

Veda SL917 Click (Integrated Antenna)



PID: MIKROE-6489

Veda SL917 Click (Integrated Antenna) is a compact add-on board designed for secure, low-power industrial IoT applications requiring Wi-Fi 6 and Bluetooth LE 5.4 connectivity. This board is based on the [453-00221](#) module from [Ezurio](#), offering advanced wireless communication capabilities using an integrated chip antenna. It features the Silicon Labs SiWx917 chipset providing single-band Wi-Fi 6 in the 2.4GHz spectrum with 802.11ax standards, Bluetooth LE 5.4, an ARM® Cortex®-M4 processor running at 180MHz, 4MB Flash, and integrated AI/ML support. With robust security features, including WPA2/3 and secure boot, it ensures safe operation in demanding environments. The board supports UART, SPI, and USB communication, making it versatile for various configurations and use cases. Ideal for battery-operated devices, it excels in applications like industrial IoT sensors, smart medical equipment, access control systems, and asset tracking.

For more information about **Veda SL917 Click (Integrated Antenna)** visit its official [product page](#).

How does it work?

Veda SL917 Click (Integrated Antenna) is based on the 453-00221, a Wi-Fi 6 and Bluetooth LE 5.4 module from Ezurio, made for low-power industrial IoT applications using an integrated chip antenna. This board is designed to meet the demands of next-generation IoT devices requiring secure wireless connectivity, including Wi-Fi, Bluetooth, Matter, and IP networking for cloud integration. Its high performance and ultra-low power consumption make it an ideal choice for

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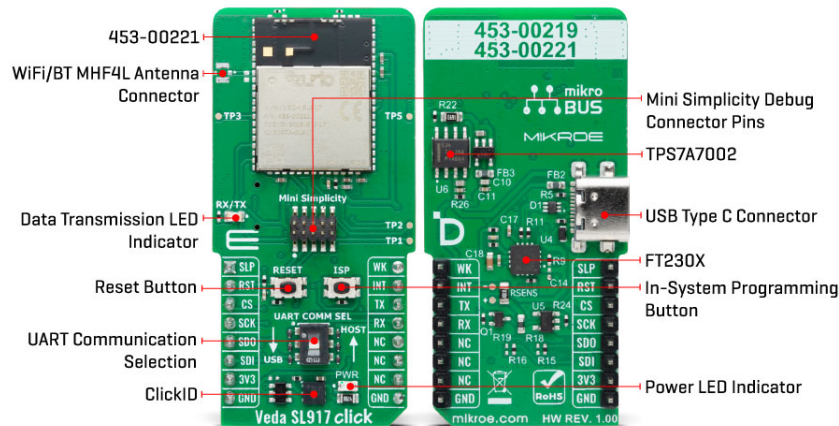


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battery-operated devices, such as smart medical equipment, industrial IoT sensors, access control systems, HVAC solutions, smart home devices, industrial wearables, and asset tracking.



The 453-00221 module features the Silicon Labs SiWx917 chipset providing single-band Wi-Fi 6 in the 2.4GHz spectrum with 802.11ax Wi-Fi standards, enhanced by an integrated Power Amplifier (PA) and Low Noise Amplifier (LNA), ensuring reliable performance even in harsh RF environments. It also features Bluetooth LE 5.4 for low-power communication, offering a robust solution for diverse IoT scenarios. The module integrates an ARM® Cortex®-M4 processor running at 180MHz, up to 4MB of Flash memory, an ultra-low-power sensor hub, and an AI/ML accelerator, making it suitable for advanced applications that require machine learning capabilities while maintaining optimized power consumption.

Security is a cornerstone of this module, offering state-of-the-art features like WPA2/3 Personal and Enterprise standards, secure boot, anti-rollback protection, secure key storage, and programmable secure hardware write protection. Combined with hardware and software accelerators, the module ensures fast and secure encryption, making it a reliable solution for sensitive industrial and consumer applications. With global certifications, including FCC, ISCED, CE, UKCA, RCM, MIC, KCC, NCC, SRRC, and Bluetooth SIG, it is fully approved for worldwide deployment.

The 453-00221 module operates as a Network Connected Processor (NCP), embedding IP networking, Bluetooth, and secure connectivity stacks. The WiSeConnect SDK provided by Silicon Labs supports a wide range of MCU vendors and platforms, allowing integration with the host MCU via an API. Ezurio provides porting guides for ST Micro and NXP MCU's to enable connection of the Veda SL917 Click top to a broad range of DVK's.

