	105	2.22
	YS1505	11.2	60	54	20	5	183	3.17
216-225	YS2163	9.25	78	74	17	3	105	2.22
220-250	YS2203	9.25	78	74	17	3	105	2.22
	YS2205	11.2	60	54	20	5	183	3.17

- **Boom terminates in N-Female connector:** Feeds elements via internal line
- **Internal harmonization:** 4 MHz bandwidth and weather resistance
- **No gamma combination:** Will not freeze, corrode, or detune
- **Economical:** Mounting kit model YM78HD included
- **Field adjustable:** Factory tuned to lowest freq.
- **Quick intallation:** Arrives partially assembled

Radiation Patterns

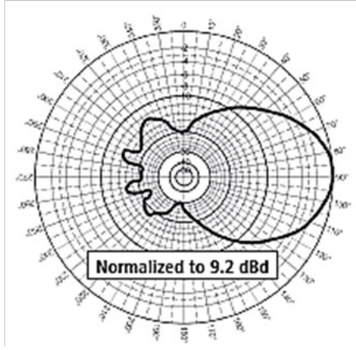
YS1503

Vertical

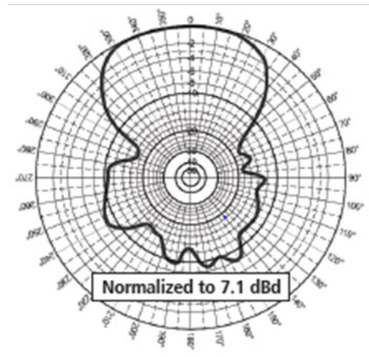


YS1505

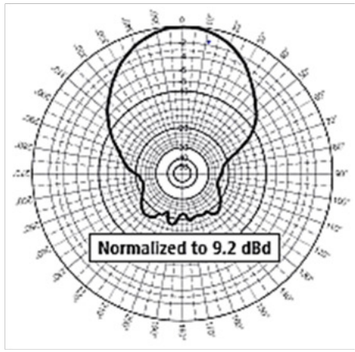
Vertical

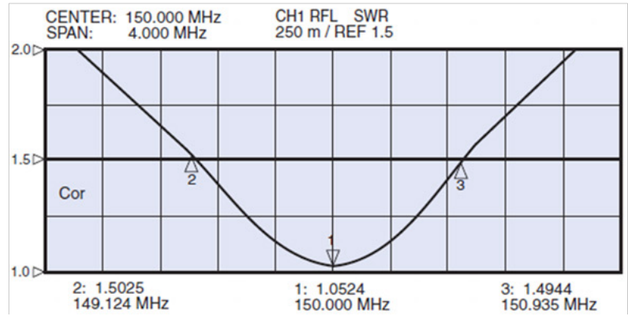


Horizontal



Horizontal



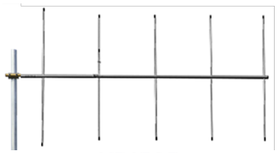


Y Series

Y1503

YB1503

Y1505



YB1505

- **Boom terminates in N-Female connector:** Feeds elements via internal line
- **Internal harmonization:** 4 MHz bandwidth and weather resistance
- **Anodized in gold and black:** Will not corrode
- **No gamma combination:** Will not freeze, corrode, or detune
- **Economical:** Mounting kit model YM78HD included
- **Fully tested on an analyzer:** Provides best performance and VSWR

Directional Yagi VHF Base Station Antenna (136 - 285 MHz)

Electrical Characteristics

Radiation Pattern	Directional
Polarization	Vertical/Horizontal
VSWR	2,0:1
Input Power (W)	300
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Element Material	Anodized Aluminum 6061-T6
Boom Material	Anodized Aluminum 6061-T6
Boom Diameter (cm)	2.2
Fixture of Elements to Boom	Screw
Finish	Anodized in Gold (Y) and Black (YB)
Maximum Wind Resistance (KM/H)	200

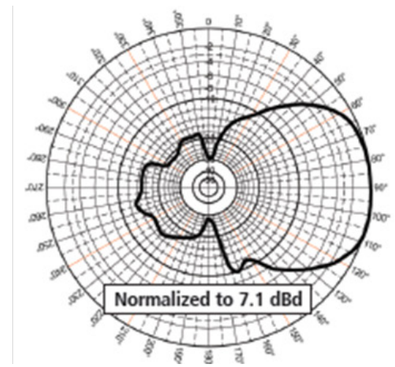
Ordering Information

Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back Ratio (dB)	# of Elements	Length (cm)	Boom Diameter (cm)
136-150	**Y1363**	9.25	78	74	17	3	105	2.22
	Y1365	11.2	60	54	20	5	183	3.17
150-174	**YB1505**	11,2	60	54	20	5	183	3.17
220-250	**Y2205**	11,2	60	54	20	5	183	3.17
250-285	**Y2503**	9,25	78	74	17	3	105	2.22
	Y2505	11,2	60	54	20	5	183	3.17

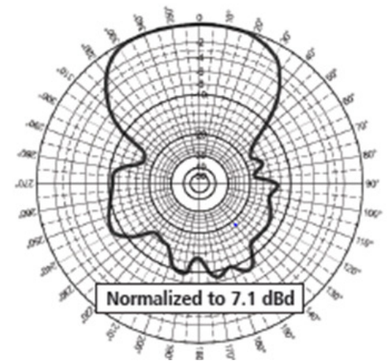
Radiation Patterns

Y1503

Vertical Polarization

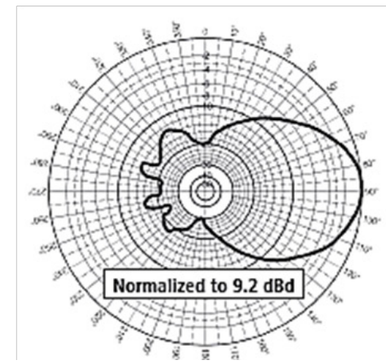


Horizontal Polarization

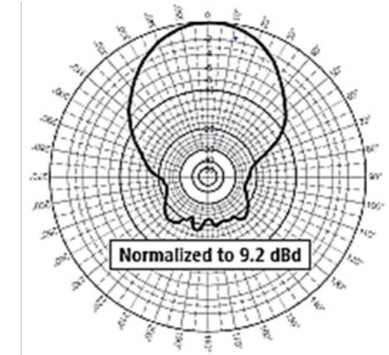


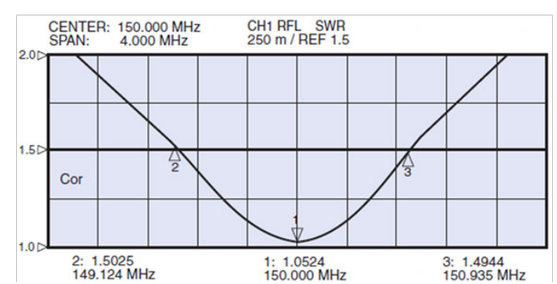
Y1505

Elevation



Horizontal Polarization





PLC Series

Directional Yagi VHF Base Station Antenna (129 - 222 MHz)

