



Jovix 3.0 VMR Operating Instructions

Work instructions for operation of the Jovix 3.0 VMR.

Version 2023.3.1

Contents

Vehicle Mounted Reader (VMR)	3
VMR components	3
Configuration of the VMR	3
Operation of the VMR	3
Driving recommendations and other notes for inventory scans.....	4
LED status indicator	5
Troubleshooting steps	5
Dos and Don'ts	6

Vehicle Mounted Reader (VMR)

VMR components

The Vehicle Mounted Reader (VMR) is an autonomous RFID scanning hardware unit that can be retrofitted to site vehicles to collect RFID tag data from Materials in the laydown yard.

The components of a VMR unit include the following:

- RFID reader and IoT device enclosure
- LED module in a mounting case for status indications
- RFID antennas and antenna cables

The enclosure is installed at a suitable location on the floor of the vehicle and powered through the vehicle's fuse panel. The LED module can be installed in view of the operator on the dash. The antennas are mounted one on each side of the vehicle bed to enable scanning on both sides of the vehicle. There is no power switch for the VMR unit, and it's turned on and off through the vehicle since it's powered through the fuse panel.

Configuration of the VMR

The VMR is shipped fully configured and ready to synchronize to the site project instance on the Jovix server. The unit requires access to the site internet via Wi-Fi.

The following are the options to connect to the Internet:

- Site Wi-Fi
- Hotspot via a mobile phone or tablet
- Mi-Fi hotspot via cellular provider

Once the installation of the VMR is complete, Hexagon Support staff can help setup the unit to connect to the Wi-Fi onsite. This will require a Windows PC with access to Microsoft® or TeamViewer® that can be used to remotely access the IoT device in the VMR enclosure. An USB cable is provided with the kit to connect to the IoT device.

Operation of the VMR

During the setup process, the VMR is setup with the Wi-Fi connection and also the speed threshold. The speed threshold, which is usually setup as 1 mph, is used to determine whether the vehicle is in motion.

The VMR is idle when the vehicle is not in motion. When the speed of the vehicle exceeds the speed threshold value, the VMR starts acknowledging tag reads.

After the operator has completed the scanning session, the vehicle needs to be brought back within Wi-Fi range of the site. If the Wi-Fi is being accessed by a mobile phone or Mi-Fi hotspot, the operator can simply park in a safe location. Once an idle timeout of 1 minute has elapsed, the VMR will attempt to publish the scanned data to Jovix server.

Driving recommendations and other notes for inventory scans

Following are some suggestions to improve the scanning performance of the VMR:

- Safety first, do not focus on the LED indicator while operating the vehicle.
- Do not drive too close or too far away from the edge of aisles.
- Drive at an even speed ~ 5 mph.
- It may require multiple passes to scan a majority of the tags in an aisle depending on the material density and positions of tags attached to materials.
- If there is heavy cloud cover and or heavy precipitation in progress, GPS signal as well as RFID scanning may be degraded. It's recommended to not continue scanning if the LED light switches back and forth from Blue to Green even if the vehicle is in regular motion which may indicate a poor GPS fix.
- It is recommended to periodically keep publishing (every 45 min – 1 hour), to prevent a large backlog of tag reads to be published in one session.



LED status indicator

The LED module mounted on the dash provides visual indication of the status of the VMR unit. The following are the different statuses that are indicated:

- No light – The VMR unit is not powered on.
- Red light – The GPS unit is not connected or not accessible by the VMR unit.
- Blue – The VMR is powered on and in an idle state and ready to read tags.
- Green – The VMR has detected that the vehicle is in motion and reading tags.
- Steady Purple returning to Blue every minute after the vehicle has stopped moving – The VMR is publishing tag data.
- Flashing Purple returning to Blue every minute after the vehicle has stopped moving – The VMR is trying to publish data but is unable to do so because of an Internet connectivity issue.

Troubleshooting steps

Red LED – The GPS is not being detected. Check if the GPS unit is plugged in securely and reboot the unit by turning the vehicle on and off.

Flashing Purple LED after every minute while the vehicle is idle – There is an issue with the Internet connectivity. Following are some of the reasons due to which the Wi-Fi may not be connecting, and corrective actions that can be taken:

- The vehicle is not in range of the Wi-Fi access point – Move closer to the Wi-Fi access point and try again.
- The Wi-Fi credentials have expired – check with IT support if the credentials (SSID/password) are still valid.
- The network access policies have changed because of which the IoT unit is being blocked from Internet access – check with IT support if the network access policies have changed.
- The cellular or Mi-Fi hotspot may have Wi-Fi credential issues or temporarily lost connectivity to the Internet – check if the Mi-Fi or cellular Wi-Fi SSID/password have changed. If there is no Internet connection being indicated, it could be a network outage or a cellular plan issue.

Contact Hexagon Support if the above issues cannot be resolved. An operator may be required to connect a PC to the IoT device to assist in the troubleshooting process:

solutionsupport.jovix.ali@hexagon.com

Dos and Don'ts

- Observe general vehicle and site safety rules while operating the vehicle and operate at a safe speed.
- Place the VMR enclosure in a secure location so that it's not free to move around while the vehicle is in motion.
- Do not operate the unit with the RFID antennas disconnected.
- Do not operate the unit in inclement weather; the scanning performance may be operational but degraded.
- To prevent ingress of water and dust, do not open the enclosure cover in inclement weather.
- Do not open the enclosure and contact the electronics with bare hands unless working with Hexagon support, as electrostatic discharge may impact the sensitive electronics.
- Periodically inspect the antennas and antenna cables for wear and damage.