

2400...2500 MHz / 4400...7125 MHz PCB Antenna (ISM, IoT, RFID, Bluetooth, WLAN, Wi-Fi 5/6E)



General information

The AN250202-02H is a compact dual-band embedded PCB antenna designed for integration into wireless devices operating in the 2.4 GHz ISM band and the extended 5 GHz / 6 GHz spectrum up to 7.125 GHz. The antenna supports IEEE 802.11 b/g/n in the 2.4 GHz band as well as IEEE 802.11 a/n/ac/ax including Wi-Fi 6 and Wi-Fi 6E in the 5 GHz and 6 GHz bands.

With omnidirectional radiation characteristics and linear polarization, the antenna ensures stable coverage in compact and space-constrained enclosures. It is optimized for high data throughput applications requiring reliable multi-band performance across WLAN, Bluetooth, and ISM systems. Typical applications include Wi-Fi routers and access points, IoT gateways, smart home devices, industrial controllers, and wireless monitoring systems.

Manufactured on an FR-4 PCB substrate, the antenna is equipped with an onboard I-PEX MHF1 / Hirose U.FL (UMCC) compatible connector. This configuration allows the use of a micro-coaxial RF cable of the required length, providing flexible integration depending on the device layout and enclosure design.

Electrical data

Antenna type	Embedded / internal PCB antenna	
Frequency band	ISM2400, Wi-Fi 5/6E GHz, ISM5800	
Frequency range [MHz]	2400...2500	4400...7125
Return loss [dB]	-9	-15
Peak gain [dBi]	1.5...2.4	3.4...5.2
Radiation efficiency [%]	70...85	70...90
Nominal input impedance [Ohm]	50	
Polarization	linear	
Radiation pattern	omnidirectional	
Maximum input power [W]	5	

Mechanical data

Antenna PCB dimensions [mm]	44.9 x 15.6 x 1
Connector type ¹⁾	IPEX MHF1 / Hirose U.FL (UMCC) compatible ¹⁾
Cable type and thickness ²⁾ [mm]	micro coax 1.13 ²⁾
Cable length ³⁾ [mm]	175 ³⁾
PCB material	FR4

Additional information

¹⁾ Other connector types can be offered on request.

²⁾ Following cable thicknesses can be used with MHF1 connector: 0.81 mm, 1.13 mm, 1.32 mm, 1.37 mm.

³⁾ Recommended length. Cable is not included but can be customized and provided separately.

Antenna performance was measured using the recommended cable length in free space.

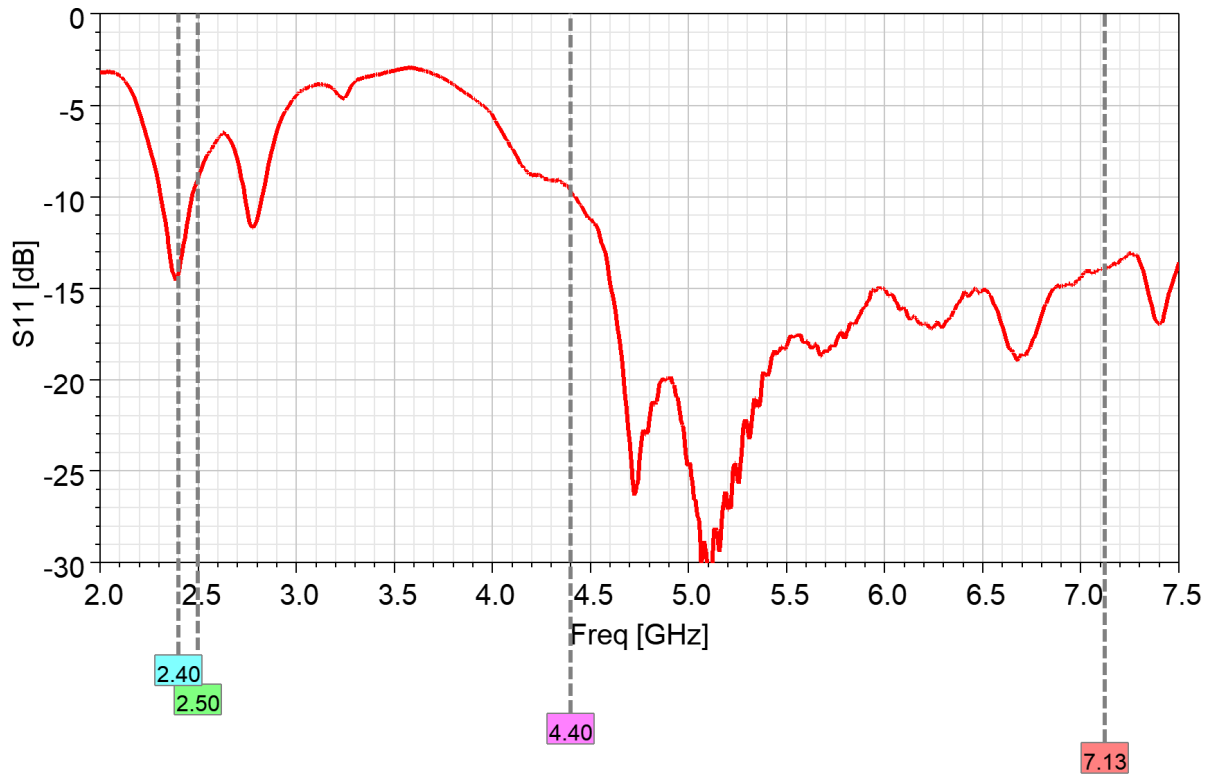
Further customization, electromagnetic simulations and measurements can be offered on request.

