

ISM 315MHz Helical Antenna

Ground cleared under antenna, clearance area 8.50 x 40.00 mm. Pulse Part Number: W3126



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.
- 315MHz 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 315MHz

Typical performance (test board size 100x40 mm, PWB ground clearance area 8.50 x40.00 mm), tuning and matching circuit: tuning 33nH series, matching 10nH shunt for Pulse standard evaluation board.

Frequency Range [MHz]	Max Gain [dBi]	Return loss min. [dB]	Impedance [Ω]	Operating Temperature [°C]
315	-5	-10	50	-40 to +85

Pulse Finland Oy

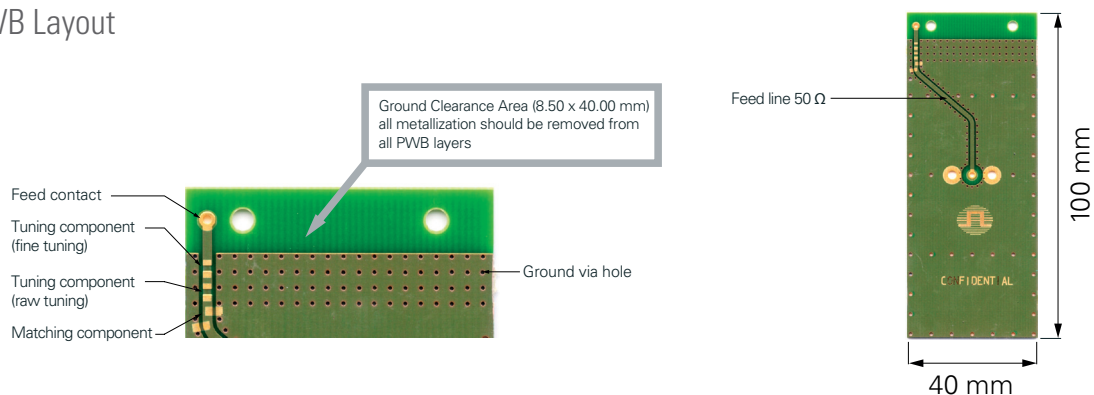
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ISM 315MHz Helical Antenna

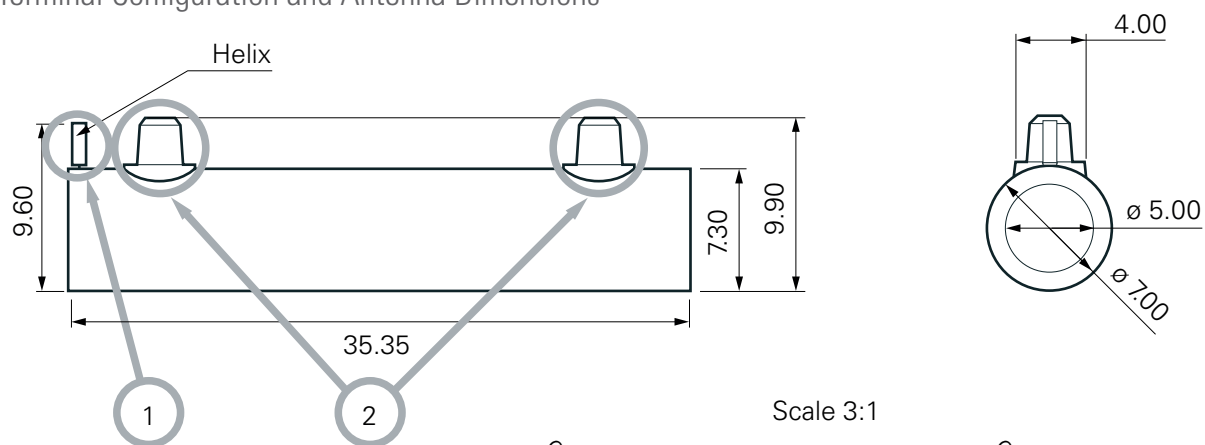
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Terminal Configuration

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..

