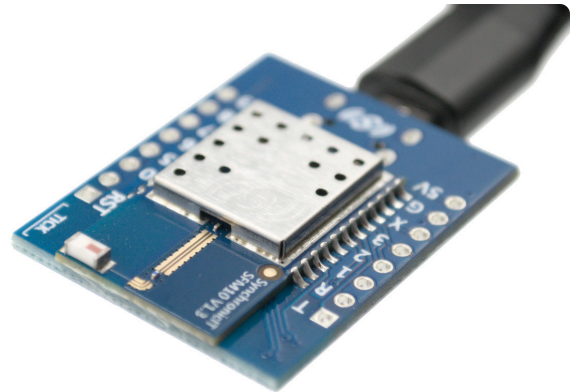


SFM10-DEV

The Development Board: Evaluate the SFM10 Module.

The SFM10-DEV development board is specifically designed for evaluating the capabilities of the SFM10-MOD.

The SFM10-DEV board combines convenience, programmability, and educational resources to empower developers exploring the exciting world of UWB technology. Whether you're a seasoned programmer or a curious beginner, this platform invites you to unlock the potential of precise localization and spatial awareness.



Form Factor and Compatibility: The SFM10-DEV adopts the form factor of the popular **Wemos D1 mini series**. This design choice ensures compatibility with generic D1 shields, allowing developers to easily enhance the board's functionality. By leveraging D1 shields, users can add features such as sensors, displays, or communication modules without complex wiring or soldering.

I/O Headers for Breadboarding: The spacing of the I/O headers on the SFM10-DEV is **100mil (2.54mm)**. This aligns perfectly with a standard breadboard and dupont cables. Whether you're connecting sensors, actuators, or other components, the breadboard-friendly layout simplifies prototyping and experimentation.

that connects to an **on-board CP2102 (Silicon Labs)** chip. The CP2102 acts as a bridge between the USB interface and the UART pins of the **SFM10 Module**. Through this serial port interface, users can upload their custom applications to the Module.

Flexible Power Options: Developers have multiple power sources to choose from, ensuring adaptability to various scenarios:

- **USB Port:** The board can be powered directly via the micro-USB port.
- **External Supply:** An external power supply (up to 6V) can be connected.
- **Battery Operation:** The SFM10-DEV accepts battery power within the range of 1.8V to 3.6V.

Unlocking UWB Technology: The SFM10-DEV is all about Ultra-Wideband (UWB) technology. UWB provides precise, secure, real-time localization capabilities. Imagine giving spatial awareness to smart device, enabling them to understand their position and surroundings with remarkable accuracy. Our mission is to make UWB accessible to everyone, regardless of their programming expertise. The C language programming environment, coupled with extensive documentation and examples, ensures a smooth learning curve.

The SFM10-DEV is part of the comprehensive **SFM10 Evaluation Kit**. The kit includes tutorials that cover essential concepts:

- **Clock Synchronization:** Understanding how devices synchronize their internal clocks.
- **Time of Flight (ToF):** Grasping the time taken by signals to travel between devices.

Single-Chip Wonder: The **SFM10 Module** stands out as the world's only single-chip UWB solution. Its integration of all necessary RF components simplifies development and accelerates time-to-market.

In summary, the SFM10-DEV combines technical excellence, ease of use, and comprehensive features to empower developers.

Key Features

- **Convenient Evaluation Platform:** The SFM10-DEV serves as a convenient board specifically designed for evaluating the capabilities of the SFM10-MOD. Whether you're a seasoned developer or a curious enthusiast, this platform simplifies the exploration of UWB technology.
- **Single-Chip UWB Solution:** The module stands out as the world's only single-chip UWB solution. Its integration of all essential RF components streamlines development and accelerates time-to-market.
- **Programmable via USB (via UART):** The SFM10-DEV is programmable via USB, thanks to the on-board CP2102 (Silicon Labs) chip. The CP2102 bridges the USB interface to the UART pins of the module, allowing seamless application uploads.
- **Smooth Learning Curve:** The SFM10-DEV offers a very good learning curve for developers. Whether you're new to UWB or an experienced programmer, the platform ensures an accessible and intuitive experience.
- **Wide UWB Band Support:** The board supports SHF UWB bands spanning from 6.0 GHz to 8.5 GHz, making it suitable for worldwide

[HOME](#)[DOWNLOADS](#)

- **Secure Radio Technology:** The SFM10-DEV incorporates secure radio technology compliant with the IEEE 802.15.4z standard. Security-conscious developers can confidently build applications with robust communication.
- **High Data Rates:** The module achieves impressive data rates: 110 kbps (BPRF), 850 kbps (BRRF), 6.8 Mbps (BPRF), 7.8 Mbps (HPRF). These rates cater to diverse use cases, from low-power sensor networks to high-throughput applications.
- **Effective Narrowband Interference Filtering:** The board features a filtering stage that effectively blocks narrowband interferences. This ensures reliable communication even in noisy environments.
- **Adjustable Transmitter Output Power:** Developers can program the transmitter output power of the SFM10-DEV, reaching up to 30 dBm peak. Fine-tune the power level based on application requirements.
- **NIST-Compliant Scrambled Timestamp Sequence (STS):** The SFM10-DEV generates Scrambled Timestamp Sequences compliant with NIST SP 800-90A. These sequences play a crucial role in precise time-of-flight measurements.
- **Robust Microcontroller Core:** The board houses an Arm Cortex-based 32-bit microcontroller with security extensions. This powerful core handles computation and security tasks efficiently.
- **XTAL Sharing and True Random Number Generation:** An XO buffer allows sharing the crystal oscillator (XTAL) with other devices (e.g., UHF or BLE transceivers). The board also boasts true random number generation (TRNG) for cryptographic applications.

HOME

DOWNLOADS

... , ... , and ... , the ... - ... can

choose the most suitable interface for their specific use case.

- **Temperature Compensation and Low-Power Modes:** An integrated temperature sensor compensates for clock variations due to temperature changes. The board offers optimized low-power modes, extending battery life in energy-efficient applications.
- **Precise Distance Measurement and Timers:** Achieve high-accuracy distance measurement using UWB technology. Internal timers allow precise scheduling for various tasks.
- **User-Friendly Programming Environment:** The SFM10-DEV provides a simple, clear programming environment. Whether you're writing custom firmware or experimenting with examples, the platform encourages rapid development.
- **Sub-Microsecond Wireless GPIO Timestamping:** The board supports sub-microsecond wireless GPIO timestamping. This feature is valuable for applications requiring precise synchronization.
- **Flexible Supply Voltage Range:** The SFM10-DEV operates within a supply voltage range of 1.8V to 3.6V. Whether powered by USB, external supply, or battery, the board adapts to your needs.