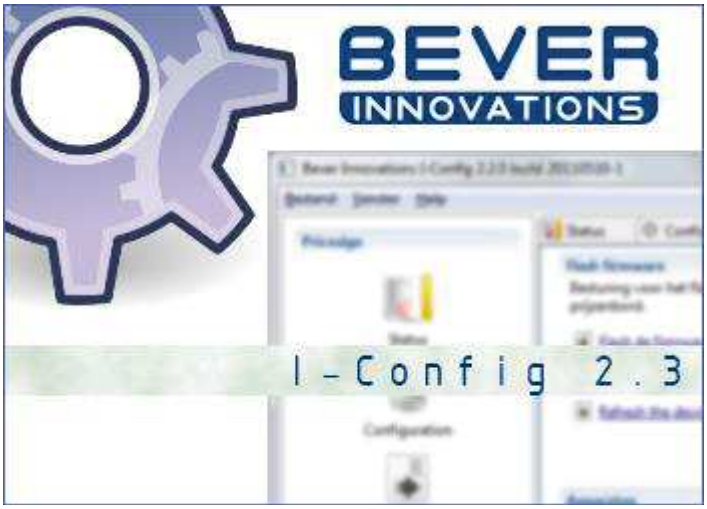
I-Config V2
User's guide



Version 2.3 Release

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History

Revision	Date	Editor	Change made
00	09-10-2008	JSC	First draft
01	10-11-2008	JSC	Updated to I-Config 2.0.2
02	14-11-2008	JSC	Updated to I-Config 2.0.3 Release
03	01-12-2008	JSC	Updated to I-Config 2.0.5 Release
04	14-10-2009	JSC	Updated to I-Config 2.0.7 Release
05	06-01-2010	JSC	Updated to I-Config 2.0.8 Release
06	15-02-2011	JSC	Minor corrections
07	05-12-2014	JSC	Updated to I-Config 2.3.12 Release

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About this guide

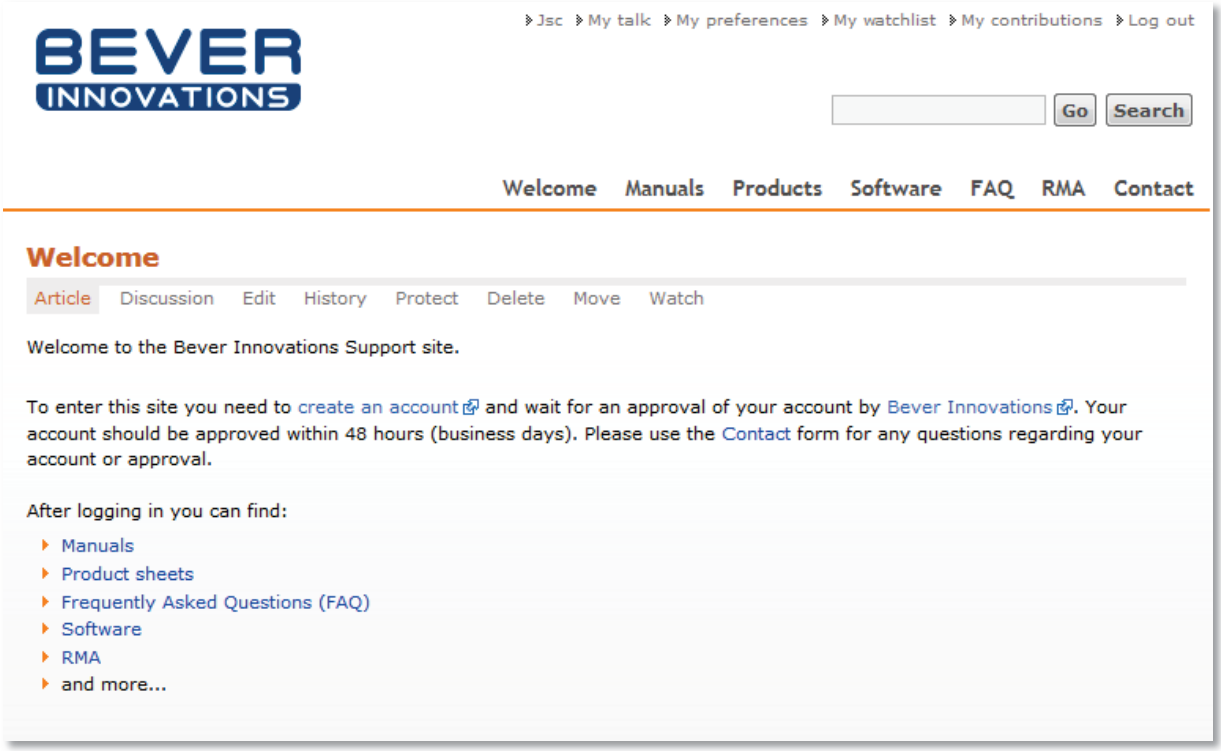
This user's guide describes the operation of Bever Innovations I-Config 2.3. This guide is intended for service personnel familiar with the Bever Innovations price display system. For more information about Bever Innovations and its products, please visit

http://beverinnovations.com

Technical Assistance

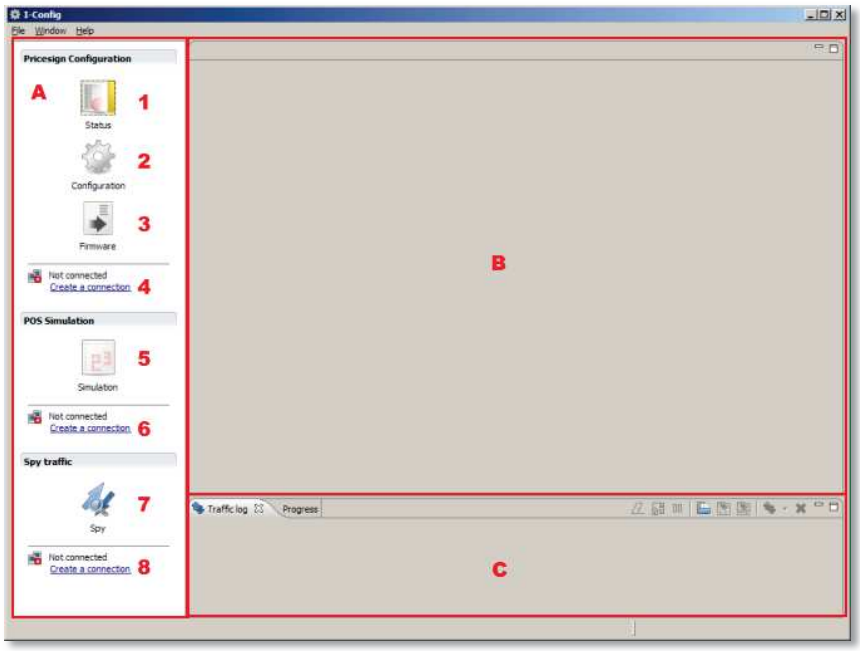
Next to this user manual, Bever Innovations provides extra manuals, information, software updates and more on the following website:

http://support.beverinnovations.com



1 - The I-Config user interface

When I-Config is started, the following screen is shown:



This user interface of I-Config consists of three sections:

A Option Selection

B View of the selected option

C Data traffic log of the current connection(s)

The options in section A are numbered from 1 to 8:

Price sign Configuration:

1: **Status**
With the option 'status' it is possible to retrieve the current properties and sensor values of the connected devices.

2: **Configuration**
With the option 'configuration' it is possible to change the settings of the connected devices.

3: **Firmware**
With the option 'firmware' it is possible to retrieve the current software version of the connected devices. Also software updates can be applied to the connected devices.

4: **Configuration connection details**
Here it is possible to open or close a connection for the options: *status, configuration* and *firmware*.

Pos Simulation

5: **POS simulation**
I-Config can emulate several POS-protocols to verify if the connected device correctly processes received prices.

6: **Simulation connection details**
Here it is possible to open or close a connection for the option Simulation.

Spy Traffic

7: **Spy traffic**
This option gives the possibility to analyze, save and load data traffic of all the supported protocols.

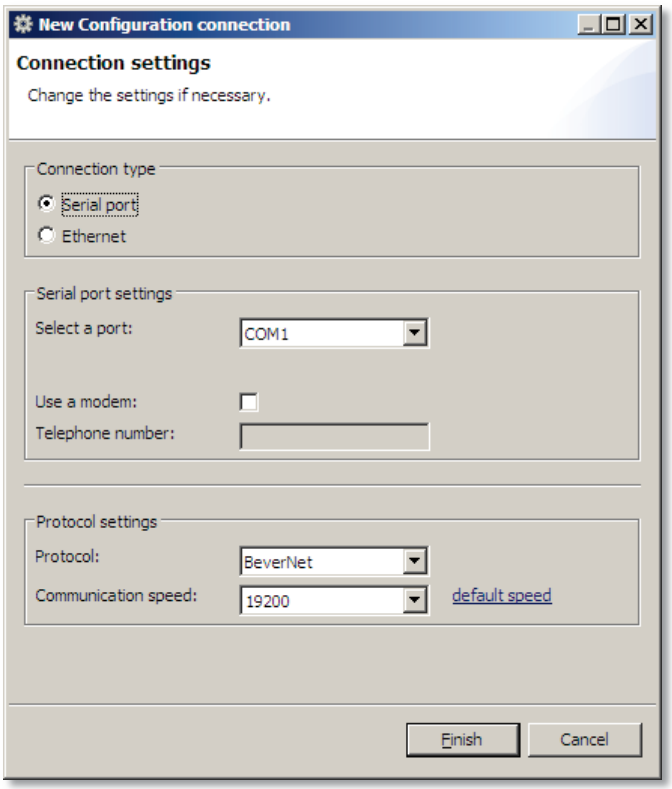
8: **Spy connection details**
Here it is possible to open or close a connection for the option Spy.

2 - Opening a connection

The connections that I-Config can open are Bevernet connections and POS simulation connections. For the configuration, status and firmware options, the Bevernet protocol is used. Only in the case of POS simulation and Spy Traffic other protocols can be selected.

2.1 - Bevernet

After clicking on options 1 to 4 of the left side of the screen, I-Config displays the options for a new Bevernet connection. In this dialog the following settings can be adjusted:



Connection Type:

Normally the serial port is selected here.

Serial port settings:

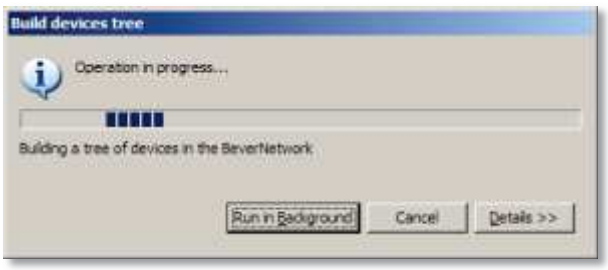
Select the serial port on which your HC02/04 is connected.

Protocol settings:

When opening a price sign configuration connection, only Bevernet can be selected.

Bevernet operates normally at 19200 baud. By selecting '*default speed*', this correct baud rate is automatically set.

When all settings are correct, click '*finish*' to open the serial Bevernet connection.



At this point an overview of all connected devices is build. This may take a few seconds.

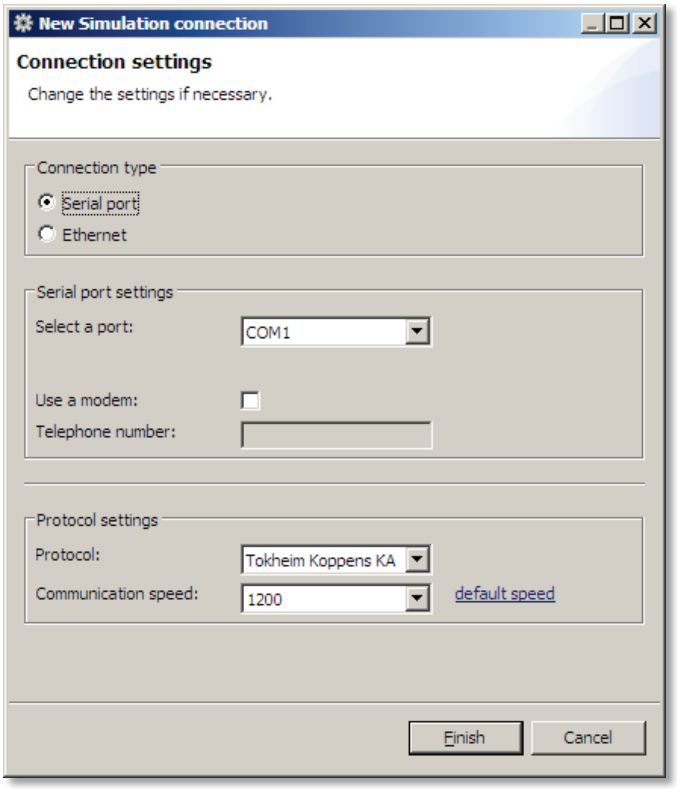
All current data traffic is shown in the traffic log located on the main screen.

2.2 - POS simulation protocols

After clicking on the option 'simulation' on the left side of the screen, I-Config displays the options for a new POS simulation connection. The option 'Spy' offers the same configuration details.

The following POS protocols can be emulated and spied by I-Config:

LON IFSF Price Pole
Tokheim Koppens KA
DOMS BP pump
Dresser Wayne
EIN
Scheidt & Bachmann V11
Dos Task
Kubald
Distab
Novotek – Wayne Dresser
System Marketer
Autotank A & B
Getpak
ER3 Kienzle
Novotek – Wayne Dresser



The Interface controller can communicate with all of these POS protocols. Most of them use different hardware layers, such as a LON interface, RS485, RS422, RS232 and current loop.

If the configuration of the Interface Controller has to be verified, the right hardware layer for the connecting the Interface controller to the PC with I-Config is needed. Bever Innovations can provide the HC04, which is an usb to multiple interface converter.

In this dialog the following settings can be adjusted:

Connection Type:

Normally the serial port is selected here.

Serial port settings:

Select the serial port on which your HC02/04 is connected.

Protocol settings:

Please choose the desired protocol to simulate. Please notice that by default the correct baud rate is selected, although this can be adjusted manually.

When all settings are correct, click '***finish***' to open the serial POS simulation connection.

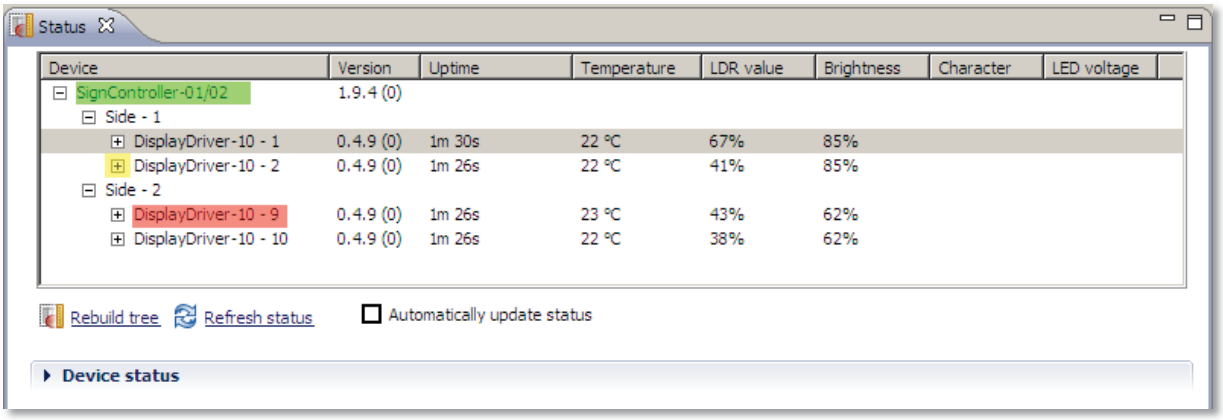
3 – Price sign status

The status of the Price Sign devices can be reviewed when connected to the Interface- or Sign controller configuration port with the HC02/04 configuration tool. The information that is available this way is explained in the following section.

