

DESKO Virtual COM Software

Installation Guide

Release: 5.4

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Objectives

This document describes the Installer for DESKO Virtual COM Software (Version 2.1.3.0 or higher). It supports the installation of

- Hid2Ser
- Null Driver for DESKO USB devices

In addition the configuration of Hid2Ser will be described in detail.

Requirements

Supported Operating Systems

The following operating systems are supported:

- Windows 7 (32 bit / 64 bit Editions)
- Windows 8.1 (32 bit / 64 bit Editions)
- Windows 10 (32 bit / 64 bit Editions)

Additional Requirements

The following additional requirements are needed:

Local administrator rights are necessary to install and configure Virtual COM Software.

One of the following .NET Framework Runtimes are required.

- .NET 2.0
- .NET 3.0
- .NET 3.5

Except Windows XP and Windows 8 one of these frameworks are part of the operating system. For the others it is necessary to install it before the installation of DESKO VCOM Software if not already done.

Interactive Installation of DESKO Virtual COM Software

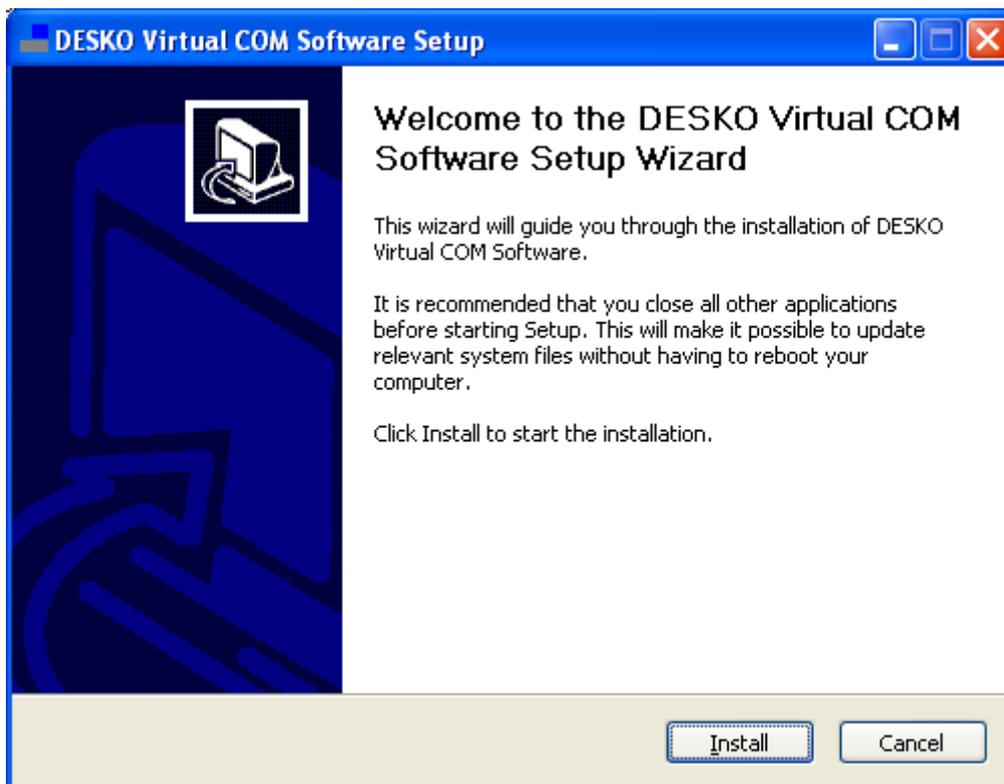
This chapter helps you to install the DESKO Virtual COM Software. This includes the following components:

- Hid2Ser Service which offers virtual serial port functionality for DESKO USB devices.
- VCOM Software Configuration tool
- Null Drivers for unused USB sub devices like Vendor API, PC/SC, etc.

It is recommended for installation to close all running programs (especially those, which are using the virtual serial port or HID service).

Start the Interactive Setup

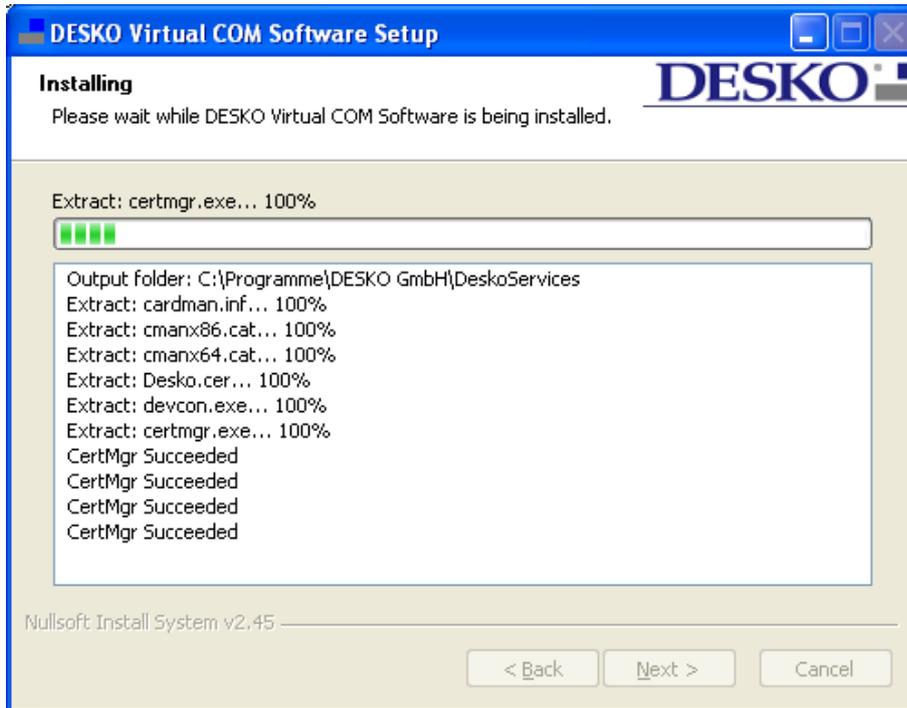
Start the setup by executing "VCOM_Setup.exe" (either by double-clicking it or via the shell). You will be welcomed by the following start screen.



