

ACD
GRUPPE
M2UHF-RFIDSE
Plug on Module
UHF RFID Reader



ACD M2UHF-RFIDSE Plug on Module UHF RFID Reader Instruction Manual

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ACD M2UHF-RFIDSE Plug on Module UHF RFID Reader



Specifications

- **Product Name:** M2Modules
- **Model:** M2UHF-RFID Shortrange
- **Range:** Short range
- **Compliance:** FCC and IC Statements of Compliance

Product Usage Instructions

- Read through the entire user manual before attempting to use the M2Modules.
- Handle the product with care during transportation to avoid damage. Store the M2Modules in a cool, dry place away from direct sunlight.
- **Intended Use:** Ensure you understand the intended use of the M2Modules for proper operation.
- **Security Advice:** Follow the security advice provided in the manual for safe usage.

Introduction



- Read all instructions first before using the Mobile Handheld Computer!



- Use Original Spare Parts Only

There are several accessories for the M2Smart®SE available, which are explained below:

- M2UHF-RFID Shortrange (Figure 1)
- M2UHF-RFID Midrange (Figure 2)
- Docking station DS2Smart® Charging and transmission box (Figure 3)
- Docking station DS2Smart® Charging box (Figure 4)
- Docking station DS2Smart® Developer box (Figure 5)

- M2Grip5 (Figure 6)
- M2 logistics protective caps (Figure 7)
- Replacement Battery (Figure 8)



Figure 1: M2UHF-RFID Shortrange



Figure 2: M2UHF-RFID Midrange



Figure 3: DS2Smart[®] Charging and transmission box



Figure 4: DS2Smart[®] Charging box



Figure 5: DS2Smart® Developer box



Figure 6: M2Grip5



Figure 7: M2 logistics protective caps




Figure 8: Replacement Battery

Transportation and Storage



The rechargeable battery for the Mobile Handheld Computer is a lithium-ion rechargeable battery pack. Lithium-ion rechargeable batteries can explode if they are subjected to fire or heat. The rechargeable battery pack may not be taken apart and subjected to fire or heat (greater than 60 °C/140 °F).

 ATTENTION	<p>Do not set the Mobile Handheld Computer, battery, docking station or power supply near heat sources (heater blowers, etc.), and never subject it to direct solar radiation, excess quantities of dust, or shocks. Make sure that there is no stumbling hazard due to connection cables or power supplies.</p> <p>The maximum permissible ambient temperatures for the M2Smart®SE with battery are listed below.</p> <p>Operating temperature: -20 °C to 50 °C/-4 °F to 122 °F* Storage temperature: -20 °C to 60 °C/-4 °F to 140 °F Charging temperature: 5 °C to 35 °C/41 °F to 95 °F</p> <p>* The device should only be used in the deep freeze area after the starting process.</p>
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Commissioning and Operation of M2Modules

M2Modules


Intended Use

The modules of the Mobile Handheld Computer serve as accessories for the M2Smart®SE. The included components are intended exclusively for use with the Mobile Handheld Computer

Security bits of Advice

Please read the following warning and safety notices. They are for your safety and to ensure that the various modules are ready to use

 ATTENTION	<p>Only ACD original power supplies may be used for the operation of the modules! The use of components that have not been approved can destroy the modules or the main device.</p>
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 ATTENTION	<p>Do not set the modules near heat sources (heater blowers, etc.), and never subject them to direct solar radiation, excess quantities of dust, or shocks. Make sure that there is no stumbling hazard due to connection cables or power supplies.</p>
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The modules may not be used in areas subject to explosion.



Before using the modules, any connection cables must be checked for damage. Damaged parts must be replaced. For this, please contact ACD Elektronik GmbH.

Before use, the contacts of the modules and the contacts of any plugs present must be checked for dirt and cleaned if necessary.



Unintended use of the interfaces is forbidden.



To prevent overheating, the modules may not be covered during operation.



The modules may only be opened by trained specialized personnel.





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

Attaching and removing the modules

The upper plug-in module and the lower plug-in module can be attached and removed as shown in the following figures



Figure 9: Attaching and removing the upper plug-in module



Figure 10: Attaching and removing the lower plug-in module

When attaching and removing the modules, please do not reach into the area of the plug-in sliding mechanism, as there is a risk of injury due to jamming during sliding.






