SHOOMS

DEVICE 04 / 08

TECHNICAL DOCUMENTATION

sp-rfdr

Card reader

13.56 MHz | Card starts a series | IP65 | 12 V

Installation, connection, daily operation and maintenance guide for range technicians and range operators.



DOCUMENT	VERSION	FIRMWARE	DATE
DOC-RF-EN	1.0	1.1	09.2026

© SHOOMS. ALL RIGHTS RESERVED

DOC-RF-EN · V1.0

Contents

For everyone 01-03

01 Overview and key specs
02 What's in the box
03 Safety and warranty

For the installer 04-05

04 Installation
05 Connection

For the shooter and operator 06-09

06 Daily operation
07 Indication
08 Troubleshooting
09 Maintenance and cleaning

Reference 10-A

10 Technical specifications
11 Firmware and changelog
A Appendix: SHOOMS device family

CHECK THE CONTENTS BEFORE INSTALLATION

Check the contents immediately after unpacking. Report any missing or damaged item to your supplier before installation.

AT A GLANCE

1	12 V	IP65	12 mo
Per terminal	Power	Enclosure rating	Warranty

COLOUR CODING

Warning
Important information that needs particular attention. Read it before you act.

Note
A clarification or useful additional information.

Tip
Useful recommendations.

© SHOOMS. ALL RIGHTS RESERVED

01 / 11

01 Overview and key specs

The card reader is installed beside the terminal. A shooter presents their card, the reader reads it and sends the card number to the SHOOMS server, and the terminal opens a new series for that shooter. Nothing has to be pressed: presenting the card is enough.

13.56	1	IP65
MHz, card standard	Card per shooter	Enclosure rating

Purpose

- A shooter starts a series at the terminal with a card instead of entering anything by hand.
- The reader sends only the card number to the server; who stands behind that number is the system's business.
- A successful read is confirmed by a beep and the LEDs, so the shooter sees at once that the card was accepted.

What it consists of

The module sits in a plastic enclosure of 160 × 80 × 55 mm rated IP65. Inside is the 13.56 MHz reader board. Outside there are two LEDs and the opening for the buzzer; the card is presented to the front face of the enclosure.

© SHOOMS. ALL RIGHTS RESERVED



Fig. 1. The card reader

ELEMENT	DESCRIPTION
Read area	The front face of the enclosure. The card is held against it or a few centimetres away.
LEDs	Blue and yellow. They show the state of the link and the result of a read — see section 07.
Buzzer	A short beep when a card is read.
Power	12 V DC from the range line.
Wi-Fi antenna	The link to the range network.

ONE READER, ONE TERMINAL

The reader works with the terminal it stands beside. If a site has several terminals, each has its own reader.

© SHOOMS. ALL RIGHTS RESERVED

02 / 11

02 What's in the box

CHECK THE CONTENTS BEFORE INSTALLATION

Check the contents immediately after unpacking. Report any missing or damaged item to your supplier before installation.

QTY	ITEM
1	Card reader sp-rfdr in an IP65 enclosure, 160 × 80 × 55 mm
1	Wi-Fi antenna, 2.4 GHz
1	Mounting kit
—	Shooter cards — ordered separately, in the quantity needed

POWER COMES FROM THE RANGE LINE

The module runs on 12 V DC from the range's shared line, like the other devices. No separate power adapter is included.

© SHOOMS. ALL RIGHTS RESERVED

03 / 11

03 Safety and warranty

ONLY SHOOMS STAFF OPEN AN ENCLOSURE

Removing a lid and doing anything inside the enclosure of any device in the system is for authorised SHOOMS personnel only. The customer and third parties must not open an enclosure, press buttons on the board, move any parts, or unplug connectors or cables inside it. Interfering breaks the enclosure's seal, voids the warranty and can cause a trap to fire unexpectedly.

General rules

- Mount the reader where it is sheltered from direct rain and spray, even though the enclosure is rated IP65.
- Cable glands and connectors must be tightened, otherwise the rating is void.
- Do not drill the enclosure or enlarge any opening: a new hole breaks the seal.
- Do not aim pressurised water at the module and do not wipe the enclosure with solvents.
- Route the cable where it cannot be caught.

About the cards

Shooter cards are ordinary 13.56 MHz contactless cards. The reader reads only their number and writes nothing to them. A lost card is blocked in the system and the shooter is issued a new one.

© SHOOMS. ALL RIGHTS RESERVED

Warranty

The warranty period is 12 months from the date the module is put into service. It does not cover damage from moisture entering through untightened connectors, lightning, overvoltage on the supply line, or mechanical tampering with the enclosure.

For a warranty claim provide: the serial number, a description of the fault and, if possible, a photo or video.

© SHOOMS. ALL RIGHTS RESERVED

04 / 11

04 Installation

Choosing the position

- Place the reader next to the terminal, at a height convenient for presenting a card — roughly waist or chest level.
- The front face must point towards the shooter and must not be masked by a canopy edge or a post.
- Avoid mounting on a solid metal sheet: metal directly behind the enclosure shortens the read distance.
- The module must be within good Wi-Fi coverage of the range.
- Although the enclosure is IP65, mounting it under a canopy extends its life.

Mounting steps

1. Fix the enclosure in the chosen position with the mounting kit.
2. Screw on the Wi-Fi antenna.
3. Connect 12 V power from the range line.
4. Apply power. The module starts by itself: the LED shows the state of the network link.
5. Wait until the reader appears in the SHOOMS system under its serial number.
6. Present a test card: a beep should sound and a series should open on the terminal.

© SHOOMS. ALL RIGHTS RESERVED

7 Record in the log the serial number and the terminal this reader works with.

CHECK THE READ DISTANCE ON SITE

Present the card the way a shooter will. If it has to be pressed flat against the enclosure, try another position — metal behind the box is the usual cause.