3.1 – Sign Controller

Please refer to chapter 2.1 for opening a Bevernet connection when you have selected the '*status*' button.

When building the overview (status tree) if finished, the following screen is shown:



The status screen shows all connected devices in a tree structure. For each side a branch is shown from the Sign Controller. Each side consists of (in this case) 2 displays. In this example it is shown that the Sign Controller contains software version 1.9.4 and the Display Drivers contain software version 0.4.9

Also shown in this example are the temperatures, light sensor values and the send out brightness per display. By clicking one of the devices shown in the status tree, all details of this device will appear.

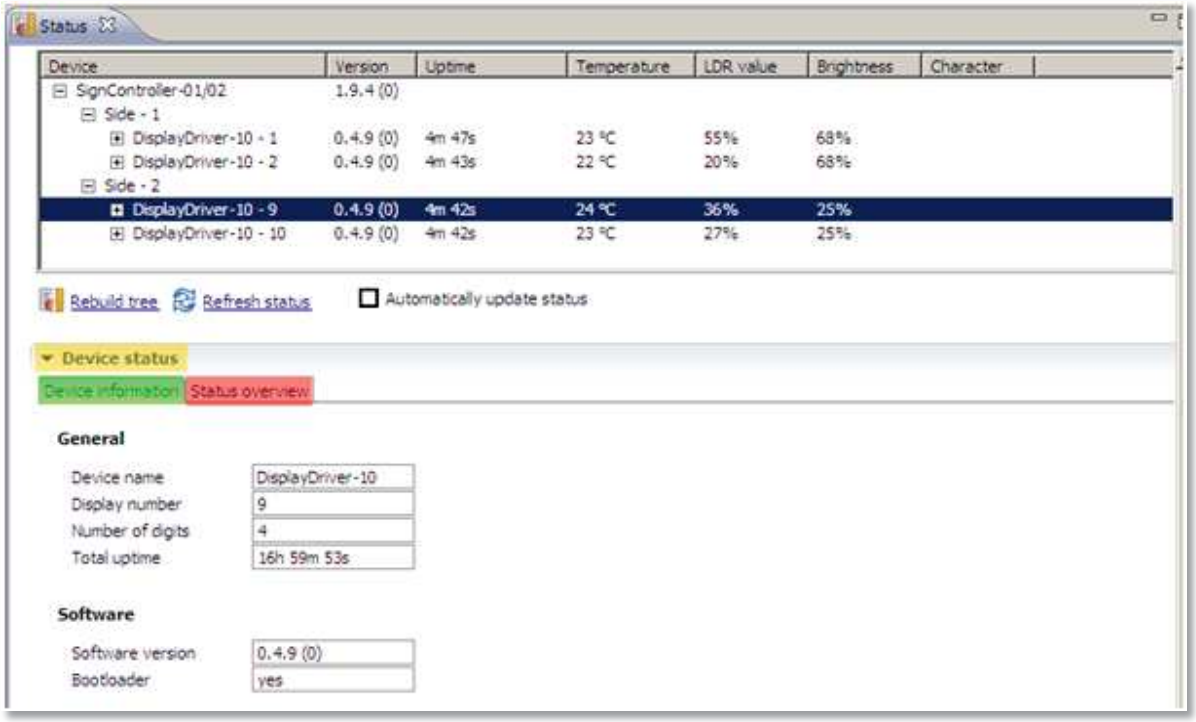
3.1.1 - Sign Controller status

When '[redacted]' in the status tree is double clicked, the following information is shown:

The standard reproduction of this screen is shown in the example. In case of a Sign Controller, the name, the number of connected displays, the software version, the configuration version and the presence of a boot loader are shown.

3.1.2 - Display status

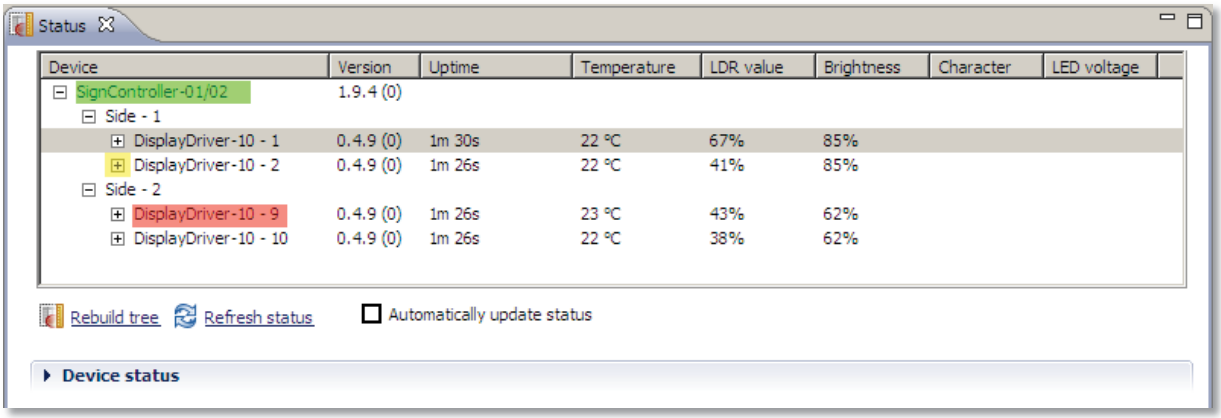
When clicking 'Device Status' the status tree is shown again. When [redacted] in the tree structure is double clicked, the following status screen of the Display Driver will be shown:



The following information is known about this DisplayDriver-10:

- Address 9 in the system
- 4 digits are connected
- Total time powered: 16u, 59m, 53 seconds
- Software version 0.4.9
- Includes a boot loader

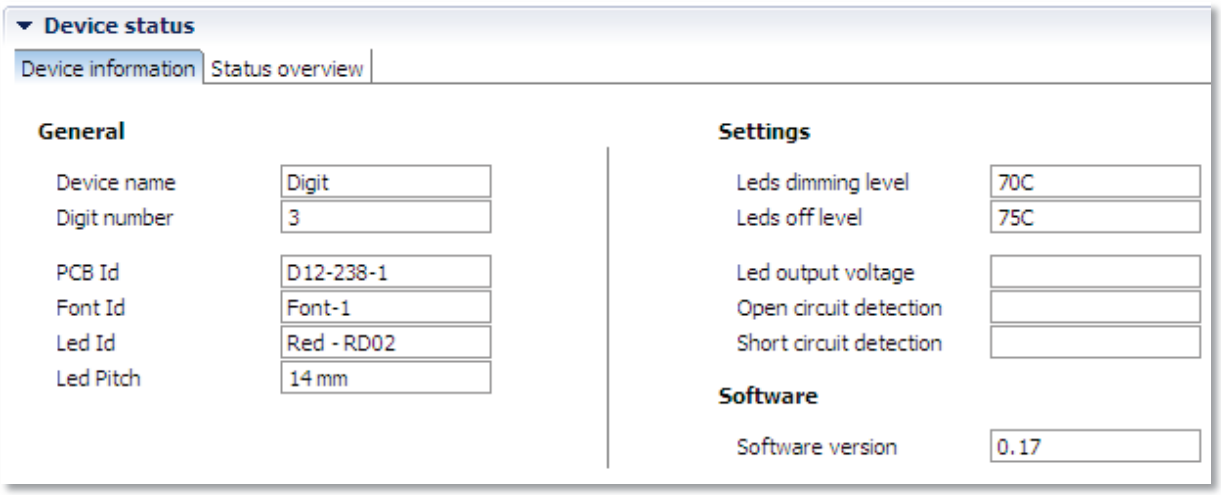
Besides 'Device Information' also 'Status Overview' can be shown. This gives an overview of the current temperatures. To return to the device tree click '[redacted]':



By clicking [ ], the digits connected to the DisplayDriver-10 are shown:

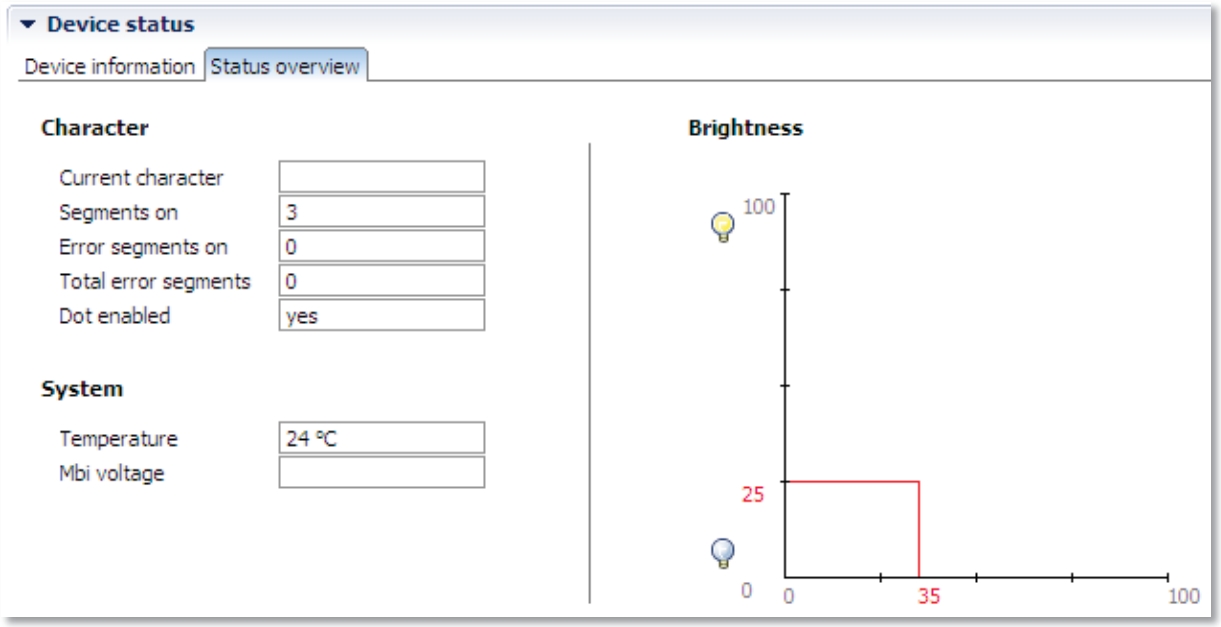
DisplayDriver-10 - 9	0.4.9 (0)	4m 42s	24 °C	36%	25%
Digit - 1	0.17				25%
Digit - 2	0.17				25%
Digit - 3	0.17		24 °C	35%	25%
Digit - 4	0.17				25%

It shows that the digits contain the software version 0.17 and that digit nr. 3 is the digit which contains the light- and temperature sensor. The light sensor on digit 3 has a value of 35%, the led-brightness of all four digits is 25%. When clicking a digit line, the following screen is shown:



This shows that this digit is a type 238 revision 1. It uses font nr.1 and the leds are red of type 2. It also shows that the digit with this led type starts dimming when the temperature reaches 70 degrees Celsius and is switched off when the temperature reaches 75 degrees Celsius. This way the leds are protected from overheating.

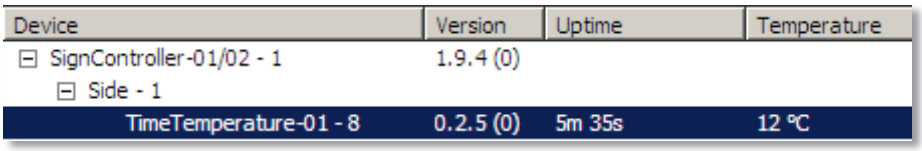
When clicking 'Status Overview' the following screen is shown:

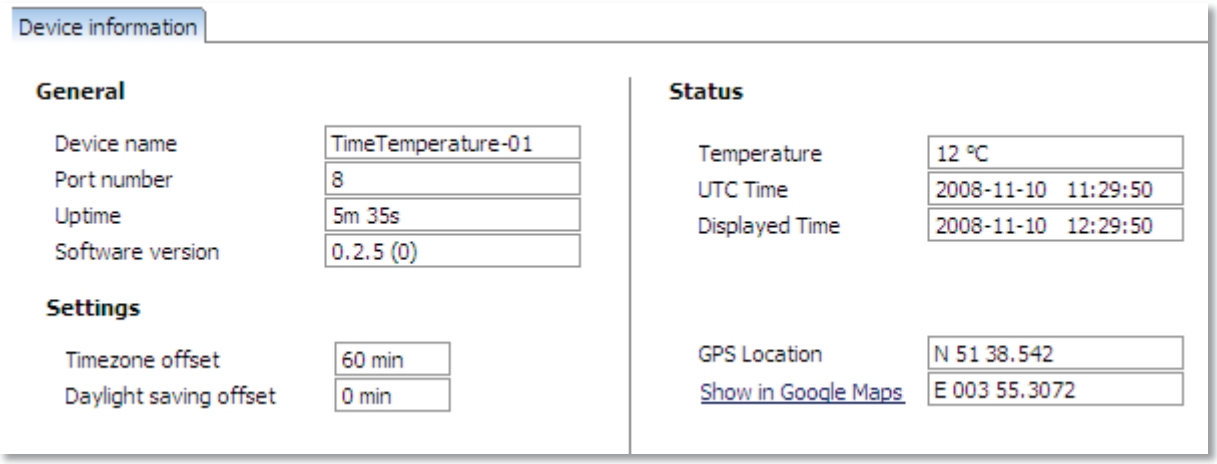


- Current Character: Displays the currently displayed character.
    - In this example, no character is being displayed.
- Segments on: Displays the amount of led segments that are currently lit.
    - The dot is currently lit (the dot contains 3 led segments)
- Total error segments: The amount of defective led segments.
    - In this example there are no defective led segments present.
- Error segments on: The amount of defective led segments in the currently displayed character.
    - In this example there are no defective led segments in the character.
- Temperature: The temperature of the selected digit.
    - In this example, the temperature is 28 degrees Celsius.
- MBI voltage: The voltage being applied to the led segments (when available).
    - In this example this value is currently not available.
- Brightness: When a light sensor is present on the selected digit, the brightness graph is shown.
    - The light sensor returns the value 14%, the applied led brightness is 25%.

3.1.3 - Time/Temperature receiver status

Next to the Display Driver status, the Time/Temperature receiver (TT01) status can also be viewed in I-Config when a TT01 is connected to the Sign Controller.





When the line 'TimeTemperature-01' is double clicked, the following information is shown:

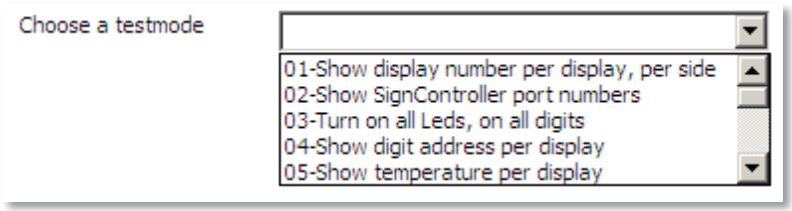
In this screen, the general information about the TT01 can be found. Next to this information, you can also find the following:

- *Timezone offset*: The offset in minutes applied by the Sign Controller time zone setting.
- *Daylight saving offset*: The offset in minutes applied by the Sign Controller daylight saving setting.
- *Temperature*: Current temperature sensed by the TT01 external temperature sensor.
- *UTC time*: Current UTC time received by the TT01 GPS receiver
- *Displayed time*: This time is the result of the time zone and daylight saving time offsets applied to the UTC time
- *GPS location*: If the TT01 GPS receiver has a fix with 3 or more satellites, the current coordinates of the TT01 are shown here. If you have a internet connection, the link 'Show in Google Maps' can be clicked to view the current location in Google Maps.