ATTENTION When attaching and removing the modules, please do not reach into the area of the plug-in sliding mechanism, as there is a risk of injury due to jamming during sliding.


The M2UHF-RFID Shortrange is described below. It is a plug-in module for reading UHF-RFID tags, which can be used for the upper plug-in sliding mechanism.




Figure 11: M2UHF-RFID Short range

Security Advice

<p>The M2UHF-RFID Shortrange is design for occupational use only.</p>	
<div><p>ATTENTION</p></div>	
<div><p>ATTENTION</p></div>	<p>Removal of the plug-in module on the upper plug-slide mechanism of the device:</p> <p>Please do not reach into the area around the scanner glass; there is a risk of injury due to pinching when sliding.</p> <p>The scanner glass can also be soiled in the process.</p>
<div><p>ATTENTION</p></div>	<p>The maximum permissible ambient temperatures for the modules are listed below.</p> <p>Operating temperature: -20 °C to 50 °C/-4 °F to 122 °F Storage temperature: -20 °C to 60 °C/-4 °F to 140 °F</p>

	<p>The device has the following radio system:</p> <p>UHF-RFID</p> <p>Frequency bands:</p> <p>UHF-RFID Europe</p> <p>865.7 to 867.5 MHz</p> <p>UHF-RFID North America</p> <p>902.75 to 927.25 MHz</p> <p>Max. permissible transmission power on the frequency bands:</p> <p>§ UHF-RFID 200 mW</p>
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	<p>The M2UHF-RFID Shortrange attachable module can become very hot during extended operation. To protect persons and the module, the maximum time of a scan is limited to two minutes.</p>
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Handling

After the M2UHF-RFID Shortrange attachable module has been plugged into the main device on the upper plug-slide mechanism, it can be used for reading UHF-RFID tags. To do this, start a software application to initialize the module. Then the read process can be carried out with the software application.



The red box represents where the antenna is placed and the red lines indicate the radiation of HF signal.

Technical Data M2UHF-RFID Short range

The table below includes the technical data for the M2UHF-RFID Shortrange plug-in module.

Technical Data

	Technical Data
Housing	ABS/PC
Protection class	IP65
Operating temperature	-20 °C to 50 °C/-4 °F to 122 °F Condensation of the device must be avoided.
Storage temperature	-20 °C to 60 °C/-4 °F to 140 °F
Rel. humidity	5 % – 90 % non-condensing
Device dimensions	52 x 85 x 27 mm (L x W x H)
Weight	58 g
Interfaces	Plug for connection to the main device
Frequency range EU	865.7 to 867.5 MHz
Frequency range USA and Canada	902.75 to 927.25 MHz
Read range	Up to 1.5 meters
Antenna type	Integrated Linear Polarized
RFID protocols	EPCglobal UHF Class 1 Gen 2 ISO 18000-63 (formerly 18000-6C) DRM (Dense Reader Mode) support
Output power	10 dBm until 23 dBm
Radiated power	9 dBm until 22 dBm (EIRP) 7 dBm until 20 dBm (ERP)

Operation of Accessories

Commissioning and Operation of Accessories

Docking station DS2Smart® Charging and transmission box, DS2Smart® Charging box, and DS2Smart® Developer box

Security Advice



- **ATTENTION** Only ACD original power supplies and rechargeable batteries approved by ACD may be used for the operation of the Mobile Handheld Computer and docking station! The use of components that have not been approved can cause the destruction of the backhand scanner or docking station. Do not use the ACD-approved components with a third-party device.
- Before use, the Mobile Handheld Computer incl. battery, docking station, power supply, and any connection cables should be checked for damage. Damaged parts should be replaced. Please contact ACD Elektronik GmbH to do this.
- For indoor use only.
To prevent overheating, the Mobile Handheld Computer incl. the battery, docking station, and power supply should not be covered while they are in operation.
- Never position the Mobile Handheld Computer incl. the battery in close proximity to heat sources (heating fans or similar equipment) and never expose it to direct sunlight, excessive dust sources or shocks.

Inserting the Mobil Handheld Computer in and removing it from the docking station

To insert the Mobile Handheld Computer in the docking station, put it in vertically downward. To remove the Mobile Handheld Computer from the docking station, pull it vertically upward out of the docking station.



