

Firmware Loader v1.2 – Translation of the original

Firmware loader for MC 92N0^{ex}

MC 92N0 ^{ex} – IS	Type 17-A1A2-R*** /*****
MC 92N0 ^{ex} – IS	Type 17-A1A3-R*** /*****
MC 92N0 ^{ex} – NI	Type B7-A2A4-R*** /*****

Revision A / Status: 27th March 2018

Reservation: We reserve the right to make technical modifications. Changes, errors and misprints shall not justify any claim for damages.

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1. Information about this Manual

Read carefully before commissioning devices.



The Installation Instructions are an integral part of the product.

The Installation Instructions contain important information that is required for the perfect functioning of the firmware loader during operation.

The Installation Instructions are directed at all persons who are involved in the programming, commissioning, handling and maintenance of the product.

The illustrations in this Manual are intended to clarify the information and descriptions. They cannot necessarily be used unaltered and may differ slightly from the actual version of the device.

Safety signs and warnings are specially highlighted in these Installation Instructions and indicated by symbols.

ATTENTION

ATTENTION designates a potentially harmful situation which, if not avoided, could damage the plant or something close to it.



Important advice and information for effective, efficient and environmentally sound use.

1.1.1 Languages

The original Installation Instructions were drawn up in German. All other available languages are translations of the original Installation Instructions.

The Installation Instructions are available in German and English. If other languages are required, these should be requested from BARTEC or specified when placing the order.

1.1.2 Changes to the document

BARTEC reserves the right to change the contents of this document without notice. No guarantee is assumed regarding the accuracy of information. In case of doubt, the German safety instructions apply because it is not possible to rule out errors during translation or printing. The "Terms and Conditions" of the BARTEC Group shall also apply in the event of legal disputes.

The current versions of data sheets, manuals, certificates and EC declarations of conformity can be downloaded from www.bartec.de under Products & solutions in the "Automation technology" product area or can be requested directly from BARTEC GmbH.

1.1.3 Information about the document

The images used in the Installation Instructions are based on software version 1.2. The version currently available may differ from version 1.2, but this has no influence on the descriptions in this document.

1.2 Reference documents – set of documents

BARTEC

- The User Manual (Document No. 11-A1A2-7D0001) for the MC 92N0^{ex} series of Mobile Computers – user manual for the explosion protected version of the MC 92N0^{ex} series of Mobile Computers.
- Technical data sheet (Document No. 03-0330-****) for the explosion protected version of the MC 92N0^{ex} series of Mobile Computers – data sheet with the most important explosion-related technical and general data.
- Compatibility_Matrix.pdf
Document for further basic information and compatibility.
- 11-A1A2-7D0002_Installtionsanleitung Software MC92N0-v2.0.3.pdf
Description of the available SDK and the demo application.
Is only required when using the RFID option.

Tectus

Description of the data protocol for the LF and HF (internal) reader.

- LF protocol description
"LF Commands.pdf" - Scotty Reader User Manual Version 1.4
- HF protocol description
"Dataprotocol TLF-50.pdf" – description of the data protocol

Feig Electronics

Description of the data protocol of the HF (external) and UHF reader.

- ID FEISC-LIB Manual - (Document No. H9391-43d-ID-B.pdf and H9391-43e-ID-B.pdf)
Software support for OBID i-scan[®] and OBID[®] classic-pro
- ID FECOM-LIB Manual – (Document No. H80592-28d-ID-B.pdf and H80592-28e-ID-B.pdf)
Software support for serial interface
- ID FEUSB-LIB Manual – (Document No. H00501-17d-ID-B.pdf and H00501-17e-ID-B.pdf)
Software support for USB (Universal Serial Bus)
- Tutorial Manual
(Document name: Tutorial.pdf)
The art of Programming for OBID i-scan[®] and OBID[®] classic-pro

2. Firmware loader description

The firmware loader is only required when using the RFID LF option. The firmware loader enables the firmware to be changed on devices with an RFID LF reader.

Since 2017, all devices have been supplied with the "Tectus MC92V1.91" firmware by way of standard. All supported RFID-LF standards are stored in this firmware. In the case of older devices, the memory for the firmware on the LF reader board was not suitable for storing/saving all supported standards. For this reason, there are 3 different types of firmware for older devices. A list of which firmware supports which standards can be found in Chapter 2.2

The firmware must be copied to the "My Documents" folder, so that the firmware can be loaded and installed again using the firmware loader.



Firmware for RFID HF and RFID UHF

The firmware for HF and UHF are stored in the memory of the RFID board and do not need to be installed separately.

