

1.575 GHz GPS Ceramic Chip Antenna

Ground cleared under antenna, clearance area 4.00 x 4.25 mm / 6.25 mm. Pulse Part Number: W3011 / W3011A



Features

- Omni directional radiation
- Low profile
- Compact size W x L x H (3.2 x 1.6 x 1.1 mm)
- Low weight (33 mg)
- Lead free materials
- Fully SMD compatible
- Lead free soldering compatible
- Tape-and-reel packing
- RoHS Compliant Product

Applications

- GPS L1 band
- 1.575 GHz

Electrical specifications @ +25 °C

Note: Electrical characteristics depend on test board (GP) size and antenna positioning on GP and the size of the ground clearance area.

1.575 GHz GPS W3011

Typical performance (Test board size 80 x 37 mm, PWB ground clearance area 4.00 x 4.25 mm)

Frequency Range [MHz]	RHCP Gain [dBic]	Max Gain [dBi]	Efficiency [%] / [dB]	Return loss min. [dB]	Impedance [Ω]	Operating Temperature [°C]
1575.42 +/-10	0.85 (Peak) 0.5 (Band edges)	3.4 (Peak) 3.0 (Band edges)	85 / -0.7 (Peak) 80 / -1.0 (Band edges)	-12	50	-40 to +85

1.575 GHz GPS W3011A

Typical performance (Test board size 80 x 37 mm, PWB ground clearance area 4.00 x 6.25 mm)

Frequency Range [MHz]	RHCP Gain [dBic]	Max Gain [dBi]	Efficiency [%] / [dB]	Return loss min. [dB]	Impedance [Ω]	Operating Temperature [°C]
1575.42 +/-10	1.0 (Peak) 0.7 (Band edges)	3.7 (Peak) 3.4 (Band edges)	85 / -0.7 (Peak) 85 / -1.0 (Band edges)	-16	50	-40 to +85

Pulse Finland Oy

Takatie 6
90440 Kempele, Finland
Tel: +358 207 935 500
Fax: +358 207 935 501
www.pulseeng.com/antennas

