CENTURION™ | a unit of Laird TECHNOLOGIES®

global solutions : local support

2005 PRODUCT PORTFOLIO

TWO-WAY RADIO ANTENNAS & BATTERIES

WIRELESS DEVICE ANTENNAS

IN-BUILDING WIRELESS ANTENNAS

TELEMATICS ANTENNAS

MOBILE PHONE ANTENNAS

global solutions : local support

25 YEARS OF TECHNOLOGY LEADERSHIP

Centurion Wireless Technologies, a Laird Technologies company, is a designer and manufacturer of antennas and power products for wireless communications devices. For over 25 years, industry leading manufacturers and installers of mobile phones, handheld devices, in-building wireless systems, PDAs, professional business radios and automobiles have relied on the quality and reliability of Centurion's products. Centurion offers in-house customer design, tooling, mold fitting and production to provide a complete turnkey solution to fit any customer-specific need. With eight design, manufacturing and sales facilities around the globe, Centurion has one of the largest and most talented R&D and sales support teams in the industry.

A UNIT OF LAIRD TECHNOLOGIES

Centurion's parent, Laird Technologies, manufactures a wide range of EMI shielding materials and related products for the computer, telecommunications, aerospace, defense, medical, automotive and general electronics industries. These products include engineered board level shields, fingerstock, conductive elastomers in extruded profiles, molded shapes and form-in-place gaskets, fabric-over-foam and a full range of shielded windows, custom metal stampings, knitted wire mesh and ventilation panels. Also offered are microwave absorber products, thermal interface materials, integrated metal printed circuit boards and thermally conductive circuit board lamination adhesives, and a complete EMC and product engineering and testing service.

COMMITMENT TO QUALITY

Centurion has the ISO 9001:2000 quality assurance program in place at all phases of design and development in their Westminster, Akersberga and Beijing facilities. Centurion is one of the only antenna manufacturers in the world to have received QS-9000 certification for its automotive antennas — a mark of unprecedented quality set by the automotive industry — at their Lincoln, Penang and Shanghai locations. These certifications assure customers that all processes are followed accurately and consistently to provide them with the highest quality and most dependable antennas and power products available.

QS-9000
One World – One Quality System

REGISTERED
ISO 9001

TABLE OF CONTENTS

Centurion Two-Way

VHF — 110-174/229 MHz

DR 1/4 Wave Whip	EXB 1/4 Wave Helical	EXH 1/4 Wave Whip	EXR Right-Angle Helical	EXS 1/4 Wave Stubby	SXB 1/4 Wave Helical
					
118-225 MHz	118-220 MHz	145-175 MHz	150-160 MHz	118-174 MHz	136-174 MHz
Connectors BN, MX & SF	**Connectors** BNX, KR, MD, MX, MXI, SF, SFU, SM, SMI, SMV & TNX	**Connectors** BN, KR, MD, MX, MXI, SF, SFU, SM, SMI, SMV & TN	**Connector** BN	**Connectors** BN, BNX, MX, MXI, SFU, SMI & SMV	**Connectors** MX, SF & SFU

UHF — 400-512 MHz

EXC 1/4 Wave Whip	EXD 1/4 Wave Stubby	EXR Right-Angle Whip	G 1/2 Wave	SXD 1/4 Wave Stubby
				
400-512 MHz	400-512 MHz	450-470 MHz	400-512 MHz	400-470 MHz
Connectors BN, BNX, KR, MD, MX, MXI, SF, SFU, SM, SMI, SMV, TN & TNX	**Connectors** BN, BNX, KR, MD, MX, MXI, SF, SFU, SM, SMI, SMV, TN & TNX	**Connectors** BN & TN	**Connectors** BN & TN	**Connectors** MX & SFU

Low-Mid Band

A Helical	EXL Helical
	
27-88 MHz	25-88 MHz
Connectors BN, HT, KR, MX, PL & TN	Connectors BNX, HT, KR, MX & TNX

Trunking / Cellular — 806-960 MHz

EXC 1/4 Wave Whip	EXE 1/2 Wave	EXP 1/2 Wave	EXR 1/2 Wave	EXS 1/4 Wave Stubby
				
806-960 MHz	806-960 MHz	806-940 MHz	806-960 MHz	806-866 MHz
Connectors BN, BNX, KR, MD, MX, MXI, SF, SFU, SM, SMI, SMV, TN & TNX	**Connectors** BN, MD & SM	**Connectors** MD, SF & SFU	**Connectors** BN & TN	**Connectors** SF & TN

Radio Antennas

The Original "Tuf Duck" Antennas

Nothing beats the durability of a "Tuf Duck" antenna.

Since the introduction of the "Tuf Duck" antenna twenty-five years ago, Centurion antennas and batteries have become the standard for two-way radio applications. Centurion products have earned a reputation for rugged reliability in hazardous situations and harsh environments.

As the industry leader in two-way radio antenna products for OEM and aftermarket applications, Centurion produces antennas in a diverse number of styles. To ensure maximum performance, each antenna can be individually tuned to frequency.

Join the ranks of leading wireless communications companies that rely on Centurion's technology and engineering innovation. With 25 years of experience and advanced manufacturing capabilities around the world, Centurion offers speed to market, reliability, quality assurance, and the scale to meet any production volume.

When you depend on your radio...

TUF DUCK

CENTURION™

Depend on Centurion

TWO-WAY RADIO ANTENNAS

A
1/4 Wave

LOW-MID BAND

- 1/4 wave tapered, helical, neoprene shrink sleeve
- Top loaded
- High durability, high efficiency
- Flexible

SPECIFICATIONS

Frequency Range	27-88 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	6" or 10"
Drop Test	1M

PART NUMBERS

Model	Frequency
A+Freq.+connector	27-88 MHz
A+Freq.+connector+6	27-88 MHz

Connectors

BN, HT, KR, MX, PL & TN

Each Model A antenna is specifically tuned to the customer's specified frequency. Please order by antenna model, your discreet frequency, and connector. For example, A28.3BN (10 inch) or A78.5BN6 (6 inch).

EXL
1/4 Wave

LOW-MID BAND

- Injection molded flexible low or mid band antenna
- High durability, high efficiency
- Textured finish with strain-relief base
- Field tuneable

SPECIFICATIONS

Frequency Range	25-88 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	5 watts
Temperature Range	-40˚C to +85˚C
Average Length	10.75"-11.10"
Drop Test	1M

PART NUMBERS

Model	Frequency	Color Code
EXL25	25-30 MHz	
EXL30	30-36 MHz	Yellow
EXL36	36-42 MHz	Red
EXL42	42-50 MHz	Blue
EXL66	66-76 MHz	White
EXL76	76-88 MHz	Orange

Connectors

BNX, HT, KR, MX & TNX

The EXL antenna is field tunable.
Please order by antenna model and connector.
For example, EXL30HT.

DR
1/4 Wave Whip

VHF

- 1/4 wave PVC
- High durability, high efficiency
- Flexible

SPECIFICATIONS

Frequency Range	118-225 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-30˚C to +50˚C
Length	19"
Drop Test	1M

PART NUMBER

Model	Frequency
DR	118-225 MHz

Connectors

BN, MX & SF

Please order by antenna model, frequency and connector. For example, DR118BN.

EXB
1/4 Wave Helical

VHF

- Injection molded 1/4 wave helical antenna
- High durability, high efficiency
- Textured finish with strain-relief base
- An original 'Tuf Duck' antenna

SPECIFICATIONS

Frequency Range	118-220 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	Varies by Freq.
Drop Test	1M

PART NUMBERS

Model	Frequency	Length
EXB118	118-127 MHz	7.8"
EXB118 with BNX connector only		
EXB127	127-136 MHz	7.6"
EXB136	136-144 MHz	6.48"-7.3"
EXB144	144-148 MHz	6.25"-6.9"
EXB150	150-162 MHz	5.95"-6.5"
EXB155	155-164 MHz	5.8"-6.3"
EXB161	161-174 MHz	5.9"
EXB164	164-174 MHz	5.6"-6.0"
EXB220	220 MHz	4.1"-4.9"
EXB0	Untuned	7.12"

Connectors

BNX, KR, MD, MX, MXI, SF, SFU, SM, SMI, SMV & TNX

Please order by antenna model and connector. For example, EXB150MX.

EXH
1/4 Wave Whip

VHF

- Injection molded 1/4 wave base loaded antenna
- High durability, high efficiency
- High Gain
- Textured finish with strain-relief base
- An original 'Tuf Duck' antenna

SPECIFICATIONS

Frequency Range	145-175 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length (approx.)	10.5" max.
Drop Test	1M

PART NUMBERS

Model	Frequency	Color Code
EXH150	145-155 MHz	Red
EXH155	150-160 MHz	Brown
EXH160	155-165 MHz	Black
EXH170	165-175 MHz	Orange

Connectors

BN, KR, MD, MX, MXI, SF, SFU, SM, SMI, SMV & TN

Please order by antenna model and connector. For example, EXH150SF.

EXR
Right-Angle Helical

VHF

- Injection molded flexible right angle antenna with adjustable 0-90˚ elbow
- High durability, high efficiency
- Allows for 360˚ movement

SPECIFICATIONS

Frequency Range	150-160 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	Varies by Freq.
Drop Test	1M

PART NUMBER

Model	Frequency	Avg. Length
EXR150	150-160 MHz	7-8"

Connectors

BN

Please order by antenna model and connector. For example, EXR150BN.

TWO-WAY RADIO ANTENNAS

EXS
1/4 Wave Stubby

VHF

- Injection molded 1/4 wave helical 'slim mini' antenna
- High durability, high efficiency
- Textured finish with strain-relief base
- An original 'Tuf Duck' antenna

SPECIFICATIONS

Frequency Range	118-174 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	Varies by Freq.
Drop Test	1M

PART NUMBERS

Model	Frequency	Length
EXS118	118-127 MHz	5.10"
EXS127	127-136 MHz	3.62-4.40"
EXS136	136-144 MHz	3.62-4.40"
EXS144	144-148 MHz	3.55-4.45"
EXS150	150-162 MHz	3.50-4.39"
EXS155	155-164 MHz	3.45-4.20"
EXS164	164-174 MHz	3.30-3.95"

Connectors

BN, BNX, MX, MXI,
SFU, SMI & SMV

Please order by antenna model and connector.
For example, EXS150MXI.

SXB
1/4 Wave Helical

VHF

- Patented Sable™ antenna design
- Rugged capless sheath
- Maximum flexibility
- Color coded insert for easy identification
- New sleek industrial design to complement today's new radios

SPECIFICATIONS

Frequency Range	136-174 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	5.5"
Drop Test	1M

PART NUMBERS

Model	Color Code	Frequency
SXB145	Red	136-149 MHz
SXB155	Brown	150-161 MHz
SXB165	Black	162-174 MHz

Connectors

MX, SF & SFU

Please order by antenna model and connector.
For example, SXB145MX.

EXC
1/4 Wave Whip

UHF

- Injection molded, 1/4 wave flexible cable antenna
- High durability, high efficiency
- Textured finish with strain-relief base
- An original 'Tuf Duck' antenna

SPECIFICATIONS

Frequency Range	400-512 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	Varies by Freq.
Drop Test	1M

PART NUMBERS

Model	Frequency	Length
EXC400	400-420 MHz	6.5-7.0"
EXC410	410-430 MHz	6.5-7.0"
EXC420	420-450 MHz	6.5-7.0"
EXC440	440-470 MHz	6.5-7.0"
EXC450	450-470 MHz	6.1-6.8"
EXC470	470-512 MHz	5.9-6.6"
EXC0	Untuned	Approx. 6"

Connectors

BN, BNX, KR, MD, MX, MXI, SF,
SFU, SM, SMI, SMV, TN & TNX

Please order by antenna model and connector.
For example, EXC450MX.

EXD
1/4 Wave Stubby — UHF

- Injection molded 1/4 wave helical antenna
- High durability, high efficiency
- Textured finish with strain-relief base
- An original 'Tuf Duck' antenna

SPECIFICATIONS

Frequency Range	400-512 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	Varies by Freq.
Drop Test	1M

PART NUMBERS

Model	Frequency	Length
EXD400	400-420 MHz	3.2-4.1"
EXD410	410-430 MHz	3.1-3.4"
EXD420	420-450 MHz	3.2-4.1"
EXD450	450-470 MHz	2.95-3.88"
EXD470	470-512 MHz	2.8-3.6"

Connectors

BN, BNX, KR, MD, MX, MXI, SF, SFU, SM, SMI, SMV, TN & TNX

Please order by antenna model and connector. For example, EXD450MX.

EXR
Right-Angle Whip — UHF

- Injection molded flexible right angle antenna with adjustable 0-90˚ elbow
- High durability, high efficiency
- Allows for 360˚ movement

SPECIFICATIONS

Frequency Range	450-470 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	Varies by Freq.
Drop Test	1M

PART NUMBER

Model	Frequency	Avg. Length
EXR450	450-470 MHz	6.62-6.95"

Connectors

BN & TN

Please order by antenna model and connector. For example, EXR450TN.

G
1/2 Wave — UHF

- Base-loaded 1/2 wave flexible cable antenna
- Provides 2.5 dB gain over standard 1/4 wave antennas
- PVC Coated
- An original 'Tuf Duck' antenna

SPECIFICATIONS

Frequency Range	400-512 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	10"
Drop Test	1M

PART NUMBERS

Model	Frequency
G400	400-420 MHz
G420	420-450 MHz
G450	450-470 MHz
G470	470-512 MHz

Connectors

BN & TN

Please order by antenna model and connector. For example, G450TN

TWO-WAY RADIO ANTENNAS

SXD
1/4 Wave Stubby

UHF

- Patented Sable™ antenna design
- Rugged capless sheath
- Maximum flexibility
- Color coded insert for easy identification
- New sleek industrial design to complement today's new radios

SPECIFICATIONS

Frequency Range	400-470 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	3.5"
Drop Test	1M

PART NUMBERS

Model	Color Code	Frequency
SXD420	Green	400-439 MHz
SXD450	White	440-470 MHz

Connectors

MX, SF & SFU

Please order by antenna model and connector.
For example, SXD420MX.

EXC
1/4 Wave Whip

TRUNKING

- Injection molded, 1/4 wave flexible cable antenna
- High durability, high efficiency
- Textured finish with strain-relief base
- An original 'Tuf Duck' antenna

SPECIFICATIONS

Frequency Range	806-960 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	Varies by Freq.
Drop Test	1M

PART NUMBERS

Model	Frequency	Length
EXC806	806-866 MHz	3.70-4.6"
EXC902	902-960 MHz	3.5-3.65"

Connectors

BN, BNX, KR, MD, MX, MXI, SF, SFU, SM, SMI, SMV, TN & TNX

Please order by antenna model and connector.
For example, EXC806MX.

EXE
1/2 Wave

TRUNKING

- Injection molded 1/2 wave coaxial dipole antenna
- High durability, high efficiency
- Textured finish with strain-relief base
- An original 'Tuf Duck' antenna

SPECIFICATIONS

Frequency Range	806-960 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	Varies by Freq.
Drop Test	1M

PART NUMBERS

Model	Frequency	Length
EXE806	806-866 MHz	8.00-8.90"
EXE821	821-902 MHz	8.00"
EXE902	902-960 MHz	8.30"

Connectors

BN, MD & SM

Please order by antenna model and connector.
For example, EXE806SM.

EXP
1/2 Wave

TRUNKING

- Injection molded 1/2 wave end fed antenna
- High durability, high efficiency
- Textured finish with strain-relief base
- An original 'Tuf Duck' antenna

SPECIFICATIONS

Frequency Range	806-940 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	6.9"
Drop Test	1M

PART NUMBERS

Model	Frequency	Color Code
EXP806	806-869 MHz	
EXP902	896-940 MHz	Green

Connectors
MD, SF & SFU

Please order by antenna model and connector.
For example, EXP806SF.

EXR
1/2 Wave

TRUNKING

- Injection molded flexible right angle antenna with adjustable 0-90˚ elbow
- High durability, high efficiency
- Allows for 360˚ movement

SPECIFICATIONS

Frequency Range	806-960 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	Varies by Freq.
Drop Test	1M

PART NUMBERS

Model	Frequency	Avg. Length
EXR806	806-869 MHz	9.25-9.50"
EXR821	824-896 MHz	9.16"
Color Code: Yellow		
EXR902	902-960 MHz	8.85-9.03"
Color Code: Green		

Connectors
BN & TN

Please order by antenna model and connector.
For example, EXR806TN.

EXS
1/4 Wave Stubby

TRUNKING

- Injection molded 1/4 wave helical 'slim mini' antenna
- High durability, high efficiency
- Textured finish with strain-relief base
- An original 'Tuf Duck' antenna

SPECIFICATIONS

Frequency Range	806-866 MHz
Polarization	Vertical
Nominal Impedance	50 ohms
VSWR	1.5:1 max at resonance
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Length	Varies by Freq.
Drop Test	1M

PART NUMBER

Model	Frequency
EXS806	806-866 MHz

Connectors
SF & SFJ

Please order by antenna model and connector.
For example, EXS806SF.

Radio Manufacturer Cross Reference

RADIO MANUFACTURER	RADIO MODEL	CONNECTOR STYLE
Bendix King	EP, GP, LP	KR
	LPX	SFU
EF Johnson	Challenger, FM	BN style
	LTR, Scorpion and newer models	SFJ
Fujitsu	FTP	BN Style
MA COM/Ericsson/GE	EDACS 300P	SF
	MPI, PCS	BN style
	Monogram	MX
	Jaguar, LPE, Panther 500P & 300P, MPD, MRK, EDACS, AEGIS	MD
	Panther 600P & 400P	SM
Kenwood	TK 100, 200, 210, 220,300, 310, 320	BN style
	TK 23-, 240, 250, 260, 270, 330, 340, 350, 360	MX
	TK290, 390, 480, 481 & 70G Series	SFU or SFK
Maxon		BNC
Vertex/Standard	VX-10/160/180/210/400/600/800/900	SMV
	VX-10UA/600/800/900	SMV
	VX-10UA/800AU	SMV
	VX-10UF	SMV
	VX-10VA/400/600/800/900	SMV
	VX-160/210/400/600/900	SMV
	VX-400	SMV
	FTH Series	BN style
	HX and VX 500 and VX50D Series	MX
	VX FTH and VX 200 series	TN style
Motorola	MT500 Omni, MT700, HT220	HT
General standards:	HT10, HT50, HT600, MT100, P10	MX
If the antenna is 800 or 900 Mhz,	P50, P100, P200, MX300, P10	MX
the connector is SF.	Radius, SP2000, SP2550, SP2850	MX
If it is a lower frequency, it is a MX,	Saber	MX
except for older radios	MX360, STX, MTX, HT1000, MT2000	SF
Check the connector before ordering.	MTX8000, MTX9000, VISAR	SF
	LTS2000, MTS2000, MX340	SF
	SP5050HD, GP900, GP1200	SF
	SP5050, ASTRO, GP900, GP1200	SF
	XTS Series	SF
Wilson		BN style
TAIT		SM
Midland		MX
TOPAZ		MX

M/A-COM Batteries

ED2121, ED2122, ED2123, ED2124

J2103, J2104, J2105, J2106

LP202, LP2022, P202500, P202502

LP203, LP2032, P203500

MG5061

MG5063

MP2051, MP2052

MP2053, MP2054

MP6392

MP6393

MT2041

PC5293P1, PC5293P5

Centurion is the only authorized supplier of aftermarket battery packs for M/A-COM two-way radios. Centurion produces battery packs for M/A-COM's EDACS®, Panther™, Hawkeye, J700P and Monogram trunking portable radio models. Centurion replacement batteries are constructed with the highest quality cells from leading manufacturers. Every battery housing is molded in-house to ensure a perfect fit. Centurion replacement batteries meet the same rigid quality standards of the original M/A-COM OEM battery specifications.

PC5293P2, PC5293P3

CENTURION P/N	OEM P/N	FITS THE FOLLOWING RADIOS	VOLTAGE	MAH	CELL TYPE
CBF15400	BKB191213/1	Panther 300P	7.5V	1500	Ni-Cd
ED2121	BKB 191 212/1	EDACS 300P	7.5	1100	Ni-Cd High Cap
ED2122	BKB 191 212/2	EDACS 300P	7.5	1500	Ni-Cd Ex High Cap
ED2123	BKB 191 212/3	EDACS 300P FM	7.5	1100	Ni-Cd High Cap
ED2124	BKB 191 212/4	EDACS 300P FM	7.5	1500	Ni-Cd Ex High Cap
J2103	BKB 191 210/3, /33, /43	SPD 2000 J-700P/Pi/J7100	7.5	1700	Ni-Cd High Cap
J2104	BKB 191 210/4, /34, /44	SPD 2000 J-700P/Pi/J7100	7.5	2700	Ni-Mh Ex High Cap
J2105	BKB 191 210/5, /35, /45	SPD 2000 J-700P/Pi/J7100 FM	7.5	1700	Ni-Cd High Cap
J2106	BKB 191 210/6, /36, /46	SPD 2000 J-700P/Pi/J7100 FM	7.5	2700	Ni-Mh Ex High Cap
LP202	BKB 191 202	LPE 200 & KPC - Hawkeye Tall	7.5	1600	Ni-Cd High Cap
LP2022	BKB 191 202/2	LPE 200 & KPC - Hawkeye Tall FM	7.5	1600	Ni-Cd Ex High Cap
LP203	BKB 191 203	LPE 200 & KPC - Hawkeye Short	7.5	1500	Ni-Cd High Cap
LP2032	BKB 191 203/2	Prisim FM	7.5	1500	Ni-Cd High Cap
MG5061	BKB 191 206/1	Mongram	10.8	600	Ni-Cd
MG5063	BKB 191 206/3	Mongram	10.8	1200	Ni-Cd High Cap
MP2051	BKB 191 205/1	MPA	7.5	1400	Ni-Cd High Cap
MP2052	BKB 191 205/2	MPA FM	7.5	1400	Ni-Cd High Cap
MP2053	BKB 191 205/3	MPA	7.5	1700	Ni-Cd Ex High Cap
MP2054	BKB 191 205/4	MPA FM	7.5	1700	Ni-Cd Ex High Cap
MP6392	19D900639G6/2	MPI Short	7.5	600	Ni-Cd
MP6393	19D900639G7/3	MPI Short	10	600	Ni-Cd
MT2041	BKB 191 204/1	Mongram	7.2	1100	Ni-Cd
P202500	BKB 191 202/500	Panther 500P Tall - Hawkeye	7.5	1600	Ni-Cd Ex High Cap
P202502	BKB 191 202/502	Panther 500P - Hawkeye Tall FM	7.5	1600	Ni-Cd Ex High Cap
P203500	BKB 191 203/500	Panther 500P Short	7.5	1500	Ni-Cd High Cap
PC5293P1	19A705293P1	PCS	7.5	1400	Ni-Cd
PC5293P2	19A705293P2	PCS Tall	7.5	1700	Ni-Cd High Cap
PC5293P3	19A705293P3	PCS Tall FM	7.5	1800	Ni-Cd Ex High Cap
PC5293P5	19A705293P5	PCS FM	7.5	1400	Ni-Cd

Centurion 802.11 & Bluetooth

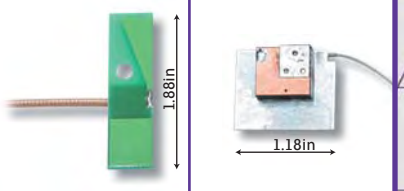
EXTERNAL Connector Mount

802.11a/b/g, Bluetooth

EXR	WCR RP-SMA	WCR MMCX	WRR RP-SMA	WXE	WXR	WTS RP-SMA
2.4-2.5 GHz Gain: 3.0 dBi VSWR: 1.5:1 max Length: 14 cm	2.4-2.5 GHz Gain: 2.5 dBi VSWR: 1.5:1 max Length: 8 cm	2.-2.54 GHz Gain: 1.0 dBi VSWR: 1.5:1 max Length: 8 cm	2.4-2.5 GHz Gain: 1.3 dBi VSWR: 2:1 Length: 8.8 cm	2.4-2.5 GHz Gain: 3.0 dBi VSWR: 1.5:1 max Length: 5.5"	2.4-2.5 GHz Gain: 1.0 dBi VSWR: 1.5:1 max Length: 7"	2.4-2.5, 4.9-5.875 GHz Gain: 2.5 - 3.4 dBi VSWR: 2:1 max Length: 5.5" - 3.8"

INTERNAL Embedded

802.11b/g, Bluetooth



NanoBlue	Dielectric Loaded PIFA
2.4 - 2.5 GHz Gain: > 2 dBi VSWR: < 2.5:1	2.4 - 2.5 GHz Peak Gain: > 4 dBi VSWR: < 2.0:1

INTERNAL Embedded

802.11a/b/g, Bluetooth

NanoBlade
2.4 - 2.5, 4.9-6 GHz Gain: 2.8 - 4 dBi VSWR: < 2:1

EXTERNAL Snap-in/Captive

802.11a/b/g, Bluetooth

WTBP Fixed	WTBP Knuckle	WTBR Fixed	WTBR Knuckle
2.4 - 2.5, 4.9 - 6 GHz Gain: 2 - 3.6 dBi VSWR: 2:1 max Length: 4"	2.4 - 2.5, 4.9 - 6 GHz Gain: 2 - 3.6 dBi VSWR: 2:1 max Length: 4.6"	2.4 - 2.5, 4.9 - 6 GHz Gain: 2 - 3.6 dBi VSWR: 2:1 max Length: 4"	2.4 - 2.5, 4.9 - 6 GHz Gain: 2 - 3.6 dBi VSWR: 2:1 max Length: 4.6"

Wireless Device Antennas

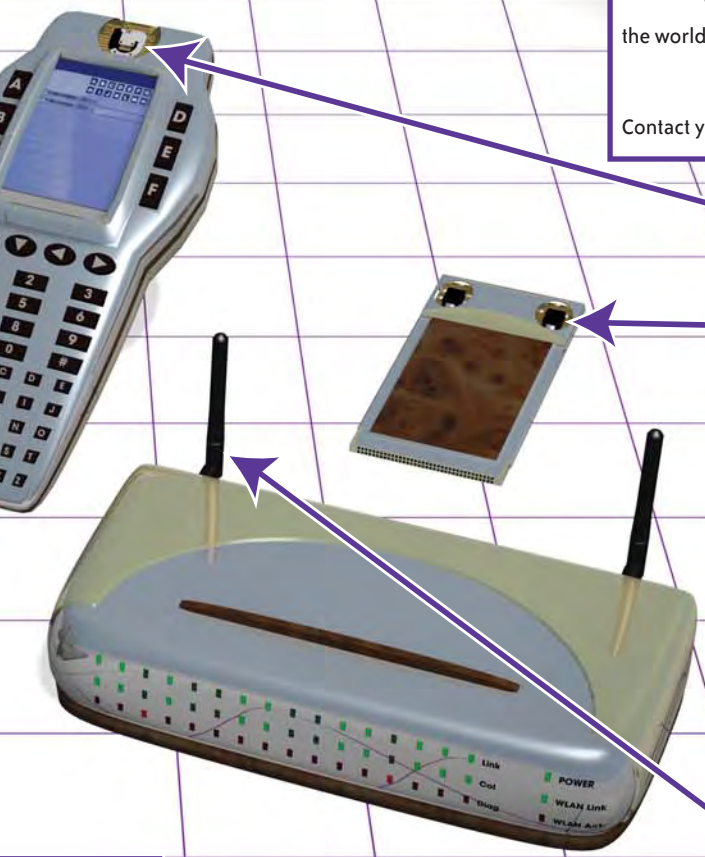
Enabling the Future of Wireless

Accelerate your design cycle with Centurion internal and external wireless device antennas.

Centurion will design, develop and manufacture the optimal antenna to meet your specifications, on schedule, without compromise. Centurion antennas are utilized in all types of wireless devices, from industrial portable terminals to consumer grade WLAN access points.

With integrated research, design, tooling, molding, assembly and accelerated life testing facilities around the world, our engineers will quickly and efficiently create solutions to your wireless challenges.

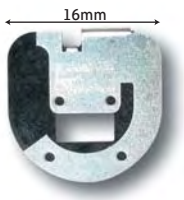
Contact your Centurion representative today to accelerate your new product development!