2.1 Operating systems supported

The firmware loader can be installed on the following operating systems.

When using an SDK version:	
SDK v1.2.3	SDK v2.0.3
Supported operating systems:	
Windows® Embedded Handheld 6.5.3	Windows® Embedded Handheld 6.5.3
Windows® Embedded Compact 7 (CE 7.0)	-
The following operating systems are not supported:	
Android 4.4.4 (Kit Kat)	Android 4.4.4 (Kit Kat)
-	Windows® Embedded Compact 7 (CE 7.0)

2.2 Device requirements

A Mobile Computer from the MC 92N0^{ex} series with an RFID LF module is required:

Device	Type	Reader version
MC 92N0 ^{ex} -NI	B7-A2A4-Rxx1/xxxQxxxx	Internal RFID LF
MC 92N0 ^{ex} -NI	B7-A2A4-Rxx2/xxxQxxxx	Extended RFID LF
MC 92N0 ^{ex} -IS	17-A1Ax-Rxx1/xxxQxxxx	Internal RFID LF
MC 92N0 ^{ex} -IS	17-A1Ax-Rxx2/xxxQxxxx	Extended RFID LF

2.3 Supported RFID LF standards

The firmware loader supports the following RFID LF standards in the frequency ranges specified.

LF reader			
Frequency range:	125 / 134 KHz		
Supported standards		<u>Firmware file/version:</u>	
		<ul style="list-style-type: none"> BARTEC-btrw-rw.[bartec].v1.40 	
Firmware loader available:		Yes	
HITAG S (RW)	HITAG 1 (RW)	HITAG 2 (RW)	Q5 (RW)
AT5557 (RW)	AT5567 (RW)	EM4305 (RW)	
Supported standards		<u>Firmware file/version:</u>	
		<ul style="list-style-type: none"> BARTEC-btrw-hdx.[bartec].v1.40 	
Firmware loader available:		Yes	
FDX-B (RO)	EM41xx (Unique) (RO)	ISO 11784/5 (RO)	HDX Transponder (TI) (RW)
Supported standards		<u>Firmware file/version:</u>	
		<ul style="list-style-type: none"> BARTEC-btrw-ti.[bartec].v1.40 	
Firmware loader available:		Yes	
FDX-B (RO)	EM41xx (UNIQUE) (RO)	ISO 11784/5 (RO)	EM 4450/4550 (TITAN) (RW)



Firmware for the internal RFID LF reader

The firmware loader is not required on devices with an internal RFID LF reader that have installed the following firmware.

Supported standards		<u>Firmware file/version:</u>	
		<ul style="list-style-type: none"> Tectus MC92V1.91 	
Firmware loader available:		No	
HITAG S256 (RW)	HITAG S 2 kbit (RW)	HITAG 1 (RW)	HITAG 2 (RW)
Q5 (RW)	AT5567 (RW)	AT5557 (RW)	HDX (RO)
HDX (Multipage) (RO)	EM4305 (RW)	EM 4450/4550 (RW)	EM41xx (UNIQUE) (RO)
FDX-B (RO)	BDE	ISO 11784/5 (RO)	ISO Animal

3. Installation

ATTENTION

The firmware loader will only function once it has been correctly installed.

- ▶ Use of the firmware loader is only possible outside of a docking station.
- ▶ The prerequisite is a battery charged to at least 50% to prevent a loss of power in the event of a firmware update.




The firmware loader automatically detects the installed RFID LF reader and the firmware version currently installed.

The required programs can be copied onto the Mobile Computer with the help of synchronisation software (e.g. Windows Device Center) or using an SD card.

We recommend creating an RFID folder in the "Application" directory on the Mobile Computer and copying all programs to this directory.

3.1 Installation of the firmware loader

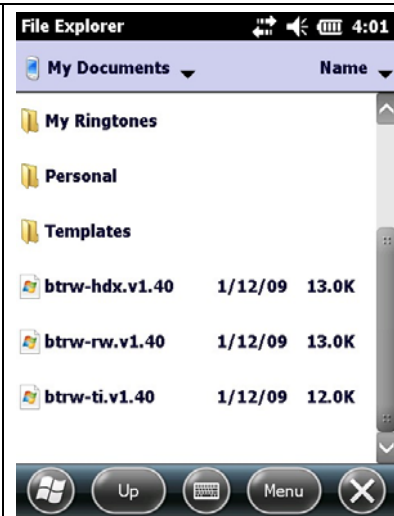
	For RFID LF Reader
Copy e.g. to the Application/RFID directory	
<ul style="list-style-type: none">• Start the installation by clicking on the marked firmware loader.• Select the installation directory	

3.2 Installation of a firmware file

The available firmware files must be copied into the "My Documents" directory.

