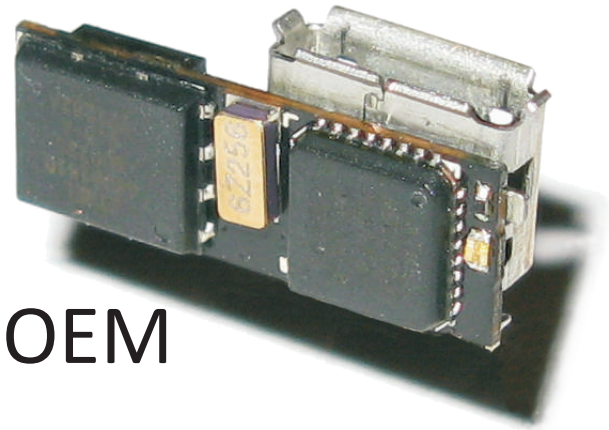# CardReaderFactory.com

Magnetic Stripe Readers

User manual
MSRv007 OEM

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You must not use this product for any fraudulent purposes, or in connection with a criminal offense or other unlawful activity.

You must not use this product to read any information without the owner's knowledge or approval.

You must not send, use or reuse any material that is illegal, offensive, abusive, indecent, defamatory, obscene or menacing; or in breach of copyright, trademark, confidence, privacy or any other right; or is otherwise injurious to third parties; or objectionable; or which consists of or contains software viruses, political campaigning, commercial solicitation, chain letters, mass mailings or any "spam".

You and your applications of this product must not cause annoyance, inconvenience or needless anxiety.

You will safeguard the use and distribution of our products and make any effort to prevent illegal use from occurring.

Limited Warranty

This product is guaranteed to be free from defects in materials and workmanship for 30 days since the date of purchase. CardReaderFactory will, without charge, repair or replace at our option, any device returned for warranty work and found to be defective by us.

General

This license is effective until terminated. It will terminate upon the conditions set forth above or if you fail to comply with any of its terms.

Upon termination, you agree that the Hardware, Software and accompanying materials, and all copies thereof, will be destroyed.

This agreement is governed by the laws of the United Kingdom.

Each provision of this agreement is severable. If a provision is found to be unenforceable, this finding does not affect the enforceability of the remaining provisions, terms, or conditions of this agreement. This agreement is binding on successors and assigns. CardReaderFactory agrees and you agree to waive, to the maximum extent permitted by law, any right to a jury trial with respect to the Hardware, Software or this agreement.

Because this waiver may not be effective in some jurisdictions, this waiver may not apply to you. You acknowledge that you have read this agreement, that you understand it, that you agree to be bound by its terms, and that this is the complete and exclusive statement of the agreement between you and CardReaderFactory regarding the Hardware and Software.

2
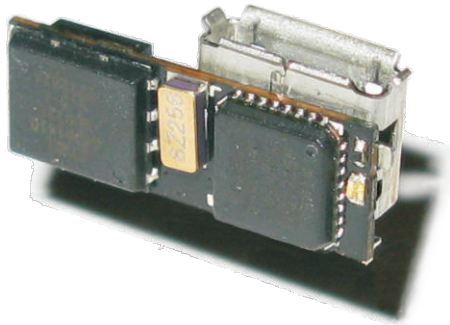
MSRv007

Your portable magnetic stripe reader
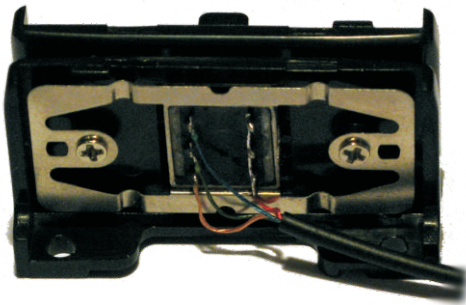
Plastic Rail

This plastic rail is ideal to test your MSRv007. It includes a 3 track low profile head which can be used to read up to 1,000,000 cards.