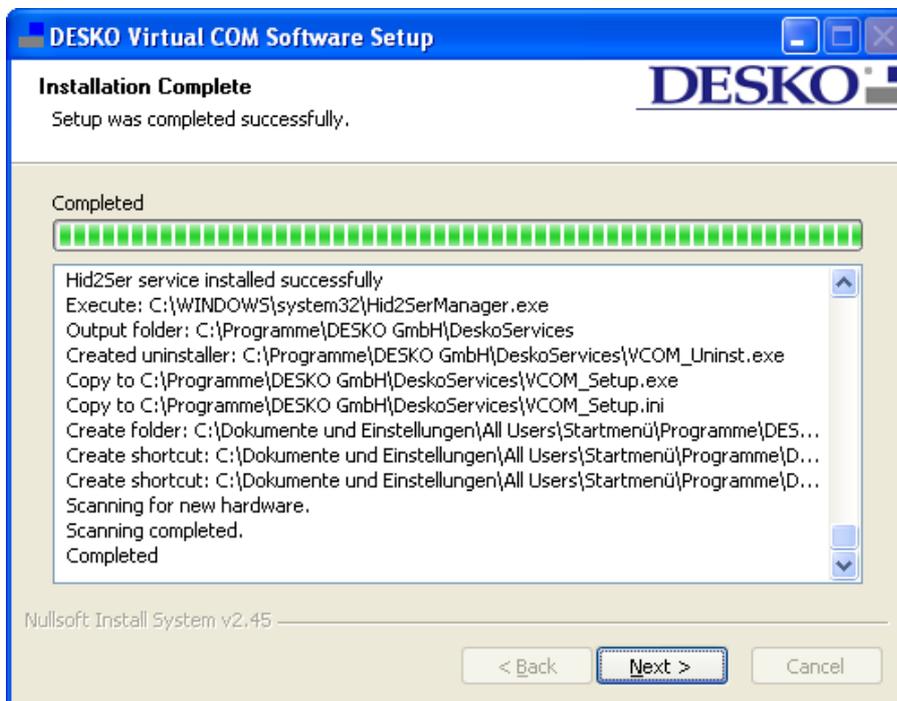
Click "Next" to continue.

Installation

The following screen is shown during installation.



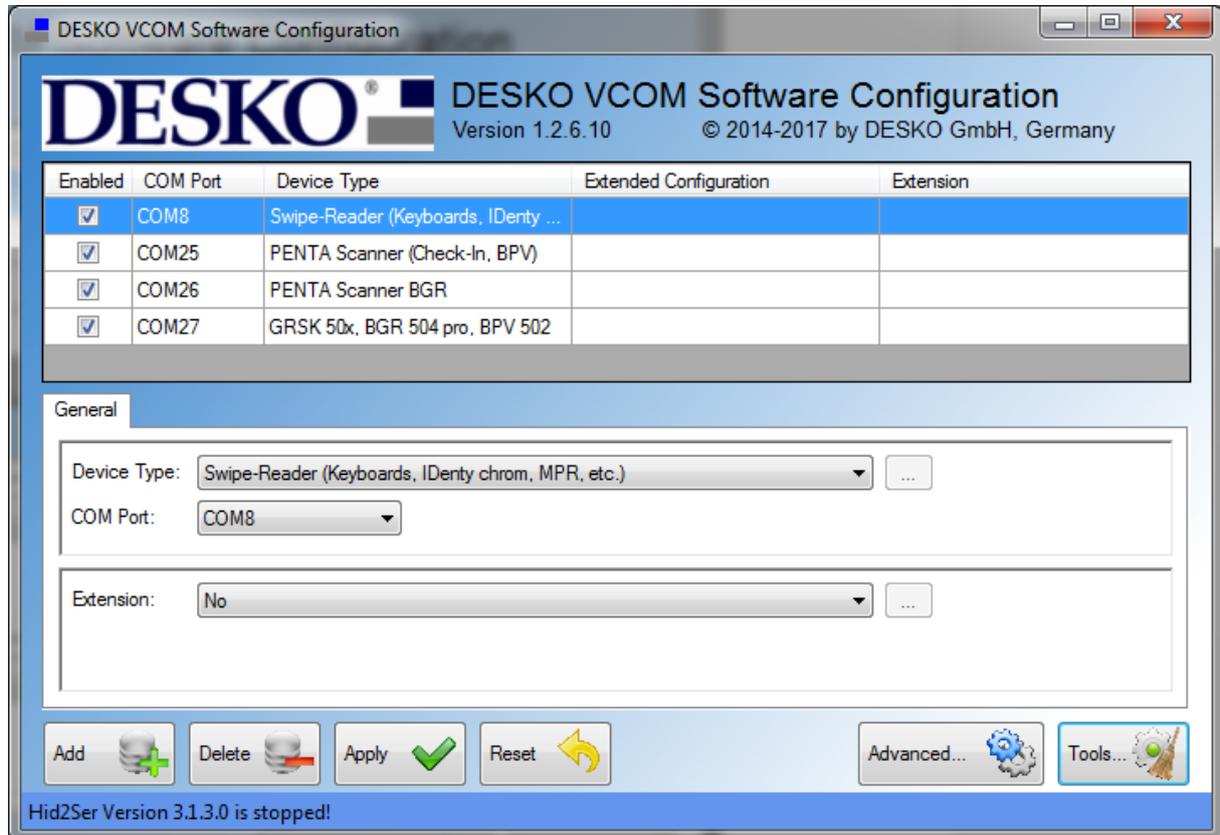
After installation is finished the following screen will be shown:



Click "Next" to continue.

Configuration

During the installation process the *DESKO VCOM Software Configuration* is launched to edit the default configuration of Hid2Ser. Please note that dependent on the actual setup configuration this step can also be skipped.

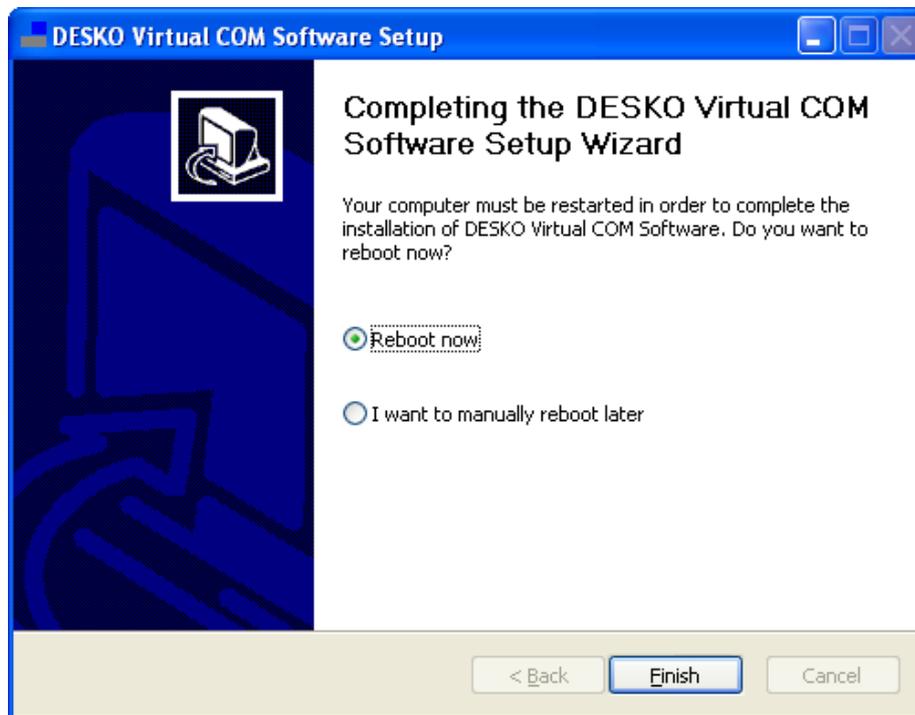


Please refer to chapter *Virtual COM Software Configuration* for details about the configuration.

