MX5 4.2 Utility Manual

Revision B

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Introduction

This Manual is for users to read about and reference all the features provided in the MX5 Series 4.2 Utility. Some options will be either obsolete or updated so there might be differences between your current version and the latest Utility available.

The MX5 Utility is designed to offer a versatile and expandable solution that will complement your MX5 product for years to come. The MX5 utility is the product of choice for versatility, expandability and productivity.

Warranty

All the MX5 products are backed by a two year parts and labour limited warranty. Should you have problems with your MX5 device, please contact the dealer from whom you purchased the product. Any alteration, erasure or modification of the MX5 Utility is against copyright laws and the person responsible may be prosecuted according to the rights of a software provider. All 2D Bar code modules carry a one year limited warranty.

Disclaimer

The Manufacturer makes no claims or warranties with respect to the contents or accuracy of this publication or the product it describes, including warranties of fitness or merchantability for a particular purpose. The Manufacturer shall not be liable for any special, incidental or consequential damages, nor damages due to use or misuse born from Integration into any mechanical, electrical or computer system. The Manufacturer is not responsible for the accuracy of any device. The Manufacturer reserves the right to make any changes to this manual or product(s) without the obligation to notify any person of such changes. Any alteration and/or modification of the MX5 hardware or Utility will void the warranty.
MX5 4.2 Utility Software

Every MX5 device comes with a utility program that is included on the CD. This program is designed to configure selectable functions for each MX5 Device and to demonstrate the functionality of the various parts of the MX5 device.

System Requirements

1. Windows compatible PC with VGA display, standard mouse and keyboard.
3. 1MB available conventional memory.
4. An open USB port.

Utility Installation

Use the following steps below in order to install the MX5 4.2 Utility program.

1. Execute the self installing application program by double clicking on the file in the CD found in this folder:
   \Setup Utility\MX5AppSetup.msi
2. Click on the Next buttons in the installation wizard, accepting the defaults for installation.
3. The MX5 Utility application will be installed in your “Program Files (x86)” Directory in a folder called “MX5 Device”.
Device Selection Screen

The MX5 4.2 Utility is intuitive to the hardware configuration. It will automatically find all MX5 Devices plugged in and display an icon for each MX5 device on the Device Selection Screen. A device name is displayed under each device which lists the hardware components within the device. The short form of the devices and their meanings are listed below:

- **HUB** – The device contains an internal USB HUB that provides internal connection of USB devices which communicate independently from the MX5.
- **MAG** – The Magnetic Reader portion of the device.
- **2D** – The Barcode Reader that reads all forms of barcodes.
- **SC** – The Smart Card Reader
- **R4** – High frequency only RFID-HF reader
- **EM** – Low frequency only RFID-LF reader
- **HL** – High and Low frequency RFID reader (OEM Module with HUB version only)
- **FNG** – Fingerprint Reader
- **IB** – iButton RFID Reader
- **SAM** – Secure Access Module – or a second smart card reader
When an Device is selected, Help information will be displayed under the Select button. This explains what can be done to the device. Clicking on the **Select** button with a device selected will transfer that device to the Device Settings screen.

**Additional Actions**

Devices can have multiple modules (H2 Versions only) which can be grouped together to act like a single device. These multi-module devices come grouped by the factory but can be ungrouped if desired. When a pre-grouped device is selected, the Ungroup button will be enabled. The Help box will inform you when this function can be used. Clicking on the Ungroup button will separate the modules and then two icons will show in the Devices window.

When two devices are in the Devices window that can be grouped and they are both highlighted, (Holding down the Ctrl key and clicking on both device icons) the Group button will become enabled. The Help box will also inform you when this function can be used. Clicking on the Group button will join the selected modules together and then one icon will be shown in the Devices window.
Device Settings Tab

General Settings

“Sound On” Selecting this option will enable sound. A single beep is heard when a good read from any device is made. Two beeps are heard when an error in reading is detected. No data is sent out by the device when an error is detected on any of the devices.

