

BASE STATION ANTENNAS

Cellular, PCS, Data, ISM and WLL are technologies migrating to completely wireless systems. Base station antennas provide the critical link between the user and the system provider. They also provide connectivity within the system without being directly accessed by the user. Base station antennas, as their name implies, are usually fixed in a specific location in the network and provide connectivity over a geographic area or from point-to-point. Base station antennas can be broken into two general categories; omni-directional and directional.

Larsen manufactures a variety of small base station antennas to meet many of today's demanding requirements. Our versatile product line offers selection and performance to meet your system needs. In addition to our standard product offering, Larsen's engineering staff can work with you to design antennas to your exact specifications.

OMNI-DIRECTIONAL ANTENNAS

Omni-directional antennas have radiation patterns which cover the horizon uniformly. Gain greater than unity is achieved by forming a collinear vertical array, which reduces the elevation beamwidth but leaves the azimuth (horizon) pattern unaffected.

Moderate-Duty Omnis

Larsen's moderate-duty omni antenna radiating elements and ground plane radials are constructed using 17-7 heat-treated stainless steel. All base station antennas are supplied with mounting hardware.

DIRECTIONAL ANTENNAS

Directional antennas are used in communication systems where gain higher than can be provided by a reasonable omni (> 7 dBi) is required. Directional antennas are useful for remote locations where high gain is required, and the direction to a desired transmitter / receiver is known. They are used in cell and microcell applications to divide a geographical region into sectors. This reduces interference in the network, allowing a greater number of users to be served.

Antenna gain and directivity are increased by increasing the effective aperture of the antenna. In a Yagi, this means lengthening the boom and adding more elements (directors) to the antenna.



BASE STATION ANTENNAS

BSA Series Omnis

BSA series omni antennas are engineered to provide lasting performance in the most demanding field conditions.

Design features include:

- Heavy, nickel-plated brass square nut radial collar (square nut allows easy removal for extra portability and convenience)
- 150 MHz and 220 MHz models are DC grounded
- Wind load rating 100 mph



Yagis

A Yagi is a parasitic linear array of parallel dipoles. Typical construction uses a single driven dipole with a reflector and director elements excited by near-field coupling to the driven element. Yagis are popular due to their rugged construction and relatively high gain.

YA series Yagis are built to precise specifications to perform in extreme weather conditions. Yagis are welded for high strength and low noise performance.

Features include:

- Fully welded design
- Solid aluminum elements
- Aluminum tube boom
- Wind load rating 100 mph
- Optional heavy duty bracket for up to 2.5" pipe



FB Series Omnis

FB series omni antennas are designed for optimum performance in extreme weather conditions.

Design features include:

- Compact, easily transportable design
- All-weather construction
- Wind load rating 100 mph



BASE STATION ANTENNAS

MODEL	FREQUENCY (MHz)
-------	-----------------

BSA45C	45 - 50
--------	---------

SPECIFICATIONS	
----------------	--

GAIN	2.14 dBi
TYPE	Base loaded 1/4 wave
VSWR (see bandwidth)	1.5:1
BANDWIDTH @ 2.0	3%
COLOR	Black/Stainless
POWER RATING	200 Watts
MAX HEIGHT	51 3/4"
FEED CONNECTION	UHF Female
WIND LOAD	100 mph



Field tunable low band omni base station kit, 45 - 50 MHz.

MODEL	FREQUENCY (MHz)
-------	-----------------

BSA118B	118 - 121
---------	-----------

SPECIFICATIONS	
----------------	--

GAIN	5.2 dBi
TYPE	5/8 wave
VSWR (see bandwidth)	1.5:1
BANDWIDTH @ 1.5	2%
BANDWIDTH @ 2.0	4%
COLOR	Black
POWER RATING	200 Watts
MAX HEIGHT	51 3/4"
FEED CONNECTION	UHF Female
WIND LOAD	100 mph



Factory tuned mid band omni base station kit, 118 - 121 MHz.

