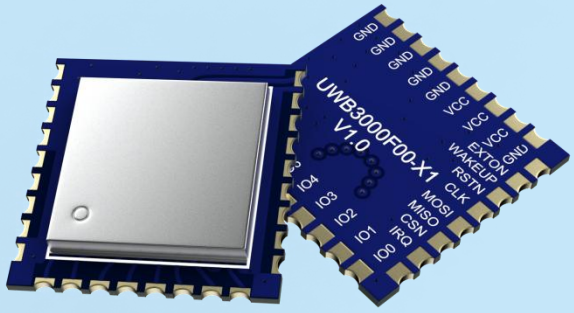
UWB3000F00-X1

- Supports CH5 & CH9
- Low power consumption with high positioning accuracy
- External PCB antenna connection

Product Specification



Catalogue

1. Description ..... - 3 -
2. Features ..... - 3 -
3. Applications ..... - 3 -
4. Block Diagram ..... - 3 -
5. Parameters ..... - 4 -
6. Typical Application Circuit ..... - 4 -
7. Pin Assignment ..... - 5 -
8. Dimension (Unit： mm) ..... - 6 -
Appendix： Reflow Chart for SMT Technology ..... - 7 -

Note: Revision History

Revision	Date	Comment
V1.0	2025-7	First release
V1.1	2026-7	Update Dimension

1. Description

UWB3000F00-X1 adopts Qorvo's DW3000 IC series, a fully integrated single-chip ultra-wideband (UWB) low-power, low-cost transceiver IC that complies with the IEEE 802.15.4-2020 standard protocol. It can be used in two-way ranging and TDoA systems, offering a positioning accuracy of 10 centimeters.

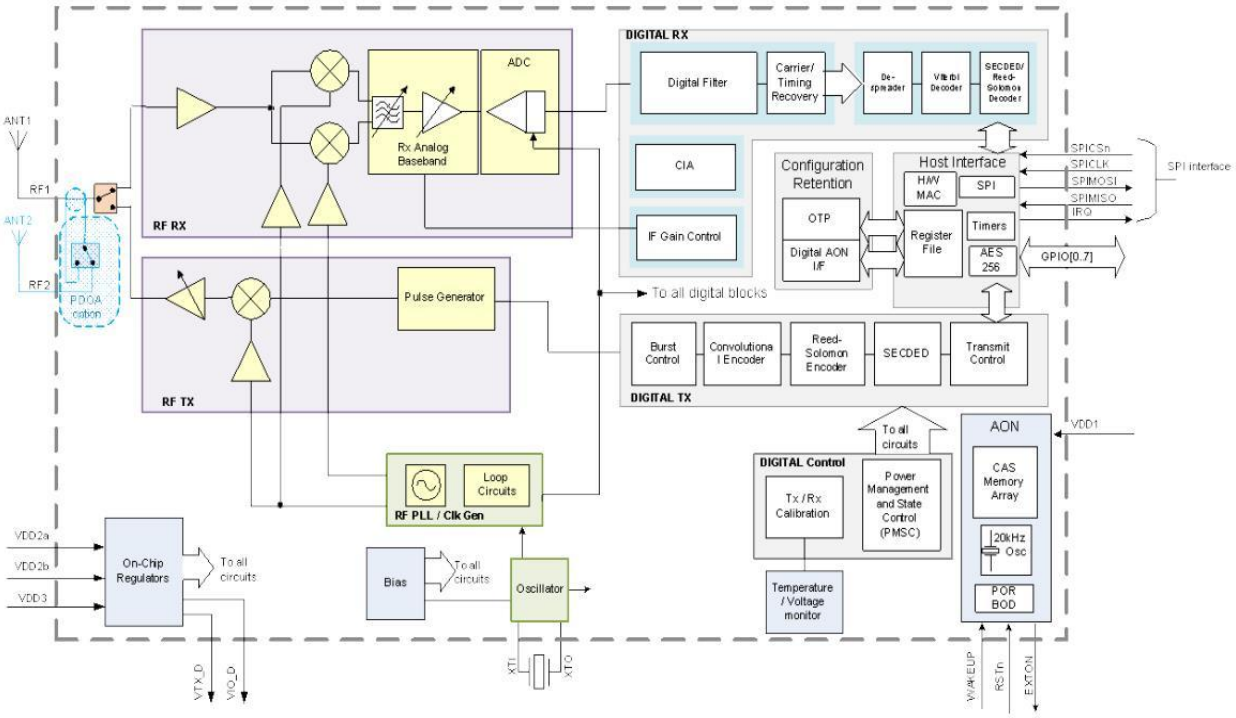
2. Features

- IEEE 802.15.4-2020 standard protocol
- Supports CH5 & CH9 (6489.6 MHz and 7987.2 MHz)
- Data rates of 850 Kpbs and 6.8 Mbps
- Packet length up to 1023 bytes
- Supports 2-way ranging and TDoA positioning schemes
- Programmable transmit power
- Asset location to an accuracy of 10 cm