“LED On” Selecting this option will enable/disable the LED. The LED will flash when settings are changed, the device is being viewed in the Utility or when the device is being initialized. The LED can be turned off by unselecting the LED On box. Note that the LED will flash during Initializing when the device is powered on and will also display all Diagnostics responses on power up. Also all error and good read responses will be flashed when any device has performed a read of any ID except Smart Cards. (Smart Card LED cannot be turned off) Smart card LEDs will vary in behaviour from various MX5 Devices which includes a SC.
“Enable Add-On Cable” If an older type of connector is needed to interface a device to the computer, there are special cables for doing this. To have a device work with those cables, this feature has to be enabled and the Channel for the device has to be VRS. Add-on Cables come in DB9, PS2/KB. (Cable and option is Available upon Request at time of Purchase only) Only available on a selected number of MX5 Products.

“Card Slot Sensor” The card slot sensor can be disabled if desired by un-checking this and just the External Trigger button will be used to start the reading of barcodes or images. (Currently available only on the MX5-K9)

“External Trigger Button” The external trigger can be disabled from triggering a barcode read by un-checking this and just the card slot sensor will be used to read barcodes or images. (Currently available only on the MX5-K9)

“KB Character-case” Selecting one of these options will control how the data will be output. Upper will output the alphabetic characters in all “CAPITAL” letters. This option overrides the Caps lock status. By selecting the Lower option, all the character data output will be in “lower case” only and this mode is not affected by the Caps lock status. The default is the As Is option which does as it sounds; outputs data as it is stored in a card or tag. This feature is only available for Keyboard type devices ONLY.
**Variable Channel Interface Options**

```
<table>
<thead>
<tr>
<th>Device Output Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Checkboxes</strong></td>
</tr>
<tr>
<td>MAG</td>
</tr>
<tr>
<td>RFID-HF</td>
</tr>
<tr>
<td>SmartCard</td>
</tr>
<tr>
<td>iButton</td>
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<tr>
<td><strong>Channel</strong></td>
</tr>
<tr>
<td>VRS1</td>
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<tr>
<td>SCCCID</td>
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<tr>
<td><strong>Encryption</strong></td>
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<td></td>
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</tbody>
</table>

**All Current USB Channels** Displays all the USB channels used by each internal device and any assigned computer port being used by the USB Channel.

**USB Channel Selector** List of all the USB Channel combinations that can be configured to connect the Devices to.

**Channel Selector Description** For each USB Channel combination there is a default device assignment. This box will display the default assignments for each USB Channel and any additional information to help decide on the best choice of Channels to use.

**Device Output Control** Controls that provide enabling and disabling of devices within an MX5 device. USB Channel settings can be changed from the default for a device and an encryption method to be used on each Channel.

**Device** Each device can be enabled or disabled within the unit by checking or unchecking the device’s checkbox.

**Channel** Display of the current Channel in use by a device which can be modified by switching to a different available Channel.

**Encryption** Each device can be set to it’s own encryption method. Not all encryption methods will be available to all device/channel combinations.
Module Information

<table>
<thead>
<tr>
<th>Module Information</th>
<th>Hardware ID: 1802</th>
<th>Channel ID: 9117</th>
<th>Firmware Ver: 0.9.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module: K9-HUB-MAG2D-FNG</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“**Module**” Name of the Module currently being viewed which lists each device function.

“**Hardware ID**” Hardware identifier - a number for internal use only.

“**Channel ID**” Identifier of the USB Channel combination being used.

“**Firmware Ver:**” The version of Firmware loaded in the device.
Magnetic Stripe Reader Settings

“Device Status” Display of the device’s current status. If ‘Enabled’ is showing, the device is working as expected. If “Disabled” is showing, the device has been manually disabled is there is a problem with it’s functions.

“Channel” The Channel Identifier the device is connected to.

“ISO Track Selectors” Select which Credit Card/Data Card ISO tracks you would like the reader to read. Refer to your software application’s notes to determine which track(s) should be selected for proper data reading.

“AAMVA Track Selectors” Select which Drivers License data tracks you would like the reader to read. This option only applies to Driver’s Licenses and has no effect on reading ISO cards.