Click *Apply* button to accept the configuration to continue with the installation.

Reboot

After the installation is finished you will be asked to reboot the system. Please reboot the system to ensure that the drivers and software will function correctly.



After rebooting your installation is located in the installation folder (<Program Files>\Desko GmbH\DeskoServices" and there is a start menu entry "Desko GmbH\DeskoServices".

Silent Installation of DESKO Virtual COM Software

This chapter helps you to install the DESKO Virtual COM Software without any user interactions (silent mode).

Start the Silent Setup with Default Configuration

Start the setup by executing "VCOM_Setup.exe" with the command line option /S (either by creating a link or via the shell). As this installation is used for automated installations there is no user interaction and no reboot behaviour. You will get a log file for the installation in the installation folder.

The configuration which is used by silent setup is located in the setup folder in the file hid2ser.ini. If you would like to change the default configuration it is easy to do:

- Prepare your configuration with the DESKO VCOM Software Configuration tool. A backup office PC is necessary which has the VCOM Software already installed.
- Copy the file %windir%\hid2ser.ini to the setup folder.
- Execute the silent setup.

Virtual COM Software Configuration

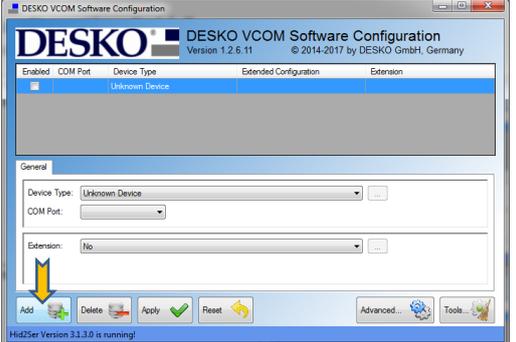
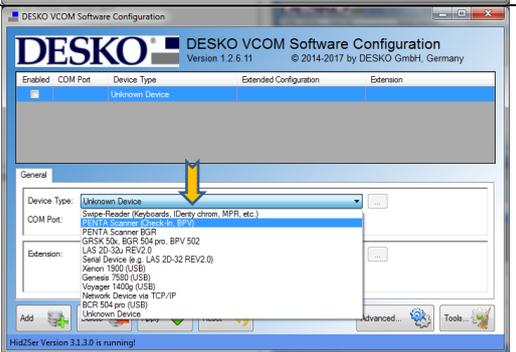
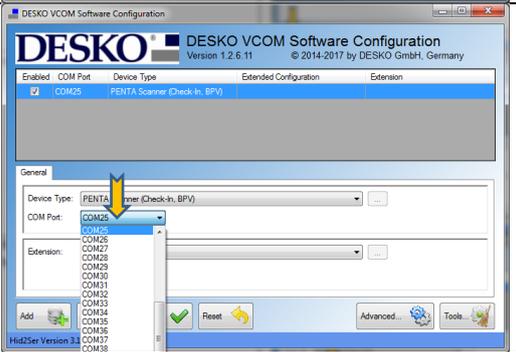
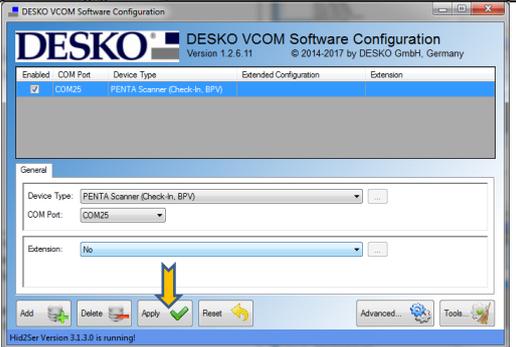
Overview

The Virtual COM Service Hid2Ser has a lot of additional features. All of them can be configured using the new configuration tool. It has the following features:

- Dynamic configuration of any DESKO USB devices, i.e. adding new devices, deleting existing devices and modifying the settings of existing devices.
- Supported device types:
 - Swipe-Reader (Keyboards, IDenty chrom, MPR, etc.)
 - PENTA Scanner (Check-In, BPV)
 - PENTA Scanner BGR
 - GRSK 50x, BGR 504 pro, BPV 502
 - LAS 2D-32u REV2.0
 - Xenon 1900 (USB)
 - Voyager 1400g (USB)
 - Genesis 7580 (USB)
 - Serial Device (e.g. LAS 2D-32 REV2.0)
 - Network Device via TCP/IP
 - BCR 504 pro (USB)
- Adding an Extension (formally known as plug-in) to a device which can be completely configured.
- Supported extensions:
 - Concentrator → redirects output to another VCOM port
 - Splitter → outputs bar code, mag-stripe and OCR data to separate VCOM ports
- Compatible to existing Hid2Ser configurations as long as the configurations contains only known devices and extensions.
- Deep validation of final configuration before it is written to the hard drive to ensure a working system.