The antenna can be additionally equipped with adhesive tape and mounting holes.

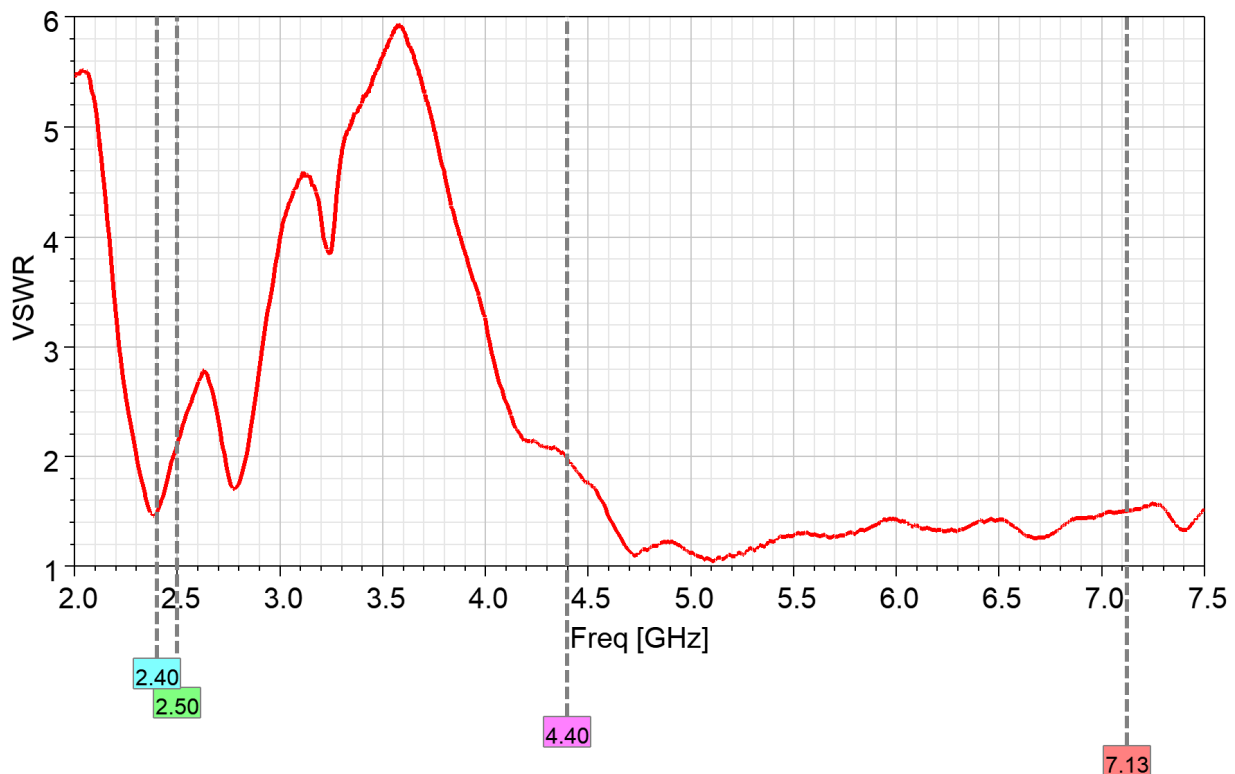
All information (including technical data and pictures) presented in this document is typical and subject to change without notice. Sevskiy is a registered trade mark of Sevskiy GmbH. Copyright © 2009 - 2026 Sevskiy GmbH. All rights reserved. No warranties.