INTERNAL Surface Mount
802.11a/b/g, Bluetooth

BlackChip

2.4 - 2.5, 4.9 - 6.0 GHz
Gain: > 4 dBi
VSWR < 2.0:1
Tape & Reel Packaging



D-Puck

2.4 - 2.5, 5.15 - 5.875 GHz
Gain: > 3 dBi
VSWR < 2.5:1
Tape & Reel Packaging

EXTERNAL Snap-in/Captive
802.11a/b/g, Bluetooth

WTC Fixed

2.4 - 2.5, 4.9 - 6 GHz
Gain: 2.5 - 5.2 dBi
VSWR: 2:1 max
Length: 4.25"

WTC Knuckle

2.4 - 2.5, 4.9 - 6 GHz
Gain: 2.5 - 5.2 dBi
VSWR: 2:1 max
Length: 4.9"

WTS Knuckle

2.4 - 2.5, 4.9 - 5.875 GHz
Gain: 2.5 - 3.4 dBi
VSWR: 2:1 max
Length: 2.55"

EXTERNAL Snap-In/Captive
802.11b/g, Bluetooth

WCP

2.4 - 2.5 GHz
Gain: 1 - 2.5 dBi
VSWR: 2:1 max
Length: 7 cm

WRR

2.4 - 2.5 GHz
Gain: 1.5 dBi
VSWR 2:1 max
Length: 8.8-10.9 cm

WCR

2.4 - 2.5 GHz
Gain: 2.0 dBi
VSWR 1.5:1 max
Length: 7.6-10.8 cm

NanoBlue
Embedded

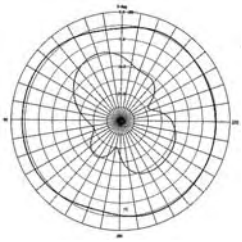
INTERNAL
802.11b/g, Bluetooth

- For Bluetooth & IEEE 802.11 devices
- Designed for easy connection to radio cards
- Patented PCB MicroSphere technology
- Ground plane incorporated into the resonator structure

SPECIFICATIONS

Frequency Range	2.4-2.5 GHz
Polarization	Linear
Gain	2 dBi
Impedance	50 ohms
VSWR	< 2.5:1
Dimensions (L x W x T)	1.88" x .5" x .032"

PATTERNS

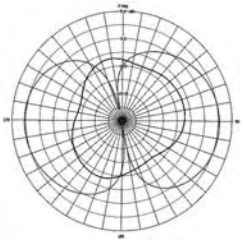


Azimuth Plane
2.45 GHz

MODEL NUMBER

Model Number	Connector
NanoBlue-IP04	MHF

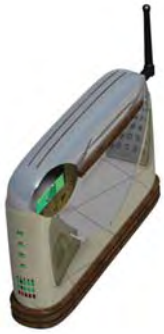
Supplied with 100mm 1.13mm coax cable

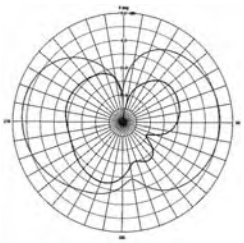


Elevation Plane
Phi = 0
2.45 GHz

MOUNTING

The NanoBlade antenna is integrated within the application housing.





Elevation Plane
Phi = 90
2.45 GHz

Dielectric Loaded PIFA
Embedded

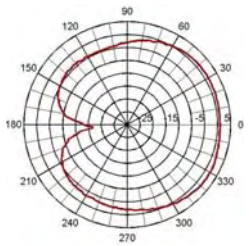
INTERNAL
802.11b/g, Bluetooth

- Directional pattern with low backscatter

SPECIFICATIONS

Frequency Range	2.4-2.5 GHz
Polarization	Mixed
Peak Gain	>4.0 dBi
Average Gain	> -1.5 dBi
Nominal Impedance	50 ohms
VSWR (min performance)	<2.0:1
Radiating Element Size	16 x 16 x 8 mm (L x W x H)
Ground Plane Size	30 x 25 x 0.3 mm (L x W x H)

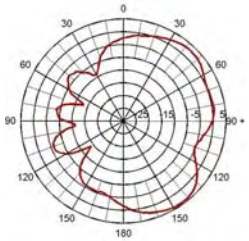
PATTERNS



Azimuth Plane
2.45 GHz

MODEL NUMBER

Model Number	Connector
WIP2450-I Loaded Internal	N/A



Elevation Plane
Phi=0
2.45 GHz

MOUNTING

The Dielectric Loaded PIFA antenna is integrated within the application housing.

BlackChip™
Surface Mount

INTERNAL
802.11a/b/g, Bluetooth

- Small and lightweight
- Wide bandwidth, ultra-wide band capable
- Internal mounting
- Tape & reel packaging
- SMT compatible including lead free processes

SPECIFICATIONS

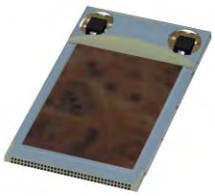
Frequency Range	2.4-2.5 GHz 4.9-6.0 GHz
Polarization	Linear
Peak Gain 2.4-2.5 GHz 4.9-6.0 GHz	 >2 dBi >3 dBi
Nominal Impedance	50 ohms
VSWR (min performance)	< 2.0:1
Temperature Range	-40˚C to +85˚C
Radiating Element Size	8 x 6 x 2.5 mm (L x W x H)
Physical Mass	0.21 grams
Length	12 mm (with solder tabs)

MODEL NUMBERS

Model Number	Connector
WIC2450-A Tape & Reel	N/A
WIC2452-A-SM Ultra-wide Band on Evaluation PCBA	SMA-Female edge mount

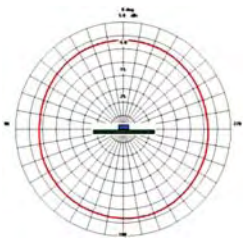
MOUNTING

The BlackChip antenna is SMT mounted from tape & reel packaging.

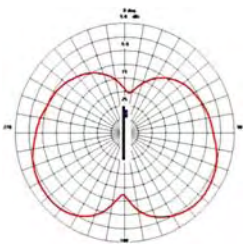


Sample PCMCIA Card Design

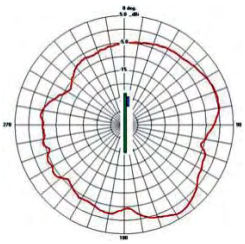
PATTERNS



Azimuth Plane
2.45 GHz
Free Space



Elevation Plane
Phi = 0
2.45 GHz
Free Space



Elevation Plane
Phi = 0
5.8 GHz
Free Space

Tri-Band Dpuck
Surface Mount

INTERNAL
802.11a/b/g, Bluetooth

- Tape & reel packaging for high volume pick-and-place manufacturing processes
- Planar Inverted F Antenna (PIFA) requires ground plane to radiate efficiently

SPECIFICATIONS

Frequency Range	2.4-2.5 GHz 5.15-5.875 GHz
Polarization	Linear
Peak Gain 2.4-2.5 GHz 5.15-5.875 GHz	 >3 dBi >4 dBi
Impedance	50 ohms
VSWR	<2.5:1
Carrier Material	Black color resin
Weight	2 grams
Dimensions	16 x 16 x 6 mm (L x W x H)

MODEL NUMBERS

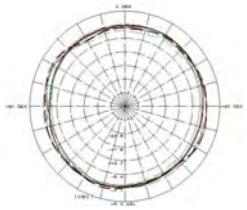
Model Number	Connector
WID2452 Tape & Reel	N/A
WID2452-SM Evaluation PC Board	SMA-Female Panel

MOUNTING

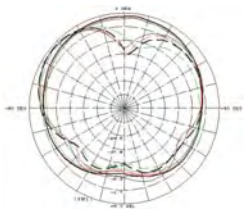
The Tri-Band D-Puck antenna is SMT mounted from tape & reel packaging.

Tape & Reel Packaging

PATTERNS



Azimuth
Total Gain



Elevation
Total Gain

NanoBlade
Embedded

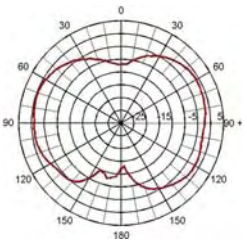
INTERNAL
802.11a/b/g, Bluetooth

- *Covers 2.4 to 2.5 GHz for 802.11b, and 4.9 to 6 GHz for 802.11a, and all US, European, and Japanese WLAN applications*
- *Coaxial cable pigtail with various connector choices*
- *Omni-directional patterns at all frequencies with increased gain in upper bands for optional coverage*

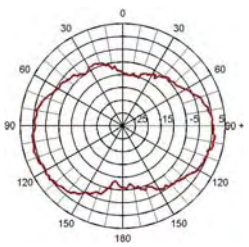
SPECIFICATIONS

Frequency Range	2.4-2.5 GHz 4.9-6.0 GHz
Polarization	Vertical, Omni-directional
Peak Gain	
2.4-2.5 GHz	2.8 dBi
5.15-5.35 GHz	3.9 dBi
5.6 GHz	4 dBi
Impedance	50 ohms
VSWR	<2:1
Dimensions	2" x 0.65"

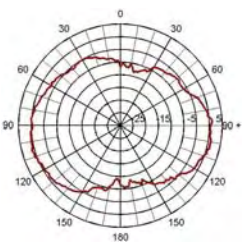
PATTERNS



Elevation
Phi=0
2.45 GHz



Elevation
Phi=0
5.29 GHz



Elevation
Phi=0
5.5825 GHz

MODEL NUMBERS

Model Number	Connector	Cable
NanoBlade-MMCX4	RA-MMCX	100mm RG-178
NanoBlade-IP04	MHF	100mm 1.13mm

MOUNTING

The NanoBlade antenna is integrated within the application housing.

EXR
Connector Mount

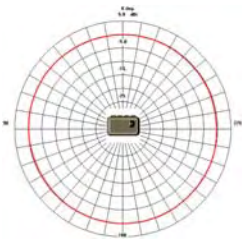
External
802.11b/g, Bluetooth

- Injection molded high performance flexible cable antenna
- 1/2 wave coaxial dipole design for improved performance
- FCC part 15 compliant connector

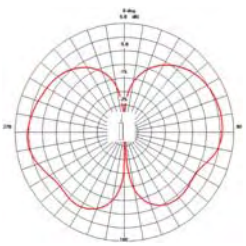
SPECIFICATIONS

Frequency Range	2.4-2.5 GHz
Polarization	Vertical
Gain	3.0 dBi
Impedance	50 ohms
VSWR	1.5:1 max
RF Power Handling	50 watts
Temperature Range	-40°C to +85°C
Drop Test	1M
Length	14 cm

PATTERNS



Azimuth



Elevation

MODEL NUMBERS

Model Number	Color	Connector
EXR2400-BNRP-G	Gray	RP-BNC
EXR2400-BNRP-B	Black	RP-BNC
EXR2400-TNSP	Black	RP-TNC

MOUNTING

The EXR antenna is connector mounted.

Dipole ComAer 2.4: WCR

Connector Mount

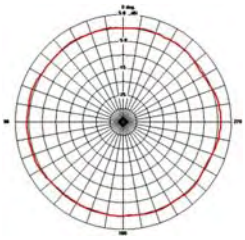
External
802.11b/g, Bluetooth

- 1/2 wave coaxial dipole
- Clutch allows 360° rotation
- Flexible element
- FCC part 15 compliant polarized connector

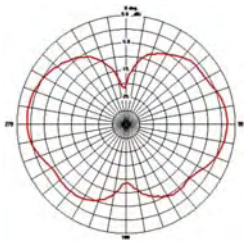
SPECIFICATIONS

Frequency Range		2.4-2.5 GHz
Polarization		Vertical
Gain	MMCX	1.0 dBi
	SMA	2.0 dBi
	SMRP	1.0 dBi
Impedance		50 ohms
VSWR		1.5:1 max
RF Power Handling		50 watts
Temperature Range		-40°C to +80°C
Drop Test		1M
Size (Length)		8 cm

PATTERNS



Azimuth
WCR2400MMCX



Elevation
WCR2400MMCX

MODEL NUMBERS

Model Number	Connector
WCR2400-MMCX	MMCX Straight
WCR2400-SMA	SMA-Male
WCR2400-SMRP	RP-SMA (gold)

MOUNTING

The WCR antenna is connector mounted.

WRR

Connector Mount

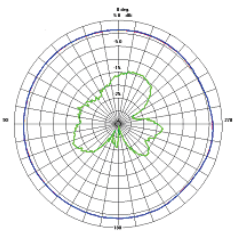
External
802.11b/g, Bluetooth

- Covers 802.11b for all US and Japanese WLAN applications
- Center fed coaxial dipole

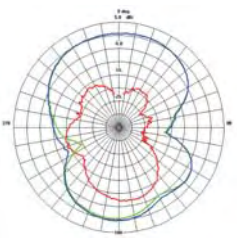
SPECIFICATIONS

Frequency Range	2.4-2.5 GHz
Polarization	Vertical, Omnidirectional
Gain	1.3 dBi (2.45 GHz)
Impedance	50 ohms
VSWR	2:1 max
Size	8.8cm (90° bent) 10.9cm (straight)
Temperature Range	-40°C to +80°C

PATTERNS



Azimuth Plane
2.45 GHz



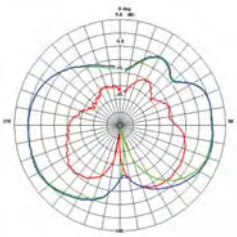
Elevation Plane
Phi=0
2.45 GHz

MODEL NUMBERS

Model Number	Color	Connector
WRR2400-RPSMA-B	Black	RP-SMA
WRR2400-RPSMA-G	Gray	RP-SMA

MOUNTING

The WRR antenna is connector mounted.



Elevation Plane
Phi=90
2.45 GHz

WTS WLAN Tri-Band Small
Connector Mount

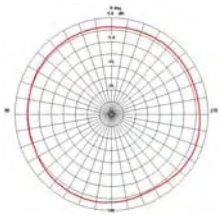
External
802.11a/b/g, Bluetooth

- Covers 2.4 to 2.5 GHz for 802.11b, and 4.9 to 6 GHz for 802.11a and all US, European, and Japanese WLAN applications
- Omni-directional patterns at all frequencies with increased gain in upper bands for optimal coverage.

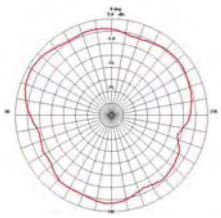
SPECIFICATIONS

Frequency Range		2.4-2.5 GHz 4.9-5.875 GHz
Polarization		Vertical, Omni-directional
Gain	2.45 GHz	2.5 dBi
	4.9 GHz	3.6 dBi
	5.25 GHz	3.0 dBi
	5.875 GHz	3.4 dBi
Impedance		50 ohms
VSWR		2:1 max
Size		75.4mm (90° bent) 95.9mm (straight) 9.3 mm diameter
Temperature Range		-40°C to +80°C

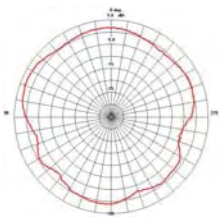
PATTERNS



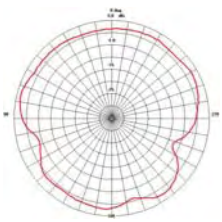
Azimuth
2.45 GHz



Azimuth
4.9 GHz



Azimuth
5.25 GHz



Azimuth
5.75 GHz

MODEL NUMBER

Model Number	Connector
WTS2450-RPSMA	RP-SMA

MOUNTING

The WTS antenna is connector mounted.

WXE
Connector Mount

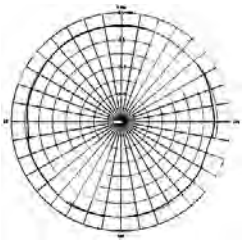
External
802.11b/g, Bluetooth

- Injection molded high performance flexible cable antenna
- 1/2 wave coaxial dipole design for improved performance
- FCC part 15 compliant connector

SPECIFICATIONS

Frequency Range	2.4-2.5 GHz
Polarization	Vertical
Gain	3.0 dBi
Impedance	50 ohms
VSWR	1.5:1 max
RF Power Handling	50 watts
Temperature Range	-40°C to +85°C
Drop Test	1M
Length	5.5"

PATTERNS



Typical Azimuth Pattern

MODEL NUMBERS

Model Number	Connector
WXE2400-SM	SMA-Male flush
WXE2400-SMLH	SMLH-Male flush

MOUNTING

The WCR antenna is connector mounted.

WXR
Connector Mount

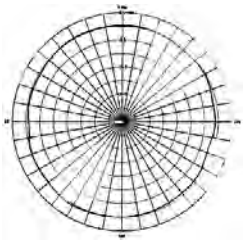
External
802.11b/g, Bluetooth

- Injection molded high performance flexible cable antenna
- 1/2 wave coaxial dipole design for improved performance

SPECIFICATIONS

Frequency Range	1850-1990 MHz 2.4-2.5 GHz
Polarization	Vertical
Gain	1.0 dBi
Impedance	50 ohms
VSWR	1.5:1 max
RF Power Handling	50 watts
Temperature Range	-40˚C to +85˚C
Drop Test	1M
Length	7"

PATTERNS



Typical Azimuth Pattern

MODEL NUMBERS

Model Number	Connector
WXR1850-TN	TNC-Male
WXR2400-TN	TNC-Male

MOUNTING

The WXR antenna is connector mounted.

WTBP WLAN Tri-Band Blade
Snap-in / Captive

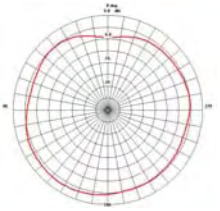
External
802.11a/b/g, Bluetooth

- Covers 2.4 to 2.5 GHz for 802.11b, and 4.9 to 6 GHz for 802.11a and all US, European, and Japanese WLAN applications
- Omni-directional patterns at all frequencies with increased gain in upper bands for optimal coverage.

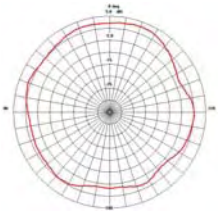
SPECIFICATIONS

Frequency Range		2.4-2.5 GHz 4.9-6.0 GHz
Polarization		Vertical, Omni-directional
Gain	2.45 GHz	2.0 dBi
	4.9 GHz	3.0 dBi
	5.25 GHz	3.7 dBi
	5.875 GHz	3.6 dBi
Impedance		50 ohms
VSWR		2:1 max
Size		4" (90˚ bent) 4.6" (straight)

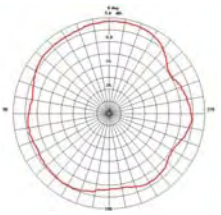
PATTERNS



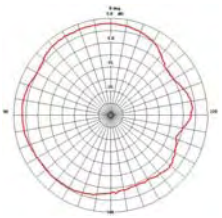
Azimuth
2.45 GHz



Azimuth
4.9 GHz



Azimuth
5.25 GHz



Azimuth
5.75 GHz

MODEL NUMBERS

Model Number	Elbow	Connector
WTBP2450-IP04-F Cable: 100mm 1.13mm	Fixed	MHF
WTBP2450-IP04-K Cable: 100mm 1.13mm	Knuckle	MHF
WTBP2450-FL04-F Cable 100mm RG-178	Fixed	Flying Lead
WTBP2450-FL04-K Cable 100mm RG-178	Knuckle	Flying Lead

MOUNTING

Available with mounting sleeve (MAP44002) for mounting to metal panels.

WTBR WLAN Tri-Band Blade

Snap-in / Captive

External
802.11a/b/g, Bluetooth

- Covers 2.4 to 2.5 GHz for 802.11b, and 4.9 to 6 GHz for 802.11a and all US, European, and Japanese WLAN applications
- Omni-directional patterns at all frequencies with increased gain in upper bands for optimal coverage.

SPECIFICATIONS

Frequency Range		2.4-2.5 GHz 4.9-6.0 GHz
Polarization		Vertical, Omni-directional
Gain	2.45 GHz	2.0 dBi
	4.9 GHz	3.0 dBi
	5.25 GHz	3.7 dBi
	5.875 GHz	3.6 dBi
Impedance		50 ohms
VSWR		2:1 max
Size		4" (90° bent) 4.6" (straight)

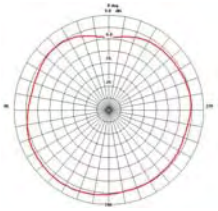
MODEL NUMBERS

Model Number	Elbow	Connector
WTBR2450-IP04-K Cable: 100mm 1.13mm	Knuckle	MHF
WTBR2450-IP04-F Cable: 100mm 1.13mm	Fixed	MHF
WTBR2450-FL04-K Cable: 100mm RG-178	Knuckle	Flying Lead
WTBR2450-FL04-F Cable: 100mm RG-178	Fixed	Flying Lead

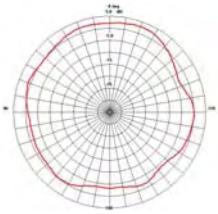
MOUNTING

Available with mounting sleeve (MAP44002) for mounting to metal panels.

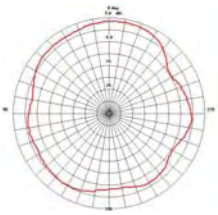
PATTERNS



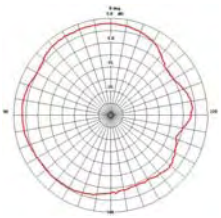
Azimuth
2.45 GHz



Azimuth
4.9 GHz



Azimuth
5.25 GHz



Azimuth
5.75 GHz

WTC WLAN Tri-Band

Snap-in / Captive

External
802.11a/b/g, Bluetooth

- Covers 2.4 to 2.5 GHz for 802.11b, and 4.9 to 6 GHz for 802.11a and all US, European, and Japanese WLAN applications
- Fixed right-angle design for access points, gateways, and portable wireless devices.
- Coaxial cable pigtail with various connector choices

SPECIFICATIONS

Frequency Range		2.4-2.5 GHz 4.9-6.0 GHz
Polarization		Vertical, Omni-directional
Gain	2.45 GHz	2.5 dBi
	4.9 GHz	3.8 dBi
	5.25 GHz	4.6 dBi
	5.75 GHz	5.2 dBi
Impedance		50 ohms
VSWR		2:1 max
Size		4.25" (90° bent) 4.9" (straight) .6" diameter

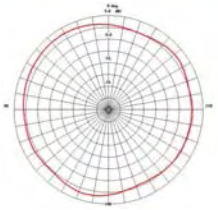
MODEL NUMBERS

Model Number	Elbow	Connector
WTC2450-IP04-F Cable: 100mm 1.13mm	Fixed	MHF
WTC2450-IP04-K Cable: 100mm 1.13mm	Knuckle	MHF
WTC2450-FL04-F Cable: 100mm RG-178	Fixed	Flying Lead
WTC2450-FL04-K Cable: 100mm RG-178	Knuckle	Flying Lead

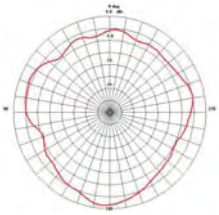
MOUNTING

Available with mounting sleeve (MAP44002) for mounting to metal panels.

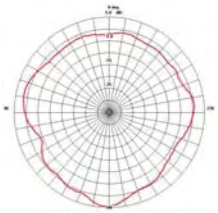
PATTERNS



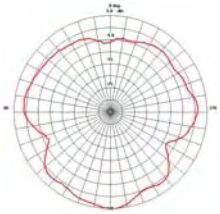
Azimuth
2.45 GHz



Azimuth
4.9 GHz



Azimuth
5.25 GHz



Azimuth
5.75 GHz

WTS WLAN Tri-Band Small

Snap-in / Captive

External
802.11a/b/g, Bluetooth

- Covers 2.4 to 2.5 GHz for 802.11b, and 4.9 to 6 GHz for 802.11a and all US, European, and Japanese WLAN applications
- Coaxial cable pigtail with various connector choices
- Omni-directional patterns at all frequencies with increased gain in upper bands for optimal coverage

SPECIFICATIONS

Frequency Range		2.4-2.5 GHz 4.9-5.875 GHz
Polarization		Vertical, Omni-directional
Gain	2.45 GHz	2.5 dBi
	4.9 GHz	3.6 dBi
	5.25 GHz	3.0 dBi
	5.875 GHz	3.4 dBi
Impedance		50 ohms
VSWR		2:1 max
Temperature Range		-40°C to +80°C
Size		75.4mm (90° bent) 95.9mm (straight) 9.3 mm diameter

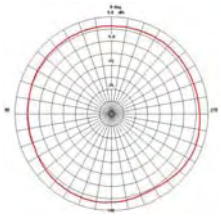
MODEL NUMBERS

Model Number	Connector
WTS2450-IP04	MHF
Cable: 100mm 1.13mm	
WTS2450-FL04	Flying Lead
Cable: 100mm RG-178	

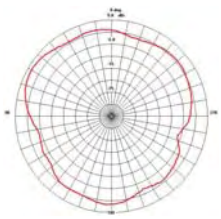
MOUNTING

Available with mounting sleeve (MAP44002) for mounting to metal panels.

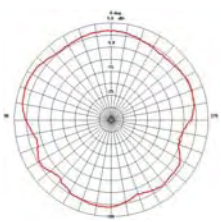
PATTERNS



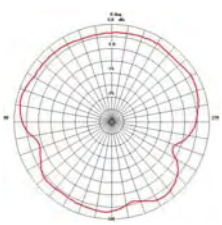
Azimuth
2.45 GHz



Azimuth
4.9 GHz



Azimuth
5.25 GHz



Azimuth
5.75 GHz

Dipole ComAer 2.4: WCP

Snap-in / Captive

External
802.11b/g, Bluetooth

- Fits in .25" case up to .070" thick
- Alignment notches to prevent rotation
- Sub-miniature right angle coax connector
- 1/2 wave coaxial dipole
- Flexible element

SPECIFICATIONS

Frequency Range		2.4-2.5 GHz
Polarization		Vertical
Gain	MMCX2	2.5 dBi
	MMCX4	2.5 dBi
	MMCX6	2.0 dBi
	MMCX8	1.5 dBi
	MMCX12	1.0 dBi
Impedance		50 ohms
VSWR		2.0:1 max
RF Power Handling		10 watts
Temperature Range		-40°C to +80°C
Drop Test		1M
Length		7 cm

MODEL NUMBERS

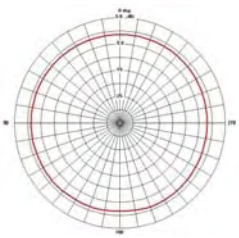
Model Number	Connector	Cable
WCP2400-MMCX2	MMXCX Jack R.A	2"
WCP2400-MMCX4	MMXCX Jack R.A	4"
WCP2400-MMCX6	MMXCX Jack R.A	6"
WCP2400-MMCX8	MMXCX Jack R.A	8"
WCP2400-MMCX12	MMXCX Jack R.A	12"

Supplied with brown RG-178 cable

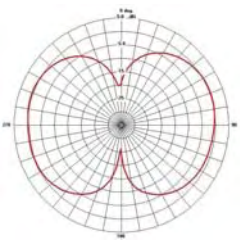
MOUNTING

The WCP antenna is snap-in / captive mounted.

PATTERNS



Azimuth Plane



Elevation Plane

WRR
Snap-in/Captive

External
802.11b/g, Bluetooth

- Covers 802.11b for all US and Japanese WLAN applications
- Center fed coaxial dipole with a coaxial cable pigtail

SPECIFICATIONS

Frequency Range	2.4-2.5 GHz
Polarization	Vertical, Omnidirectional
Gain	1.5 dBi (2.45 GHz)
Impedance	50 ohms
VSWR	2:1 max
Temperature Range	-40˚C to +80˚C
Size	8.8cm (90˚ bent) 10.9cm (straight)

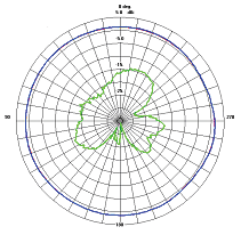
MODEL NUMBERS

Model Number	Color	Connector
WRR2400-IP04-B Cable: 100mm 1.13mm	Black	MHF
WRR2400-IP04-G Cable: 100mm 1.13mm	Gray	MHF
WRR2400-FL04-B Cable 100mm RG-178	Black	Flying Lead
WRR2400-FL04-G Cable 100mm RG-178	Gray	Flying Lead

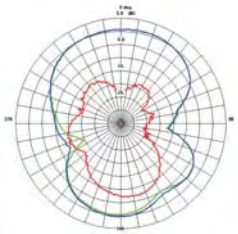
MOUNTING

Available with mounting sleeve (MAP44002) for mounting to metal panels.

