

ISM 433MHz Helical Antenna

Ground cleared under antenna, clearance area 8.50x40.00 mm. Pulse Part Number: W3127



Features

- Plastic supported helical antenna
- Size (helix): Length 35.35mm, \varnothing 7mm
- Low weight (1.8g)
- Mounting on top of the PWB
- Through hole mechanical support pegs
- Feed contact by soldering via PWB hole
- Tray packing
- RoHS Compliant Product

Applications

- Remote controls, toys etc.
- 433MHz ISM Band Systems

Electrical specifications @ +25 °C

Note: Electrical characteristics depend on test board (GP) size and antenna positioning on GP and Ground Clearance area size.

ISM 433MHz

Typical performance (test board size 100x40 mm, PWB ground clearance area 8.50 x40.00 mm), tuning and matching circuit: tuning 12nH series, matching 6.8nH shunt for Pulse standard evaluation board.

| Frequency Range [MHz] | Max Gain [dBi] | Return loss min. [dB] | Impedance [Ω] | Operating Temperature [°C] |
|-----------------------|----------------|-----------------------|------------------------|----------------------------|
| 433 – 435 | -2.9 | -15 | 50 | -40 to +85 |

Pulse Finland Oy

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www.pulseeng.com/antennas

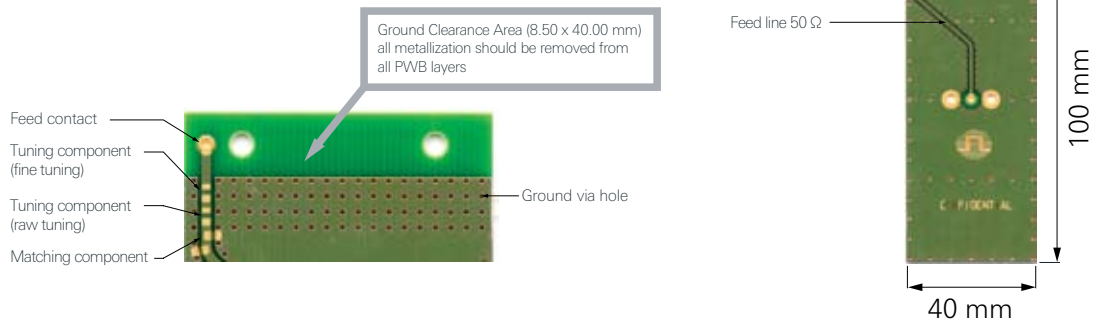


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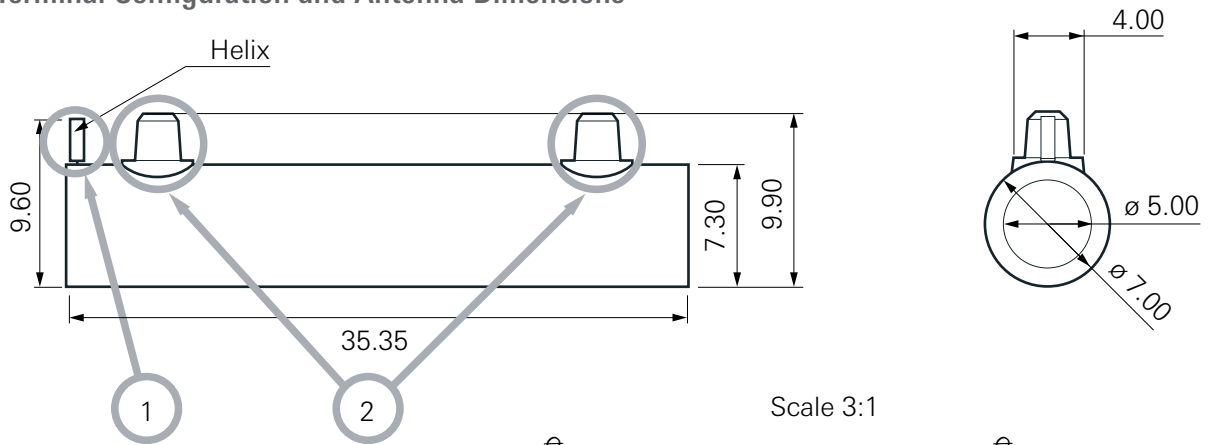
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Terminal Configuration