PLC1506

PLC1509

Electrical Characteristics

Radiation Pattern	Directional
Polarization	Vertical/Horizontal
VSWR	1.5:1
Input Power (W)	400
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	UHF or N-Female
Element Material	Aluminum 6063-T832
Boom Material	Aluminum 6063-T832
Element Diameter	1.3
Boom Diameter	2.9
Maximum Mast Diameter (cm)	5.4
Finish	Chrome
Maximum Wind Resistance (KM/H)	200

Ordering Information

- **High-density fiberglass:** Very durable
- **Collinear design with J-pole style element:** High performance
- **Doesn't require adjustment in the field:** Broadband 4 MHz
- **Treated for UV:** Resists sun damage

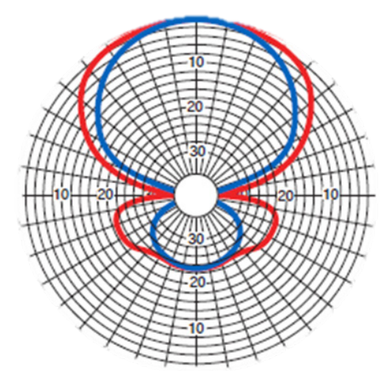
Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back Ratio (dB)	# of Elements	Length (cm)	Weight (kg)
129-137	**PLC1296N**	9.1	74	53	20	6	190	3.3
134-142	**PLC1346**	9.1	74	53	20	6	190	3.3
136-142	**PLC1369**	13.1	45	35	20	9	386	4.9
142-150	**PLC1426**	9.1	74	53	20	6	190	3.3
	PLC1426N	9.1	74	53	20	6	190	3.3
	PLC1429N	13.1	45	35	20	9	386	4.9
150-158	**PLC1506**	9.1	74	53	20	6	190	3.3
	PLC1509	13.1	45	35	20	9	386	4.9
	PLC1509N	13.1	45	35	20	9	386	4.9

Ordering Information (Cont'd)

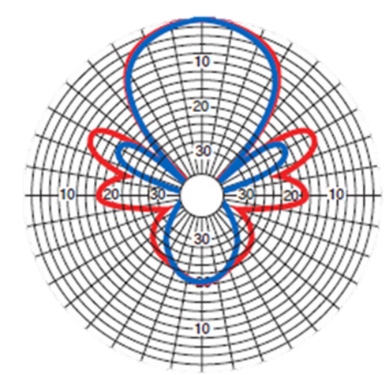
Freq. (MHz)	Part #	Gain (dBi)	Horiz. Beam Width	Vert. Beam Width	Front to Back Ratio (dB)	# of Elements	Length (cm)	Weight (kg)
158-166	**PLC1586**	9.1	74	53	20	6	190	3.3
	PLC1586N	9.1	74	53	20	6	190	3.3
	PLC1589	13.1	45	35	20	9	386	4.9
	PLC1589N	13.1	45	35	20	9	386	4.9
166-174	**PLC1666**	9.1	74	53	20	6	190	3.3
	PLC1669	13.1	45	35	20	9	386	4.9
220-222	**PLC2206**	9.1	74	53	20	6	190	3.3
	PLC2206N	9.1	74	53	20	6	190	3.3
	PLC2209N	13.1	45	35	20	9	386	4.9

Radiation Patterns

PLC1506



PLC1509



Horizontal Plane

Vertical Plane

VG Series

VG1502 VG1505

- **Economical:** Magnificent design and manufacturing at a low price
- **N-type connector with gold-anodized aluminum cover:** Protective and provides a strong mount
- **Patented internal adapter:** Will not freeze, corrode, or detune
- **Rubberized plastic coating**: Resists moisure and vibrations
- **UV resistant:** Won't crack or wear in sun
- **Thick wall mount:** Durable, safe installation
- **Broadband:** Easy adjustment/operation across many channels and frequencies
- **Field-adjustable:** For quick deployment
- **Telescoping elements:** Easy to transport
- **Fully tested:** Reliable performance

Omnidirectional VHF Base Station Antenna (132 - 174 MHz)

Electrical Characteristics

Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	1.5:1
Horizontal Beam Width (Azimuth)	360°
Input Power (W)	250
Impedance	50
Electrostatic Discharge Protection	Grounding

Mechanical Characteristics

Connectory Type	N-Female
Radiator Material	Anodized Alumninum 6061-T6
Finish	Gold
Maximum Wind Resistance (KM/H)	160

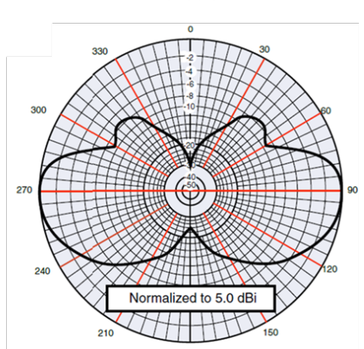
Ordering Information

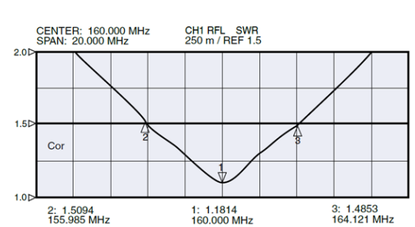
Frequency (MHz)	Part #	Gain (dBi)	Bandwidth (%)	Vertical Beam Width	Height (cm)	Weight (kg)
132-150	**VG1325**	5	2.5%	70	259	1.13
150-174	**VG1502**	2	5%	70	140	0.54
150-174	**VG1505**	5	2.5%	70	259	1.13