3. Applications

- Personnel positioning in large-scale industrial production
- Various indoor positioning scenarios
- Underground coal mine positioning
- Hospital staff positioning

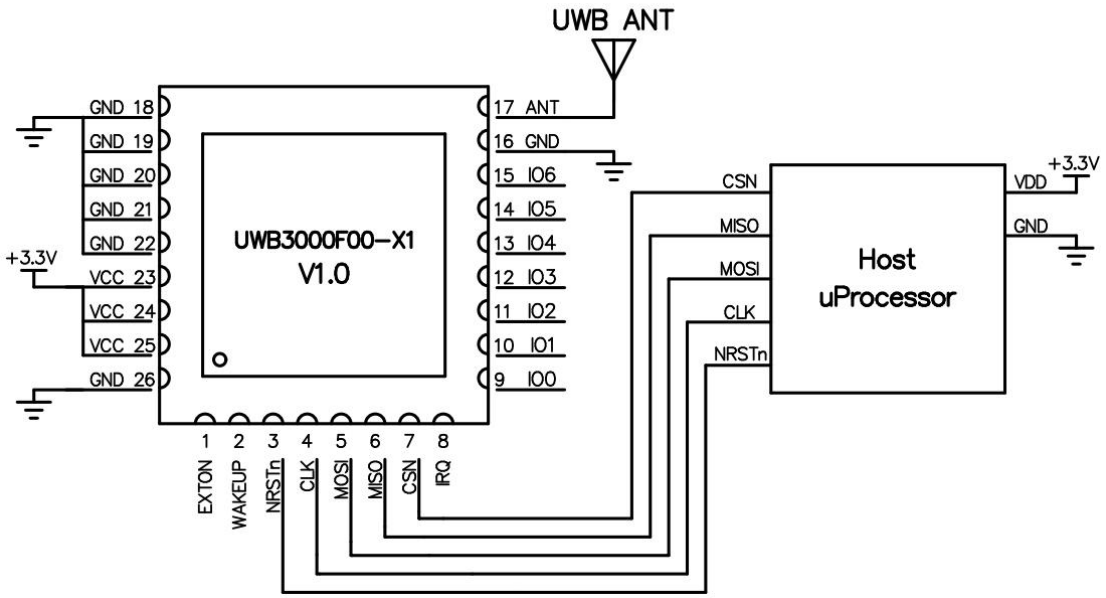
4. Block Diagram



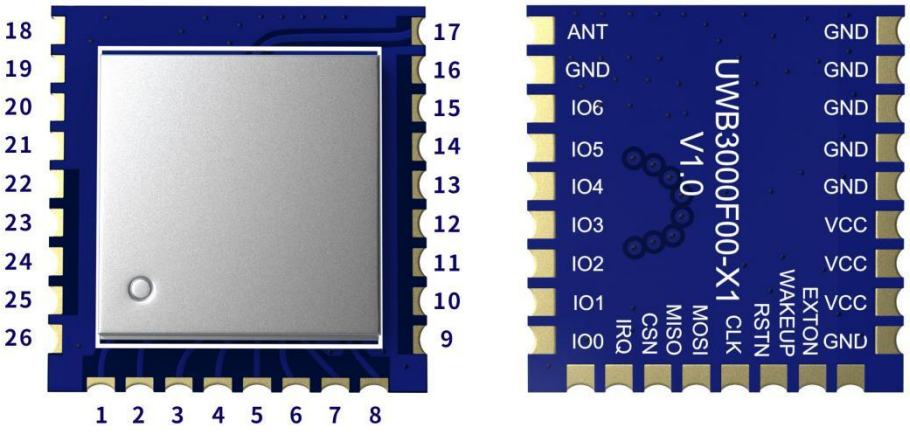
5. Parameters

Parameter	Condition	Min.	Typ.	Max.	Unit
Supply Voltage		2.4	3.3	3.6	V
Operating Temperature Range		-40	25	85	℃
Frequency Range	CH5		6489.6		MHz
	CH9		7987.2		MHz
Data Rate		850k		6.8M	bps
Current Consumption					
Sleep current			<1		uA
Continuous receive current			72		mA
Continuous transmit current (data packet)			67		mA
Ranging current	Average current		21		mA
	Peak current		72		mA
RF parameter					
Tx Power	@VCC=3.3V	-30		0	dBm
Tx Bandwidth（BW)			499.2		MHz
Receive parameters					
Rx Sensitivity	@850Kbps		-100		dBm
	@6.8Mbps		-94		dBm