USB cable

The cable required to connect the MSRv007 to your computer.

Warning: Although this cable looks like a standard mobile phone cable, it is not; it contains a USB to Serial Port convertor and a custom pin layout therefore it cannot be replaced by any other cable made by other manufacturers.

Using other cables with your MSRv007 will damage it and void its warranty.

Software installation and usage

The software for MSRv007 has been designed and tested on Windows XP and Windows 7 (32 and 64bit). We do not guarantee or support its usage on any other operating system.

1. Install drivers

You will need to go through this step only once.
If you already have the drivers installed, you should skip this step.

1. Insert the CD into your CD-Rom
2. Run file D:\CDM 2.04.16.exe (D: is your DVD-ROM drive)

If the instructions above are insufficient, please refer to the following documents for a very detailed installation of the drivers.
- D:\ FTDI_Drivers_Installation_Guide_for_VISTA.pdf
- D:\ FTDI_Drivers_Installation_Guide_for_WindowsXP.pdf

The drivers are located on D:\CDM 2.04.16 WHQL Certified\ directory on your DVD-ROM drive.

2. Using the software

The software used to download, command and view the data read with the MSRv007 is called CRFSuite.
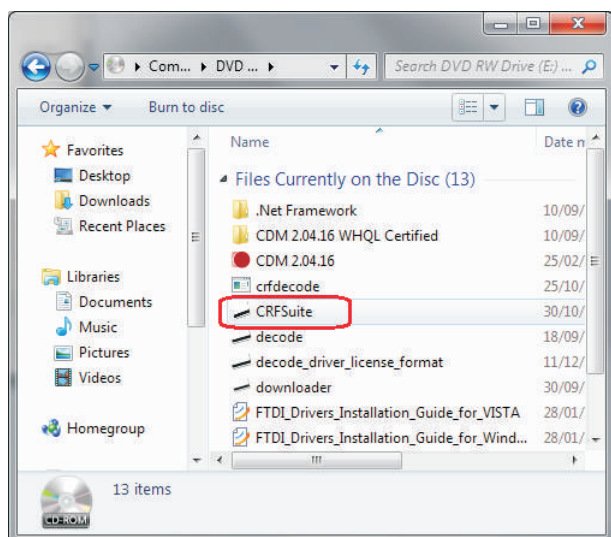
2.1 Start CRFSuite

On your CDRom there is a file called CRFSuite. You need to double click on its icon in order to start it.

Please observe the picture on the left. We have highlighted with a rounded RED rectangle the file that you need to double click on.

2.1.1 Installing .Net 2.0 Framework

If you do not encounter any problems while starting CRFSuite, please skip this step.

If CRFSuite fails to start when you double click it, the problem might happen because, you need to install the .NET 2.0 framework.The .Net 2.0 framework is included on the installation cd-rom in ".Net Framework" directory or provided for free on the internet. If you have to install it, you just need to double click on NetFx20SP1_x86.exe from .Net Framework directory.

2.1.2 Step 1 - Connect to MSRv007

CRFSuite is designed to work with all our card readers therefore it has more options than MSRv007 needs. As your reader is connected through USB please select the USB radio button. If by any chance this fails, use All or All(2) radio buttons to find your device.

4
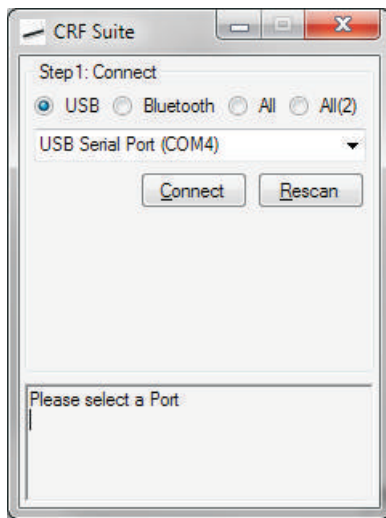
After selecting the USB radio button, CRFSuite will detect all possible options where your MSRv007 can be. They will be presented in the combo box below the radio buttons.