Radiation Patterns

VG1505

Elevation





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QW Series

QW152

QWB152

QWFT120

QWFTB120

- **1/4 Wavelength**
- **Economical**
- **Requires Ground Plane**
- **136-256 MHz Frequency:** adjustable by cutting
- **Gain:** 2 dBi
- **Stainless steel radiating element:** 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional VHF Mobile Antenna (136 - 256 MHz)

Electrical Characteristics

Antenna Style	Whip
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

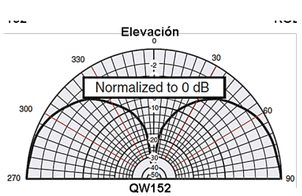
Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	Triple chrome plated brass
Color	Bright Chrome or Black
Connector	NMO

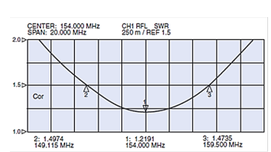
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
136-144	**QW136**	2	Chrome	56
	QWB136	2	Black	56
144-152	**QW144**	2	Chrome	48
	QWB144	2	Black	48
152-162	**QW152**	2	Chrome	46
	QWB152	2	Black	46
162-174	**QW162**	2	Chrome	43
	QWB162	2	Black	43
220-225	**QW220**	2	Chrome	32
	QWB220	2	Black	32
232-256	**QW246**	2	Chrome	30
	QWB246	2	Black	30
118-970	**QWFT120**	2	Chrome	61
	QWFTB120	2	Black	61

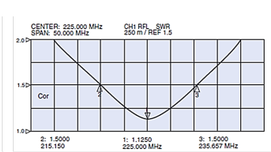
Radiation Patterns

Elevation





QW152



QW220

Base A Series

A150

AB150

A150S

AB150S

- **1/4 Wavelength**
- **Requires Ground Plane**
- **Robust ABS base**
- **118-174 MHz Frequency:** adjustable by cutting
- **Gain:** 2 dBi
- **Stainless steel radiating element:** 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission
- **Long triple-chrome splint:** allows more adjustment range without cutting
- **Robust ABS base with moderate threads:** extreme power retention

Omnidirectional VHF Mobile Antenna (118 - 174 MHz)

Electrical Characteristics

Antenna Style	Whip
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<1.5:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Color	Bright Chrome or Black
Connector	NMO

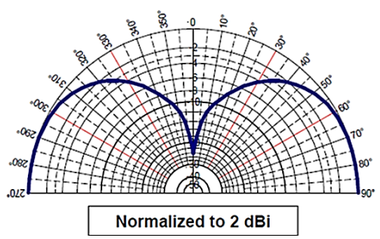
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Base Style	Color	Height (cm)
150-174	**A150**	2	Solid	Chrome	44.7
	AB150	2	Solid	Black	44.7
	A150S	2	Spring	Chrome	43
	AB150S	2	Spring	Black	43
118-896	**AFT**	2	Solid	Chrome	63.5
	ABFT	2	Solid	Black	63.5
	AFTS	2	Spring	Chrome	63.5
	ABFTS	2	Spring	Black	63.5

Radiation Patterns

Elevation

AFT



Base B Series - 1/4 Wavelength

B132 B132S B132R

BB132 BB132S BB132R

- **1/4 Wavelength**
- **Robust ABS base:** injection molded around brass core, waterproof **118-174 MHz Frequency:** adjustable by cutting
- **Gain:** 2 dBi
- **Stainless steel radiating element:** 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission
- **Easily remove rod for car wash:** waterproof base
- **Stainless steel rod:** 17-7 PH anodized, resists rust and bending
- **Triple chrome plated brass insert:** bridges base and rod
- **Silver welded joints**
- **Tight-sealed base O ring**
- **Low loss coil:** provides dimension and frequency stability

Omnidirectional VHF Mobile Antenna (132 - 250 MHz)

Electrical Characteristics

Antenna Style	Whip w/ charging coil in base
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<1.5:1
Horizontal Beam Width (Azimuth)	360°
Vertical Beam Width	110°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Color	Bright Chrome or Black
Base Diameter (cm)	3.65
Weight (kg)	0.22
Connector	NMO

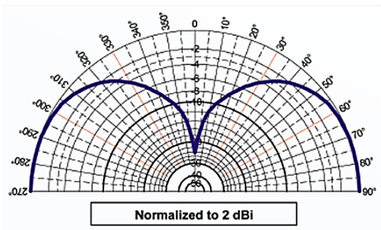
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Base Style	Color	Height (cm)
132-928	B132	2	Solid	Chrome	53
	BB132	2	Solid	Black	53
132-525	B132R	2	Spring	Chrome	53
	BB132R	2	Spring	Black	53
	B132S	2	Spring	Chrome	53
	BB132S	2	Spring	Black	53

Radiation Patterns

Elevation

B132S



Base B Series - 1/2 Wavelength Broadband

B1322W B1322WS

BB1360W BB1360WS

- **1/2 Wavelength**
- **Bandwidth:** 23 MHz
- **Robust ABS base:** injection molded around brass core, waterproof
- **Low-loss base load coil**
- **132-174 MHz Frequency:** requires no adjustment
- **Stainless steel radiating element:** 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional VHF Mobile Antenna (132 - 174 MHz)

Electrical Characteristics

Antenna Style	Whip w/ charging coil in base
Radiation Pattern	Omnidirectional
Polarization	Vertical
Bandwidth (MHz)	23
VSWR	<1.5:1
Horizontal Beam Width (Azimuth)	360°
Vertical Beam Width	110°
Maximum Input Power (W)	100
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Color	Bright Chrome or Black
Base Diameter (cm)	3.65
Weight (kg)	0.22
Connector	NMO

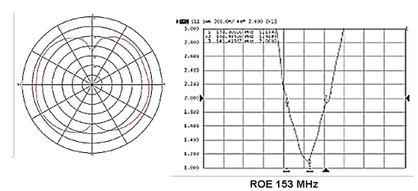
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Base Style	Color	Height (cm)
132-174	B1322W	4.4	Solid	Chrome	102
	BB1322W	4.4	Solid	Black	102
	B1322WS	4.4	Spring	Chrome	102
	BB1322WS	4.4	Spring	Black	102
136-174	B1360W	2	Solid	Chrome	49
	BB1360W	2	Solid	Black	49
	B1360WS	2	Spring	Chrome	49
	BB1360WS	2	Spring	Black	49

