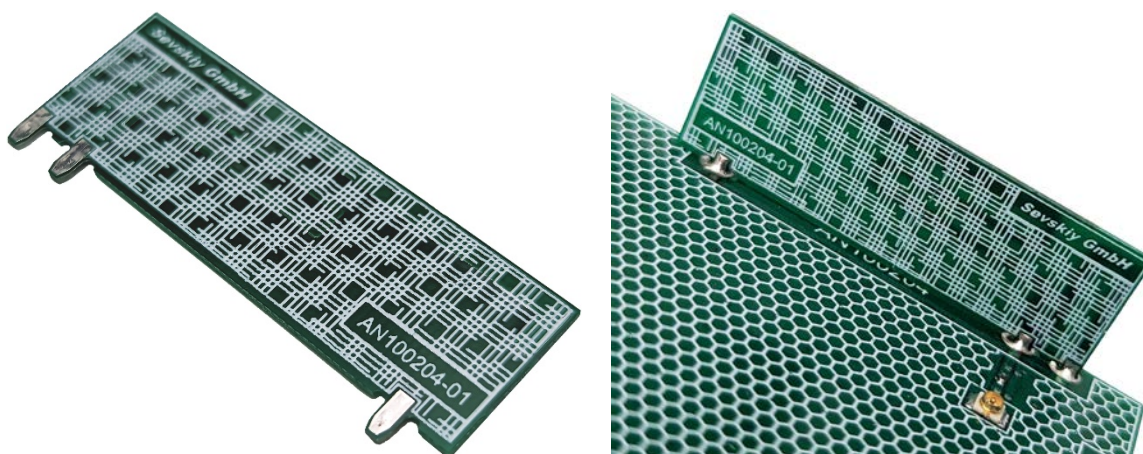


863...960 MHz / 2450 MHz PCB Antenna (ISM, RFID, IoT, LP-WAN, Smart meters, Wi-Fi 2.4 GHz)



### General information

This compact PCB antenna is designed for dual-band wireless systems, operating in both the 863...960 MHz and 2400...2500 MHz ranges. It supports SRD860, ISM915, and ISM2400 bands and is suitable for a wide range of wireless technologies, including LoRa, Bluetooth, Wi-Fi, Zigbee, and other sub-GHz and 2.4 GHz IoT communication protocols. The antenna's broad compatibility makes it well suited for applications such as IoT sensors, smart-metering devices, home-automation systems, and industrial monitoring, as well as various embedded devices requiring reliable multi-band connectivity.

The antenna is manufactured on a PCB and equipped with three contacts for vertical solder mounting along the edge of the device's primary circuit board. A corresponding footprint must be included to provide both mechanical stability and proper electrical connection. Once installed, the antenna stands perpendicular to the main board, ensuring reliable performance even in compact enclosures.

### Electrical data

|                                |                                                      |             |
|--------------------------------|------------------------------------------------------|-------------|
| Antenna type                   | Embedded / internal antenna soldered on the main PCB |             |
| Frequency band                 | SRD860, ISM915, ISM2400                              |             |
| Frequency range [MHz]          | 863...960                                            | 2400...2500 |
| Return loss [dB] <sup>1)</sup> | -8                                                   | -10         |
| Peak gain [dBi]                | 2.2                                                  | 3.5         |
| Radiation efficiency [%]       | 85                                                   | 75          |
| Nominal input impedance [Ohm]  | 50                                                   |             |
| Polarization                   | linear                                               |             |
| Radiation pattern              | omnidirectional                                      |             |
| Maximum input power [W]        | 5                                                    |             |

### Mechanical data

|                             |                 |
|-----------------------------|-----------------|
| Antenna PCB dimensions [mm] | 45 x 17.5 x 0.8 |
| PCB material                | FR4             |
| Weight [g]                  | 1.1             |

### Additional information

All electrical data have been obtained in free space on the reference board (not included) with the following dimensions: 120mm x 60mm x 0.8mm. Please note that the performance in the lower frequency bands is dependent on the ground plane length and may degrade in case of reducing the board size.