3.1.4 - Control Price Sign test mode

When '[redacted]' in the status tree is double clicked, the following information is shown:

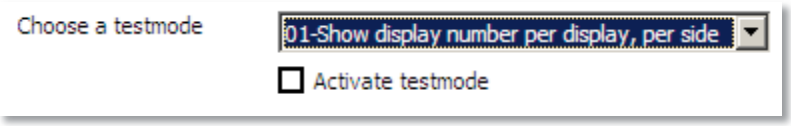
Under the heading '*control price sign test mode*' a test mode for the sign controller can be selected:



The following test modes are available:

Nr	
2	Show Sign Controller port numbers
4	Show digit address per display
6	Show ambient light % per display
8	Show active brightness output % per side
10	Show sign controller software version
0	Tokheim Koppens KA
2	Dresser Wayne
4	Bevernet
12	Show baud rate / 100
14	Turn fan and light relay outputs (FLO) ON

When a mode from this list is selected, it can be enabled and disabled with the button beneath the selection list:

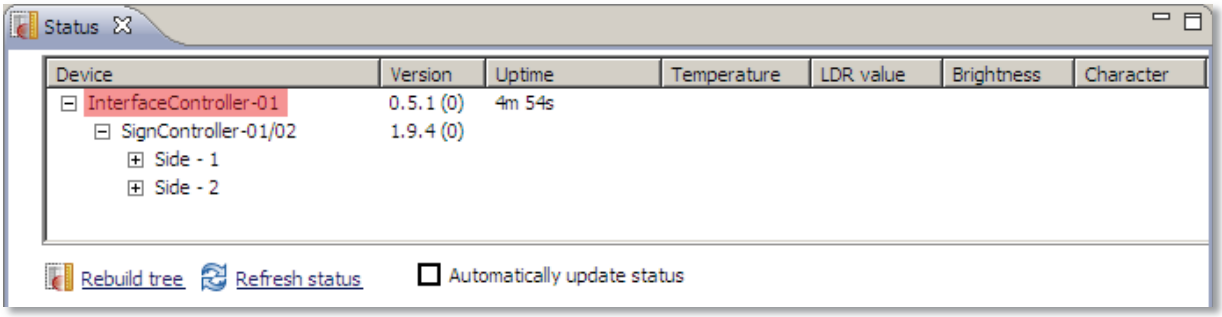


When a test mode is activated, the price displays of the system display the selected information.

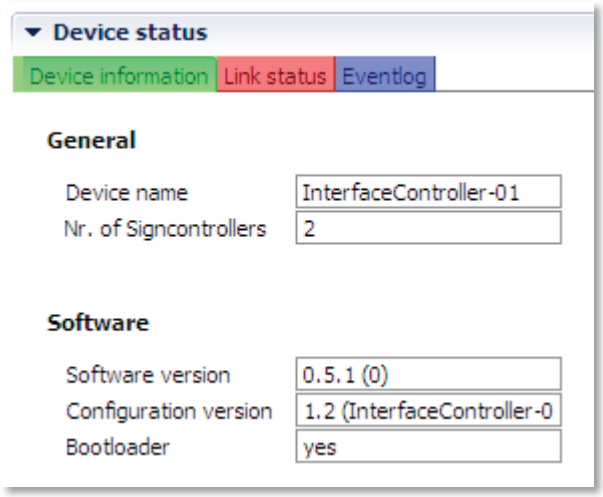
3.2 – Interface Controller

Please refer to chapter 2.1 for opening a Bevernet connection when you have selected the '*status*' button.

When building the overview (status tree) is finished, the following screen is shown:



When double clicking '[redacted]', the following is shown:

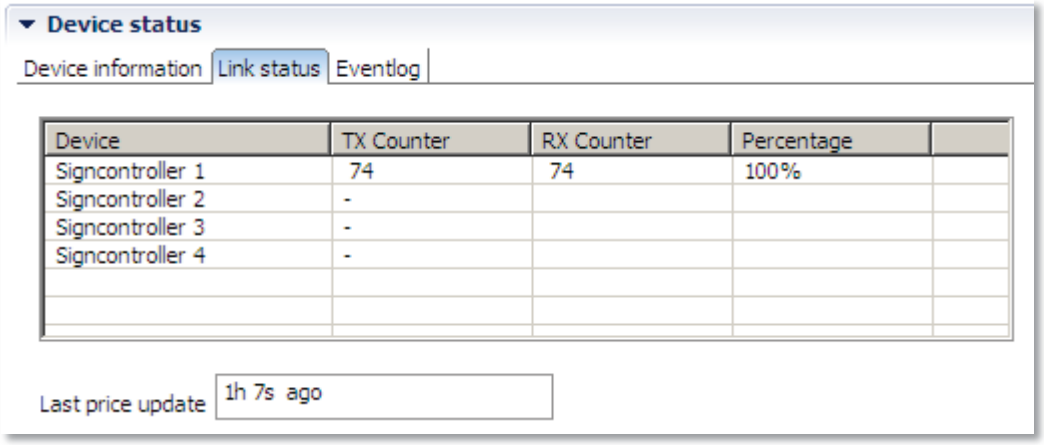


In the current tab 'Device information', the following information about the connected IC(-U)-01 is shown:

- Software version 0.5.1
- Configuration version 1.2
- Equipped with a boot loader

3.2.1 - Interface Controller Link Status

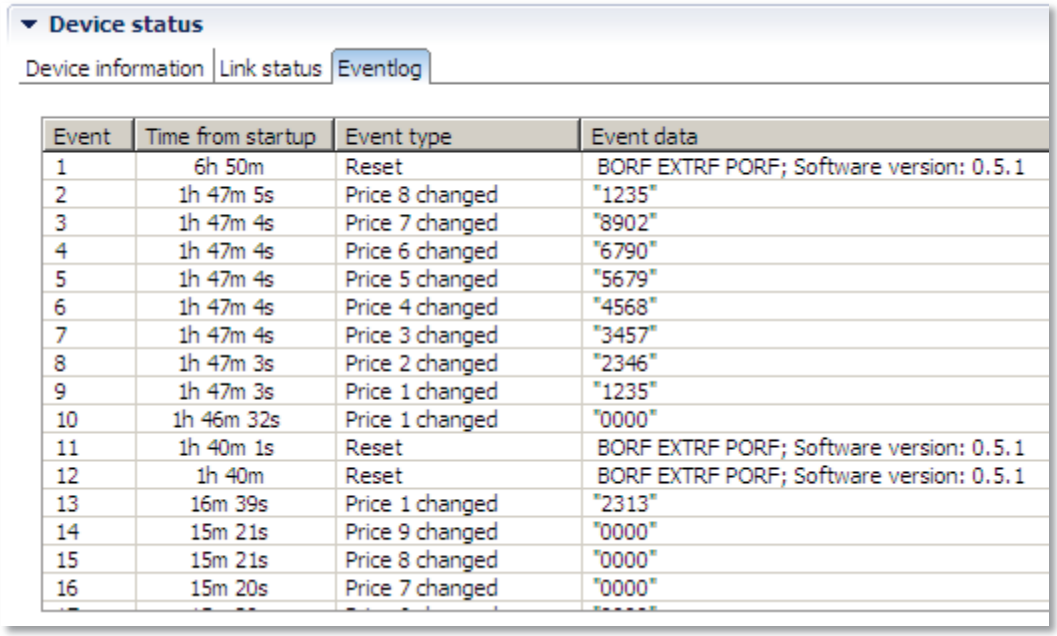
After clicking on 'Link status' in the Interface Controller device information screen, the following information is shown:



This shows that one Sign controller is activated in the Interface Controller configuration. The IC01 has sent 74 packets to this 'Sign controller 1' and received 74 packets back. This means that no packets are lost during communication, and this displayed link quality percentage will be 100%. Around the maximum of 100 packets, the counters will reset to save on memory usage; the resulting proportion will keep the percentage valid. This screen also lists the time since the last external price reception. In this case 1 hour and 7 seconds ago a price or other communication packet was received from the connected POS.

3.2.2 - Interface Controller Event Log

When 'Event Log' is selected in the IC device information screen, the following information is shown:



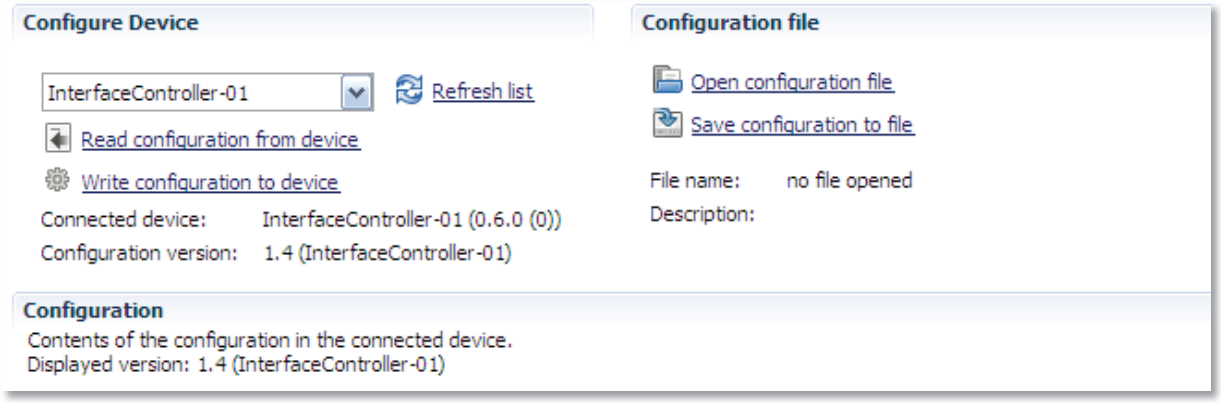
The Event log has 320 entries which will be filled during normal operation with entries such as price changes, power failures, external resets and software updates. In case of prices, the 'event data' column displays the price that was received.

4 - Configuration

Please refer to chapter 2.1 for opening a Bevernet connection when you have selected the '*configuration*' button.

4.1 – Read, write, open and save

When retrieving the current configuration is finished, the following screen appears:



The options offered by this screen are discussed in the following chapters:

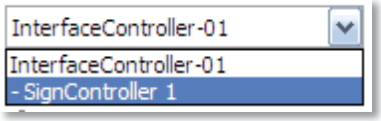
4.1.1 – Configure device

With ***'Read configuration from device' the*** current configuration of the Sign Controller is retrieved and shown in the configuration screen.

With ***'Write configuration to device',*** the configuration shown on the screen is written to the connected Interface Controller.

'Connected Device' indicates which device was connected to the PC when the connection was opened. In this example a Interface Controller with the configuration version 1.4.

When connected to a Interface Controller which has signcontroller subdevices, these subdevices can be selected in the dropdown box:



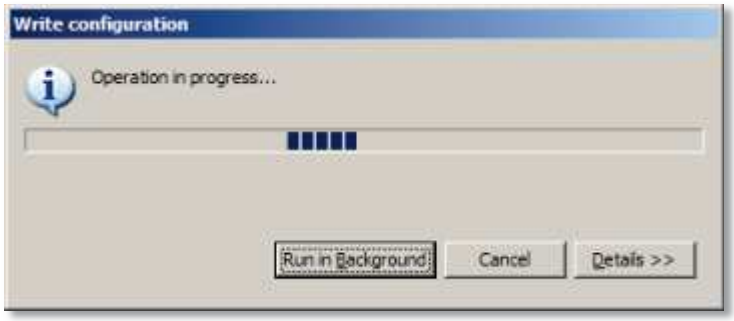
If I-Config is connected directly to a Sign Controller, no subdevices can be selected.

4.1.2 – Read configuration from device

When this option is selected, the configuration of the Sign Controller is retrieved again and the configuration screen is refreshed. While the configuration is read, the following status dialog is shown:

4.1.3 – Write configuration to device

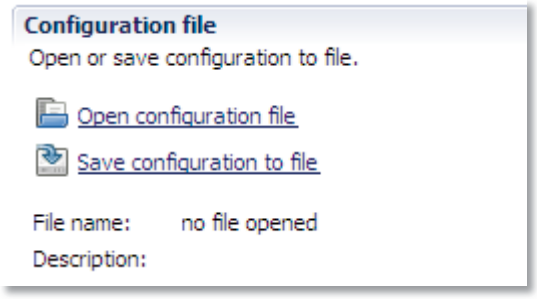
This option writes the settings made on the screen to the connected Sign Controller. While the configuration is written, the following status dialog is shown:



When writing the configuration is finished, the configuration is read again to check if it matches the configuration written to the Sign Controller:

When the configuration is verified, this will be confirmed:

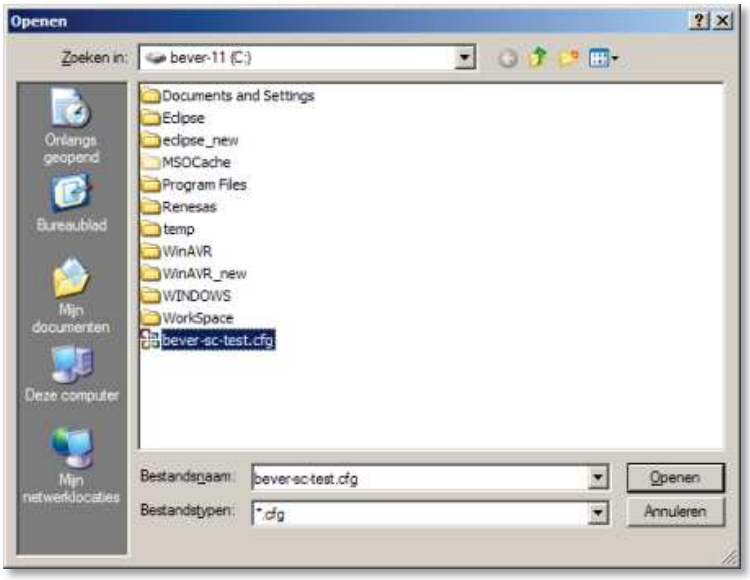
4.1.4 – Configuration File



With ***'Open configuration file'*** *an* existing configuration file on the PC can be loaded into the configuration screen. With ***'Save configuration to file'*** *a* configuration shown in the configuration screen can be written to a file on the PC. This way the configuration can be used later on.

4.1.5 – Open configuration file

When this option is selected, the following dialog box is shown:

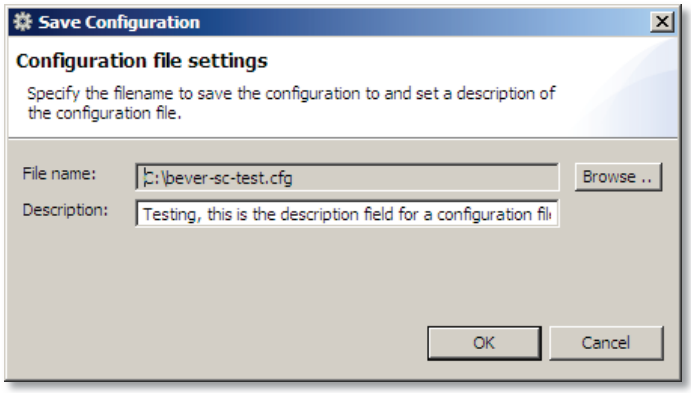


Now select an existing configuration file with the extension (.cfg) which is suitable for the Sign Controller. When the configuration file is opened, this is shown in the main screen under 'Configuration file':

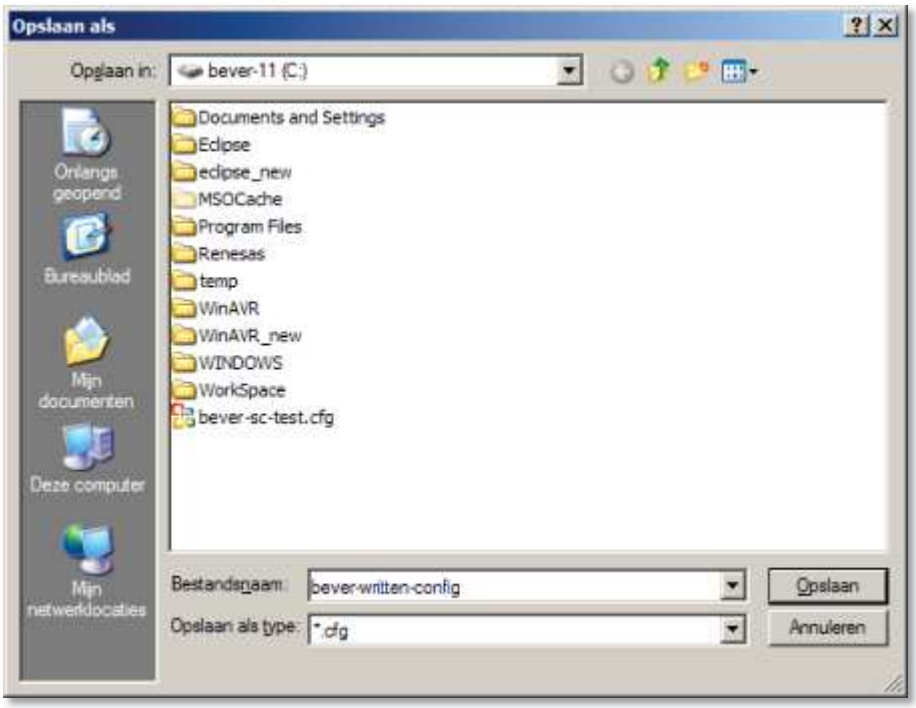
Information is shown about the file name and the description of the configuration file.