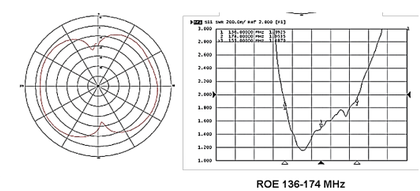
Radiation Patterns

Elevation

B1322W



B1360W



Base B Series - 1/2 Wavelength

B1322N B1422NS B1322NR

BB1372N BB1442NS BB1442NR

- **1/2 Wavelength**
- **No ground plane needed**
- **Low-loss base load coil**
- **132-174 MHz Frequency:** adjustable by cutting
- **Stainless steel radiating element:** 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional VHF Mobile Antenna (132 - 174 MHz)

Electrical Characteristics

Wavelength	1/2 Wave
Antenna Style	Whip w/ charging coil in base
Radiation Pattern	Omnidirectional
Polarization	Vertical
Bandwidth (MHz)	23
VSWR	<1.5:1
Horizontal Beam Width (Azimuth)	360°
Vertical Beam Width	70°
Maximum Input Power (W)	100
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	Brass/ABS
Color	Bright Chrome or Black
Base Diameter (cm)	3.65
Weight (kg)	0.22
Connector	NMO

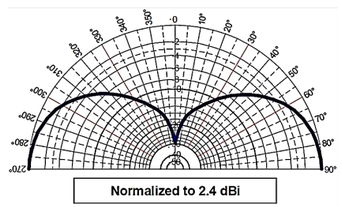
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Vert. Beam Width	Base Style	Color	Height (cm)
132-174	**B1322N**	2	70°	Solid	Chrome	140
	B1322NR	2	70°	Rubber spring	Chrome	124
	BB1322NR	2	70°	Rubber spring	Black	124
	B1322NS	2	70°	Metal spring	Chrome	124
137-150	**B1372N**	2	70°	Solid	Chrome	140
	BB1372N	2	70°	Solid	Black	140
144-174	**B1442N**	2	70°	Solid	Chrome	124
	BB1442N	2	70°	Solid	Black	124
	B1442NS	2	70°	Metal spring	Chrome	124
	BB1442NS	2	70°	Metal spring	Black	124

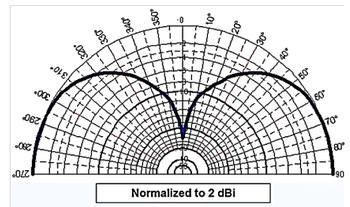
Radiation Patterns

Elevation

B1322N



B1442N



Base B Series - 5/8 Wavelength

B1323 B1323S B1323R

BB1443 BB1443S BB1323R

- **5/8 Wavelength**
- **Low-loss base load coil**
- **132-174 MHz Frequency:** adjustable by cutting
- **Stainless steel radiating element:** 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional VHF Mobile Antenna (132 - 174 MHz)

Electrical Characteristics

Wavelength	5/8 Wave
Antenna Style	Whip w/ charging coil in base
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<1.5:1
Horizontal Beam Width (Azimuth)	360°
Vertical Beam Width	70°
Maximum Input Power (W)	100
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	Brass/ABS
Color	Bright Chrome or Black
Base Diameter (cm)	3.65
Weight (kg)	0.22
Connector	NMO

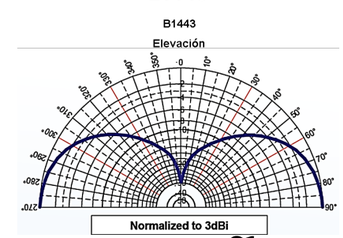
Ordering Information

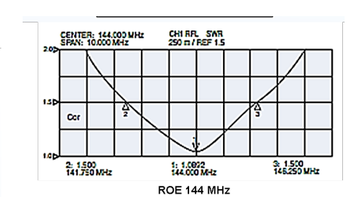
Frequency (MHz)	Part #	Gain (dBi)	Base Style	Color	Height (cm)
132-174	**B1323**	3	Solid	Chrome	140
	B1323R	3	Rubber Spring	Chrome	140
	BB1323R	3	Rubber Spring	Black	140
	B1323S	3	Metal Spring	Chrome	140
	BB1323S	3	Metal Spring	Black	140
144-174	**B1443**	3	Solid	Chrome	124
	BB1443	3	Solid	Black	124
	B1443R	3	Rubber Spring	Chrome	124
	BB1443R	3	Rubber Spring	Black	124
	B1443S	3	Metal Spring	Chrome	124
	BB1443S	3	Metal Spring	Black	124

Radiation Patterns

Elevation

B1443





Base CW Series - 5/8 Wavelength Broadband

CW1503

CWB1503

CW1503S

CWB1503S

- **5/8 Wavelength**
- **Patented base load per circuit**
- **132-174 MHz Frequency:** doesn't require adjusting
- **Broadband**
- **Stainless steel radiating element:** 17-7 PH
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional VHF Mobile Antenna (132- 174 MHz)

Electrical Characteristics

Antenna Style	Whip w/ base load per circuit
Radiation Pattern	Omnidirectional
Polarization	Vertical
Percentage bandwidth (MHz)	Exceeds 10% @ VSWR 1.8:1
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

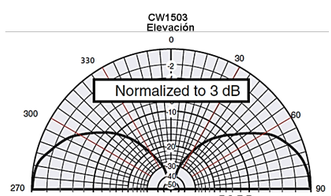
Contact Material	Gold Plated
Radiator Material	Slainless Steel Alloy 17-7 PH
Base Material	ABS
Color	Bright Chrome or Black
Connector	NMO / N-Female