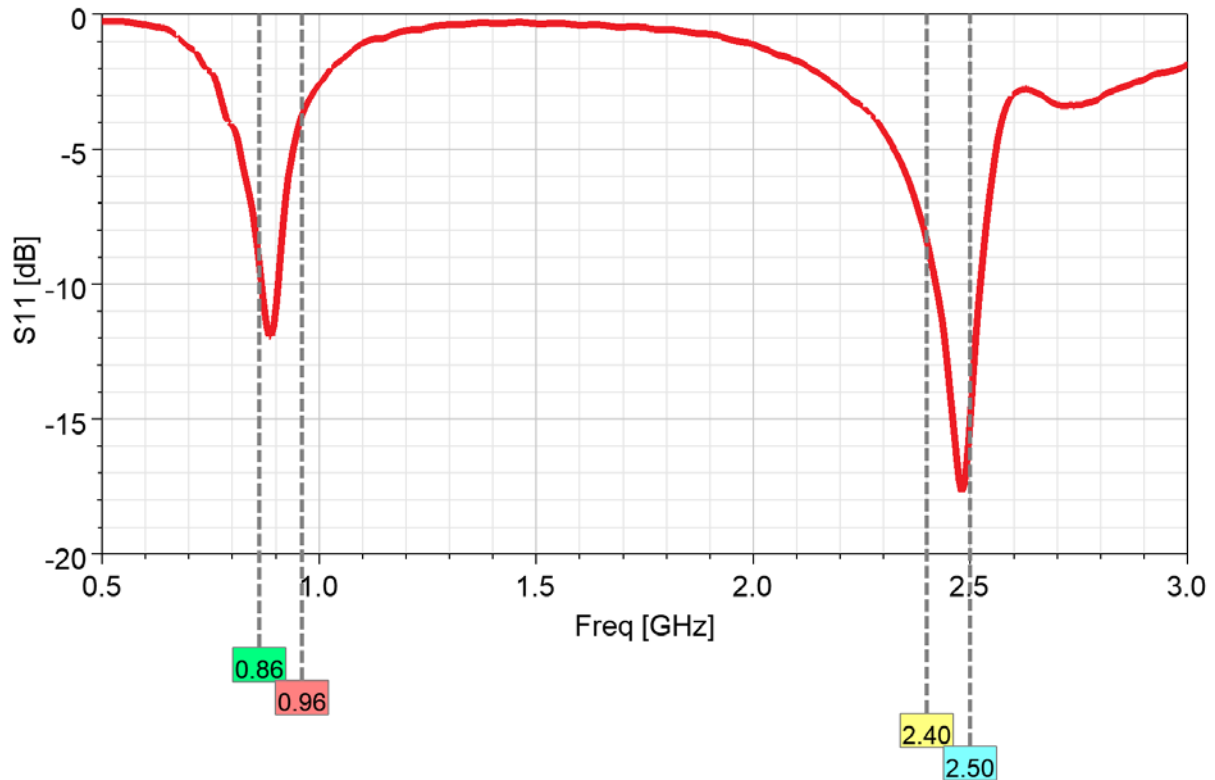
Other mechanical designs, materials or frequency bands are possible on request.

Further customization, electromagnetic simulations and measurements can be offered on request.