Quick Configuration Guide

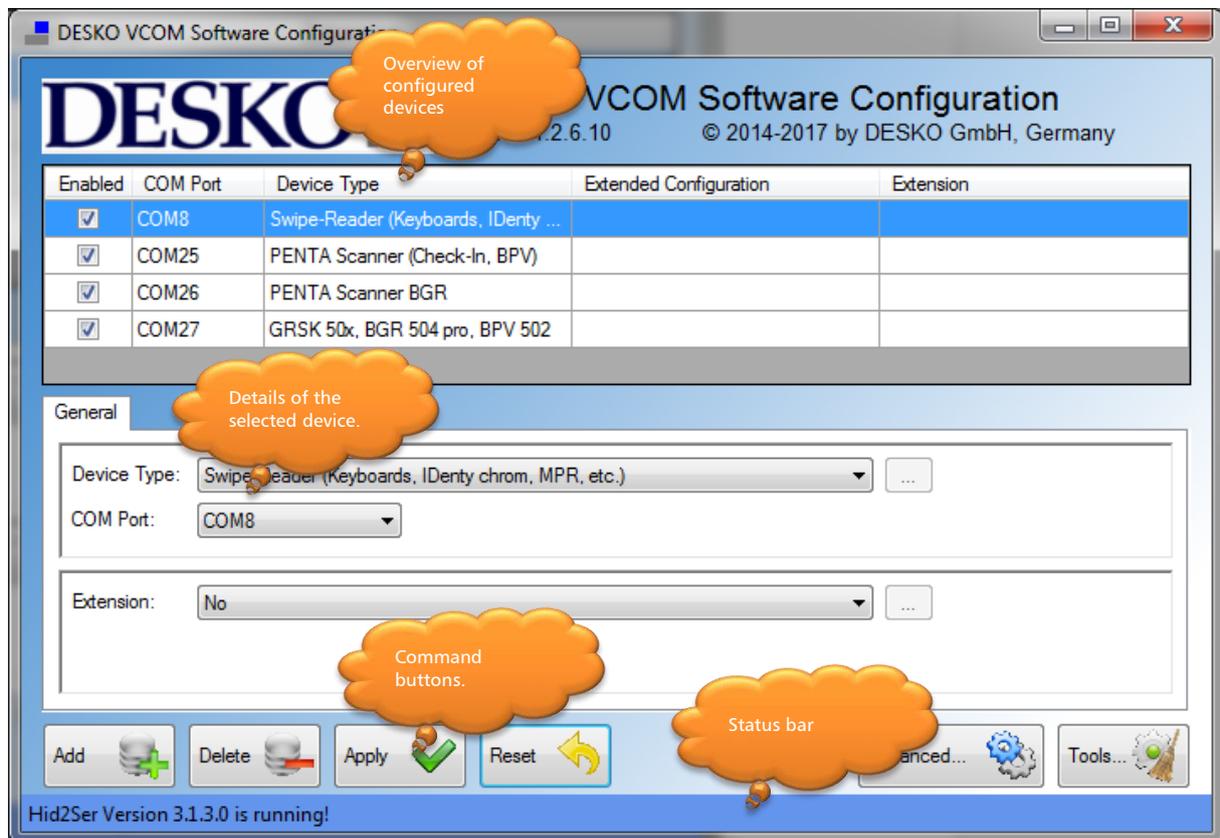
If you would like to add a new device to the configuration use the following procedure:

<p>1. Click on <i>Add</i> button → Adds a new device</p>	
<p>2. Choose the appropriate <i>Device Type</i></p>	
<p>3. Use the suggested COM Port or choose another <i>COM Port</i>, which is not used.</p>	
<p>4. Click on <i>Apply</i> button → Saves the configuration and restarts Hid2Ser service.</p> <p>Remark: You can postpone this step if you have further devices to configure.</p>	

Repeat this steps for other devices. Please refer to the appropriate chapter below if it is necessary to do extended configuration and adding Extensions.

Main Window

The main window of DESKO Virtual COM Software Configuration is shown either during installation or manually by clicking on the corresponding link in the Start Menu.



It is split into four main areas:

1. Overview of configured devices
2. Details of the selected device
3. Command buttons
4. Status bar

At application start the elements are filled with the current configuration, i.e. this is the actual configuration which is used by Hid2Ser.

Overview of configured devices

This area shows an overview of the configured devices with the main attributes like the COM Port for communication, most important configuration values and if it has some extensions. Following a list of all columns:

Enabled

Only device entries which have checked Enabled flags are available for communication.

COM Port

This is the port number of the virtual serial port. This is the master port for communicating with the device. It does not matter if the device is plugged-in or not. The virtual serial port is always available if configured here. Even if this COM port can be empty, enabled devices has to have a valid COM Port.

Device Type

Each DESKO USB device is from a specific device type. The most device types can only be added once. One exception is the network device which can be added multiple times.

Extended Configuration

If the device type has an extended configuration, this column shows its major attributes.

Extension

Extensions are optional and are able to extend the standard functionality of a device type. This column shows the chosen extension and its major attributes.

Details of the selected device

This area shows details about the selected device from the overview area. It has at least the *General* page and depends on the chosen type of device and extension further sections like *Extended* and *Feature Configuration*.

Hint: The most important settings are always in the upper panel and the optional or least important settings are always in the lower panel.

General

This page is common to all device entries.

The screenshot shows a configuration window with three tabs: 'General', 'Extended Configuration', and 'Feature Configuration'. The 'General' tab is active. It contains two main sections. The upper section has 'Device Type' set to 'Xenon 1900 (USB)' and 'COM Port' set to 'COM30'. The lower section has 'Extension' set to 'Concentrator - Redirects output to another VCOM port'. Each dropdown menu has a small '...' button to its right.

The most important settings are *Device Type* and *COM Port* which can be edit in the upper panel. If an *Extended Configuration* is available you can switch to it by clicking the [...] button close to the *Device Type*.

In the lower panel you can optionally choose an *Extension*. By clicking the [...] button close to the *Extension* you will be navigated to its configuration page.

Extended Configuration

This page is available for those devices which need to have additional configuration, e. g. the Xenon 1900 (USB) which has to know the output protocol.

Please refer to the chapter *Configuration of Device Types* if an *Extended Configuration* is necessary and which configuration elements are available.

Feature Configuration

This page is available for those devices which have an *Extension*. The type of configuration elements depends on the chosen *Extension*. The following sample shows the configuration elements for the *Concentrator Extension*.

Please refer to the detailed configuration of *Extensions* which configuration elements are available.

Command buttons

With the command buttons you can add, delete, apply and reset the configuration. The following commands are available:

Add

Adds a device to the list of configured devices. This device is by default an Unknown Device. It is necessary to specify at least the *Device Type* and the *Com Port* afterwards.

Delete

Removes the selected device from the list of configured devices.

Apply

Saves the modified configuration to the system. This includes the following steps:

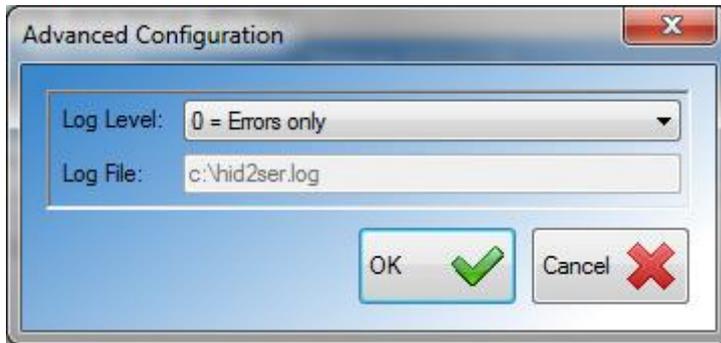
1. The configuration will be checked for plausibility. If there are any errors you will be informed. Only configurations which passes the plausibility check will be saved.
2. The configuration will be saved to the hid2ser.ini file located in %windir%.
3. The Hid2Ser service will be started or restarted to apply the new configuration.

Reset

Discards the changes made to the configuration and reloads the configuration from hid2ser.ini file located in %windir%.

Advanced

Shows the advanced configuration dialog. Here you can change the log level, if necessary. In addition the path to the log file is shown.



Log Level

Change from 0 (default) to 4 (most verbose level). You need to apply this setting before changes take effect.

Log File (read only)

The path of the written log file.