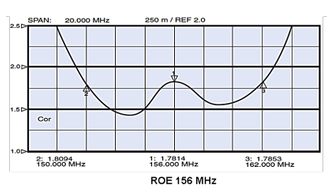
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Base Style	Color	Height (cm)	Base Diameter (cm)	Weight (kg)
132-144	CW1323	3	Solid	Chrome	128	3.65	0.22
	CW1323S	3	Spring	Chrome	128	3.65	0.22
138-150	CW1383	3	Solid	Chrome	128	3.65	0.22
	CW1383S	3	Spring	Chrome	128	3.65	0.22
	CWB1383S	3	Spring	Black	128	3.65	0.22
144-156	CW1443	3	Solid	Chrome	128	3.65	0.22
	CWB1443	3	Solid	Black	128	3.65	0.22
	CW1443S	3	Spring	Chrome	128	3.65	0.22
	CWB1443S	3	Spring	Black	128	3.65	0.22
150-162	CW1503	3	Solid	Chrome	128	3.65	0.22
	CWB1503	3	Solid	Black	128	3.65	0.22
	CW1503S	3	Spring	Chrome	128	3.65	0.22
	CWB1503S	3	Spring	Black	128	3.65	0.22
153-169	CW1533	3	Solid	Chrome	128	3.65	0.22
	CWB1533	3	Solid	Black	128	3.65	0.22
	CW1533S	3	Spring	Chrome	128	3.65	0.22
	CWB1533S	3	Spring	Black	128	3.65	0.22
162-174	CW1623	3	Solid	Chrome	128	3.65	0.22
	CWB1623	3	Solid	Black	128	3.65	0.22
	CW1623S	3	Spring	Chrome	128	3.65	0.22

Radiation Patterns

Elevation - CW1503





Phantom Series - Adjustable

TRAT1500

TRABT1500

TRAT1500P

TRABT1500P

- **Low profile:** 9 cm height
- **142-225 MHz Frequency:** adjustable by allen key
- **1 MHz Bandwidth**
- **NMO or N connector**
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional VHF Mobile Antenna (142 - 225 MHz)

Electrical Characteristics

Antenna Style	Low Profile
Radiation Pattern	Omnidirectional
Polarization	Vertical
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	60
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Solid Brass
Base Material	ABS
Color	White or Black
Base Diameter (cm)	8.5
Weight (kg)	0.11
Connector	NMO

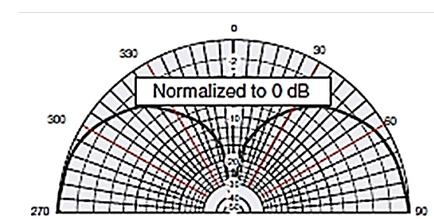
Ordering Information

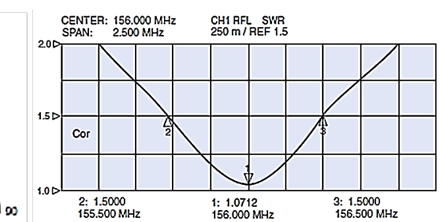
Frequency (MHz)	Part #	Gain (dBi)	Connector	Color	Height (cm)
142-160	TRAT1420	0	NMO	White	9
	TRABT1420	0	NMO	Black	9
	TRABT1420P	0	N	Black	9
150-168	TRAT1500	0	NMO	White	9
	TRABT1500	0	NMO	Black	9
	TRAT1500P	0	N	White	9
	TRABT1500P	0	N	Black	9
156-172	TRAT1560	0	NMO	White	9
	TRABT1560	0	NMO	Black	9
	TRAT1560P	0	N	White	9
210-225	TRAT2100	0	NMO	White	7
	TRABT2100	0	NMO	Black	7

Radiation Patterns

Elevation

TRAT1420





Phantom Elite Series

ETRA1500

ETRAB1500

Omnidirectional VHF Mobile Antenna (144 - 170 MHz)

Electrical Characteristics

Antenna Style	Low Profile
Radiation Pattern	Omnidirectional
Polarization	Vertical
Bandwidth (MHz)	5
VSWR	<2.0:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	60
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiating Element Material	Radiant Circuit
Base Material	ABS
Color	White or Black
Base Diameter (cm)	8.2
Weight (kg)	0.11
Connector	Bayonet (3/4" adapter included)

- **Low profile:** 6 cm height
- **Patented radiant PCB**
- **144-170 MHz Frequency:** adjustable by allen key
- **Silver-tin welded joints:** ensure mechanical and electrical connection
- **Molded ABS plastic frame:** nearly indestructible
- **Bayonet insert notch on mount:** point toward front and rear of vehicle
- **5 MHz Bandwidth**
- **Requires no adjustment**
- **Bayonet connector**
- **Gold anodized connector:** Corrosion-resistant and better transmission

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
144-148	ETRA1440	0	White	6
	ETRAB1440	0	Black	6
150-155	ETRA1500	0	White	6
	ETRAB1500	0	Black	6
155-160	ETRA1550	0	White	6
	ETRAB1550	0	Black	6
160-165	ETRAB1600	0	Black	6
165-170	ETRA1650	0	White	6
	ETRAB1650	0	Black	6

Base A Series - Multiband

A150/450C

AB150/450C

A150/450CS

AB150/450CS

- **Multiband:** UHF and VHF
- **144-174 MHz and 440-470 MHz**
- **1 MHz Bandwidth**
- **NMO or N connector**
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional VHF Mobile Antenna (144-170/440-450 MHz)

Electrical Characteristics

Antenna Style	Low Profile
Radiation Pattern	Omnidirectional
Polarization	Vertical
Wavelength	1/4 (VHF), 5/8 to 1/2 (UHF)
VSWR	<1.5:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Stainless Steel Alloy 17-7 PH
Base Material	ABS
Color	Chrome or Black
Base Diameter (cm)	3.2
Connector	NMO

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Base Style	Color	Height (cm)
144-148 / 440-450	A144/440C	2	Solid	Chrome	97
	AB144/440C	2	Solid	Black	97
150-174 / 450-470	A150/450C	2	Solid	Chrome	97
	AB150/450C	2	Solid	Black	97
	A150/450CS	2	Metal Spring	Chrome	97
	AB150/450CS	2	Metal Spring	Black	97

Base C Series - Multiband

C150/450C

CB150/450C

C150/450CS

CB150/450CS

- **Multiband:** UHF and VHF
- **144-174 MHz and 440-470 MHz -** adjustable by cutting
- **Base loading coil and encapsulated tempered silver brass coil**
- **NMO connector**
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omnidirectional VHF Mobile Antenna (144-170 / 440-450 MHz)

Electrical Characteristics

Antenna Style	Whip w/ charging coil in base
Radiation Pattern	Omnidirectional
Polarization	Vertical
Wavelength	1/2 (VHF), 5/8 to 1/2 (UHF)
VSWR	<1.5:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	200
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Stainless Steel Alloy 17-7 PH
Encapsulated Coil Material	Tempered Silver-plated Brass
Base Material	ABS
Color	Chrome or Black
Base Diameter (cm)	3.2
Connector	NMO

