

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

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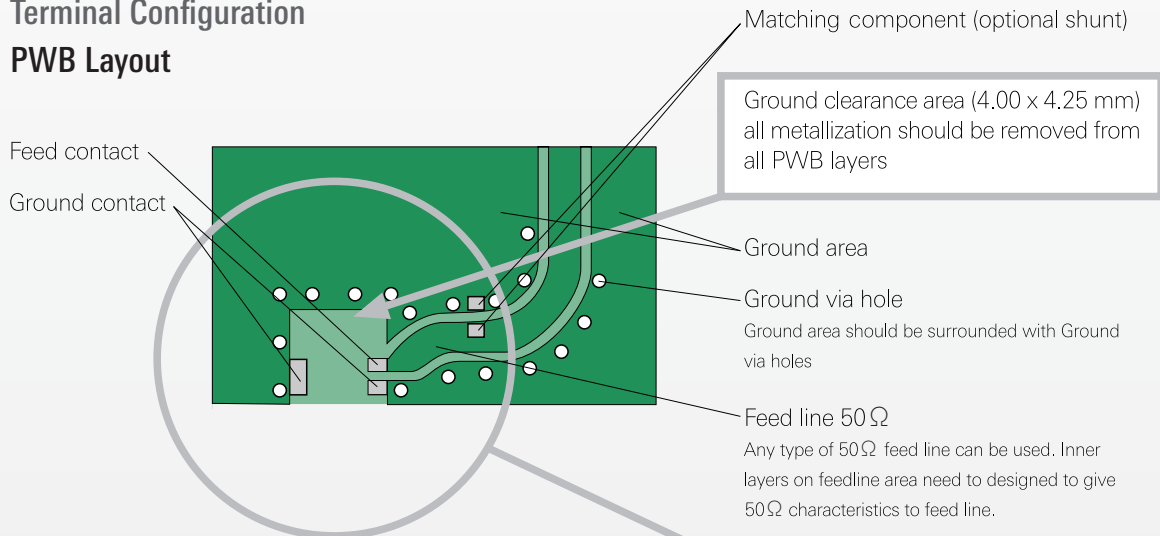


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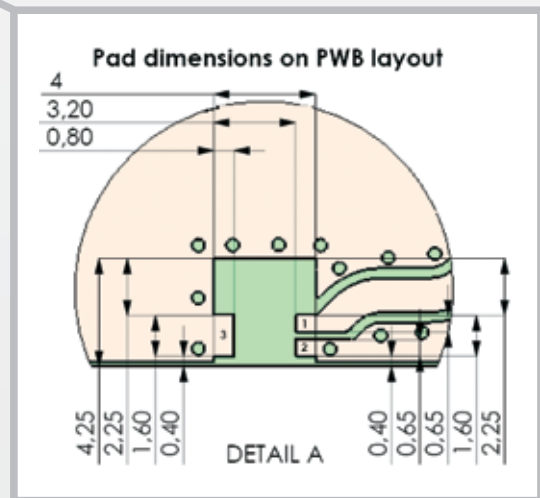
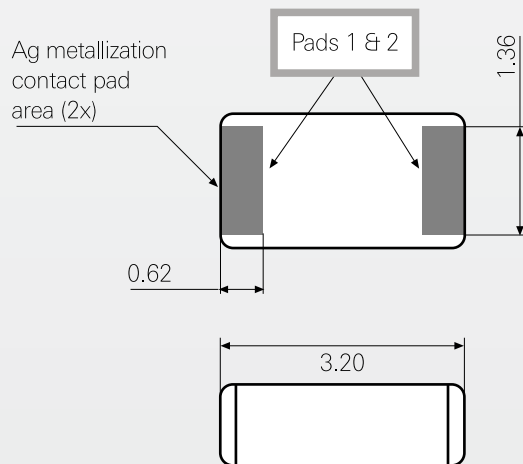
Ground cleared under antenna, clearance area **4.00 x 4.25 mm**. Pulse Part Number: W3011

