GV-RU9003 UHF RFID Reader

Introduction

GV-RU9003 is a Radio Frequency Identification (RFID) reader of ISO18000-6C (EPC GEN2) standard. Designed for parking lot management, the reader can read RFID tag within 10 m (32.8 ft).

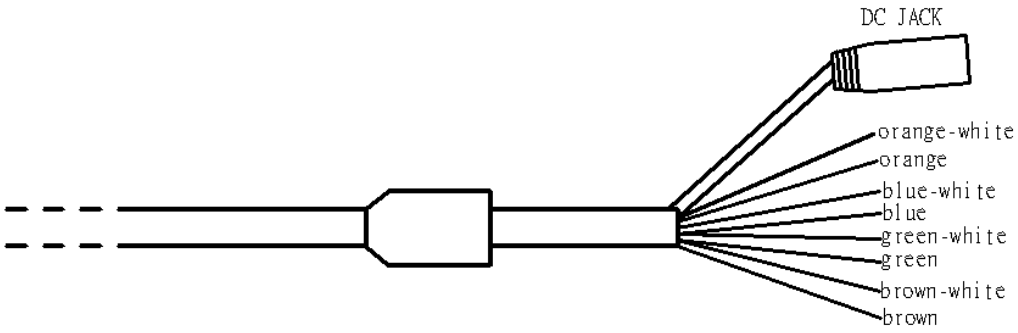
Features

- Built-in antenna and RF module
- Effective identification with specially designed antenna pattern
- Compatible with access controller using Wiegand 64 interface
- Ideal sensing range within 10 m (32.8 ft)
- Special energy-saving design reducing power consumption
- Support for external sensors and controllers
- Electronic tag compliant with EPC Gen II (ISO18000-6C) standard
- R&D patent for EMI reduction
- NCC/FCC/CE certification

Notice

1. The product pattern is certified by the FCC. Unauthorized modification of the frequency, power, or originally designed functions and characteristics of the RFID reader are prohibited.
2. This product has a water-resistant design. Unauthorized removal of the screws and case of the product will damage the water-resistant performance and void product warranty.
3. Cables are water-resistant. Do not damage the shield, as it will also damage water-resistant performance.
4. The reader should be positioned so that personnel in the area for prolonged periods may safely remain at least 20 cm (8 in) in an uncontrolled environment from the reader's surface.
5. Avoid the interference of other radio frequencies with the look-up table frequency-hopping spread spectrum (FHSS).

Output Cable Descriptions



Wire Color	Definition	Function
Orange-White	D485+	Not functional
Orange	D485-	
Blue-White	GND	GND
Blue	GND	GND
Green-White	DATA 1	Wiegand communication interface
Green	DATA 0	
Brown-White	DI	External control signal input, H:3.3V / L:0V
Brown	DO	Not functional

Figure-1

1. Wiegand Communication Interface
   1.1. Connect with access controller using Wiegand interface (one-way operation).
   1.2. Support by Wiegand 64 interface.

2. DI (external control signal input)
   2.1. Signal level defining: High level (H) : 3.3V / Low level (L) : 0V (GND signal)
   2.2. When the external control signal input is at high level and the GV-RU9003 is in the standby mode, the GV-RU9003 will not output any identification code to the back-end access controller.
   2.3. When the external control signal input is at low level and the GV-RU9003 is in the working mode, the GV-RU9003 will output the identification code on the tag to the back-end access controller.
   2.4. If DI is not in use, connect it with the blue or blue-white wire.

Recommended Installation of GV-RU9003 RFID Reader

1. Secure the GV-RU9003 RFID reader on a column, pedestal, wall, or beam at a height between 1.8 - 2.2 m (5.9 – 7.2 ft) above the ground. Be sure to leave some space to adjust the reader's angle to the upper, lower, left, or right position.
2. Check the antenna pattern as listed below and make sure that the tags on the passing vehicles will be on the opposite side of the reader.