The Veda SL917 Click offers multiple communication and configuration options for various applications. It supports UART and SPI communication through a host MCU, but it can also be configured and communicated via a USB interface and the [FT230X](#), a USB-to-UART bridge IC from FTDI. To select the preferred communication mode, either through the host MCU or the USB interface, the UART COMM SEL switch must be set to the appropriate position as marked on the board. The upper position enables communication via the host MCU, while the lower position activates the USB interface. In USB mode, the board uses a blue RX/TX LED that indicates active data transmission, providing visual feedback during operation. When connected via USB, the Click board™ can operate as a standalone device, with appropriate power supplied by the [TPS7A7002](#) low-dropout (LDO) regulator, ensuring stable operation.

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In addition to the interface pins, this board uses several auxiliary pins to enhance its functionality. The SLP and WK pins place the module into Sleep mode and wake it up when needed, enabling efficient power management. The INT pin supports various interrupt events, providing real-time notifications and task-handling flexibility. Additionally, the RST pin is dedicated to resetting the module, offering the same functionality as the onboard RESET button, ensuring a convenient way to restart the module when necessary.

The Veda SL917 Click also features a Mini Simplicity Debug connector, an advanced development and troubleshooting interface. This connector allows for debugging, firmware programming, and module configuration, providing developers with a powerful tool for integration and testing. Additionally, the board includes an ISP (In-System Programming) button, which activates entering bootloader or debug modes. The ISP button and the Mini Simplicity Debug header ensure a smooth development process and easy maintenance.

This Click board™ can be operated only with a 3.3V logic voltage level. The board must perform appropriate logic voltage level conversion before using MCUs with different logic levels.

Specifications

Type	2.4 GHz Transceivers,WiFi+BLE
Applications	Ideal for battery-operated devices, it excels in applications like industrial IoT sensors, smart medical equipment, access control systems, and asset tracking
On-board modules	453-00221 - Wi-Fi 6 with Bluetooth LE 5.4 for low-power industrial IoT module with integrated antenna from Ezurio
Key Features	Wi-Fi 6 and Bluetooth LE 5.4, ARM® Cortex®-M4 processor, advanced security, multiple communication interfaces, integrated chip antenna, power efficiency, debugging and programming, global certifications, and more
Interface	SPI,UART,USB
Feature	ClickID
Compatibility	mikroBUS™
Click board size	L (57.15 x 25.4 mm)
Input Voltage	3.3V,External

Pinout diagram

This table shows how the pinout on Veda SL917 Click (Integrated Antenna) corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin	mikro™ BUS				Pin	Notes
Sleep Mode Control	SLP	1	AN	PWM	16	WK	Module Wake-Up
Reset / ID SEL	RST	2	RST	INT	15	INT	Interrupt
SPI Select / ID COMM	CS	3	CS	RX	14	TX	UART TX

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SPI Clock	SCK	4	SCK	TX	13	RX	UART RX
SPI Data OUT	SDO	5	MISO	SCL	12	NC	
SPI Data IN	SDI	6	MOSI	SDA	11	NC	
Power Supply	3.3V	7	3.3V	5V	10	NC	
Ground	GND	8	GND	GND	9	GND	Ground

Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator
LD2	RX/TX	-	USB-UART Data Transmission LED Indicator
SW1	UART COMM SEL	Upper	UART Mode Communication Selection HOST/USB: Upper position HOST, Lower position USB
J1	Mini Simplicity	Soldered	Mini Simplicity Debug Connector
T1	RESET	-	Reset Button
T2	ISP	-	In-System Programming Button

Veda SL917 Click (Integrated Antenna) electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	-	3.3	-	V
Frequency	-	2.4	-	GHz

Software Support

MIKROE does not currently provide software support for this Click board™ in the form of libraries, functions, or example code. For additional information or assistance, we recommend reaching out to Ezurio, the module's manufacturer. Find more details at the following resources:

- Access detailed specifications and module information on the [official product page](#).
- For general inquiries and technical support materials, visit the Ezurio [Technical Support page](#).
- Additional support can be found on the Ezurio official [Support page](#), where you can submit a support ticket for further assistance.

Resources

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

[Click boards™](#)

[ClickID](#)

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Downloads

[Veda SL917 click 2D and 3D files v100](#)

[Veda SL917 click schematic v100](#)

[Veda SL917 series datasheet](#)

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