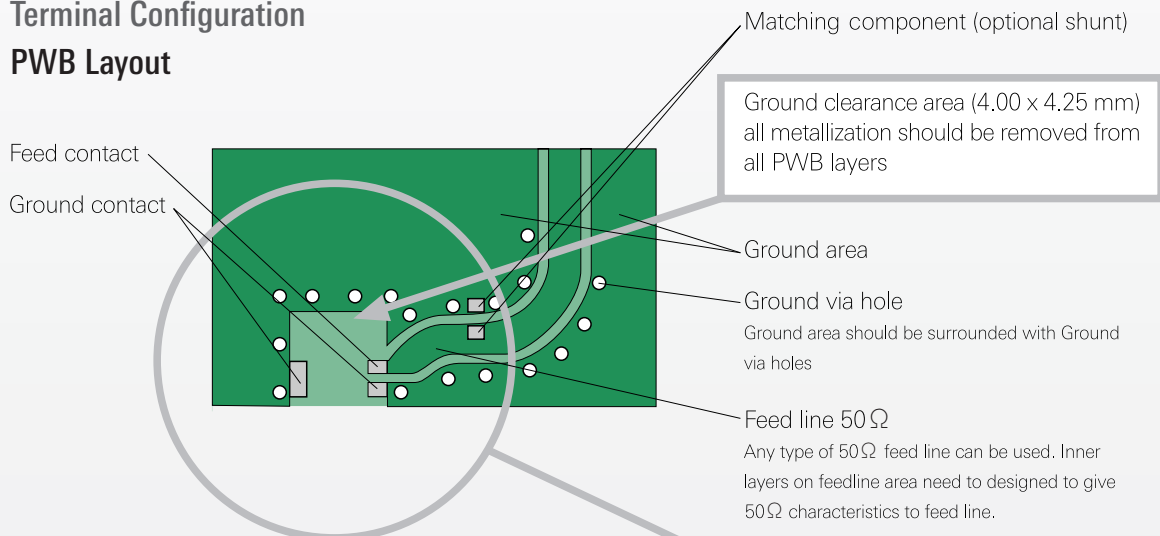


1.575 GHz GPS Ceramic Chip Antenna

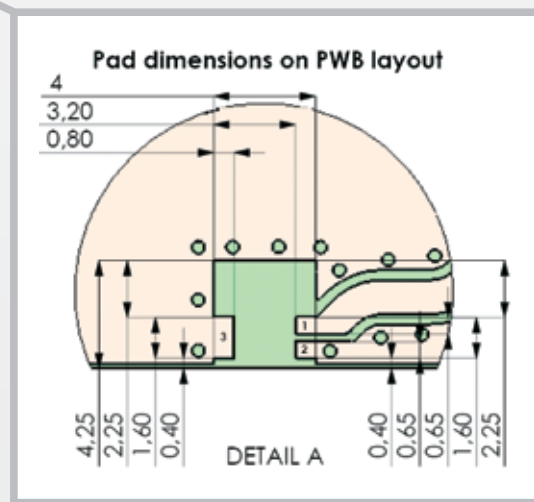
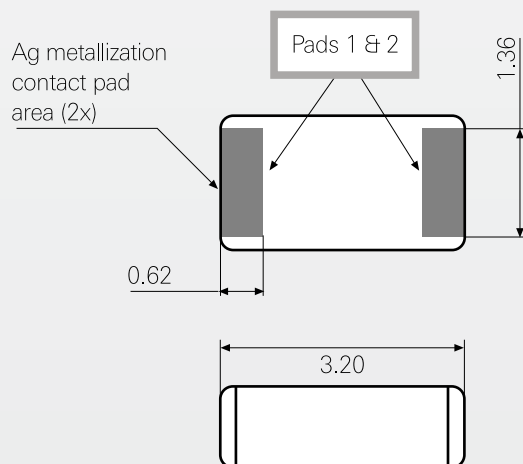
Ground cleared under antenna, clearance area **4.00 x 4.25 mm**. Pulse Part Number: W3011

Terminal Configuration

PWB Layout



Antenna



Antenna features

No.	Terminal name	Terminal Dimensions
1	Feed / GND	0.62 x 1.36 mm
2	Feed / GND	0.62 x 1.36 mm

Antenna is symmetrical.

Either of terminals 1 or 2 can be feed / GND

PWB features

No.	Terminal name	Terminal Dimensions
1	Feed	0.8 x 0.65 mm
2	GND	0.8 x 0.65 mm
3	GND	0.8 x 1.60 mm

Pulse Finland Oy

Takatie 6
90440 Kempele, Finland
Tel: +358 207 935 500
Fax: +358 207 935 501
www.pulseeng.com/antennas