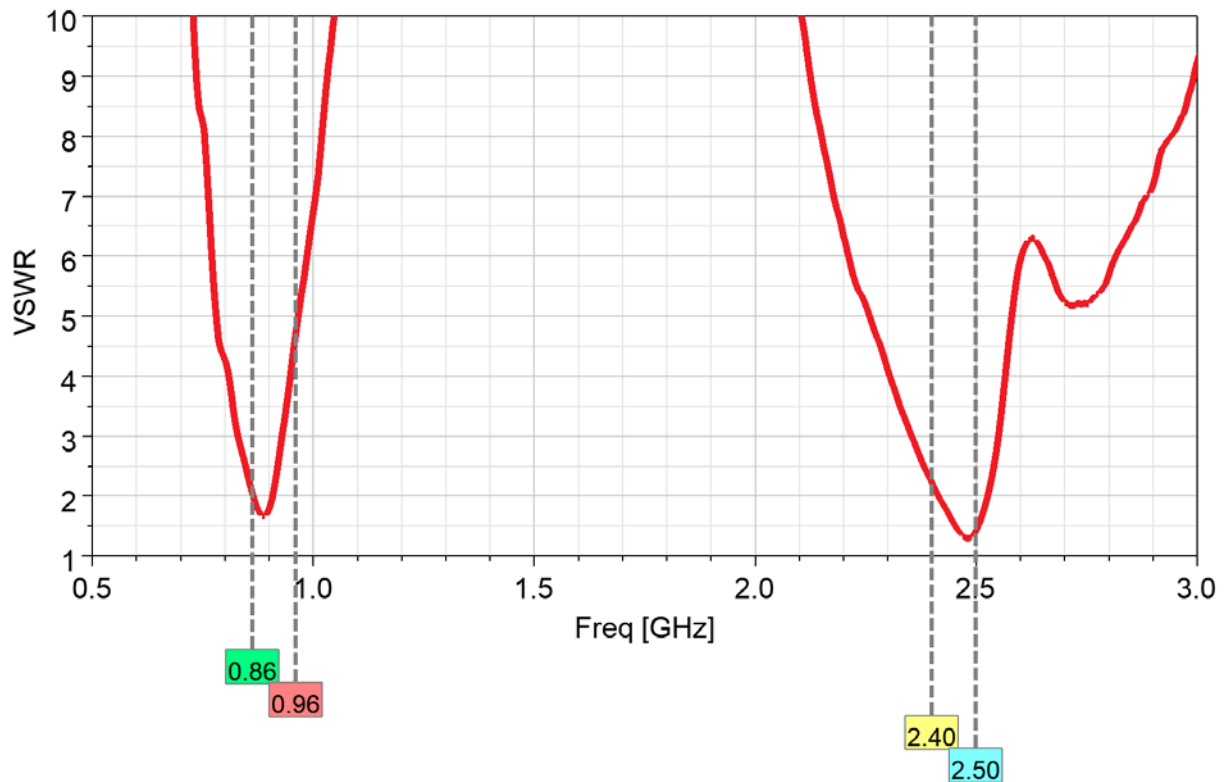
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Measured input impedance matching