If you have only one MSRv007 USB cable connected to your computer, there should be only one entry in the list. However, if you have multiple entries, repeat the steps below for each one until you find the correct USB Serial port.

After selecting the desired port in the combo box, press "Connect".

If you receive a message like "Access to the 'COM6' is denied" and you are sure that this is the correct port, press Connect several times until you receive the message "Connected; authentification required".

At this point, CRFSuite has connected to the MSRv007 and will ask for a password. The default one is "1234". Do not worry, you will be able to change it later. For the moment, type in the password and press LogIn.
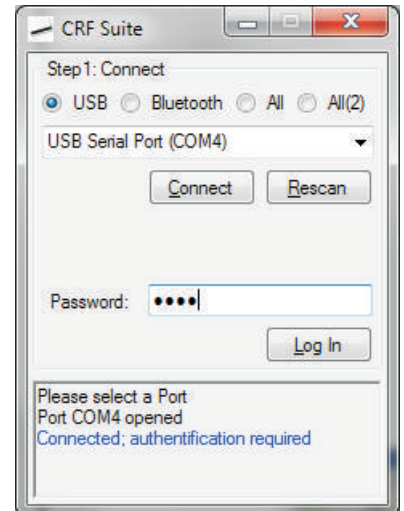
2.1.3 Step 2 - Command the device
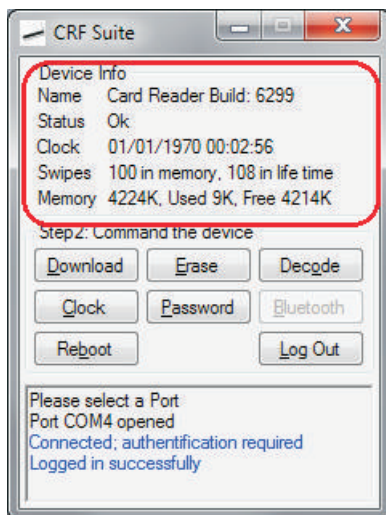
This step allows you to perform all the operations on your device.

2.1.3.1 Device Info box

On the upper area of the window there is the **Device Info** box. In here you can see the status of your device. The information displayed includes the time and date of the device, the number of swipes in memory and in device's life time, and the memory status.

The Status field should be always "OK". If it isn't, there's a fault with your device. We will display instead of OK a short description of the fault and you can find out more about it by holding your mouse pointer over this field for a few seconds

Generally, you can find detailed information regarding each field in the statistics box if you hold your mouse pointer over the field for a few seconds.

You can refresh all the fields from this box by clicking anywhere inside it. If there is nothing changed it is because the information remains the same; however at least the device clock should be updated.

2.1.3.2 Commands

Download - downloads the date from the device. You will be prompted to choose the name of the file. All the files downloaded from the MSRv007 are in .CRF format which is encrypted.

Erase - erases the content of the device. Once this button is pressed, the data will be permanently erased and there will be no way to recover it from your device. During the erase, the device's led will flicker from time to time which indicates that it is erasing the memory.

Decode - opens the decode window which allows you to see, modify, print and save the downloaded data. If you have not downloaded anything from MSRv007 it will ask for the file that you want to decode. We will discuss this window into next chapter.

Reboot - will restart your device as if the power was cut. Normally you will not use this feature