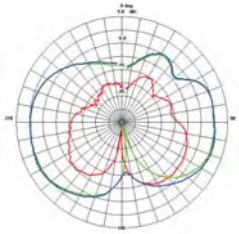
PATTERNS



Azimuth Plane
2.45 GHz



Elevation Plane
Phi=0
2.45 GHz



Elevation Plane
Phi=90
2.45 GHz

Dipole ComAer 2.4: WCR
Snap-in

External
802.11b/g, Bluetooth

- 1/2 wave coaxial dipole
- Clutch allows 360˚ rotation
- Flexible element
- FCC part 15 compliant polarized connector

SPECIFICATIONS

Frequency Range	2.4-2.5 GHz
Polarization	Vertical
Gain	2.0 dBi
Impedance	50 ohms
VSWR	1.5:1 max
RF Power Handling	50 watts
Temperature Range	-40˚C to +80˚C
Drop Test	1M
Size (Length)	7.6cm (90˚ bent) 10.8cm (straight)

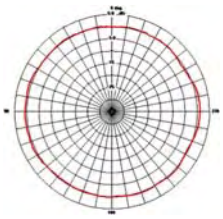
MODEL NUMBERS

Model Number	Connector	Cable
WCR2400-FL04	Flying Lead	100mm RG-178
WCR2400-IP04	MHF	100mm 1.13mm

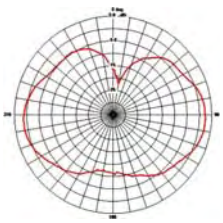
MOUNTING

Available with mounting sleeve (MAP44002) for mounting to metal panels.

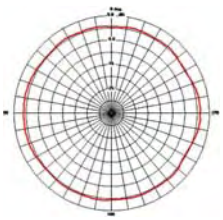
PATTERNS



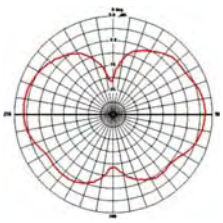
Antenna Bent @ 90˚
Azimuth
2.45 GHz



Antenna Bent @ 90˚
Elevation - Phi=0
2.45 GHz



Antenna Straight
Azimuth
2.45 GHz



Antenna Straight
Elevation - Phi=0
2.45 GHz

Model & Part Number Cross-Reference

INTERNAL ANTENNAS

Antenna Type	Model #	Reference #	Antenna Description	Cable	Connectors
BlackChip	WIC2450-A	MAF95029	Tri-Band BlackChip w/ lead free solder (Tape+Reel, 2K/Reel)	N/A	N/A
	WIC2452-A-SM		Tri-Band BlackChip on Evaluation Board	N/A	SMA-female edge-mount
D-Puck	WID2452	CAF94400	Tri-Band D-Puck Internal SMT PIFA (Tape+Reel, 400/Reel, 8 Reels/Carton)	N/A	N/A
(WID)	WID2452-SM	CAF94377	Tri-Band D-Puck Internal SMT PIFA on Evaluation Board	N/A	SMA-female Panel
NanoBlade	NanoBlade - MMCX4	CAF94504	Tri-Band 2.4/4.9-6 GHz Internal Embedded Antenna	100mm, RG-178	R.A. MMCX Plug
	NanoBlade - IP04	CAF94505	Tri-Band 2.4/4.9-6 GHz Internal Embedded Antenna	100mm, 1.13 mm	MHF
NanoBlue	NanoBlue - IP04	MAF94045	2.4 GHz Internal Embedded Antenna	100mm, 1.13 mm	MHF

EXTERNAL ANTENNAS

Antenna Type	Model #	Reference #	Antenna Description	Cable	Connectors
EXR Series	EXR2400-BNRP-G	CAF28915	2.4 GHz Half-Wave Dipole, Knuckle Elbow, 5.5", Gray (G)	N/A	RP-BNC
	EXR2400-BNRP-B	CAF28896	2.4 GHz Half-Wave Dipole, Knuckle Elbow, 5.5", Black (B)	N/A	RP-BNC
	EXR2400-TNSP	CAF28777	2.4 GHz Half-Wave Dipole, Knuckle Elbow, 5.5", Black	N/A	RP-TNC
WCP Series	WCP2400-MMCX2	CAF28841	2.4 GHz ComAer Dipole w/ Pigtail, Straight/Captive, 7 cm	2" RG-178	MMCX jack R.A.
	WCP2400-MMCX4	CAF28841	2.4 GHz ComAer Dipole w/ Pigtail, Straight/Captive, 7 cm	4" RG-178	MMCX jack R.A.
	WCP2400-MMCX6	CAF28841	2.4 GHz ComAer Dipole w/ Pigtail, Straight/Captive, 7 cm	6" RG-178	MMCX jack R.A.
	WCP2400-MMCX8	CAF28841	2.4 GHz ComAer Dipole w/ Pigtail, Straight/Captive, 7 cm	8" RG-178	MMCX jack R.A.
	WCP2400-MMCX12	CAF28841	2.4 GHz ComAer Dipole w/ Pigtail, Straight/Captive, 7 cm	12" RG-178	MMCX jack R.A.
WCR Series	WCR2400-MMCX	WCR2400MMCX	2.4 GHz ComAer Dipole, Knuckle Elbow, 10 cm	N/A	MMCX Straight
	WCR2400-SMA	WCR2400SMA	2.4 GHz ComAer Dipole, Knuckle Elbow, 10 cm	N/A	SMA-Male
	WCR2400-SMRP	WCR2400SMRP	2.4 GHz ComAer Dipole, Knuckle Elbow, 10 cm	N/A	RP-SMA-Male
	WCR2400-FL04	MAF94015	2.4 GHz ComAer Dipole, Snap-in, Knuckle Elbow	100 mm RG-178	Flying Lead
	WCR2400-IP04	MAF94017	2.4 GHz ComAer Dipole, Snap-in, Knuckle Elbow	100 mm, 1.13mm	MHF
WRR Series	WRR2400-RPSMA-B	MAF94028	2.4 GHz Dipole, Knuckle Elbow, Black (B)	N/A	
	WRR2400-RPSMA-G	MAF94046	2.4 GHz Dipole, Knuckle Elbow, Gray (G)	N/A	RP-SMA
	WRR2400-IP04-B	MAF94019	2.4 GHz Dipole, Snap-in, Knuckle Elbow, Black (B)	100 mm, 1.13mm	MHF
	WRR2400-IP04-G	MAF94048	2.4 GHz Dipole, Snap-in, Knuckle Elbow, Gray (G)	100 mm, 1.13mm	MHF
	WRR2400-FL04-B	MAF94027	2.4 GHz Dipole, Snap-in, Knuckle Elbow, Black (B)	100 mm RG-178	Flying Lead
	WRR2400-FL04-G	MAF94047	2.4 GHz Dipole, Snap-in, Knuckle Elbow, Gary (G)	100 mm RG-178	Flying Lead
WTBP Series (Blade parallel to Rotation)	WTBP2450-IP04-F	MAF94003	Tri-Band 2.4/4.9-6 GHz Blade - Fixed elbow (F)	100 mm, 1.13mm	MHF
	WTBP2450-IP04-K	MAF94009	Tri-Band 2.4/4.9-6 GHz Blade - Knuckle elbow (K)	100 mm, 1.13mm	MHF
	WTBP2450-FL04-F	MAF94023	Tri-Band 2.4/4.9-6 GHz Blade - Fixed elbow (F)	100 mm RG-178	Flying Lead
	WTBP2450-FL04-K	MAF94025	Tri-Band 2.4/4.9-6 GHz Blade - Knuckle elbow (K)	100 mm RG-178	Flying Lead
WTBR Series (Edge parallel to Rotation)	WTBR2450-IP04-K	MAF94007	Tri-Band 2.4/4.9-6 GHz Blade - Knuckle elbow (K)	100 mm, 1.13mm	MHF
	WTBR2450-IP04-F	MAF94010	Tri-Band 2.4/4.9-6 GHz Blade - Fixed elbow (F)	100 mm, 1.13mm	MHF
	WTBR2450-FL04-K	MAF94024	Tri-Band 2.4/4.9-6 GHz Blade - Knuckle elbow (K)	100 mm RG-178	Flying Lead
	WTBR2450-FL04-F	MAF94026	Tri-Band 2.4/4.9-6 GHz Blade - Fixed elbow (F)	100 mm RG-178	Flying Lead
WTC Series	WTC2450-IP04-F	MAF94005	Tri-Band 2.4/4.9-6 GHz Cylindrical - Fixed elbow (F)	100 mm, 1.13mm	MHF
	WTC2450-IP04-K	MAF94006	Tri-Band 2.4/4.9-6 GHz Cylindrical - Knuckle elbow (K)	100 mm, 1.13mm	MHF
	WTC2450-FL04-F	MAF94022	Tri-Band 2.4/4.9-6 GHz Cylindrical - Fixed elbow (F)	100 mm RG-178	Flying Lead
	WTC2450-FL04-K	MAF94021	Tri-Band 2.4/4.9-6 GHz Cylindrical - Knuckle elbow (K)	100 mm RG-178	Flying Lead
WTS Series	WTS2450-RPSMA	MAF94051	Tri-Band 2.4/4.9-6 GHz Small Diameter - Knuckle elbow	N/A	RP-SMA
	WTS2450-IP04	MAF94016	Tri-Band 2.4/4.9-6 GHz, Snap-in, Small Diameter - Knuckle elbow	100 mm, 1.13mm	MHF
	WTS2450-FL04	MAF94035	Tri-Band 2.4/4.9-6 GHz, Snap-in, Small Diameter - Knuckle elbow	100 mm RG-178	Flying Lead
WXE Series	WXE2400-SM	CAF29155	2.4 GHz Half-Wave Dipole, Straight, 5.5"	N/A	SMA-Male Flush
	WXE2400-SMLH	CAF28832	2.4 GHz Half-Wave Dipole, Straight, 5.5"	N/A	SMLH-Male Flush
WXR Series	WXR1850-TN	CAF28793	1850 MHz Half-Wave Dipole, Knuckle Elbow, 7"	N/A	TNC-Male
	WXR2400-TN	CAF28778	2.4 GHz Half-Wave Dipole, Knuckle Elbow, 7"	N/A	TNC-Male
Accessory	Ferrite Bead (B)	4x25x1.5 mm	for Std. Dipole external antennas	100 mm, 1.13mm	MHF
	Ferrite Bead (S)	4x10x2 mm	for Std. Dipole external antennas	100 mm, 1.13mm	MHF

Centurion In-Building

Complete Coverage for

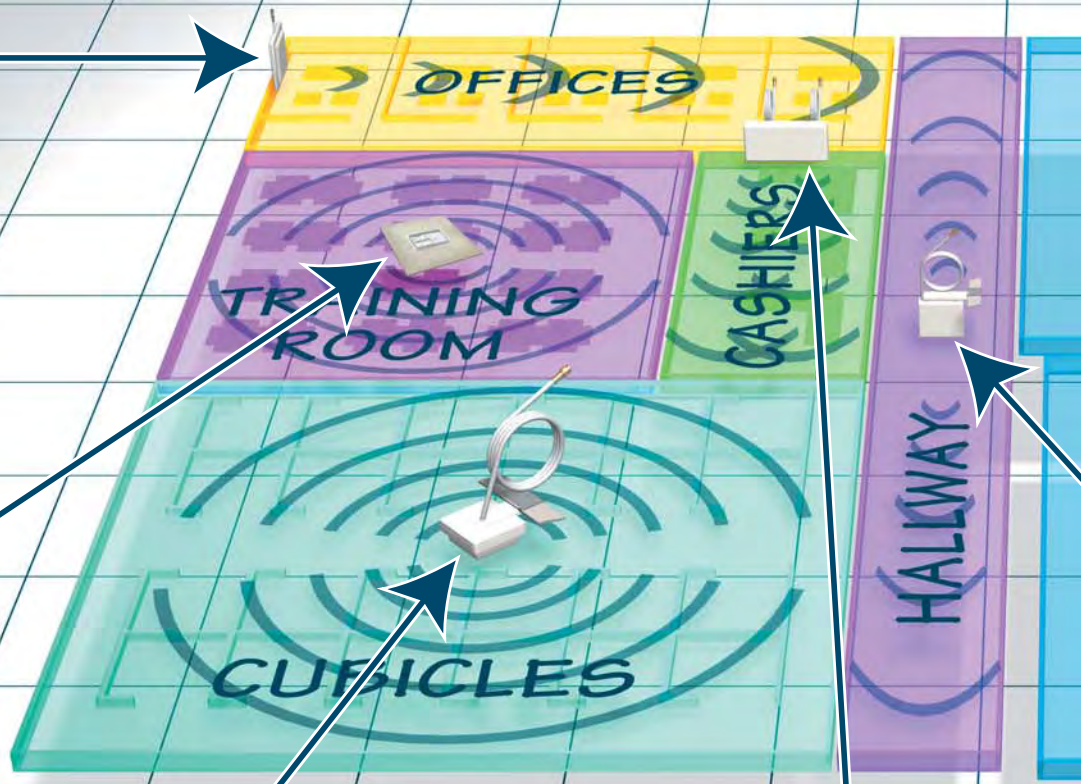
Directional

Whisper

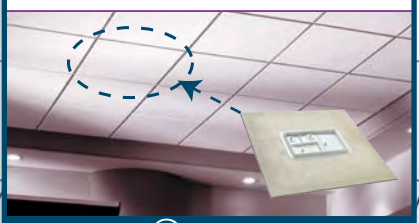
850, 1900, 2400
or 5250 MHz
Gain: 7.5 - 8.5 dBi
VSWR 1.5:1 - 2.0:1
Wall-mounts to any surface

Outdoor Whisper

2.4 - 2.5 GHz
Gain: 8.5 dBi
VSWR 1.8:1
Wall-mounts to any surface
with swivel bracket



Omnidirectional



ceilings
Ceiling Tile Antenna

850, 1900 and/or 2400 MHz
Gain: 3 dBi
VSWR 1.5:1
Hidden within an Armstrong Ceiling Tile

Wireless Valley®

Pattern data files for PartsPlanner are available at www.centurion.com

Omnidirectional

MicroSphere

450, 850, 920, 1800, 1900, 2100 or 2400 MHz Single-band
850 & 1900 or 900 & 1800 MHz Dual-band
Gain: 3 dBi
VSWR 1.5:1 - 2.0:1
Ceiling Mount

MicroSphere Multiband

850, 900, 1800, 1850,
1900 & 2100 MHz
Gain: 3 dBi
VSWR 2:1
Ceiling Mount

Sphere 850 MHz

850 MHz
Gain: 3 dBi
VSWR 2:1
Ceiling Mount

Sphere 1900 or 2400 MHz

1900 or 2400 MHz
Gain: 3 dBi
VSWR 1.5:1 - 2.0:1
Ceiling Mount

Sphere 5 GHz

5.15 - 5.35 GHz
Gain: 5 dBi
VSWR 2:1
Ceiling Mount

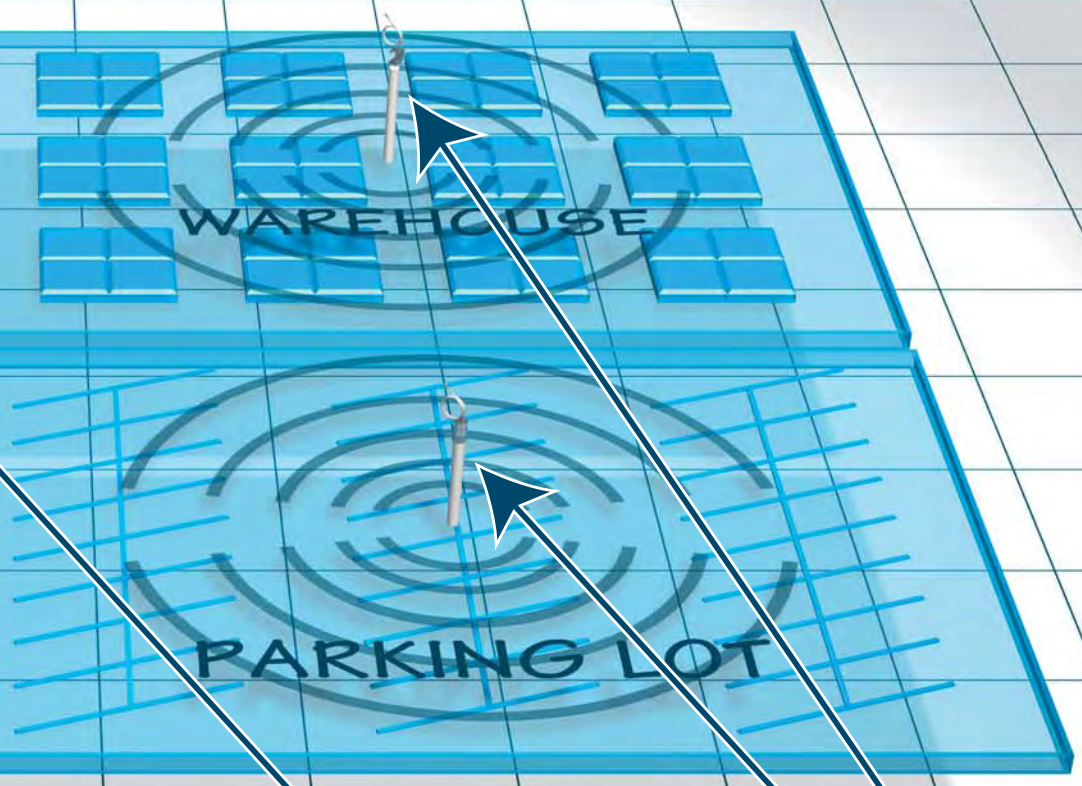
Diversity

MicroSphere Omnidirectional

2.4 - 2.5 GHz
Gain: 3 dBi
VSWR 2.0:1
Wall-mount or
Ceiling-mount

Wireless Antennas

Your Wireless World



Easy installation.
Small size.
Aesthetically appealing.
Mounting flexibility.
Durability and quality.

Characteristics found in every Centurion wireless antenna.

Centurion offers a full range of in-building and outdoor antennas with multiple frequency, connector and cable length options. Centurion's omnidirectional, bidirectional and directional antennas provide versatility for optimal coverage of your application. Optional mounting hardware and cable assemblies ensure maximum adaptability.

For complete coverage of your next application, rely on Centurion antennas.

Diversity

Terrace 2.4 GHz Directional

2.4 - 2.5 GHz
Gain: 5 dBi
VSWR 2.0:1
Wall-mount

Sphere Omnidirectional

2.4 - 2.5 GHz
Gain: 3 dBi
VSWR 2.0:1
Ceiling mount

Terrace 5 GHz Directional

4.9 - 6.0 GHz
Gain: 5 dBi
VSWR 2.0:1
Wall-mount

Bidirectional

Terrace

2.4 - 2.5 GHz
Gain: 5 dBi
VSWR 1.8:1
Mounts to ceiling tile grid

Omnidirectional

MegaSphere

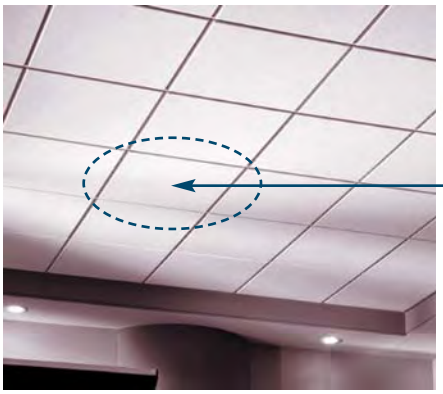
2.4 - 2.5 GHz
Gain: 6 dBi
VSWR < 2.0:1
Ceiling tile and clamp brackets included

Outdoor/Indoor MegaSphere

2.4 - 2.5 GHz
Gain: 5 dBi
VSWR < 2.0:1
Ceiling tile, pole and clamp mount brackets included

i ceilings
Ceiling Tile Antenna

OMNIDIRECTIONAL
850, 1900 and/or 2400 MHz



TOP VIEW

- Produced through a partnership with Armstrong World Industries
- Patent-pending design embeds the latest antenna technology into standard Armstrong ceiling panels
- Provides the most efficient and effective in-building coverage because the ceiling plane is the best location for omni-directional antennas
- Specifically tuned and tested to perform in suspended panel ceilings
- Provides the capability for wireless connectivity to both voice and data
- Compatible with 802.11b&g, Bluetooth, iDen, AMPS, PCS
- The antenna tray is undetectable when the tile is installed

SPECIFICATIONS	850 & 1900 MHZ	1900 MHZ	2400 MHZ
Element Type	Microstrip	Microstrip	Microstrip
Frequency Range	806-896 MHz 1850-1990 MHz	1850-1990 MHz	2.4-2.5 GHz
Peak Gain	3 dBi	3 dBi	3 dBi
Polarization	Horizontal	Horizontal	Horizontal
Impedance	50 ohms	50 ohms	50 ohms
Max Input Power	50 watts	50 watts	50 watts
Isolation (between pairs)	29 dB (850-1900)	26 dB (850-2400)	24 dB (1900-2400)
VSWR*	1.5:1	1.5:1	1.5:1
Connectors	SMA Female	SMA Female	SMA Female
Temperature Range	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C

ANTENNA TRAY CONFIGURATIONS

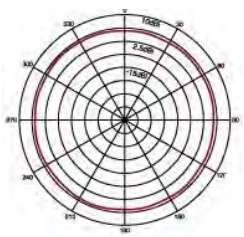
Model Number	Antennas	Type
IFC8519-SF00**	One 850/1900 MHz Dual-band	Voice
IFCMULT-SF00**	One 850-1900 MHz Dual-band One 1900 MHz Two 2.4 GHz	Voice & Data
IFC2450-SF00**	Two 2.4 GHz	Data
IFE8519-SF00**	One 850/1900 MHz Dual-band One 1900 Mhz	Voice

* Minimum VSWR performance

** i-ceiling antenna trays are not available as separate units without being embedded in Armstrong ceiling tiles. When ordering, please have the Armstrong item number (printed on the back of Armstrong ceiling tiles) available to assure that the antenna tray ordered is embedded within the correct tile in terms of style, color & size.

*** Cable assemblies for the i-ceiling antenna trays are available at the end of this section.

SINGLE BAND ELEMENT PATTERNS



Azimuth Plane (cut perpendicular to the antenna and perpendicular to the polarization

Elevation Plane (cut perpendicular to the antenna and parallel to the polarization

Omni Plane (cut in the ceiling plane from above)

DUAL BAND ELEMENT PATTERNS

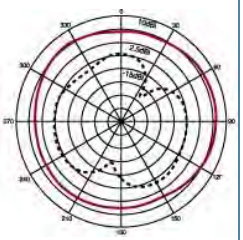
850 MHz

Azimuth Plane (cut perpendicular to the antenna and perpendicular to the polarization

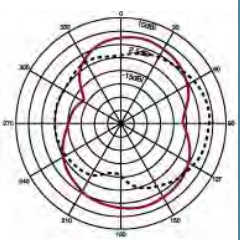
Elevation Plane (cut perpendicular to the antenna and parallel to the polarization

Omni Plane (cut in the ceiling plane from above)

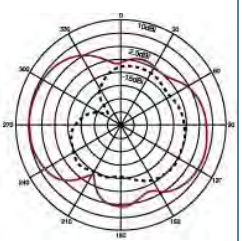
1900 MHz



Azimuth Plane (cut perpendicular to the antenna and perpendicular to the polarization



Elevation Plane (cut perpendicular to the antenna and parallel to the polarization



Omni Plane (cut in the ceiling plane from above)

Co-Polarization ---------- *Cross-Polarization*

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

MegaSphere™

OMNIDIRECTIONAL
2.4-2.5GHz

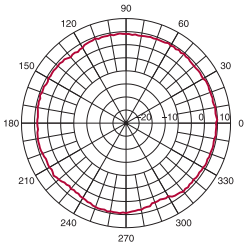
- Cylindrical form factor
- High gain omnidirectional antenna
- Mounts to suspended ceiling grid or clamps to I-beam, etc.
- Excellent choice for open-air installation
- Two standard mounting options included

SPECIFICATIONS

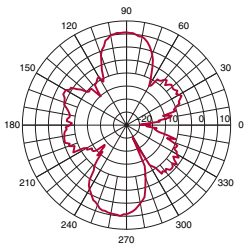
Element Type	Linear Array
Frequency Range	2.4-2.5 GHz
Peak Gain	6 dBi
Polarization	Vertical
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	< 2.0:1
Dimensions	27.6 x 2.7 cm
Housing	PVC
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

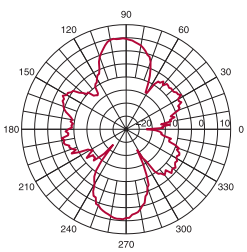
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

MODEL NUMBERS

Model Number	Cable Length	Connector
IG2450-NF12	12"	N-Female
IG2450-NF36	36"	N-Female
IG2450-NM36	36"	N-Male
IG2450-RB12	12"	RP-BNC
IG2450-RB36	36"	RP-BNC
IG2450-RS36	36"	RP-SMA
IG2450-RT36	36"	RP-TNC
IG2450-SM36	36"	SMA Male

Supplied with low-loss white RG-142 plenum rated coax cables.

MOUNTING

Two mounting brackets included:

Ceiling tile grid bracket

Overhead beam clamp

Outdoor/Indoor MegaSphere™

OMNIDIRECTIONAL
2.4-2.5GHz

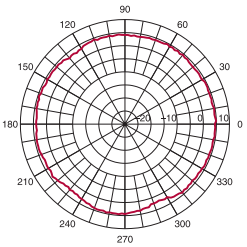
- Cylindrical form factor
- High gain omnidirectional antenna
- Weather resistant and waterproof with fully sealed radome
- Excellent choice for open-air installation (parking lot, storage yard, shipping/ receiving, warehouse, etc.)
- Indoor and outdoor mounting hardware included

SPECIFICATIONS

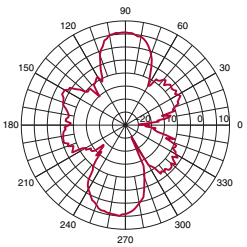
Element Type	Linear Array
Frequency Range	2.4-2.5 GHz
Peak Gain	5 dBi
Polarization	Vertical
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	< 2.0:1
Dimensions	28.5 x 3.2 cm
Housing	PVC
Wind Resistance	120 mph
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

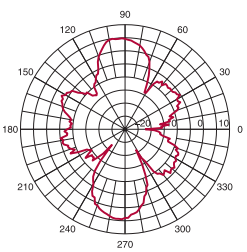
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

MODEL NUMBERS

Model Number	Cable Length	Connector
IGO2450-NF12	12"	N-Female
IGO2450-RT12	12"	RP-TNC

Supplied with low-loss white RG-142 plenum rated coax cables.