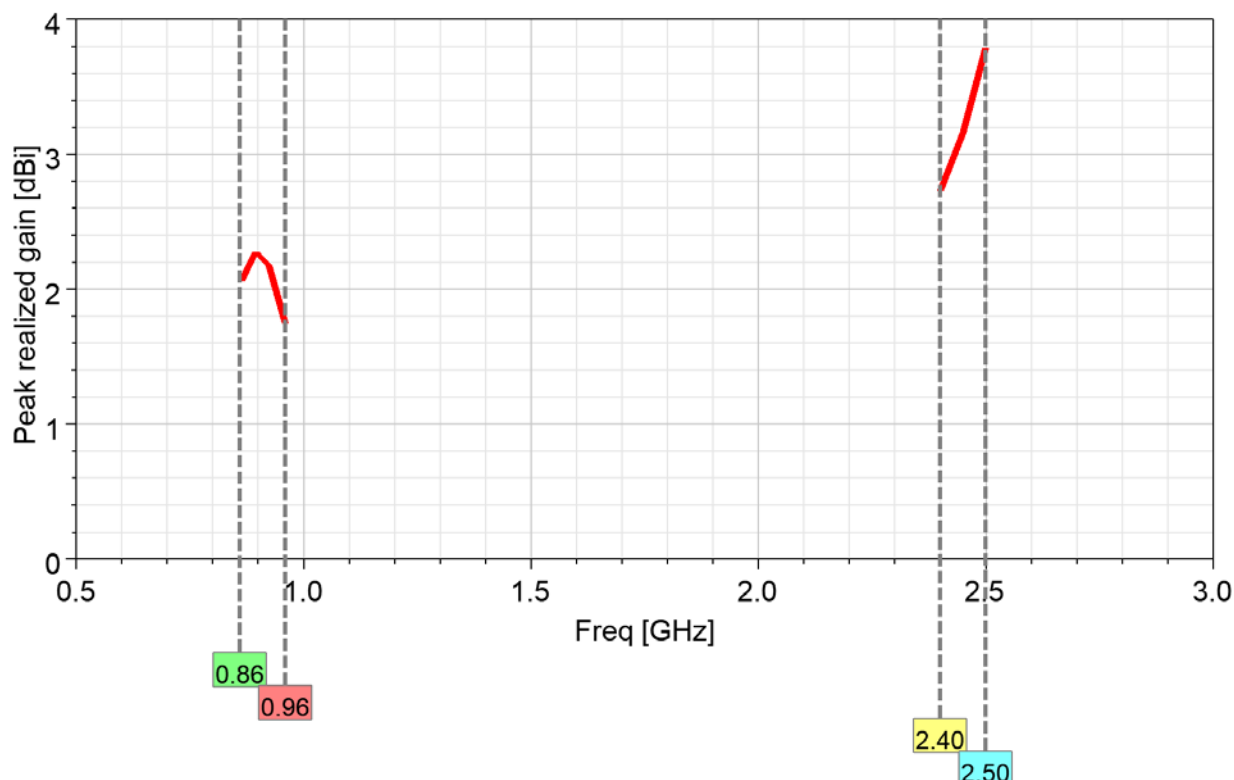
VSWR



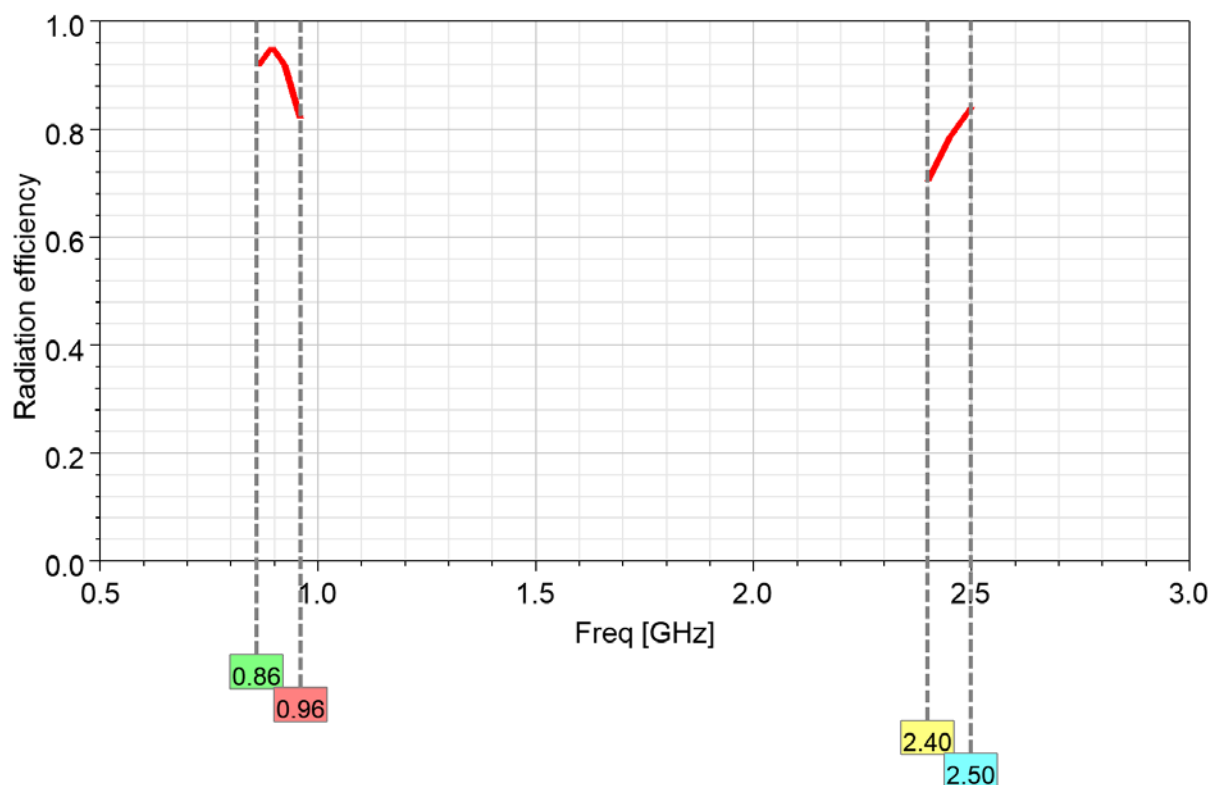
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Peak realized gain