NOTE: Antennas are not to scale

1 800 ANTENNA

To convert to Gain (dBd):
Gain (dBi) - 2.14



BASE STATION ANTENNAS



MODEL	FREQUENCY (MHz)
-------	-----------------

BSA132B	131 - 135
---------	-----------

SPECIFICATIONS	
----------------	--

GAIN	5.2 dBi
TYPE	5/8 wave
VSWR (see bandwidth)	1.5:1
BANDWIDTH @ 1.5	2%
BANDWIDTH @ 2.0	4%
COLOR	Black
POWER RATING	200 Watts
MAX HEIGHT	54 1/2"
FEED CONNECTION	UHF Female
WIND LOAD	100 mph

Factory tuned VHF omni base station kit,
131 - 135 MHz.



MODEL	FREQUENCY (MHz)
-------	-----------------

BSA150B	144 - 174
---------	-----------

SPECIFICATIONS	
----------------	--

GAIN	5.2 dBi
TYPE	5/8 wave
VSWR (see bandwidth)	1.5:1
BANDWIDTH @ 1.5	2%
BANDWIDTH @ 2.0	4%
COLOR	Black
POWER RATING	200 Watts
MAX HEIGHT	51 3/4"
FEED CONNECTION	UHF Female
WIND LOAD	100 mph

Field tunable VHF omni base station kit,
144 - 174 MHz. Black coil and whip.

BASE STATION ANTENNAS

MODEL	FREQUENCY (MHz)
BSA150C	144 - 174

SPECIFICATIONS

GAIN	5.2 dBi
TYPE	5/8 wave
VSWR (see bandwidth)	1.5:1
BANDWIDTH @ 1.5	2%
BANDWIDTH @ 2.0	4%
COLOR	Black/Stainless
POWER RATING	200 Watts
MAX HEIGHT	51 3/4"
FEED CONNECTION	UHF Female
WIND LOAD	100 mph



Field tunable VHF omni base station kit, 144 - 174 MHz. Black coil, stainless whip.

MODEL	FREQUENCY (MHz)
BSA220C	200 - 225

SPECIFICATIONS

GAIN	5.2 dBi
TYPE	5/8 wave
VSWR (see bandwidth)	1.5:1
BANDWIDTH @ 1.5	2%
BANDWIDTH @ 2.0	4%
COLOR	Black/Chrome
POWER RATING	200 Watts
MAX HEIGHT	33 3/4"
FEED CONNECTION	UHF Female
WIND LOAD	100 mph



Factory tuned omni base station kit, 220 - 225 MHz.

NOTE: Antennas are not to scale

1 800 ANTENNA

To convert to Gain (dBd):
Gain (dBi) - 2.14



BASE STATION ANTENNAS



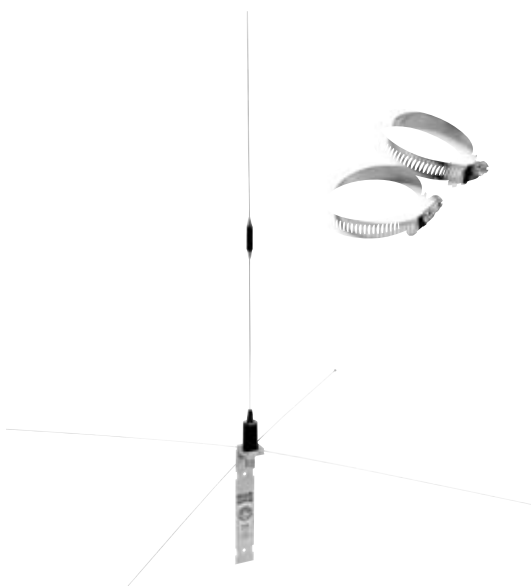
MODEL	FREQUENCY (MHz)
-------	-----------------

BSADC450	450 - 470
----------	-----------

SPECIFICATIONS	
----------------	--

GAIN	5.6 dBi
TYPE	5/8 over 1/2 wave, DC grounded
VSWR (see bandwidth)	1.5:1
BANDWIDTH @ 1.5	2%
BANDWIDTH @ 2.0	4%
COLOR	Black/Stainless
POWER RATING	200 Watts
MAX HEIGHT	32"
FEED CONNECTION	UHF Female
WIND LOAD	100 mph

Factory tuned DC ground UHF omni base station kit, 450 - 470 MHz.



