

SRF-M290P UWB Module User Manual

OEM/Integrators Installation Manual

Important Notice to OEM integrators

1. This module is limited to OEM installation ONLY.
2. This module is limited to installation in mobile or fixed applications, according to Part 2.1091(b).
3. The separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations
4. For FCC Part 15.31 (h) and (k): The host manufacturer is responsible for additional testing to verify compliance as a composite system. When testing the host device for compliance with Part 15 Subpart B, the host manufacturer is required to show compliance with Part 15 Subpart B while the transmitter module(s) are installed and operating. The modules should be transmitting and the evaluation should confirm that the module's intentional emissions are compliant (i.e. fundamental and out of band emissions). The host manufacturer must verify that there are no additional unintentional emissions other than what is permitted in Part 15 Subpart B or emissions are complaint with the transmitter(s) rule(s).

End Product Labeling

When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: **“Contains FCC ID: 2A3LY-SRFM290P”**

The FCC ID can be used only when all FCC compliance requirements are met.

Antenna Installation

- (1) The transmitter module may not be co-located with any other transmitter or antenna.
- (2) Only antennas of the same type and with equal or less gains as shown below may be used with this module. Other types of antennas and/or higher gain antennas may require additional authorization for operation.

Antenna type	3.25 -6.75GHz Peak Gain (dBi)
TAG	4.74
PCB	5.53

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This module must be integrated in hand held devices, the use of antennas mounted on outdoor structures, e.g., antennas mounted on the outside of a building or on a telephone pole, or any fixed outdoors infrastructure is prohibited.

US responsibility party

COMPANY :

ADRESS :

Contact :

Telephone :

NCC

Brand : CiaoDa

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

平台商於最終產品內含已認證過之射頻模組(組件)，應於最終產品本體明顯處標示

「本產品內含射頻模組 CC XX xx LP yyy Z z 」

Overview:

SRF-M290P UWB Module is compliance with 802.15.4a Ultra Wide Band (UWB) communications protocol. With the technologies of the impulse wave transmission of UWB communication system, and the Time Difference Of Arrival (TDOA), the huge tag throughput can be processed instantly and the tag location can be located precisely. The Real-time Location System (RTLS) can be applied in the location tracking of people and cargo, area restriction, mobility positioning, electronic roll calls and real-time searching.

Features:

- RTLS accuracy error is about 10~30cm, which outperforms the other positioning systems
- UWB communication technology
- TDOA technology
- Track in real-time and accuracy
- High tag throughput real-time processing
- High stability and long term processing
- To provide the standard user interface software for the system real-time processing
- To provide SDK for the system quick development