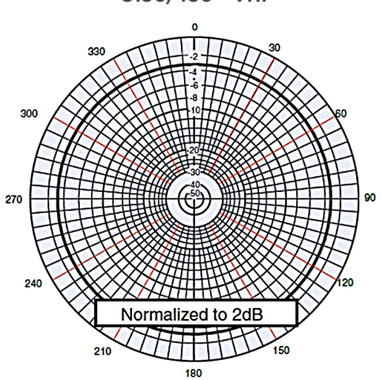
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Base Style	Color	Height (cm)
144-148 / 440-450	C144/440C	4	Solid	Chrome	97
	CB144/440C	7	Solid	Black	97
	C144/440CS	4	Metal Spring	Chrome	97
	CB144/440CS	7	Metal Spring	Black	97
150-174 / 450-470	C150/450C	2	Solid	Chrome	97
	CB150/450C	2	Solid	Black	97
	C150/450CS	2	Metal Spring	Chrome	97
	CB150/450CS	2	Metal Spring	Black	97

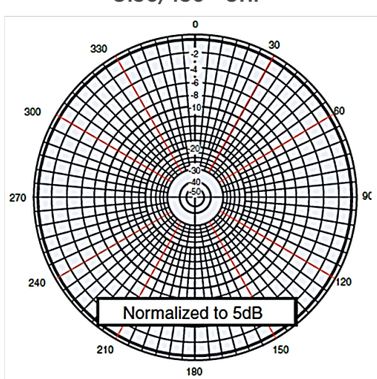
Radiation Patterns

Elevation

C150/450 - VHF



C150/450 - UHF



WPD Series - Multiband

WPD136M6C-001

- **Multiband:** UHF and VHF
- **136-174 MHz (VHF), 380-520 MHz (UHF), 760-870 MHz (Cellular):** Requires no adjustment
- **Base loading coil and encapsulated tempered silver brass coil**
- **Ingress protection:** IP66
- **NMO connector**
- **Gold anodized connector:** Corrosion-resistant and better transmission

Omni VHF Mobile Antenna (136-174 / 380-520 / 760-870 MHz)

Electrical Characteristics

Antenna Style	Whip w/ charging coil in base
Radiation Pattern	Omnidirectional
Polarization	Vertical
Wavelength	1/2 (VHF), 5/8 to 1/2 (UHF)
VSWR	<2.5:1
Horizontal Beam Width (Azimuth)	360°
Maximum Input Power (W)	100
Impedance (Ohms)	50

Mechanical Characteristics

Contact Material	Gold Plated
Radiator Material	Stainless Steel Alloy 17-7 PH
Encapsulated Coil Material	Tempered Silver-plated Brass
Base Material	ABS
Color	Black
Base Diameter (cm)	6.35
Connector	NMO

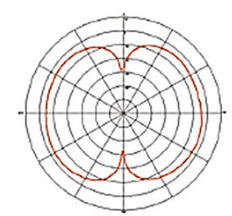
Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Base Style	Color	Height (cm)
136-174 / 380-520 / 760-870	WPD136M6C-001	2	Solid	Black	51

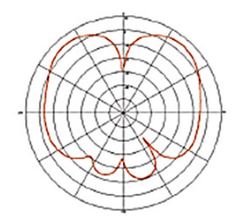
Radiation Patterns

Elevation

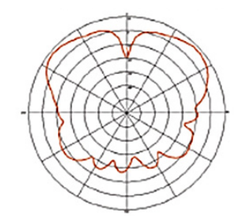
156 MHz



440 MHz



815 MHz



GPS Series

GPS and Spring for External VHF Antenna

GPSNMOAO

GPSBNMOAO

(Phantom Antenna and NMO connector not included)

Ordering Information

Frequency (MHz)	Part #	Gain (dBi)	Color	Height (cm)
1.575 MHz	**GPSNMOAO**	4	Chrome	1.9
	GPSBNMOAO	7	Black	1.9

- **Multiband:** VHF/GPS AVL
- **132-285 MHz (VHF), 1.575 MHz (GPS),**
- **GPS AVL antenna (automatic vehicle location) with integrated spring for external NMO antenna**
- **Low profile**
- **Includes 5.18 meter RG174 cable with connector of your choice**

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Accessories

3/4” NMO Mounts

	Part #	Type	Color	Hole Diameter	Cable Length	Cable Type	Connector
	MB8U	NMO ceiling		3/4” (19 mm)	5.18 m	RG58U	None
	MB8UB	NMO ceiling		3/4” (19 mm)	5.18 m	RG58U	Loose folding BNC connector
	MB8UM	NMO ceiling		3/4” (19 mm)	5.18 m	RG58U	Loose folding mini UHF connector
	MB8UN	NMO ceiling		3/4” (19 mm)	5.18 m	RG58U	Loose folding N connector
	MB8UP	NMO ceiling		3/4” (19 mm)	5.18 m	RG58U	Loose folding PL259 connector
	MB8USM	NMO ceiling		3/4” (19 mm)	5.18 m	RG58U	Loose folding SMA connector
	MB8UT	NMO ceiling		3/4” (19 mm)	5.18 m	RG58U	Loose folding TNC connector
	NMOHPC	High-performance NMO barrel	Chrome	3/4” (19 mm)	None	None	LNone
	NMOHPCG518	High performance NMO, IP67 Rated	Chrome	3/4” (19 mm)	5.18 m	RG58U	None
	NMOHPCGFMEM518	High performance NMO	Chrome	3/4” (19 mm)	5.18 m	RG58U	Loose male FME connector
	NMOHPCGMUHM518	High performance NMO	Chrome	3/4” (19 mm)	5.18 m	RG58U	Loose male Mini UHF connector
	NMOHPCGSMAM518	High performance NMO	Chrome	3/4” (19 mm)	5.18 m	RG58U	Loose male SMA connector
	NMOHPCGTNCM518	High performance NMO	Chrome	3/4” (19 mm)	5.18 m	RG58U	Loose male TNC connector
	NMOHPCGUHFM518	High performance NMO	Chrome	3/4” (19 mm)	5.18 m	RG58U	Loose male UHF PL259