MODEL	FREQUENCY (MHz)
-------	-----------------

BSA406C	406 - 420
BSA440C	440 - 460
BSA450C	450 - 470
BSA470C	470 - 490
BSA490C	490 - 512

SPECIFICATIONS	
----------------	--

GAIN	5.6 dBi
TYPE	5/8 over 1/2 wave
VSWR	2:1
COLOR	Black/Stainless
POWER RATING	200 Watts
MAX HEIGHT	32"
FEED CONNECTION	UHF Female
WIND LOAD	100 mph

Field tunable UHF omni base station kit, 406 - 512 MHz.

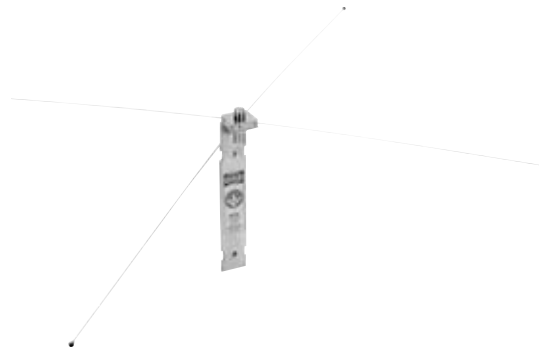
BASE STATION ANTENNAS

MODEL

BSAKIT

SPECIFICATIONS

TYPE	Base station ground plane kit
POWER RATING	200 Watts
FEED CONNECTION	UHF Female
WIND LOAD	100 mph



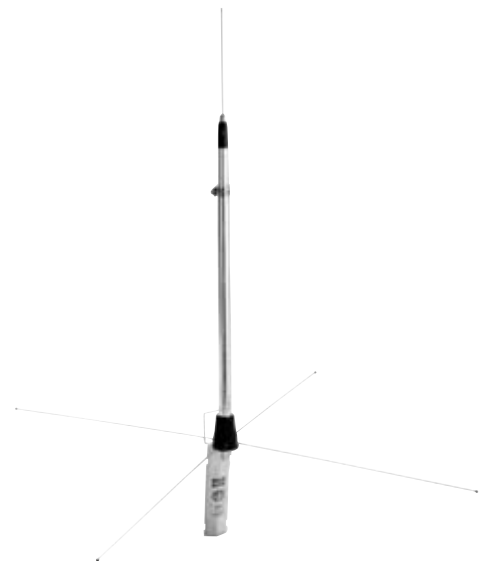
Omni base station ground plane kit converts PO or NMO mobile antennas for base applications, 144 - 512 MHz.

MODEL	FREQUENCY (MHz)
-------	-----------------

FB1136	136 - 230
--------	-----------

SPECIFICATIONS

GAIN	5.6 dBi
TYPE	5/8 over 1/2 wave
VSWR	1.5:1
POWER RATING	200 Watts
MAX LENGTH	96"
FEED CONNECTION	UHF Female
WIND LOAD	100 mph



Field tunable 5.6 dB gain VHF base station. Provides 5 MHz bandwidth at tuned frequency, 136 - 230 MHz. Includes mounting hardware.

NOTE: Antennas are not to scale

1 800 ANTENNA

To convert to Gain (dBd):
Gain (dBi) - 2.14



BASE STATION ANTENNAS



MODEL	FREQUENCY (MHz)
-------	-----------------

FB2406	406 - 420
FB2420	420 - 440
FB2450	450 - 470

SPECIFICATIONS	
----------------	--

GAIN	5.4 dBi
TYPE	5/8 over 1/4 wave
VSWR	1.5:1
COLOR	Black
WHIP	.100, open coil
POWER RATING	200 Watts
MAX HEIGHT	32 1/4"
FEED CONNECTION	N Female
WIND LOAD	100 mph

Field tunable UHF omni base antenna with attached ground plane, 406 -470 MHz. Includes mounting bracket and hardware.