4.1.6 – Save configuration to file

When this option is selected, the following dialog is shown:

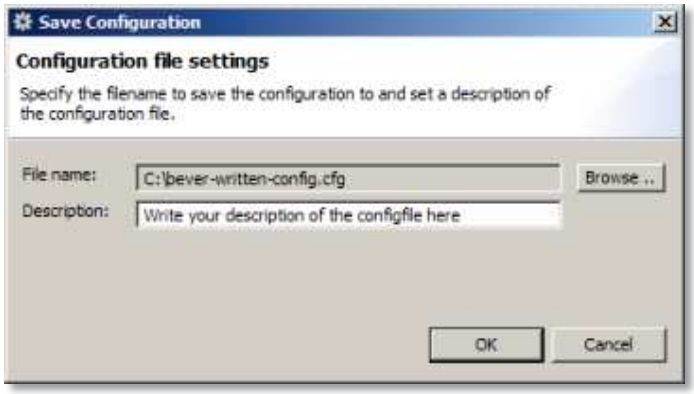


Click '*Browse*' to select a location to save the configuration file on the PC:



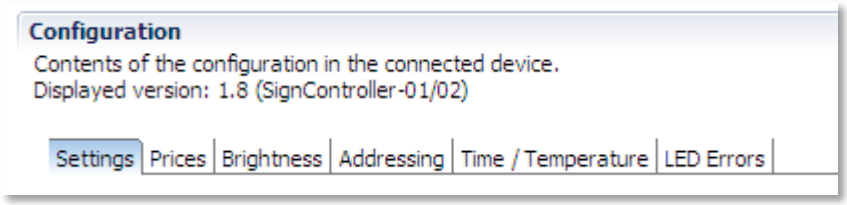
Enter the file name and select a location were the configuration file must be saved. Click '*Save*':

After saving the file the '*Save Configuration*' will show up again. Now a description can be given to the file in the '*Description*' text field. After this, click '*OK*' to save the configuration file to the hard disk of the PC.



4.2 – Sign Controller Configuration

Please refer to chapter 4.1.1 for reading the Sign Controller configuration. When the reading has finished, the following information tabs are shown:



In the following chapters these tabs are explained:

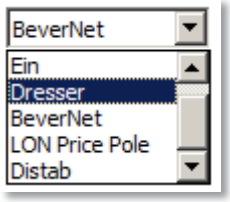
Settings, Prices, Brightness, Addressing, Time / Temperature and LED Errors.

4.2.1 - Settings

Under the tab settings, there are options for protocol, price and fan settings. The following chapters explain these offered options.

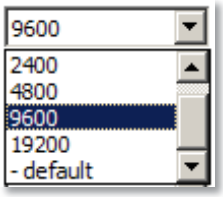
4.2.1.1 Protocol Settings

With '*Protocol Settings*' the incoming protocol which is used on the Sign Controller's protocol port can be set.



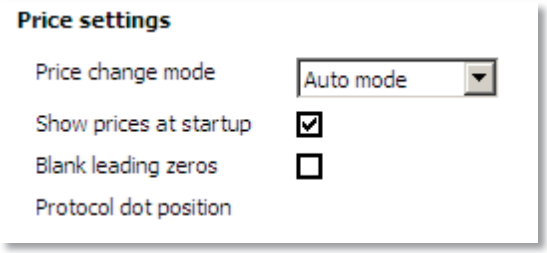
When this selection box is dropped down, all protocols supported by the Sign Controller are shown:

Drop down the Baud rate selection box to show all baud rates:



When '*default*' is selected, the standard baud rate of the currently selected protocol is used. In most cases this is the correct baud rate for the selected protocol. Please select 19200 baud for RF applications.

4.2.1.2 Price Settings

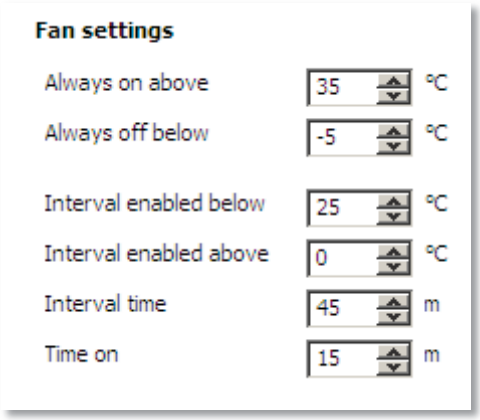


With '*Price change Mode*' the options '*Auto mode*' and '*User mode*' can be selected. **When '*Auto mode*' is selected, the prices received by the POS overwrite the manually set price changes with the I-Control.** When '*User mode*' is selected, the Sign Controller will only except manually made price changes. Prices received from the POS are denied.

The option 'Show *prices at startup' can* be used to save prices in the memory of the Sign controller. This way the Sign Controller always shows the last entered prices after power-up.

The option '*Protocol dot position' is* only displayed and used when 'LON *IFSF Price Pole*' is selected in the 'Protocol *Settings' screen*. This option makes it possible to configure the dot position of the incoming LON Price Pole price from 1 to 4.

4.2.1.3 Fan Settings



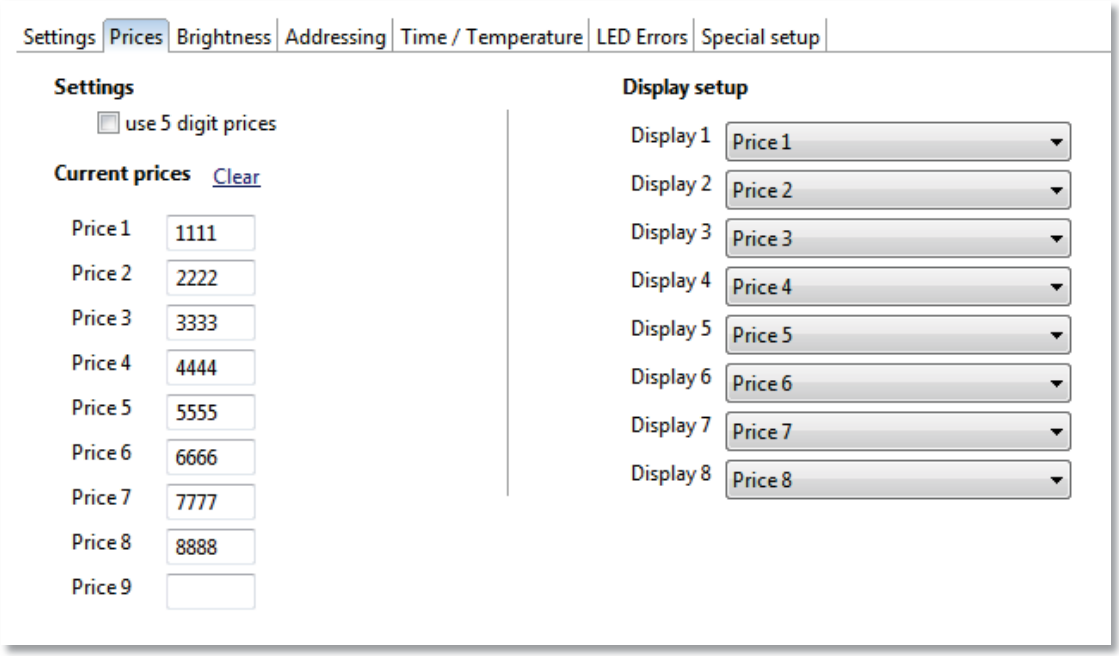
The option *'Fan Settings' is* applicable to the fan which is connected to the Sign Controller FLO-relays.

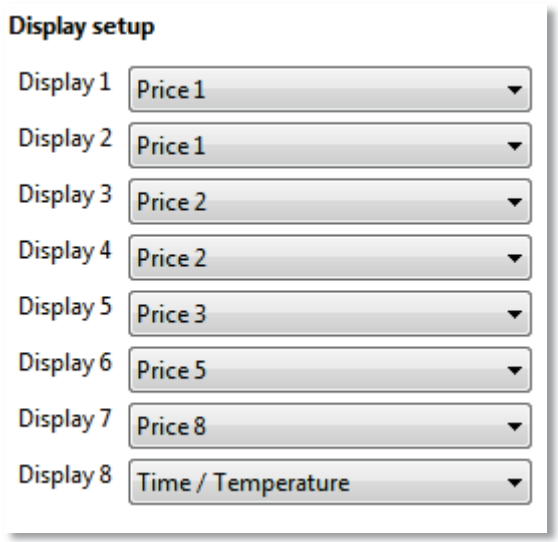
In this example the fan will be continuously switched on when the temperature is 35 degrees Celsius or higher. When the temperature is -5 degrees Celsius or lower, the fan will be switched off continuously.

When the temperature lies between -5 and +35 degrees Celsius, the fan interval settings are applicable. The values in this example have the following effect: The fan will be switched on for 15 minutes every hour when the temperature lies between 0 and 25 degrees Celsius.

4.2.2 – Prices

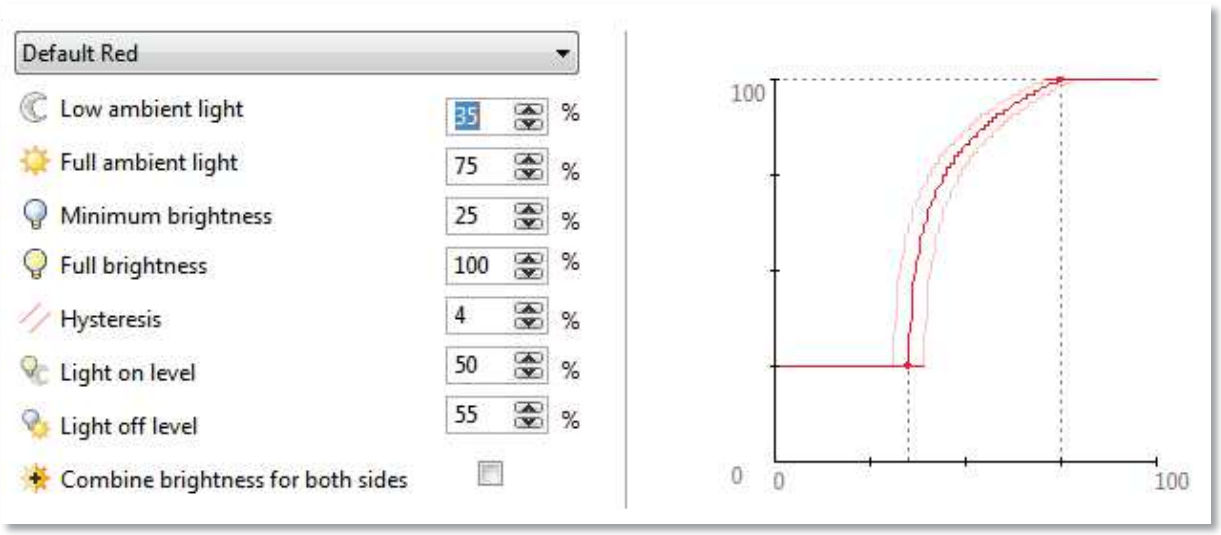
Please select the tab 'Prices' in the main Sign Controller configuration screen. This will call the following screen:



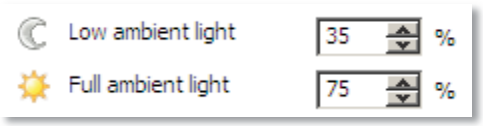


4.2.3 – Brightness

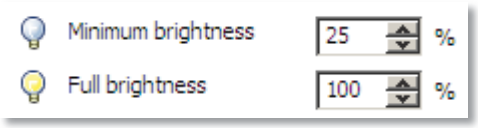
Please select the tab 'Brightness' in the main Sign Controller configuration screen. This will call the following screen:



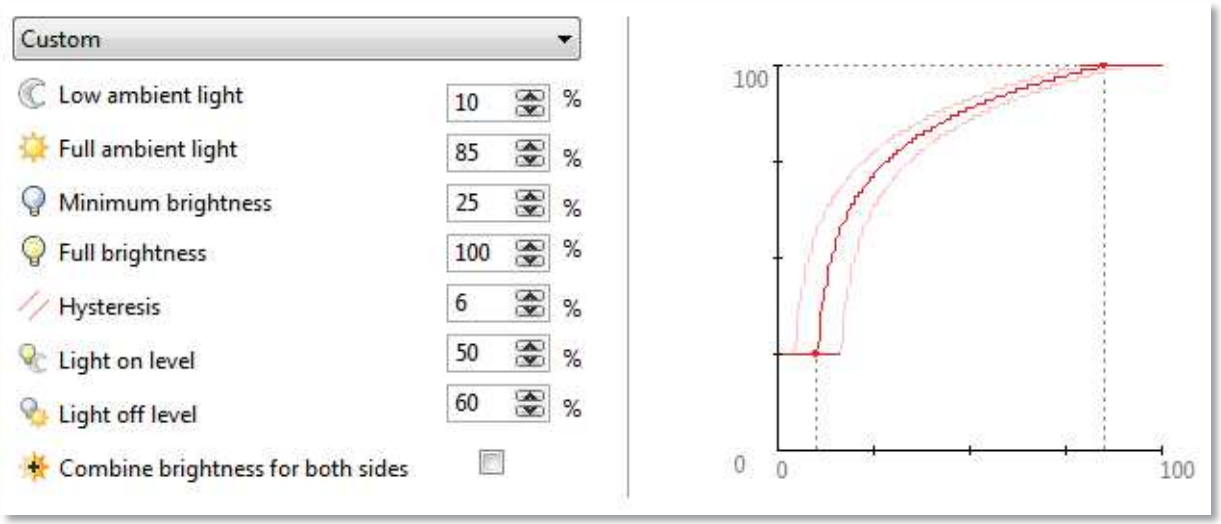
4.2.3.1 – Ambient light settings (X-Axis)



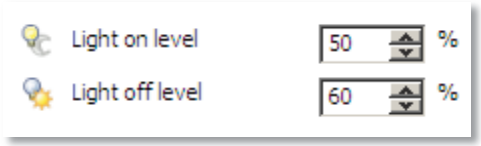
4.2.3.2 – Brightness settings (Y-axis)



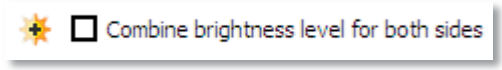
4.2.3.3 – Hysteresis



4.2.3.4 – Light on/off level

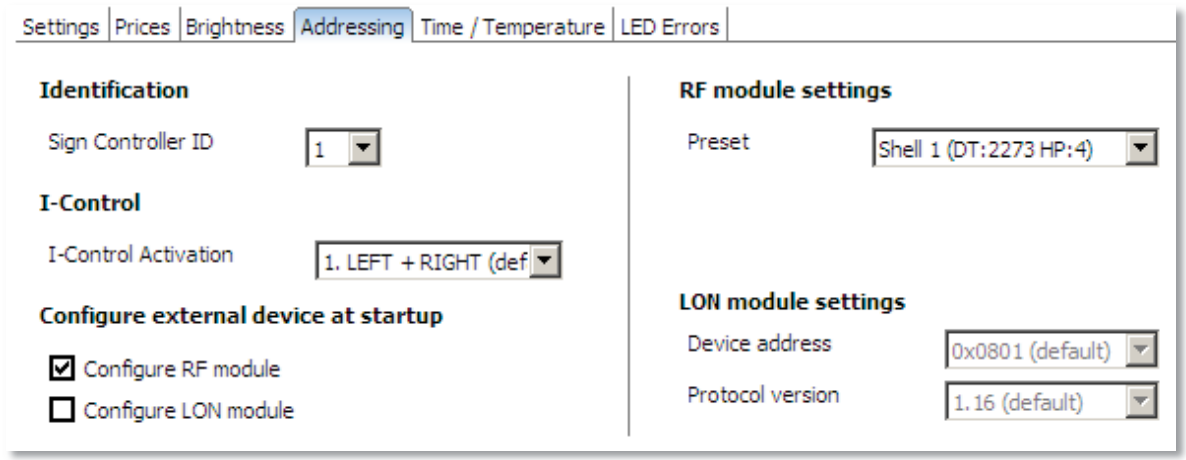


4.2.3.5 – Combine brightness level for both sides

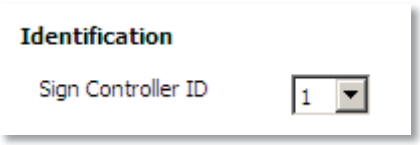


Normally, the Sign Controller regulates the brightness per side of the price sign. If the same brightness output is needed on both sides, this option can be enabled. If this is enabled, the Sign Controller calculates the average of both sides and sets the brightness output accordingly.