2400...2500 MHz / 4400...7125 MHz PCB Antenna (ISM, IoT, RFID, Bluetooth, WLAN, Wi-Fi 5/6E)

Measured input impedance matching



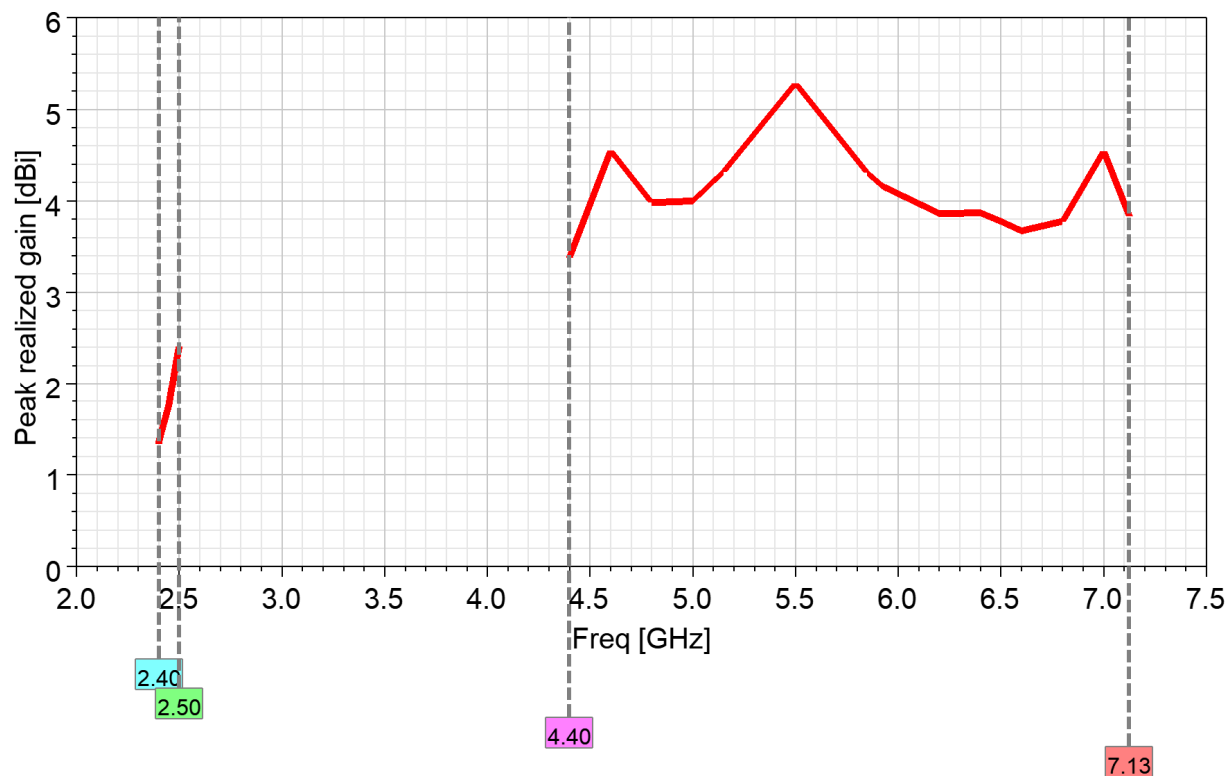
VSWR



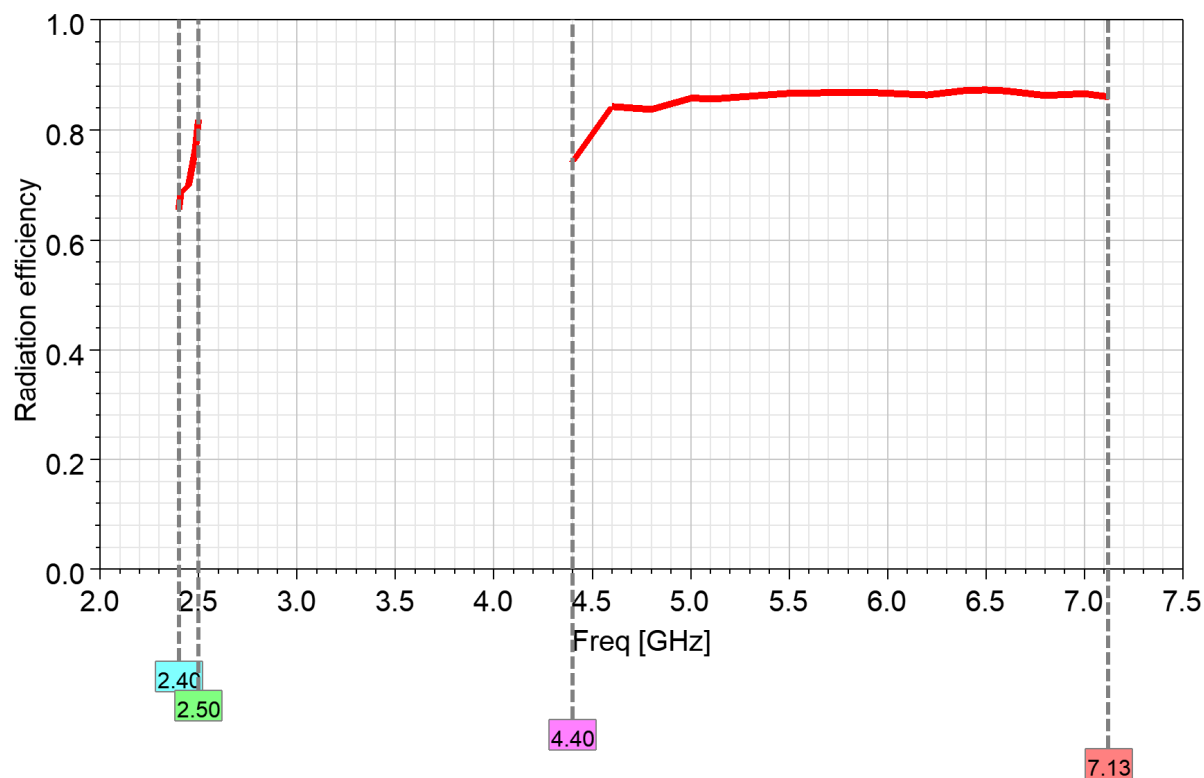
All information (including technical data and pictures) presented in this document is typical and subject to change without notice. Sevskiy is a registered trade mark of Sevskiy GmbH. Copyright © 2009 - 2026 Sevskiy GmbH. All rights reserved. No warranties.