Clicking on *OK* button will confirm the adjusted log level and *Cancel* button will undo all changes.

Tools

Shows the VCOM tools dialog. Here you can manually start and stop the service and rebuild virtual serial ports if necessary.



Start Service

Manually starts the hid2ser service immediately.

Stop Service

Manually stops the hid2ser service immediately.

Rebuild VSPorts

This maintenance operation removes all created VSP (virtual serial ports) and recreates those which are needed according the current hid2ser configuration. To clean-up all ports completely it is necessary to close all programs which have access to one of the virtual serial ports.

Status bar

The status bar shows the current Hid2Ser version (if installed) and the status of the service.

Configuration of Device Types

This chapter lists all available Device Types and describes its configuration.

Swipe-Reader (Keyboards, IDenty chrom, MPR, etc.)

This device type is used for all USB Swipe Reader devices:

- DESKO Keyboard
- DESKO IDenty chrom
- DESKO MPR
- DESKO mini MPR
- DESKO Tablet Kiosk.

There is no Extended Configuration necessary for this type of device.

PENTA Scanner (Check-In, BPV)

This device type is used for all kinds of USB PENTA devices which uses the VCOM-CKI interface:

- DESKO PENTA Scanner® Check-In
- DESKO PENTA Scanner® BPV.

There is no Extended Configuration necessary for this type of device.

PENTA Scanner BGR

This device type is used for all kinds of USB PENTA devices which uses the VCOM-BGR interface:

- DESKO PENTA Scanner® BGR

There is no Extended Configuration necessary for this type of device.

GRSK 50x, BGR 504 pro, BPV 502

This device type is used for all kinds of USB BGR devices (excluding PENTA Scanner) which uses the VCOM-BGR interface:

- DESKO GRSK 501, 502, 504
- DESKO BGR 504 pro
- DESKO BPV 502

There is no Extended Configuration necessary for this type of device.

Xenon 1900 (USB)

This device type is used for the DESKO Barcode Scanner Handheld Xenon 1900 (USB) which is operating in HID POS mode.

Extended Configuration

General | Extended Configuration

Protocol: SITACUTE

Hardware: xenon_bg HID Vendor ID: 0C2E HID Product ID: 0BC7

Protocol

Choose the appropriate protocol from the list. This *Protocol* defines the output format of the barcode scanner. The following output protocols are available:

Barcode-ID AIM

Output format: <STX> <AIM-ID> data <ETX>

Barcode-ID AEA

Output format: <STX> <AEA-ID> data <ETX>

No Barcode-ID

Output format: <STX> data <ETX>

SITA CUTE

Output format: SITA CUTE

ARINC CUTE

Output format: ARINC MUSE

AIM-ID	AEA-ID	Symbology
Jl	0x30	1D Interleaved 2 of 5 with check digit
Jl	0x31	1D Code Interleaved 2 of 5
JR	0x32	1D Code Industrial 2 of 5
JA	0x33	1D Code 39
jd	0x34	2D Data Matrix
JQ	0x35	QR
JL	0x36	2D PDF417
JC	0x37	1D Code 128 with check digit
JS	0x39	1D Industrial 2 of 5 with check digit
JE	0x41	EAN 13 with check digit from application
JV	0x56	2D Aztec
	0x45	Abnormal barcode data

Please note that the settings in the lower panel cannot be modified.

Voyager 1400g (USB)

This device type is used for the DESKO Barcode Scanner Handheld Voyager 1400g (USB) which is operating in HID POS mode.

For a description of additional configuration see the Extended Configuration of Xenon 1900 (USB).

LAS 2D-32u REV2.0

This device type is used for the DESKO Barcode Scanner Handheld LAS 2D-32u REV2.0 which is operating in HID POS mode.

For a description of additional configuration see the Extended Configuration of Xenon 1900 (USB).

Genesis 7580 (USB)

This device type is used for the DESKO Barcode Scanner Handheld Genesis 7580 (USB) which is operating in HID POS mode.

For a description of additional configuration see the Extended Configuration of Xenon 1900 (USB).

Serial Device

This device type is used for any serial DESKO Barcode Scanner which is able to output <STX> <AIM-ID> data <ETX> frames.

Extended Configuration

The screenshot shows a software configuration window with two tabs: 'General' and 'Extended Configuration'. The 'Extended Configuration' tab is selected. Inside this tab, there are three configuration fields: 'Input Port' is a dropdown menu currently showing 'COM1'; 'Input Settings' is a text input field containing the string '9600,E,7,1'; and 'Protocol' is a dropdown menu currently showing 'SITA CUTE'.

Input Port

Physical COM port on which the serial device is connected to. This port will be opened for exclusive use by Hid2Ser if the device is configured and enabled. It is not more available for other applications.

Input Settings

COM settings in the format: <baud rate>, <parity: E,N,O>, <data bits>, <stop bits>.

Protocol

Choose the appropriate protocol from the list. This *Protocol* defines the output format of the barcode scanner. The following output protocols are available:

Barcode-ID AIM

Output format: <STX> <AIM-ID> data <ETX>

SITA CUTE

Output format: SITA CUTE

ARINC CUTE

Output format: ARINC MUSE

Network Device via TCP/IP

This device type is used for any LAN / Wi-Fi capable DESKO device which is operating in Virtual LAN mode. Currently these are:

- DESKO PENTA Scanner® Check-In with LAN configuration
- DESKO PENTA Scanner® BGR with LAN configuration
- DESKO BGR 504 pro with LAN configuration

Extended Configuration

The screenshot shows a configuration window with three tabs: 'General', 'Extended Configuration', and 'Feature Configuration'. The 'Extended Configuration' tab is active. It contains the following fields:

- Server:** A text input field containing 'localhost'.
- Port:** A text input field containing '9100'.
- Channel:** A text input field containing '0'.
- Heartbeat:** A text input field containing '1500'.
- Encryption:** A checkbox that is checked.

Server

The TCP/IP host name or IP address of the *LAN/WLAN Add-On* (Silex) which is connected to the LAN / Wi-Fi capable DESKO device. If you do not know you can use the Silex configuration tool *ExtendView* to see its configured address.

Port

The TCP/IP port number of the *LAN/WLAN Add-On* (Silex) which is connected to the LAN / Wi-Fi capable DESKO device. If you do not know you can use the Silex configuration tool *ExtendView* to see its configured port number.

Channel

Any LAN / Wi-Fi capable DESKO device is a multichannel device which is able to communicate with several applications over one line. E. g. you have a DESKO PENTA Scanner® BGR combined with a DESKO PENTA Scanner® Check-In in one device which communicates via one LAN/WLAN Add-On. The *Channel* specifies the number of the logical communication channel. The number depends on the device configuration and can vary, but there are some defaults:

- Channel 0 → Check-In / BPV
- Channel 1 → BGR

BCR 504 pro (USB)

This device type is used for the DESKO BCR 504 pro (USB) which is operating in HID POS mode.