4.2.4 – Addressing



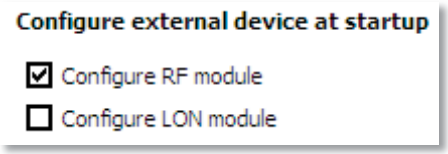
4.2.4.1 - Identification



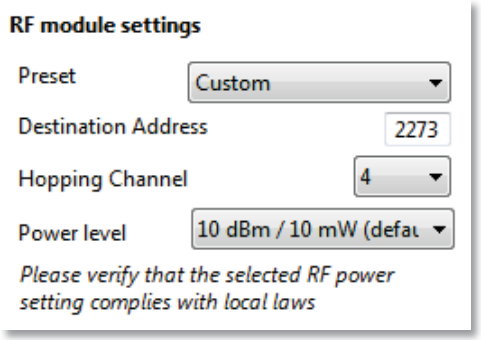
In situations where multiple sign controllers are connected to the Interface Controller by cable or RF, all the connected sign controllers need a separate address. Set the address for the first sign controller to 1, second to 2, etc. Please enable the selected addresses in the Interface Controller config.

4.2.4.2 - I-Control

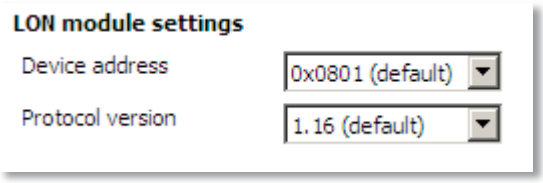
4.2.4.3 – Configure external device at startup



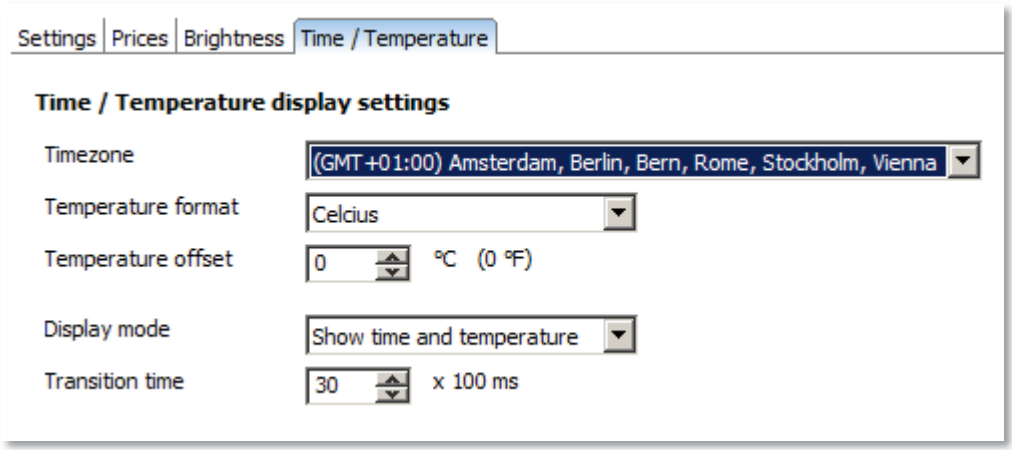
4.2.4.4 – RF module settings



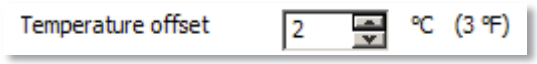
4.2.4.5 – LON module settings



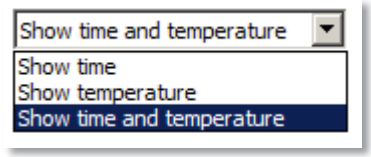
4.2.5 – Time/Temperature

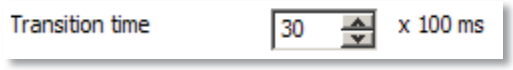


4.2.5.1 – Time & Temperature settings

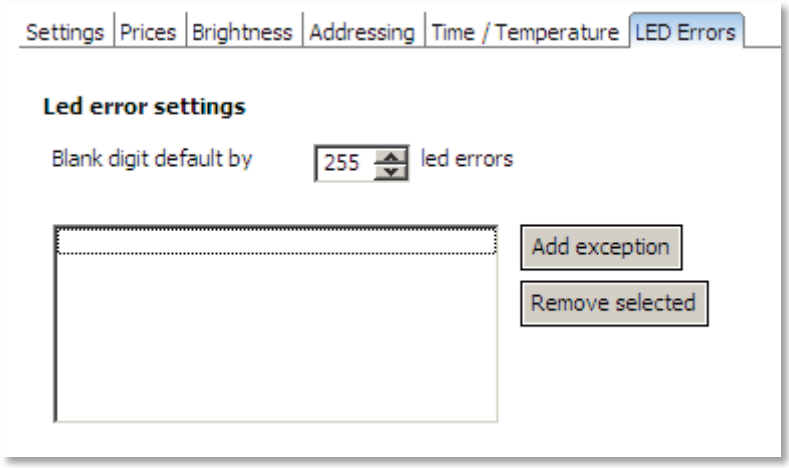


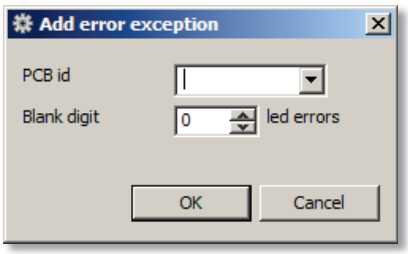
4.2.5.2 – Display mode settings

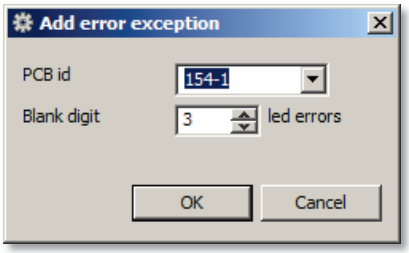


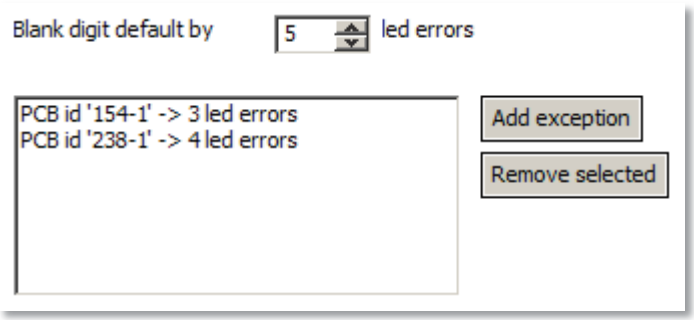


4.2.6 – LED Errors









4.3 – Interface Controller configuration

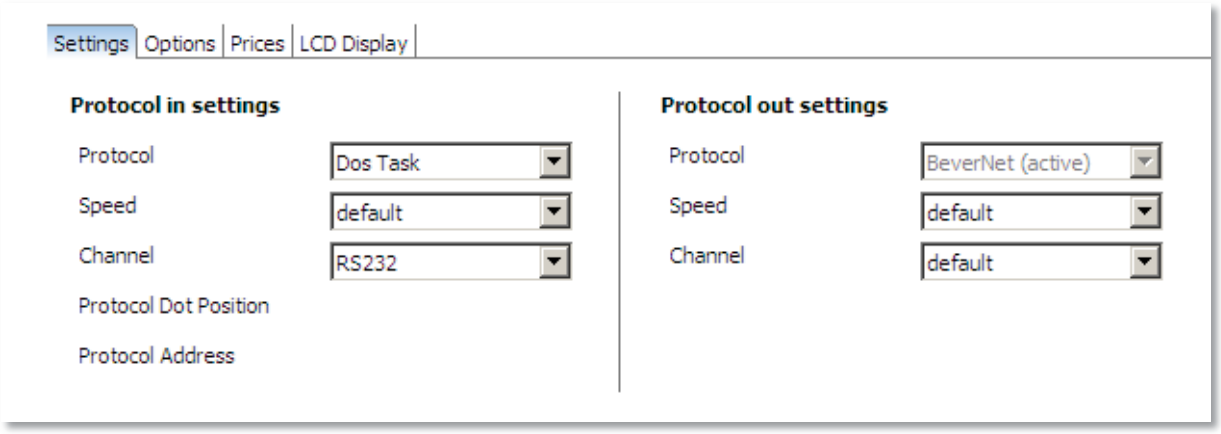
Please refer to chapter 4.1.1 for reading the Interface Controller configuration. When the reading has finished, the following information tabs are shown:

In the following chapters these tabs are explained:

Settings, Options, Prices, LCD Display and Extension.

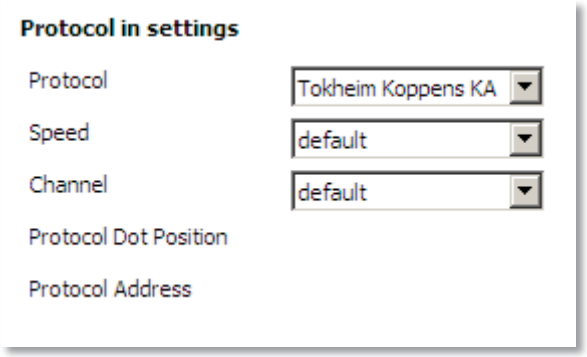
4.3.1 – Settings

By selecting the tab 'Settings' in the main Interface Controller configuration screen, the following screen is shown:

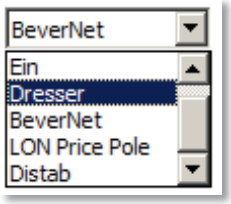


The Interface Controller settings are divided in protocol in and protocol out settings:

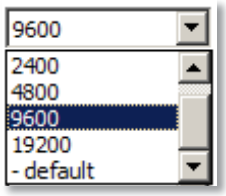
4.3.1.1 – Protocol in settings



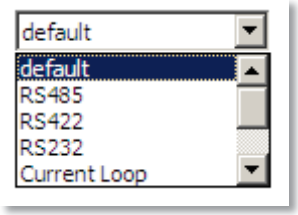
These are the settings that can be adjusted in the protocol in settings: Protocol, speed, channel, protocol dot position and protocol address.



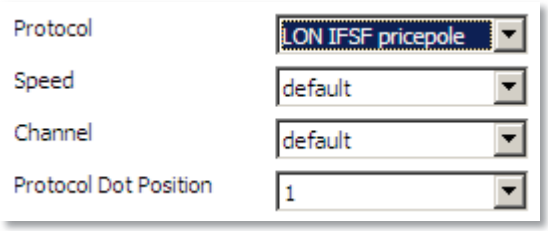
With '*Protocol Settings*' the incoming protocol which is used on the Interface Controller's protocol port can be set. When this selection box is dropped down, all protocols supported by the Interface Controller are shown.



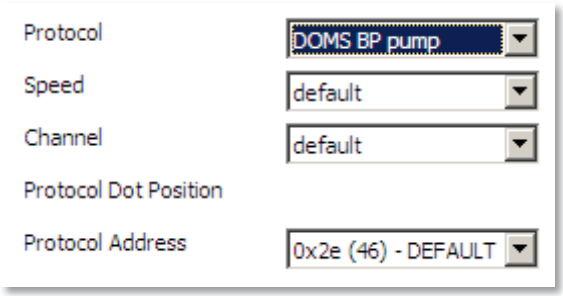
Drop down the Baud rate selection box to show all baud rates. When '*default*' is selected, the standard baud rate of the currently selected protocol is used. In most cases this is the correct baud rate for the selected protocol.



The incoming protocol has a certain hardware interface, such as RS422, RS485, Current Loop, and RS232. The option 'Channel' lists all the available types, select the desired type:

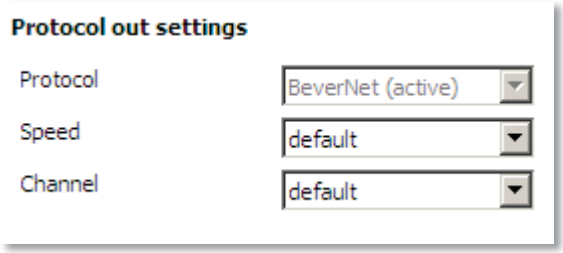


The option 'protocol dot position' is only available when the 'LON IFSF price pole' protocol is selected. With this option, the dot position within the incoming POS prices can be selected.

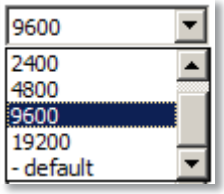


The option 'Protocol Address' is only available when the 'DOMS BP pump' protocol is selected. With this option, the POS protocol address of the Interface Controller can be adjusted.

4.3.1.2 – Protocol out settings



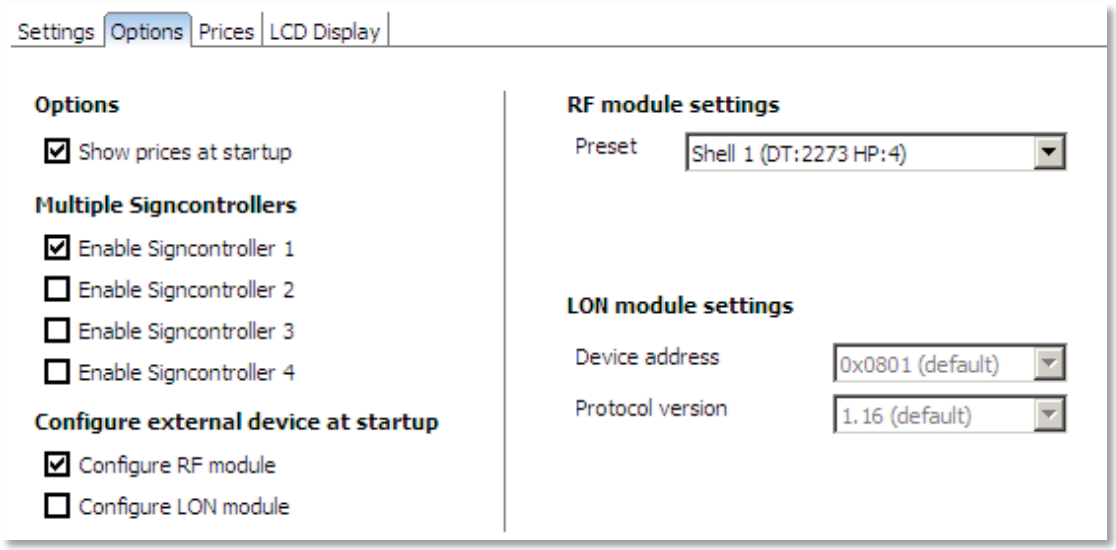
The protocol out port works with the Bevernet protocol. The speed depends on the device connected to the Interface Controller:

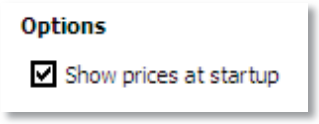


When 'default' is selected, 9600 baud is automatically selected for data cable applications. When a RF module is placed, the default baud rate will be 19200 baud.