2400...2500 MHz / 4400...7125 MHz PCB Antenna (ISM, IoT, RFID, Bluetooth, WLAN, Wi-Fi 5/6E)

Peak realized gain



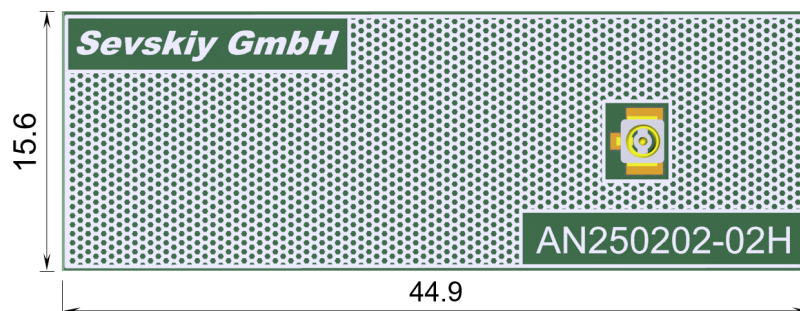
Radiation efficiency



All information (including technical data and pictures) presented in this document is typical and subject to change without notice. Sevskiy is a registered trade mark of Sevskiy GmbH. Copyright © 2009 - 2026 Sevskiy GmbH. All rights reserved. No warranties.