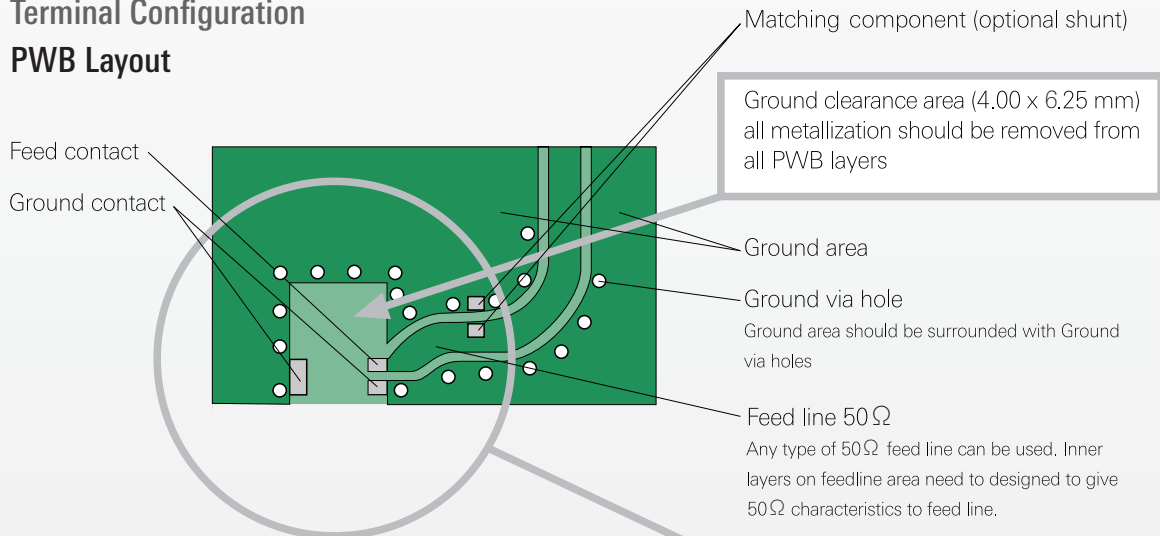


1.575 GHz GPS Ceramic Chip Antenna

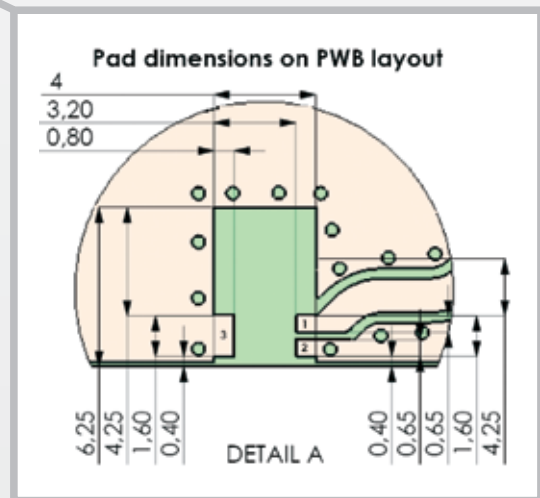
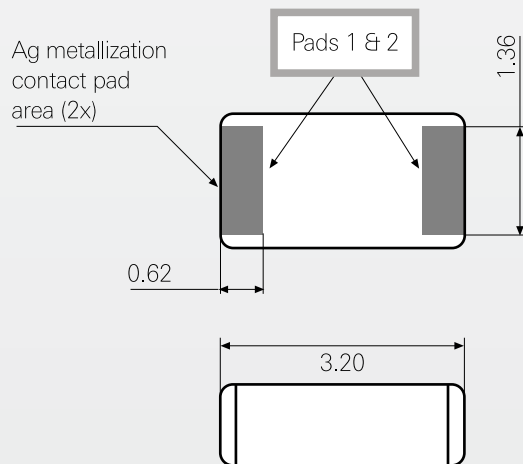
Ground cleared under antenna, clearance area **4.00 x 6.25 mm**. Pulse Part Number: W3011a

Terminal Configuration

PWB Layout



Antenna



Antenna features

No.	Terminal name	Terminal Dimensions
1	Feed / GND	0.62 x 1.36 mm
2	Feed / GND	0.62 x 1.36 mm

Antenna is symmetrical.

Either of terminals 1 or 2 can be feed / GND

PWB features

No.	Terminal name	Terminal Dimensions
1	Feed	0.8 x 0.65 mm
2	GND	0.8 x 0.65 mm
3	GND	0.8 x 1.60 mm

Pulse Finland Oy

Takatie 6
90440 Kempele, Finland
Tel: +358 207 935 500
Fax: +358 207 935 501
www.pulseeng.com/antennas



1.575 GHz GPS Ceramic Chip Antenna

Ground cleared under antenna, clearance area 4.00 x 4.25 mm / 6.25 mm. Pulse Part Number: W3011 / W3011A