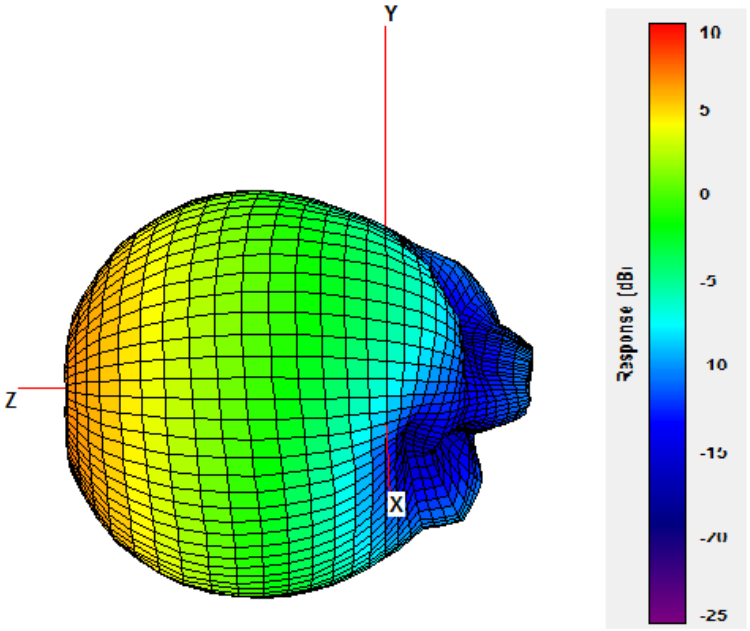


Figure-2

3. Although the ideal sensing range of GV-RU9003 is within 10 m (32.8 ft), the actual sensing range varies due to weather (raining, fog, sunny) and installation method (horizontal, inclining).

