



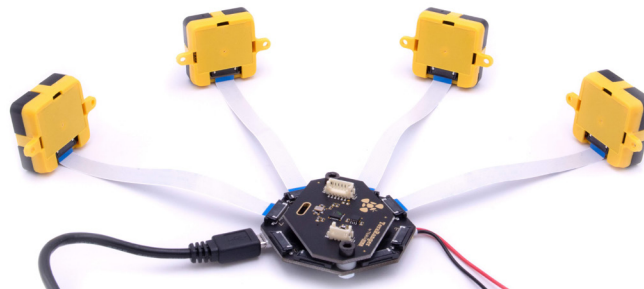
TeraRanger Evo Mini Array Kits

Build low-cost multi-sensor applications in any configuration you need!

Tired of being constrained to pre-set sensor configurations? With our Evo Mini Array Kits build custom arrays, position sensors where needed, and forget about crosstalk! Developed for indoor distance measurement applications, the modular and low-cost kit comes in 2 configurations with either 4 or 8 sensors. Connect the sensors to the central Hub and stream out data via a single UART or USB interface, and benefit from 3 on-board modes, including crosstalk avoidance mode!

Key features

- Infrared Time-of-Flight technology
- Choose between kits with 4 or 8 sensors
- Optimized for indoor measurements
0.03 m to 3.3 m
- Each sensor has a wide 27° Field of View for maximum coverage
- All parts and accessories included in one easy-to-setup kit
- Multiple sensors - single data output via USB or UART interface
- Built-in crosstalk avoidance system



Enabler for the following applications



Multi-point material level monitoring



Proximity sensing



Anti-collision for mobile robots



Multi-sensor applications



Contactless inventory management

Technical specifications

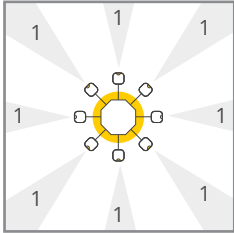
| | | |
|----------------------------|--|--|
| Product code | TR-AK-EVO-MINI-4 / TR-AK-EVO-MINI-8 | |
| Performance | | |
| Detection Principle | Infrared Time-of-Flight | |
| Light Source Wavelength | 940 nm | |
| Use Environment | Indoors | |
| Repeatability | < 5 mm | |
| Output Distance Resolution | 1 mm | |
| Operating modes | Sequential mode Simultaneous mode Tower mode | |
| Range ⁽¹⁾ | 0.03 m to 3.3 m per sensor ⁽²⁾ | |
| Accuracy ⁽¹⁾ | Up to +/- 2cm per sensor | |
| Update Rate ⁽¹⁾ | 4 sensor array | 8 sensor array |
| | Tower mode - 8 Hz Sequential mode - 4 Hz Simultaneous mode - 16 Hz | Tower mode - 8 Hz Sequential mode - 2 Hz Simultaneous mode - 16 Hz |
| Field of View | 27° per sensor (Max coverage 4 = 108 degrees Max coverage 8 = 216 degrees) | |
| Electronics | | |
| Supply Voltage V_{DC} | 12V DC for the hub board Power cable with open-end | |
| Current Consumption | 50 mA per sensor (max. 8 sensors per hub board) 25 mA for the hub board | |
| Communication | | |
| Interfaces | USB 2.0 Micro-B UART, +3.3V level, 921600, 8, N, 1 | |
| Visual Notification | WS2812B LED serial control output | |
| Mechanical data | | |
| Dimensions | 42 x 30 x 13 mm (incl. backboard) per sensor 55 x 55 x 10.7 mm for the hub board (incl. UART board) | |
| Weight | 60 g for 4 sensor array kit & accessories 100 g for 8 sensor array kit & accessories | |
| Operating Temperature | -20°C to 75°C | |
| Sensor enclosure materials | ABS | |
| Mounting options | 2 x M2 holes per sensor backboard 2 x M3 holes for the hub board 2 x M3 holes for the UART board | |
| Type of Connection | USB 2.0 Micro-B UART, +3.3V level, 921600, 8, N, 1 WS2812B LED serial control output | |
| Conformity | | |
| Reference Standard | CE, RoHS | |

⁽¹⁾ Specifications are derived from tests in controlled conditions (target with 80% diffuse reflectivity, indoor fluorescent lighting, ambient temperature around 25°C). Note that bright sunlight, target surface reflectivity, and other variables can affect sensor performance

⁽²⁾ By default, the Teraranger Evo Mini sensor boots in 1-pixel long-range mode. When connected to Teraranger Hub Evo, these modes cannot be changed. To change pixel or range mode, TeraRanger Evo Mini needs to be connected to a compatible I2C/UART or USB 2.0 backboard interface and given a specific command. Please read the TeraRanger Evo Mini user manual for more information.