© SHOOMS. ALL RIGHTS RESERVED

05 / 11

05 Connection

POWER

12 V DC from the range's shared line. The module has no switch of its own: it starts with the line.

12 V

Network

The reader joins the range router as a Wi-Fi client. The network settings are entered by SHOOMS support during commissioning; nothing needs configuring on the customer's side.

Link to the terminal

There is no cable between the reader and the terminal. The reader sends the card number to the server, and the server tells the terminal that the shooter is ready to start. The reader therefore works only while the range network is healthy.

NO NETWORK, NO CARD

If the link to the server is lost, the reader will still read the card but no series will open. The state of the link is visible on the LED — see section 07.

© SHOOMS. ALL RIGHTS RESERVED

06 / 11

06 Daily operation

How a shooter starts a series

1. The shooter presents their card to the front face of the reader.
2. A short beep sounds and the LEDs confirm the read.
3. A new series opens on the terminal for that shooter.
4. From there the shooter works with the terminal as usual.

Presenting the same card again

If the same card is presented again straight away, the module does not send it a second time — a guard against an accidental double read. After a few seconds the card works again.

Switching off

The module is powered down with the range line — overnight or for the season. Settings are retained.

THE READER DECIDES NOTHING

The module only passes on the card number. Whether to open a series, which one and for whom, is decided by the SHOOMS system.

© SHOOMS. ALL RIGHTS RESERVED

07 / 11

07 Indication

Two LEDs on the enclosure show the state of the module. Together with the buzzer they give the full picture without opening any settings.

	SIGNAL	WHAT IT MEANS	WHAT TO DO
	**Blue, slow blink**	The module is on the range network and ready.	Nothing
	**Yellow, slow blink**	No link to the network. A card will not open a series.	Tell the operator
	**Yellow and blue alternating**	Setup mode: the module raised its own access point.	Should not happen in service — tell support
	**Yellow, fast blink**	The card reader is not responding.	Power the line down and up again
	**Both together and a beep**	The card was read and sent.	Nothing
	**Blue, fast blink**	A firmware update is running.	Do not remove power

THE BEEP ONLY CONFIRMS A READ

The short beep means the card was read. Whether a series opened is shown by the terminal.

© SHOOMS. ALL RIGHTS RESERVED

08 / 11

08 Troubleshooting

SYMPTOM	LIKELY CAUSE	FIX
The LEDs are dark	No power on the line or at this module	Check the 12 V line and the power connector; check the neighbouring devices on the line.
Yellow blinks slowly	The module cannot see the range network	Check that the router is running; if other devices are online, contact support.
The card is not read	The card is too far, held the wrong way, or metal is behind the enclosure	Hold the card against the front face; try another card.
Yellow blinks fast	The card reader is not responding	Power the line down and up again. If that does not help, contact support.
A beep sounds but no series opens	The card is unknown to the system or blocked	Check the card at the terminal; issue a new one if needed.
Only one card out of several works	The other cards are not registered in the system	Register the cards; the reader reads any card, the server decides.

WHAT TO TELL SUPPORT

The module's serial number, the state of the LEDs, whether a beep sounds when a card is presented, and whether the other devices on the range are working.

© SHOOMS. ALL RIGHTS RESERVED

09 / 11

09 Maintenance and cleaning

INTERVAL	TASK
Weekly	Inspect the enclosure and the cable; check that the front face is clean and not covered.
Monthly	Wipe the enclosure with a damp, solvent-free cloth. Check the tightness of the connectors.
Each season	Check the mounting and the condition of the cable where it bends.
Before winter	If the range is idle for over 2 months, power the line down.

STICKERS ON THE READ AREA

Do not cover the front face with stickers that have a metallised layer — they shorten the read distance noticeably.

© SHOOMS. ALL RIGHTS RESERVED

10 / 11

10 Technical specifications

PARAMETER	VALUE
READER	
Standard	13.56 MHz contactless cards
Read area	The front face of the enclosure
Confirmation	Buzzer and LEDs
POWER	
Input voltage	12 V DC
Source	The range's shared 12 V line
Switch	None: the module starts with the line
CONNECTIVITY	
Wi-Fi	IEEE 802.11 b/g/n, 2.4 GHz
Antenna	External
Network name	sp-rfdr-‹serial number›
ENCLOSURE AND ENVIRONMENT	
Enclosure	Plastic, 160 × 80 × 55 mm
Ingress protection	IP65 with the connectors tightened
Placement	Beside the terminal, preferably under a canopy
Operating temperature	–20 … +50 °C
CONTROL	
Controller	ESP32-S3
Serial number	Sticker on the enclosure

© SHOOMS. ALL RIGHTS RESERVED

11 / 11

11 Firmware and changelog

The firmware version is shown on the cover. Updates are performed by SHOOMS support; the client provides access to the range network for this. There is no self-service update.

VERSION	DATE	CHANGES
1.1	09.2026	First release within the SHOOMS system: new board, admin page in nine languages, card log.

© SHOOMS. ALL RIGHTS RESERVED

APPENDIX A

A Appendix: SHOOMS device family

Every SHOOMS device has its own manual in the same structure (sections 01–11).

1 · DOC-MM

Media module

Media module: TV and sound

2 · DOC-RB

Release module

Target release module

3 · DOC-MC

Microphone

Microphone module

4 · DOC-RF

Card reader

Shooter card reader

This document

5 · DOC-TR

Terminal

Self-service terminal

6 · DOC-WR

Wireless receiver

Wireless release receiver

7 · DOC-WT

Transmitter

Wireless release transmitter

8 · DOC-BS

Base station

Range server and network

© SHOOMS. ALL RIGHTS RESERVED