“Track SS Selectors” Enable or Disable the Track Start Character (Start Sentinel). You can also select your own SS by using the pull down bar that is beside the Enable checkbox. Use the default settings unless notified otherwise by your application vendor. Each track can have a unique SS.

“Track ES Selectors” Enable or Disable the Track End Character (End Sentinel). You can also select your own ES by using the pull down bar that is beside the Enable checkbox. Use default settings unless otherwise notified by your application vendor. Each track can have a unique ES.

“Send CR Track Selectors” Select a Carriage Return “CR” will put a Carriage Return character at the end of the selected
track of magnetic strip data. This forces the data that follows reading of a track to the next line of the output.

**“Track Output Order”** This option allows you to change the output order of the selected tracks. Default order is (1,2,3).

**“Send Any Valid Selected Track(s)”** Enabling this option will tell the device to send out ANY VALID data from the tracks “that have been selected” only (Track Error is “OFF”). When this option is selected, it informs the reader to send ALL the selected valid tracks regardless if there was a read error. When unselected and there is a track read error, the unit will flash the LED twice and sound two beeps. NO DATA will be sent out. This option is handy for trouble shooting.

**“Group Prefix”** An optional character that can be placed before all the magnetic track data output from the Reader.

**“Group Suffix”** An optional character that can be placed at the end of all the magnetic track data output from the Reader.

**“Group CR After Data”** An optional final Carriage Return after all the magnetic data has been formatted for output and will be added after the Group Suffix if enabled.
RFID HF UID Settings

“Device Status” Display of the device’s current status. If ‘Enabled’ is showing, the device is working as expected. If “Disabled” is showing, the device has been manually disabled is there is a problem with it’s functions.

“Channel” The Channel Identifier the device is connected to.

“Data Format” This function controls what Data format the RFID Reader will attempt to read or write. Options include, Standard UID (4/7 Byte) and Wiegand.

“Antenna Gain (%)” If needed, the Antenna Gain can be changed for more sensitive cards or tags that require a different level of power for them to be readable. The default setting is able to handle most card/tags and most likely will not need to be changed.

“Auto Read Card Types” This feature will list each Card Standard that will be read automatically by the RFID device. Any standard can be taken out of the list of card types that will be read by un-checking it. This will provide for faster reading if fewer card types are required to be read.
Output Options

“RFID SS & ES” Enable or Disable the RFID Start & End Character (Sentinel) being added to the output. You can also select your own SS/ES character by using the pull down bars and choosing a different character than the default one. Use the default settings unless otherwise notified by your application vendor.

“Send CR” You may add a CR character to the output after the UID is read from the RFID card/tag.

“Wiegand Data Size” For the Wiegand Data Format, there are many options of data sizes. This provides the choice of which Wiegand data size the RFID reader will output.

“Decimal/Hex” The UID of a RFID card/tag can optionally be output in either Decimal or Hexadecimal format.

“Padding/Truncation” The UID can be altered by padding it with leading zeroes from a length of 10 characters to a maximum length of 17 characters (13 characters maximum for EM type Cards). For Hexadecimal output, the optional number of bytes are 8, 14 or 16 with zero padding put at the front of the UID. The padding values are related to the choice of Data Size and Decimal/Hexadecimal options.

Output Manipulation

“Available Commands” The default command for data manipulation is ‘Non-Reversed”. This will send byte data in the order it is read from the RFID media. The other commands available are: Reversed, Left Shift, Right Shift, Left Align, Right Align. A script can be developed by choosing multiple commands and adding them to the Instruction List which will be performed in the order they are added.

“Align/Shift Adjustment” For the Left/Right Shift commands, a chosen number of bits can be specified for those commands. For Left/Right Alignment, a chosen number of bytes can be selected for those commands.

“Add to List” Clicking on this button will take the command currently in the Commands dropdown and add it along with the Adjustment number, if applicable, to the Instruction List.

“Clear List” If the list of commands chosen is not what is desired, clicking this button will clear it so no Data Output Manipulation occurs or a new list can be entered.

“Instruction List” The list box that will display all commands chosen to be performed at the time an RFID card is read by the reader.
