

TCR-SLI GEN2 Datasheet



TCR-SLI is a solar powered radar object counter with integrated LoRaWAN® connectivity.

The system shared_content powerful radar signal processing that enables bi-directional counting of moving objects in distances up to 10m. Objects can be categorized into up to 4 groups with speed and object size filters. Counter values are transmitted in regular intervals to the LNS (LoRaWAN® Network Server).

TCR GEN2 is a very versatile radar counting system. It enables various applications such as people counting, traffic statistics, use of sports facilities or even security applications.

TCR-Sxx types come with an integrated solar charging unit including tempered battery. The battery is used to backup up to 4 foggy days. The system can be installed very flexible on different locations including remote areas without any electricity.

Applications

- Traffic Counting and Categorization
- Bicycles
- Hikers (People Counting)
- Outdoor Sports
- Boats
- Smart Street Lighting
- Smart City Traffic Management
- Parking Lot Management

Features

- Rugged device with protection level against water and dust
 - Robust measurement system (24GHz Doppler Radar)
 - Fully anonymous counting (EU-GDPR compliant)
 - Bi-directional
 - Categorization using speed and object size filters
 - Interval or totalizer mode
 - LoRaWAN™ data uplink intervals between 1 min up to 1440 minutes
 - Configuration via USB-Port or LoRaWAN™ Downlinks
 - Pole or surface mount
 - External power supply 5-12V DC or Solar Panels up to 22V/2A
 - Free Lifetime firmware updates via USB DFU
 - Swiss made
 - 24 months limited warranty, extendable up to 60 months
-

Technical Specification

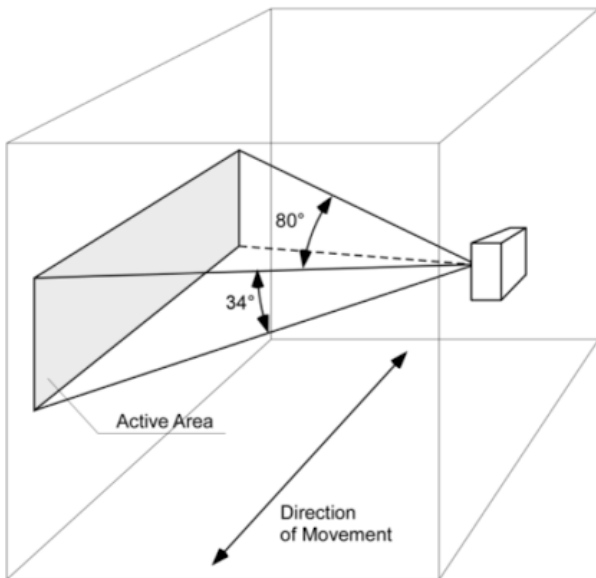
Note: This technical specs relates to Firmware 2.1

Side Mounting

When mounted sidewise, TCR can detect objects passing by in both directions

IMPORTANT: Minimum distance to street or path should be more than 50cm

IMPORTANT: If a bigger object hides a smaller object behind it, it will be counted as one.



Tilted

The device can be mounted at a pole at around 3m facing towards the street. Our pole mount MT80-15 (accessory) can be used for that. This is useful in public places to prevent damage from vandalism.

Mechanical Specs

Mechanical

Size (L x W x H) 150 x 150 x 60mm

Weight 800g

Protection class (IEC 60529) IP65

Wall mount holes behind hinged caps

Radar Specs

Radar Detection

Frequency	24GHz
Beam Aperture	80° / 34°
Range	50-800cm
Movement detection	bi-directional
Movement speed	1-40 km/h (LS), 7-120km/h (HS)
Classification	Speed, Size
Mounting	side mounting tilted
Counting modes	interval totalizer

LoRaWAN®

LoRaWAN®

LoRaWAN® Specification	LoRaWAN® 1.0.3 Regional Parameters v1.0.3revA
Device Classes	A or C
LoRaWAN® Features	OTAA, ADR, LinkCheck, DeviceTime
LoRaWAN® Regions	EU863-870 AS923 AU915-928 (8 selectable sub-bands) US902-928 (8 selectable sub-bands) IN865-867
Antenna	internal monopole, dual-band 868-870 MHz, 902-928 MHz
Antenna Gain	0.3 @ 868 MHz, 1.0 @ 902 MHz

Region	Channel Datarate	Channels	Channel Groups	Max EIRP
EU868	DR0-DR7	3 (863-870 MHz)	n/a	16.0 dB
AS923	DR0-DR7	2 (915-928 MHz)	AS923-1 only	16.0 dB
US915	DR0-DR4	64+8 (902-928 MHz)	All FSB1 FSB2 FSB3 FSB4 FSB5 FSB6 FSB7 FSB8	20.0 dB
AU915	DR0-DR6	64+8 (915-928 MHz)	FSB1 FSB2 FSB3 FSB4 FSB5 FSB6 FSB7 FSB8	20.0 dB

Power Sources

It is possible to operate the unit either with a solar cell or an external 12V power source such as a 12V battery or DC Power Supply. Mixed operation is also possible, with automatic switching.

Solar

Please select a small solar module that does not exceed the following power rating. Higher voltages can destroy the internal solar charger. We offer solar modules with 9W or 17W power, which have been tested with the device. (Ask for SOL9-KIT or SOL_17-KIT)

Solar Panel Rating

Voltage 5-22V

Current 0-2A

External DC

External DC Power

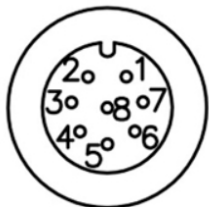
Voltage 5-12VDC

Nominal Current 34mA @ 5VDC
22mA @ 12VDC

Connectors

M12 8P Connector

The solar panel is connected via the M12SOL adapter plug to the M12 8pin socket.



8-pin
M12

Pin	Purpose	
1	V-	0V DC
2	V+	5-12V DC
3	NC	not used
4	NC	not used
5	NC	not used
6	NC	not used
7	VS-	Solar Panel negative pole
8	VS+	Solar Panel positive pole

Ordering Information

Device Types and Configurations

The order number (SKU) is composed as follows

	Type	Speed Class Configuration	LoRa Region Configuration
TCR	-SLI Internal 868/915MHz Antenna	/LS Low Speed Detection	/EU868
		/AS923	/AS923
		/HS High Speed Detection	/US915
			/AU915

Note: Speed Class and LoRa Region Configuration may be changed by the user later.

What is in the box

Parts

- 1x TCR-SLI
- 1x M12SOL Round Plug Adapter for Parametric Solar Kits

Accessories

Optional accessories when ordered together with the counter can be found in the same box

SKU	Description	Used for
MT80-15	Bracket for TCR, 80° tiltable, stainless steel	horizontal or tilted mounting at poles
SOL17-KIT	Rugged solar panel for use in Central Europe, North America, shared_content mounting hardware and cables	
SOL9-KIT	Rugged solar panel for use in Southern Countries (Sunny Countries)	
PSU12	12V Power supply, IP67 rated, industrial grade	winter/summer dual power supply

Regulations

UMSUG

- UMSUG Charge Code: 9400011000100