Accessories

Large Mag Mount

	Part #	Type	Diameter	Cable Length	Cable Type	Color	Connector
	G8U	Magnetic NMO	8.25 cm	3.66 m	RG58U	Chrome	None
	G8UB	Magnetic NMO	8.25 cm	3.66 m	RG58U	Chrome	Loose folding BNC
	G8UM	Magnetic NMO	8.25 cm	3.66 m	RG58U	Chrome	Loose folding Mini UHF
	G8UN	Magnetic NMO	8.25 cm	3.66 m	RG58U	Chrome	Loose folding N
	G8UP	Magnetic NMO	8.25 cm	3.66 m	RG58U	Chrome	Loose folding PL259
	G8UT	Magnetic NMO	8.25 cm	3.66 m	RG58U	Chrome	Loose folding TNC
	GB8U	Magnetic NMO	8.25 cm	3.66 m	RG58U	Black	None
	GB8UB	Magnetic NMO	8.25 cm	3.66 m	RG58U	Black	Loose folding BNC
	GB8UM	Magnetic NMO	8.25 cm	3.66 m	RG58U	Black	Loose folding Mini UHF
	GB8UN	Magnetic NMO	8.25 cm	3.66 m	RG58U	Black	Loose folding N
	GB8USM	Magnetic NMO	8.25 cm	3.66 m	RG58U	Black	Loose folding SMA
	GB8UT	Magnetic NMO	8.25 cm	3.66 m	RG58U	Black	Loose folding TNC

Accessories

Mini Mag Mount

	Part #	Type	Diameter	Hole Diameter	Cable Length	Cable Type	Color	Connector
	GM8U	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Chrome	None
	GM8UB	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Chrome	Loose folding BNC
	GM8UM	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Chrome	Loose folding Mini UHF
	GM8UP	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Chrome	Loose folding PL259
	GM8USM	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Chrome	Loose folding SMA
	GM8UT	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Chrome	Loose folding TNC
	GMB8U	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Black	None
	GMB8UB	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Black	Loose folding BNC
	GMB8UM	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Black	Loose folding BNC
	GMB8UN	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Black	Loose folding N
	GMB8UP	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Black	Loose folding PL259
	GMB8UT	Mini Magnetic NMO	6.03 cm	3/4" (19 mm)	3.66 m	RG58U	Black	Loose folding TNC

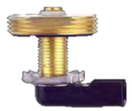
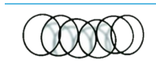
Accessories

Trunk Mounts

	Part #	Type	Hole Diameter	Cable Length	Cable Type	Color	Connector
	TM8U	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Chrome	None
	TM8UB	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Chrome	Loose folding BNC
	TM8UM	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Chrome	Loose folding Mini UHF
	TM8UNS	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Chrome	Loose folding N
	TM8UP	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Chrome	Loose folding PL259
	TM8UT	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Chrome	Loose folding TNC
	TMB8U	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Black	None
	TMB8UB	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Black	Loose folding BNC
	TMB8UM	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Black	Loose folding Mini UHF
	TMB8UN	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Black	Loose folding N
	TMB8UP	NMO Trunk Mount	3/4" (19 mm)	5.18 m	RG58U	Black	Loose folding PL259

Accessories

Mount Accessories

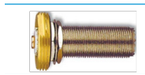
	Part #	Description
	GMRO	Rubber boot for mini magnetic NMO mounting, 6.03 cm
	GRO	Rubber boot for magnetic NMO mounting, 8.25 cm diameter
	MABNUT	External nut for 3/8" mounts
	MABO	Ceiling mount NMO, 3/8" hole (9.5 mm), loose, no cable
	MABTO	Ceiling mount NMO, 3/4" hole (19 mm) or 3/8" (9.5 mm), plate up to 6.5 mm thick, loose, no cable
	MABVTO	Ceiling mount NMO, 3/4" hole (19 mm) or 3/8" (9.5 mm), plate up to 13 mm thick, loose, no cable
	MBNUT	External nut for 3/4" mounts
	MBO	Ceiling mount NMO, 3/4" hole (19 mm), loose, no cable
	MOGSK	Gaskets for 3/4" NMO mounts, six pack
	MORNG	O rings for NMO assemblies, six pack
	P34	3/4" plugs, six pack
	P38	3/8" plugs, six pack

Accessories

3/8" - 3/4" Mounting Bracket

	Part #	Type	Hole Diameter	Color
	LBH3400	Mounting plate for Z-type fender	3/4"	Chrome
	LBM9034	Mounting plate for 90° L-type mirror	3/4"	Chrome
	LBM9038	Mounting plate for 90° L-type mirror	3/8"	Chrome
	LBMB9034	Mounting plate for 90° L-type mirror	3/4"	Black
	LBT3400	Mounting plate for L-type trunk	3/4"	Chrome
	LBT3800	Mounting plate for L-type trunk	3/8"	Chrome
	LBTB3400	Mounting plate for L-type trunk	3/4"	Black
	LBTB3800	Mounting plate for L-type trunk	3/8"	Black
	SBH3400	Mounting plate for Z-type fender	3/4"	Chrome
	SBT3400	Mounting plate	3/4"	Chrome
	SBTB3400	Mounting plate	3/4"	Black

Adapters

	Part #	Description
	AD-NF-NF	Barrel Adapter - N-Female to N-Female
	AD-NM-NM	Barrel Adapter - N-Male to N-Male
	VTPM	Ceiling mount NMO, 5/8" hole (16 mm), plate up to 25.4 mm thickness, loose, no cable
	VTPM800	Ceiling mount NMO, 5/8" hole (16 mm), plate up to 13 mm thickness, 800 MHz, N-type barrel, loose, no cable
	VTPM800-002	Ceiling mount NMO, 5/8" hole (16 mm), plate up to 23 mm thickness, 800 MHz, N-type barrel, loose, no cable

