

TRIO MOBIL

FORKLIFT SAFETY ASSISTANCE

- Maximum safety for personnel and vehicles
- Comfort modules for total flexibility
- NEW: Collision protection for forklift trucks
- Intelligent technology for automatic safety
- Forklift and Personnel tracking
- Zone based collision prevention

Forklift Zone Anchor Installation Guide

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NOTICE

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 or more 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.

NOTICE

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

NOTICE

This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.



WARNING

Forklift Safety Assistant System is designed as an Assistant or supportive safety system. It does not make any commitment to provide certainty or 100% protection. Trio Mobil Assistant safety system does not eliminate operator responsibility or autonomy.

Trio Mobil Company is not responsible for any problems that may arise due to the use, non-use, activation or non-activation of the system.

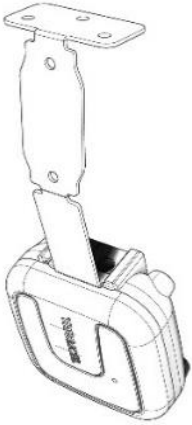
The working principle defined in the topology document is for ideal conditions, it should be taken into account that environmental conditions and other factors (natural events, electrical and software factors) may affect the operation of the system.

It is the Customer's responsibility to inform all personnel who will use the system in this regard, and to maintain all previous occupational safety measures.

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DEFINITIONS

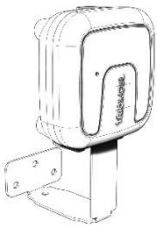
FORKLIFT SAFETY ASSISTANCE



Zone Anchor : Ultra-Wide Band stationary devices used to slow down forklifts in designated zones. It is also used to track forklifts and pedestrian devices.



Forklift Central Unit (FCU) : Forklift Central Unit (FCU) an industrial device that collects real time Forklift Readers data and forwards them to Forklift I/Os and own buzzer/leds



Forklift Reader Unit : Ultra-Wide Band antennas to measure the range between forklifts and pedestrians, other forklifts or zone based speed limiters.



Vehicle : Forklift or similar machinery .



Pedestrian Safety Card : Mobile tracker units for pedestrians. Antennas connected to FCU unit communicate with pedestrian devices and measure the distance between them.



Ultra-Wide Band : Wireless communication technology which the forklift functional safety system is based on.

SAFETY INSTRUCTION AND LEGAL NOTICE

FORKLIFT SAFETY ASSISTANCE

○ SAFETY INSTRUCTIONS

This section explains the safety rules for Forklift Zone Anchor installation. In order to avoid dangerous situations, please follow these requirements and recommendations. Please read these instructions carefully and follow strictly before operating the device!

The device can be powered with a DC voltage 5V.

Before device installation, please check the device accessories.

Please be sure of the software settings of the device.

In order to disassemble the device, disconnect the power cable first.

○ LEGAL NOTICE

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The manufacturer reserves the right to make changes and/or improvements at any time in design, functionality, parameters and electrical characteristics without any prior notice and without incurring obligations.

○ DOCUMENT DETAIL

This document contains information about the Basic specifications, accessories, mechanical characteristics, and configuration of the Forklift Zone Anchor device.

Acronyms and terms used in the document:

- AC/DC - Alternating Current / Direct Current

- I/O - Input / Output

Forklift Zone Anchor has multiple I/O interfaces that make the device an ideal choice for tracking and safety applications that require sophisticated integrations. Forklift Zone Anchor has been specifically designed to be used for functional safety and tracking purposes. Forklift Zone Anchor has 2 digital outputs that can be used with 12-24V relays, 2 digital inputs.

○ PACKAGE CONTENTS

Forklift Zone Anchor contains below listed items. Trio Mobil has the right to make a change on the below list.