4.3.2 – Options

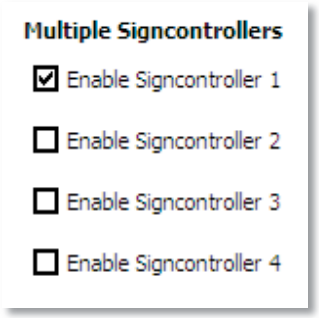
By selecting the tab 'Options' in the main Interface Controller configuration screen, the following screen is shown:





The option 'Show *prices at startup' can* be used to save prices in the memory of the Interface Controller. This way the Interface Controller always transfers the last entered prices after power-up.

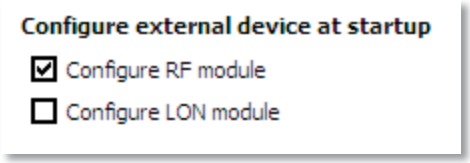
4.3.2.1 – Multiple Signcontrollers



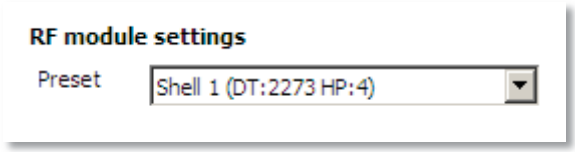
In situations where multiple sign controllers are connected to the Interface Controller by cable or RF, all the connected sign controllers need a separate address.

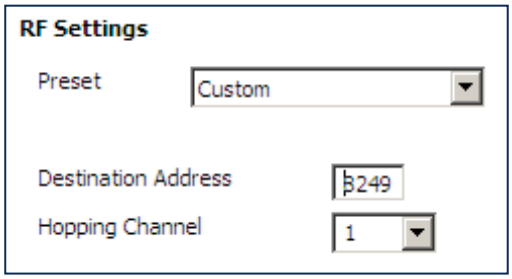
Enable the amount of connected sign controllers, and adjust the configuration of the attached sign controllers accordingly.

4.3.2.2 – Configure external device at startup

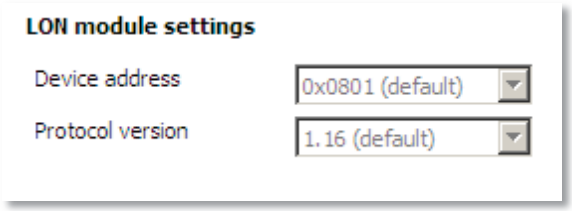


4.3.2.3 – RF module settings



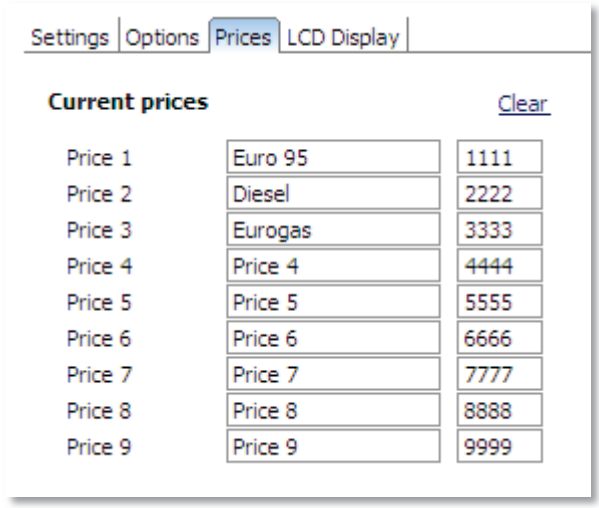


4.3.2.4 – LON module settings



4.3.3 – Prices

By selecting the tab 'Prices' in the main Interface Controller configuration screen, the following screen is shown:

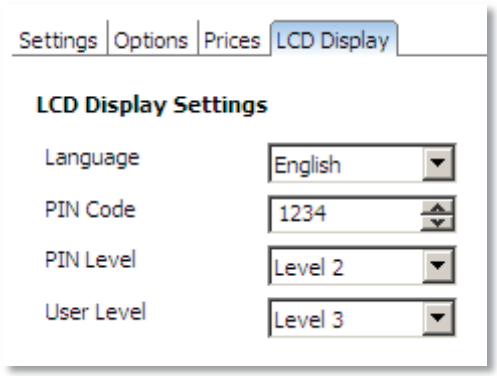


The middle column of this screen contains the price description that is displayed when a LCD display is available on the IC, thus called an IC-U. Adjust these text descriptions as required.

This lists the prices in the right column which are currently saved in the Interface Controller memory. When the option '*Show Prices at startup*' is enabled, these prices will be displayed until the POS sends new prices.

The button 'clear' clears all prices in the Interface Controller's memory.

4.3.4 – LCD settings



When the Interface Controller is equipped with a LCD screen, and thus is called an IC-U, these options can be set.

The languages English, Dutch and German can be selected.

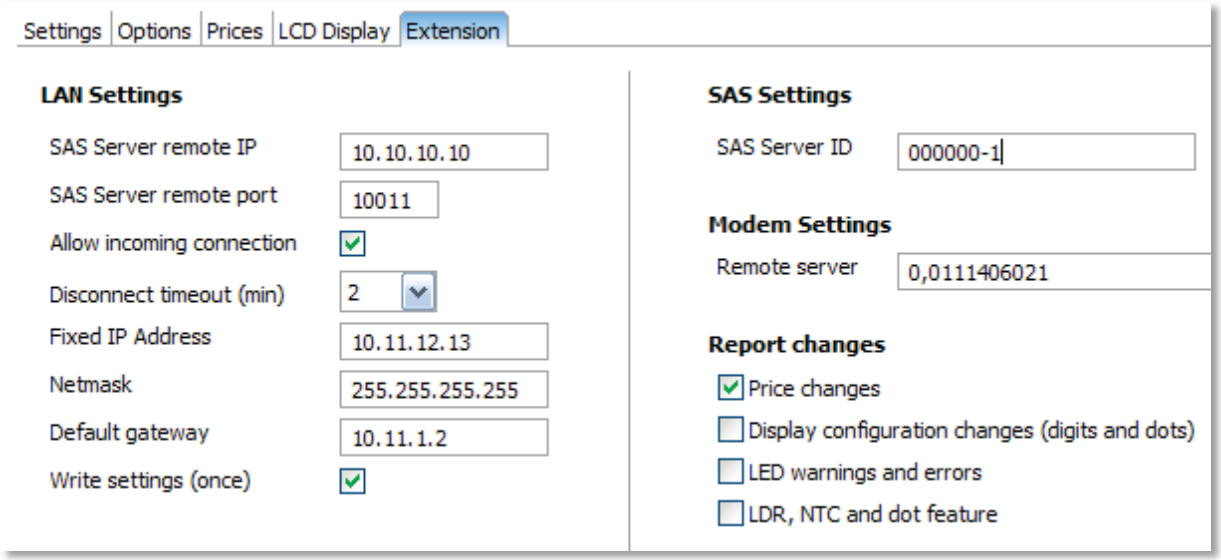
Access to several settings on the IC-U can be limited with PIN-code access. The PIN code that is required can be set here.

Level 2 is the Operator level. At this level, users can change prices. Level 3 is the read-only level to view prices. By default, the PIN level is level 2, so users can change prices after logging in with the pin code.

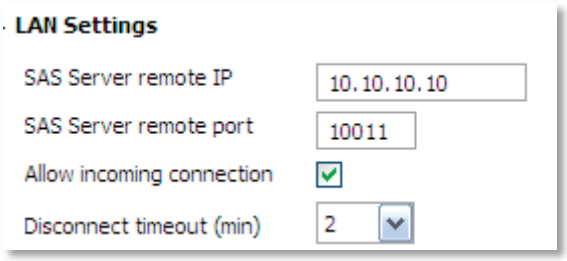
When the 'user level' is set at level 2, the user can change prices without logging in. By default, the user level is level 3.

4.3.5 – Extension

When the IC-(U) is equipped with a LAN or modem underboard, the following settings can be configured:



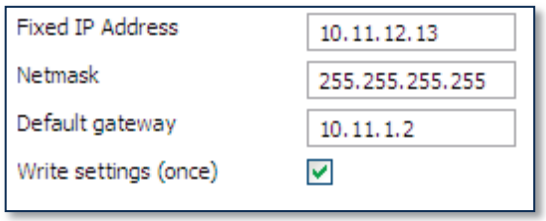
4.3.5.1 – Remote IP Settings



: IP of the remote Site Alarm Server
: Port of the remote SAS server

: Allow incoming connections to the IC(U)
: Default connection disconnect timeout

4.3.5.2 – Local IP Settings



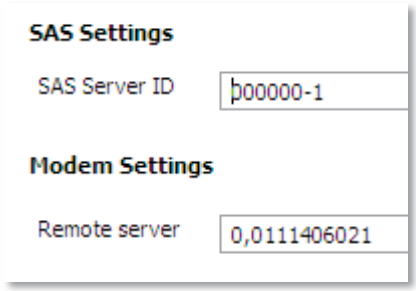
: Fixed local IP address

: Local netmask

: Default gateway

Write settings is automatically enabled when a IP setting is changed.

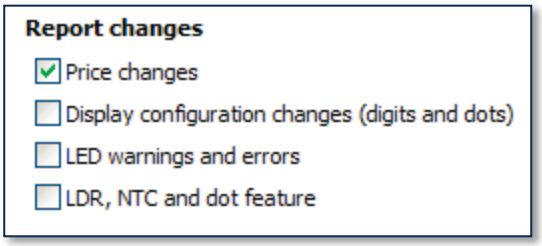
4.3.5.3 – SAS and modem settings



For identification of the IC-U on the SAS server, an unique ID must be entered here. This ID must also be enabled on the server itself.

When the IC(U) is equipped with a modem board, the telephone number of the SAS server can be entered here.

4.3.5.4 – Report changes settings

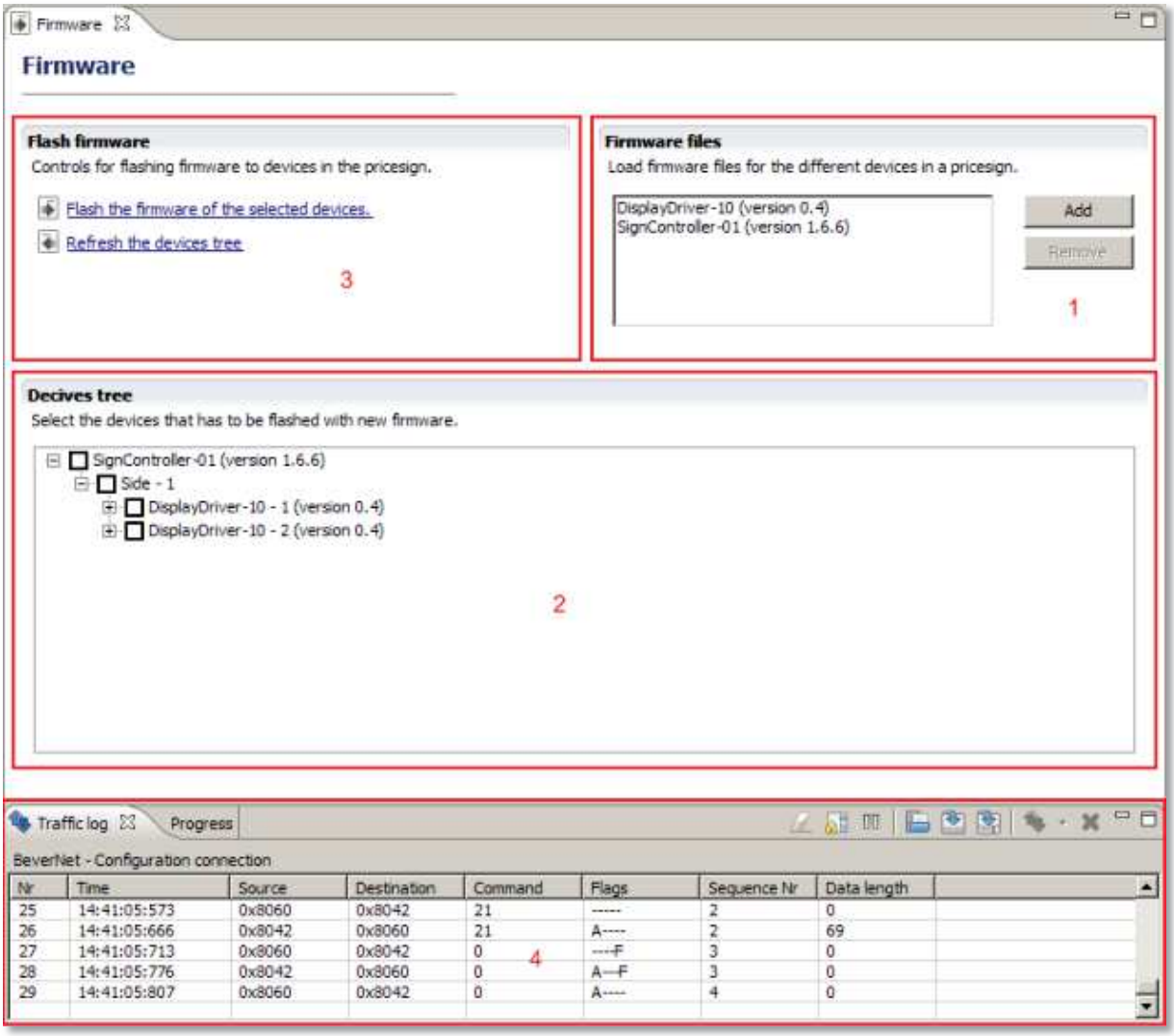


When a change in the price sign is detected, the SAS server is contacted.

Normally, the SAS server is only contacted on price changes and display configuration changes.

6 – Firmware

Please refer to chapter 2.1 for opening a Bevernet connection when you have selected the '*Firmware*' button. When the overview of the connected devices is built, the following screen appears:



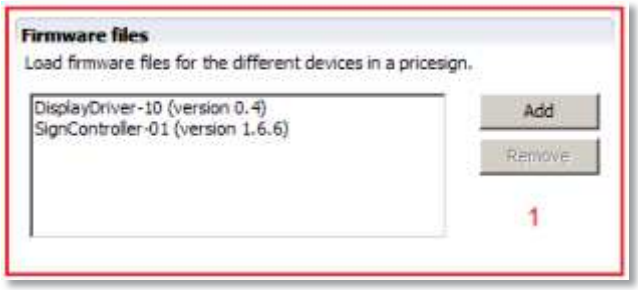
This screen offers the following options:

1. Open a firmware file from the PC.
2. Build a device tree of the connected devices.
3. Write firmware to one of the connected devices in 2.
4. Give insights into the data traffic.

