

TFmini-S LiDAR Module

1. Product Description

TFmini-S is a single-point ranging LiDAR based on TFmini upgrade. The blind zone is shortened to 10cm, the outdoor performance and accuracy of different reflectivity are improved, it can achieve stable, accuracy, sensitive and high frequency range detection.

the module is characterized by the following points:

- Small size
- Light weight
- Low power consumption
- High frame rate(up to 1000Hz)

Main application scenario:

- Pedestrian detection
- Vehicle detection
- Intelligent barrier gate
- Altimeter



2. Technical Specifications and Parameters

Table 1 Main characteristic parameters of TFmini-S

| Parameters | | Value |
|-----------------------|-------------------------|--|
| Product Performance | Operating Range | 0.1m~12m@90%Reflectivity |
| | Accuracy | $\pm 6\text{cm}@ (0.1-6\text{m})$ ¹ $\pm 1\% @ (6\text{m}-12\text{m})$ |
| | Distance resolution | 1cm |
| | Frame rate | 100Hz |
| | Ambient light immunity | 70Klux |
| | Operating Temperature | 0°C~60°C |
| | Enclosure Rating | / |
| Optical parameters | Light source | VCSEL |
| | Central wavelength | 850nm |
| | Photobiological safety | Class1 (IEC60825) |
| | FOV | 2° ² |
| Electrical parameters | Supply voltage | 5V±0.1V |
| | Average current | ≤140mA |
| | Power consumption | ≤0.7W |
| | Peak current | 200mA |
| | Communication level | LVTTL (3.3V) |
| | Communication interface | UART / I2C |
| Miscellaneous | Dimension | 42mm*15mm*16mm(L*W*H) |
| | Housing | ABS+PC |
| | Storage temperature | -20°C~75°C |
| | Weight | 5g±0.3g |
| | Cable length | 10cm |

¹ Accuracy was calculated based on a standard whiteboard with reflectivity 90% in indoor condition

² This is a theoretical reference value





3. Product Appearance and Structure

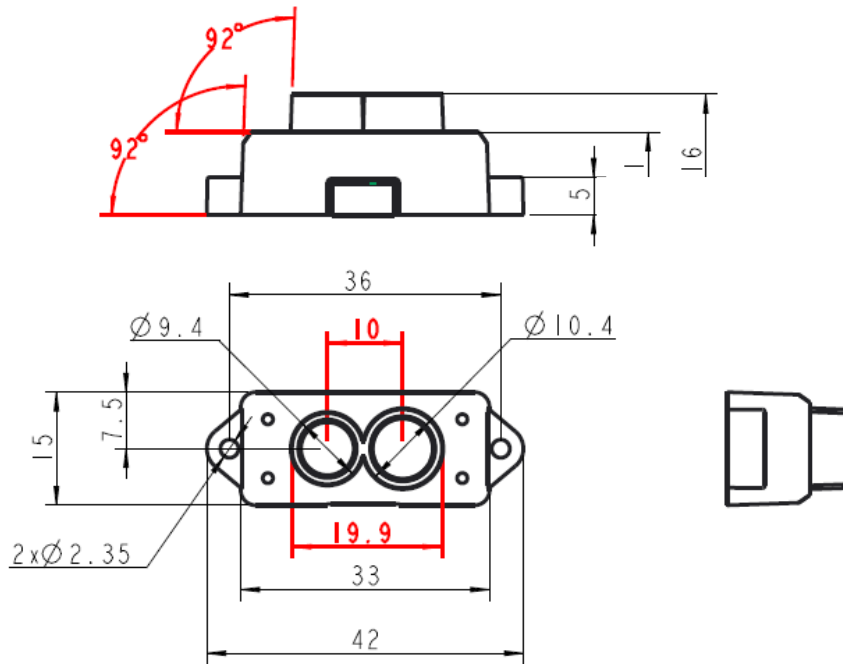


Figure 1 Dimension of TFmini-S (Unit:mm)

4. Communication Interface

Table 2 Communication Interface--UART

| | |
|--------------------------|--------|
| Default Baud rate | 115200 |
| Data bits | 8 |
| Stop bit | 1 |
| Parity | None |

Table 3 Communication Interface--I²C

| | |
|------------------------------|-----------|
| Max transmission rate | 400kbps |
| Master/Slave mode | Slave |
| Default address | 0x10 |
| Address range | 0x01~0x7F |



5. Configurable Parameters

Table 4 Configurable parameters

| Parameters | UART | | I2C | |
|--------------------------------|-----------------------------------|-----------------|-----------------------------------|------------------|
| | Description | Default setting | Description | Default setting |
| Communication interface | UART, I ² C and I/O | UART | UART, I ² C and I/O | I ² C |
| Frame rate | Adjustable, 1~1000Hz | 100Hz | Adjustable, 1~100Hz | / |
| Baud rate | Adjustable, 9600~921600bps | 115200bps | Fast mode (400kbps) | / |
| Reset to default | Reset all the settings to default | / | Reset all the settings to default | / |

Note: Refer to user manual for more information