MOUNTING

Two mounting brackets included:

Indoor mounting kit

Outdoor mounting kit

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

450 MHz MicroSphere™

OMNIDIRECTIONAL
417-483 MHz

- Omnidirectional pattern provides optimal in-building coverage
- Toroidal field pattern provides omnidirectional coverage in any plane around the long axis, and two lobes in any plane parallel to the long axis

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	417-483 MHz UHF
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	10 watts
VSWR*	2:1 typical across band
Dimensions	13 x 14.7 x 2.5 cm
Coating	Acrylic
Temperature Range	-40˚C to +70˚C
Connector	SMA Female panel

* Minimum VSWR performance

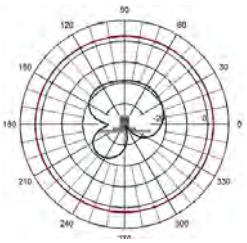
MODEL NUMBER

IF450-SF00	450 MHz MicroSphere

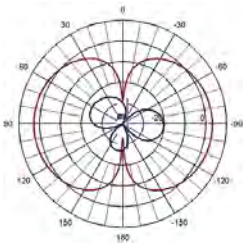
MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

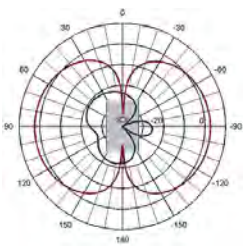
PATTERNS



Azimuth Plane
Cut perpendicular to the antenna, parallel to the connector / cable exit, perpendicular to the polarization



Elevation Plane
Cut perpendicular to the antenna, parallel to the connector / cable exit, parallel to the polarization axis



Omni Plane
Cut in the plane of the antenna perpendicular to the connector / cable exit

850 MHz MicroSphere™

OMNIDIRECTIONAL
806-896 MHz

- Omnidirectional pattern provides optimal in-building coverage
- Toroidal field pattern provides omnidirectional coverage in any plane around the long axis, and two lobes in any plane parallel to the long axis

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	806-960 MHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2:1
Dimensions	11.4 x 8.6 x 0.25 cm
Coating	Acrylic
Temperature Range	-40˚C to +70˚C
Connector	SMA Female panel

* Minimum VSWR performance

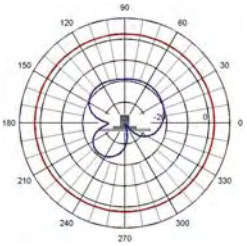
MODEL NUMBER

IF850-SF00	850 MHz MicroSphere

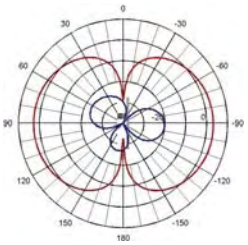
MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

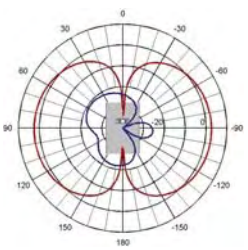
PATTERNS



Azimuth Plane
Cut perpendicular to the antenna, parallel to the connector / cable exit, perpendicular to the polarization



Elevation Plane
Cut perpendicular to the antenna, parallel to the connector / cable exit, parallel to the polarization axis



Omni Plane
Cut in the plane of the antenna perpendicular to the connector / cable exit

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

900 MHz MicroSphere™

OMNIDIRECTIONAL
880-960 MHz

- Omnidirectional pattern provides optimal in-building coverage
- Toroidal field pattern provides omnidirectional coverage in any plane around the long axis, and two lobes in any plane parallel to the long axis

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	880-960 MHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.5:1
Dimensions	10.9 x 7.9 x 0.25 cm
Coating	Acrylic
Temperature Range	-40°C to +70°C
Connector	SMA Female panel

* Minimum VSWR performance

MODEL NUMBER

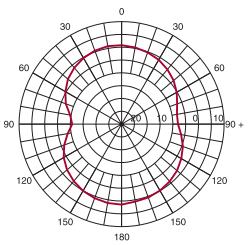
IF900-SF00	900 MHz MicroSphere

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

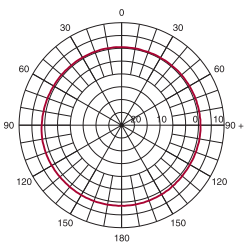
MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

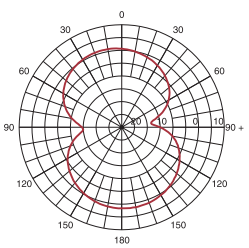
PATTERNS



Conic
10° down from ceiling



Elevation
Phi = 0



Elevation
Phi = 90

1800 MHz MicroSphere™

OMNIDIRECTIONAL
1710-1880 MHz

- Omnidirectional pattern provides optimal in-building coverage
- Toroidal field pattern provides omnidirectional coverage in any plane around the long axis, and two lobes in any plane parallel to the long axis

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	1710-1880 MHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.5:1
Dimensions	5.6 x 3.5 x 0.25 cm
Coating	Acrylic
Temperature Range	-40°C to +70°C
Connector	SMA Female panel

* Minimum VSWR performance

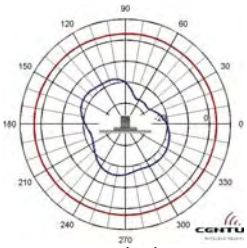
MODEL NUMBER

IF1800-SF00	1800 MHz MicroSphere

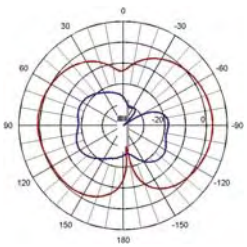
MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

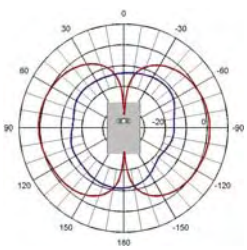
PATTERNS



Azimuth Plane
Cut perpendicular to the antenna, parallel to the connector / cable exit, perpendicular to the polarization



Elevation Plane
Cut perpendicular to the antenna, parallel to the connector / cable exit, parallel to the polarization axis



Omni Plane
Cut in the plane of the antenna perpendicular to the connector / cable exit

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

1900 MHz MicroSphere™

OMNIDIRECTIONAL
1850-1990 MHz

- Omnidirectional pattern provides optimal in-building coverage
- Toroidal field pattern provides omnidirectional coverage in any plane around the long axis, and two lobes in any plane parallel to the long axis

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	1850-1990 MHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.5:1
Dimensions	5.6 x 3.5 x 0.25 cm
Coating	Acrylic
Temperature Range	-40°C to +70°C
Connector	SMA Female panel

* Minimum VSWR performance

MODEL NUMBER

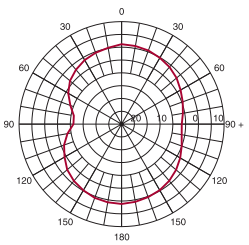
IF1900-SF00	1900 MHz MicroSphere

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

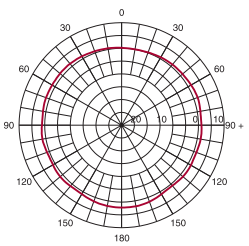
MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

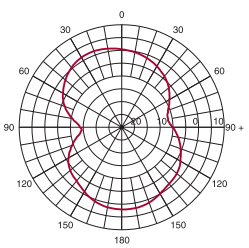
PATTERNS



Conic
10° down from ceiling



Elevation
Phi = 0



Elevation
Phi = 90

2100 MHz UMTS MicroSphere™

OMNIDIRECTIONAL
1920-2170 MHz

- Omnidirectional pattern provides optimal in-building coverage
- Toroidal field pattern provides omnidirectional coverage in any plane around the long axis, and two lobes in any plane parallel to the long axis

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	1920-2170 MHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2:1
Dimensions	5.5 x 3.6 x .25 cm
Coating	Acrylic
Temperature Range	-40°C to +70°C
Connector	SMA Female panel

* Minimum VSWR performance

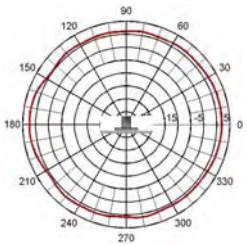
MODEL NUMBER

IF2100-SF00	UMTS MicroSphere

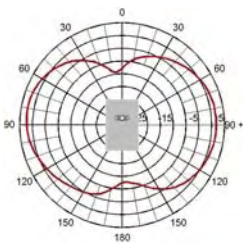
MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

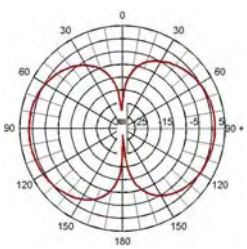
PATTERNS



Azimuth Plane
Cut perpendicular to the antenna, parallel to the connector / cable exit, perpendicular to the polarization



Elevation Plane phi = 0
Cut parallel to the antenna, perpendicular to the connector / cable exit, parallel to the polarization axis



Elevation Plane phi = 90
Cut perpendicular to the antenna, parallel to the connector / cable exit, parallel to the polarization axis

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

2.4 GHz MicroSphere™

OMNIDIRECTIONAL
2.4 - 2.5 GHz

- Omnidirectional pattern provides optimal in-building coverage
- Toroidal field pattern provides omnidirectional coverage in any plane around the long axis, and two lobes in any plane parallel to the long axis

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	2.4-2.5 GHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.5:1
Dimensions	4.6 x 3 x 0.25 cm
Coating	Acrylic
Temperature Range	-40°C to +70°C
Connector	SMA Female panel

* Minimum VSWR performance

MODEL NUMBER

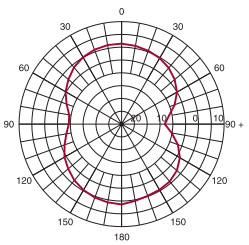
IF2450-SF00	2.4 GHz MicroSphere
Color: White	

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

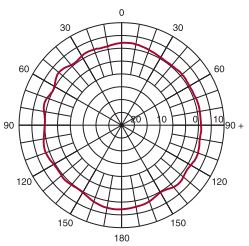
MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

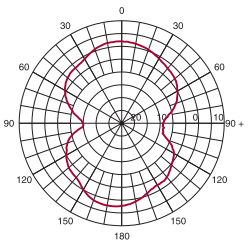
PATTERNS



Conic
10° down from ceiling



Elevation
Phi = 0



Elevation
Phi = 90

850 & 1900 MHz Dual-band MicroSphere™

OMNIDIRECTIONAL
850 & 1900 MHz

- Omnidirectional pattern provides optimal in-building coverage
- The dual-band, single-port MicroSphere contains an integrated diplexer which allows independent or simultaneous use of both bands

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	806-896 MHz 1850-1990 MHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.5:1
Dimensions	15.9 x 13.6 x 0.25 cm
Coating	Acrylic
Temperature Range	-40°C to +70°C
Connector	SMA Female panel

* Minimum VSWR performance

MODEL NUMBER

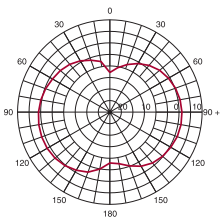
IF8519-SF00	850 & 1900 MHz MicroSphere

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

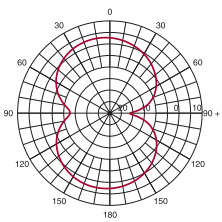
MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

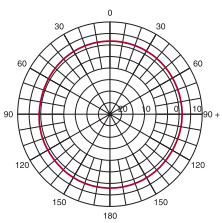
850 MHz PATTERNS



Conic
10° down from ceiling

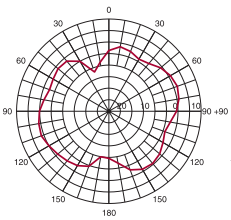


Elevation
Phi = 0

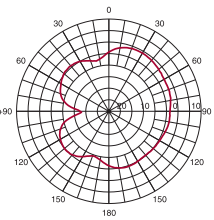


Elevation
Phi = 90

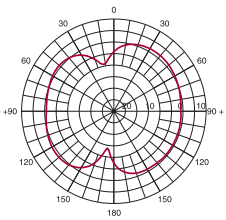
1900 MHz PATTERNS



Conic
10° down from ceiling



Elevation
Phi = 0



Elevation
Phi = 90

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

900 & 1800 MHz Dual-band MicroSphere™

OMNIDIRECTIONAL
900 & 1800 MHz

- Omnidirectional pattern provides optimal in-building coverage
- The dual-band, single-port MicroSphere contains an integrated diplexer which allows independent or simultaneous use of both bands

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	880-960 MHz 1710-1880 MHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.5:1
Dimensions	12.9 x 15.6 x .25 cm
Coating	Acrylic
Temperature Range	-40˚C to +70˚C
Connector	SMA Female panel

* Minimum VSWR performance

MODEL NUMBER

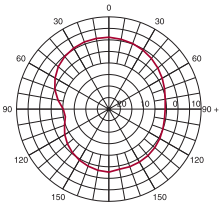
IF9018-SF00	900 & 1800 MHz MicroSphere

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

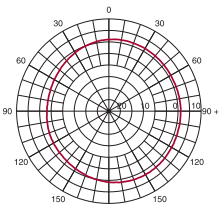
MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

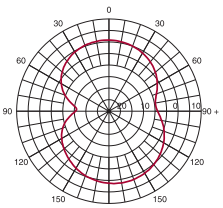
900 MHz PATTERNS



Conic
10˚ down from ceiling

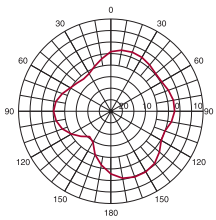


Elevation
Phi = 0

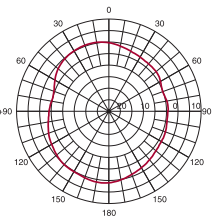


Elevation
Phi = 90

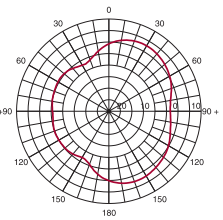
1800 MHz PATTERNS



Conic
10˚ down from ceiling



Elevation
Phi = 0



Elevation
Phi = 90

Multi-Band MicroSphere™

OMNIDIRECTIONAL
850, 900, 1800 & 2100 MHz

- Omnidirectional pattern provides optimal in-building coverage
- Toroidal field pattern provides omnidirectional coverage in any plane around the long axis, and two lobes in any plane parallel to the long axis

SPECIFICATIONS

Element Type		Microstrip
Frequency Range	AMPS	806-896 MHz
	GSM	880-960 MHz
	DCS	1710-1880 MHz
	PCS	1850-1990 MHz
	UMTS	1920-2170 MHz
Peak Gain		3 dBi
Polarization		Linear
Impedance		50 ohms
Max Input Power		50 watts
VSWR*		2:1
Dimensions		11.2 x 13.8 x .25 cm
Coating		Acrylic
Temperature Range		-40˚C to +70˚C

* Minimum VSWR performance

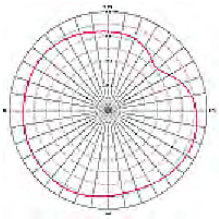
MODEL NUMBERS

Model Number	Connector
IFMULT-NF00	N-Female
IFMULT-SF00	SMA-Female panel
IFMULT-SFRA00	SMA-Female

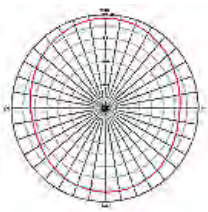
MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

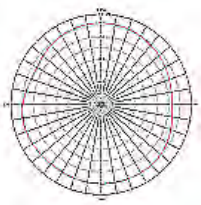
850 & 900 MHz PATTERNS



Azimuth
AMPS-GSM

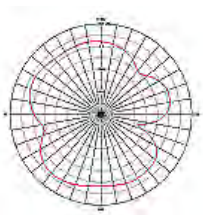


Elevation, Phi=0
AMPS-GSM

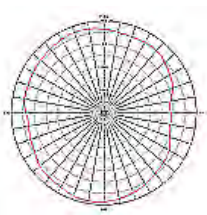


Elevation, Phi=90
AMPS-GSM

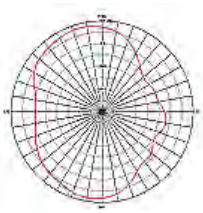
1800 & 2100 MHz PATTERNS



Azimuth
DCS-PCS & UMTS



Elevation, Phi=0
DCS-PCS & UMTS



Elevation, Phi=90
DCS-PCS & UMTS

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

2.4 GHz MicroSphere™ Diversity Antenna

OMNIDIRECTIONAL
2.4 - 2.5 GHz

- Multi-port spatial diversity within a single, compact radome
- Omnidirectional pattern provides optimal in-building coverage
- Ideal for large coverage areas from a single, ceiling-mounted location

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	2.4-2.5 GHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2.0:1
Dimensions	12.3 x 4.4 x 1.1 cm
Housing	ABS
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBERS

Model Number	Cable Length	Connector
IFD2450-RB36	36"	RP-BNC x 2
IFD2450-RT36	36"	RP-TNC x 2
IFD2450-RT60	60"	RP-TNC x 2

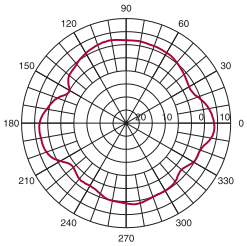
Supplied with white low-loss RG-142 plenum rated coax cables.

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

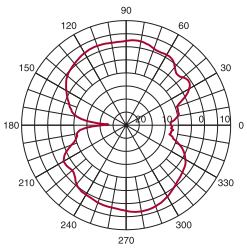
MOUNTING

Includes wall-mount bracket and screws. May also be ceiling mounted.

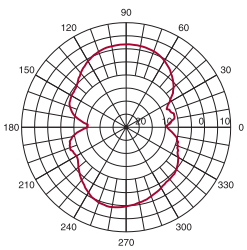
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

850 MHz Sphere™

OMNIDIRECTIONAL
824-896 MHz

- Omnidirectional pattern provides optimal in-building coverage
- Quick installation with a standard ceiling tile frame metal clip
- Considerable gain improvement over traditional dipole antennas

SPECIFICATIONS

Element Type	Air-loaded patch
Frequency Range	824-896 MHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2.0:1
Dimensions	13.6 x 10.5 x 5.1 cm
Housing	ABS
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBERS

Model Number	Cable Length	Connector
IO850-NF36	36"	N-Female
IO850-SM36	36"	SMA-Male

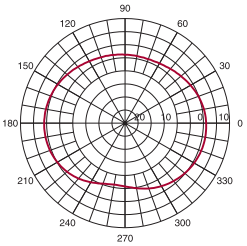
Supplied with white low-loss RG-142 plenum rated coax cable.

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

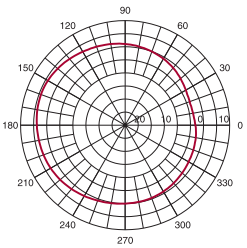
MOUNTING

Includes metal twist-lock bracket for mounting to a ceiling tile grid

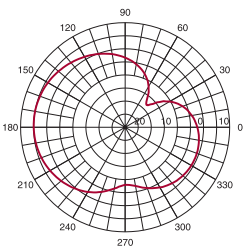
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

1900 MHz Sphere™

OMNIDIRECTIONAL
1850-1990 MHz

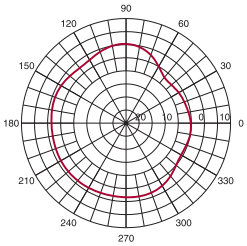
- Omnidirectional pattern provides optimal in-building coverage
- Quick installation with a standard ceiling tile frame metal clip
- Considerable gain improvement over traditional dipole antennas

SPECIFICATIONS

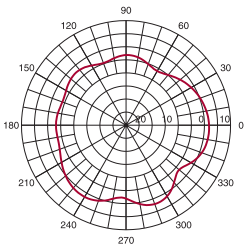
Element Type	Air-loaded patch
Frequency Range	1850-1990 MHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2.0:1
Dimensions	6.4 x 6.3 x 2.7 cm
Housing	ABS
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

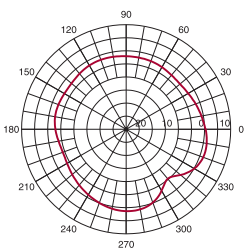
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

MODEL NUMBERS

Model Number	Cable Length	Connector
IO1900-NF12	12"	N-Female
IO1900-NF36	36"	N-Female
IO1900-SM36	36"	SMA-Male

Supplied with low-loss white RG-142 plenum rated coax cable.

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

MOUNTING

Includes a metal clip for mounting to a ceiling tile grid

2.4 GHz Sphere™

OMNIDIRECTIONAL
2.4-2.5 GHz

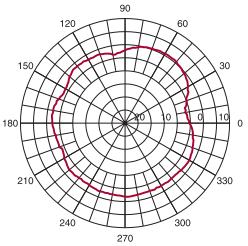
- Omnidirectional pattern provides optimal in-building coverage
- Quick installation with a standard ceiling tile frame metal clip
- Considerable gain improvement over traditional dipole antennas

SPECIFICATIONS

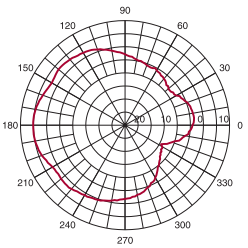
Element Type	Air-loaded patch
Frequency Range	2.4-2.5 GHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.5:1
Dimensions	6.4 x 6.3 x 1.7 cm
Housing	ABS
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

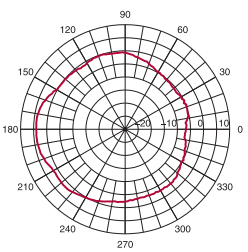
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

MODEL NUMBERS

Model Number	Cable Length	Connector
IO2450-NF12	12"	N-Female
IO2450-NM18	18"	N-Male
IO2450-RN12	12"	RP-N-Female
IO2450-RT36	36"	RP-TNC
IO2450-RT60	60"	RP-TNC
IO2450-RT84	84"	RP-TNC
IO2450-SM12	12"	SMA-Male

Supplied with low-loss white RG-142 plenum rated coax cable.

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

MOUNTING

Includes nylon screws for mounting to the ceiling tile or finished ceiling

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

5 GHz Sphere™

OMNIDIRECTIONAL
5.15-5.35 GHz

- Omnidirectional pattern provides optimal in-building coverage
- Toroidal field pattern provides omnidirectional coverage in any plane around the long axis, and two lobes in any plane parallel to the long axis

SPECIFICATIONS

Element Type	Air-loaded patch
Frequency Range	5.15-5.35 GHz
Peak Gain	5 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2:1
Dimensions	10.2 x 10.4 x 4.19 cm
Housing	ABS
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBER

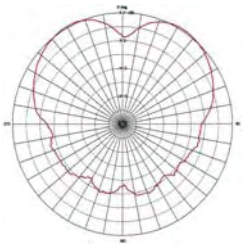
Model Number	Cable Length	Connector
IO5250-RT36	36"	RP-TNC

Supplied with white low-loss RG-142 plenum rated coax cable.

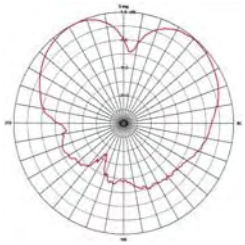
MOUNTING

Includes metal twist-lock bracket for mounting to a ceiling tile grid

PATTERNS



Elevation Plane phi = 0
Cut perpendicular to the antenna along the cable axis



Elevation Plane phi = 9
Cut perpendicular to the antenna along the cable axis

2.4 GHz Sphere™ Diversity Antenna

OMNIDIRECTIONAL
2.4-2.5 GHz

- Multi-port spatial diversity within a single, compact radome
- Omnidirectional pattern provides optimal in-building coverage
- Ideal for large coverage areas from a single, ceiling-mounted location

SPECIFICATIONS

Element Type	Air-loaded patch
Frequency Range	2.4-2.5 GHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2.0:1
Dimensions	18.3 x 6.9 x 2.5 cm
Housing	ABS or Luran
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBERS

Model Number	Cable Length	Connector
IOD2450-NF12	12"	N-Female x 2
IOD2450-RN12	12"	RP-N-Female x 2
IOD2450-RT36	36"	RP-TNC x 2

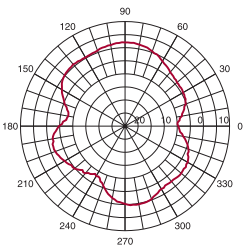
Supplied with white low-loss RG-142 plenum rated coax cables.

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

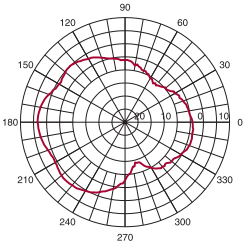
MOUNTING

Includes metal twist-lock bracket for mounting to a ceiling tile grid

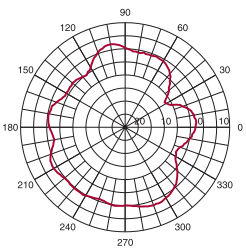
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

850 MHz Whisper™

DIRECTIONAL
806-896 MHz

- Self contained in its durable radome, the Whisper blends in anywhere
- Patented technology provides inexpensive reliability
- Directional pattern provides targeted coverage to a specific area

SPECIFICATIONS

Element Type	Air-loaded patch
Frequency Range	806-896 MHz
Peak Gain	7.5 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2.0:1
Dimensions	28.4 x 22.4 x 5.6 cm
Indoor Housing	ABS
Outdoor Housing	Kydex
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBERS

Model Number	Use	Connector
IDO850-NF00	Outdoor	N-Female bulkhead
ID850-SF00	Indoor	SMA-Female panel

MOUNTING

Includes a wall-mount bracket and screws.
Optional mounting brackets:

2" Indoor Pan/Tilt

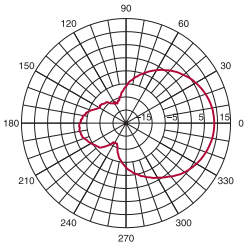
5" Indoor Pan/Tilt

5" Outdoor Metal Pan/Tilt

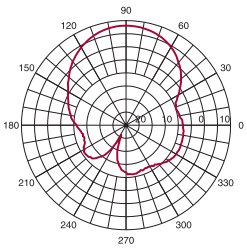
8" Outdoor Pan/Tilt Wall/Pole

Please reference the end of this section.

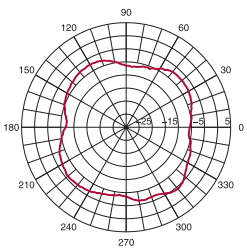
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

1900 MHz Whisper™

DIRECTIONAL
1850-1990 MHz

- Self contained in its durable radome, the Whisper blends in anywhere
- Patented technology provides inexpensive reliability
- Directional pattern provides targeted coverage to a specific area

SPECIFICATIONS

Element Type	Air-loaded patch
Frequency Range	1850-1990 MHz
Peak Gain	8.5 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2.0:1
Dimensions	10.4 x 13.5 x 3.6 cm
Housing	Luran
Temperature Range	-40°C to +70°C

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

* Minimum VSWR performance

MODEL NUMBERS

Model Number	Cable Length	Connector
ID1900-NF12 Indoor	12"	N-Female
ID1900-NF36 Indoor	36"	N-Female
ID1900-SM36 Indoor	36"	SMA-Male
IDO1900-SM12 Outdoor	12"	SMA-Male
IDO1900-SM36 Outdoor	36"	SMA-Male

Supplied with white low-loss RG-142 plenum rated coax cable.

MOUNTING

Includes a wall mount bracket and screws.
Optional mounting brackets:

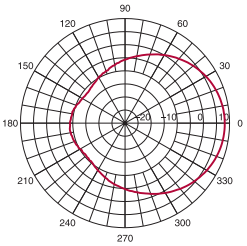
2" Indoor Pan/Tilt

5" Indoor Pan/Tilt

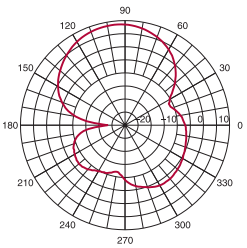
5" Outdoor Metal Pan/Tilt

Please reference the end of this section.

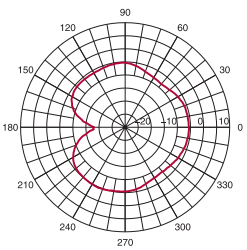
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

2.4 GHz Indoor Whisper™

DIRECTIONAL
2.4-2.5 GHz

- Self contained in its durable radome, the Whisper blends in anywhere
- Patented technology provides inexpensive reliability
- Directional pattern provides targeted coverage to a specific area

SPECIFICATIONS

Element Type	Air-loaded patch
Frequency Range	2.4-2.5 GHz
Peak Gain	9.0 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.5:1
Dimensions	12.9 x 12.9 x 2.22 cm
Housing	ABS
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBERS

Model Number	Cable Length	Connector
ID2450-NF12	12"	N-Female
ID2450-NF36	36"	N-Female
ID2450-NM12	12"	N-Male
ID2450-NM36	36"	N-Male
ID2450-NM60	60"	N-Male
ID2450-RN12	12"	RP-N-Female
ID2450-RS36	36"	RP-SMA
ID2450-RS60	60"	RP-SMA
ID2450-RT12	12"	RP-TNC
ID2450-RT36	36"	RP-TNC
ID2450-RT60	60"	RP-TNC
ID2450-RT120	120"	RP-TNC

Supplied with white low-loss RG-142 plenum rated coax cable.

MOUNTING

Includes velcro and screws.

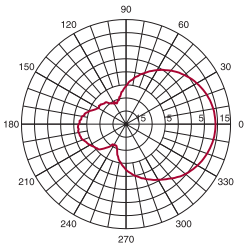
Optional mounting brackets:

2" Indoor Pan/Tilt

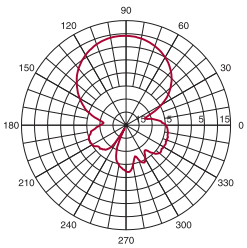
5" Indoor Pan/Tilt

Please reference the end of this section.