6. Typical Application Circuit



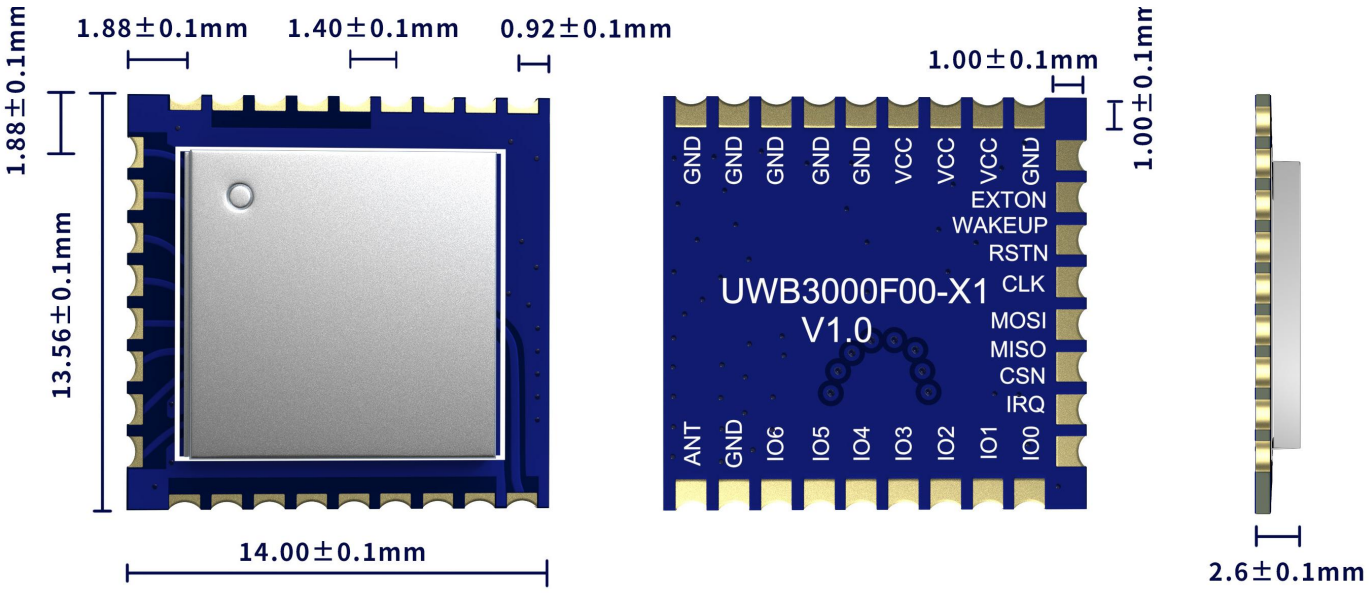
7. Pin Assignment



Pin No.	Pin definitio	I/O	Description
1	EXTON	DO	External device enable. Asserted during wake-up and remains active until the device enters sleep mode. It can be used to control an external DC-DC converter or other circuits that are not needed while the device is in sleep mode, in order to minimize power consumption. For more details, please refer to the DW3000 datasheet.
2	WAKEUP	DI	When set to a valid high level, the WAKEUP pin brings the DW3000 out of sleep or DEEPSLEEP mode into active mode. If not used, this pin can be grounded.
3	NRSTn	DIO	Reset pin. Active-low output. Can be pulled low by an external open-drain driver to reset the device
4	CLK	DI	SPI clock
5	MOSI	DI	SPI data input
6	MISO	DO	SPI data output
7	CSN	DI	SPI chip select. This is an active-low enable input. A falling edge on SPICSn indicates the start of a new SPI transaction. SPICSn can also serve as a wake-up signal to bring the DW3000 out of sleep or DEEPSLEEP mode
8	IRQ	DI	Interrupt request output from the DWM3000 to the host processor. By default, IRQ is an active-high output, but it can be configured as active-low if needed. For correct operation in SLEEP and DEEPSLEEP modes, it should be configured as active-high. This pin is floating during SLEEP and DEEPSLEEP states and may cause false interrupts unless pulled low. If the IRQ function is not used, this pin can be reconfigured as general-purpose I/O (GPIO8)

9	GPIO0	DIO	General-purpose I/O pins — refer to the chip datasheet for details
10	GPIO1	DIO	General-purpose I/O pin, refer to the chip datasheet for details。
11	GPIO2	DIO	General-purpose I/O pin, refer to the chip datasheet for details
12	GPIO3	DIO	General-purpose I/O pin, refer to the chip datasheet for details
13	GPIO4	DIO	General-purpose I/O pin, refer to the chip datasheet for details
14	GPIO5	DIO	General-purpose I/O pin, refer to the chip datasheet for details
15	GPIO6	DIO	General-purpose I/O pin, refer to the chip datasheet for details
16,18,19, 20,21,22,26	GND		Connect to power ground (GND)
17	ANT		External 50Ω antenna connection
23,24,25	VCC		Connect to power supply positive terminal (2.4–3.6V)

8. Dimension (Unit： mm)



Appendix：Reflow Chart for SMT Technology