MODEL	FREQUENCY (MHz)
-------	-----------------

FB2406WA	406 - 420
FB2420WA	420 - 440
FB2450WA	450 - 470

SPECIFICATIONS	
----------------	--

GAIN	5.4 dBi
TYPE	5/8 over 1/4 wave
VSWR	1.5:1
COLOR	Black
WHIP	.100, open coil
POWER RATING	200 Watts
MAX HEIGHT	32 1/4"
FEED CONNECTION	N Female
WIND LOAD	100 mph

Field tunable UHF omni base antenna only with attached ground plane, 406 - 470 MHz. No mounting hardware.

BASE STATION ANTENNAS

MODEL	FREQUENCY (MHz)
FB3740	740 - 806
FB3800	806 - 866
FB3825	824 - 896

SPECIFICATIONS	
GAIN	5.4 dBi
TYPE	5/8 over 1/4 wave
VSWR	25:1
COLOR	Black
WHIP	.100, open coil
POWER RATING	150 Watts
MAX HEIGHT	16"
FEED CONNECTION	N Female
WIND LOAD	100 mph



Field tunable omni base antenna with attached ground plane, 740 - 896 MHz. Includes mounting bracket and hardware.

MODEL	FREQUENCY (MHz)
FB3740WA	740 - 806
FB3800WA	806 - 866
FB3825WA	824 - 896

SPECIFICATIONS	
GAIN	5.4 dBi
TYPE	5/8 over 1/4 wave
VSWR	2:1
COLOR	Black
WHIP	.100, open coil
POWER RATING	150 Watts
MAX HEIGHT	16"
FEED CONNECTION	N Female
WIND LOAD	100 mph



Omni base antenna with attached ground plane, 740 - 896 MHz. No mounting hardware.

NOTE: Antennas are not to scale

1 800 ANTENNA

To convert to Gain (dBd):
Gain (dBi) - 2.14

BASE STATION
ANTENNAS



BASE STATION ANTENNAS



MODEL	FREQUENCY (MHz)
FB35T800	806 - 866
FB35T825	824 - 896

SPECIFICATIONS	
GAIN	7.2 dBi
TYPE	5/8 over 5/8 over 1/4 wave
VSWR	2:1
COLOR	Black
WHIP	.100, twin open coil
POWER RATING	150 Watts
MAX HEIGHT	32"
FEED CONNECTION	N Female
WIND LOAD	100 mph

High gain omni base antenna with attached ground plane for SMR, cellular or data applications. Includes mounting bracket and hardware.



MODEL	FREQUENCY (MHz)
FB35T800WA	806 - 866
FB35T825WA	824 - 896

SPECIFICATIONS	
GAIN	7.2 dBi
TYPE	5/8 over 5/8 over 1/4 wave
VSWR	2:1
COLOR	Black
WHIP	.100, twin open coil
POWER RATING	150 Watts
MAX HEIGHT	32"
FEED CONNECTION	N Female
WIND LOAD	100 mph

High gain omni base antenna with attached ground plane SMR, cellular or data applications. No mounting hardware.

BASE STATION ANTENNAS

MODEL	FREQUENCY (MHz)
-------	-----------------

FB3900	890 - 960
--------	-----------

SPECIFICATIONS	
----------------	--

GAIN	5.4 dBi
TYPE	5/8 over 1/4 wave
VSWR	2:1
COLOR	Black
WHIP	.100, open coil
POWER RATING	150 Watts
MAX HEIGHT	16"
FEED CONNECTION	N Female
WIND LOAD	100 mph



Field tunable omni base antenna with attached ground plane, 890 - 960 MHz. Includes mounting bracket and hardware.