Figure 15: Inserting Mobile Handheld Computer in and removing it from the docking station



- **ATTENTION** Place the docking station correctly on a smooth and clean underground, which is not exposed to direct sunlight.
- The charging and communication contacts are very sensitive! The Mobile Handheld Computer and the replacement rechargeable battery may only be inserted in and removed from the docking station as described above. Do not touch the contact with your fingers or with objects such as pens, screwdrivers, etc.
- Do not leave the battery in the charger or docking station for an unnecessarily long time.

Inserting the replacement rechargeable battery in and removing it from the docking station

To insert the replacement rechargeable battery in the device, tip it diagonally downward and place it in the rechargeable battery compartment. Insert the rechargeable battery so that the contacts are aligned with the contacts of the docking station. Press the rechargeable battery into the rechargeable battery compartment until it snaps in audibly.



Figure 16: Inserting replacement rechargeable battery in the docking station

To remove the replacement rechargeable battery from the docking station, first, open the lock by pressing toward the surface of the rechargeable battery. Remove the rechargeable battery upward.



Figure 17: Removing replacement rechargeable battery from the docking station



- **ATTENTION** Place the docking station correctly on a smooth and clean underground, which is not exposed to direct sunlight.
- The charging and communication contacts are very sensitive! The Mobile Handheld Computer and the replacement rechargeable battery may only be inserted in and removed from the docking station as described above. Do not touch the contact with your fingers or with objects such as pens, screwdrivers, etc.
- Do not leave the battery in the charger or docking station for an unnecessarily long time.

Status LEDs

The status LEDs of the DS2Smart® docking station will be described below.



Figure 18: Status LEDs of the DS2Smart®

Charging cradle for M2Smart®SE	
Speed CHARGE LED lit red:	The rechargeable battery in the M2Smart®SE is being charged
Speed CHARGE LED lit green:	The rechargeable battery in the M2Smart®SE is fully charged
Speed CHARGE LED not lit:	No M2Smart®SE is inserted in the docking station

Charging cradle for replacement rechargeable battery	
CHARGE LED lit red:	The replacement battery is being charged
CHARGE LED lit green:	A replacement battery is fully charged
CHARGE LED not lit:	There is no replacement battery inserted in the docking station

Disposal of the DS2Smart®



ATTENTION All components should be disposed of properly at the end of their technical lifetime.

M2Grip5

A handle is available as an accessory for the M2Smart®SE. It can be attached to the M2Smart®SE without tools.



Figure 19: M2Grip5

The upper and lower slide mechanisms remain untouched and can therefore still be used for different M2Modules. It is still possible to charge the M2Smart®SE with M2Grip5 in the DS2Smart®. Please note that the M2Grip5 is suitable for the M2Smart®SE without a scanner and for the M2Smart®SE with a 2D short-range Imager (SE4770).

Security Bits of Advice



- **ATTENTION** Unintended use of the M2Grip5 should be avoided.

Attaching M2Grip5 to the M2Smart®SE

- To attach the M2Grip5 to the M2Smart@SE, the first step is to remove the retaining strap.
- After removing the retaining strap, the M2Grip5 can be attached to the M2Smart@SE.
- To do this, guide the nose of the M2Grip5 to the upper retaining strap attachment and hook it in there. Then slide the side sections of the M2Grip5 onto the device.



Figure 20: Attaching M2Grip5 to M2Smart@SE

- The scanner button is now mechanically contacted and can be triggered by the scanner button in the handle.

Removing M2Grip5 from the M2Smart@SE

- To remove the M2Grip5, slide the side sections of the M2Grip5 off the device. Then you can guide the M2Grip5 out of the upper retaining strap attachment.



- Figure 21: Removing M2Grip5 from M2Smart@SE (1/2)
- Figure 22: Removing M2Grip5 from M2Smart@SE (2/2)

After the M2Grip5 is removed, the retaining strap can be attached again.

M2 logistics protective caps

M2 logistics protective caps are another accessory for the M2Smart@SE. Their purpose is to increase fall protection. M2 logistics protective caps are designed for the upper and lower blind cap.



Figure 23: M2 logistics protective caps

To charge the M2Smart@SE in the DS2Smart®, the M2 logistics protective caps must be removed.

Security Advice



ATTENTION Unintended use of the M2 logistics protective caps should be avoided.