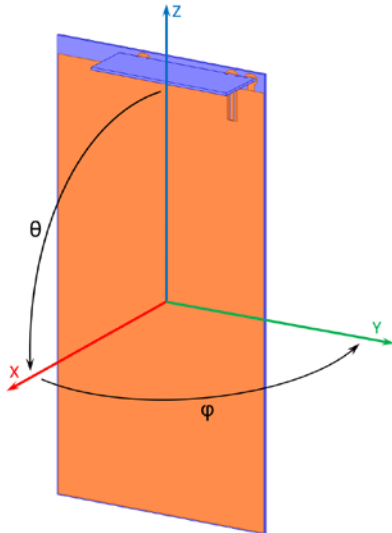
Radiation efficiency



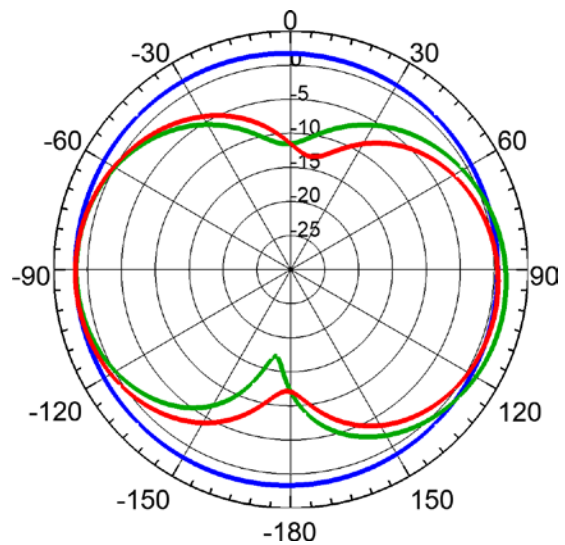
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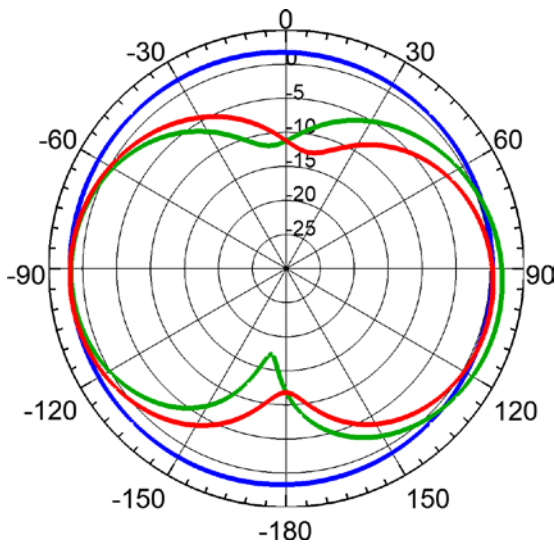
Radiation pattern



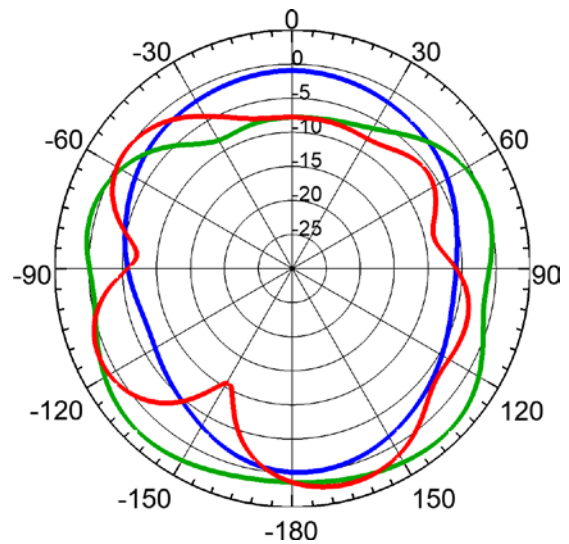
Total realized gain [dBi]  
 Phi=0°, plane XZ, green curve  
 Phi=90°, plane YZ, red curve  
 Theta=90°, plane XY, blue curve