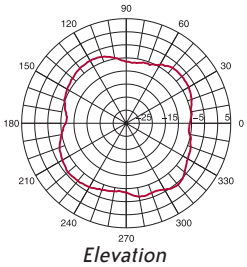
PATTERNS



Azimuth Plane



Elevation Plane - Phi = 0



Elevation
Phi = 90

2.4 GHz Outdoor Whisper™

DIRECTIONAL
2.4-2.5 GHz

- Self contained in its durable radome, the Whisper blends in anywhere
- Patented technology provides inexpensive reliability
- Directional pattern provides targeted coverage to a specific area

SPECIFICATIONS

Element Type	Air-loaded patch
Frequency Range	2.4-2.5 GHz
Peak Gain	8.5 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.8:1
Dimensions	10.4 x 13.5 x 3.6 cm
Housing	ABS
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBERS

Outdoor Antennas

Model Number	Cable Length	Connector
IDO2450-NF12	12"	N-Female
IDO2450-RT12	12"	RP-TNC
IDO2450-RT36	36"	RP-TNC

Marine Antenna

Model Number	Cable Length	Connector
IDM2450-RT36	36"	RP-TNC

Supplied with swivel mounting bracket

Supplied with white low-loss RG-142 plenum rated coax cable.

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

MOUNTING

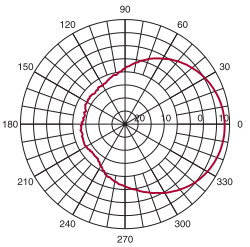
Includes wall-mount bracket and screws.

Optional mounting bracket:

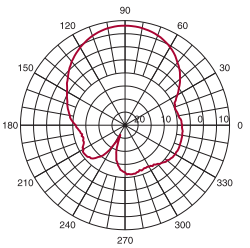
5" Outdoor Metal Pan/Tilt

Please reference the end of this section.

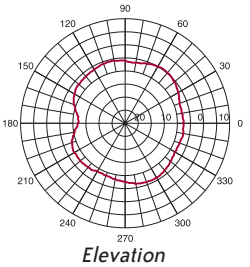
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

5 GHz Whisper™

DIRECTIONAL
5.15 - 5.35 GHz

- Self contained in its durable radome, the Whisper blends in anywhere
- Patented technology provides inexpensive reliability
- Directional pattern provides targeted coverage to a specific area

SPECIFICATIONS

Element Type	Air-loaded patch
Frequency Range	5.15-5.35 GHz
Peak Gain	9 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	<2.0:1
Dimensions	6.4 x 6.4 x 1.7 cm
Housing	ABS
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBERS

Model Number	Cable Length	Connector
ID5250-RT12	12"	RP-TNC
ID5250-RT36	36"	RP-TNC
ID5250-SM36	36"	SMA-Male

Supplied with white low-loss RG-142 plenum rated coax cable.

MOUNTING

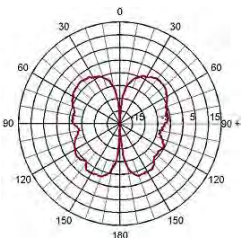
Supplied with a wall-mount bracket and screws.

Optional mounting bracket:

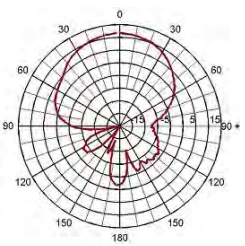
5" Indoor Pan/Tilt

Please reference the end of this section.

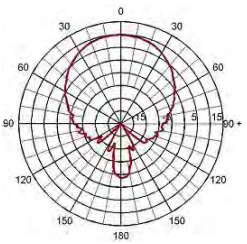
PATTERNS



Azimuth Plane



Elevation Plane - Phi = 0



Elevation Plane - Phi = 90

2.4 GHz Terrace™

BIDIRECTIONAL
2.4- 2.5 GHz

- Patented low-profile design provides coverage in corridors & hallways
- Provides outstanding performance in healthcare and office environments, allowing a single base station to cover a long hallway

SPECIFICATIONS

Element Type	Air-loaded patch
Frequency Range	2.4-2.5 GHz
Peak Gain	5 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.8:1
Dimensions	6.9 x 6.4 x 2 cm
Housing	ABS
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBERS

Model Number	Cable Length	Connector
IB2450-NF12	12"	N-Female
IB2450-NF36	36"	N-Female
IB2450-RN12	12"	RP-N-Female
IB2450-RT12	12"	RP-TNC
IB2450-RT36	36"	RP-TNC

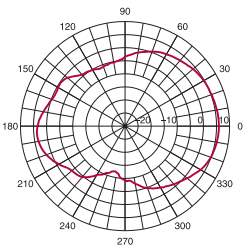
Supplied with white low-loss RG-142 plenum rated coax cable.

Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

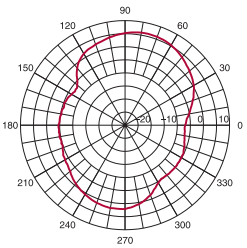
MOUNTING

Includes metal clip for mounting to a ceiling tile grid

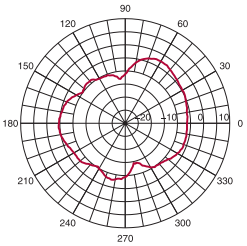
PATTERNS



Azimuth



Elevation Phi = 0



Elevation Phi = 90

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

2.4 GHz Terrace™ Diversity Antenna

DIRECTIONAL
2.4-2.5 GHz

- Multi-port spatial diversity within a single, compact radome
- Bi-directional pattern provides optimal corridor & hallway coverage
- Supplied with standard wall-mount kit

SPECIFICATIONS

Element Type	Air-loaded patch
Frequency Range	2.4-2.5 GHz
Peak Gain	5 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2.0:1
Dimensions	18.3 x 6.9 x 2.5 cm
Housing	ABS or Luran
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBERS

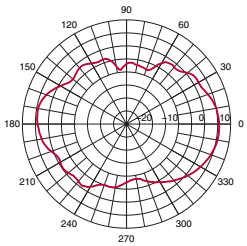
Model Number	Cable Length	Connector
Indoor - Cable exits backplate		
IDD2450-NF12	12"	N-Female x 2
IDD2450-NF36	36"	N-Female x 2
IDD2450-RT36	36"	RP-TNC x 2
Indoor - Cable exits edge/side		
IDD2450-RT07E	7"	RP-TNC x 2
IDD2450-RT36E	36"	RP-TNC x 2
Marine Rated		
IDN2450-RT07 Cable exits backplate	7"	RP-TNC x 2
IDN2450-RT07E Cable exits edge/side	7"	RP-TNC x 2

Supplied with white low-loss RG-142 plenum rated coax cables.
Note: Wireless Valley PartsPlanner pattern data files are available for this antenna.

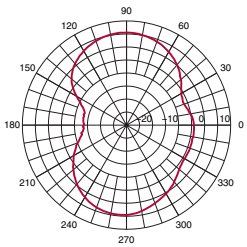
MOUNTING

Includes metal snap-on bracket for wall mounting

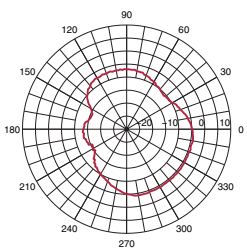
PATTERNS



Azimuth



Elevation
Phi = 0



Elevation
Phi = 90

5 GHz Terrace™ Diversity Antenna

DIRECTIONAL
4.9-6.0 GHz

- Multi-port spatial diversity within a single, compact radome

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	4.9-6.0 GHz
Peak Gain	5 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	2.0:1
Dimensions	12.2 x 4.3 x 2.7 cm
Housing	ABS
Temperature Range	-40°C to +70°C

* Minimum VSWR performance

MODEL NUMBERS

Model Number	Cable Length	Connector
IDD5250-RS36	36"	RP-SMA x 2
IDD5250-RSRA36	36"	RP-SMA RA x 2
IDD5250-RT12	12"	RP-TNC
IDD5250-RT36	36"	RP-TNC

Supplied with white low-loss RG-316 plenum rated coax cables.

MOUNTING

Includes wall-mount bracket and screws, Dual-Lock® and L-bracket.

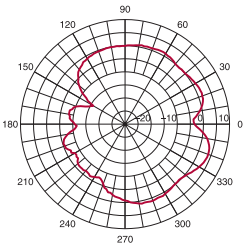
Optional mounting bracket:


2" Indoor Pan/Tilt

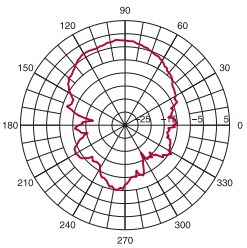

5" Indoor Pan/Tilt

Please reference the end of this section.

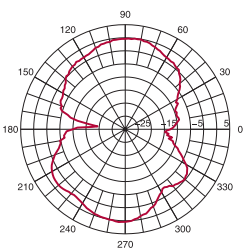
PATTERNS



Azimuth



Elevation
Phi = 0



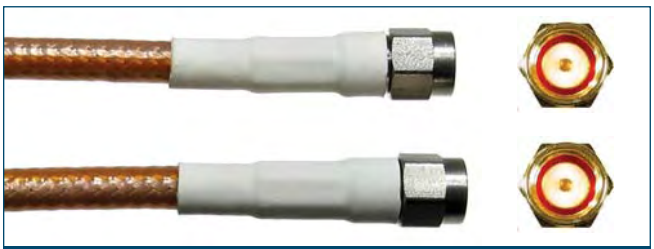
Elevation
Phi = 90

Pattern data files for Wireless Valley Parts Planner are available at www.centurion.com

Cable Assemblies

Centurion applies its precision manufacturing experience to the production of in-building cable assemblies, ensuring the highest quality at the lowest cost. Centurion cable assemblies provide a low loss, within a rugged plenum rated exterior designed to hold up to the rigors of installation and maintenance.

ICSM-RT36
3' RG-142 Plenum Rated Coax
SMA-Male / RP-TNC

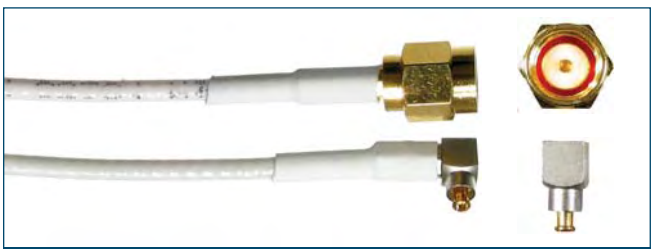


ICSM-SM60
5' RG-142 Plenum Rated Coax
SMA-Male/SMA-Male

ICSM-NM60
5' RG-142 Plenum Rated Coax
SMA-Male/N-Male

ICSM-NF60
5' RG-142 Plenum Rated Coax
SMA-Male/N-Female

ICSM-RT60
5' RG-142 Plenum Rated Coax
SMA-Male/RP-TNC



ICSM-LURA24
2' RG-316 Plenum Rated Coax
SMA-Male/WaveLAN Plug R.A.

ICSM-RB60
5' RG-142 Plenum Rated Coax
SMA-Male/RP-BNC

Mounting Hardware

Centurion mounting hardware ensures the best possible antenna performance, by giving complete control over the angle and tilt of the antenna. Centurion's mounting hardware is available in plastic, metal and steel to meet the environmental demands of indoor or outdoor use.

2" INDOOR PAN/TILT MOUNT

IMI-02A
IMI-02B
IMI-02C
IMI-02D

5" INDOOR PAN/TILT MOUNT

IMI-05A
IMI-05B
IMI-05C
IMI-05D

5" OUTDOOR PAN/TILT METAL MOUNT

IMO-05A
IMO-05B

8" OUTDOOR PAN/TILT WALL/POLE MOUNT

IMP-08A

MODEL #	PART #	DESCRIPTION	FOR USE WITH ANTENNA:
IMI-02A	CAF94147	2" Indoor Pan/Tilt Mount	ID1900
IMI-02B	CAF94148	2" Indoor Pan/Tilt Mount	ID2450
IMI-02C	CAF94154	2" Indoor Pan/Tilt Mount	ID850
IMI-02D	CAF94658	2" Indoor Pan/Tilt Mount	IDD5250
IMI-05A	CAF95985	5" Indoor Pan/Tilt Mount	ID1900
IMI-05B	CAF95971	5" Indoor Pan/Tilt Mount	ID2450, ID5250
IMI-05C	CAF94153	5" Indoor Pan/Tilt Mount	ID850
IMI-05D	CAF94659	5" Indoor Pan/Tilt Mount	IDD5250
IMO-05A	CAF94164	5" Outdoor Metal Pan/Tilt Mount	IDO1900, IDO2450
IMI-05B	CAF94140	5" Outdoor Metal Pan/Tilt Mount	IDO850
IMP-08A	CAF95980	8" Outdoor Metal Pan/Tilt Mount, Wall/Pole Mount	IDO850

Model & Part Number Cross-Reference

Antenna Type	Model #	Reference #	Antenna Description	Gain (dBi)	Coax* Length	Connector(s)
Armstrong i-ceiling Tiles Omnidirectional	IFC8519-SF00	CAF94102P	i-ceiling tile w/ (1)850/1900 Dual-Band MicroSphere Embedded (Armstrong WL1)	3	N/A	SMA Female panel
	IFCMULT-SF00	CAF94103P	i-ceiling tile w/ (1) 850/1900 Dual-Band, (1) 1900 & (2) 2450 MicroSpheres Embedded (Armstrong WL2)	3	N/A	SMA Female panel x 4
	IFC2450-SF00	CAF94104P	i-ceiling tile w/ (2) 2450 MicroSpheres Embedded (Armstrong WL3)	3	N/A	SMA Female x 2
	IFE8519-SF00	CAF94105P	i-ceiling tile w/ (1) 850/1900 Dual-Band & (1) 1900 MicroSphere Embedded (Armstrong WL4)	3	N/A	SMA Female panel x 2
MicroSphere Omnidirectional	IF2450-SF00	CAF94146	2.4 Omni-directional, Indoor	3	N/A	SMA Female panel
	IF2100-SF00	CAF94358	2170 UMTS Omni-directional, Indoor	3	N/A	SMA Female panel
	IF1900-SF00	CAF95955	1900 Omni-directional, Indoor	3	N/A	SMA Female panel
	IF1800-SF00	CAF95954	1800 Omni-directional, Indoor	3	N/A	SMA Female panel
	IF900-SF00	CAF95956	900 Omni-directional, Indoor	3	N/A	SMA Female panel
	IF850-SF00	CAF95952	850 Omni-directional, Indoor	3	N/A	SMA Female panel
	IF450-SF00	CAF94350	450 UHF Omni-directional, Indoor	3	N/A	SMA Female panel
	IF9018-SF00	CAF94126	Dual-Band 900/1800 Omni-directional, Indoor	3	N/A	SMA Female panel
	IF8519-SF00	CAF94135	Dual-Band 850/1900 Omni-directional, Indoor	3	N/A	SMA Female panel
	IFMULT-NF00	CAF94454	850/900/1800/1900/2100 Omni-directional, Indoor	3	N/A	N Female
	IFMULT-SF00	CAF94362	850/900/1800/1900/2100 Omni-directional, Indoor	3	N/A	SMA Female Panel
	IFMULT-SFRA00	CAF94533	850/900/1800/1900/2100 Omni-directional, Indoor	3	N/A	R.A. SMA Female panel
Sphere Omnidirectional	IO5250-RT36	CAF94349	5.25 Omni-directional, Indoor	5	3 ft.	RP-TNC
	IO2450-NF12	CAF94170	2.4 Omni-directional, Indoor	3	1 ft.	N Female
	IO2450-NM18	CAF94119	2.4 Omni-directional, Indoor	3	18 in.	N-Male
	IO2450-RN12	CAF94120	2.4 Omni-directional, Indoor	3	1 ft.	RP-N-Female
	IO2450-RT36	CAF94150	2.4 Omni-directional, Indoor	3	3 ft.	RP-TNC
	IO2450-RT60	CAF94674	2.4 Omni-directional, Indoor	3	5 ft.	RP-TNC
	IO2450-RT84	CAF94672	2.4 Omni-directional, Indoor	3	7 ft.	RP-TNC
	IO2450-SM12	CAF94101	2.4 Omni-directional, Indoor	3	1 ft.	SMA Male
	IO1900-NF12	CAF94130	1900 Omni-directional, Indoor	3	1 ft.	N-Female
	IO1900-NF36	CAF94167	1900 Omni-directional, Indoor	3	3 ft.	N-Female
	IO1900-SM36	CAF94129	1900 Omni-directional, Indoor	3	3 ft.	SMA-Male
	IO850-NF36	CAF94191	850 Omni-directional, Indoor	3	3 ft.	N-Female
	IO850-SM36	CAF95984	850 Omni-directional, Indoor	3	3 ft.	SMA-Male
MegaSphere Omnidirectional	IG2450-NF12	CAF94520	2.4 Omni-directional, Indoor	6	1 ft.	N-Female
	IG2450-NF36	CAF94512	2.4 Omni-directional, Indoor	6	3 ft.	N-Female
	IG2450-NM36	CAF94553	2.4 Omni-directional, Indoor	6	3 ft.	N-Male
	IG2450-RB12	CAF94521	2.4 Omni-directional, Indoor	6	1 ft.	RP-BNC
	IG2450-RB36	CAF94514	2.4 Omni-directional, Indoor	6	3 ft.	RP-BNC
	IG2450-RS36	CAF94722	2.4 Omni-directional, Indoor	6	3 ft.	RP-SMA
	IG2450-RT36	CAF94492	2.4 Omni-directional, Indoor	6	3 ft.	RP-TNC
	IG2450-SM36	CAF94513	2.4 Omni-directional, Indoor	6	3 ft.	SMA-Male
	IGO2450-NF12	CAF94579	2.4 Omni-directional, Outdoor/Indoor	6	1 ft.	N-Female
	IGO2450-RT12	CAF94568	2.4 Omni-directional, Outdoor/Indoor	6	1 ft.	RP-TNC
Terrace Bidirectional	IB2450-NF12	CAF94179	2.4 Bi-directional, Indoor	5	1 ft.	N-Female
	IB2450-NF36	CAF95986	2.4 Bi-directional, Indoor	5	3 ft.	N-Female
	IB2450-RN12	CAF95989	2.4 Bi-directional, Indoor	5	1 ft.	RP-N-Female
	IB2450-RS36	CAF94723	2.4 Bi-directional, Indoor	5	3 ft.	RP-SMA
	IB2450-RT12	CAF94116	2.4 Bi-directional, Indoor	5	1 ft.	RP-TNC
	IB2450-RT36	CAF94149	2.4 Bi-directional, Indoor	5	3 ft.	RP-TNC
Whisper Directional	ID5250-RT12	CAF94809	5.25 Directional, Indoor	9	1 ft.	RP-TNC
	ID5250-RT36	CAF94791	5.25 Directional, Indoor	9	3 ft.	RP-TNC
	ID5250-SM36	CAF94343	5.25 Directional, Indoor	9	3 ft.	SMA-Male
	ID2450-NF12	CAF95998	2.4 Directional, Indoor	9	1 ft.	N-Female
	ID2450-NF36	CAF94493	2.4 Directional, Indoor	9	3 ft.	N-Female
	ID2450-NM12	CAF95964	2.4 Directional, Indoor	9	1 ft.	N-Male
	ID2450-NM36	CAF95967	2.4 Directional, Indoor	9	3 ft.	N-Male
	ID2450-NM60	CAF95969	2.4 GHz Directional, Indoor	9	5 ft.	N-Male
	ID2450-RN12	CAF95972	2.4 Directional, Indoor	9	1 ft.	RP-N-Female
	ID2450-RT12	CAF95958	2.4 GHz Directional, Indoor	9	1 ft.	RP-TNC
	ID2450-RT36	CAF95950	2.4 GHz Directional, Indoor	9	3 ft.	RP-TNC
	ID2450-RT60	CAF95962	2.4 GHz Directional, Indoor	9	5 ft.	RP-TNC
	ID2450-RT120	CAF94601	2.4 GHz Directional, Indoor	8	10 ft.	RP-TNC

* All coax is RG-142 white plenum rated unless otherwise noted in the antenna description

Model & Part Number Cross-Reference (continued)

Antenna Type	Model #	Reference #	Antenna Description	Gain (dBi)	Coax* Length	Connector(s)
Whisper Directional (continued)	ID2450-RS36	CAF95990	2.4 GHz Directional, Indoor	9	3 ft.	RP-SMA
	ID2450-RS60	CAF94379	2.4 GHz Directional, Indoor	9	5 ft.	RP-SMA
	IDM2450-RT36	CAF94157	2.4 GHz Directional, Marine-Rated (w/ swivel mount bracket)	8.5	3 ft.	RP-TNC
	IDO2450-NF12	CAF94180	2.4 GHz Directional, Outdoor	8.5	1 ft.	N-Female
	IDO2450-RT12	CAF94255	2.4 GHz Directional, Outdoor	8.5	1 ft.	RP-TNC
	IDO2450-RT36	CAF94118	2.4 GHz Directional, Outdoor	8.5	3 ft.	RP-TNC
	ID1900-NF12	CAF95979	1900 MHz Directional, Indoor	7.5	1 ft.	N-Female
	ID1900-NF36	CAF94330	1900 MHz Directional, Indoor	7.5	3 ft.	N-Female
	ID1900-SM36	CAF95996	1900 MHz Directional, Indoor			
	7.5	3 ft.	SMA-Male			
	IDO1900-SM12	CAF94138	1900 MHz Directional, Outdoor	7.5	1 ft.	SMA-Male
	IDO1900-SM36	CAF95993	1900 MHz Directional, Outdoor	7.5	3 ft.	SMA-Male
	IDO850-NF00	CAF94122	850 MHz Directional, Outdoor	8.5	N/A	N-Female panel
	ID850-SF00	CAF95978	850 MHz Directional, Indoor	8.5	N/A	SMA-Female panel
Diversity (Various Patterns)	IDD5250-RS36	CAF94585	5.25 GHz Terrace Diversity Directional, Indoor	5	3 ft.	RP-SMA x 2
	IDD5250-RSRA36	CAF94649	5.25 GHz Terrace Diversity Directional, Indoor	5	3 ft.	RP-SMA R.A. x 2
	IDD5250-RT12	CAF94810	5.25 GHz Terrace Diversity Directional Indoor	5	3 ft.	RP-TNC x 2
	IDD5250-RT36	CAF94792	5.25 GHz Terrace Diversity Directional Indoor	5	3 ft.	RP-TNC x 2
	IDD2450-NF12	CAF94177	2.4 GHz Terrace Diversity Directional, Indoor (cables exit backplate)	5	1 ft.	N-Female x 2
	IDD2450-NF36	CAF94489	2.4 GHz Terrace Diversity Directional, Indoor (cables exit backplate)	5	3 ft.	N-Female x 2
	IDD2450-RT07E	CAF94139	2.4 GHz Terrace Diversity Directional, Indoor (cables exit edge/side)	5	7 in.	RP-TNC x 2
	IDD2450-RT36	CAF95988	2.4 GHz Terrace Diversity Directional, Indoor (cables exit backplate)	5	3 ft.	RP-TNC x 2
	IDD2450-RT36E	CAF94430	2.4 GHz Terrace Diversity Directional, Indoor (cables exit edge/side)	5	3 ft.	RP-TNC x 2
	IOD2450-NF12	CAF94178	2.4 GHz Sphere Diversity Omni-directional, Indoor	3	1 ft.	N-Female x 2
	IOD2450-RN12	CAF94137	2.4 GHz Sphere Diversity Omni-directional, Indoor	3	1 ft.	RP-N-Female x 2
	IOD2450-RT36	CAF94136	2.4 GHz Sphere Diversity Omni-directional, Indoor	3	3 ft.	RP-TNC x 2
	IDN2450-RT07	CAF94117	2.4 GHz Terrace Diversity Directional, Marine-Rated (cables exit backplate)	5	7 in.	RP-TNC x 2
	IDN2450-RT07E	CAF94159	2.4 GHz Terrace Diversity Directional, Marine-Rated (cables exit edge/side)	5	7 in.	RP-TNC x 2
	IFD2450-RB36	CAF94270	2.4 GHz MicroSphere Diversity Omni-directional, Indoor	3	3 ft.	RP-BNC x 2
	IFD2450-RT36	CAF94165	2.4 GHz MicroSphere Diversity Omni-directional, Indoor	3	3 ft.	RP-TNC x 2
	IFD2450-RT60	CAF94675	2.4 GHz MicroSphere Diversity Omni-directional, Indoor	3	5 ft.	RP-TNC x 2
Antenna Mounting Hardware	IMI-02A	CAF94147	2" Indoor Pan/Tilt Mount (for ID1900)	N/A	N/A	N/A
	IMI-02B	CAF94148	2" Indoor Pan/Tilt Mount (for ID2450)	N/A	N/A	N/A
	IMI-02C	CAF94154	2" Indoor Pan/Tilt Mount (for ID850)	N/A	N/A	N/A
	IMI-02D	CAF94658	2" Indoor Pan/Tilt Mount (for IDD5250)	N/A	N/A	N/A
	IMI-05A	CAF95985	5" Indoor Pan/Tilt Mount (for ID1900)	N/A	N/A	N/A
	IMI-05B	CAF95971	5" Indoor Pan/Tilt Mount (for ID2450, ID5250)	N/A	N/A	N/A
	IMI-05C	CAF94153	5" Indoor Pan/Tilt Mount (for ID850)	N/A	N/A	N/A
	IMI-05D	CAF94659	5" Indoor Pan/Tilt Mount (for IDD5250)	N/A	N/A	N/A
	IMO-05A	CAF94164	5" Outdoor Metal Pan/Tilt Mount (for IDO1900, IDO2450)	N/A	N/A	N/A
	IMO-05B	CAF94140	5" Outdoor Metal Pan/Tilt Mount (for IDO850)	N/A	N/A	N/A
	IMP-08A	CAF95980	8" Outdoor Metal Pan/Tilt, Wall/Pole Mount (for IDO850)	N/A	N/A	N/A
Cable Assemblies	ICSM-RT36	CAF94121	3' SMA-male / RP-TNC	N/A	3 ft.	SMA-Male/RP-TNC
	ICSM-RT60	CAF94272	5' SMA-male / RP-TNC	N/A	5 ft.	SMA-Male/RP-TNC
	ICSM-LURA24	CAF94306	2' SMA-male / Lucent plug R.A. (RG-316 plenum-rated coax)	N/A	2 ft.	SMA-Male/Lucent Plug RA
	ICSM-RB60	CAF94316	5' SMA-male / RP-BNC	N/A	5 ft.	SMA-Male/RP-BNC
	ICSM-SM60	CAF94134	5' SMA-male / SMA-male	N/A	5 ft.	SMA-Male/SMA-Male
	ICSM-NM60	CAF94152	5' SMA-male / N-male	N/A	5 ft.	SMA-Male/N-Male
	ICSM-NF60	CAF94226	5' SMA-male / N-female	N/A	5 ft.	SMA-Male/N-Female
	ICSM-RN08	CAF94207	8" SMA-male / RP-N-female	N/A	8 in.	SMA-Male/RP-N-Female

* All coax is RG-142 white plenum rated unless otherwise noted in the antenna description

In-building Wireless Model Number Schematics

To better communicate with our customers, Centurion in-building antennas are now represented by a model number system for easier identification and availability reference. The model number schematic is designed to quickly identify the antennas and their accessories by performance pattern, special features, frequency, connector options, and cable length. The chart below illustrates each aspect of the Centurion in-building wireless antennas and accessories model number system.