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

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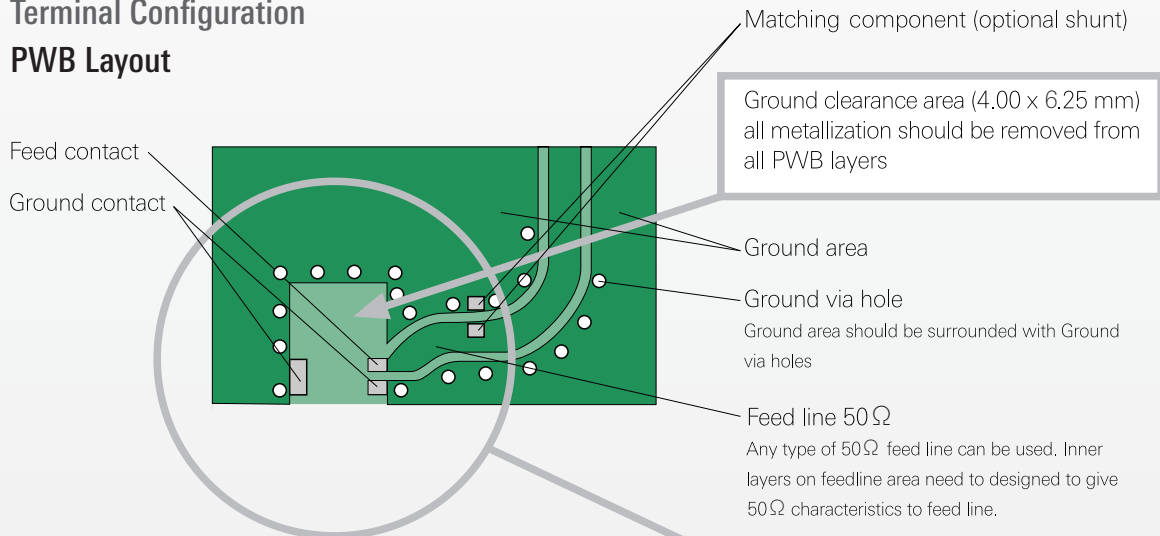
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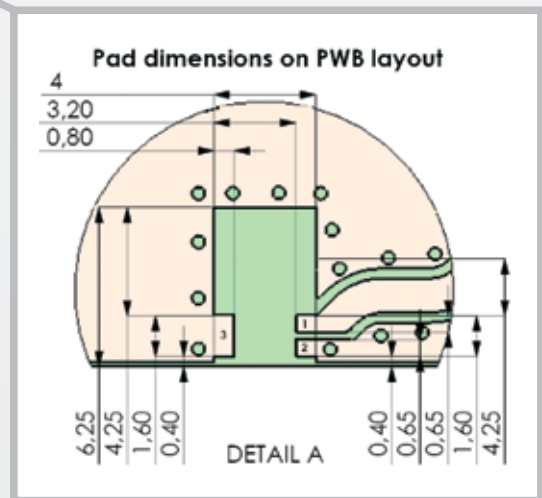
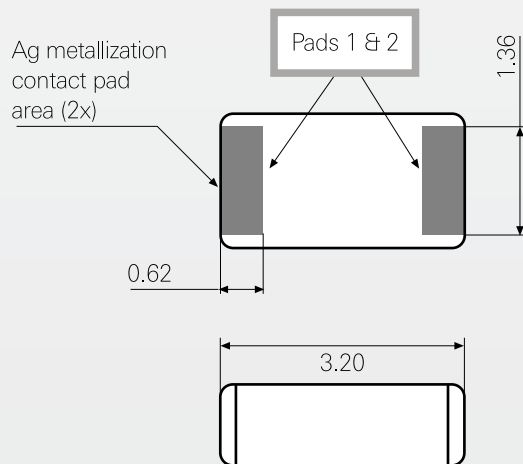
Ground cleared under antenna, clearance area **4.00 x 6.25 mm**. Pulse Part Number: W3011a

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.

