MEGAPROX8

Long-Range UHF-RFID Reader

Installation and User Manual

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Notice and Disclaimer

This manual's sole purpose is to assist installers and/or users in the safe and efficient installation and usage of the system and/or product, and/or software described herein.

Before attempting to install and/or use the system, the installer and the user must read this manual and become familiar with all safety requirements and operating procedures.

- The system must not be used for purposes other than those for which it was designed.
- The use of the software associated with the system and/or product, if applicable, is subject to the terms of the license provided as part of the purchase documents.
- Prastel France exclusive warranty and liability is limited to the warranty and liability statement provided in an appendix at the end of this document.
- This manual describes the maximum configuration of the system with the maximum number of functions, including future options. Therefore, not all functions described in this manual may be available in the specific system and/or product configuration you purchased.
- Incorrect operation or installation, or failure of the user to effectively maintain the system, relieves the manufacturer (and seller) from all or any responsibility for consequent noncompliance, damage, or injury.
- The text, images and graphics contained in the manual are for the purpose of illustration and reference only.
- All data contained herein subject to change without prior notice.
- In no event shall manufacturer be liable for any special, direct, indirect, incidental, consequential, exemplary or punitive damages (including, without limitation, any and all damages from business interruption, loss of profits or revenue, cost of capital or loss of use of any property or capital or injury).
- All wiring diagrams are intended for reference only, the photograph or graphic of the PCB(s) are intended for clearer illustration and understanding of the product and may differ from the actual PCB(s).

Introduction

The MEGAPROX8 UHF reader operates in 865-868 MHz frequencies. The reader is waterproof (IP65) and is suitable for use in a wide range of RFID applications, such as transport management, vehicle management, car parking, production process control, and access control. The readers support the following functions:

- Reading UHF hard credential
- Transmitting credential ID to the controller
- Acting based on controller's input (allowing access or not)

Technical Specifications

Table 1: Technical specifications

Operating Voltage Range	9-15 VDC (2 A) ; Max: 24 VDC
Input Current	Standby: 0.2 A max
	Read: 1.2 A max
Credential Read Distance*	0.5 to 12 m (adjustable in factory)
Transmission Protocol	Wiegand 26-Bit (default) or Custom (in factory)
Maximum Cable Distance	100 m with 18" AWG cable
Frequency	865–868 MHz
Modulation Type	ASK
Read Sensitivity	Dual polarization read mode
Cards and Tags	EPC GEN2 (ISO18000-6C) tags
Operating Temp. Range	-35°C to 60°C
Operating Humidity Range	0 to 95% (non-condensing) Suitable for outdoor use (IP65)
Dimensions (H x W x D)	36.5 x 36.5 x 3.2 cm
Weight	2.8 kg

* Measured using a Prastel proximity card or equivalent.

Mounting

Important	All RFID readers can be affected by Radio Frequency Interference (RFI). For optimal read range, RFID readers should be installed away from areas with RFI.
Note	Installing an RFID reader adjacent to metallic surfaces might alter it's specifications. To diminish this interference, use a plastic spacer when mounting the reader.

General

There are two methods that can be used when installing the reader.

- 1-Shaped Stand Bracket Side-Loaded
- L-Shaped Stand Bracket Top-Loaded

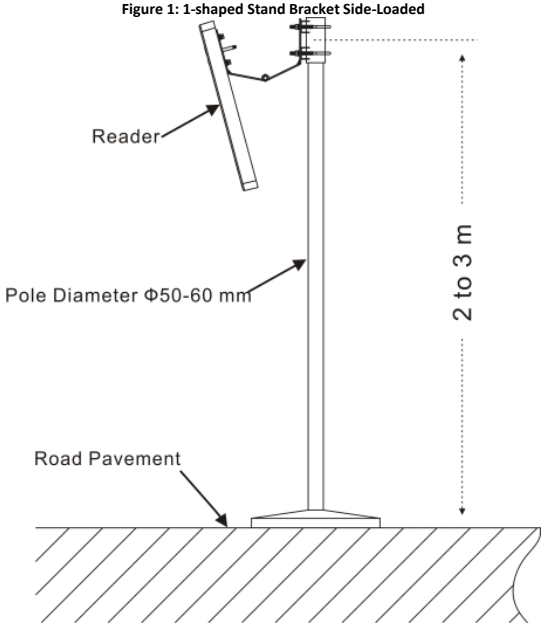
Each installation method is selected based on application requirements and location.