For a description of additional configuration see the Extended Configuration of Xenon 1900 (USB).

Extensions

An Extension is a so-called Plug-in which extends the functionality of the device.

By default Hid2Ser is responsible to create a communication channel between the application and the device. On device side it uses a specific USB HID protocol and on the other side it uses a virtual serial port. The data coming from USB will be output as it is to the virtual serial port without any modifications and vice versa.

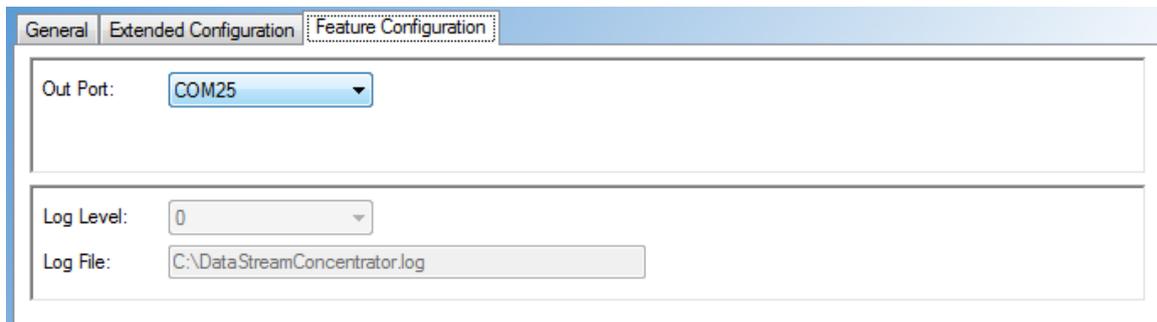
To change this behavior it is possible to add an Extension or Plug-in to the device configuration to hook into the data stream and do whatever necessary, e.g. manipulating it.

This chapter lists all available *Extensions* and describes its configuration.

Concentrator

This Extension is a very simple one. It hooks into the data stream, copies and redirects the data to another virtual serial port.

Configuration



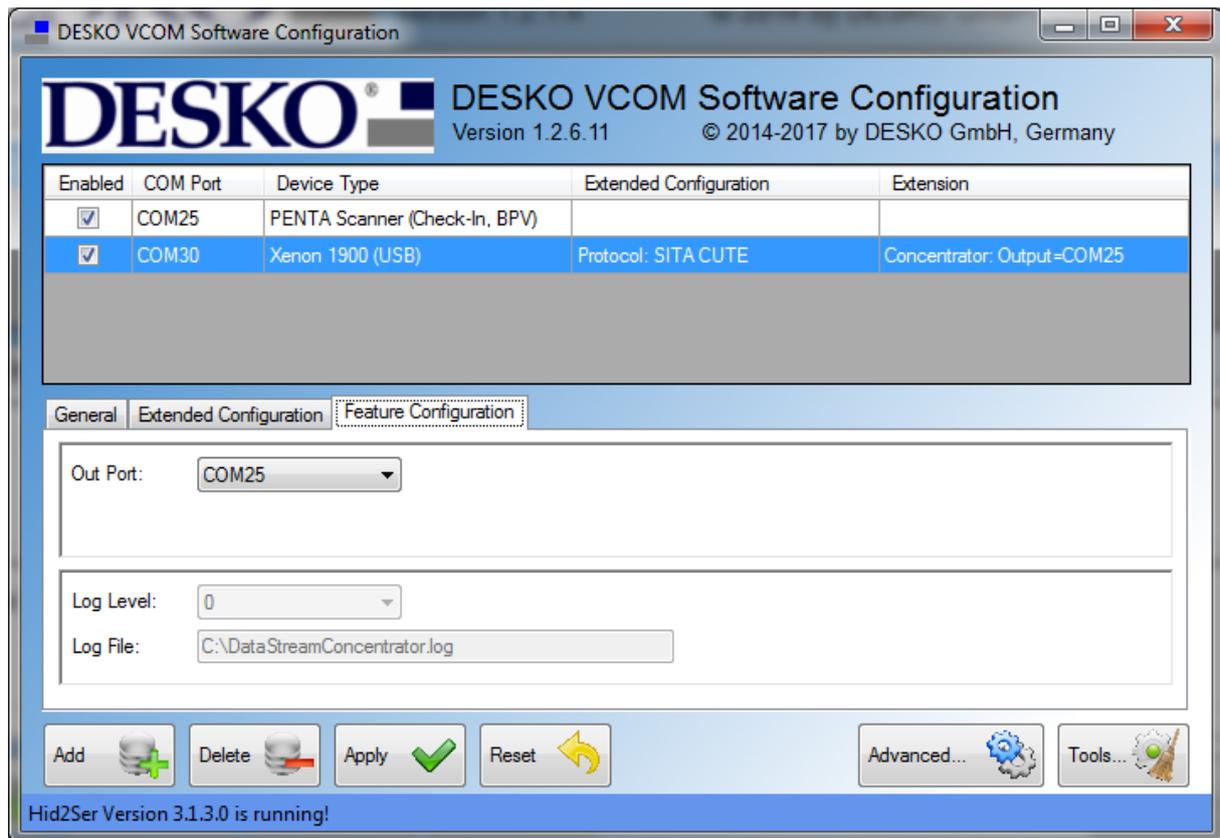
The screenshot shows a configuration window with three tabs: 'General', 'Extended Configuration', and 'Feature Configuration'. The 'Feature Configuration' tab is active. It contains three settings: 'Out Port' is a dropdown menu set to 'COM25'; 'Log Level' is a dropdown menu set to '0'; and 'Log File' is a text input field containing 'C:\DataStreamConcentrator.log'.

Out Port

The virtual serial port to which the data should be redirected. It does not matter if this port is used for other device or if it is completely new.

Example

You would like to have the output from a DESKO Xenon 1900 (USB) barcode scanner and the output from a DESKO PENTA Scanner® Check-In on the same COM Port. This can be easily done by using the Concentrator Extension which redirects the output from the Xenon additionally to the COM Port defined for the PENTA (COM25).



Remarks

- Using the above configuration you always have COM30 in addition which is the main port for the Xenon. If it is necessary to have the Xenon output only, use this one.
- The redirected output is only available if the master device is available, i.e. if PENTA is switched off and Xenon scans something, nothing happens on COM25.

Splitter

This Extension is especially used by scanner with multiple scan sources like the DESKO PENTA Scanner® Check-In. It hooks into the data stream and splits the scan data of different sources (BCR, MSR or OCR) to separate virtual serial ports.

Configuration

BCR Output

The virtual serial port to which the BCR data should be redirected. It does not matter if this port is used for other device or if it is completely new.

MSR Output

The virtual serial port to which the MSR data should be redirected. It does not matter if this port is used for other device or if it is completely new.