RFID LF UID Settings

“Device Status” Display of the device’s current status. If ‘Enabled’ is showing, the device is working as expected. If “Disabled” is showing, the device has been manually disabled is there is a problem with it’s functions.

“Channel” The Channel Identifier the device is connected to.

Output Options

“RFID SS & ES” Enable or Disable the RFID Start & End Character (Sentinel) being added to the output. You can also select your own SS/ES character by using the pull down bars and choosing a different character than the default one. Use the default settings unless otherwise notified by your application vendor.

“Send CR” You may add a CR character to the output after the UID is read from the RFID card/tag.

“Decimal/Hex” The UID of a RFID card/tag can optionally be output in either Decimal or Hexadecimal format.

“Padding/Truncation” The UID can be altered by padding it with leading zeroes from a length of 10 characters to a maximum length of 17 characters (13 characters maximum for EM type Cards). For Hexadecimal output, the optional number of bytes are 8, 14 or 16 with zero padding put at the front of the UID. The padding values are related to the choice of Data Size and Decimal/Hexadecimal options.
**Output Manipulation**

“**Available Commands**” The default command for data manipulation is ‘Non-Reversed’. This will send byte data in the order it is read from the RFID media. The other commands available are: Reversed, Left Shift, Right Shift, Left Align, Right Align. A script can be developed by choosing multiple commands and adding them to the Instruction List which will be performed in the order they are added.

“**Align/Shift Adjustment**” For the Left/Right Shift commands, a chosen number of bits can be specified for those commands. For Left/Right Alignment, a chosen number of bytes can be selected for those commands.

“**Add to List**” Clicking on this button will take the command currently in the Commands dropdown and add it along with the Adjustment number, if applicable, to the Instruction List.

“**Clear List**” If the list of commands chosen is not what is desired, clicking this button will clear it so no Data Output Manipulation occurs or a new list can be entered.

“**Instruction List**” The list box that will display all commands chosen to be performed at the time an RFID card is read by the reader.
Barcode Reader Settings

“Device Status” Display of the device’s current status. If ‘Enabled’ is showing, the device is working as expected. If “Disabled” is showing, the device has been manually disabled is there is a problem with it’s functions.

“Channel” The Channel Identifier the device is connected to.

“First Read Sequence” Using sequences, certain barcode symbols can be prioritized over other types which speeds up barcode reading.

“Read Time” can be adjusted for the optimal time of duration for each Read Sequence.

“Second Read Sequence” Having a second read sequence, additional barcode symbols can be added for the control of priority order of barcode formats which speeds up barcode reading. The read time of this sequence can also be adjusted.

“Barcode Selection” All possible barcodes are available in each read sequence which allows for priority of first pass to read high demand barcodes. Second pass can have additional barcodes for alternate data barcodes.

Note: if the device undergoes a “Reset to Factory Defaults”, barcode settings will return to the defaults and the customized lists of barcode types will have to be changed to get the desired barcodes to read again.

“Barcode Prefix/Suffix” Optionally, a Prefix and/or Suffix can be added to the Barcode Data output. Checking on either or both is available and the character chosen can be any character of the ASCII character set; even unprintable characters. A Carriage Return (CR) can also be added to the end of the Barcode Data if desired.
QuickSettings Function

There is a function available to create a QR barcode that contains all the settings of the selected VCI Module which is captured at the time the button is clicked. The barcode can be printed and read by the barcode device which will force all settings to the user defined values. This makes the rolling out of multiple units quick and easy. This can also help restores the desired USER settings after a firmware upgrade or the “Reset to Defaults” button is clicked. This function is only available on MX5 devices with a 2D Barcode and is available on MX5 Utility version 4.2 with devices that contain firmware version 9.8 RC11 or higher.

Steps to create a QuickSet Barcode

1. YOU will need to first select the Channel Selector desired and save the settings.
2. Make desired changes to the settings for all the options of the selected VCI Module devices.
3. Save the changes of the Settings for each Device(s)
4. Go to the Barcode Tab and click on the QuickSettings button.
5. Save the JPEG file with an appropriate name.
6. Open a Word document and include the image.

7. Right click on the image and choose Format Picture

