

# Upgrading Firmware and setup the Interface controller for Q8 protocol.

### Needed Tools:

- Laptop
- HC02 config tool (2 pcs if possible)
- Spy testing cable RS485
- Files and programs downloaded from the Cloud

#### Step to follow:

- 1. Connect the configuration tool (hc02) to the interface controller and your laptop.
- 2. Open the I-Config program and create a connection by clicking on the Firmware icon.

|                          |                          |                          |                          |                         |                           |                          |                            |                            | -                          |
|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------|---------------------------|--------------------------|----------------------------|----------------------------|----------------------------|
|                          |                          |                          |                          |                         |                           |                          |                            |                            | -                          |
|                          |                          |                          |                          |                         |                           |                          |                            |                            |                            |
|                          |                          |                          |                          |                         |                           |                          |                            |                            |                            |
|                          |                          |                          |                          |                         |                           |                          |                            |                            |                            |
|                          |                          |                          |                          |                         |                           |                          |                            |                            |                            |
|                          |                          |                          |                          |                         |                           |                          |                            |                            |                            |
|                          |                          |                          |                          |                         |                           |                          |                            |                            |                            |
| Traffic log 🛛 🕥 Progress | <u> </u>                 |                          |                          | 12 51                   | 00   E                    |                          | 1                          | - 3I                       |                            |
|                          |                          |                          |                          |                         |                           |                          |                            |                            |                            |
|                          | Traffic log 🛙 🕥 Progress | Traffic log ⊠ ) Progress | Traffic log 🛙 🕥 Progress | Traffic log 🛙 🕐 Progres | Traffic log 23 O Progress | Traffic log 🛿 🕐 Progress | 🕽 Traffic log 😂 💽 Progress | 🕽 Traffic log 😂 💽 Progress | 🕽 Traffic log 😂 🕐 Progress |

- 3. An overview of the connected device will be showed in the bottom window. All available default Firmware versions can be found in the Right top corner.
- 4. Click on "Add" and a new window pops-up.
- 5. Click on **"Open"** go to the location on where you have saved the new firmware file that you downloaded earlier from the cloud.
- 6. Once Firmware file is selected, you need to select the correct device type "interfaceController-01" and click on Finish.



| Bever Innovations I-Config 2.3   |  |  |   |  |  | _ <b>D</b> _×                            |  |
|--|--|--|---|--|--|--|--|
| Pricesian  | Firmware 🛛   |  |   |  |  | -  |  |
| Status<br>Configuration  | Flash firmware         Controls for flashing           | irmware to dev<br>are in the select<br>vices in batch r<br>es tree | ices in the p<br><u>ed devices</u><br><u>node</u> | ricesign.  | Firmware files<br>Load firmware files for the different devices in<br>DisplayDriver-10 (version 0.9.9 (0))<br>DisplayDriver-11 (version 1.1.3 (0))<br>InterfaceController-01 (version 1.3.3 (0))<br>SignController-01.02 (version 2.6.3 (0)) | a pricesign.<br>Add<br>Remove<br>Default |  |
| Firmware Conn. to COM21 - 19200 <u>Close current connection</u>            | Devices tree<br>Select the devices tha<br>InterfaceCom | t has to be flash<br>troller-01 (versie<br>roller - 1 (no bo       | ned with ne<br>on 1.3.3 (0))<br>rotloader)        | Firmware file wiz<br>Load a Firmware<br>Open a Firmware f  | ard<br>file<br>file and select the Device type of this firmware.   |  |  |
| POS Simulation  Simulation  Not connected Create a connection  Spy traffic |  |  |   | Firmware file<br>C:\Users\mvb\(<br>Version: 1.4.5 (0)<br>Device type<br>DisplayDriver-01<br>DisplayDriver-01<br>DisplayDriver-10<br>DisplayDriver-10 | Desktop)H80170530-1_IC01_V1_4_5_E1_9_Protoco   | ol_27_Dene Open                          |  |
| Al   | 🐐 Traffic log 🗵 🕥                                      | Progress   |   | DisplayDriver 1<br>InterfaceContro   | ller-01  |  |  |
| Spy  | Nr Time  | Source   | Destina   |  |  |  |  |
| Not connected<br>Create a connection                                       | 53 15:17:29.279<br>54 15:17:30.782                     | 0x9800<br>0x9800   | 0x80E0<br>0x80E0                                  |  |  |  |  |
|  |  |  |   |  | Finish   | Cancel                                   |  |