Connection of GV-RU9003 RFID Reader

1. Connect the GV-RU9003 to a Wiegand signal source based on the communication interface of the access controller.

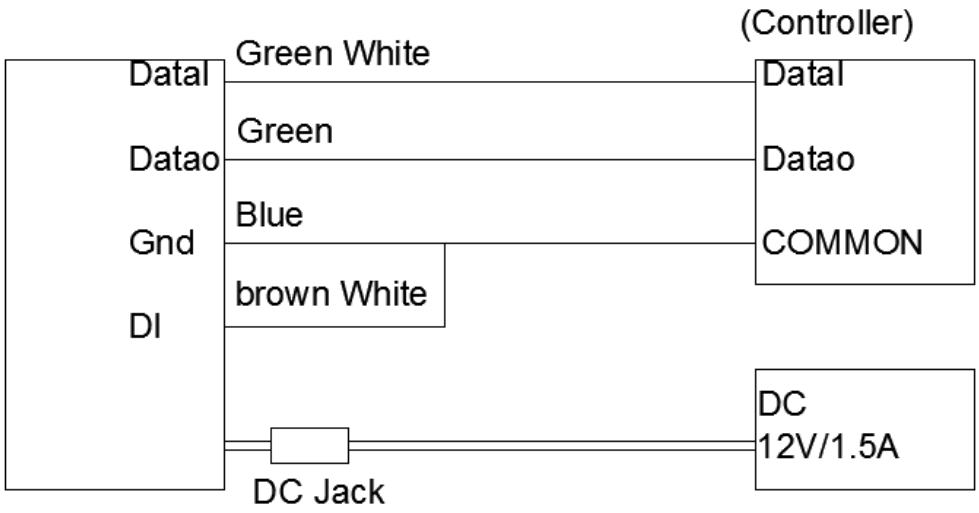


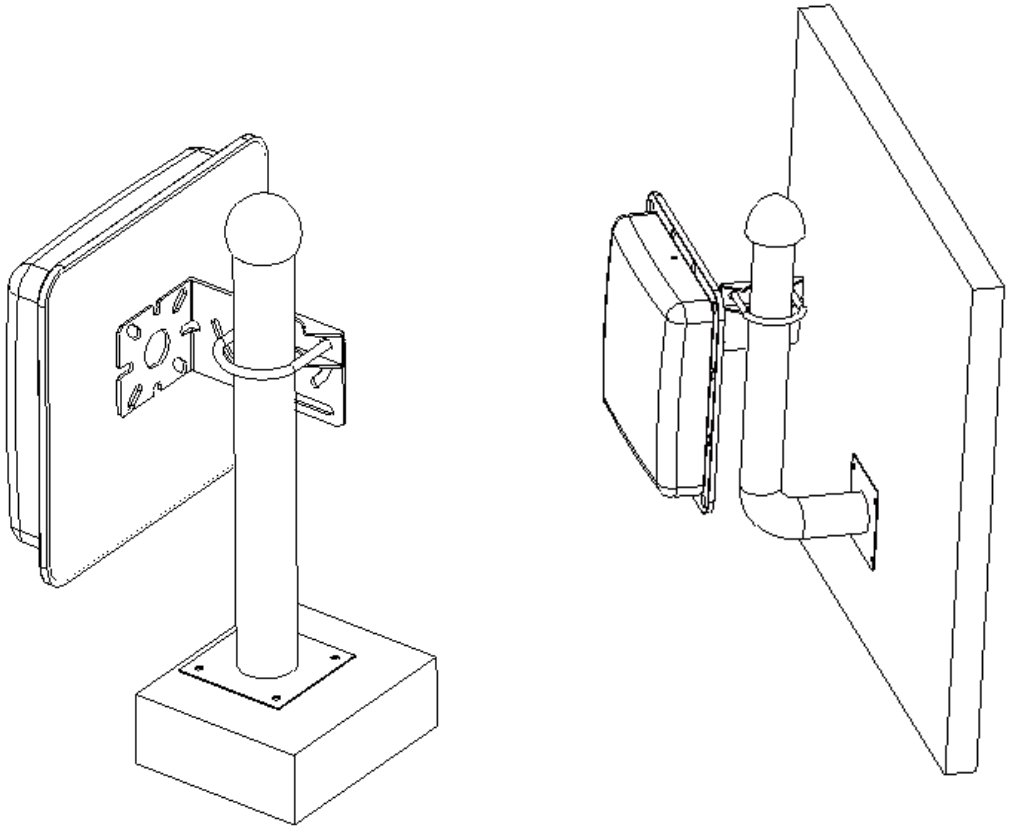
Figure-3

2. DI (brown-white) is the input signal (e.g. ground induction loop or photo interrupter) controlling the operating mode of the GV-RU9003 with external control. If external control is not in use, please connect it with the blue or blue/white wire.
3. Connect the GV-RU9003 to power using one of the methods:
   - Connect the DC Jack to a power adaptor (self-prepared) as shown in *Figure 3*.
   - Connect the DC Jack to the controller using the DC Jack power cable (supplied) as shown in *Figure 4*.

Figure-4

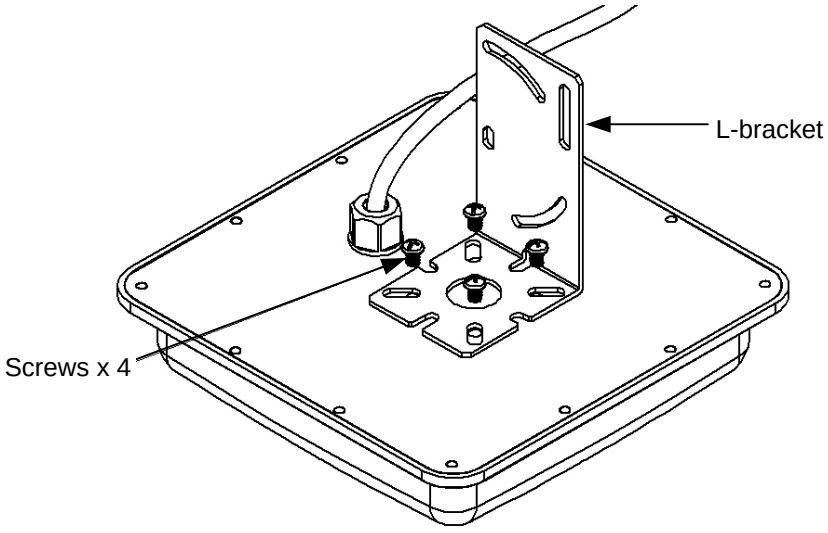
Installing GV-RU9003

You can install the reader on a pole or a pillar. Two types of pole mounts are recommended, as indicated below.