1-Shaped Stand Bracket Side-Loaded

In this method, the stand pole should have a diameter of between 50-60 mm and a height of 2-3 m. It should be made of stainless steel with a thickness of at least 1.2 mm.

Use the bracket contained in the package box to mount the MEGAPROX8 reader to the top of the stand pole according to vehicle type (Figure 1).

Figure 1: 1-shaped Stand Bracket Side-Loaded



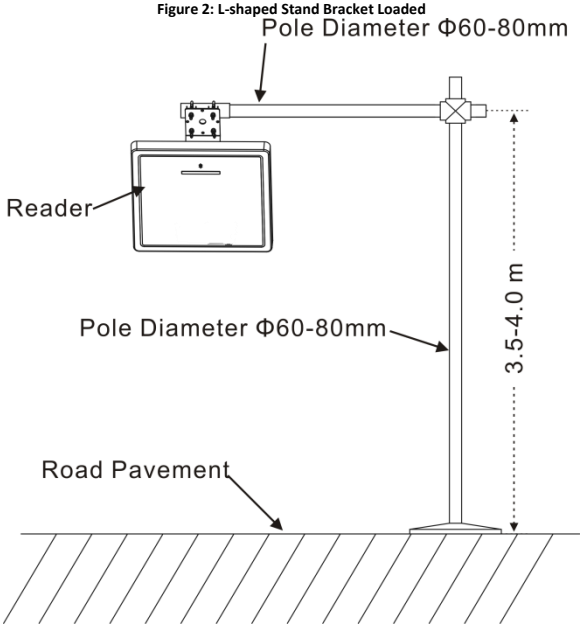
Adjust the height from the center of MEGAPROX8 reader to lane level to be around 2m.

L-Shaped Stand Bracket Top-Loaded

In this method, the L-shaped stand pole should have a diameter of between 60 to 80 mm and a height of 4.2 m. It should be made of stainless steel with a thickness ≥ 1.2 mm.

Use the bracket contained in package box to mount the MEGAPROX8 reader to the rail near the center of the lane (Figure 2).

Figure 2: L-shaped Stand Bracket Loaded



Adjust the height between the rail and the ground to between 3.5 to 4.0 m, depending on the height of vehicle.

Adjusting the Azimuth Angle of Antenna

The angle of inclination with the ground plane of the antenna should be approximately 60° to 75° (Figure 3), while the deviation angle of the antenna should be biased towards the lane direction (Figure 4).

Figure 3: Antenna Angle Side View

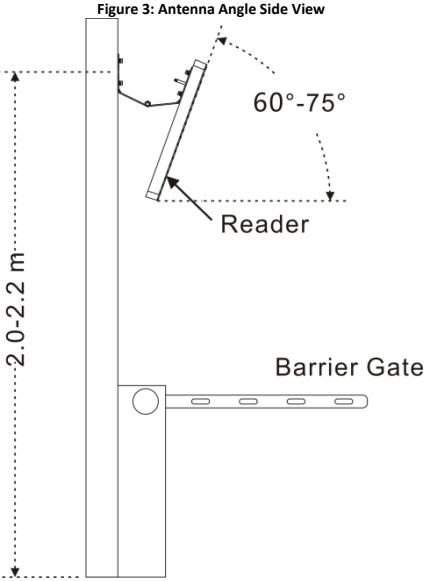
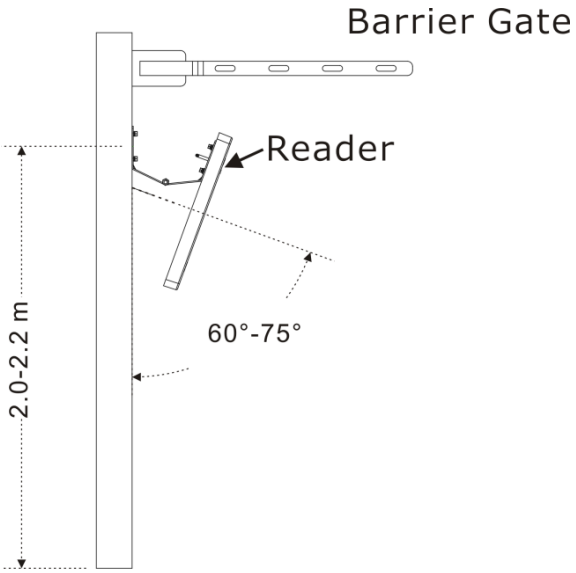