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PWB features

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1	Feed	0.8 x 0.65 mm
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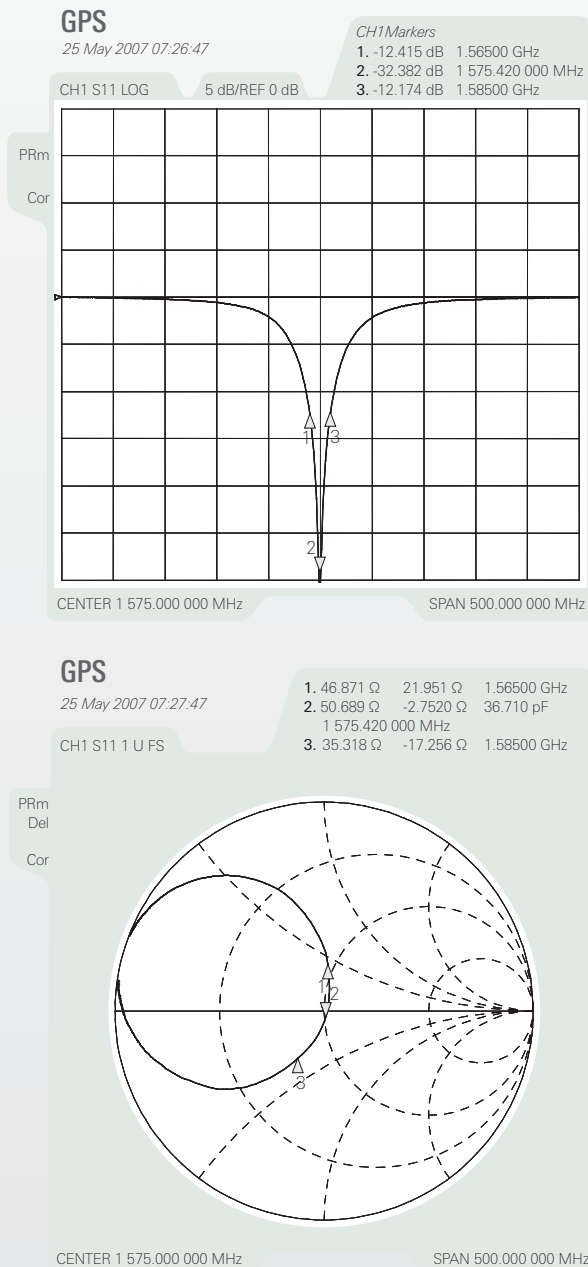
W3011 GPS Antenna Test Set Up and Measured Performance

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

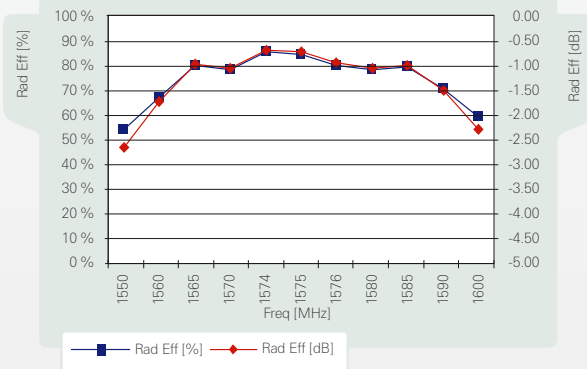
Typical Electrical Characteristics (T=25°C)

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

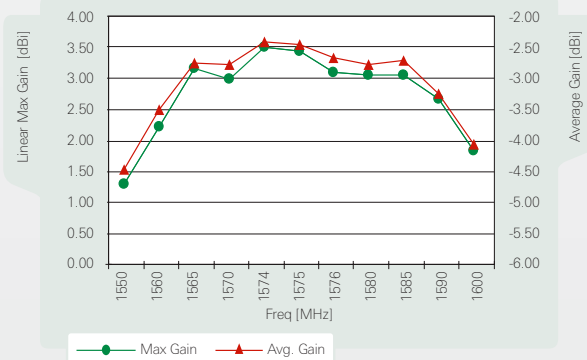
Typical Return Loss S11/ impedance, free space efficiency and gain.