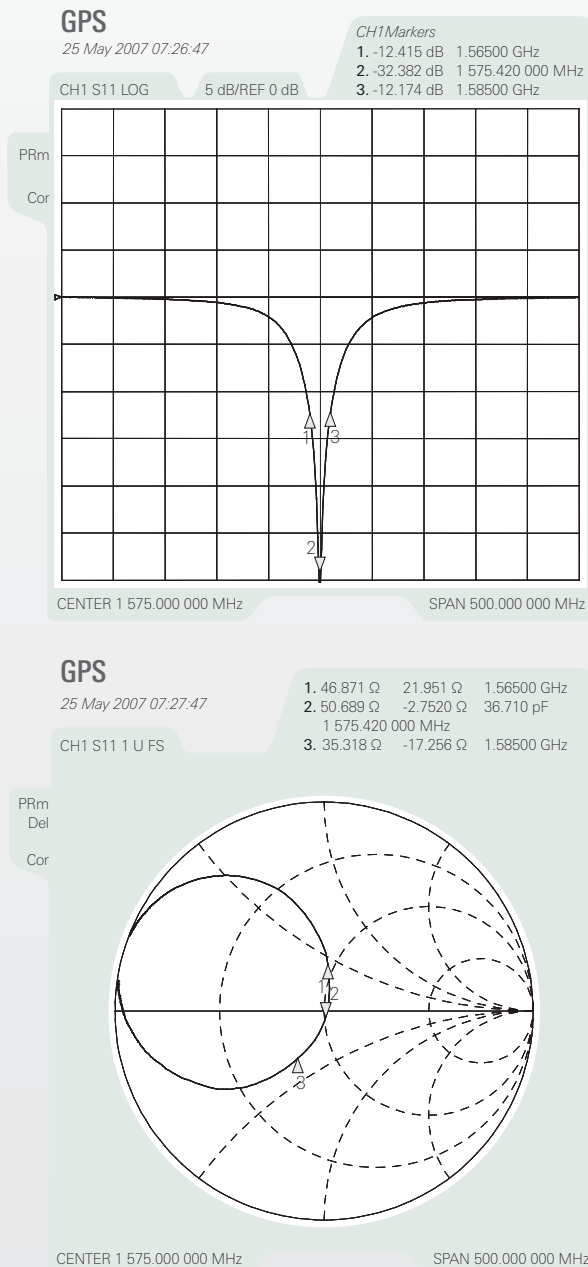
W3011 GPS Antenna Test Set Up and Measured Performance

Ground cleared under antenna, clearance area 4.00 x 4.25 mm.

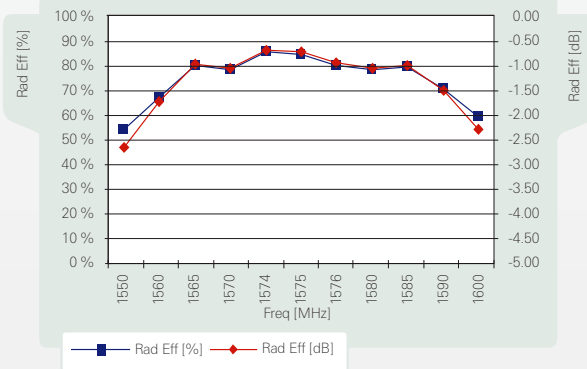
Typical Electrical Characteristics (T=25°C)

Measured on the 80 x 37mm test board without matching circuit and in antenna position 1 on PWB layout.

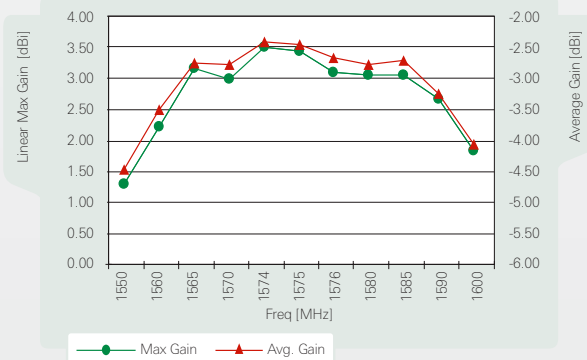
Typical Return Loss S11/ impedance, free space efficiency and gain.