Antenna Model Numbers

I p (x) f f f (f) - c c (e e) l l (z)

In-building	Pattern	Optional Feature Indicator	Frequency, MHz	Connector	Connector Option	Cable Length	Cable Option
All in-building model numbers start with I	D = directional O = omni-directional F = flat-panel omni-directional (MicroSphere) G = high-gain omni-directional (MegaSphere) B = bi-directional	M = marine-rated O = outdoor C = ceiling tile (i-ceiling) D = diversity E = diversity and ceiling tile (i-ceiling) N = diversity and marine-rated	450 = UHF 850 = AMPS/cellular/iDen 900 = GSM (Europe) 1800 = DCS (Europe) 1900 = PCS 8519 = dual-band 850/1900 9018 = dual-band 900/1800 2100 = UMTS MULT = multi-band 2450 = 802.11b/g 5250 = 802.11a	RT = reverse-polarity TNC RB = reverse-polarity BNC SM = SMA-male SF = SMA-female RS = reverse-polarity SMA NM = N-male NF = N-female RN = reverse-polarity N MX = MMCX male plug LU = Lucent plug	RA = right angle	inches	E = cable exits edge or side of radome

Mounting Bracket Model Numbers

I M y h h z

In-building	Feature Descriptor	Height	Variation
All in-building mounting bracket model numbers start with IM	I = indoor (plastic) O = outdoor (metal) P = pole/wall	inches	sequential A-Z as parts are added

Cable Assembly Model Numbers

I C c c d d (e e) l l

In-building	Connector 1	Connector 2	Connector Option	Cable Length
All in-building cable model numbers start with IC	RT = reverse-polarity TNC RB = reverse-polarity BNC SM = SMA-male SF = SMA-female RS = reverse-polarity SMA NM = N-male NF = N-female RN = reverse-polarity N MX = MMCX male plug LU = Lucent plug	RT = reverse-polarity TNC RB = reverse-polarity BNC SM = SMA-male SF = SMA-female RS = reverse-polarity SMA NM = N-male NF = N-female RN = reverse-polarity N MX = MMCX male plug LU = Lucent plug	RA = right angle	inches

Access Point - Antenna Cross-Reference

Model #	Part #	Antenna Description	Gain (dBi)	RG-142 Coax	Connector(s)	Access Point Vendor	Access Point Model	Access Point P/N
Aruba Access Points								
IG2450-RS36	CAF94722	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	RP-SMA	Aruba	AP-52	AP-ANT-2
IB2450-RS36	CAF94723	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	RP-SMA	Aruba	AP-52	AP-ANT-3
ID2450-RS36	CAF95990	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	RP-SMA	Aruba	AP-52	AP-ANT-4
IDD5250-RSRA36	CAF94649	IDD5250, 5.25 Terrace Diversity Directional, Indoor	5	3 ft.	RP-SMA R.A. x 2	Aruba	AP-52	
IDD5250-RS36	CAF94585	IDD5250, 5.25 Terrace Diversity Directional, Indoor	5	3 ft.	RP-SMA x 2	Aruba	AP-52	
ID2450-RS60	CAF94379	ID2450, 2.4 Whisper Directional, Indoor	9	5 ft.	RP-SMA	Aruba	AP-52	
IG2450-RS36	CAF94722	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	RP-SMA	Aruba	AP-60	AP-ANT-2
IB2450-RS36	CAF94723	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	RP-SMA	Aruba	AP-60	AP-ANT-3
ID2450-RS36	CAF95990	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	RP-SMA	Aruba	AP-60	AP-ANT-4
IDD5250-RSRA36	CAF94649	IDD5250, 5.25 Terrace Diversity Directional, Indoor	5	3 ft.	RP-SMA R.A. x 2	Aruba	AP-60	
IDD5250-RS36	CAF94585	IDD5250, 5.25 Terrace Diversity Directional, Indoor	5	3 ft.	RP-SMA x 2	Aruba	AP-60	
ID2450-RS60	CAF94379	ID2450, 2.4 Whisper Directional, Indoor	9	5 ft.	RP-SMA	Aruba	AP-60	
IG2450-RS36	CAF94722	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	RP-SMA	Aruba	AP-70	AP-ANT-2
IB2450-RS36	CAF94723	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	RP-SMA	Aruba	AP-70	AP-ANT-3
ID2450-RS36	CAF95990	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	RP-SMA	Aruba	AP-70	AP-ANT-4
IDD5250-RSRA36	CAF94649	IDD5250, 5.25 Terrace Diversity Directional, Indoor	5	3 ft.	RP-SMA R.A. x 2	Aruba	AP-70	
IDD5250-RS36	CAF94585	IDD5250, 5.25 Terrace Diversity Directional, Indoor	5	3 ft.	RP-SMA x 2	Aruba	AP-70	
ID2450-RS60	CAF94379	ID2450, 2.4 Whisper Directional, Indoor	9	5 ft.	RP-SMA	Aruba	AP-70	
Avaya Access Points								
IO2450-NF12	CAF94170	IO2450, 2.4 Sphere Omni-directional, Indoor	3	1 ft.	N-female	Avaya	AP-6	
IG2450-NF12	CAF94520	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	1 ft.	N-female	Avaya	AP-6	
IG2450-NF36	CAF94512	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	N-female	Avaya	AP-6	
IGO2450-NF12	CAF94579	IGO2450, 2.4 MegaSphere Omni-directional, Outdoor/Indoor	6	1 ft.	N-female	Avaya	AP-6	
IB2450-NF12	CAF94179	IB2450, 2.4 Terrace Bi-directional, Indoor	5	1 ft.	N-female	Avaya	AP-6	
IB2450-NF36	CAF95986	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	N-female	Avaya	AP-6	
ID2450-NF12	CAF95998	ID2450, 2.4 Whisper Directional, Indoor	9	1 ft.	N-female	Avaya	AP-6	
ID2450-NF36	CAF94493	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	N-female	Avaya	AP-6	
IDO2450-NF12	CAF94180	IDO2450, 2.4 Whisper Directional, Outdoor	8.5	1 ft.	N-female	Avaya	AP-6	
IOD2450-NF12	CAF94178	IOD2450, 2.4 Sphere Diversity Omni-directional, Indoor	3	1 ft.	N-female x 2	Avaya	AP-6	
IDD2450-NF12	CAF94177	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	1 ft.	N-female x 2	Avaya	AP-6	
IDD2450-NF36	CAF94489	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	3 ft.	N-female x 2	Avaya	AP-6	
IO2450-NF12	CAF94170	IO2450, 2.4 Sphere Omni-directional, Indoor	3	1 ft.	N-female	Avaya	AP-7	
IG2450-NF12	CAF94520	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	1 ft.	N-female	Avaya	AP-7	
IG2450-NF36	CAF94512	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	N-female	Avaya	AP-7	
IGO2450-NF12	CAF94579	IGO2450, 2.4 MegaSphere Omni-directional, Outdoor/Indoor	6	1 ft.	N-female	Avaya	AP-7	
IB2450-NF12	CAF94179	IB2450, 2.4 Terrace Bi-directional, Indoor	5	1 ft.	N-female	Avaya	AP-7	
IB2450-NF36	CAF95986	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	N-female	Avaya	AP-7	
ID2450-NF12	CAF95998	ID2450, 2.4 Whisper Directional, Indoor	9	1 ft.	N-female	Avaya	AP-7	
ID2450-NF36	CAF94493	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	N-female	Avaya	AP-7	
IDO2450-NF12	CAF94180	IDO2450, 2.4 Whisper Directional, Outdoor	8.5	1 ft.	N-female	Avaya	AP-7	
IOD2450-NF12	CAF94178	IOD2450, 2.4 Sphere Diversity Omni-directional, Indoor	3	1 ft.	N-female x 2	Avaya	AP-7	
IDD2450-NF12	CAF94177	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	1 ft.	N-female x 2	Avaya	AP-7	
IDD2450-NF36	CAF94489	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	3 ft.	N-female x 2	Avaya	AP-7	
IO2450-NF12	CAF94170	IO2450, 2.4 Sphere Omni-directional, Indoor	3	1 ft.	N-female	Avaya	AP-8	
IG2450-NF12	CAF94520	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	1 ft.	N-female	Avaya	AP-8	
IG2450-NF36	CAF94512	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	N-female	Avaya	AP-8	
IGO2450-NF12	CAF94579	IGO2450, 2.4 MegaSphere Omni-directional, Outdoor/Indoor	6	1 ft.	N-female	Avaya	AP-8	
IB2450-NF12	CAF94179	IB2450, 2.4 Terrace Bi-directional, Indoor	5	1 ft.	N-female	Avaya	AP-8	
IB2450-NF36	CAF95986	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	N-female	Avaya	AP-8	
ID2450-NF12	CAF95998	ID2450, 2.4 Whisper Directional, Indoor	9	1 ft.	N-female	Avaya	AP-8	
ID2450-NF36	CAF94493	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	N-female	Avaya	AP-8	
IDO2450-NF12	CAF94180	IDO2450, 2.4 Whisper Directional, Outdoor	8.5	1 ft.	N-female	Avaya	AP-8	
IOD2450-NF12	CAF94178	IOD2450, 2.4 Sphere Diversity Omni-directional, Indoor	3	1 ft.	N-female x 2	Avaya	AP-8	
IDD2450-NF12	CAF94177	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	1 ft.	N-female x 2	Avaya	AP-8	
IDD2450-NF36	CAF94489	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	3 ft.	N-female x 2	Avaya	AP-8	

Access Point - Antenna Cross-Reference (continued)

Model #	Part #	Antenna Description	Gain (dBi)	RG-142 Coax	Connector(s)	Access Point Vendor	Access Point Model	Access Point P/N
Cisco Access Points								
IG2450-RT36	CAF94492	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	RP-TNC	Cisco	1200 Series	AIR-ANT1728
IDD2450-RT36	CAF95988	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	3 ft.	RP-TNC x 2	Cisco	1200 Series	AIR-ANT2012
IGO2450-RT12	CAF94568	IGO2450, 2.4 MegaSphere Omni-directional, Outdoor/Indoor	6	1 ft.	RP-TNC	Cisco	1200 Series	AIR-ANT2506
ID2450-RT36	CAF95950	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	RP-TNC	Cisco	1200 Series	AIR-ANT3529 AIR-ANT1729
IFD2450-RT36	CAF94165	IFD2450, 2.4 Microsphere Diversity Omni-directional, Indoor	3	3 ft.	RP-TNC x 2	Cisco	1200 Series	AIR-ANT5959
IO2450-RT36	CAF94150	IO2450, 2.4 Sphere Omni-directional, Indoor	3	3 ft.	RP-TNC	Cisco	1200 Series	
IO2450-RT60	CAF94674	IO2450, 2.4 Sphere Omni-directional, Indoor	3	5 ft.	RP-TNC	Cisco	1200 Series	
IO2450-RT84	CAF94672	IO2450, 2.4 Sphere Omni-directional, Indoor	3	7 ft.	RP-TNC	Cisco	1200 Series	
IB2450-RT12	CAF94116	IB2450, 2.4 Terrace Bi-directional, Indoor	5	1 ft.	RP-TNC	Cisco	1200 Series	
IB2450-RT36	CAF94149	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	RP-TNC	Cisco	1200 Series	
ID5250-RT36	CAF94791	ID5250, 5.25 Whisper Directional, Indoor	9	3 ft.	RP-TNC	Cisco	1200 Series	
ID2450-RT12	CAF95958	ID2450, 2.4 Whisper Directional, Indoor	9	1 ft.	RP-TNC	Cisco	1200 Series	
ID2450-RT60	CAF95962	ID2450, 2.4 Whisper Directional, Indoor	9	5 ft.	RP-TNC	Cisco	1200 Series	
ID2450-RT120	CAF94601	ID2450, 2.4 Whisper Directional, Indoor	8	10 ft.	RP-TNC	Cisco	1200 Series	
IDM2450-RT36	CAF94157	IDM2450, 2.4 Whisper Directional, Marine-Rated (w/ swivel mount bracket)	8.5	3 ft.	RP-TNC	Cisco	1200 Series	
IDO2450-RT12	CAF94255	IDO2450, 2.4 Whisper Directional, Outdoor	8.5	1 ft.	RP-TNC	Cisco	1200 Series	
IDO2450-RT36	CAF94118	IDO2450, 2.4 Whisper Directional, Outdoor	8.5	3 ft.	RP-TNC	Cisco	1200 Series	
IOD2450-RT36	CAF94136	IOD2450, 2.4 Sphere Diversity Omni-directional, Indoor	3	3 ft.	RP-TNC x 2	Cisco	1200 Series	
IDD2450-RT07E	CAF94139	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit edge/side)	5	7 in.	RP-TNC x 2	Cisco	1200 Series	
IDD2450-RT36E	CAF94430	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit edge/side)	5	3 ft.	RP-TNC x 2	Cisco	1200 Series	
IDN2450-RT07	CAF94117	IDN2450, 2.4 Terrace Diversity Directional, Marine-Rated (cables exit backplate)	5	7 in.	RP-TNC x 2	Cisco	1200 Series	
IDN2450-RT07E	CAF94159	IDN2450, 2.4 Terrace Diversity Directional, Marine-Rated (cables exit edge/side)	5	7 in.	RP-TNC x 2	Cisco	1200 Series	
IFD2450-RT60	CAF94675	IFD2450, 2.4 Microsphere Diversity Omni-directional, Indoor	3	5 ft.	RP-TNC x 2	Cisco	1200 Series	
IG2450-RT36	CAF94492	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	RP-TNC	Cisco	1200AG Series	AIR-ANT1728
IDD2450-RT36	CAF95988	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	3 ft.	RP-TNC x 2	Cisco	1200AG Series	AIR-ANT2012
IGO2450-RT12	CAF94568	IGO2450, 2.4 MegaSphere Omni-directional, Outdoor/Indoor	6	1 ft.	RP-TNC	Cisco	1200AG Series	AIR-ANT2506
ID2450-RT36	CAF95950	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	RP-TNC	Cisco	1200AG Series	AIR-ANT3529 AIR-ANT1729
IO5250-RT36	CAF94349	IO5250, 5.25 Sphere Omni-directional, Indoor	5	3 ft.	RP-TNC	Cisco	1200AG Series	AIR-ANT5145V Lower Band Only
IFD2450-RT36	CAF94165	IFD2450, 2.4 Microsphere Diversity Omni-directional, Indoor	3	3 ft.	RP-TNC x 2	Cisco	1200AG Series	AIR-ANT5959
IO2450-RT36	CAF94150	IO2450, 2.4 Sphere Omni-directional, Indoor	3	3 ft.	RP-TNC	Cisco	1200AG Series	
IO2450-RT60	CAF94674	IO2450, 2.4 Sphere Omni-directional, Indoor	3	5 ft.	RP-TNC	Cisco	1200AG Series	
IO2450-RT84	CAF94672	IO2450, 2.4 Sphere Omni-directional, Indoor	3	7 ft.	RP-TNC	Cisco	1200AG Series	
IB2450-RT12	CAF94116	IB2450, 2.4 Terrace Bi-directional, Indoor	5	1 ft.	RP-TNC	Cisco	1200AG Series	
IB2450-RT36	CAF94149	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	RP-TNC	Cisco	1200AG Series	
ID5250-RT12	CAF94809	ID5250, 5.25 Whisper Directional, Indoor	9	12 in.	RP-TNC	Cisco	1200AG Series	
ID5250-RT36	CAF94791	ID5250, 5.25 Whisper Directional, Indoor	9	3 ft.	RP-TNC	Cisco	1200AG Series	
ID2450-RT12	CAF95958	ID2450, 2.4 Whisper Directional, Indoor	9	1 ft.	RP-TNC	Cisco	1200AG Series	
ID2450-RT60	CAF95962	ID2450, 2.4 Whisper Directional, Indoor	9	5 ft.	RP-TNC	Cisco	1200AG Series	
ID2450-RT120	CAF94601	ID2450, 2.4 Whisper Directional, Indoor	8	10 ft.	RP-TNC	Cisco	1200AG Series	
IDM2450-RT36	CAF94157	IDM2450, 2.4 Whisper Directional, Marine-Rated (w/ swivel mount bracket)	8.5	3 ft.	RP-TNC	Cisco	1200AG Series	
IDO2450-RT12	CAF94255	IDO2450, 2.4 Whisper Directional, Outdoor	8.5	1 ft.	RP-TNC	Cisco	1200AG Series	
IDO2450-RT36	CAF94118	IDO2450, 2.4 Whisper Directional, Outdoor	8.5	3 ft.	RP-TNC	Cisco	1200AG Series	
IDD5250-RT12	CAF94810	IDD5250, 5.25 Terrace Diversity Directional, Indoor	5	12 in.	RP-TNC x 2	Cisco	1200AG Series	
IDD5250-RT36	CAF94792	IDD5250, 5.25 Terrace Diversity Directional, Indoor	5	3 ft.	RP-TNC x 2	Cisco	1200AG Series	
IOD2450-RT36	CAF94136	IOD2450, 2.4 Sphere Diversity Omni-directional, Indoor	3	3 ft.	RP-TNC x 2	Cisco	1200AG Series	
IDD2450-RT07E	CAF94139	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit edge/side)	5	7 in.	RP-TNC x 2	Cisco	1200AG Series	
IDD2450-RT36E	CAF94430	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit edge/side)	5	3 ft.	RP-TNC x 2	Cisco	1200AG Series	
IDN2450-RT07	CAF94117	IDN2450, 2.4 Terrace Diversity Directional, Marine-Rated (cables exit backplate)	5	7 in.	RP-TNC x 2	Cisco	1200AG Series	
IDN2450-RT07E	CAF94159	IDN2450, 2.4 Terrace Diversity Directional, Marine-Rated (cables exit edge/side)	5	7 in.	RP-TNC x 2	Cisco	1200AG Series	
IFD2450-RT60	CAF94675	IFD2450, 2.4 Microsphere Diversity Omni-directional, Indoor	3	5 ft.	RP-TNC x 2	Cisco	1200AG Series	

Access Point - Antenna Cross-Reference (continued)

Model #	Part #	Antenna Description	Gain (dBi)	RG-142 Coax	Connector(s)	Access Point Vendor	Access Point Model	Access Point P/N
Proxim Access Points								
IO2450-NF12	CAF94170	IO2450, 2.4 Sphere Omni-directional, Indoor	3	1 ft.	N-female	Proxim	AP-4000	
IG2450-NF12	CAF94520	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	1 ft.	N-female	Proxim	AP-4000	
IG2450-NF36	CAF94512	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	N-female	Proxim	AP-4000	
IGO2450-NF12	CAF94579	IGO2450, 2.4 MegaSphere Omni-directional, Outdoor/Indoor	6	1 ft.	N-female	Proxim	AP-4000	
IB2450-NF12	CAF94179	IB2450, 2.4 Terrace Bi-directional, Indoor	5	1 ft.	N-female	Proxim	AP-4000	
IB2450-NF36	CAF95986	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	N-female	Proxim	AP-4000	
ID2450-NF12	CAF95998	ID2450, 2.4 Whisper Directional, Indoor	9	1 ft.	N-female	Proxim	AP-4000	
ID2450-NF36	CAF94493	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	N-female	Proxim	AP-4000	
IDO2450-NF12	CAF94180	IDO2450, 2.4 Whisper Directional, Outdoor	8.5	1 ft.	N-female	Proxim	AP-4000	
IOD2450-NF12	CAF94178	IOD2450, 2.4 Sphere Diversity Omni-directional, Indoor	3	1 ft.	N-female x 2	Proxim	AP-4000	
IDD2450-NF12	CAF94177	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	1 ft.	N-female x 2	Proxim	AP-4000	
IDD2450-NF36	CAF94489	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	3 ft.	N-female x 2	Proxim	AP-4000	
IO2450-NF12	CAF94170	IO2450, 2.4 Sphere Omni-directional, Indoor	3	1 ft.	N-female	Proxim	AP-600	
IG2450-NF12	CAF94520	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	1 ft.	N-female	Proxim	AP-600	
IG2450-NF36	CAF94512	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	N-female	Proxim	AP-600	
IGO2450-NF12	CAF94579	IGO2450, 2.4 MegaSphere Omni-directional, Outdoor/Indoor	6	1 ft.	N-female	Proxim	AP-600	
IB2450-NF12	CAF94179	IB2450, 2.4 Terrace Bi-directional, Indoor	5	1 ft.	N-female	Proxim	AP-600	
IB2450-NF36	CAF95986	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	N-female	Proxim	AP-600	
ID2450-NF12	CAF95998	ID2450, 2.4 Whisper Directional, Indoor	9	1 ft.	N-female	Proxim	AP-600	
ID2450-NF36	CAF94493	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	N-female	Proxim	AP-600	
IDO2450-NF12	CAF94180	IDO2450, 2.4 Whisper Directional, Outdoor	8.5	1 ft.	N-female	Proxim	AP-600	
IOD2450-NF12	CAF94178	IOD2450, 2.4 Sphere Diversity Omni-directional, Indoor	3	1 ft.	N-female x 2	Proxim	AP-600	
IDD2450-NF12	CAF94177	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	1 ft.	N-female x 2	Proxim	AP-600	
IDD2450-NF36	CAF94489	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	3 ft.	N-female x 2	Proxim	AP-600	
IO2450-NF12	CAF94170	IO2450, 2.4 Sphere Omni-directional, Indoor	3	1 ft.	N-female	Proxim	AP-700	
IG2450-NF12	CAF94520	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	1 ft.	N-female	Proxim	AP-700	
IG2450-NF36	CAF94512	IG2450, 2.4 MegaSphere Omni-directional, Indoor	6	3 ft.	N-female	Proxim	AP-700	
IGO2450-NF12	CAF94579	IGO2450, 2.4 MegaSphere Omni-directional, Outdoor/Indoor	6	1 ft.	N-female	Proxim	AP-700	
IB2450-NF12	CAF94179	IB2450, 2.4 Terrace Bi-directional, Indoor	5	1 ft.	N-female	Proxim	AP-700	
IB2450-NF36	CAF95986	IB2450, 2.4 Terrace Bi-directional, Indoor	5	3 ft.	N-female	Proxim	AP-700	
ID2450-NF12	CAF95998	ID2450, 2.4 Whisper Directional, Indoor	9	1 ft.	N-female	Proxim	AP-700	
ID2450-NF36	CAF94493	ID2450, 2.4 Whisper Directional, Indoor	9	3 ft.	N-female	Proxim	AP-700	
IDO2450-NF12	CAF94180	IDO2450, 2.4 Whisper Directional, Outdoor	8.5	1 ft.	N-female	Proxim	AP-700	
IOD2450-NF12	CAF94178	IOD2450, 2.4 Sphere Diversity Omni-directional, Indoor	3	1 ft.	N-female x 2	Proxim	AP-700	
IDD2450-NF12	CAF94177	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	1 ft.	N-female x 2	Proxim	AP-700	
IDD2450-NF36	CAF94489	IDD2450, 2.4 Terrace Diversity Directional, Indoor (cables exit backplate)	5	3 ft.	N-female x 2	Proxim	AP-700	

Centurion High Performance

TRI-BAND External

External Mercury™

AMPS/PCS/GPS	GSM/DCS/GPS
AMPS/PCS Gain: 3.5 dBi GPS Gain: 30 dBi 3 or 5 Volt	GSM/DCS Gain: 3.5 dBi GPS Gain: 30 dBi 3 or 5 Volt

TRI-BAND Waterproof

Waterproof Internal Mercury™

AMPS/PCS/GPS	GSM/DCS/GPS
AMPS/PCS Gain: 3 dBi GPS Gain: 30 dBi 3 or 5 Volt	GSM/DCS Gain: 3 dBi GPS Gain: 30 dBi 3 or 5 Volt

BLUETOOTH Internal

BLUETOOTH/GPS	BLUETOOTH
Bluetooth Gain: 2 dBi GPS Gain: 30 dBi	Gain: 4 dBi

TRI-BAND Roof Mount

AMPS/PCS/GPS	GSM/DCS/GPS
AMPS/PCS Gain: 2 dBi GPS Gain: 21-27 dBi 3 or 5 Volt	GSM/DCS Gain: 2 dBi GPS Gain: 21-27 dBi 3 or 5 Volt

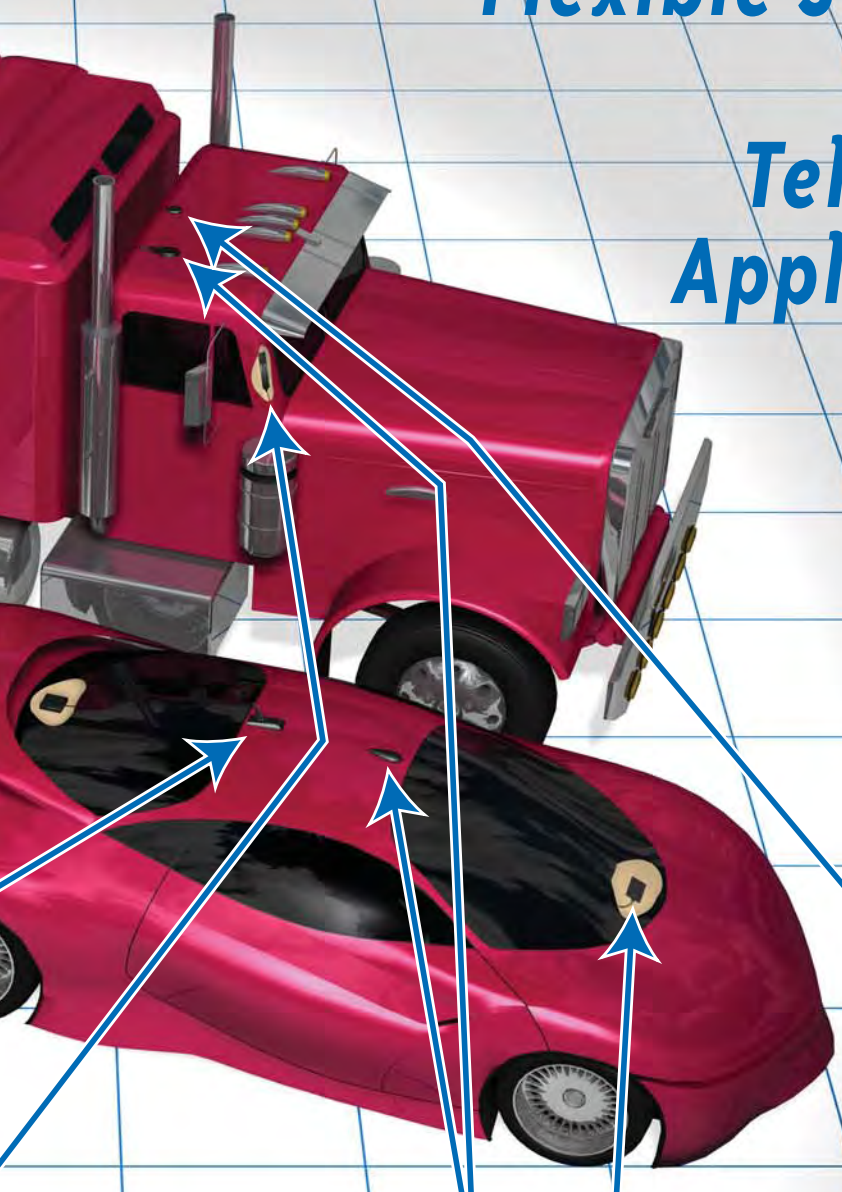
DUAL-BAND Internal

MicroBlade

AMPS/PCS	GSM/DCS
AMPS Gain: 2.5 dBi PCS Gain: 3.6 dBi	GSM Gain: 3.2 dBi DCS Gain: 2.4 dBi

Telematics Antennas

Flexible Solutions for Your Telematics Applications



Accelerate your telematics application with Centurion antennas.

Centurion telematics antennas are low-profile, high performance and cost-effective solutions for your mobile communications needs. Available in combinations that cover all primary cellular frequencies plus GPS and Satellite Radio, Centurion antennas feature small form factors allowing easy installation virtually anywhere inside or outside a vehicle.

With integrated research, design, tooling, molding, assembly and accelerated life testing facilities around the world, our engineers will quickly and efficiently create solutions to your wireless challenges.