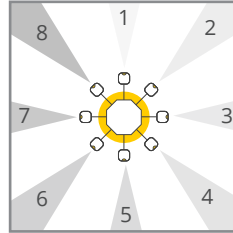
Operating modes

Simultaneous mode



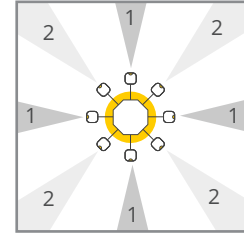
All sensors connected to the Hub Evo are activated at the same time. Benefit from highest update rates.

Sequential mode



Sensors connected to the Hub Evo are activated one at a time (1 - 2 - 3 - etc). This mode is useful in configurations when crosstalk is likely and allows flexible sensor positioning.

Tower mode

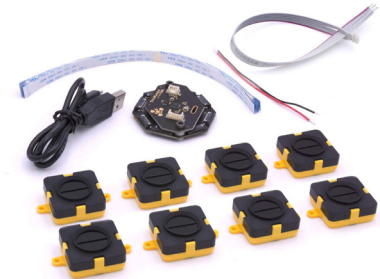
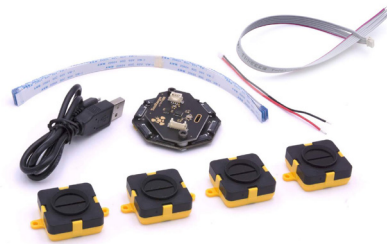


Sensors are activated 4 at a time, first odd port numbers, then even port numbers on the Hub Evo. This mode is best used for 360° environment monitoring.

What's inside the box

TR Evo Mini Array Kit 4

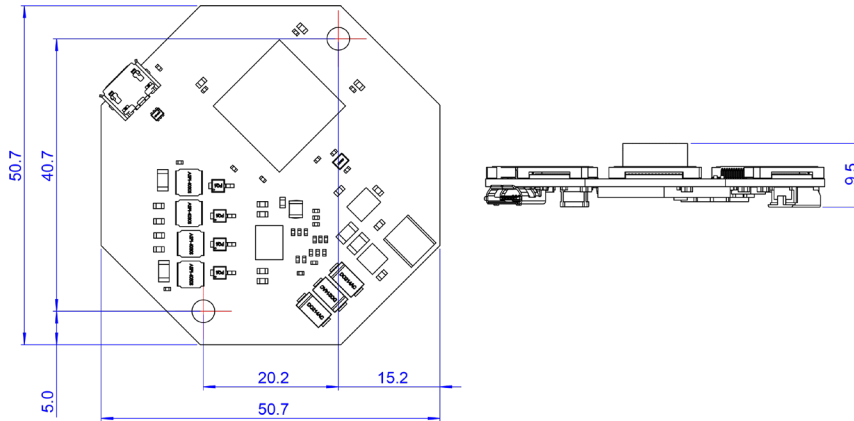
TR Evo Mini Array Kit 8



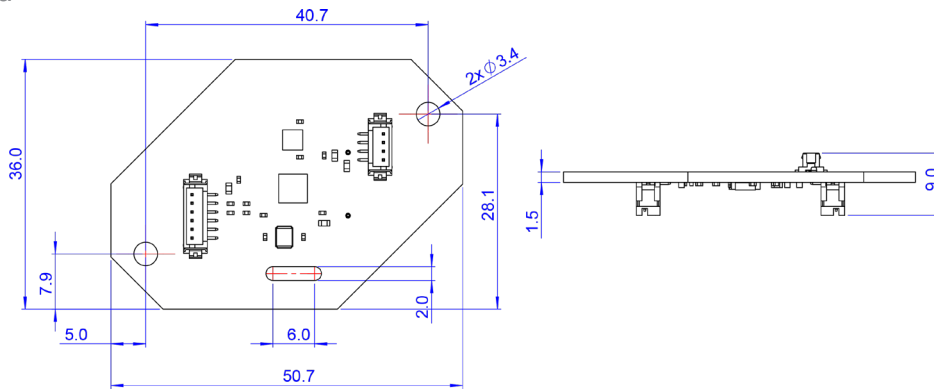
| | | |
|--|---------|---------|
| TR Evo Mini sensors | x 4 pcs | x 8 pcs |
| Hub backboards | x 4 pcs | x 8 pcs |
| FFC cables (20 cm) | x 4 pcs | x 8 pcs |
| TR Hub Evo | x 1 pcs | x 1 pcs |
| UART board | x 1 pcs | x 1 pcs |
| UART cable: DF13 6pin to open-end cable (22cm) | x 1 pcs | x 1 pcs |
| Micro-USB cable (50 cm) | x 1 pcs | x 1 pcs |
| Power cable with open ends (10cm) | x 1 pcs | x 1 pcs |
| Screws, spacers, nuts | x 6 pcs | x 6 pcs |

Dimensions

TeraRanger Hub Evo



UART board



TeraRanger Evo Mini