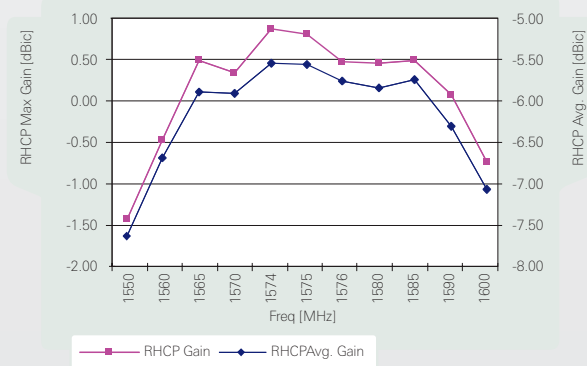
GPS mini 3.2 x 1.6 x 1.1 mm



GPS mini 3.2 x 1.6 x 1.1 mm



GPS mini 3.2 x 1.6 x 1.1 mm



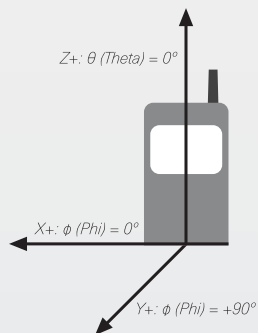
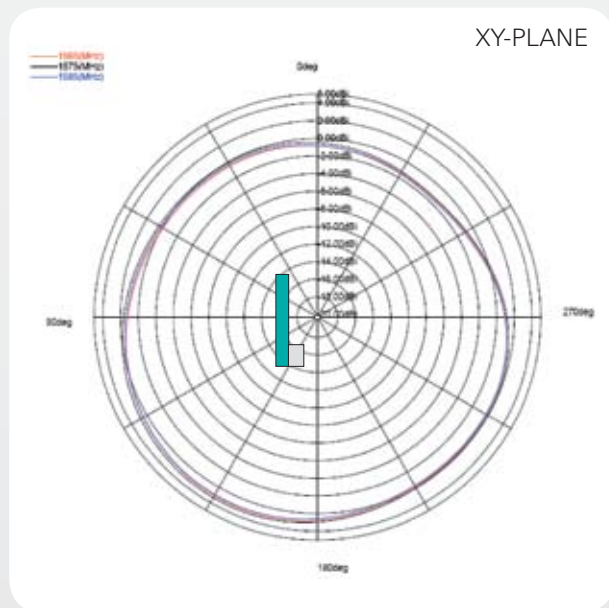
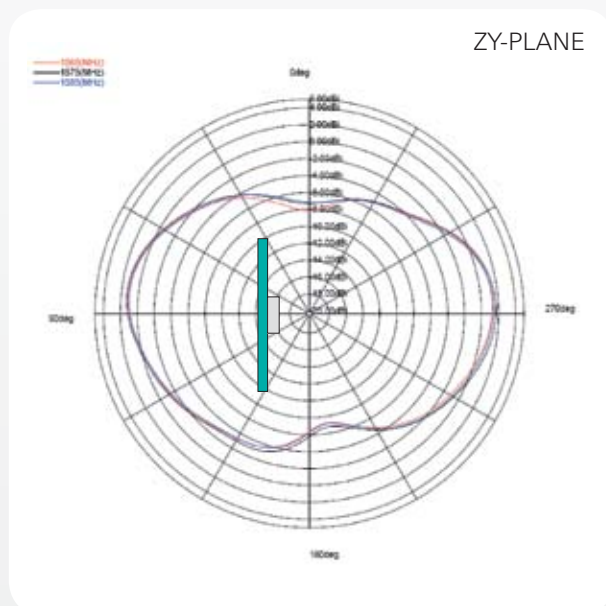
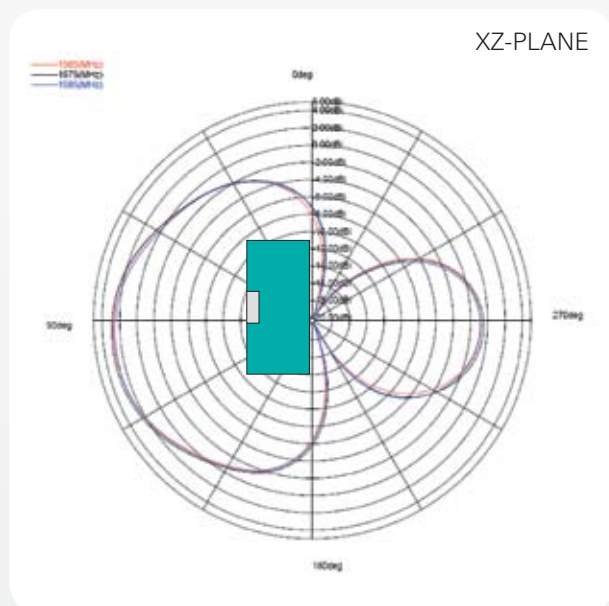
Pulse Finland Oy

Takatie 6
90440 Kempele, Finland
Tel: +358 207 935 500
Fax: +358 207 935 501
www.pulseeng.com/antennas

1.575 GHz GPS Ceramic Chip Antenna

Ground cleared under antenna, clearance area 4.00 x 4.25 mm / 6.25 mm. Pulse Part Number: W3011 / W3011A