Accessories

Base Station Brackets

	Part #	Bracket Type	Material	Max Mast Diameter	Length	Qty	Additional Description
	FM1	U type	Stainless Steel	4.76 cm	N/A	2	
	FM2	U type	Aluminum	6.35 cm	N/A	2	
	FM2SP	U type	Aluminum	6.35 cm	N/A	1	
	UM-UB	U type	Stainless Steel	5.08 cm	N/A	2	Spare U-Bolt kit for UM and UML mount
	FM3	Robust Mast Mount	Die cast aluminum	7.62 cm	N/A	2	For heavy antennas and masts
	FM3W	Side wall Mount	Die cast aluminum	7.62 cm	N/A	2	Welded center, for heavy antennas and masts
	FMW4	Side wall Mount	Stainless Steel	6.35 cm	N/A	2	For YMST4 and YMST18 masts
	UM	Wall/Mast Mount	Galvanized Steel	3.81 cm	38.1 cm	1	90° adjustable tilt
	UML	Wall/Mast Mount	Galvanized Steel	3.81 cm	58.42 cm	1	90° adjustable tilt
	YMST18	Wall Mast	Aluminum	3.81 cm	54.8 cm	1	
	YMST4	Wall Mast	Aluminum	3.175 cm	12.1 cm	1	
	WMB8	Wall Mount	Galvanized Steel	3.81 cm (8 inch standoff from wall)	N/A	1	Anti-corrosion plating. Distance between wall: 20 cm
	YM125HD	Robust Yagi Mount	Die cast aluminum	3.17 cm	N/A	1	
	YM78	Robust Yagi Mount	Die cast aluminum	4.12 cm	N/A	1	
	YM78HD	Robust Yagi Mount	Die cast aluminum	2.22 cm	N/A	1	

Accessories

Cable Assemblies

	Part #	Cable Type	Connectors	Length
	PT4002NN	ATX 400 Series assembled cable	N Male to N Male	0.60 m (2 feet)
	PT4003NN	ATX 400 Series assembled cable	N Male to N Male	0.91 m (3 feet)
	PT40010NN	ATX 400 Series assembled cable	N Male to N Male	3.04 m (10 feet)
	PT40017NN	ATX 400 Series assembled cable	N Male to N Male	5.18 m (17 feet)
	R81000	Cable Coil RG58A/U	N/A	304 m (1000 feet)
	R8U1000	Cable Coil RG58U	N/A	304 m (1000 feet)

Connectors

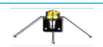
	Part #	For Cable Type	Connector Type
	CBNC58	RG58/LMR195	BNC male
	CMUHF58	RG58/LMR195	Mini UHF
	CN58	RG58/LMR195	N male
	CNF58	RG58/LMR195	N female
	CPL9C	RG58/LMR195	PL259 male
	CPL9CF	RG58/LMR195	PL259 female
	CTNC58	RG58/LMR195	TNC male

Installation Tools

	Part #	Description
	CCT	Crimping pliers for RG58 connectors
	CCT213	Crimping pliers for RG213/LMR400 connectors
	HS34	Hole saw with 3/4" drill bit
	HS38DB	3/8" drill bit repacement for punch
	HS34DB	3/4" drill bit repacement for punch
	HS34RB	Replacement 3/4" drill bit for punch, 2 pack
	IASFST	Silicone waterproofing tape for joints and connectors, 10.97 m (36 feet)
	IASFST10	Silicone waterproofing tube for joints, 6 25.4 cm (10 inch) tapes
	SEALTUBE3	Heat shrinkable adhesive tube 5.08 cm long by 2.54 cm in diameter

Accessories

Mobile Whip Accessories

	Part #	Description
	AO	Low profile base for Base Series A antennas
	AS	Base Series A antenna coil sprint with key and nut, chrome color
	ASB	Base Series A antenna coil sprint with key and nut, black color
	BCORNG	O rings for Base Series B and Base Series C antennas, pack of six
	HWS0316	#10 32 x 3/16 nut for splints of Base Series B and C antennas, pack of 12
	MBC	VHF mobile antenna to VHF base antenna converter, UHF connector, SO239
	MBC800	800/900 MHz mobile antenna to 800/900 MHz base antenna converter, N connector
	MBC800-NGP	800/900 MHz mobile antenna to 800/900 MHz base antenna converter, N connector, doesn't require ground plane
	MBC800LBT	>800 MHz mobile antenna to >800 MHz base antenna converter, N connector and wall mounting
	MBCN	VHF mobile antenna to VHF base antenna converter, UHF connector, N
	QWNUT	External nut for QW series antennas, chrome color
	QWNUTB	External nut for QW series antennas, black color
	QWRCB	Plugs for QW series antennas, black color
	QWRCB-6	Plugs for QW series antennas, black color, six pack
	QWRC	Plugs for QW series antennas, chrome color
	QWRC-6	Plugs for QW series antennas, chrome color, six pack
	RO49T	Replacement 106 cm whip rod with ball, chrome color
	ROB49T	Replacement 106 cm whip rod with ball, black color
	S	Coil spring for Base Series B and C antennas, chrome color
	SB	Coil spring for Base Series B and C antennas, black color
	SRS-100-B-001	Elastomer spring for Base Series B coils, 2.54 mm diameter rod, black color
	SRS-100-C-001	Elastomer spring for Base Series C coils, 2.54 mm diameter rod, black color

Accessories

Surge Suppression

	Part #	Frequency	Voltage	Max Power	Connectors
	LABH2400NN	DC-4000 MHz	90 - 130 V	200 W	N-Female to N-Female
	LAC4	DC-500 MHz	50 V	200 W	UHF-Female to UHF-Female
	LAC4N	DC-3000 MHz	50 V	200 W	N-Female to N-Female
	LAC6NFF	DC-6000 MHz	230 V	250 W	N-Female to N-Female
	LAC6NMF	DC-6000 MHz	230 V	250 W	N-Male to N-Female
	LABH350NN	DC-1000 MHz	350 V	1000 W	N-Female to N-Female
	LAIL350NN	DC-1000 MHz	350V	1000 W	N-Female to N-Female
	SP3-90-6-BFF	DC-3000 MHz	90 V	42 W	N-Female to N-Female
	SP3-90-6-BFM	DC-3000 MHz	90 V	42 W	N-Male to N-Female
	SP6-230-BFF	DC-6000 MHz	230V	100 W	N-Female to N-Female
	SP6-230-BFM	DC-6000 MHz	230V	100 W	N-Male to N-Female
	LA350GT	N/A (Replacement Gas Tube)			

Noise Suppression

	Part #	Description
	NS1535	Noise suppressor, 1-35 V, 15 amps
	NS3035	Noise suppressor, 1-35 V, 30 amps