XM RADIO External

XM Satellite Radio	XM20 XM Satellite Radio
Gain: 23-30 dBi	Satellite LNA Gain: 20-24 dBi Terrestrial LNA Gain: 18-22 dBi

TRI-BAND Internal

Internal Mercury™	
AMPS/PCS/GPS	**GSM/DCS/GPS**
AMPS/PCS Gain: 3 dBi GPS Gain: 30 dBi 3 or 5 Volt	GSM/DCS Gain: 3 dBi GPS Gain: 30 dBi 3 or 5 Volt

GPS External/Internal

Centurion GPS
Gain: 2.5 dBic LNA Gain 26 dBi 3 or 5 Volt

Internal Mercury™

AMPS, PCS & 3 Volt GPS Antenna

- High gain solution maximizes coverage area
- Small size and low profile allow for stealth (covert) in-vehicle automotive applications such as fleet management, asset tracking and anti-theft systems
- Sleek, durable housing for longer life span and easier transfer between vehicles

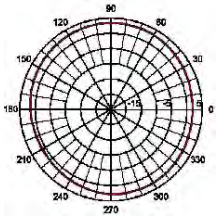
SPECIFICATIONS	AMPS	PCS	GPS
Element Type	Microstrip	Microstrip	Dielectrically Loaded Patch
Frequency Range	824-896 MHz	1850-1990 MHz	1575.42 MHz
Peak Gain (Nominal)	3 dBi	3 dBi	30 dBi
Polarization	Linear	Linear	RHCP
Impedance	50 ohms	50 ohms	50 ohms
Input Power (max)	10 watts	10 watts	—
VSWR*	2:1	2:1	2:1
Axial Ratio	—	—	3 dB max
LNA Gain	—	—	31 dBi
LNA Noise Figure	—	—	1.5 dB max (23˚C)
LNA Supply Voltage	—	—	2.7 - 3.3 VDC
LNA Current Consumption	—	—	18 mA typical 25 mA max@3VDC
Dimensions (L x W x H)		5.12" x 2.59" x 0.51"	
Radome Material		Cycoloy™	

* Minimum VSWR performance

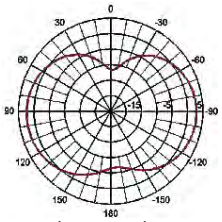
CABLES & CONNECTORS

Part Number	Patch Connectors	GPS Connectors	Cable Lengths*
CAF94246	SMA-Male	SMC-Male	5 meter
CAF94286	SMA-Male	SMA-Male	5 foot
CAF94401	SMC-Male	SMA-Male	15 foot
CAF94395	SMA-Male	MMCX-Male straight	15 foot
CAF94457	SMC-Male	SMA-Male	5 foot

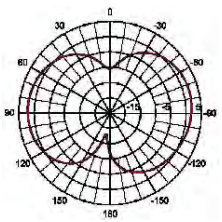
* Supplied with black low-loss RG-174 coax cable.



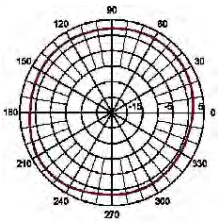
Azimuth
861 MHz



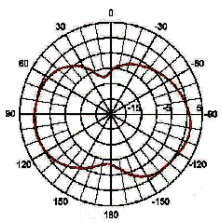
Elevation - phi=0
861 MHz



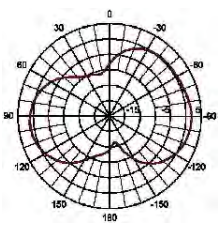
Elevation - phi=90
861 MHz



Azimuth
1920 MHz



Elevation - phi=0
1920 MHz



Elevation - phi=90
1920 MHz

Internal Mercury™

AMPS, PCS & 5 Volt GPS Antenna

- High gain solution maximizes coverage area
- Small size and low profile allow for stealth (covert) in-vehicle automotive applications such as fleet management, asset tracking and anti-theft systems
- Sleek, durable housing for longer life span and easier transfer between vehicles

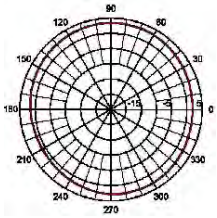
SPECIFICATIONS	AMPS	PCS	GPS
Element Type	Microstrip	Microstrip	Dielectrically Loaded Patch
Frequency Range	824-896 MHz	1850-1990 MHz	1575.42 MHz
Peak Gain (Nominal)	3 dBi	3 dBi	30 dBi
Polarization	Linear	Linear	RHCP
Impedance	50 ohms	50 ohms	50 ohms
Input Power (max)	10 watts	10 watts	—
VSWR*	2:1	2:1	2:1
Axial Ratio	—	—	3 dB max
LNA Gain	—	—	31 dBi
LNA Noise Figure	—	—	1.5 dB max (23˚C)
LNA Supply Voltage	—	—	4.5 - 5.5 VDC
LNA Current Consumption	—	—	18 mA typical 25 mA max@5VDC
Dimensions (L x W x H)	5.12" x 2.59" x 0.51"		
Radome Material	Cycoloy™		

* Minimum VSWR performance

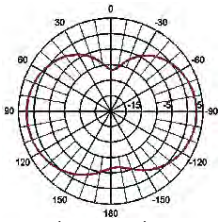
CABLES & CONNECTORS

Part Number	Patch Connectors	GPS Connectors	Cable Lengths*
CAF94209	TNC-Male	SMA-Male	10 foot
CAF94303	SMC-Male	SMA-Male	15 foot
CAF94326	SMA-Male	MCX (OSX) straight	3 meter
CAF94331	SMA-Male	BNC-Male	20 foot
CAF94392	SMA-Male	SMC-Male	15 foot
CAF94393	SMA-Male	MCX (OSX) R/A	6 foot
CAF94394	SMA-Male	SMB-Male	10 foot
CAF94434	TNC-Male	SMA-Male	3 meter

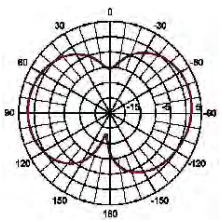
* Supplied with black low-loss RG-174 coax cable.



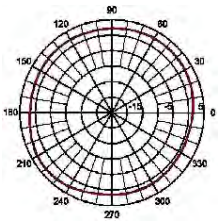
Azimuth
861 MHz



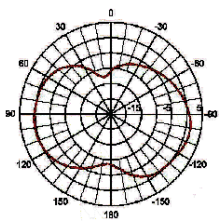
Elevation - phi=0
861 MHz



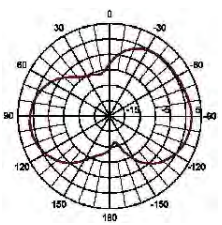
Elevation - phi=90
861 MHz



Azimuth
1920 MHz



Elevation - phi=0
1920 MHz



Elevation - phi=90
1920 MHz

Waterproof Internal Mercury™

AMPS, PCS & GPS Antenna

- Ruggedized, durable housing that stands up to extreme weather conditions
- High gain solution maximizes coverage area
- Small size and low profile allow for stealth (covert) in-vehicle automotive applications such as fleet management, asset tracking and anti-theft systems

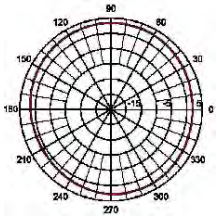
SPECIFICATIONS	AMPS	PCS	GPS
Element Type	Microstrip	Microstrip	Dielectrically Loaded Patch
Frequency Range	824-896 MHz	1850-1990 MHz	1575.42 MHz
Peak Gain (Nominal)	3 dBi	3 dBi	30 dBi
Polarization	Linear	Linear	RHCP
Impedance	50 ohms	50 ohms	50 ohms
Input Power (max)	10 watts	10 watts	—
VSWR*	2:1 max	2:1 max	2:1 max
Axial Ratio	—	—	3 dB max
LNA Gain	—	—	31 dBi
LNA Noise Figure	—	—	1.5 dB max (23˚C)
LNA Supply Voltage	—	—	2.7 - 3.3 VDC or 4.5 - 5.5 VDC
LNA Current Consumption	—	—	18 mA typical 25 mA max
Dimensions (L x W x H)	5.12" x 2.59" x 0.51"		
Radome Material	Cycoloy™, hermetically sealed, 100% waterproof		

* Minimum VSWR performance

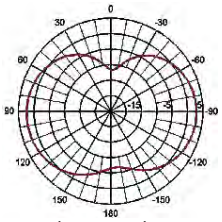
CABLES & CONNECTORS

Part Number	GPS Voltage	Patch Connector	GPS Connector	Cable Lengths*
CAF94461	5 VDC	TNC-Male	SMA-Male	15 foot
CAF94462	3 VDC	TNC-Male	SMA-Male	15 foot
CAF94528	3 VDC	SMA-Male	SMA-Male	10 foot

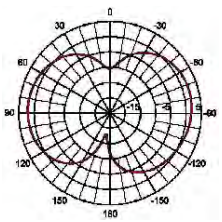
* Supplied with black low-loss RG-174 coax cable.



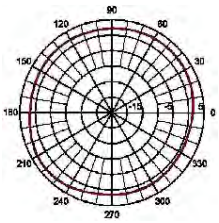
Azimuth
861 MHz



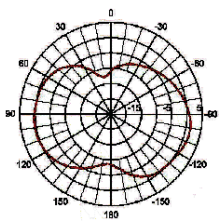
Elevation - phi=0
861 MHz



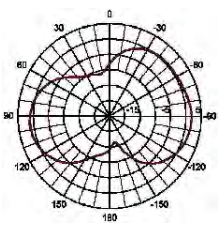
Elevation - phi=90
861 MHz



Azimuth
1920 MHz



Elevation - phi=0
1920 MHz



Elevation - phi=90
1920 MHz

Internal Mercury™

GSM, DCS & 3 Volt GPS Antenna

- High gain solution maximizes coverage area
- Small size and low profile allow for stealth (covert) in-vehicle automotive applications such as fleet management, asset tracking and anti-theft systems
- Sleek, durable housing for longer life span and easier transfer between vehicles

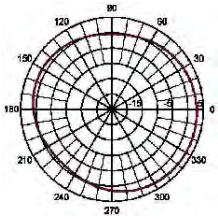
SPECIFICATIONS	GSM	DCS	GPS
Element Type	Microstrip	Microstrip	Dielectrically Loaded Patch
Frequency Range	880-960 MHz	1710-1880 MHz	1575.42 MHz
Peak Gain (Nominal)	3 dBi	3 dBi	30 dBi
Polarization	Linear	Linear	RHCP
Impedance	50 ohms	50 ohms	50 ohms
Input Power (max)	10 watts	10 watts	—
VSWR*	2:1	2:1	2:1
Axial Ratio	—	—	3 dB max
LNA Gain	—	—	31 dB
LNA Noise Figure	—	—	1.5 dB max (23˚C)
LNA Supply Voltage	—	—	2.7 - 3.3 VDC
LNA Current Consumption	—	—	18 mA typical 25 mA max@3VDC
Dimensions (L x W x H)		5.12" x 2.59" x 0.51"	
Radome Material		Cycoloy™	

* Minimum VSWR performance

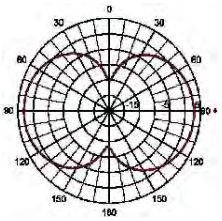
CABLES & CONNECTORS

Part Number	Patch Connectors	GPS Connectors	Cable Lengths*
CAF94345	TNC-Male	SMA-Male	10 foot
CAF94396	FME f	SMA-Male	3 meter
CAF94397	SMA-Male	SMB-Male	2 meter
CAF94479	SMA-Male	SMA-Male	15 foot

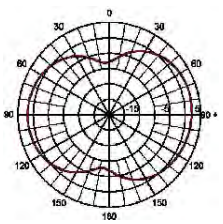
* Supplied with black low-loss RG-174 coax cable.



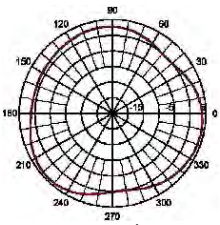
Azimuth
920 MHz



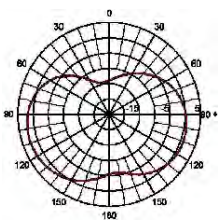
Elevation - phi=0
920 MHz



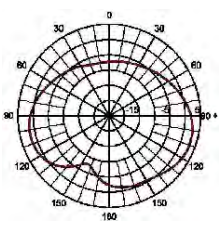
Elevation - phi=90
920 MHz



Azimuth
1795 MHz



Elevation - phi=0
1795 MHz



Elevation - phi=90
1795 MHz

Internal Mercury™

GSM, DCS & 5 Volt GPS Antenna

- High gain solution maximizes coverage area
- Small size and low profile allow for stealth (covert) in-vehicle automotive applications such as fleet management, asset tracking and anti-theft systems
- Sleek, durable housing for longer life span and easier transfer between vehicles

SPECIFICATIONS

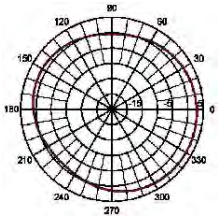
SPECIFICATIONS	GSM	DCS	GPS
Element Type	Microstrip	Microstrip	Dielectrically Loaded Patch
Frequency Range	880-960 MHz	1710-1880 MHz	1575.42 MHz
Peak Gain (Nominal)	3 dBi	3 dBi	30 dBi
Polarization	Linear	Linear	RHCP
Impedance	50 ohms	50 ohms	50 ohms
Input Power (max)	10 watts	10 watts	—
VSWR*	2:1	2:1	2:1
Axial Ratio	—	—	3 dB max
LNA Gain	—	—	31 dB
LNA Noise Figure	—	—	1.5 dB max (23˚C)
LNA Supply Voltage	—	—	4.5 - 5.5 VDC
LNA Current Consumption	—	—	18 mA typical 25 mA max@5VDC
Dimensions (L x W x H)		5.12" x 2.59" x 0.51"	
Radome Material		Cycoloy™	

* Minimum VSWR performance

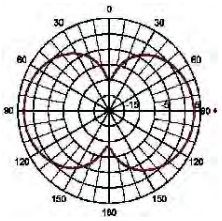
CABLES & CONNECTORS

Part Number	Patch Connectors	GPS Connectors	Cable Lengths*
CAF94344	TNC-Male	SMA-Male	10 foot
CAF94398	FME f	SMA-Male	5 meter
CAF94399	FME f	SMBf	3 meter

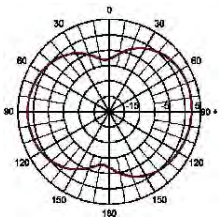
* Supplied with black low-loss RG-174 coax cable.



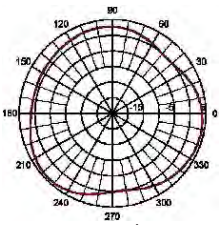
Azimuth
920 MHz



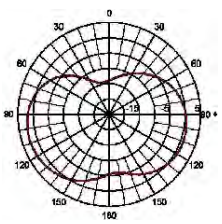
Elevation - phi=0
920 MHz



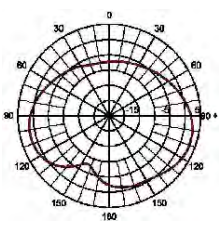
Elevation - phi=90
920 MHz



Azimuth
1795 MHz



Elevation - phi=0
1795 MHz

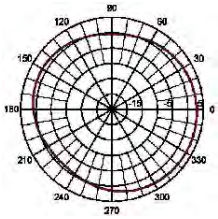


Elevation - phi=90
1795 MHz

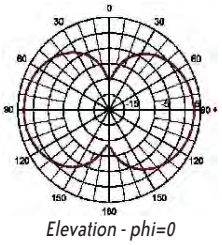
Waterproof Internal Mercury™

GSM, DCS & GPS Antenna

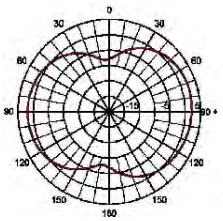
- Ruggedized, durable housing that stands up to extreme weather conditions
- High gain solution maximizes coverage area
- Small size and low profile allow for stealth (covert) in-vehicle automotive applications such as fleet management, asset tracking and anti-theft systems



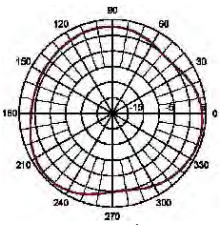
Azimuth
920 MHz



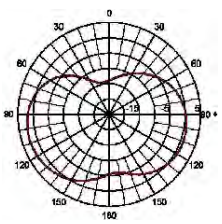
Elevation - phi=0
920 MHz



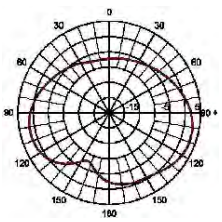
Elevation - phi=90
920 MHz



Azimuth
1795 MHz



Elevation - phi=0
1795 MHz



Elevation - phi=90
1795 MHz

SPECIFICATIONS	GSM	DCS	GPS
Element Type	Microstrip	Microstrip	Dielectrically Loaded Patch
Frequency Range	880-960 MHz	1710-1880 MHz	1575.42 MHz
Peak Gain (Nominal)	3 dBi	3 dBi	30 dBi
Polarization	Linear	Linear	RHCP
Impedance	50 ohms	50 ohms	50 ohms
Input Power (max)	10 watts	10 watts	—
VSWR*	2:1 max	2:1 max	2:1 max
Axial Ratio	—	—	3 dB max
LNA Gain	—	—	31 dB
LNA Noise Figure	—	—	1.5 dB max (23˚C)
LNA Supply Voltage	—	—	2.7 - 3.3 VDC or 4.5 - 5.5 VDC
LNA Current Consumption	—	—	18 mA typical 25 mA max
Dimensions (L x W x H)	5.12" x 2.59" x 0.51"		
Radome Material	Cycoloy™, hermetically sealed, 100% waterproof		

* Minimum VSWR performance

CABLES & CONNECTORS

Part Number	GPS Voltage	Patch Connector	GPS Connector	Cable Lengths*
CAF94459	5 VDC	FME f	SMA	5 meter
CAF94460	3 VDC	FME f	SMA	5 meter

* Supplied with black low-loss RG-174 coax cable.

External Mercury™

AMPS, PCS & GPS Antenna

- High performance antenna for external mounting
- Weatherproof housing and low profile offers an excellent solution for trucks, trailers and tall vehicles
- Works on and off ground plane

SPECIFICATIONS	AMPS	PCS	GPS
Frequency Range	824-896 MHz	1850-1990 MHz	1575.42 MHz
Peak Gain (Nominal)	3.5 dBi	3.5 dBi	30 dBi (at 90°)
VSWR*	2:1 max	2:1 max	2:1 max
Axial Ratio	—	—	3 dB max
LNA Gain	—	—	30 dBi
LNA Noise Figure	—	—	1.5 dB max (23°C)
LNA Supply Voltage	—	—	2.7 - 3.3 VDC or 4.5 - 5.5 VDC
LNA Current Consumption	—	—	18 mA typical 25 mA max
Operating Temperature		-40° C to +70°C	
Storage Temperature		-40° C to +85°C	
Dimensions (L x W x H)		145 x 130 x 22 mm	
Housing Material		Black PC/ABS blend	

* Minimum VSWR performance

CABLES & CONNECTORS

Part Number	GPS Voltage	Mounting Option	Patch Connector	GPS Connector	Cable Lengths*
CAF94573	3 VDC	Magnet	TNC	SMA	15 foot
CAF94473	5 VDC	Adhesive Tape	TNC	SMA	15 foot
CAF94507	5 VDC	Magnet	TNC	SMA	15 foot
CAF94644	5 VDC	Adhesive Tape	SMA	SMB(m)	10 foot

* Supplied with black low-loss RG-174 coax cable.

External Mercury™

GSM, DCS & GPS Antenna

- High performance antenna for external mounting
- Weatherproof housing and low profile offers excellent solution for trucks, trailers and tall vehicles
- Works on and off ground plane

SPECIFICATIONS	GSM	DCS	GPS
Frequency Range	880-960 MHz	1710-1880 MHz	1575.42 MHz
Peak Gain (Nominal)	3.5 dBi	3.5 dBi	30 dBi (at 90°)
VSWR*	2:1 max	2:1 max	2:1 max
Axial Ratio	—	—	3 dB max
LNA Gain	—	—	30 dBi
LNA Noise Figure	—	—	1.5 dB max (23°C)
LNA Supply Voltage	—	—	2.7 - 3.3 VDC or 4.5 - 5.5 VDC
LNA Current Consumption	—	—	18 mA typical 25 mA max
Operating Temperature		-40° C to +70°C	
Storage Temperature		-40° C to +85°C	
Dimensions (L x W x H)		145 x 130 x 22 mm	
Housing Material		Black PC/ABS blend	

* Minimum VSWR performance

CABLES & CONNECTORS

Part Number	GPS Voltage	Mounting Option	Patch Connector	GPS Connector	Cable Lengths*
CAF94574	3 VDC	Magnet	FME f	SMA	5 meter
CAF94466	5 VDC	Adhesive Tape	FME f	SMA	5 meter
CAF94506	5 VDC	Magnet	FME f	SMA	5 meter

* Supplied with black low-loss RG-174 coax cable.

Centurion GPS™

Telematics Antenna

- Externally Mountable
- Magnetic or adhesive mounting options
- Low profile, high gain antenna
- Available in 3 or 5 volt configurations

SPECIFICATIONS

Frequency Range (MHz)	1575.42
Gain	2.5 dBic @ Zenith
VSWR*	2.0:1 max
Output Impedance	50 ohms
LNA** Gain	26 dBi (typical)
LNA** Noise Figure	2.0 dB max (+23˚ C)
Output Band Rejection	-25 dBc min @ fo ± 50 MHz
Operating Voltage	3.0 V or 5.0 V
Power Consumption	15 mA max
Dimensions (L x W x H)	54.4 x 44 x 14.5 mm (standard magnet)
	54.4 x 44 x 15.5 mm (strong magnet)
Connector	SMA-Male
Mounting Applications	Magnetic or Adhesive

* Minimum VSWR performance

** LNA - Low Noise Amplifier

PART NUMBERS

Part Number	LNA Voltage	Mounting Option
MAF95001	3 Volt	Standard Magnet
MAF95009	5 Volt	Standard Magnet
MAF95010	3 Volt	Strong Magnet
MAF95011	5 Volt	Strong Magnet

Supplied with 3 meter black RG-174 coax cable.

XM20™

Satellite Radio Antenna

XM SATELLITE RADIO CERTIFIED

- Lowest profile and cost effective antenna for satellite radio
- Adhesive mount — no drilling required
- Low profile and aerodynamic shape does not significantly alter vehicle appearance

SPECIFICATIONS	SATELLITE	TERRESTRIAL
Max Noise Figure (dB)	1.1 nom 1.6 max	1.5 nom 2.0 max
Operating Frequency Range	2332.5-2345 MHz	2332.5-2345 MHz
Total Active Gain (inc. cable)	20-24	18-22
Input IP3 (dBm)	-15	-10
Nominal Output Impedance	50 ohms	50 ohms
Max Output VSWR*	1.5:1	1.5:1
Supply Voltage		3.36-5.5 V
Supply Current		60 mA typical, 80 mA max
Dimensions (Height x Diameter.)		16mm x 102mm
Operating Temperature		-40˚C to +85˚C
Connector		SMB-Plug FAKRA

* Minimum VSWR performance

PART NUMBER

CAF94361	XM20 Satellite Radio Antenna

Supplied with 14' black RG-178 coax cable.

Dualband MicroBlade™

AMPS & PCS Antenna

- Slim, flexible design for easy integration into automotive vehicles
- Sleek durable housing for longer life span

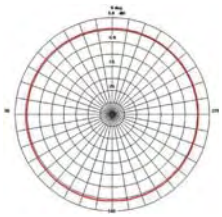
SPECIFICATIONS	AMPS	PCS
Element Type	PCB	PCB
Frequency (MHz)	824-896	1850-1990
Peak Gain (max)	2.5 dBi	3.6 dBi
Polarization	Linear	
Impedance	50 ohms	
Input Power (max)	10 watts	
VSWR*	< 2.0:1	
Dimensions (L x W)	143x27 mm	
Cover	Polyolefin	

* Minimum VSWR performance

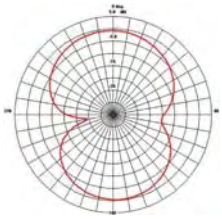
PART NUMBER

Part Number	Connector
MAF90001	SMA-Male

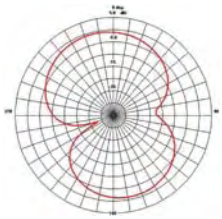
Supplied with 3 meter black RG-174 coax cable.



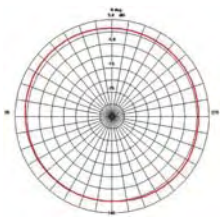
Azimuth
824 MHz



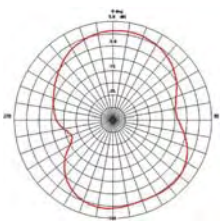
Elevation - phi=0
824 MHz



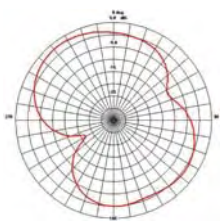
Elevation - phi=90
824 MHz



Azimuth
1990 MHz



Elevation - phi=0
1990 MHz



Elevation - phi=90
1990 MHz

Dualband MicroBlade™

GSM & DCS Antenna

- Slim, flexible design for easy integration into automotive vehicles
- Sleek durable housing for longer life span

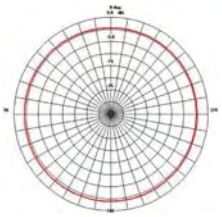
SPECIFICATIONS	GSM	DCS
Element Type	PCB	PCB
Frequency (MHz)	880-960	1710-1880
Peak Gain (max)	3.2 dBi	2.4 dBi
Polarization	Linear	
Impedance	50 ohms	
Input Power (max)	10 watts	
VSWR*	< 2.0:1	
Dimensions (L x W)	143 x 27 mm	
Cover	Polyolefin	

* Minimum VSWR performance

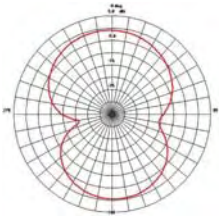
PART NUMBERS

Part Number	Connector
MAF90002	SMA-Male
MAF90004	Straight MCX Plug

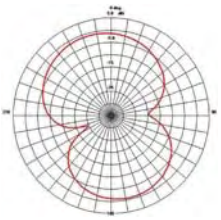
Supplied with 3 meter black RG-174 coax cable.