1.575 GHz Typical Radiation Patterns



Pulse Finland Oy

Takatie 6
90440 Kempele, Finland
Tel: +358 207 935 500
Fax: +358 207 935 501

www.pulseeng.com/antennas

1.575 GHz GPS Ceramic Chip Antenna

Ground cleared under antenna, clearance area 4.00 x 4.25 mm / 6.25 mm. Pulse Part Number: W3011 / W3011A

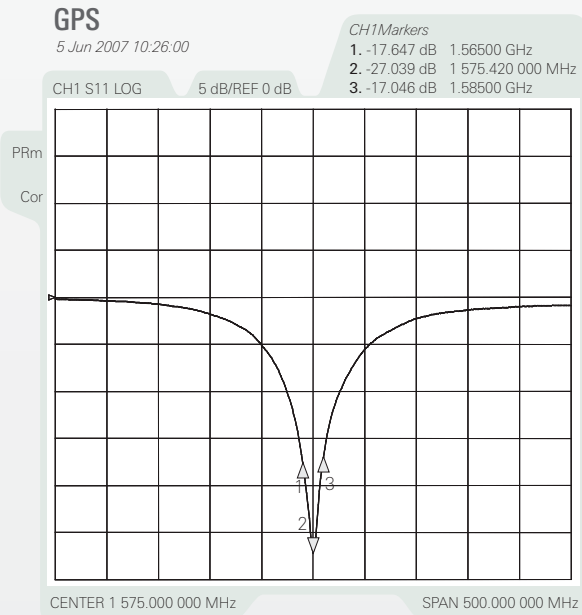
W3011a GPS 1.575GHz Test Set Up and Measured Performance

Ground cleared under antenna, clearance area 4.00 x 6.25 mm

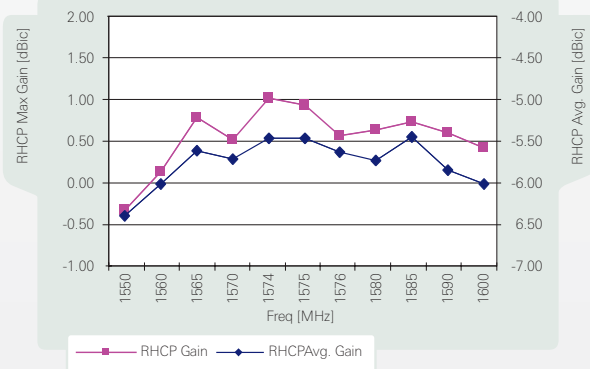
Typical Electrical Characteristics (T=25°C)

Measured on the 80 x 37mm test board with matching circuit (shunt 1.8 pF) and in antenna position 1 on PWB layout.

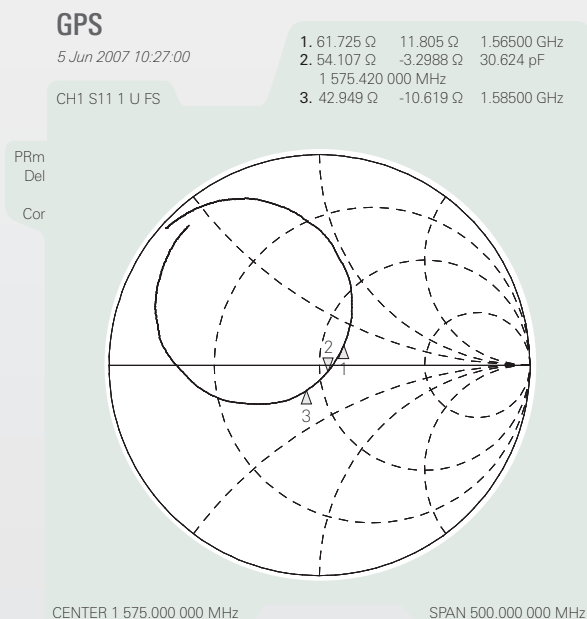
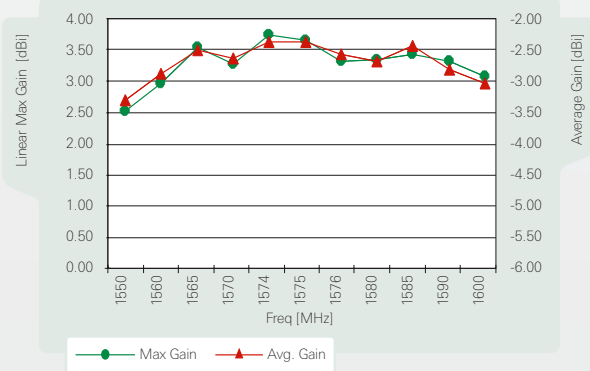
Typical Return Loss S11/ impedance, free space efficiency and gain