OCR Output

The virtual serial port to which the OCR data should be redirected. It does not matter if this port is used for other device or if it is completely new.

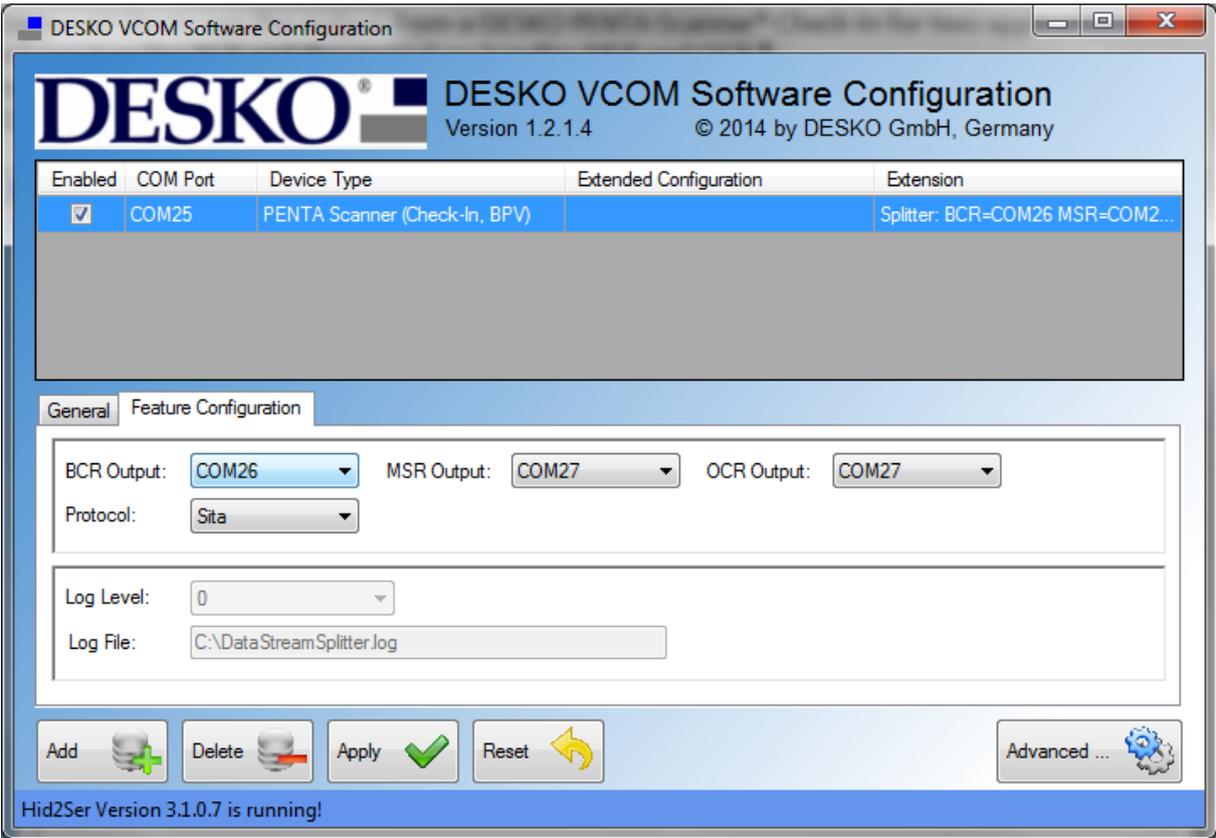
Protocol

Choose the appropriate protocol from the list. This *Protocol* defines the output format of the split data.

Example

You would like to use the output from a DESKO PENTA Scanner® Check-In for two applications. The first one handles BCR and the second one handles MSR and OCR.

This can be easily done by using the Splitter Extension which redirects the output from BCR to COM26 and MSR/OCR to COM27.



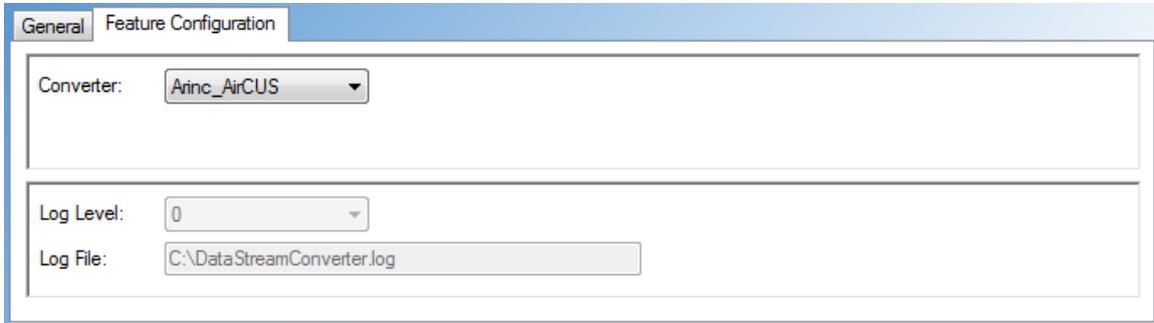
Remarks

- Using the above configuration you always have COM25 in addition which is the main port for the PENTA. If it is necessary to have the combined PENTA output, use this one.

Converter (optional)

This optional Extension converts the data stream coming from the DESKO PENTA Scanner® Check-In into other protocol formats.

Configuration



The screenshot shows a configuration window with two tabs: "General" and "Feature Configuration". The "Feature Configuration" tab is active. It contains three settings:

- Converter:** A dropdown menu with "Arinc_AirCUS" selected.
- Log Level:** A dropdown menu with "0" selected.
- Log File:** A text input field containing "C:\DataStreamConverter.log".