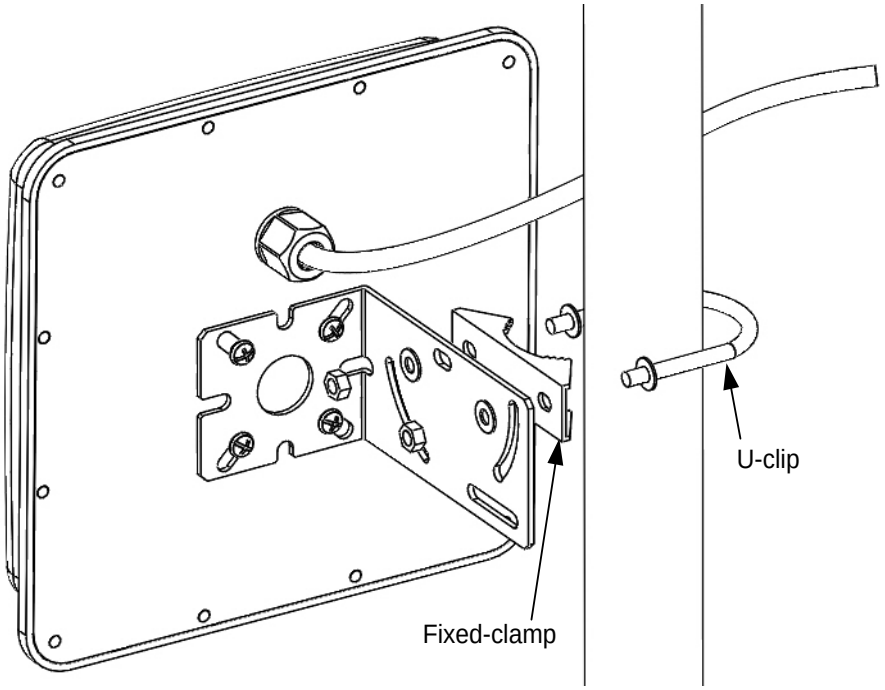


Note: Make sure the diameter of the pole is within 53 mm (0.17 ft).

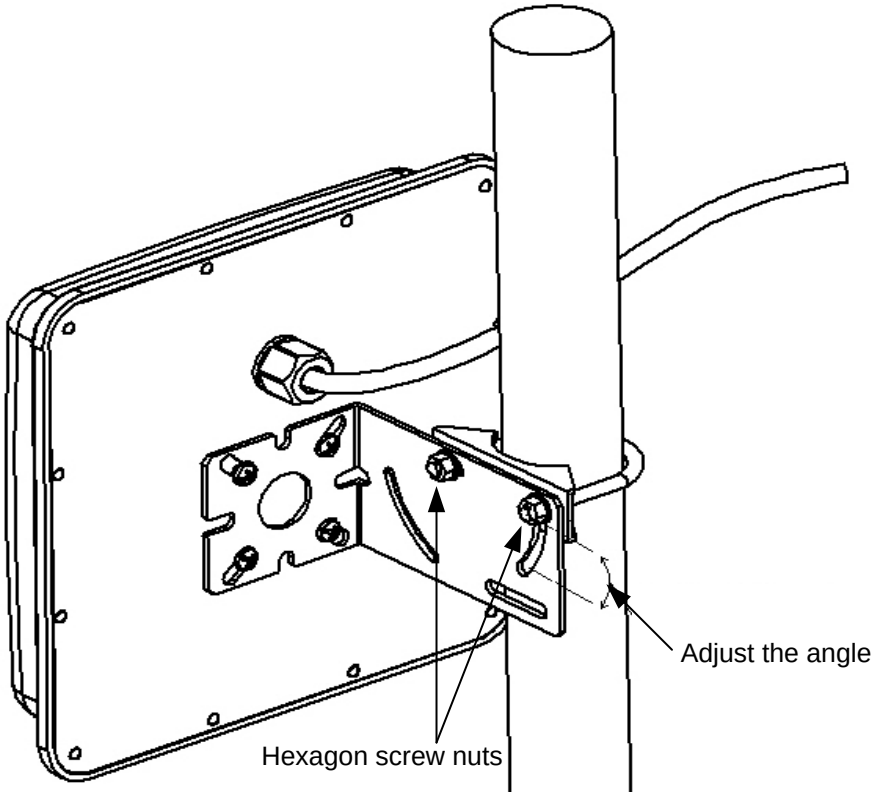
1. Secure the L-bracket with four screws (supplied) on the rear side of the UHF RFID Reader.