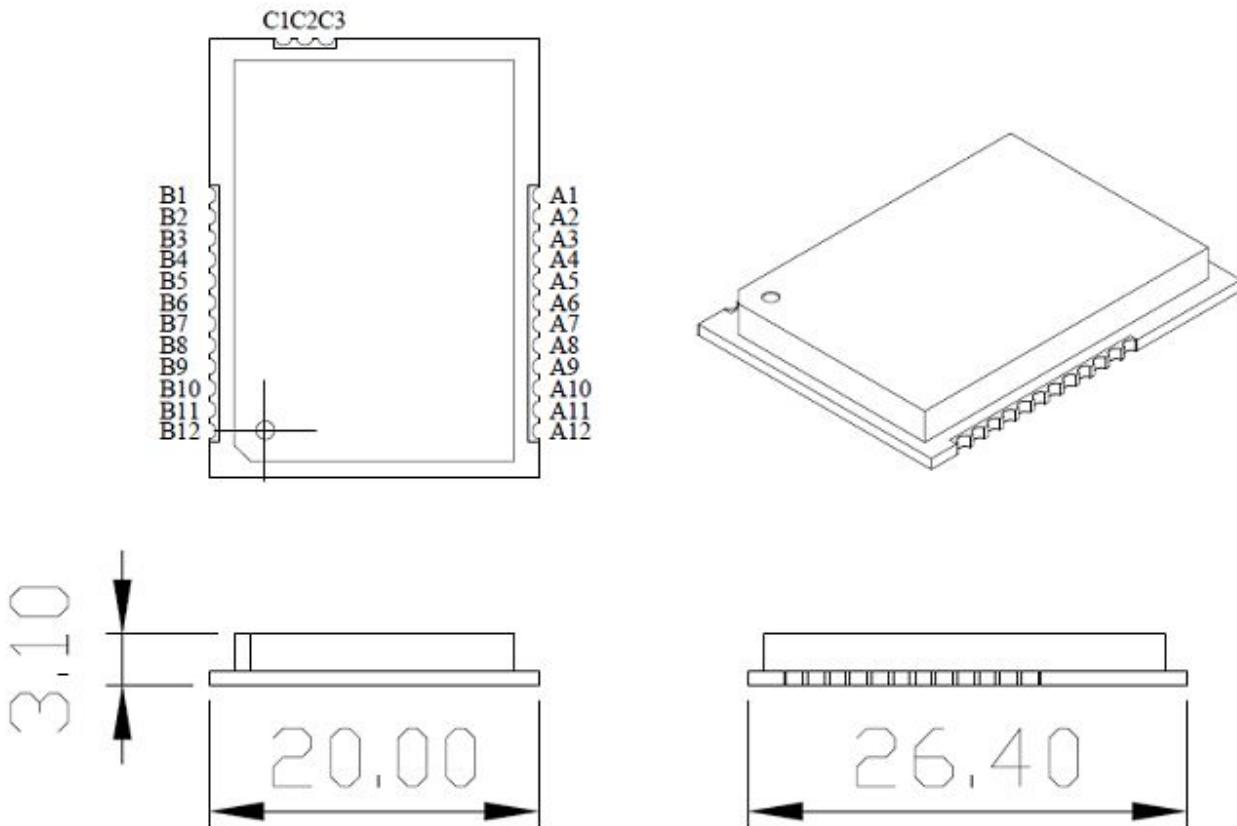
Recommended uses:

- Smart factory: Real-time management of personnel, equipments, devices and objects to improve working efficiency and output value
- Healthcare: Medical devices management and patients tracking to shorten event processing time
- Shopping mall service: Real-time location service and customer preference analysis
- Guidance service: Real-time positioning and guidance to reduce manpower and to improve service quality
- Data analysis: Effective and accurate data collection to improve high analysis yield rate
- Electronic fence: Precise real-time location to effectively manage restricted areas

Specification:

Input Voltage	3.3V & 1.8V
Avg. Operating Current	0.5W
Operating Frequency	3.25~6.75GHz
Transmitting Power	-41.3 dBm/MHz
Receiving Sensitivity	-93 dBm
Max. Read Distance	50 meters @ Data rate=110K
Communication Interface	SPI
Communication Protocol	802.15.4a
Operating Temp.	-20°C ~ +55 °C
Storage Temp.	-20°C ~ +85°C
Humidity	5-90%
Dimension	26.4x20x3.1mm
Weight	65g