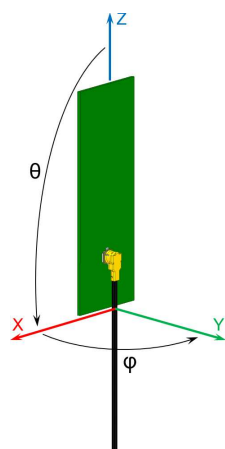
2400...2500 MHz / 4400...7125 MHz PCB Antenna (ISM, IoT, RFID, Bluetooth, WLAN, Wi-Fi 5/6E)

Product dimensions

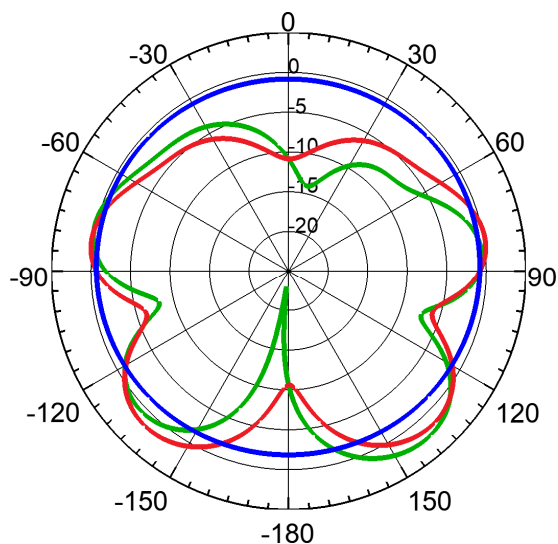


Units: mm

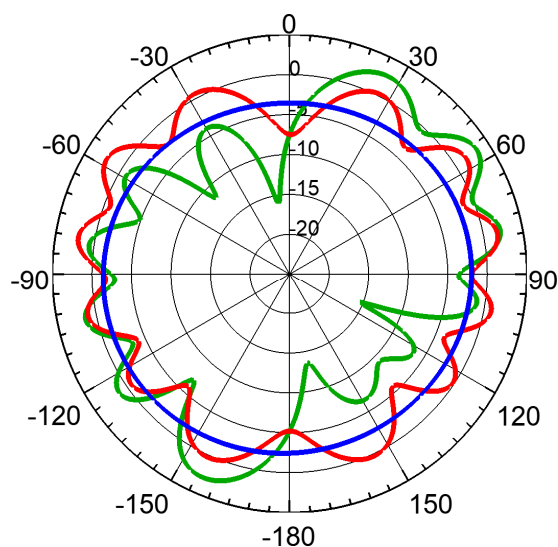
Radiation pattern



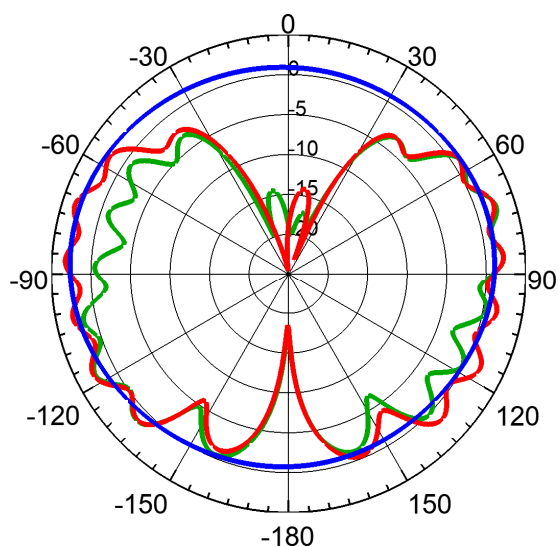
Total realized gain [dBi]
Phi=0°, plane XZ, green curve
Phi=90°, plane YZ, red curve
Theta=90°, plane XY, blue curve



2485 MHz



4400 MHz



6600 MHz

All information (including technical data and pictures) presented in this document is typical and subject to change without notice. Sevskiy is a registered trade mark of Sevskiy GmbH. Copyright © 2009 - 2026 Sevskiy GmbH. All rights reserved. No warranties.