8. Set the Size scaling factor to no less than 25%

9. Add a label below the picture, if desired and print the document.
Using the QuickSet barcode

When the QuickSettings barcode is printed, place the paper about an inch away from the barcode card slot and press the trigger button. The barcode camera will start reading and if the read is successful, the device’s LED will start flashing. When the update to the settings is complete, the device will reboot.
**Smart Card Settings**

“**Device Status**” Display of the device’s current status. If ‘Enabled’ is showing, the device is working as expected. If “Disabled” is showing, the device has been manually disabled is there is a problem with it’s functions.

“**Channel**” The Channel Identifier the device is connected to.

**Action Buttons**

**Get Current Settings** Your screen settings will be updated to reflect the current device settings when you click on this button. This is useful for when you have changed the values of some settings and don’t remember what was changed. This clears your changes and resets everything back to the last saved values.

**Save New Settings** All changes will be saved once you have clicked on this button. All saved settings are automatically updated and implemented inside the Flash Memory of the device.

**Reset to Defaults** Choosing this option will force all the Utility settings and the device to be reset to the factory defaults based on the Hardware ID and Firmware version.

**Firmware Upgrade** When new Firmware is released and it is desired to update the device with the latest firmware, this function will start the upgrade process. The upgrade screen will be shown with the hardware’s firmware file automatically selected.
Update Tab

The MX5 Device Update Firmware Tab is for upgrading the firmware whenever a new version has been provided for a device. When a MX5 device is in Upgrade mode, it will make a regular beeping sound and will flash the LED every second.

The **Current Firmware Information** area will display the MX5 Device’s current information stored in its flash memory. If you have started the Upgrade process and do not wish to change the firmware, press the **Reactivate Firmware** button and the MX5 Device will resume with the current firmware loaded.

“**Device Information**” is the information about the device hardware that is connected; like the Device Name, the Hardware ID and the Channel ID.

The “**Firmware Update**” area lists all the information about a Firmware File which can be flashed into the MX5 Device. When a firmware file is chosen, additional fields display the Supported Hardware ID(s), Firmware ID, Firmware Version information which identifies the Firmware. There will be information in the **Firmware Description** area that lists all the device functions supported by the firmware.
“Browse” This button opens a dialog to the folder that contains the relevant Firmware files. If there is more than one firmware file installed, the file dialog will narrow the choice to the one(s) that matches the Firmware ID so it can be selected for loading.

“Upgrade Firmware” Installation of a Firmware file into the MX5 Device is performed by clicking on the “Upgrade Firmware” button. The button will be grayed out until a valid firmware file for the device has been selected.

**Firmware Description** is the area that displays the information on the firmware file chosen to be loaded into the MX5 device.

**Note:** If the Update Firmware button is clicked and if the USB cable for the device is pulled out or the power to the computer is stopped, the firmware process will fail and the device will need to be flashed once again. (All MX5 devices are designed with a Flashing recovery program) So updates maybe interrupted with out damaging the MX5 device.
Steps To Upgrade An MX5 Device

If you encounter this message when plugging in your device, it means that you should go through the following procedure to update the firmware in your device.

1. When the **Firmware Upgrade** button is clicked, a confirmation message will appear that will provide the option to delay the upgrade process.

2. The Utility will switch to the Upgrade mode for the Module currently displayed.
3. The Utility will transfer to the Update tab when the upgrade action has been accepted.

Note: At this point in the process, the option to upgrade can be canceled by clicking on the Reactivate Firmware button.
4. The **Browse** button will be enabled to choose the Firmware file to upgrade to. Choose a file to download from the File Dialog. Note that you may only install files that contain the same Hardware ID shown in the Device Information BOX. The **Update Firmware** button will not be active if you are trying to install the wrong update for the specific hardware.

Note: The Utility will only allow loading of firmware files that are designed for the hardware capabilities which were designated for the device at the factory.
5. After returning to the Upgrade window, click on the **Update Firmware** button to complete the process.