MODEL	FREQUENCY (MHz)
-------	-----------------

FB3900WA	890 - 960
----------	-----------

SPECIFICATIONS	
----------------	--

GAIN	5.4 dBi
TYPE	5/8 over 1/4 wave
VSWR	2:1
COLOR	Black
WHIP	.100, open coil
POWER RATING	150 Watts
MAX HEIGHT	16"
FEED CONNECTION	N Female
WIND LOAD	100 mph



Omni base antenna with attached ground plane, 890 - 960 MHz. No mounting hardware.

NOTE: Antennas are not to scale

1 800 ANTENNA

To convert to Gain (dBd):
Gain (dBi) - 2.14



BASE STATION ANTENNAS



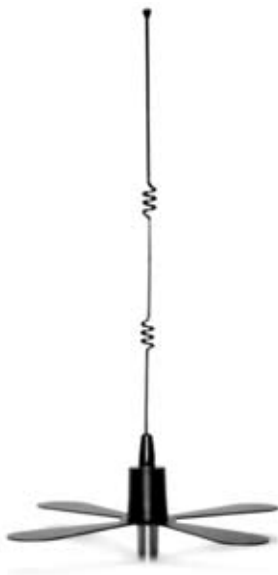
MODEL	FREQUENCY (MHz)
-------	-----------------

FB35T900	902 - 928
----------	-----------

SPECIFICATIONS	
----------------	--

GAIN	7.2 dBi
TYPE	5/8 over 5/8 over 1/4 wave
VSWR	2:1
COLOR	Black
WHIP	.100, twin open coil
POWER RATING	150 Watts
MAX HEIGHT	23"
FEED CONNECTION	N Female
WIND LOAD	100 mph

High gain omni base antenna with attached ground plane for SMR, cellular or data applications. Includes mounting bracket and hardware.



MODEL	FREQUENCY (MHz)
-------	-----------------

FB35T900WA	902 - 928
------------	-----------

SPECIFICATIONS	
----------------	--

GAIN	7.2 dBi
TYPE	5/8 over 5/8 over 1/4 wave
VSWR	2:1
COLOR	Black
WHIP	.100, twin open coil
POWER RATING	150 Watts
MAX HEIGHT	23"
FEED CONNECTION	N Female
WIND LOAD	100 mph

High gain omni base antenna with attached ground plane SMR, cellular or data applications. No mounting hardware.

BASE STATION ANTENNAS

MODEL	FREQUENCY (MHz)
FB45T2400	2400 - 2485

SPECIFICATIONS

GAIN	7.2 dBi
TYPE	5/8 over 5/8 over 1/4 wave
VSWR	1.5:1
COLOR	Black
WHIP	.070, twin open coil
POWER RATING	100 Watts
MAX HEIGHT	15.6"
FEED CONNECTION	N Female
WIND LOAD	100 mph

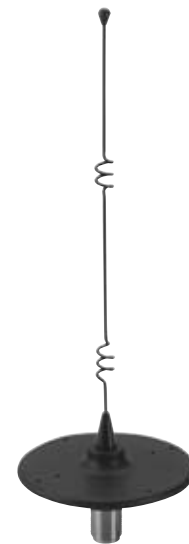


High gain omni base antenna with attached ground plane, 2400 - 2485 MHz. Includes mounting bracket and hardware.

MODEL	FREQUENCY (MHz)
FB45T2400WA	2400 - 2485

SPECIFICATIONS

GAIN	7.2 dBi
TYPE	5/8 over 5/8 over 1/4 wave
VSWR	1.5:1
COLOR	Black
WHIP	.070, twin open coil
POWER RATING	100 Watts
MAX HEIGHT	9"
FEED CONNECTION	N Female
WIND LOAD	100 mph



High gain omni base antenna with attached ground plane, 2400 - 2485 MHz. No mounting hardware.

NOTE: Antennas are not to scale

1 800 ANTENNA

To convert to Gain (dBd):
Gain (dBi) - 2.14

BASE STATION
ANTENNAS



159

BASE STATION ANTENNAS



GPS base station timing antenna.