PWB Layout

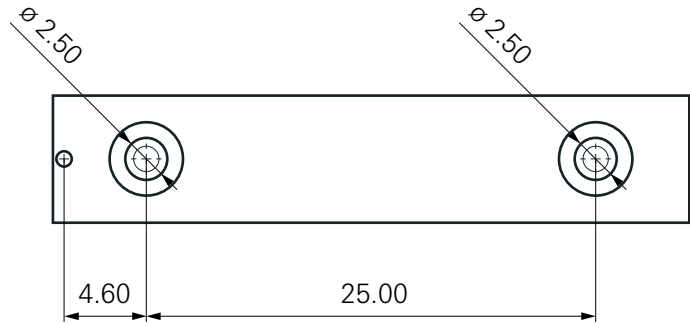


Terminal Configuration and Antenna Dimensions



Antenna Features

| No. | Terminal Name | Terminal Dimensions |
|-----|---------------|------------------------------|
| 1 | Feed terminal | Wire diameter 0.8mm |
| 2 | Support | Diameter 2.5mm, length 2.6mm |



Matching circuit needs to be placed on PCB close to antenna feed terminal.

Matching component values depend on device construction; size, surrounding mechanics, materials etc..

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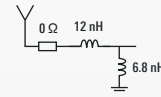
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Typical Electrical Characteristics (T=25 °C)

Typical Return Loss S11/ impedance,

Measured on the 100x40mm test board with tuning and matching circuit



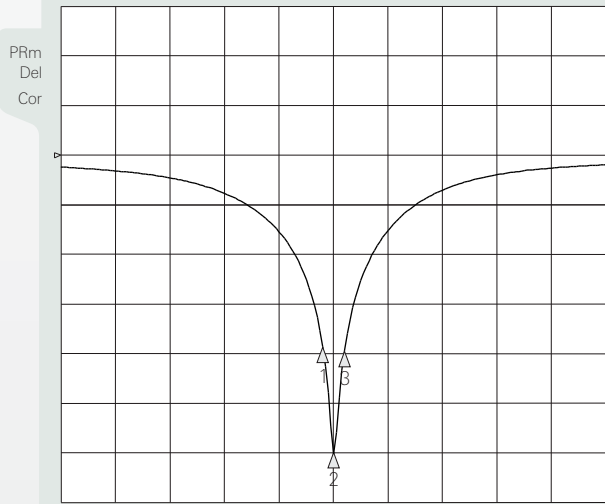
ISM 433MHz

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CH1 S11 log MAG 5 dB/REF 0 dB

CH1Markers

- 1. -21.132 dB 433 MHz
- 2. -32.939 dB 434 MHz
- 3. -21.458 dB 435 MHz



CENTER 434.000 000 MHz

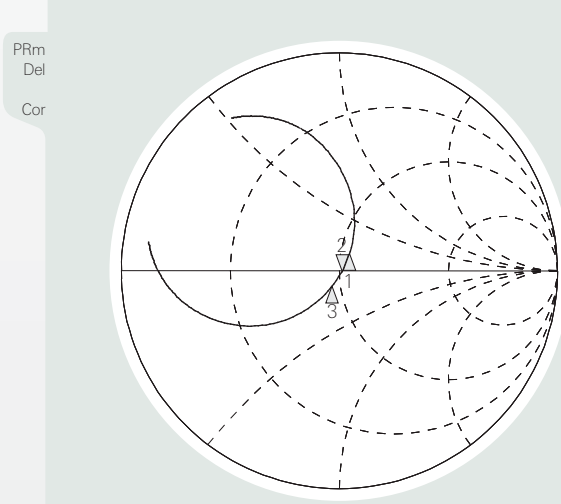
SPAN 50.000 000 MHz

ISM 433MHz

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CH1 S11 1 U FS

- | | | |
|-----------------|------------|-----------|
| 1. 54.908 Ω | 7.666 Ω | 433 MHz |
| 2. 51.811 Ω | -777.34 mΩ | 471.76 pF |
| 434.000 000 MHz | | |
| 3. 46.588 Ω | -7.293 Ω | 435 MHz |