- Forklift Zone Anchor Device Body
- I / O Ports Connection Cable

○ BASIC CHARACTERISTICS

○ WIRELESS INTERFACE

UWB (Ultra-Wide Band) Communication module

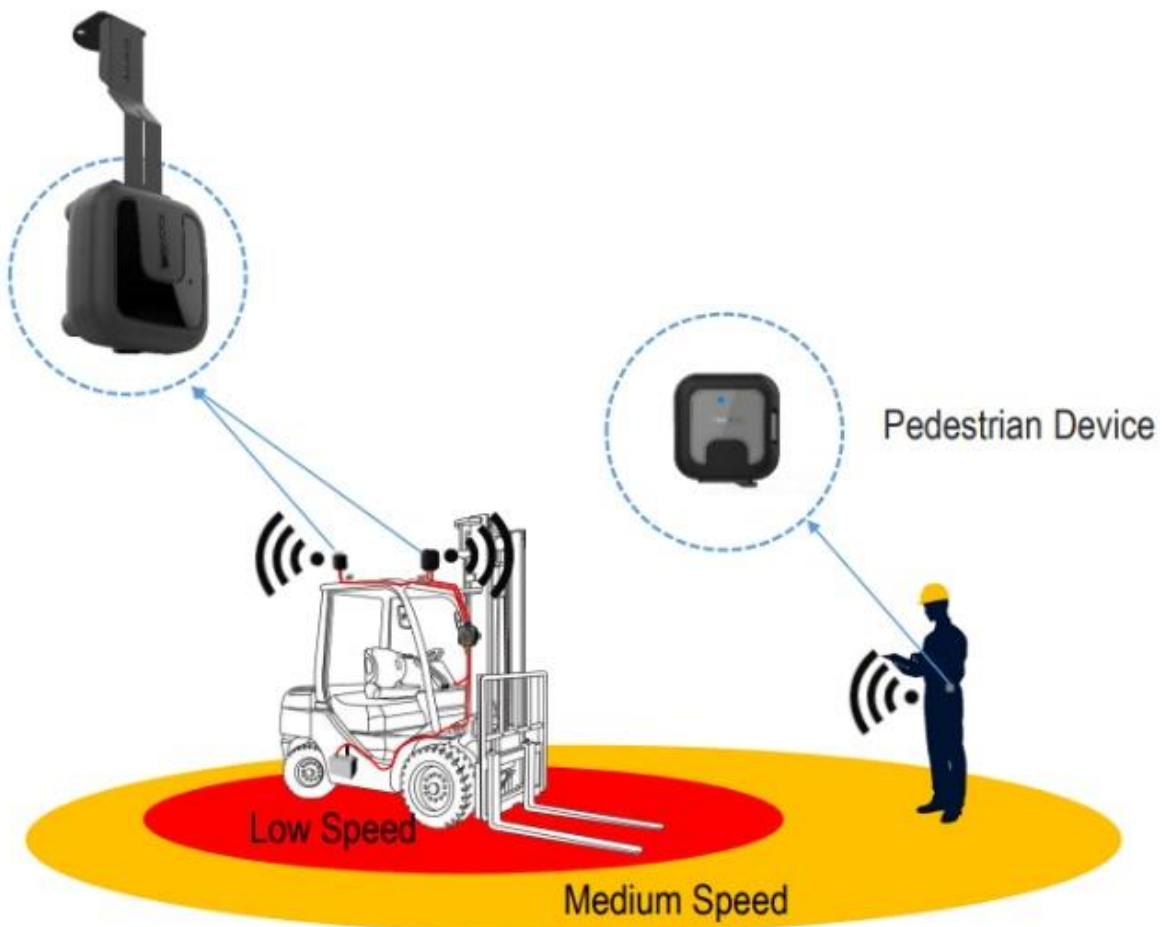
- Supports Forklift Safety Solution and Indoor tracking applications.
- I / O Ports Connection Cable

- **WIRED INPUTS**
2 x General I/O's
- **WIRED OUTPUTS**
2 x Digital Outputs
- **LEDS**
2 x Data Led

ZONE BASED SPEED CONTROL

Zone based forklift safety system allows for:

- Determining low speed zones for forklifts enabling them to slow - down automatically if necessary.
- Making crossroads and pedestrian zones safer using IoT technology.
- Using zone anchor output to trigger traffic lights, barriers or other systems.