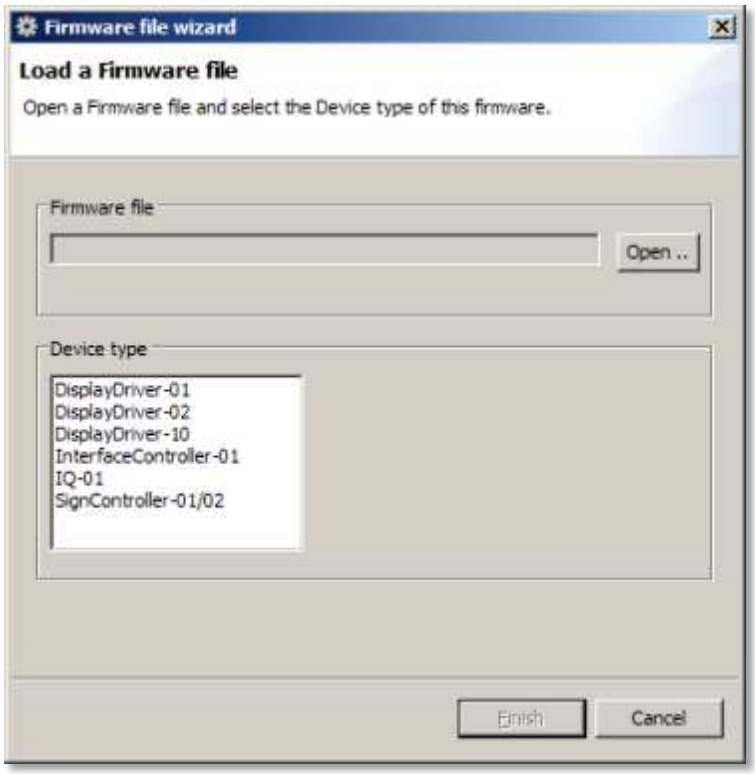
The options will be discussed in chronological order.

6.1 - Firmware files

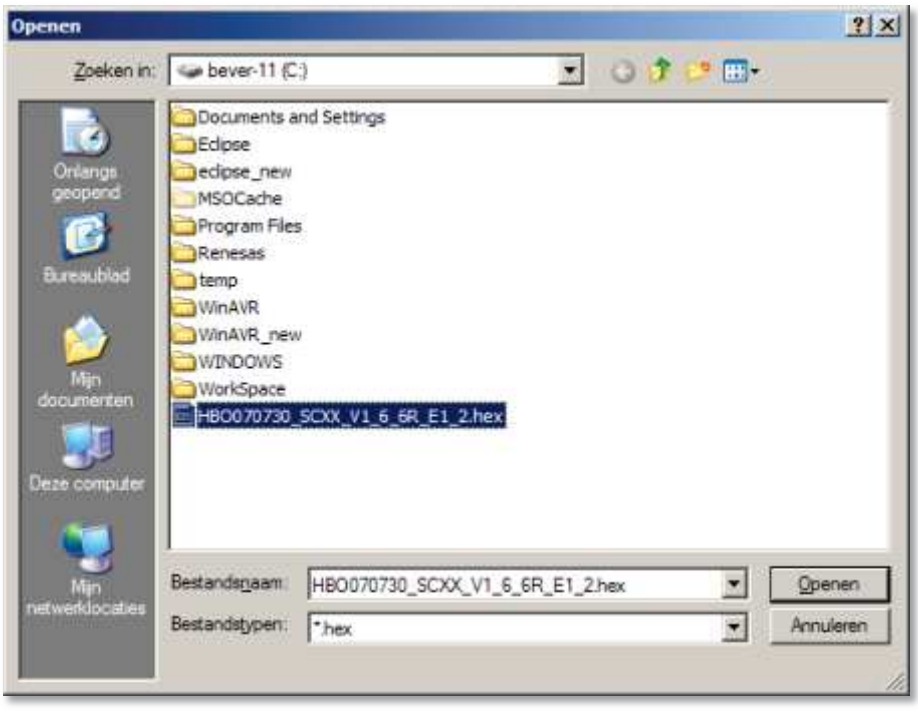
At first firmware files need to be added to the firmware list. Click '*Add*' to open the following dialog box:

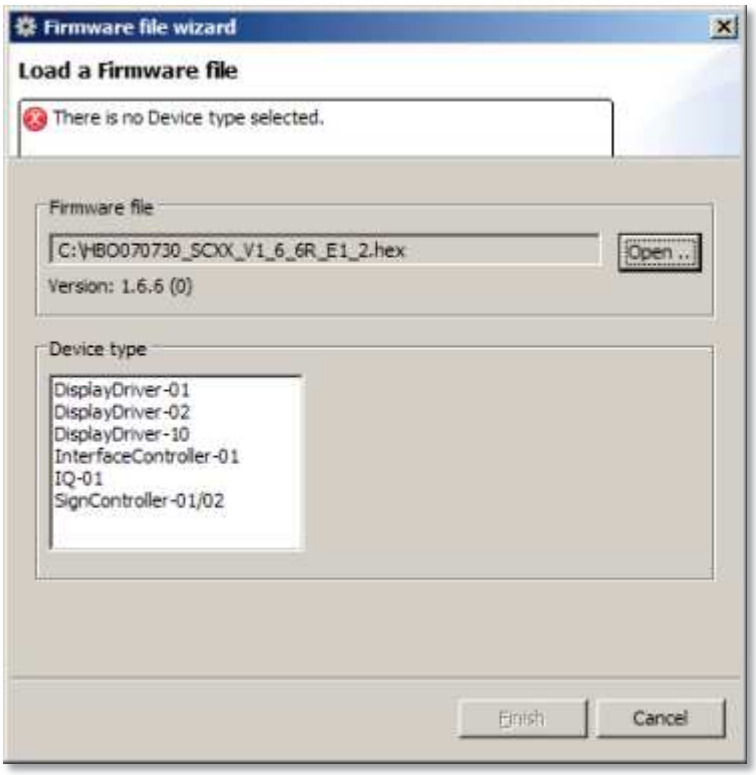


Now click '*Open ...*' to select a firmware file which is located on the PC:

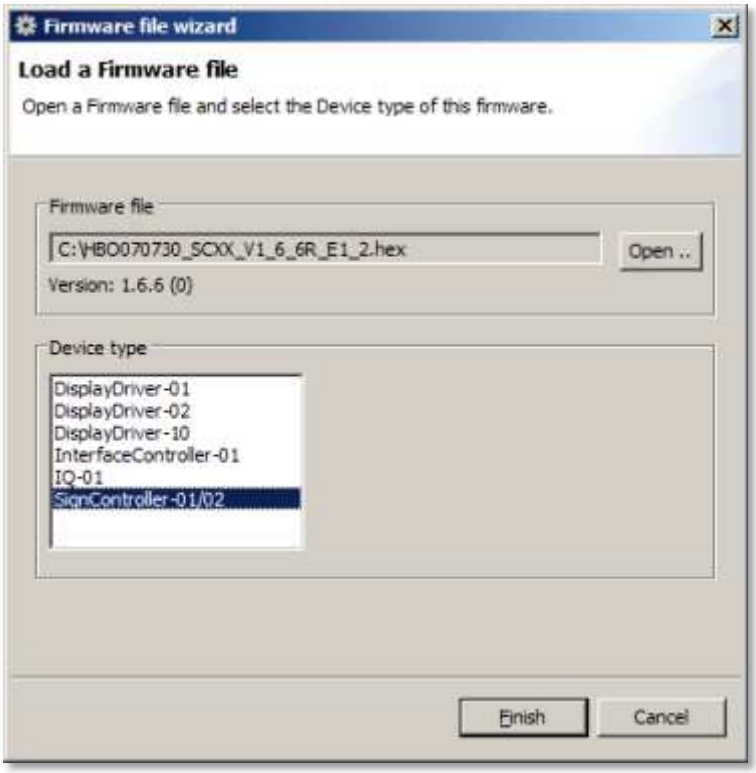


Select a firmware file with the extension (.hex) and click '*Open*':

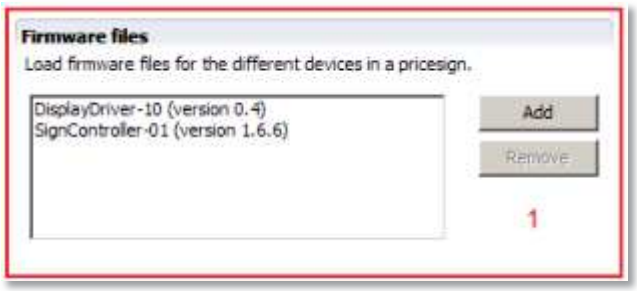




Now a warning will show up '*There is no Device type selected*'. Select the correct device type which corresponds with the selected firmware file. In this example the device type SignController-01/02 must be selected:

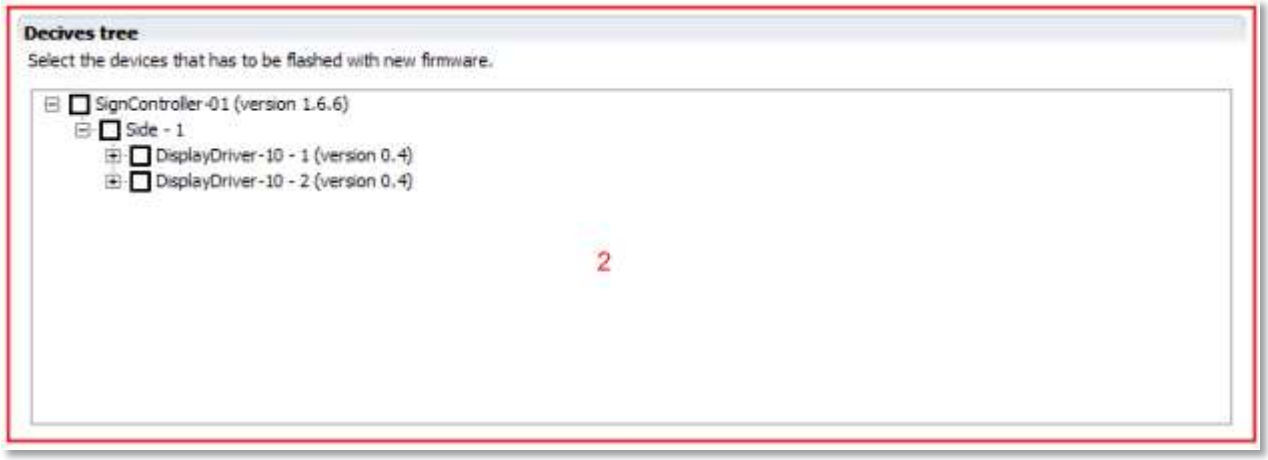


Now I-Config has all the information it needs. Click *'Finish'* to return to the main firmware screen. The selected firmware file is now added to the *'Firmware Files'* list:

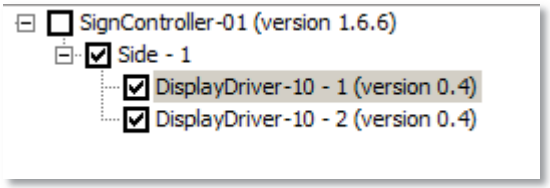


Repeat these steps in case more device types are needed in the firmware files list.

6.2 – Devices Tree

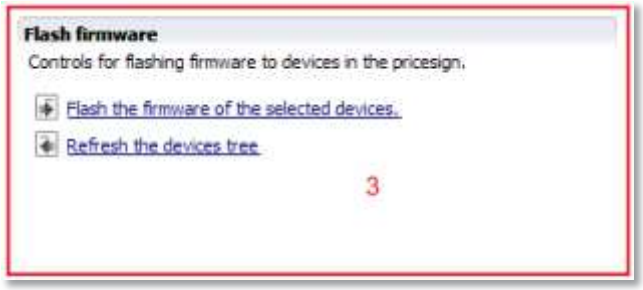


In the devices tree all devices which are detected by I-Config are shown. In this example one Sign Controller and two Display Drivers (which are connected to the Sign Controller) are connected to the PC. Check all devices which need to be updated:

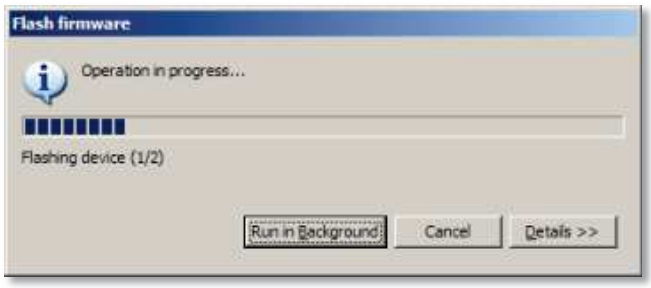


Now both Display Drivers are selected for an update.

6.3 – Flash Firmware



Click '*Flash Firmware of the selected devices*' to flash the selected devices:

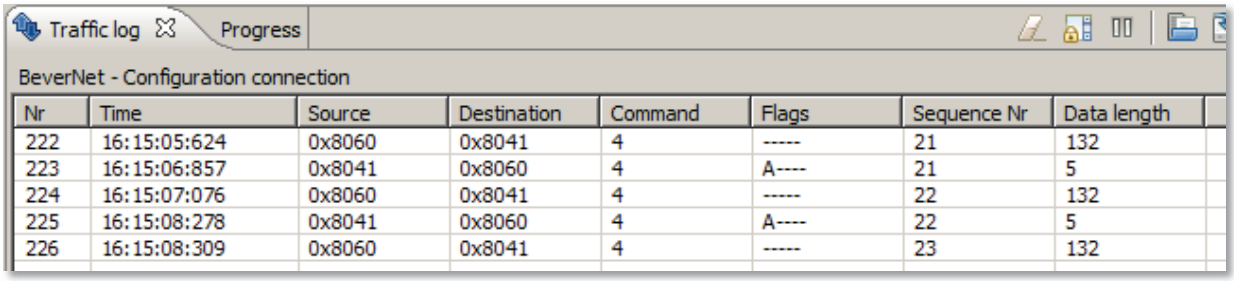


When all selected devices are successfully flashed, the following screen appears:

At this point all selected devices are flashed.

6.4 – Traffic Log

When the devices are being flashed all current data traffic is shown in the traffic log:



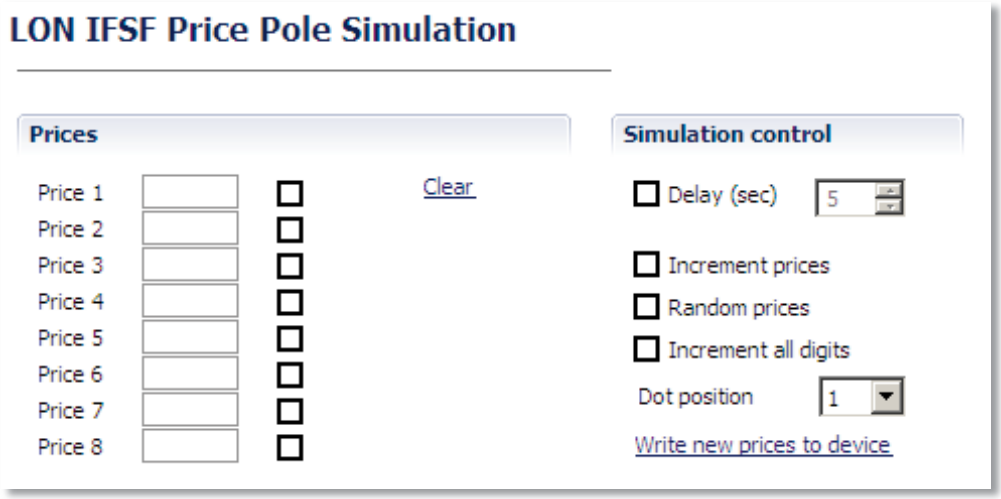
Nr	Time	Source	Destination	Command	Flags	Sequence Nr	Data length
222	16:15:05:624	0x8060	0x8041	4	-----	21	132
223	16:15:06:857	0x8041	0x8060	4	A----	21	5
224	16:15:07:076	0x8060	0x8041	4	-----	22	132
225	16:15:08:278	0x8041	0x8060	4	A----	22	5
226	16:15:08:309	0x8060	0x8041	4	-----	23	132

This example shows large data packages are send from 0x8060 (Sign Controller) to 0x8041 (first Display Driver). The display driver acknowledges these.

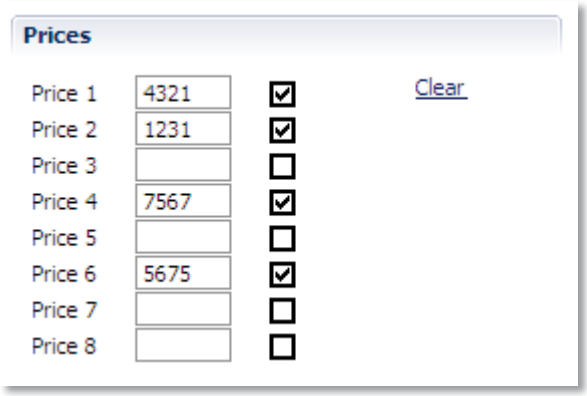
7 – POS simulation

Please refer to chapter 2.2 for opening a POS simulation connection.