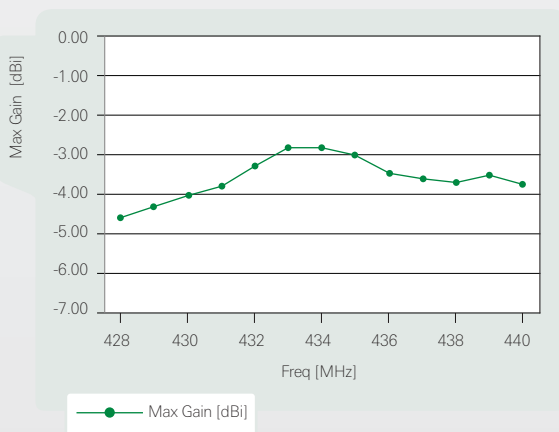


CENTER 434.000 000 MHz

SPAN 50.000 000 MHz

Free space maximum gain, PWB ground clearance area 8.50 x 40.00 mm

W3127 Max Gain



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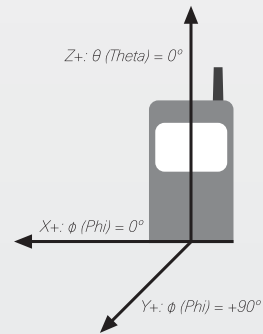
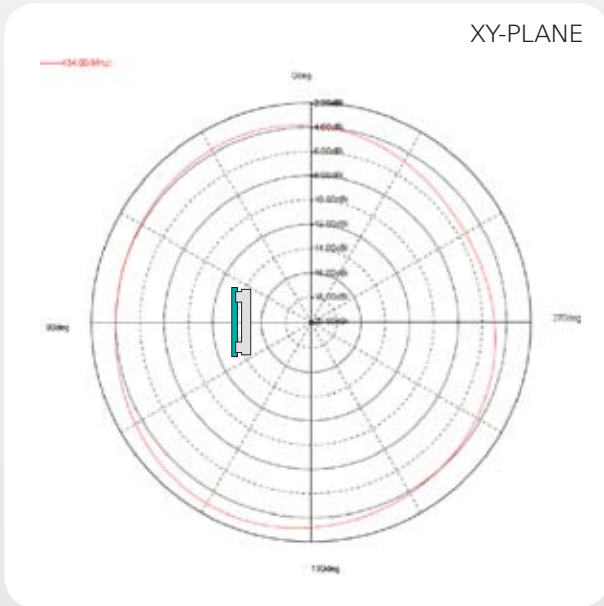
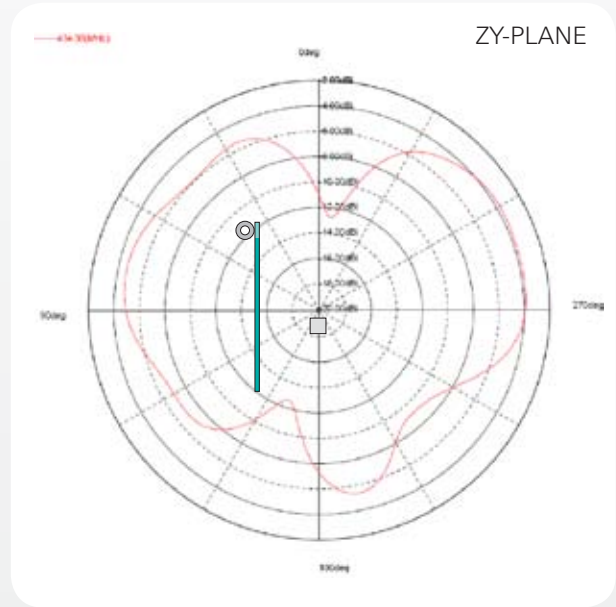
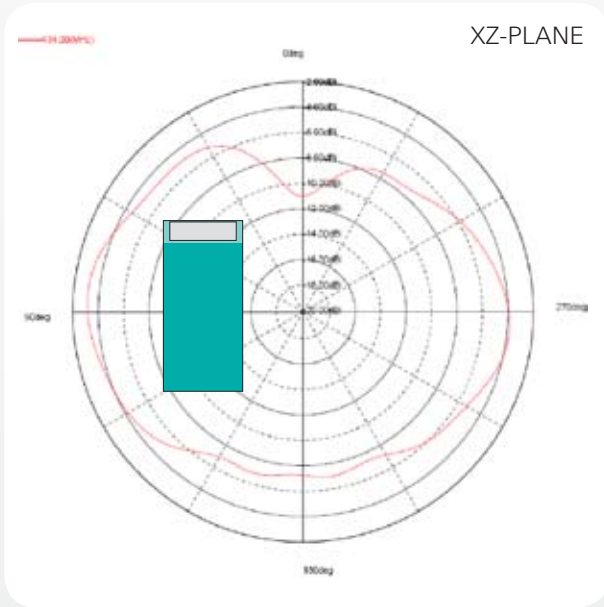
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Typical Free space Radiation Patterns



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