ZONE BASED SPEED CONTROL

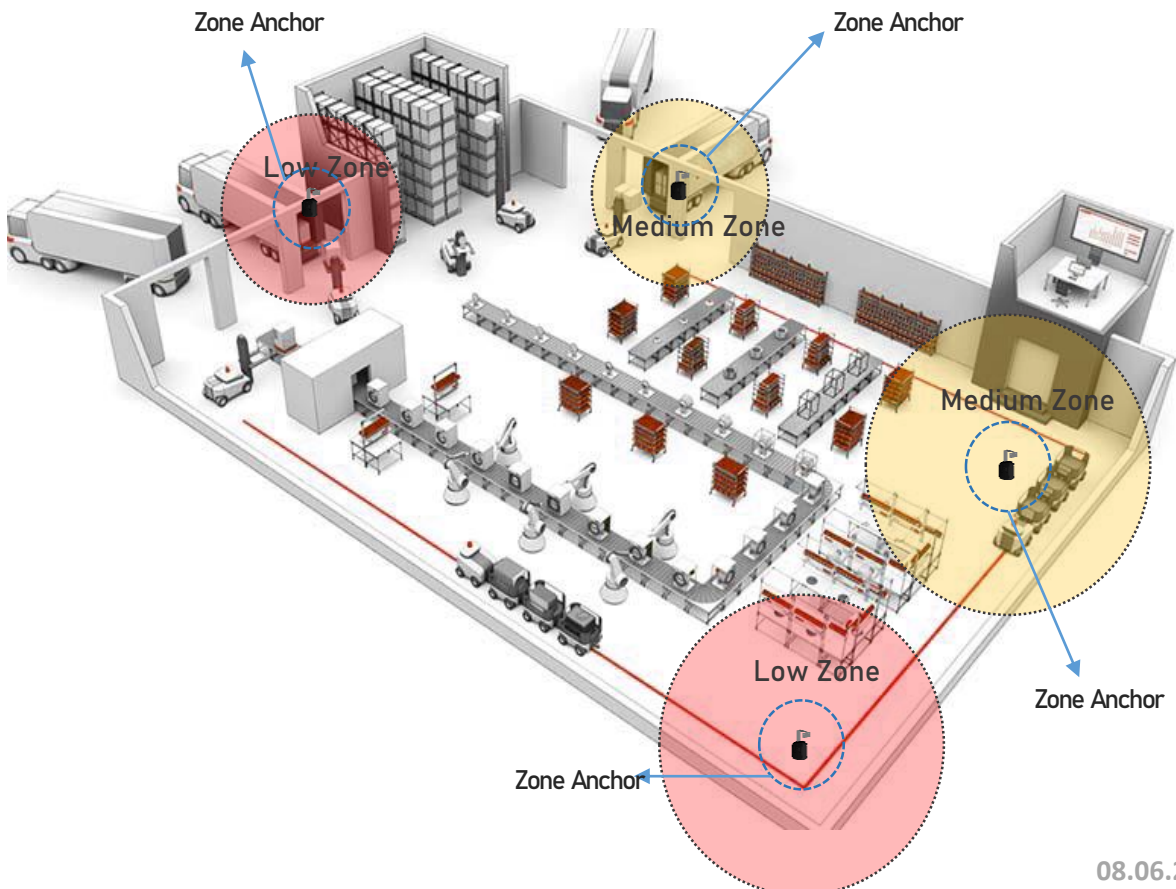
Distance at which the forklifts slow down can be configured on the zone anchor at 2 levels, one for medium speed and one for low speed.

Whenever the forklift enters the speed zone, the forklift central unit and speed zone anchors start back and forth communication and range measurement.

Depending on speed zone anchor type (low speed or medium speed), the forklift reduces its speed.

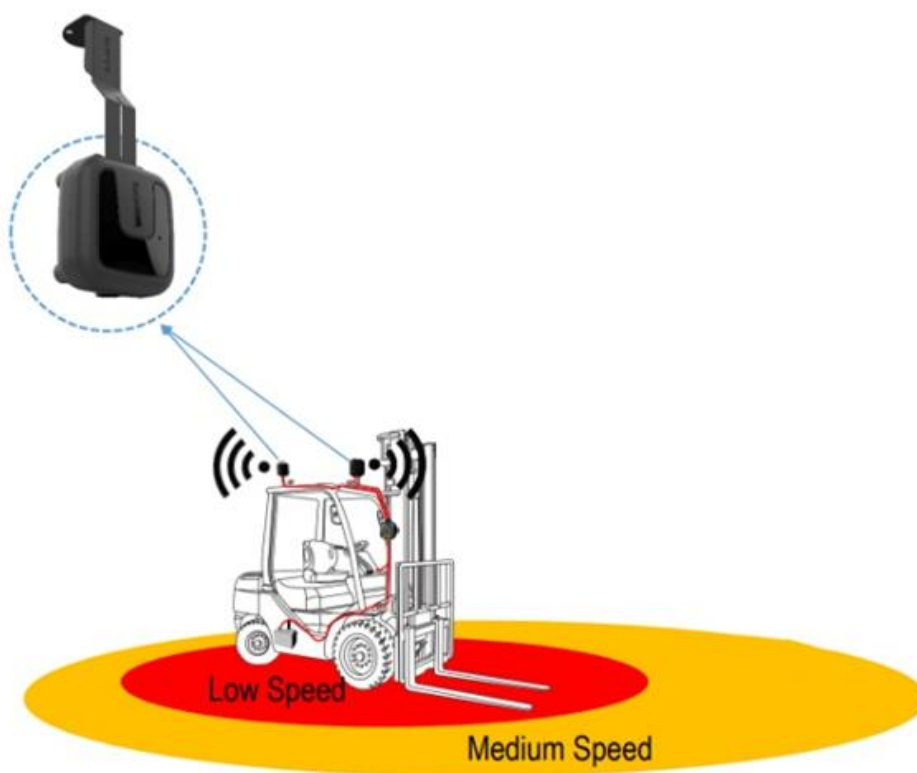
As long as the forklift is in predetermined range, the speed will be limited in accordance with the forklift's configuration.

