

Savi Mobile Reader SMR-650-217 and SMR-650-218 User Guide

About the Mobile Readers

The Savi® Mobile Reader SMR-650-217 and SMR-650-218 are portable radio frequency identification (RFID) readers that communicate with active Savi RFID tags. The SMR-650-217 Reader and SMR-650-218 Reader include a USB interface connector and work with a notebook or desktop computer or other devices with standard USB serial connectors. The only difference between the SMR-650-217 Reader and the SMR-650-218 Reader is the length of the cable for the USB connector. The SMR-650-217 Reader has a 20 inch (50.8 cm) cable and is designed to plug into a computer USB port or a USB hub. The SMR-650-218 Reader has a 9-foot (2.74 m) cable and is designed to operate in the Savi Total Asset Visibility Portable Deployment Kit (TAV-PDK). See the *Savi Total Asset Visibility Portable Deployment Kit User Guide* for instructions on where to plug in the Savi Mobile Reader SMR-650-218.

NOTE: In this guide, when the model of the mobile reader is not specifically mentioned, the information applies to both Savi Mobile Reader models and kits.

SMR-650 Reader Communication

The SMR-650 Reader has an ultra high frequency (UHF) transceiver and low frequency (LF) transmitter that communicate with all Savi RFID tags via UHF and LF antennas. The software on the computer or device determines if you use UHF or LF commands.

UHF Mode

The UHF transmitter sends commands and write information to Savi RFID tags. In UHF mode, the mobile reader supports single and continuous collections.

When the mobile reader is in single UHF mode, you can only perform one tag collection within a fixed radius. When the mobile reader is in continuous UHF mode, you can perform multiple tag collections while moving through a facility.

The amber status LED is visible when the SMR-650 reader is receiving a UHF signal and is an indication that the tag ID and the information in the data packets is being validated. When the amber LED flashes, it indicates that the mobile reader received a valid data packet. The amber LED is only functional when receiving UHF data and is not functional during UHF or LF transmission.



Amber LED flashes to indicate that the mobile reader is receiving data

LF Mode

LF mode is controlled by the software running on the computer or mobile device. LF mode is compatible only with Savi tags. With the software, you can use LF mode to perform short-range communications up to 3 feet (.91 m). To use LF mode, you must turn it on in the software.

Please refer to Savi SmartChain Mobile and Savi SmartChain Workstation documentation.

Software Compatibility

The Savi Mobile Reader SMR-650 is compatible with the following Savi software products:

- Savi SmartChain® Site Manager, version 6.0 and greater
- Savi SmartChain Mobile, version 6.0 and greater
- Savi SmartChain WorkStation, version 6.0 and greater

USB Driver Updates

Drivers are small software programs that allow Microsoft® Windows® to communicate with other software programs and hardware. Without drivers, the hardware you connect to your computer, such as the SMR-650-217 or SMR-650-218 reader will not work properly. The latest drivers are factory installed with the Savi software listed above.

Savi may release USB driver updates as required. To check for updates contact Savi Global Support Services. See “Contacting Savi Global Support Services” on page 3.

Optimizing the SMR-650 Reader Tag Collection Range

Factors that can limit the SMR-650 reader collection range include:

- Obstructions such as multiple walls, chained areas, solid-core doors, and enclosures
- RF interference from other equipment such as computers, cellular phones, walkie-talkies, elevators, electrical motors, or other RF-emitting devices
- Reflection from the ground and from nearby objects
- Position and orientation of the SMR-650 reader
- Metal or RF-absorbent surface on the tracked item
- Tag location relative to the SMR-650 reader, such as behind a metal obstruction or stacked under multiple layers

Radio interference also affects the probability of collecting any given tag, and you can expect some variance in repeatability in the field.

Recharging the SMR-650 Reader Battery

The SMR-650-217 and SMR-650-218 readers have an internal Lithium-Ion battery that is not replaceable. The reader battery is recharged through the USB serial connection when connected to a laptop computer, TAV-PDK, or other device that is powered on.

NOTE: You must charge the SMR at least 4 hours before you use it the first time. It is recommended that you plug the SMR into a USB port on a PC or a USB hub to charge it at least every 21 days whether it is in use or in storage. It is okay to leave the unit plugged in to maintain charge.

Resetting the Mobile Reader

The reset contacts on the SMR-650-217 and SMR-650-218 are located in the pinholes on the unit as illustrated below.



If the SMR-650 Reader is not communicating with Savi RFID tags, simultaneously insert the tips of an unfolded metal paper clip (made into a U-shape) into the pinholes to reset the unit. The LED will blink for a second to indicate that the reset has occurred.

Contacting Savi Global Support Services

Savi Global Support Services operates 24x7. Access to 24x7 support depends on your Savi support plan.

For product information, including firmware updates:

- Go to www.savi.com and click SAVI SUPPORT.
- Send an email to help@savi.com.
- Call 1-888-994-7284 (North America only) or 1-650-316-4760.

When you contact Savi Global Support Services by telephone or email, have the following information available:

- Contact information (company name, your name, email, and phone number)
- Problem description
- Product name/model
- Product/software version
- Serial number or license information

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Specifications

Specification	Description
Model Number	SMR-650-217 SMR-650-218
Physical	Dimensions: 6.25 in. (15.9 cm) x 2.5 in. (6.4 cm) x 1 in. (2.5 cm) Weight: 6.4 ounces (181 g) SMR-650-217: 20 in. (50.8 cm) cable, USB connector SMR-650-218: 9 ft. (2.7 m) cable, USB connector
Environmental	Temperature: -10°C to +50°C Operating; -40°C to +60°C Storage Humidity: 95%, Non-Condensing Vibration & Shock: MIL-STD-810 Weatherproofing: IP54 Manufacturing: RoHS Directive 2002/95/EC
Wireless UHF Transceiver	Frequency: 433 MHz Range: Up to 200 ft. (61 m), line-of-sight reader and tag Protocols: ISO 18000-7 Protocol, EchoPoint Air Protocol, ANSI INCITS 256
Wireless (LF Transmitter)	Frequency: 123 kHz Range: Up to 3.5 ft. (1.1 m) Protocol: EchoPoint Protocol
Power	Source: USB Internal Battery: Rechargeable Li-ion; 7.2v, 2400 mAh
Network	Interface: USB
Approvals	Radio Type Approval: FCC Part 15, RSS 210, EN 300 220 (433 MHz), EN 300 330 (123 kHz) EMC & Immunity: EN 301, 489 Product Safety: AC Adapter to UL60950/CSA C22.2 No. 60950/IEC/EN60950 Ordnance: HERO Certified (Unit will meet a 4 in./10.1 cm safe separation distance) Hazardous Location: UL 1604, Division 2, Class I, Groups A,B,C,D; Class II Groups F,G; Class III