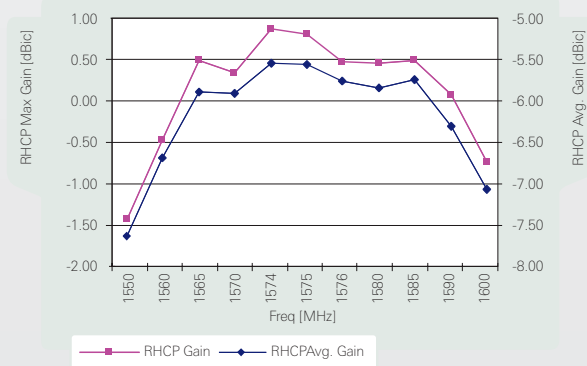
GPS mini 3.2 x 1.6 x 1.1 mm



GPS mini 3.2 x 1.6 x 1.1 mm



GPS mini 3.2 x 1.6 x 1.1 mm



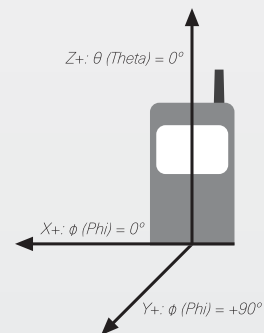
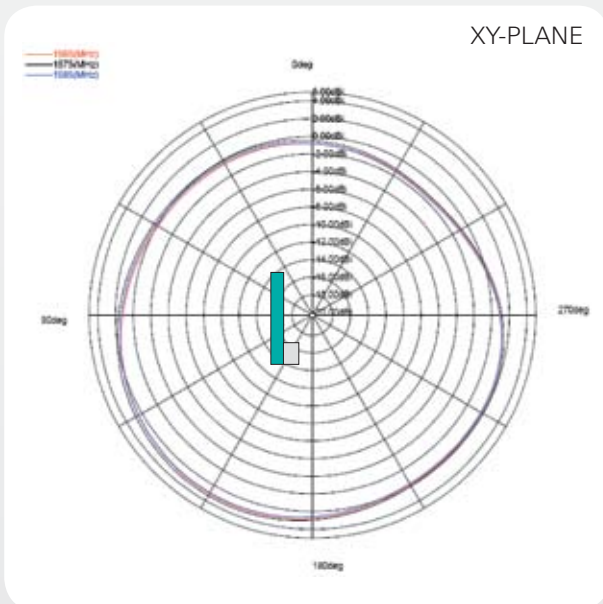
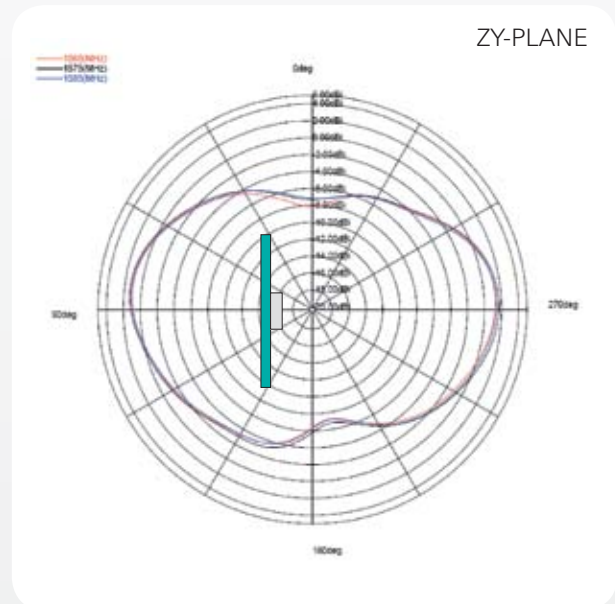
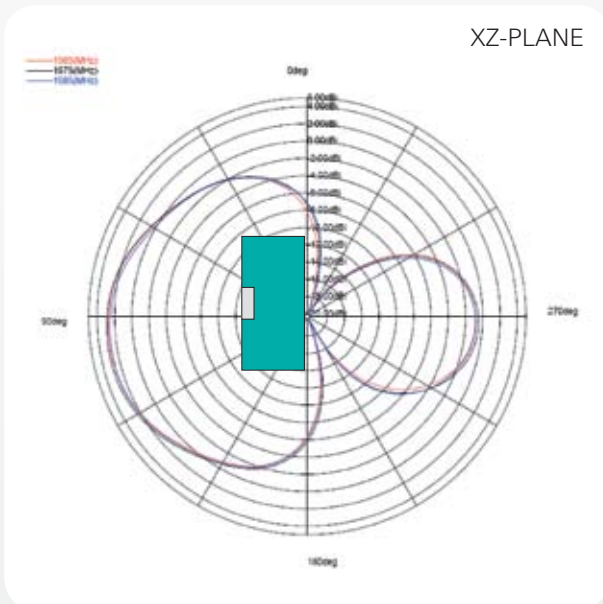
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1.575 GHz Typical Radiation Patterns