Log Out - logs you out from the device. If you do not log out, the next time you (or somebody else) that connects the device won't be asked for a password. For this reason, we strongly recommend that you log out or close CRFSuite before physically disconnecting the device from your PC.
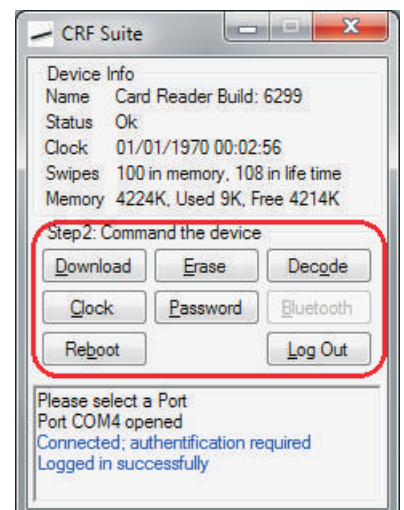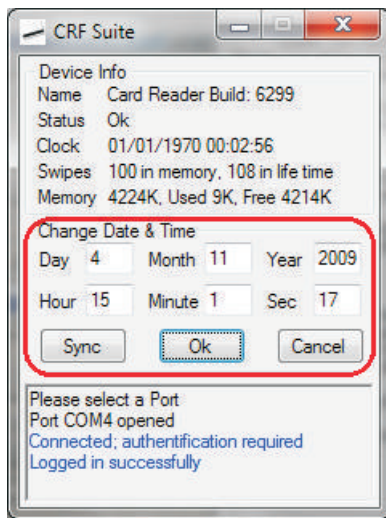
Clock - When you power on the MSRv007, it starts from 00:00:00 1/1/1970 GMT. 00:00:00 is set exactly when the light blinks twice. You can change the device date and time by pressing this button. You will be prompted with 6 text boxes in which you can write the date and time required (as in the picture on the left)

Sync - will synchronise the device clock with the computer's clock. All the values in the additional fields are ignored

Ok - will synchronise the clock with the values specified in the fields above

Cancel - the clock on the device will be left unchanged and you will be returned to the Step 2

Password - This option changes the password for your device. This is the one that you are asked in step 1. **Warning:** If you forget the new password you will not be able to access the device anymore and we won't be able to help you.
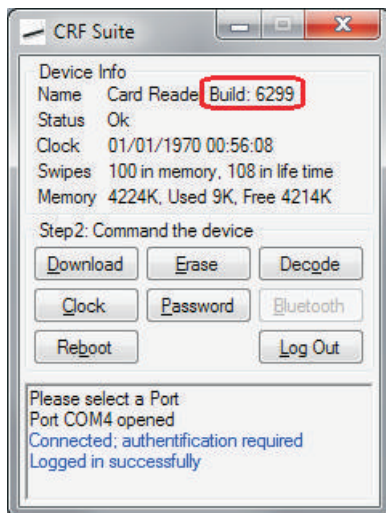
Ok - will change the password with the one requested

Cancel - will not change the password and you will be returned to Step 2

2.3. Decode the data

2.3.1 Obtain your decryption key

The data downloaded from your MSRv007 is encrypted with a military grade encryption (Rijndael-128). In order to decrypt the file, you need to have a key which is unique for each reader.

We never ship the key together with the reader. You need to confirm us that you have received the reader and we will send you the key.

In order to obtain the key, you need to write an email to support@cardreaderfactory.com and ask us for the key. You need to include into your email the build number of your device. This number is displayed in the Statistics box (please observe the rounded red rectangle from the picture on the left).

We will only send the key to the email that has been used to place the order so we can make sure that nobody else can obtain your own private key from us. Please take very good care of your key as it cannot be changed.

We will never disclose your key to anybody else (unless the law requires us to). To protect your privacy you can ask us to permanently erase your key from our records. Please note that if we erase your key, we won't be able to remind you the key of your reader if you ever loose it.

2.3.2 Viewing the data

Decoding is done by the program called **Decode**. If **CRFSuite** cannot find the decode program in the current directory it will ask you to point it to the decode.exe file.

If you have just downloaded a file from the reader, once you press the Decode button you will be presented with the window from the right.

To decode the file, you just need to paste (or type) our private key into the text box and press OK.