**NOTE:** Do not unplug the device or turn off the power to the computer while updating or the device will need to be flashed again.

A progress bar will display the activity of downloading the firmware to the MX5 Device.
After the download process completes, the firmware will be internally verified. When the Verifying step reaches 100%, the updating process will be completed.

If the process of upgrading was unsuccessful, (it will be evident by seeing the same Firmware Version showing in the Module Information box) the firmware upgrade process can be re-done any time.
Appendices

Troubleshooting and FAQ

In most instances, your MX5 product is a plug and play device and should operate trouble free. The drivers for all MX5 devices are included with your Windows operating system (OS). It is highly recommended that you insure that your OS has all the latest service packs installed in order to experience proper operation of your MX5 device. Depending on the version of your OS, additional installation files (.INF) may be required with the use of the Virtual Serial communication channel (VRS). These files are included as part of the installation for the MX5 and can be found in the MX5 Device folder of your Program Files directory.

Below you will find a list of Frequently Asked Questions (FAQ) and the solutions which may be helpful in resolving any issue(s) you may have with your MX5 product.

- My MX5 Device is not recognized by my Operating System (OS)?

Solution: Unplug your MX5 from your computer and confirm you have installed the latest service pack and updates for your OS. You may need to restart your computer to complete the updates. Try re-connecting the MX5 after your system has restarted. Windows should automatically install the appropriate drivers for your MX5. Your system may request driver information when using VRS firmware of the MX5. If this is the case, you can find these files in the MX5 Device directory which is created when you install the MX5 Utility. Check the Device Manager in the control Panel to verify that there is no problem with the installation of the OS drivers.

- My System reports a Device error when I install my MX5?

Solution: Do Not unplug your MX5 device from your computer. Open your Device Manager and list the device in question. Right click on the device in question and select properties of the device. Select the option to Remove or Uninstall the device and click OK. Now unplug your MX5 from your computer and wait a few seconds before you plug it back in. Some older versions of the Windows OS need to reboot after removing the device. You may want to try this option if you are still getting this error after removing the device.

- My MX5 Device LED flashes and beeps every second?

Solution: This means your MX5 is in Bootload mode. Use the MX5 Utility to reactivate your existing firmware or install a different version of the firmware into the MX5. By upgrading your firmware, your system may install different drivers for your MX5 device. This is normal and you should let the process complete.
When using my MX5 as a Virtual Serial (VRS) device, my software cannot see the MX5 when I change USB ports?

Solution: The MX5 is assigned a different COM port for each USB port. This is Normal and you will need to adjust the COM port to be the same on each USB port used for the MX5 device. You can adjust the COM port for each USB by using your device manager and going to properties of the MX5 device. You will need to access the Advanced settings to change the COM port number. Make sure that your software port setting matches the selected COM port number. You will need to change this option for every USB port you wish to connect the MX5 device to. We recommend a Reboot of your computer anytime you have made any changes to your VRS port. If you have made changes to the Channel Selector using the MX5 Utility, you will need to Reboot your computer. If you are experiencing problems with your VRS ports, Reboot your computer. If all else fails, Reboot your computer. THIS IS an OS issue with Windows. USE HID ports when possible.

After mounting my MX5 Device to my monitor, two beeps are randomly heard from the device?

Solution: Older CRT monitors emit electromagnetic fields and mounting the MX5 to this type of monitor is not recommended. The CRT will interfere with the Magnetic Head and RFID device. Two beeps from the MX5 indicate an error state was detected which was caused by the CRT electromagnetic fields.

I plugged the MX5 into a USB Hub and random beeping is happening to the MX5?

Solution: Some Hubs are not strong enough in the power output for a port so the power level is just under the power requirements for the MX5. Unplug it from the hub and plug into a USB port on the computer or get a powered hub that can handle at least 100mA on each port.

After I upgraded the interface for the MX5, I cannot see any data from the MX5 Device?