The communication and range measurement between forklift and zone antennas are carried out via high precision and high speed Ultra-Wide Band technology.





1. Forklift Zone Anchor is fixed at any location within the factory where it is required to communicate with the reader on the forklift.
2. Forklift Zone anchor is placed in such a way that no material comes in front of it.
3. The device can be powered with any adapter that can output 5VDC-1A.



When there are people or forklifts in the low-medium-high risk areas around the forklift, the devices on the person and the forklift detect each other and the LEDs on the instrument panel give a warning. These distance settings are determined and sent according to the customer's request. It is possible to change them later.

Forklift Central Unit and Zone Anchor devices communicate and measure distance when they are within range. When a forklift connects with any zone anchor device, the distance between forklift and pedestrian is measured periodically (typically 5-10 times per second).

If they are closer than the predefined distance, the forklift control unit sets its output to give a slowdown command to the forklift.



FCC DECLARATION OF CONFORMITY

FORKLIFT SAFETY ASSISTANCE

FCC Part 15.19 Statement

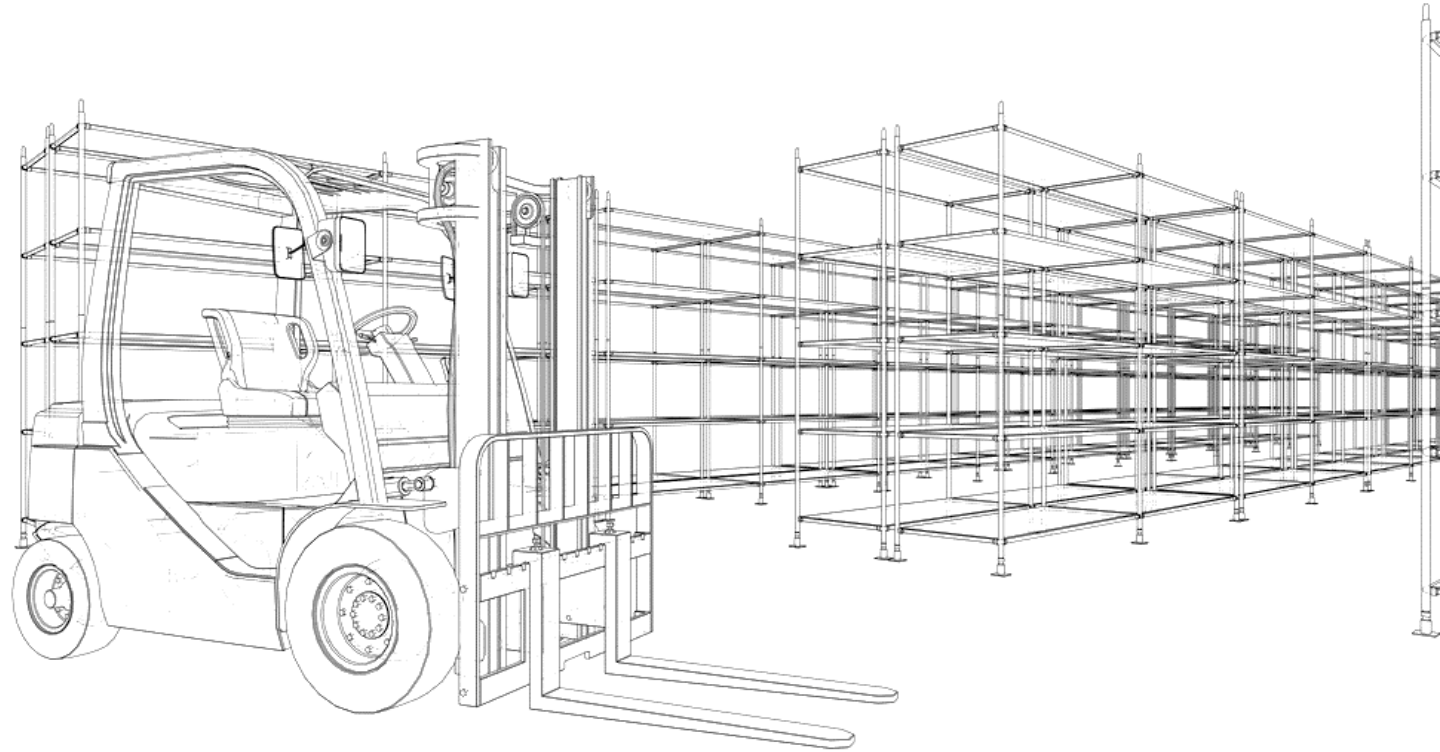
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Part 15.21 Statement

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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FORKLIFT SAFETY ASSISTANCE



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