If you have not downloaded data from the MSR in the current session, you will be shown the decode program in which you can view already saved .CRF files. You will need to open a file in order to view decoded data.
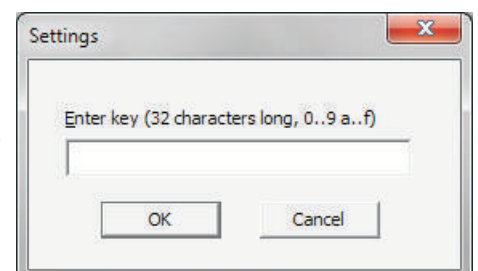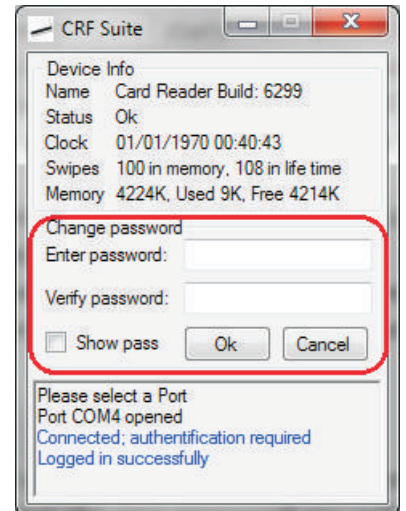
2.3.3 Open a .CRF file

In the upper menu, select File and then Open…. A new widow will open which will allow you to select the ".crf" file that you want to decode. After you've selected the file, you will be asked for the decrypt key (the same window shown in the previous paragraph).

All the files downloaded from the MSRv007 (.crf) are encrypted. The contents of these files cannot be accessed without a key therefore you will be asked for one each time you want to open these files. The key is 32 characters long and contains only numbers and letters from a to f. The software does not make any difference between upper case (e.g 'A') and lowercase (e.g 'a').

2.3.4 View and edit the data

If the key is ok, the program will decrypt the data and display it in the textbox.
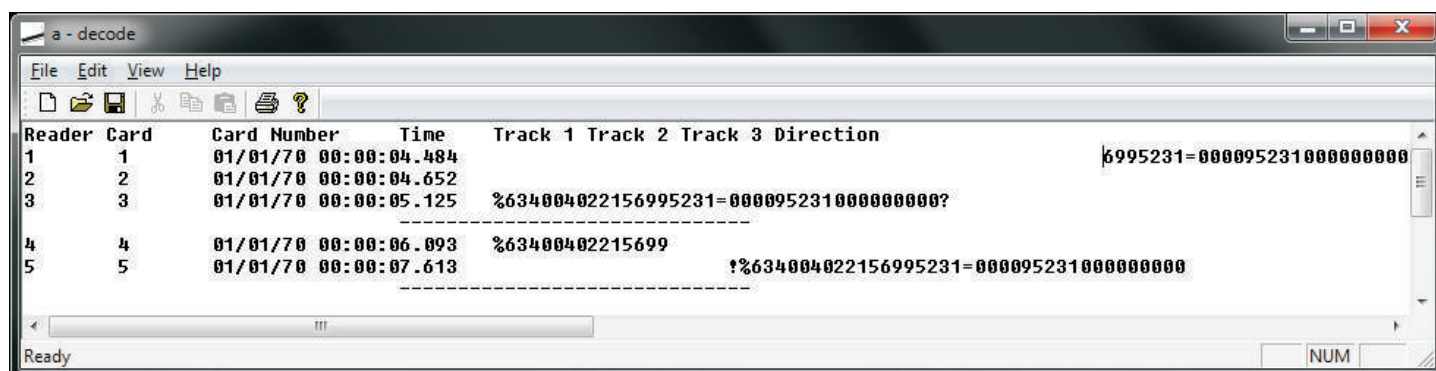
From now on, you can edit the file and arrange the data as you see fit.

2.3.5 Saving the data

CRFSuite can only save text files. A text file is the human readable information and is NOT encrypted. The data shown into the text file is the best guessed variant by our software. All other variants are not saved therefore they are lost.