MODEL	FREQUENCY (MHz)
-------	-----------------

GPS0015	1575.42 ± 1.023
---------	-----------------

SPECIFICATIONS	
----------------	--

LNA GAIN	25 ± 2 dB
VOLTAGE	4.5 ~ 12 V DC
CURRENT	30 mA
VSWR	<2:1
IMPEDANCE	50 Ohms
POLARIZATION	Right Hand Circular
CONNECTOR	N Male
HEIGHT	4"
DIAMETER	4.25"
OPERATING TEMP	-22° to +176° F
MOUNTING	Bracket



Fully welded five element UHF Yagi. Wide band, high gain, 406 - 512 MHz. Includes mounting hardware.

MODEL	FREQUENCY (MHz)	LENGTH
-------	-----------------	--------

YA3406WN	406 - 430	42.25"
YA3450WN	450 - 470	36.25"
*YA3470WN	470 - 490	35.25"
*YA3490WN	490 - 512	34.25"

SPECIFICATIONS	
----------------	--

GAIN	11 dBi
TYPE	Five element welded
VSWR	2:1
POWER RATING	300 Watts
FEED CONNECTION	N Female
BEAMWIDTH	53°
WIND LOAD	100 mph

*** Minimum order quantities apply to these products. Please contact the factory for more information.**

BASE STATION ANTENNAS

MODEL	FREQUENCY (MHz)	LENGTH
YA51400W	1395 - 1450	23.5"

SPECIFICATIONS

GAIN	10 dBi
TYPE	Seven element welded
VSWR	2:1
POWER RATING	300 Watts
FEED CONNECTION	N Female
BEAMWIDTH	H Plane: 54° typical E Plane: 45° typical
WIND LOAD	100 mph

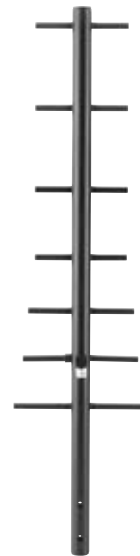


Fully welded seven element UHF Yagi. High gain, 1395 - 1450 MHz. Includes mounting hardware.

MODEL	FREQUENCY (MHz)	LENGTH
YA5740W	740 - 806	32.75"
YA5800W	806 - 866	31.25"
YA5825W	824 - 896	31.25"
YA5900W	890 - 960	30"

SPECIFICATIONS

GAIN	11 dBi
TYPE	Seven element welded
VSWR	2:1
POWER RATING	300 Watts
FEED CONNECTION	N Female
BEAMWIDTH	H Plane: 54° typical E Plane: 45° typical
WIND LOAD	100 mph



Fully welded seven-element Yagi for SMR, cellular or data frequencies.

NOTE: Antennas are not to scale

1 800 ANTENNA

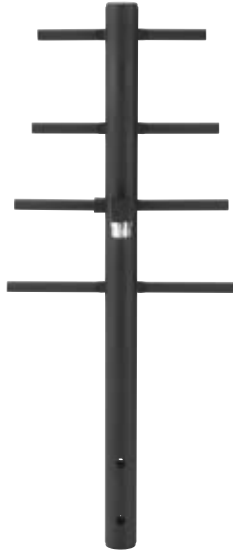
To convert to Gain (dBd):
Gain (dBi) - 2.14

BASE STATION
ANTENNAS



161

BASE STATION ANTENNAS



MODEL	FREQUENCY (MHz)	LENGTH
YA6740W	740 - 806	19.25"
YA6800W	806 - 866	17.5"
YA6825W	824 - 896	17.5"
YA6900W	890 - 960	17.5"

SPECIFICATIONS

GAIN	8 dBi
TYPE	Four element welded
VSWR	2:1
POWER RATING	300 Watts
FEED CONNECTION	N Female
BEAMWIDTH	H Plane: 86° typical E Plane: 58° typical
WIND LOAD	100 mph

Fully welded four-element Yagi for SMR, cellular or data frequencies.