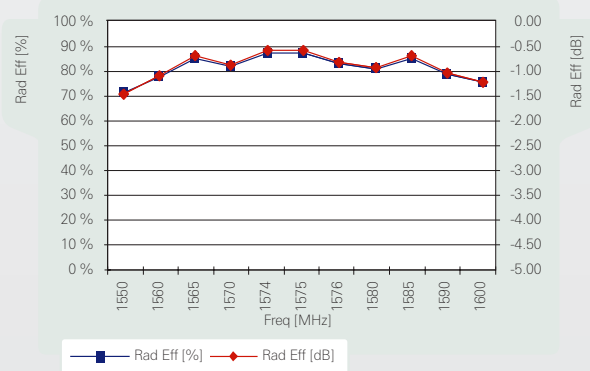
GPS mini 3.2 x 1.6 x 1.1 mm



GPS mini 3.2 x 1.6 x 1.1 mm



GPS mini 3.2 x 1.6 x 1.1 mm



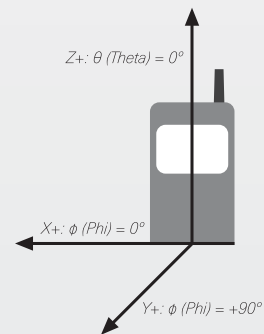
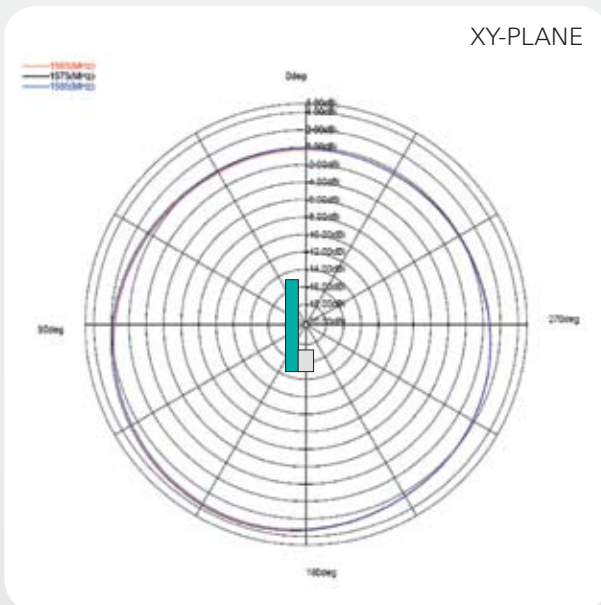
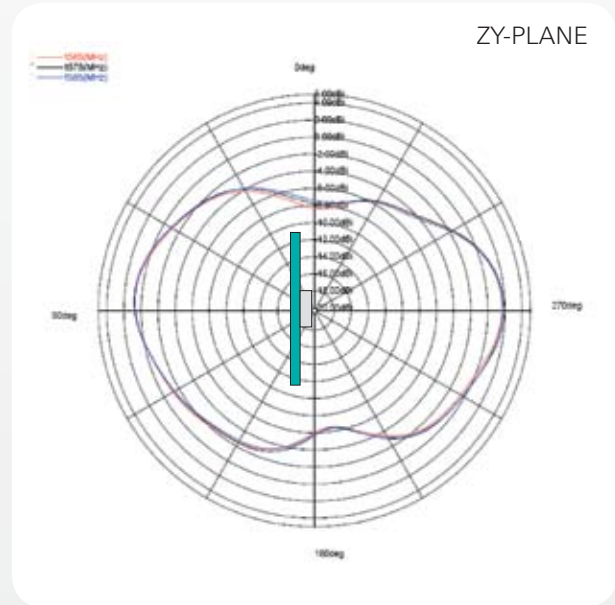
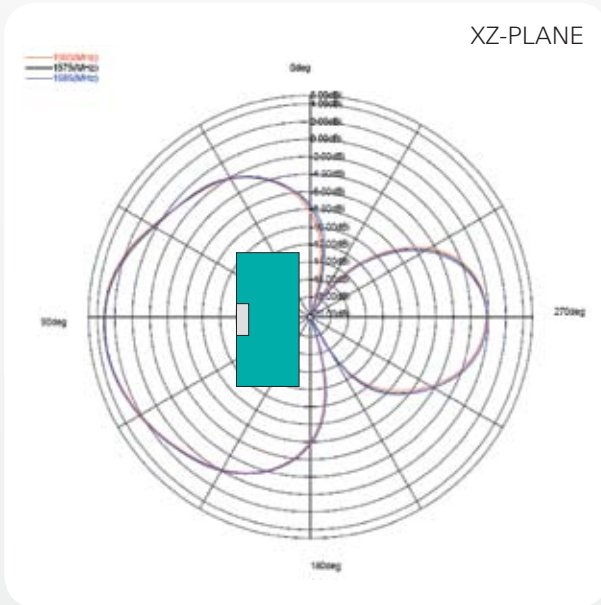
Pulse Finland Oy