Solution: The default interface installed into the MX5 device is commonly chosen to be a keyboard device. When you read a card using the MX5, data is automatically typed to your computer as if someone has entered the data manually. If you have installed a new application which is a Virtual Serial port (VRS) or a HID device, the card data will no longer be sent to your keyboard port. Your software setup will determine which interface you are required to use for your device. The MX5 Utility is designed to be used to upgrade, configure and test your MX5 device. To ensure that the MX5 is working, have the Device Testing tab open in the MX5 Utility and swipe the relevant card in order to see card data coming from your MX5 device.

I have updated the firmware on my MX5 device and the RFID stopped working?

Solution: Check the hardware configuration setting using the MX5Utility. You can enable or disable any portion of your reader. By doing so, you will not be able to read any magnetic cards. Reversely you can also turn off the RFID or SC of your MX5 device and only enable the Magnetic card option. The factory default setting for this device is all functions in the device are enabled. You can change this setting to enable various options and save your changes to the unit.
- I am using the MX5 and after I upgraded the firmware, the utility does not see the device?

Solution: As new applications are created and released for the MX5, upgrades are also done to the MX5 Utility and the Configuration. If you download the newest version of the Utility from the Internet, also make sure that you update your MX5 with the latest firmware available. By downloading the latest MX5 Utility and installing it on your system, all the required files for the Utility are automatically installed and updated.

- After I upgraded my MX5 firmware with a VRS (Virtual Serial Port) version, my computer failed to install the device and returned an error message that the hardware did not install properly?

Solution: The MX5 devices use only generic system drivers which are included as part of your Microsoft Operating System (OS). We recommend that you keep your OS up to date with the latest upgrades and service packs available for your system. Also make sure that you are using the latest MX5 Utility available. By downloading the latest MX5 Utility and installing it on your system, all the required updated firmware files are automatically installed and updated. The USB Virtual serial Port (VRS) makes use of a driver called usbser.sys which is included with your OS. You will find an installation file located in the directory that you have selected during the install of the MX5 Utility. The default location is “C:/Program Files/MX5 Device/”. The general configuration file is a system setup information file called MX5_EN.inf.

Use this file to update the drivers listing for the MX5 device. See the illustrations below on how to use this file. Open your device Manager for your OS and locate the device which did not install properly. You will see an “!” or “?” beside the device in question. Right Click your mouse cursor over the device and select “Update Driver Software” option. See illustration below.

Once you have selected Update Driver Software, You will need to Select “Locate and install driver software manually” option. See illustration below.
You will then be asked to provide a search directory which contains the INF files for the MX5 Device. For this illustration the files are saved in the “C:\Program Files (x86/x64)\MX5 Device” by default when you install the MX5 Utility. Use the Browse… option to select the location. See illustration below. Click “Next” once you have selected the location.

The system will then install the INF file for the MX5 Device. The system may ask you if you want to install this device driver or it needs the authorization to install it. If so, select Install. When the installation completes, your device will automatically be configured and a COM port will be assigned to this device. (You can change this port number by going into Properties of the Device and selecting advance options) See illustration below.
You may need to close and re-open the MX5 Utility in order for the new device to be detected. It is recommended to always keep your operating system updated with the latest service pack and updated. The MX5 Device only uses the drivers which are supplied with your operating system. The INF file only contains the information on which files the operating system will need to install for the selected MX5 Device.

**Other Considerations**

- All the Device settings are stored inside each individual MX5 device flash memory. Moving the MX5 device to another computer will not affect the internal settings.

- Custom applications installed on your MX5 device may be designed to disable the utility and upgrade functions. Contact your Device supplier for more details.

Data Encryption features are only available on Custom applications. Contact your Device supplier for more details.

New applications and updates are available on the manufacturer’s website. Custom applications, SDK (System Development Kits) are available for the MX5 product. Contact your Device supplier for more details.