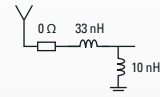
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Typical Electrical Characteristics (T=25 °C)

Typical Return Loss S11/ impedance,

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



ISM 315MHz

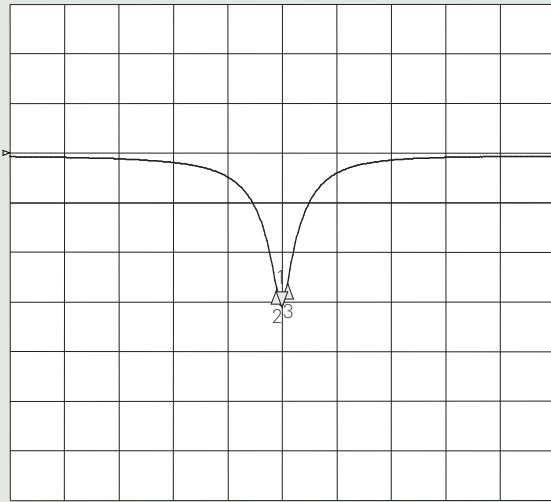
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CH1 S11 log MAG 5 dB/REF 0 dB

CH1Markers

- | | |
|---------------|---------|
| 1. -16.902 dB | 315 MHz |
| 2. -14.812 dB | 314 MHz |
| 3. -14.642 dB | 316 MHz |

PRm
Del
Cor



CENTER 315.000 000 MHz

SPAN 100.000 000 MHz

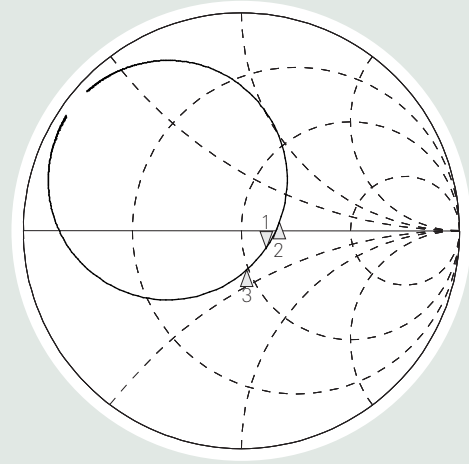
ISM 315MHz

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CH1 S11 1 U FS

- | | | |
|--------------------|------------------|-----------|
| 1. 61.861 Ω | -10.211 Ω | 471.76 pF |
| 315 MHz | | |
| 2. 70.941 Ω | 5.3633 Ω | 314 MHz |
| 3. 49.076 Ω | -18.451 Ω | 316 MHz |

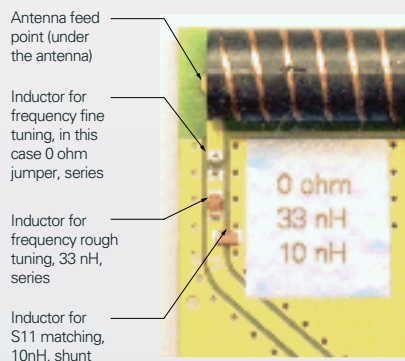
PRm
Del
Cor



CENTER 315.000 000 MHz

SPAN 100.000 000 MHz

Matching Circuit Details



Note: Exact matching and tuning components value depend on application, board size, cover etc.

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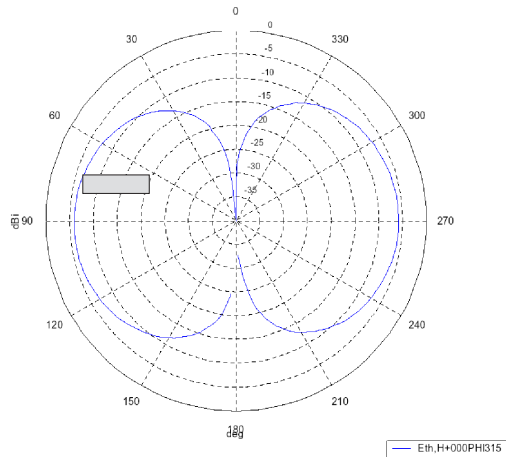
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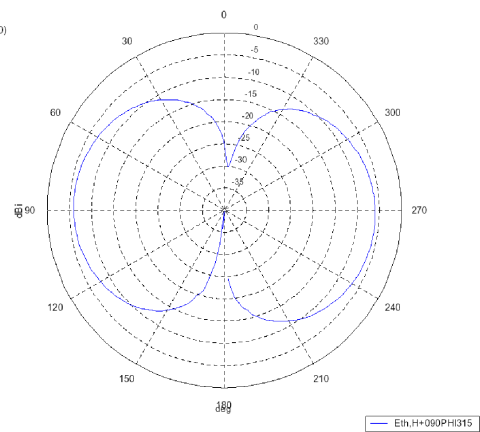
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Typical Free space Radiation Patterns

HELIX
ZX (phi 0)
Eth
315MHz



HELIX
ZY (phi 90)
Eth
315MHz



HELIX
XY (the 90)
Eth
315MHz