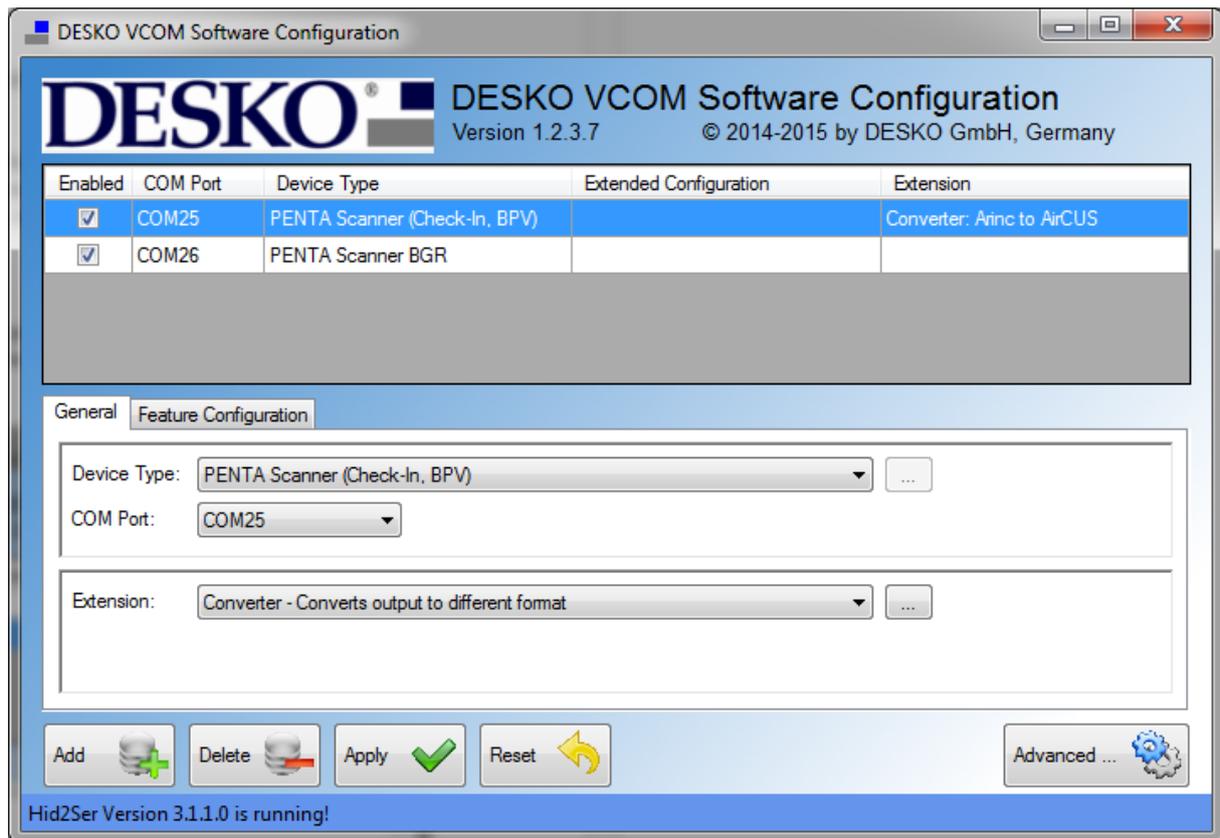
Converter

The type of conversion to apply to the data stream. At the moment there are the following converters available:

- **None**
Let the data stream pass through without any modification.
- **Arinc_AirCUS**
Converts the ARINC Check-In format coming from the device to the AirCUS format. Data coming from MRZ and bar code reader will be converted. Data coming from mag stripe will not pass through as there is no suitable conversion available.

Example

You would like to have AirCUS compatible data format for your ARINC configured DESKO PENTA Scanner® Check-In. This can be easily done by using the Converter Extension and setting the Converter combo box to "Arinc_AirCUS".



Remarks

- The converter works only for unidirectional protocols and is only usable for DESKO PENTA Scanner® devices which uses the Check-In port (default COM25).
- Bidirectional protocols like BGR are not supported.

Hong Kong - Macao Conversion Filter (optional)

This optional Extension is responsible for doing two things:

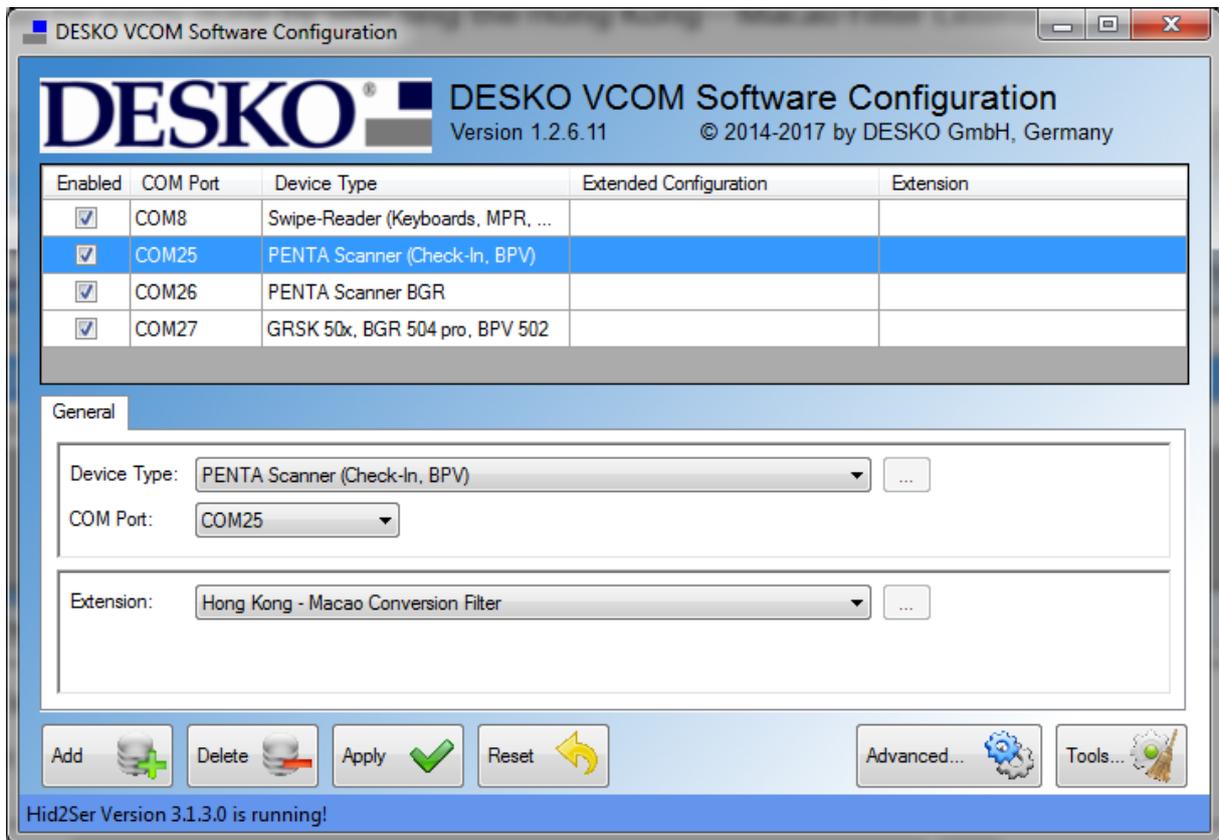
1. For Hong Kong - Macao ID cards, the e-Pass MRZ will be used instead of the printed MRZ.
2. 3-line MRZ documents will be converted to 2-line MRZ.

Configuration

There is no configuration necessary for this Extension.

Example

You would like to use this Extension for your SITA configured DESKO PENTA Scanner® Check-In with RFID. This can be easily done by selecting the Hong Kong – Macao Filter Extension for this type of device.



Remarks

- The Extension works only for SITA configured DESKO PENTA Scanner® devices with RFID option and Check-In port (default COM25).
- Bidirectional protocols like BGR are not supported.
- Works only for OCR. Barcode and MSR is not supported.