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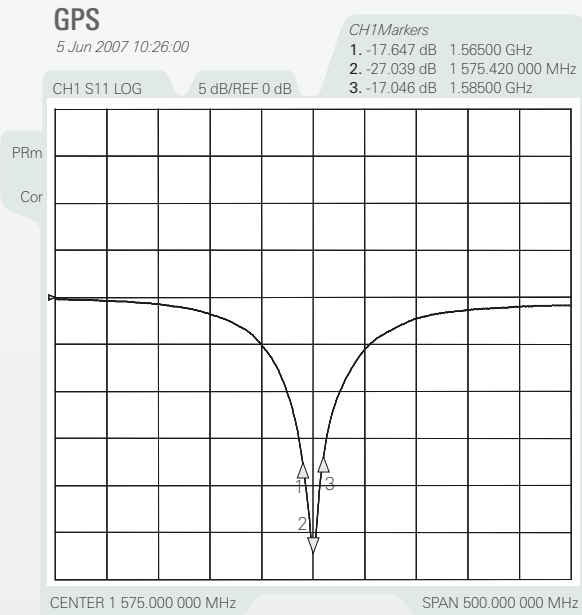
W3011a GPS 1.575GHz Test Set Up and Measured Performance

Ground cleared under antenna, clearance area 4.00 x 6.25 mm

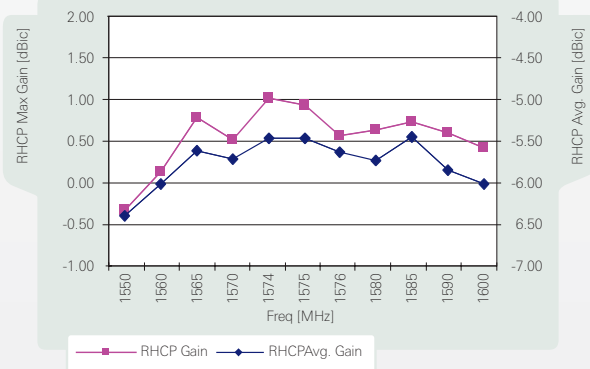
Typical Electrical Characteristics (T=25°C)