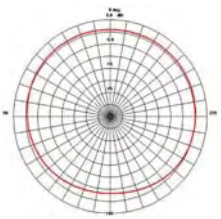
Azimuth
880 MHz



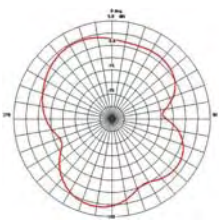
Elevation - phi=0
880 MHz



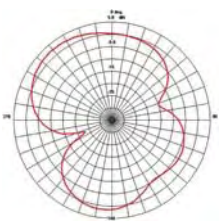
Elevation - phi=90
880 MHz



Azimuth
1785 MHz



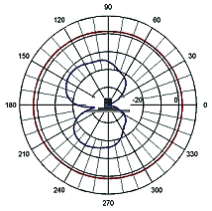
Elevation - phi=0
1785 MHz



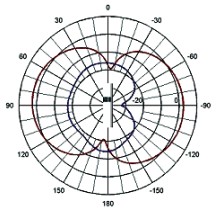
Elevation - phi=90
1785 MHz

2.4 GHz Cable MicroSphere™

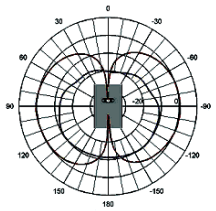
Omnidirectional Antenna



Azimuth



Elevation - phi=0



Elevation - phi=90

- Omnidirectional pattern provides optimal coverage
- Toroidal field pattern provides omnidirectional coverage in any plane around the long axis, and two lobes in any plane parallel to the long axis

SPECIFICATIONS

Element Type	Microstrip
Frequency Range	2.4-2.5 GHz
Peak Gain	3 dBi
Polarization	Linear
Impedance	50 ohms
Max Input Power	50 watts
VSWR*	1.5:1
Dimensions	4.1 x 2.9 cm
Coating Material	Acrylic
Temperature Range	-40˚C to +70˚C
Connector	SMA-Male
Cable	39" Black RG-174

* Minimum VSWR performance

PART NUMBER

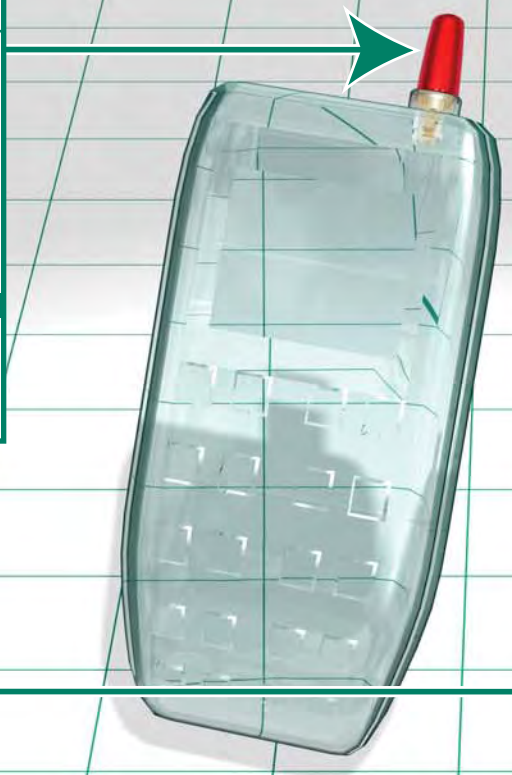
CAF94320	2.4 GHz MicroSphere

Part Number Reference

ANTENNA TYPE	FREQ.	GPS VOLT.	PART NUMBER	ANTENNA DESCRIPTION	BLACK COAX	GPS CONNECTOR	PATCH CONNECTOR
Internal Mercury	AMPS	5V	CAF94209	Tri-Band, Black	10' RG-174	SMA-male	TNC-male
	PCS	5V	CAF94285	Tri-Band, Black	10' RG-174	SMA	TNC
	GPS	5V	CAF94303	Tri-Band, Black	15' RG-174	SMA-male	SMC-male
		5V	CAF94326	Tri-Band, Black	3m RG-174	MCX (OSX) straight	SMA-male
		5V	CAF94331	Tri-Band, Black	20' RG-174	BNC-male	SMA-male
		5V	CAF94392	Tri-Band, Black	15' RG-174	SMC-male	SMA-male
		5V	CAF94394	Tri-Band, Black	10' RG-174	SMB-male	SMA-male
		5V	CAF94434	Tri-Band, Black	15' RG-174	SMA-male	TNC-male
		5V	CAF94393	Tri-Band, Black	6' RG-174	MCX (OSX) R.A.	SMA-male
		5V	CAF94551	Tri-Band, Black	20' RG-174	BNC	SMA
		3V	CAF94246	Tri-Band, Black	5m RG-174	SMC-male	SMA-male
		3V	CAF94286	Tri-Band, Black	5' RG-174	SMA-male	SMA-male
		3V	CAF94395	Tri-Band, Black	15' RG-174	MMCX-male straight	SMA-male
		3V	CAF94401	Tri-Band, Black	15' RG-174	SMA-male	SMC-male
		3V	CAF94457	Tri-Band, Black	5' RG-174	SMA-male	SMC-male
		3V	CAF94552	Tri-Band, Black	20' RG-174	BNC	SMA
		3V	CAF94646	Tri-Band, Black	5' RG-174	SMA	SMC
Internal Mercury	GSM	5V	CAF94344	Tri-Band, Black	10' RG-174	SMA-male	TNC-male
	DCS	5V	CAF94398	Tri-Band, Black	5m RG-174	SMA-male	FME-female
	GPS	5V	CAF94399	Tri-Band, Black	3m RG-174	SMB-female	FME-female
		3V	CAF94345	Tri-Band, Black	10' RG-174	SMA-male	TNC-male
		3V	CAF94396	Tri-Band, Black	3m RG-174	SMA-male	FME-female
		3V	CAF94397	Tri-Band, Black	2m RG-174	SMB-male	SMA-male
		3V	CAF94479	Tri-Band, Black	15' RG-174	SMA-male	SMA-male
Waterproof	AMPS	5V	CAF94461	Tri-Band, Black	15' RG-174	SMA-male	TNC-male
Internal Mercury	PCS	3V	CAF94462	Tri-Band, Black	15' RG-174	SMA-male	TNC-male
	GPS	3V	CAF94528	Tri-Band, Black	10' RG-174	SMA-male	SMA-male
Waterproof	GSM	5V	CAF94459	Tri-Band, Black	5m RG-174	SMA-male	FME-female
Internal Mercury	DCS	3V	CAF94460	Tri-Band, Black	5m RG-174	SMA-male	FME-female
	GPS						
External Mercury	AMPS	5V	CAF94473	Multi-Band, Adhesive-mount, Black	15' RG-174	SMA-male	TNC-male
	PCS	5V	CAF94507	Multi-Band, Magnetic-mount, Black	15' RG-174	SMA-male	TNC-male
	GPS	5V	CAF94644	Multi-Band, Adhesive-mount, Black	10' RG-174	SMB-male	SMA
		3V	CAF94572	Multi-Band, Mag/Adhesive-mount, Black	12' RG-174	SMA	SMC
		3V	CAF94573	Multi-Band, Magnetic-mount, Black	15' RG-174	SMA	TNC
		3V	CAF94716	Multi-Band, Adhesive-mount, Black	15' RG-174	SMA	TNC
External Mercury	GSM	5V	CAF94466	Multi-Band, Adhesive-mount, Black	5m RG-174	SMA-male	FME-female
	DCS	5V	CAF94506	Multi-Band, Magnetic-mount, Black	5m RG-174	SMA-male	FME-female
	GPS	3V	CAF94574	Multi-Band, Magnetic-mount, Black	5m RG-174	SMA-male	FME-female
MicroBlade	AMPS & PCS		MAF24003	Dual-Band, Back	3m RG-174	N/A	SMA-male
MicroBlade	GSM & DCS		MAF24004	Dual-Band, Black	3m RG-174	N/A	SMA-male
Centurion GPS	GPS	3V	MAF95001	Standard Magnet, Black, Mag/Adhesive-mount	3m RG-174	SMA-male	N/A
		5V	MAF95009	Standard Magnet, Black, Mag/Adhesive-mount	3m RG-174	SMA-male	N/A
		3V	MAF95010	Strong Magnet, Black, Mag/Adhesive-mount	3m RG-174	SMA-male	N/A
		5V	MAF95011	Strong Magnet, Black, Mag/Adhesive-mount	3m RG-174	SMA-male	N/A
Cable MicroSphere	ISM		CAF94320	2.4 Mobile, Black	39" RG-174	N/A	SMA-male
XM Radio	XM		CAF94361	XM20 Satellite Radio Antenna, Black	14' RG-178	SMB-plug FAKRA	SMB-plug FAKRA
			CAF94564	XM Satellite Radio Antenna, Black	14' RG-178	SMB-plug FAKRA	SMB-plug FAKRA

Handset Device

Stubby Antennas



BENEFITS	STYLES
• Cost effective design • Easy to install • Eliminate the need for contact on the circuit board • Tamper proof	• Snap-in • Screw-in

Retractable Antennas

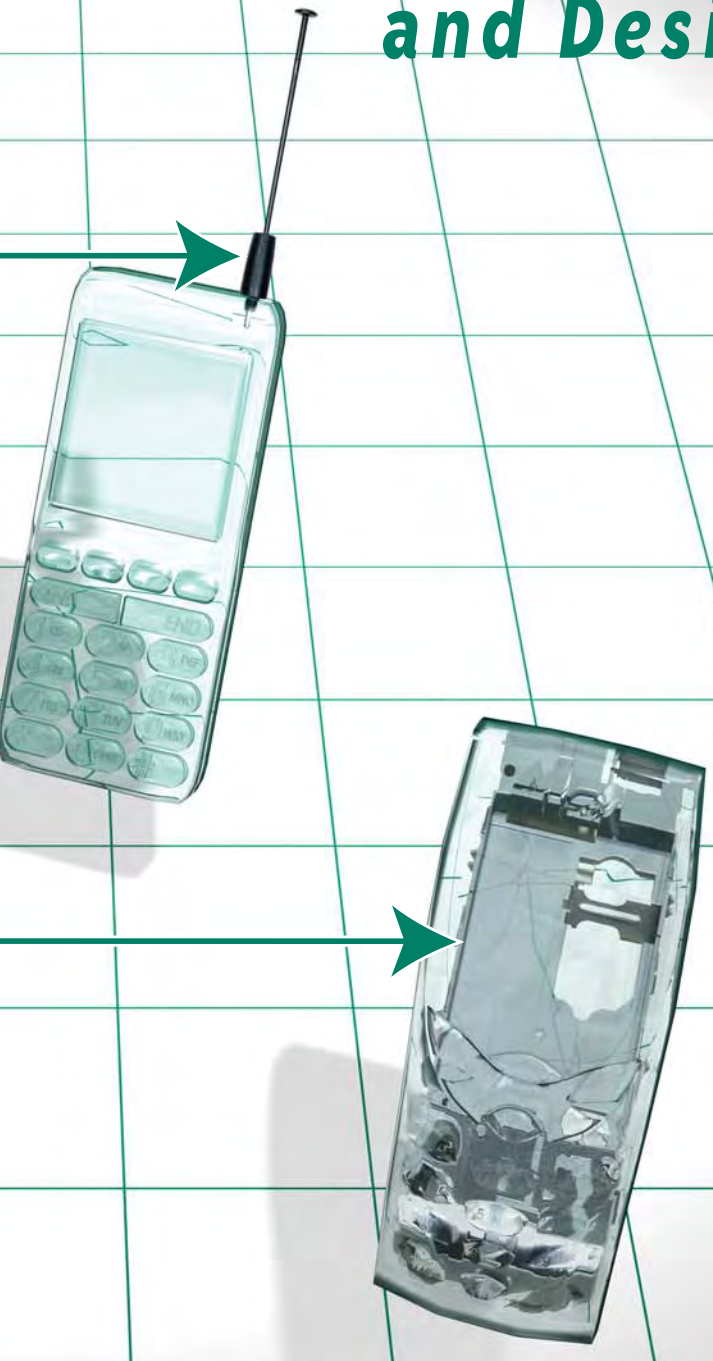
BENEFITS	STYLES
• Longer antennas for smaller handsets • Exceptional RF Performance	• Bottom loaded collapsible (telescopic whip extension) • Top loaded collapsible (telescopic whip extension)

Embedded Antennas

BENEFITS	STYLES	
• Good RF performance, better or equal to a stubby antenna • Tailored solutions for specific customer needs • Design solutions optimized for lowest total cost • Multiband cellular with optional GPS, Bluetooth™, FM-radio, TV etc	GSM • Dual, Triple or Quad Band • Antenna + Audio	CDMA • Dual Band + GPS • Dual Band + Whip + GPS

Antennas

Offering Worldwide Manufacturing and Design



Your Global Partner

Centurion offers a truly global footprint with manufacturing, design, and research facilities in Europe, Asia Pacific, and the Americas. A pioneer in the industry, Centurion has been supplying handset antennas since 1991. Utilizing best-in-class practices, Centurion has a solid track record of creating more than 1,500 different antenna designs.

Centurion's customers include the world's major handset manufacturers such as Motorola, Nokia, Samsung, and Sony-Ericsson, as well as ODMs/OEMs, contract manufacturers and design houses. Centurion's highly experienced, global customer project teams offer all types of antenna solutions, including the development of customized products suitable for large-scale production, delivered through a tailored logistics system at a competitive total cost.

Centurion efficiently serves your antenna needs from locations in the United States (Lincoln, Nebraska and Westminster, Colorado), Sweden (Stockholm), China (Beijing and Shanghai), Malaysia (Penang), Korea (Seoul), and Taiwan (Taipei). Centurion is a partner that truly delivers at a global level.

Centurion's core competencies include:

- Technologies and design of antennas that combine small size with high performance, as well as, antenna integration with other components
- Integration of antenna functionality for wireless systems, e.g. Bluetooth™, GPS, etc...
- Speed in the design process facilitating rapid product launches
- Efficient, flexible supply chain for antenna products, including RF testing and logistic solutions
- Reduction of total customer cost
- Understanding and addressing all antenna related activities in our customer's design and supply processes
- Strong intellectual property portfolio and skills promoting peace of mind in antenna implementation

Stubby Antennas

Stubby antennas are a rugged and durable solution for handsets. They provide exceptional clarity and are available as single, dual, tri-band and quad-band receivers. Additionally, they can be complemented to include GPS functionality. Centurion's array of standard stubby antenna styles presents a variety of dimensions, and connection methods (snap-in, connector, etc.) Centurion also offers design elements such as metal caps and rings as well as color and custom matched paints to further complement your device.

BENEFITS

- Cost effective design
- Easy to install
- Eliminate the need for contact on the circuit board
- Tamper proof

STYLES

- Snap-in
- Screw-in

Retractable Antennas

Retractable antennas are a rugged and durable solution for handsets. They provide exceptional clarity and can be equipped for single, dual, and tri-band receivers. Additionally, they can be complemented to include GPS functionality. Dimensions, widths, colors, sizes, and design elements can all be customized by our design teams.

BENEFITS

- Longer antennas for smaller handsets
- Excellent RF Performance

STYLES

- Bottom loaded collapsible (telescopic whip extension)
- Top loaded collapsible (telescopic whip extension)

Embedded Antennas

Having become such an integral part of our daily lives, mobile phones need to be more compact, fashionable and practical than ever before. Embedded antennas offer several advantages over the external mobile phone antennas, making them ideal for compact phones. Integrating the antenna into a module saves space and maximizes performance.

Centurion's embedded antenna solutions provide a series of products to satisfy all customer requirements for all standards widely-used today. We have solutions for all kinds of phones, including bar, folder, and sliding types. The antennas can be supplied either as separate units or as an integral part of larger assemblies or modules.

Centurion offers the most common production methods, including flexifilm, foil, stamped metal sheet, and plated plastic.

BENEFITS

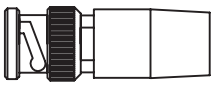
- Good RF performance, better or equal to a stubby antenna
- Tailored solutions for specific customer needs
- Design solutions optimized for lowest total cost
- Multiband cellular functionality with optional features like GPS, Bluetooth™, FM-radio, TV etc.

STYLES

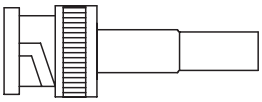
GSM
- Quad Band
- Triple Band
- Dual Band
- Antenna + Audio
- WCDMA Functionality

CDMA
- Dual Band + GPS
- Dual Band + Whip + GPS

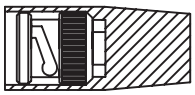
Connector Drawings



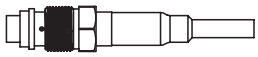
BN



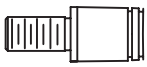
BNC



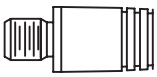
BNX



FME F

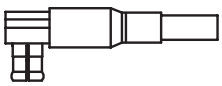


HT

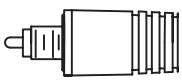


KR

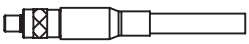
LUCENT



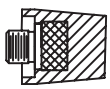
MCX



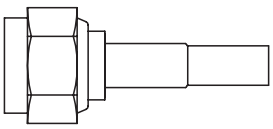
MD



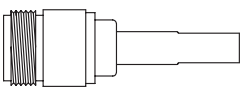
MMCX



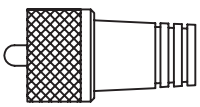
MX



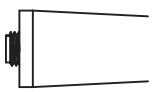
N-MALE



N-FEMALE



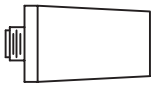
PL



SF

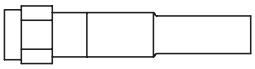
SFK

Connector Drawings



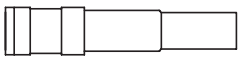
SFU

SM

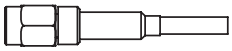


SMA MALE

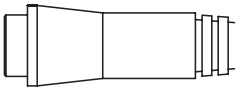
SMA PANEL



SMB

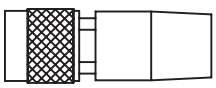


SMC

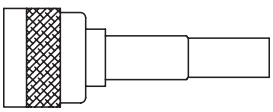


SMS

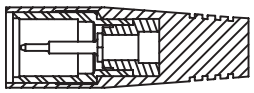
SMV



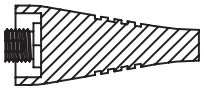
TN



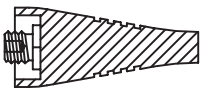
TNC



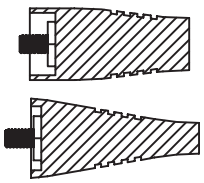
TNX



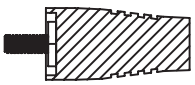
TT2



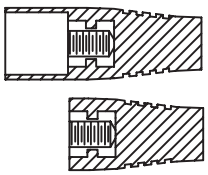
TT3



TT4



TT4/L



TT5

Glossary

802.11a — The IEEE standard that specifies a carrier sense media access control and physical layer specifications for 54 megabit per second wireless LANs transmitting at 5 GHz.

802.11b — The IEEE standard that specifies a carrier sense media access control and physical layer specifications for 5.5 and 11 megabit per second wireless LANs transmitting at 2.4 GHz.

802.11g — The IEEE standard that specifies a carrier sense media access control and physical layer specifications for 54 megabit per second wireless LANs transmitting at 2.4 GHz.

AMPS — Advanced Mobile Phone Service; the analog wireless transmission standard (technology) deployed in the 1980s in the United States and Canada. AMPS operates at 800 MHz. See also N-AMPS (Narrowband AMPS).

Antenna — A wireless system component that converts wired electrical energy to wireless radio waves, and directs them through the air in some pattern.

Antenna Array — An antenna comprising a number of radiating elements, generally similar, which are arranged and excited to obtain directional radiation patterns.

Band — A clearly defined range of radio frequencies dedicated to a particular purpose.

Bandwidth — The range of frequencies within which the performance of the antenna, with respect to some characteristic, conforms to a specified standard. Greater bandwidth generally provides for a more robust system because changes in the installation environment will not degrade antenna performance.

Bi-directional — Communications between two points where each point both transmits and receives.

Beamwidth — In a plane containing the direction of the maximum of a beam, the angle between the two directions in which the radiation intensity is one half the maximum value of the beam.

Bluetooth — A short range wireless standard operating at 2.4 GHz. Originally designed for use as a cable replacement technology, it is now used for personal area networking.

CDMA — Code Division Multiple Access (CDMA) is one of several digital wireless transmission methods in which signals are encoded using a pseudo-random sequence that corresponds to a different communication channel, that the receiver also knows and can use to decode the received signal. CDMA is one of several "spread spectrum" techniques. CDMA offers improvements over analogue transmission in the areas of reduced call dropping, battery power conservation, more secure transmission and increased service options.

Coax — Short for coaxial cable.

dB — DeciBels; a technique for expressing voltage, power, gain, loss, or frequency in logarithmic form against a reference. Typical references include volts, watts or Hz. DeciBels are calculated using the expression: dB = 10*log(x/y)

dBi — A ratio of decibels to an isotropic antenna that is commonly used to measure antenna gain. The greater the dBi value, the higher the gain and, as such, the more acute the angle of coverage.

Dipole — A type of low gain antenna consisting of two (often internal) elements.

Directional Antenna — An antenna having the property of radiating or receiving electromagnetic waves more effectively in some directions than others.

Diversity Antenna — An intelligent system of two antennas that continually senses incoming radio signals and automatically selects the antenna best positioned to receive it.

Embedded Antenna — Typically an antenna that is enclosed into a product's housing or case, or one that is not readily discernible by a casual observer. The antenna forms an integral, inseparable part of the product.

Frequency — The number of times an electromagnetic wave goes through a complete cycle in one second, measured in Hertz.

Gain — In a given direction, 4 pi times the ratio of the radiation intensity in that direction to the net power accepted by the antenna from the connected transmitter.

GHz — Gigahertz; one trillion cycles per second (a measure of frequency).

GPS — GPS is a worldwide radio-navigation system formed from a constellation of 24 satellites and their ground stations. A GPS receiver uses these "man-made stars" as reference points to calculate positions accurate to a matter of meters.

GSM — Global System for Mobile Communications; the digital transmission technique widely adopted in Europe and supported in North America for PCS. GSM uses 900 MHz and 1800 MHz in Europe. In North America, GSM uses the 1900 MHz. See also CDMA, PCS, TDMA

Impedance — A unit of measure, expressed in Ohms, of the total opposition (resistance, capacitance and inductance) offered to the flow of an alternating current.

Isotropic — A hypothetical antenna having equal radiation intensity in all directions.

Line of Sight — An unobstructed straight line between two transmitting devices. Line of sight is typically required for long-range directional radio transmission. Due to the curvature of the earth, the line of sight for devices not mounted on towers is limited to 16 miles (26km).

Li-Ion — Lithium-Ion batteries offer more energy per volume than Nickel based cells, with a low self-discharge rate. Li-Ion batteries are lighter in weight than earlier battery types, have a relatively long cycle life and generally do not suffer from a memory effect, with disadvantages including more complex charging and protection circuitry, and a higher cost.

Li-Poly — Lithium-Polymer batteries are lighter in weight than even Li-Ion batteries, have a relatively long cycle life and generally do not suffer from a memory effect. Their advantages include a very thin form factor, no toxic substances, and a low self-discharge rate. Their disadvantages include their high cost and more difficult assembly.

MHz — Megahertz, a measure of frequency in millions (mega) of cycles per second.

NiCd — A Nickel Cadmium battery is durable, rechargeable and typically has an extremely long life cycle. NiCd battery advantages include low cost, high current delivery and simple charging systems. Disadvantages include a high self-discharge rage of 30% per month, caustic contents, and a large size as compared to other battery types.

NiMH — Nickel Metal Hydride battery is a rechargeable battery that is capable of holding more power that a NiCd battery and suffers much less from memory effect. It is also typically more expensive than a NiCd battery. NiMH battery's disadvantages include a high self-discharge rate of 30% per month and a heavy weight per unit volume.

Omni-Directional Antenna — An antenna having an essentially non-directional pattern in azimuth, and a directional pattern in elevation.

Glossary

PCS — Personal Communications Service (or System.) Generally, a marketing term used to describe a wide variety of two-way digital wireless service offerings operating at 1900 MHz. PCS services include next generation wireless phone and communication services, wireless local loop, inexpensive walk-around communications service with lightweight, low-powered handsets, in-building cordless voice services for business, in-building wireless LAN service for business, enhanced paging service as well as wireless services integrated with wired networks. A Personal Communications System refers to the hardware and software that provide communications services.

PIFA — Planer Inverted F Antenna.

Polarization — In a given direction, the polarization of the wave radiated by the antenna. Alternatively, the polarization of a plane wave incident from the given direction which results in maximum available power at the antenna terminals.

Reverse Polarity TNC (RP-TNC) — A connector type unique to NetWORLD radios and antennas. Part 15.203 of the FCC rules covering spread-spectrum devices limits the types of antennas that may be used with transmission equipment. In compliance with this rule, NetWORLD, like all other wireless LAN providers, equips its radios and antennas with a unique connector to prevent attachment of non-approved antennas to radios.

RF — The area (or band) of the electromagnetic spectrum where most radio communication takes place, typically from 100 KHz to 100 GHz.

SAR — Specific Absorption Rate; the amount of radiation absorbed by the human body (SAR for the entire body) or by the head (local SAR).

SMT — Surface Mount Technology, whereby electronic components are machine-mountable to the surface of printed circuit boards.

TDMA — Time Division Multiple Access is one of several technologies used in digital wireless transmissions that increases the efficiency of the network by allowing a greater number of simultaneous transmissions. Networks using TDMA assign 6 timeslots for each frequency channel. Devices using the wireless network send bursts of information that are reassembled at the receiving end.

Telematics — The convergence of wireless technology, Global Positioning Systems (GPS), onboard electronics, asset tracking and information services.

UMTS — Universal Mobile Telecommunications System; an international third-generation (3G) wireless communications system capable of supporting very-high-speed mobile multimedia services.

VSWR — A comparison of the power accepted to the power reflected back from the system, generally with respect to a 50 Ohm line impedance. A VSWR of 1.0 is 100% of power accepted by the antenna, a VSWR of 1.5 is 97%, a VSWR of 2.0 is 89%.

WAP — Wireless Application Protocol; a wireless telephony protocol that transforms a wireless handset into a mobile Internet and multimedia device.

WIFI — Short for wireless fidelity and is meant to be used generically when referring of any type of 802.11 network, whether 802.11b, 802.11a, dual-band, etc. The term is promulgated by the Wi-Fi Alliance.

WiMax — WiMax is the trade name for a family of new technologies related to the IEEE 802.16 wireless standards. WiMax has the potential for very long range (5 - 30 miles) and high speeds.

Warranty

Limited One-Year Warranty

Centurion Wireless Technologies, Inc. ("Centurion") warrants to the original purchaser of any Centurion product, that should it prove defective by reason of improper workmanship and/or material:

For a period of one year from the date of the original purchase, Centurion will repair or replace, at Centurion's option, any defective part without charge. Parts used for replacement are warranted for the remainder of the original warranty.

1. TO OBTAIN WARRANTY SERVICE, the original purchaser must obtain a Return Material Authorization (RMA) number by calling Centurion Customer Service at 1-800-228-4563. This number will allow the proper tracing of the warranty claim. This number must be marked on the outside of the package being returned. This number should always be referenced when an inquiry is made about the status of the warranty claim. Shipping expenses are the original purchaser's responsibility. Centurion's mailing address is noted below or may be obtained by calling 1-800-228-4563.

   Centurion Wireless Technologies, Inc.
   Attn: Customer Service Department
   3425 N. 44th Street
   Lincoln, NE 68504
   (402) 467-4491

   Include a specific description outlining the nature of the failure and the application in which the product is used. Be certain to include your name/company name, address and phone number.

2. THIS WARRANTY DOES NOT COVER defects caused by: modification, alteration, repair or service by anyone other than Centurion; physical abuse to, misuse of, the product or operation thereof in a manner contrary to the accompanying instructions. This warranty also excludes products purchased or serviced outside the United States of America.

3. ANY EXPRESS WARRANTY NOT PROVIDED HEREIN, IN ANY REMEDY FOR BREACH OF CONTRACT WHICH BUT FOR THIS PROVISION MIGHT ARISE BY IMPLICATION OR OPERATION OF LAW, IS HEREBY EXCLUDED AND DISCLAIMED. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND A FITNESS FOR ANY PARTICULAR PURPOSE ARE EXPRESSLY LIMITED TO A TERM OF ONE YEAR. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

4. UNDER NO CIRCUMSTANCES SHALL CENTURION BE LIABLE TO THE ORIGINAL PURCHASER OR TO ANY OTHER PERSON FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES, WHETHER ARISING OUT OF BREACH OF WARRANTY, BREACH OF CONTRACT, OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

5. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

CORPORATE HEADQUARTERS
3425 N. 44th Street., LINCOLN, NE 68504 USA
INTERNATIONAL PHONE 402.467.4491 • **FAX** 402.467.4528
SALES PHONE 800.228.4563 • **SALES FAX** 800.826.3774
TECHNICAL SUPPORT 866.454.6914
sales@centurion.com
www.centurion.com

Centurion is the antenna products unit of Laird Technologies
www.lairdtech.com

Westminster, Colorado, USA
Centurion Wireless Technologies, Inc.
6252 West 91st Avenue
Westminster, CO 80031 USA
Phone: 303.635.2000
Fax: 303.635.2003

Shanghai, PRC
Centurion Electronics (Shanghai), Ltd.
No. 150 Cai Lun Road
(1600 West Chaun-Bei Hwy)
Zhangjiang Industrial Park
Pudong New Area, Shanghai PRC 201203
Phone: +86.21.5855.0827
Fax: +86.21.5855.0934

Penang, Malaysia
Centurion Wireless Components Sdn. Bhd.
No. 8 (Lot 5353) Lorong Jelawat 4
Bandar Seberang Jaya
Penang, Malaysia 13700 Prai
Phone: +60.4.398.9298
Fax: +60.4.398.9198

Taipei, Taiwan
Centurion Wireless Technologies, Inc.
4F, No. 6
Hou-Sheng Road
Luchu, Taoyuan 338
Taiwan, ROC
Phone: +886.3.312 9292
Fax: +886.3.312 9090

AMC Centurion AB
P.O. Box 500, SE-184 25
Åkersberga Sweden
Phone: +46.8.555.722.00
Fax: +46.8.555.722.10

AMC Centurion Beijing, China
AMC Centurion Beijing Co. Ltd.
No. 7A Rong Chang East Street
BDA, Beijing 100176 P. R. China
Phone: +86.10.67.87.33.11
Fax: +86.10.67.87.63.84

AMC Centurion Korea Co. Ltd.
8th Fl, Samik Electronics Building
#50, Nonhyeon-Dong
Kangnam-ku
Seoul, Republic of Korea
Phone: +82.2.3445.6845
Fax: +82.2.3445.7615
email: infoack@centurion.se