863 MHz



924 MHz

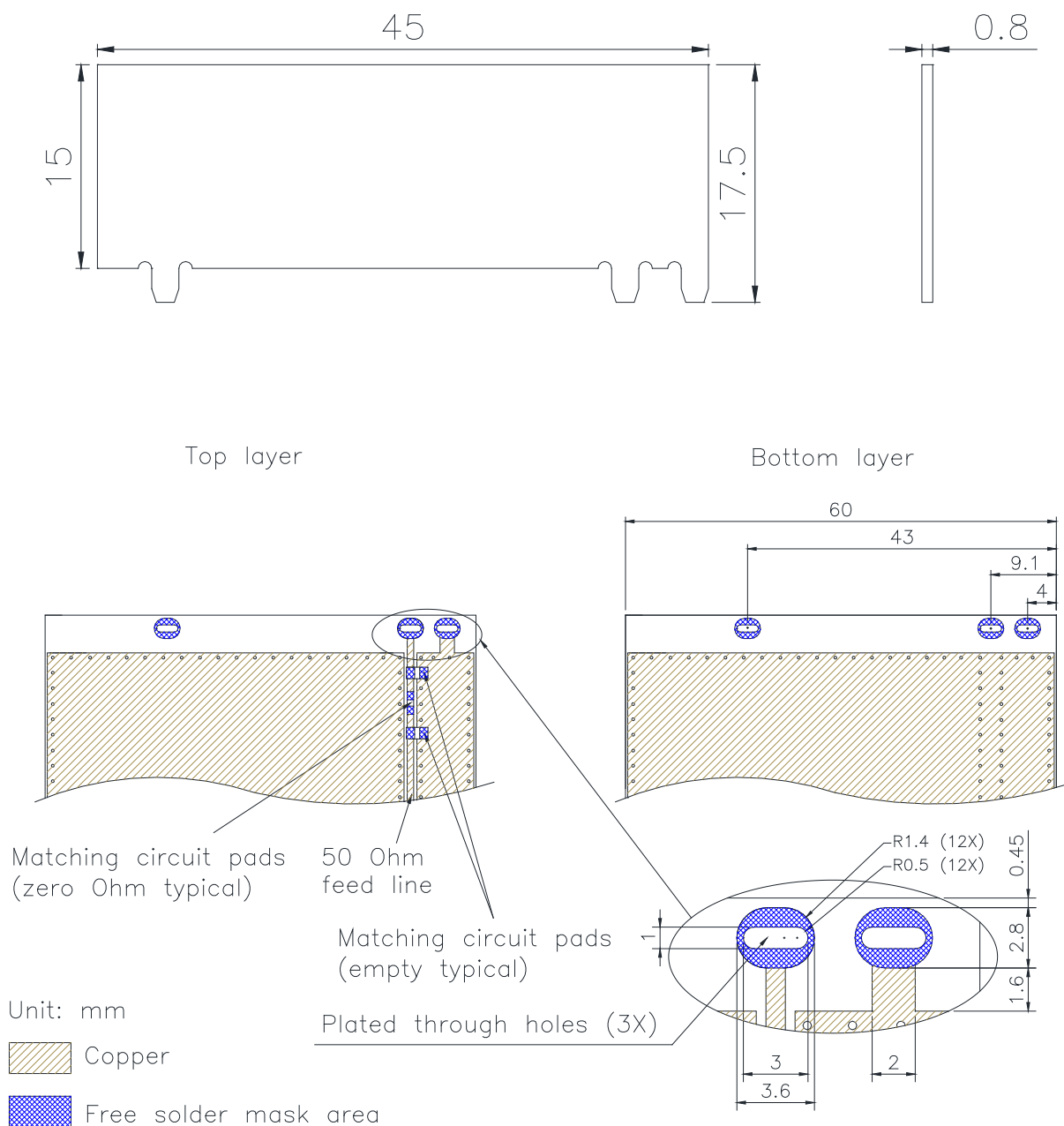


2450 MHz

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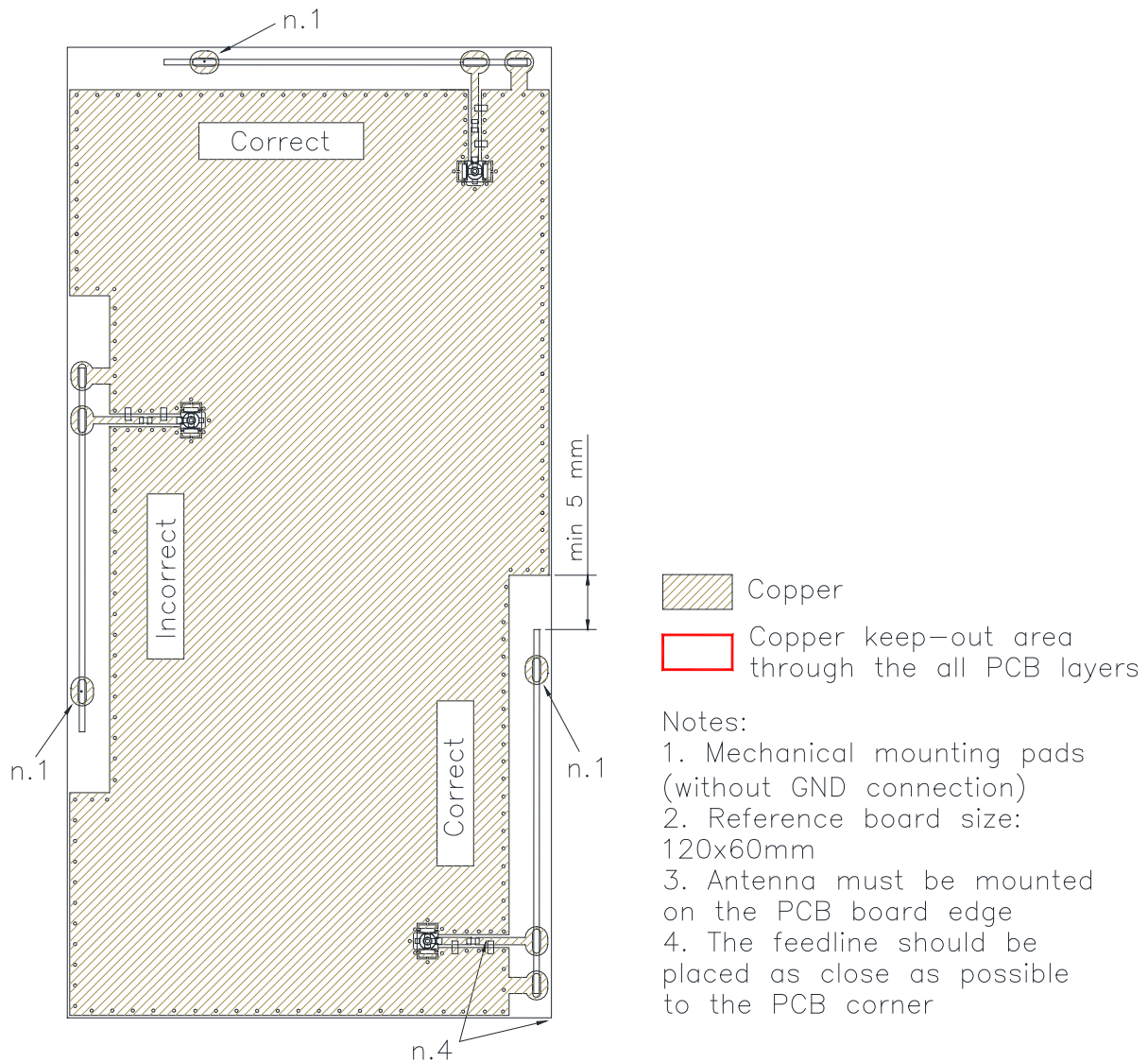
**Product dimensions and recommended layout**



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Antenna placement



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