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

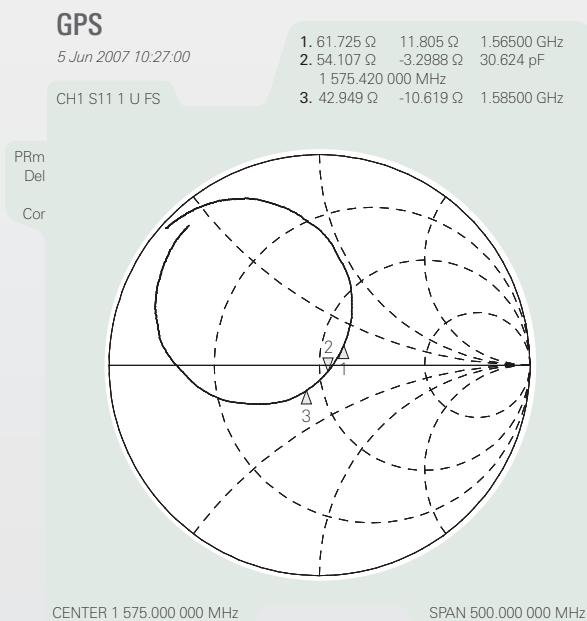
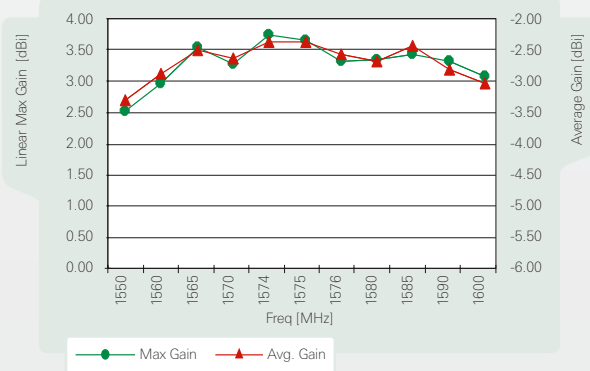
Typical Return Loss S11/ impedance, free space efficiency and gain