Takatie 6
90440 Kempele, Finland
Tel: +358 207 935 500
Fax: +358 207 935 501
www.pulseeng.com/antennas

1.575 GHz GPS Ceramic Chip Antenna

Ground cleared under antenna, clearance area 4.00 x 4.25 mm / 6.25 mm. Pulse Part Number: W3011 / W3011A

1.575 GHz Typical Radiation Patterns



Pulse Finland Oy

Takatie 6
90440 Kempele, Finland

Tel: +358 207 935 500

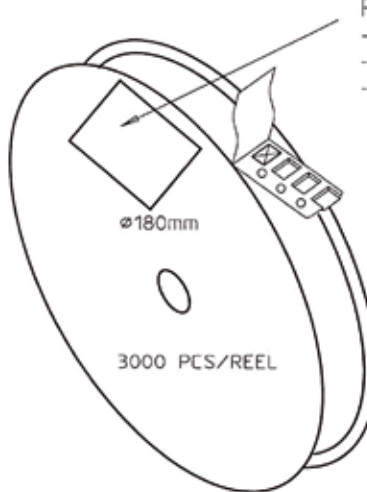
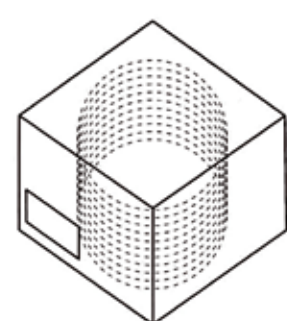
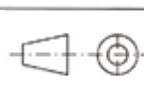
Fax: +358 207 935 501

www.pulseeng.com/antennas

1.575 GHz GPS Ceramic Chip Antenna

Ground cleared under antenna, clearance area 4.00 x 4.25 mm / 6.25 mm. Pulse Part Number: W3011 / W3011A

Packing Form

		REEL LABEL INFORMATION: - TRACEABILITY - QUANTITY - PRODUCT CODE	
		CARRIER TAPE H85-00125 width=8,00 depth=1,22 COVER TAPE H85-00126 width=5,60	
		LENGTH OF TAPE: - Leader section: 50 empty cavities before component section - Trailer section: 25 empty cavities after component section. Empty part cavities at leader and trailer section of the tape must be sealed with top cover tape.	
		BOX H85-00128 1 pcs (182x182x132) - LABEL 1 pcs/BOX	
		REEL H85-00127 10 pcs (D180,W12) - REEL LABEL 1 pcs/REEL	
MATERIAL			
HANDLINGS			
		RATIO	
PRODUCT H90-OY116-F01P01		DRWN	010305 PeHa H
		DGNER	G
		CHKD	F
		APPRD	E
		APPRD BY	D
DENOMINATION PACKING FORM			C
			B
			A
		VERSION	MOD/DATE/NAME

Pulse Finland Oy

Takatie 6
 90440 Kempele, Finland
 Tel: +358 207 935 500
 Fax: +358 207 935 501

www.pulseeng.com/antennas



© 2008. All Rights Reserved.