To save, select File and then Save As. You cannot save the file as .CRF even though the save dialog box shows you *.CRF. You need to type in a name followed by **.txt** extension. **Do not overwrite your original CRF file** because you will be able to use this file later with the next version of CRFSuite which will be able to analyse these files better.
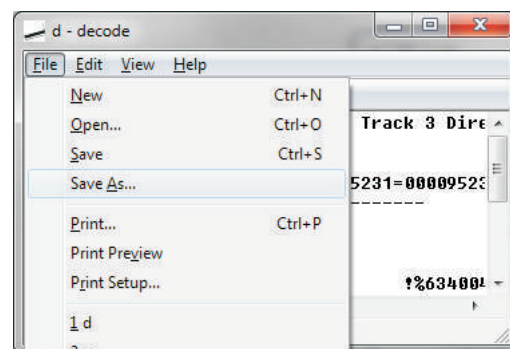
2.3.6 Using other software to view the data

If you want to see the data into a spreadsheet program you can copy the data into Microsoft Excel or Open Office Spreadsheet.

In order to view the data into this software, you need to do the following:

Method 1:
- Select everything (press CTRL-A)
- Copy everything into memory (CTRL-C)
- Switch to an empty Excel document
- Paste everything from memory (CTRL-V)

Method 2:
- Save the file as text file (File/Save As). When you type in the filename make sure that you add **.txt** at the end of the name.
- Open the saved file with Microsoft Excel or Open Office Spreadsheet.

MSRv007 signal codes

MSRv007 shows light signals as a feedback for the user. Please find below the list with these signals:

Normal operation:
> **StartUp** - led blinks twice rapidly (2 x 25ms)
> **Read Card Ok** - 1 signal of 25 ms
> **Erasing Memory** - led turns on and off for an average of 1.5 seconds

Errors:
> **Card Read but not stored** - 5 signals of 25ms; this signal is shown only by the **demo version**
> **Other failures** - on startup the led will blink few times (not as normal). The blinks are slower than the normal ones. The error will be explained by the CRFSuite as soon as you log into the device. It will also be shown into the Status field.

Charging the battery

MSRv007 is shipped with a Li-Ion battery. When it runs out, it needs to be charged. Our USB adapter does not charge the battery as we want to allow the usage of non rechargeable batteries too. You can purchase a charger from our website: www.cardreaderfactory.com or you can use any 3.7V Li-Ion charger. Do not charge your battery at more than 4.2volts because it will blow up or catch fire.

The red wire is plus (+) and the black wire is minus (-)

Connections

The MSRv007 is static sensitive therefore you need to handle it in a static free environment. This means that you need to wear at least an antistatic bracelet when you touch the electronics. If you do not wear static protection gear you risk damaging your reader!

Please find below the picture of MSRv007 with its connections:
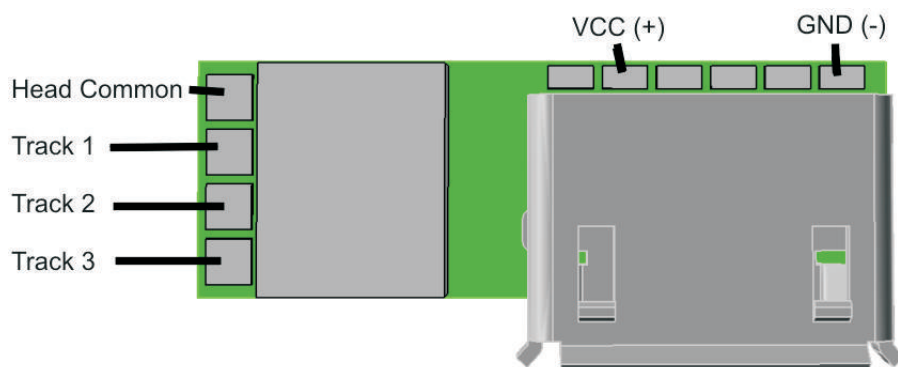
MSRv007 requires at least 2.8Volts to work correctly and a maximum of 3.8volts. Please read the MSRv007 datasheet for complete information.