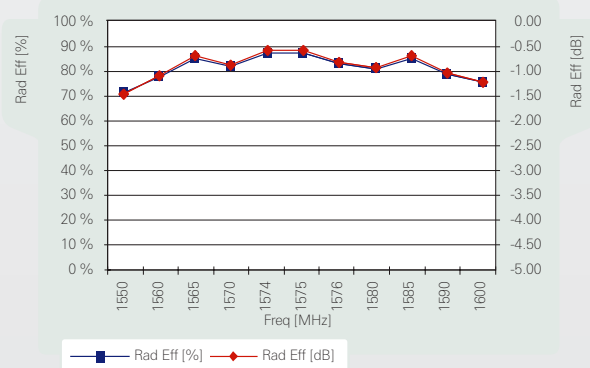
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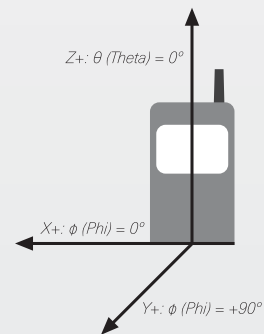
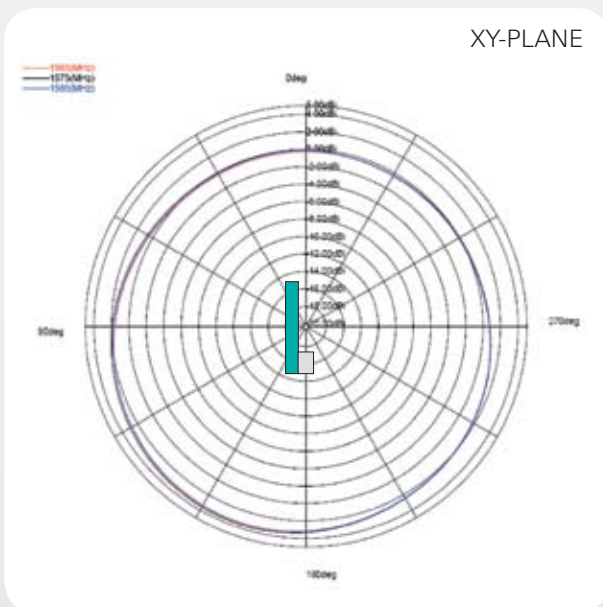
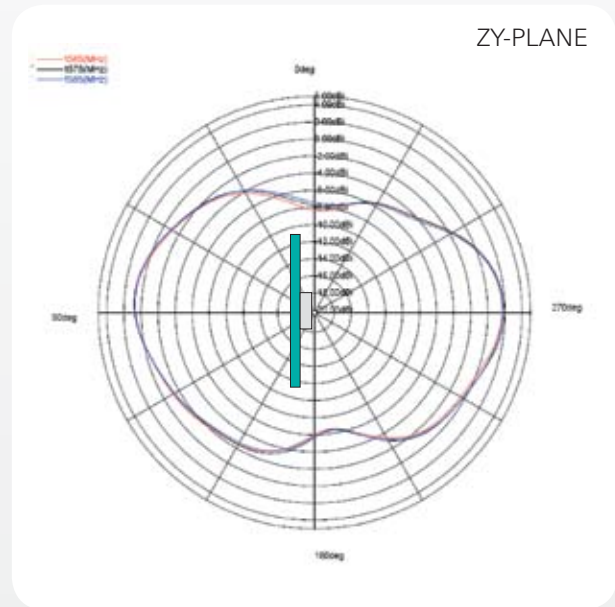
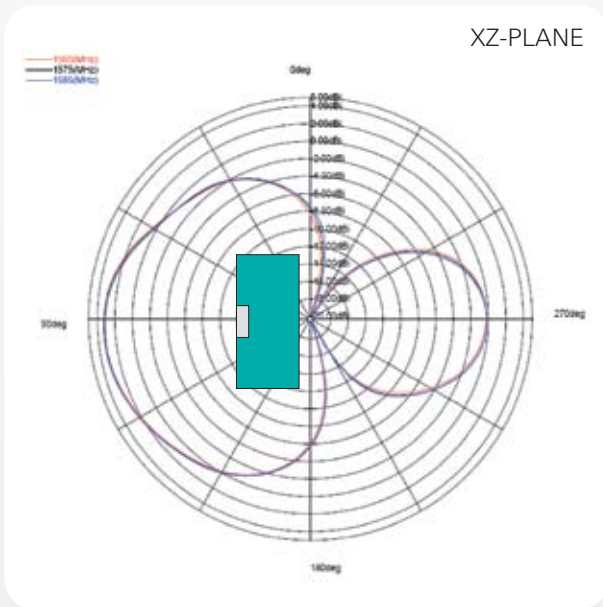
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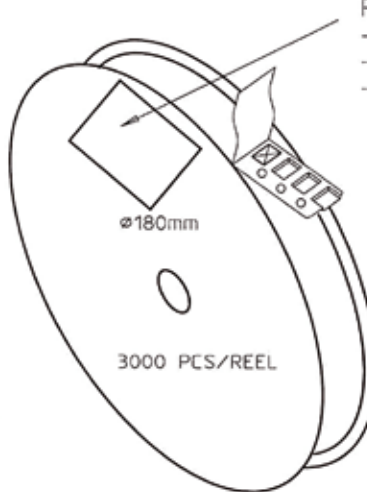
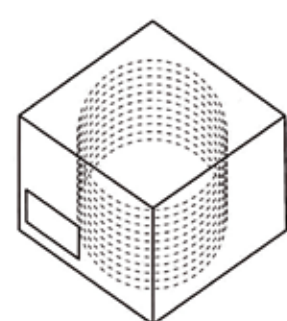


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Packing Form

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 (182x182x132)	1 pcs
- LABEL	1 pcs/BOX
REEL H85-00127 (D180,W12)	10 pcs
- REEL LABEL	1 pcs/REEL

MATERIAL			
HANDLINGS			
	RATIO	DRWN	010305 PeHa H
		DGNER	G
		CHKD	F
		APPRD	E
		APPRD BY	D
PRODUCT H90-OY116-F01P01			C
			B
			A
		DENOMINATION PACKING FORM	
		VERSION	MOD/DATE/NAME

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