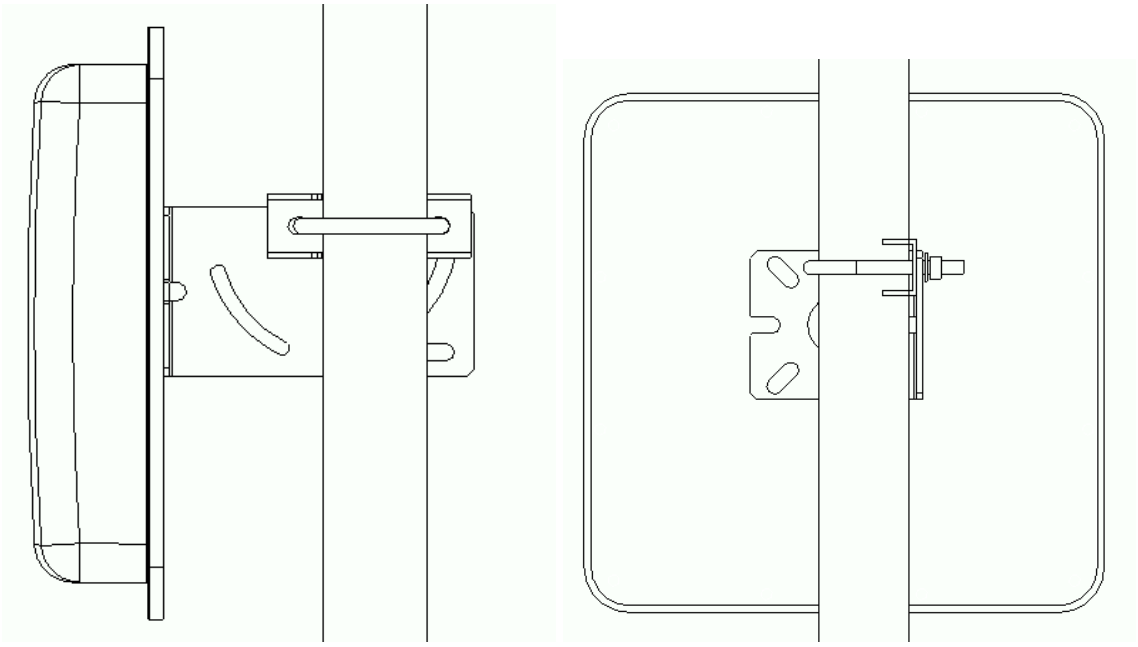
2. Secure the reader on a pillar or a pole using fixed-clamp and U-clip.



3. Adjust the angle of the U-clip on L-bracket and secure the hexagon screw nuts.



4. Overview of pole mount.



Specification

	GV-RU9003
Input voltage	9 ~15 V
Antenna gain	7.71 dBi (circular polarization)
Antenna receiving	50 ohm U.FL.
Wiegand interface	Wiegand 64 bit
Operating frequency	RU9003 TW 922-928 MHz RU9003 US 902-928 MHz RU9003 EU 865-868 MHz
Emission power	27.9 dBm
Modulation scheme	PR-ASK, ASK
Current	<1A max.
Protocol	EPC Gen2 (ISO 18000-6C)
Receiving sensitivity	-85 dBm
Sensing range	10 m (32.8 ft) max.
Water resistance	IP56
Operating temperature	-20°C ~ 55 °C / -7.6°F ~ 131°F
Storage temperature	-20°C ~ 85°C / -7.6°F ~ 185°F
LEDs	Red, Green
Humidity	5-90 %
Dimensions	228 x 228 x 52.3 mm / 8.97 x 8.97 x 2.04 in
Weight	530 g / 1.16 lb
Certification	NCC, FCC, CE

Note:

1. The GV-ASManager V4.4.2.0 is required.
2. Wiegand interface supports both GeoVision AS2xxx/4xxx/8xxx controllers and 3rd party controllers (Wiegand 64 Bits).
3. Specifications are subject to change without notice.