Attaching M2 logistics protective caps to the M2Smart@SE

To attach the upper and lower M2 logistics protective cap to the M2Smart@SE, place it over the corresponding blind cap. The upper logistics protective cap is marked by the ACD logo and also has a recess for the Imager.



Figure 24: Attaching the upper logistics protective cap

The lower logistics protective cap is identified by the recess for the retaining strap and the charging contacts. First loosen the retaining strap and then attach the lower logistics protective cap. You can then reattach the retaining strap.



Figure 25: Attaching the lower logistics protective cap

Removing M2 logistics protective caps from the M2Smart@SE

To remove the upper and lower M2 logistics protective caps from the M2Smart@SE, remove them from the blind caps.



Figure 26: Removing the upper logistics protective cap

First, loosen the retaining strap, then remove the lower logistics protective cap and reinsert the retaining strap.



Figure 27: Removing the lower logistics protective cap

Replacement Battery

Security Advice



- **ATTENTION** The rechargeable battery for the Mobile Handheld Computer is a lithium-ion rechargeable battery pack. Lithium-ion rechargeable batteries can explode if they are subjected to fire or heat. The rechargeable battery pack may not be taken apart and subjected to fire or heat (greater than 60 °C/140 °F).
- Only ACD original power supplies and rechargeable batteries approved by ACD may be used for the operation of the Mobile Handheld Computer and docking station! The use of components that have not been approved can cause the destruction of the backhand scanner or docking station. Do not use the ACD-approved components with a third-party device.
- Before use, the Mobile Handheld Computer incl. battery, docking station, power supply, and any connection cables should be checked for damage. Damaged parts should be replaced. Please contact ACD Elektronik GmbH to do this.
- For indoor use only.
- Never position the Mobile Handheld Computer incl. the battery in close proximity to heat sources (heating fans or similar equipment) and never expose it to direct sunlight, excessive dust sources or shocks.

Rechargeable battery change

The rechargeable battery compartment is on the back of the device. To remove the rechargeable battery, first remove the hand strap (bottom) by unhooking it. Open the rechargeable battery cover by pressing the lock toward the surface of the rechargeable battery. The cover can be opened and the rechargeable battery removed.



Figure 28: Removing the rechargeable battery

To insert the rechargeable battery in the device, tip it diagonally downward and place it in the rechargeable battery compartment. Insert the rechargeable battery so that the contacts are aligned with the contacts of the device. Then the rechargeable battery can be folded downward so that the lock snaps in. Then the hand strap can be hooked back in.



Figure 29: Inserting the rechargeable battery

Instructions for Cleaning and Care


Clean the module by setting it down on a surface (e.g. table). This way, you can hold it securely and the module cannot slip out of your hands during the cleaning process.



Do not use any corrosive chemicals, cleaning solutions or strong cleaning agents to clean the Mobile Handheld Computer, battery, and docking station.

All components must be disposed of properly at the end of their technical lifetime.



-  Turn off the device before starting any cleaning or maintenance process!
- Make sure that the laser beam is switched off by checking the laser beam exit!



Laser beam exit

Communication contacts

- If there are communication problems, clean the communication contacts with a soft, damp cloth.

Keyboard/Keys

- To clean the keyboard/keys, always switch the Mobile Handheld Computer off since the keyboard/keys react to being touched and therefore the active program can be compromised or destroyed. Do not put a lot of pressure on the
- keyboard/keys.

These Representations and Warranties apply to all customers (the "Customers" and each, individually, a "Customer") purchasing products (the "Products") manufactured by ACD Elektronik GmbH (the "Company").

Warranty and Limitations:

1. Company warrants solely to the original purchaser of the Products that for the Warranty Period (as defined below), the Products will be free from defects in materials and workmanship under normal use, and will conform to the Company's published specifications of the Products. Notwithstanding the foregoing, the Company retains its right to deviate from its published specifications due to the latest innovations and improvements in function and design of the Products.
2. The foregoing warranty is subject to the proper storage, transportation, and use of the Products, and does not include defects due to normal wear and tear or deterioration.
3. Customer shall immediately, but in any event no later than eight (8) days following delivery or installation of the Product, inspect the Products for conformity and visible defects. Customer shall give Company immediate written notice of any non-conformities or visible defects regarding the Products. If Customer fails to provide the Company within eight (8) days following delivery or installation of the Products with notice of any non-
4. conformities or visible defects, any warranty claims in this regard shall be deemed waived. Customer shall immediately notify Company in writing of any other defects of the Products and return such defective Product. Company's sole obligation under the foregoing warranty is, at Company's option, to replace or exchange the defective Product or issue a merchandise credit for the defective Product. Any replaced or exchanged Products shall be subject to the warranty set forth in 1.1., following their replacement or exchange. If the Company has received notification from the Customer, and no defects of the Product could be discovered, the Customer shall bear the costs that the Company incurred as a result of the notice. It shall be in the Company's sole discretion to determine if the Product has a defect.
5. Concerning orders made to customs, any defects of the Products caused by the Customer's specifications are excluded from the warranty set forth in 1.1.
6. Company also makes no warranty that the Products manufactured under an order made to custom do not infringe the intellectual property or other proprietary rights of any third party and Customer is solely responsible for assuring that such Products do not so infringe.
7. The "Warranty Period" begins on the date of delivery of the Product to Customer, and continues to be in effect for two (2) years.
8. Company does not authorize any person or party to assume or create for it any other obligation or liability in connection with the Products except as set forth herein.
9. All requests and notices under this Warranty shall be directed to:
 1. ACD Elektronik GmbH

2. Engelberg 2
3. 88480 Achstetten
4. Germany
5. Phone: +49 7392 708-0
6. Email: info@acd-elektronik.de

10. THE WARRANTY SET FORTH IN SECTION 1.1 IS MADE IN LIEU OF ALL OTHER WARRANTIES (WHETHER EXPRESS OR IMPLIED), RIGHTS OR CONDITIONS, AND CUSTOMER ACKNOWLEDGES THAT EXCEPT FOR SUCH LIMITED WARRANTY, THE PRODUCTS ARE PROVIDED "AS IS." COMPANY SPECIFICALLY DISCLAIMS, WITHOUT LIMITATION, ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, OF ANY KIND, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, AND THOSE WARRANTIES ARISING FROM A COURSE OF PERFORMANCE, A COURSE OF DEALING OR TRADE USAGE.

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FAQ

- **Q:** Can the M2Modules be used outdoors?
- **A:** The M2Modules are designed for indoor use only. Avoid exposing them to outdoor elements.
- **Q:** How do I know if the modules are securely attached?
- **A:** Ensure you hear a click sound when attaching the modules to guarantee a secure connection.

FCC STATEMENT

FCC Statement of Compliance

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

1. This device may not cause interference.
2. This device should accept any interference, including interference that may cause undesired operation of the device.

IC Statement of Compliance

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

RF Exposure

This equipment complies with FCC and IC SAR exemption limits at a minimum separation distance of 50 mm from the Antenna of this module.

CONTACT

Support

- If you need additional assistance, please contact our support hotline:
- ///ACD Elektronik GmbH
- Engelberg 2
- 88480 Achstetten, Germany
- Tel.: +49 7392 708-488
- E-mail: support.technik@acd-elektronik.de
- Web: <https://www.acd-gruppe.de/en/>
- The support hotline is available for you Monday to Thursday from 8:00 am to 5:00 pm (CET) and
- Friday from 8:00 am to 3:00 pm (CET).

Service and Spare Parts

- If you require spare parts please contact:
- ACD Elektronik GmbH
- Engelberg 2
- 88480 Achstetten
- Germany
- Telephone: +49 7392 708 499
- Fax: +49 7392 708 490
- Email: info@acd-elektronik.de

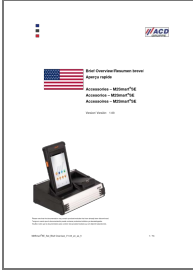
Warranties

Manufacturer's Representations and Warranties

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- Germany
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- Fax: +49 7392 708-190

Documents / Resources



[ACD M2UHF-RFIDSE Plug on Module UHF RFID Reader](#) [pdf] Instruction Manual
O2FM2UHF-RFIDSE, O2FM2UHF RFIDSE, m2uhf rfidse, M2UHF-RFIDSE Plug on Module UH
F RFID Reader, M2UHF-RFIDSE, Plug on Module UHF RFID Reader, Module UHF RFID Read
er, UHF RFID Reader, RFID Reader, Reader

References

- [**Elektronik - Elektroniknet**](#)
- [**User Manual**](#)

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