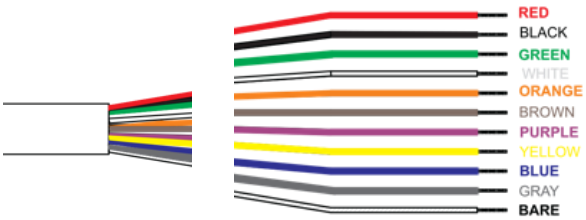
Figure 4: Antenna Angle Top View



Wiring

The units are supplied with a 5 m 10-conductor pigtail with solder-coated wires (Figure 5).

Figure 5: Wiring Colors



WIRE COLOUR	DESCRIPTION
RED	**VIN 12 - 24 VDC**
BLACK	**Ground**
GREEN	**Data 0**
WHITE	Data 1
ORANGE	**Green LED CTL**
BROWN	Red LED CTL
PURPLE	**Output (OC)**
YELLOW	**Hold / Trigger**
BLUE	RS-485 - A / OSDP
GRAY	**RS-485 - B / OSDP**
BARE	Shield

To connect the unit as a reader to an access control unit:

1. Select the appropriate connections according to Table 2.
2. Prepare the controller cable by cutting its jacket back about 3 cm and strip the insulation from the wires about 1.3 cm.
3. Splice the reader's pigtail wires to the corresponding controller wires and cover each joint with insulating tape.

Table 2: Wiring the Unit as a Reader to a Control Panel

Wire Color	Output
Red	Power
Black	Ground
Green	Data 0 / Data / C2
White	Data 1 / Clock / C1
Orange	Green LED Control
Brown	Yellow LED Control
Purple	OC Output*
Yellow	Hold/Trigger Control
Blue	RS-485 - A / OSDP*
Gray	RS-485 - B / OSDP*

*For future use

4. Trim and insulate the ends of all unused conductors individually. Do not short any unused wires together.

Note

- The individual wires from the reader are color coded according the Wiegand standard.
- When using a separate power supply for the reader, both supply must have common ground.
- The reader's cable shield wire should be attached: to an earth ground, or a signal ground connection at the panel, or the power supply end of the cable.
  This configuration is best for shielding the reader cable from external interference.

Operation Instructions

After wiring the unit to a controller (POWER, GND, D0, D1), you should test the reader.

To test the reader:

1. Power up the reader. One beep is emitted and then it begins an auto-calibration procedure. After 2 seconds, the reader enters working mode.
2. Present the appropriate type of credential to the reader. A short beep is emitted, indicating that the credential is read properly.

LED functioning:

	Ready to read = Red light ON

	Reading = Green light ON

Declaration of Conformity

FCC ID = GCD-AYU9XXBT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

Radio Equipment Directive (RED)

Under our sole responsibility that the following labeled MEGAPROX8 is tested to conform to the EU Radio Equipment Directive – RED 2014/53/EU – in electrical and electronic equipment

RoHS Directive

Under our sole responsibility that the following labeled MEGAPROX8 is tested to conform to the Restriction of Hazardous Substances (RoHS) directive – 2011/65/EU – in electrical and electronic equipment.

Limited Warranty

The full Prastel France Limited Warranty Statement is available in the Quick Links section on the Prastel France website at www.prastel.com.

Prastel considers any use of this product as agreement to the Warranty Terms even if you do not review them.

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