When the POS simulation is opened, (in this example the simulation of the IFSF LON price pole protocol), the following screen is shown:



7.1 – Prices



In this example, when '*Write new prices to device*' is clicked, the filled in prices on position 1,2,4 and 6 will be send to the connected device.

7.2 – Simulation Control

Prices can also be send automatically. This can be done by using the options in the '*Simulation control*' field. Several options are available here:

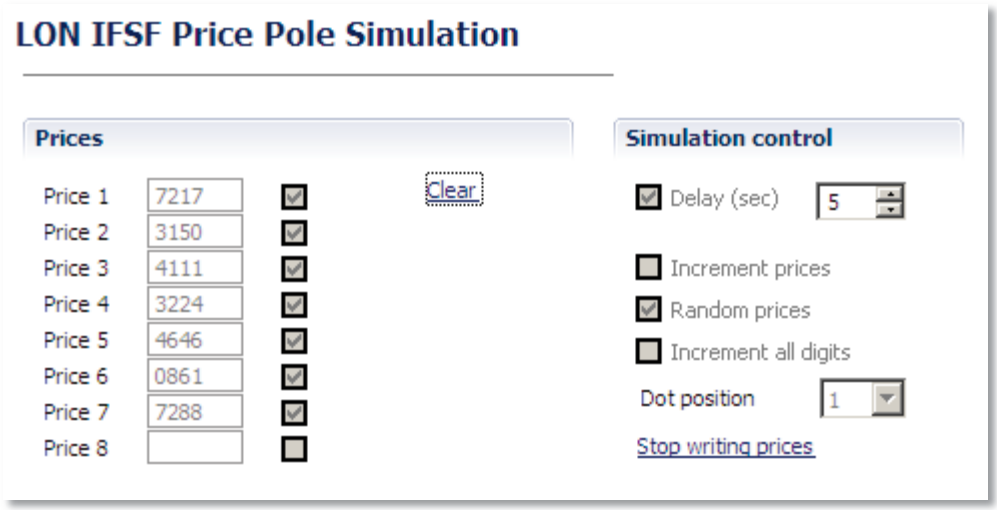
- **Delay**: Fill in the number of seconds which need to be in between the price broadcasts. The recommended minimum number of seconds is 5.
- **Increment prices**: This increments the prices set in '*prices*' by one, each cycle of x seconds. (x is the number of seconds filled in as delay).

- **Random prices**: Writes random prices to all positions which are checked for each cycle of x seconds. (x seconds is the number of seconds filled in as delay).
- **Increment all Digits**: Add 1 to every digit in the prices.

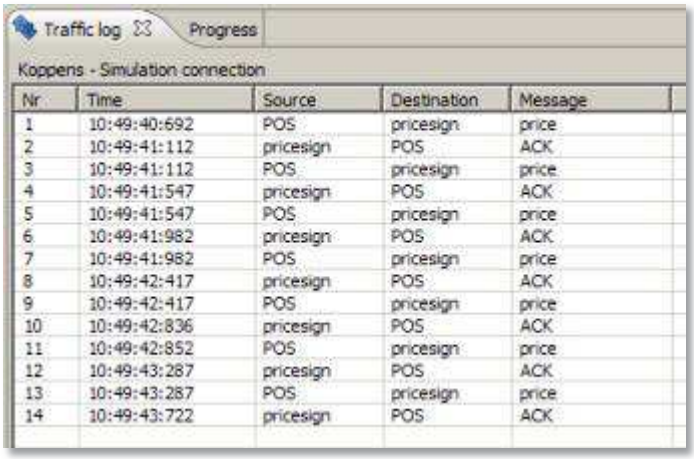
Dot Position: This option is only visible when LON IFSF simulation is selected. This selects the dot position in the transmitted IFSF LON prices.

The options *Increment*, *Random* and *Increment all digits* cannot be selected at the same time. Start sending the prices automatically by clicking '*Write new prices to device*'.

7.3 – Price write example



In this example price 1 to 7 are checked. This means random prices are send to these positions every 5 seconds, until '*Stop writing prices*' is clicked. While prices are send, the current data traffic is shown in the traffic log screen:


Traffic log | Progress

Koppens - Simulation connection

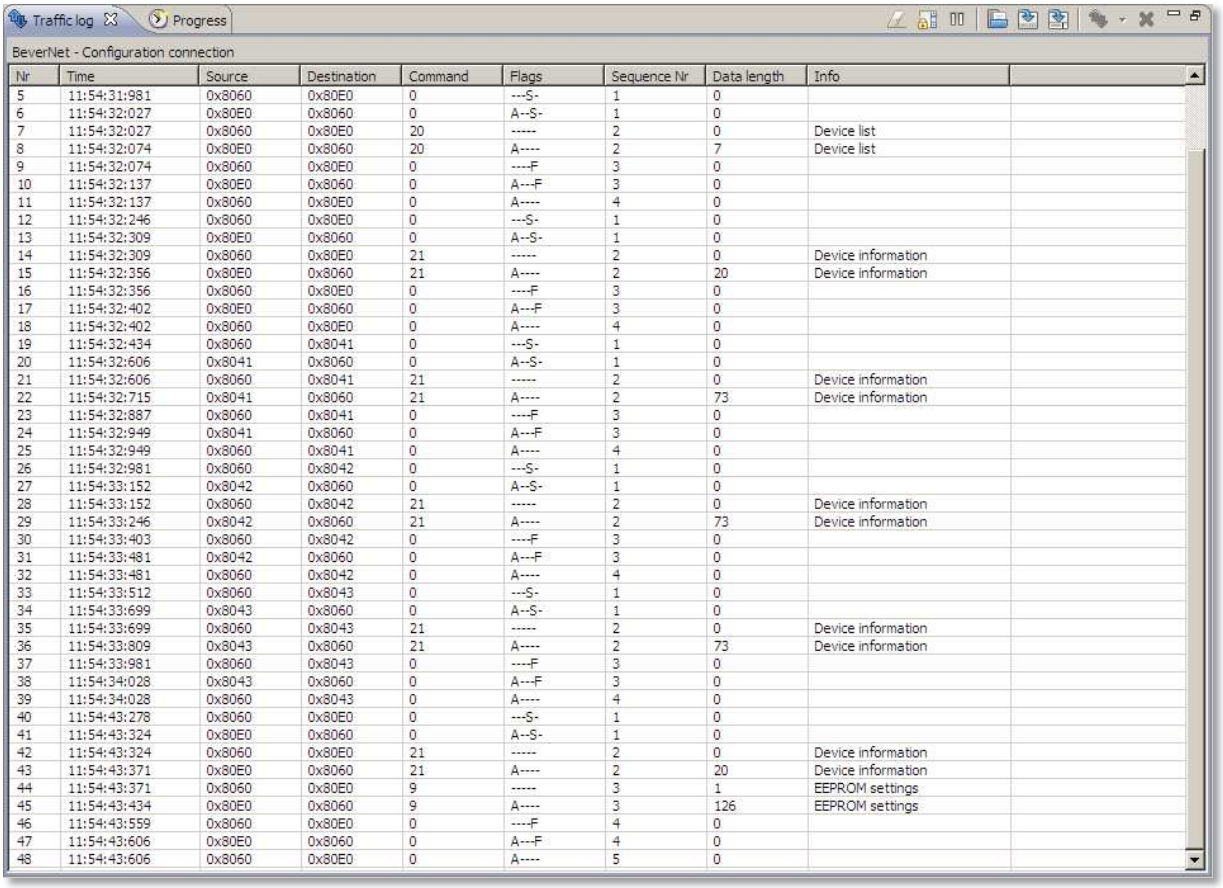
Nr	Time	Source	Destination	Message
1	10:49:40:692	POS	pricesign	price
2	10:49:41:112	pricesign	POS	ACK
3	10:49:41:112	POS	pricesign	price
4	10:49:41:547	pricesign	POS	ACK
5	10:49:41:547	POS	pricesign	price
6	10:49:41:982	pricesign	POS	ACK
7	10:49:41:982	POS	pricesign	price
8	10:49:42:417	pricesign	POS	ACK
9	10:49:42:417	POS	pricesign	price
10	10:49:42:836	pricesign	POS	ACK
11	10:49:42:852	POS	pricesign	price
12	10:49:43:287	pricesign	POS	ACK
13	10:49:43:287	POS	pricesign	price
14	10:49:43:722	pricesign	POS	ACK

In this example it is shown that the POS (I-Config) sends a price to the connected Sign Controller. A correctly received price is confirmed by a (ACK).

8 - Spy Traffic

Please refer to chapter 2.2 for opening a Spy traffic connection.

When the connection is opened, all data which is received by I-Config over this connection is shown:



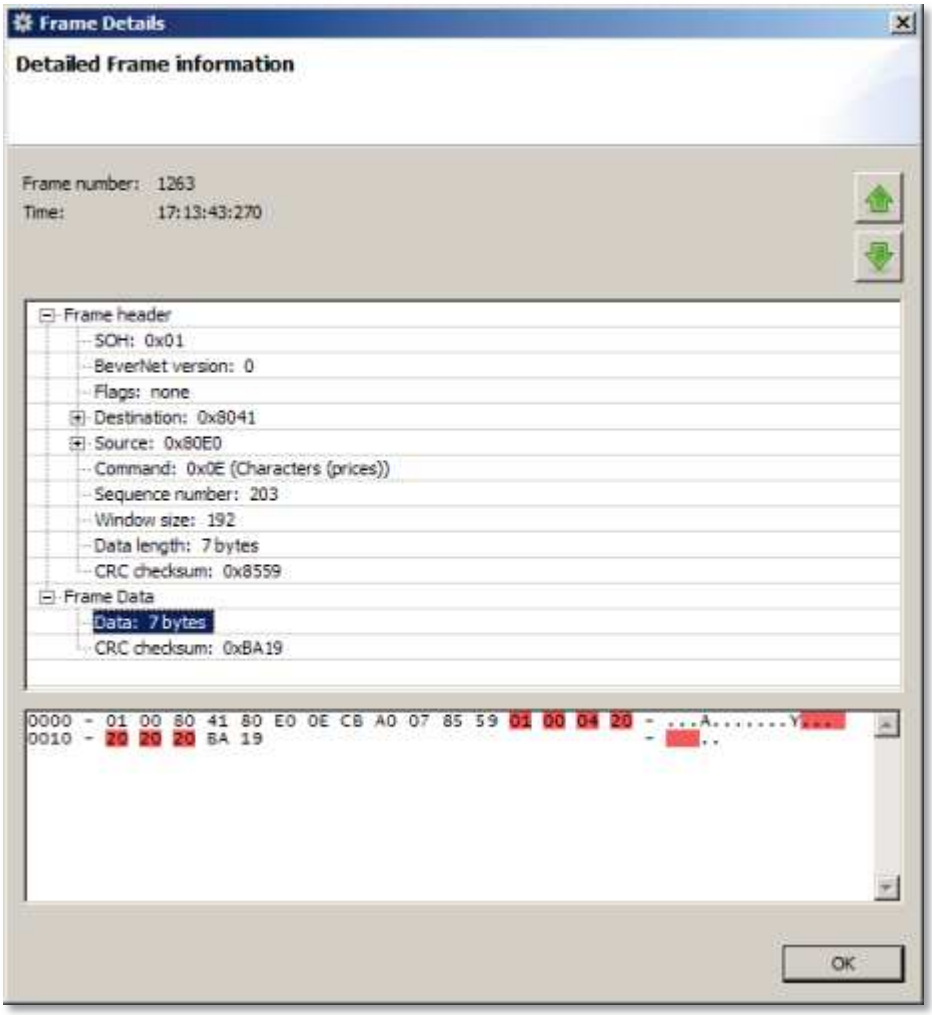
Nr	Time	Source	Destination	Command	Flags	Sequence Nr	Data length	Info
5	11:54:31:981	0x8060	0x80E0	0	---S-	1	0	
6	11:54:32:027	0x80E0	0x8060	0	A--S-	1	0	
7	11:54:32:027	0x8060	0x80E0	20	-----	2	0	Device list
8	11:54:32:074	0x80E0	0x8060	20	A----	2	7	Device list
9	11:54:32:074	0x8060	0x80E0	0	----F	3	0	
10	11:54:32:137	0x80E0	0x8060	0	A---F	3	0	
11	11:54:32:137	0x8060	0x80E0	0	A----	4	0	
12	11:54:32:246	0x8060	0x80E0	0	---S-	1	0	
13	11:54:32:309	0x80E0	0x8060	0	A--S-	1	0	
14	11:54:32:309	0x8060	0x80E0	21	-----	2	0	Device information
15	11:54:32:356	0x80E0	0x8060	21	A----	2	20	Device information
16	11:54:32:356	0x8060	0x80E0	0	----F	3	0	
17	11:54:32:402	0x80E0	0x8060	0	A---F	3	0	
18	11:54:32:402	0x8060	0x80E0	0	A----	4	0	
19	11:54:32:434	0x8060	0x8041	0	---S-	1	0	
20	11:54:32:606	0x8041	0x8060	0	A--S-	1	0	
21	11:54:32:606	0x8060	0x8041	21	-----	2	0	Device information
22	11:54:32:715	0x8041	0x8060	21	A----	2	73	Device information
23	11:54:32:887	0x8060	0x8041	0	----F	3	0	
24	11:54:32:949	0x8041	0x8060	0	A---F	3	0	
25	11:54:32:949	0x8060	0x8041	0	A----	4	0	
26	11:54:32:981	0x8060	0x8042	0	---S-	1	0	
27	11:54:33:152	0x8042	0x8060	0	A--S-	1	0	
28	11:54:33:152	0x8060	0x8042	21	-----	2	0	Device information
29	11:54:33:246	0x8042	0x8060	21	A----	2	73	Device information
30	11:54:33:403	0x8060	0x8042	0	----F	3	0	
31	11:54:33:481	0x8042	0x8060	0	A---F	3	0	
32	11:54:33:481	0x8060	0x8042	0	A----	4	0	
33	11:54:33:512	0x8060	0x8043	0	---S-	1	0	
34	11:54:33:699	0x8043	0x8060	0	A--S-	1	0	
35	11:54:33:699	0x8060	0x8043	21	-----	2	0	Device information
36	11:54:33:809	0x8043	0x8060	21	A----	2	73	Device information
37	11:54:33:981	0x8060	0x8043	0	----F	3	0	
38	11:54:34:028	0x8043	0x8060	0	A---F	3	0	
39	11:54:34:028	0x8060	0x8043	0	A----	4	0	
40	11:54:43:278	0x8060	0x80E0	0	---S-	1	0	
41	11:54:43:324	0x80E0	0x8060	0	A--S-	1	0	
42	11:54:43:324	0x8060	0x80E0	21	-----	2	0	Device information
43	11:54:43:371	0x80E0	0x8060	21	A----	2	20	Device information
44	11:54:43:371	0x8060	0x80E0	9	-----	3	1	EEPROM settings
45	11:54:43:434	0x80E0	0x8060	9	A----	3	126	EEPROM settings
46	11:54:43:559	0x8060	0x80E0	0	----F	4	0	
47	11:54:43:606	0x80E0	0x8060	0	A---F	4	0	
48	11:54:43:606	0x8060	0x80E0	0	A----	5	0	

The spy window has several options shown in the upper right corner which can be selected:

From left to right:

1. Erase current content of the spy-window
2. Scroll lock on the current spy window
3. Pause the current spy connection
4. Load a previously saved traffic log file
5. Save the current traffic log
6. Export the current traffic log to .CSV format.

Details of received frames
When a frame line is double clicked, all details of this selected frame are shown:



Use the green arrows to scroll through the frames.