Dimension



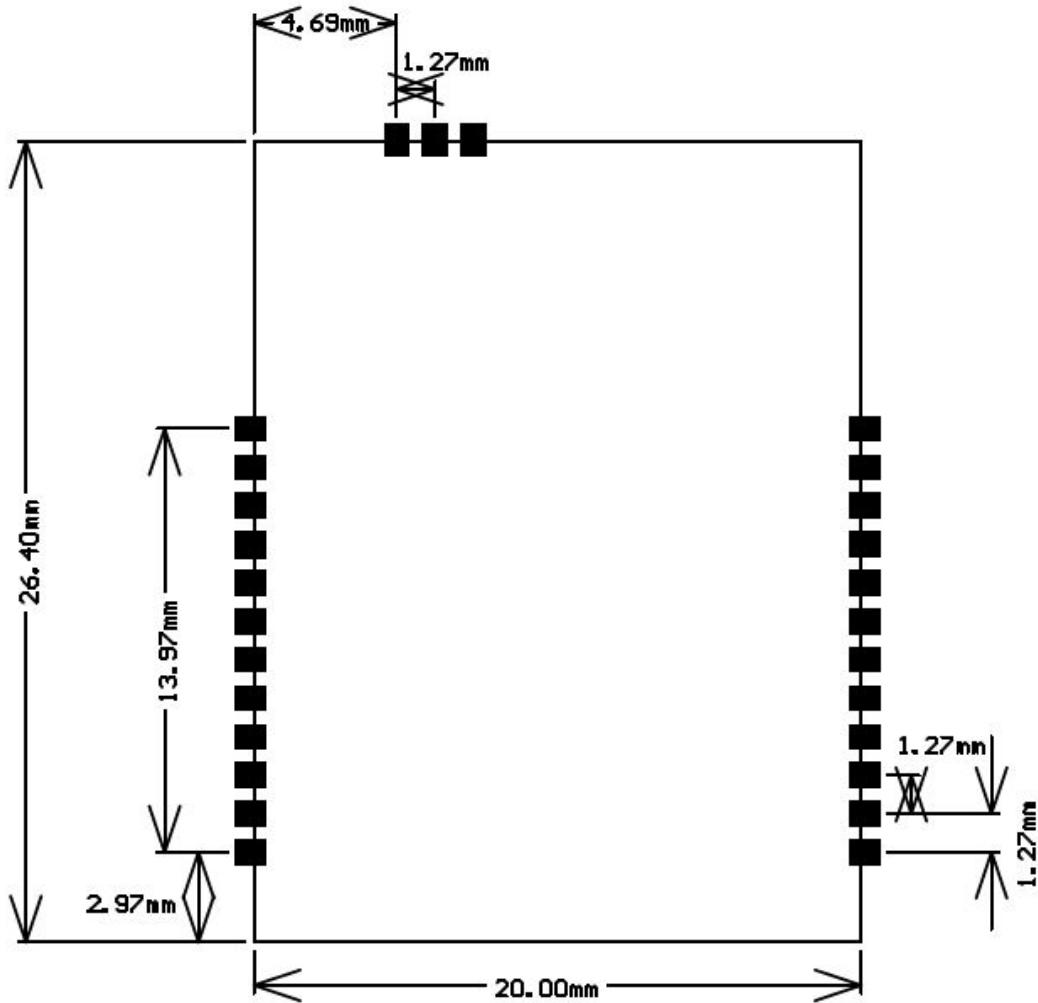
Pin Assignment

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
V2	V1	VA1	WAKEUP	SPICSN	RSTN	SYNC	MOSI	MISO	SPICLK	IRQN	VDD_TCXO

B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
PAVDD	PAVDD	GND	GND	VDD1V8	VDD1V8	GND	GND	VDD3V3	VDD3V3	VBAT	VBAT

C1	C2	C3
GND	ANT	GND

PCB Layout Size



Warranty Coverage:

1. The product's warranty against defects in materials and workmanship under normal use for a period of ONE YEAR from the date of purchase by the original user of the Product. This warranty is non-transferable.
2. If the product prove to be defective within the warranty period, Szok will repair the product defect at no charge, using new or refurbished replacement parts to proper operating condition.

This Warranty Does Not Apply To:

1. Damage from flood, fire, earthquake, natural disaster or other external causes.
2. If the defects are due to damage caused by accident, misuse, tampering, unauthorized modification or human negligence, such as parts lost, loose or lack of care and physical abuse to the product (e.g, scratches, dents, or cracks).
3. Damage caused by operating the product outside the permitted, intended uses described by Szok, or service(including upgrades and expansions) performed by unauthorized representative.
4. If any serial number or logo affixed has been altered, removed, duplicated or defaced from Szok Product.