The following firmware files are available:

- BARTEC-btrw-rw.[bartec].v1.40
- BARTEC-btrw-hdx.[bartec].v1.40
- BARTEC-btrw-ti.[bartec].v1.40



4. Operation of the firmware loader

ATTENTION

The firmware loader will only function once it has been correctly installed.

- ▶ Use of the firmware loader is only possible outside of a docking station.
- ▶ The prerequisite is a battery charged to at least 50% to prevent a loss of power in the event of a firmware update.

The connection to the LF reader is established automatically when starting the firmware loader.

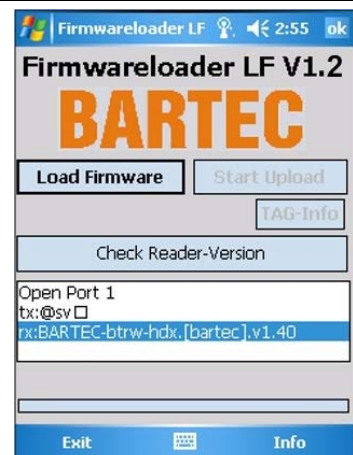
The successful connection is confirmed and displayed in the information window.

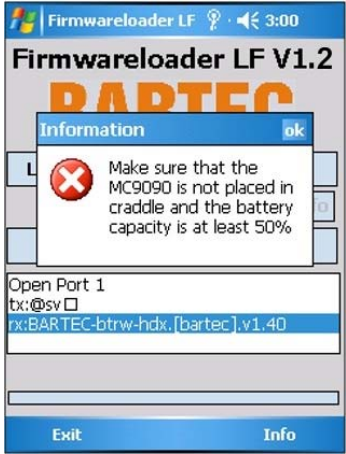
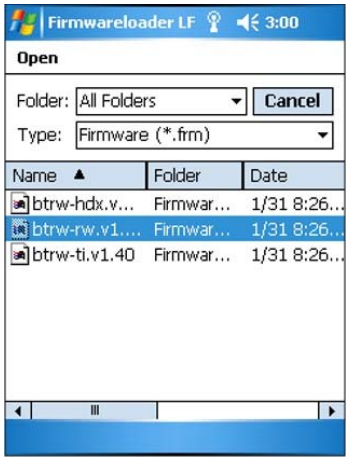


- "Open Port 1" is displayed

The port is a default and does not need to be changed because the LF reader is activated internally via the "COM Port 1" serial interface.

Pressing the "Load Firmware"

Load Firmware button opens a selection dialog and the 3 different firmware versions are displayed.



<p>A warning is shown first to ensure that the Mobile Computer is not in the cradle and that the battery has been charged to at least 50%.</p>	
<p>Available firmware files (stored in My Documents) are listed for selection.</p> <p>The following firmware files are available:</p> <ul style="list-style-type: none"> • BARTEC-btrw-rw.[bartec].v1.40 • BARTEC-btrw-hdx.[bartec].v1.40 • BARTEC-btrw-ti.[bartec].v1.40 	
<p>After selecting a firmware file, the dialog closes automatically. The file is automatically opened and prepared for starting the update.</p> <p>It is possible to start the process of selecting the firmware a number of times.</p>	
<p>The upload process begins once the "Start Upload" Start Upload button has been pressed.</p> <p>The progress of the upload process is displayed by a progress bar.</p> <p>Avoid interrupting the process:</p> <ul style="list-style-type: none"> • by turning the PDA off • by plugging it into the cradle <p>This can result in loss of data!</p>	

Firmware loader for the RFID Option for the MC 92N0^{ex} series

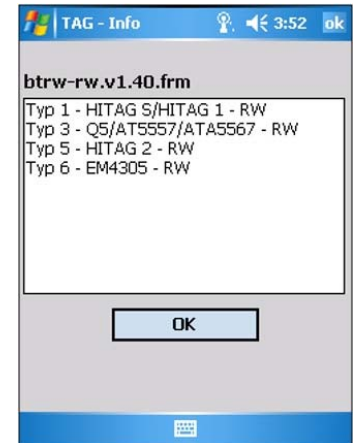
After the successful upload, the "Upload complete" message appears in the information window.



Pressing the "Check Reader-Version" button displays the currently loaded firmware version.



Pressing the "TAG-Info" button displays a list of the RFID LF standards supported.



Pressing the "Exit" button closes the firmware loader.