- 7. The test firmware version 1.4.5 will be added in the firmware release window replacing the default version 1.3.3.
- 8. Tick the box in front of the interface controller at Device tree and click on "Flash new firmware in the selected device. The I-Config program knows which file to use.
- 9. The Upgrade starts and progress is showed in an extra window.

| Bever Innovations I-Config 2.3                            |   |                              |                   |   |                   |       |              |                 |                                    | x |
|---|---|------------------------------|-------------------|---|-------------------|-------|--------------|-----------------|------------------------------------|---|
| <u>File Window H</u> elp                                  |   |                              |                   |   |                   |       |              |                 |                                    |   |
| Pricesian   | Fin   | mware 🛿                      |                   |   |                   |       |              |                 |                                    |   |
|   | Flash firmware Controls for flashing firmware to devices in the pricesign. Load firmware files for the diff |                              |                   |   |                   |       |              | different devic | es in a pricesign.                 |   |
| Status  |   | Flash multiple d             | evices in batch r | a: mbasischet devices;         DisplayOrwer-10 (version 0.3.9 (0))           ices in batch mode         DisplayOrwer-11 (version 1.3.1 (0))           interfaceController-01 (version 1.4.5 (0))         InterfaceController-01 (version 1.4.5 (0))           istign Controller-01 (version 1.4.5 (0))         InterfaceController-01 (version 1.4.5 (0)) |                   |       |              |                 | Remove                             |   |
| Configuration   |   | Flash firmware               |                   |   |                   |       | - <b>- X</b> |                 | Derault                            |   |
| Firmware  |   | Operation                    | in progress       |   |                   |       |              |                 |                                    |   |
| Conn. to COM21 - 19200<br>Close current connection        |   | Flashing device (1)          | (1) with Interfac | eController-01 (v   | ersion 1.4.5 (0)) |       |              |                 |                                    |   |
| POS Simulation  |   | Always run in b              | ackground         | Run in Backgrou   | und Canc          | el    | Details >>   |                 |                                    |   |
| Simulation<br>Not connected<br><u>Create a connection</u> |   |                              |                   |   |                   |       |              | 1               |                                    |   |
| Spy traffic   |   |                              |                   |   |                   |       |              |                 |                                    |   |
| 101   | Sever   | affic log 🛛 🕥                | Progress          |   |                   |       | <i>G</i>     | Al 00   🕒       | 🖹 🖹 🍬 + 🗶 🗆                        |   |
| Spy   | Nr  | Time                         | Source            | Destination   | Command           | Flags | Sequence Nr  | Data length     | Info                               | * |
| Not connected<br>Create a connection                      | 201<br>202  | 15:27:36.464<br>15:27:36.465 | 0xB800<br>0x9800  | 0x9800<br>0x8800  | 4 4               | A     | 73<br>74     | 5<br>260        | Bootloader data<br>Bootloader data | - |
|   |   |                              |                   |   |                   |       | Flash fir    | rmware: (23%)   |                                    | 1 |

10. Once the Firmware upgrade is finished you can click on the Configuration icon on the left side to open the configuration window so configuration of the interface controller can be adjusted. Please setup as below screenshots.



| Bever Innovations I-Config 2.3           | -      | _                                       | _                               | _                                     | _              | _              | _                    | _           | _    |                 | _ <b>D</b> _ X |
|--|--------|---|---------------------------------|---------------------------------------|----------------|----------------|----------------------|-------------|------|-----------------|----------------|
| <u>F</u> ile <u>W</u> indow <u>H</u> elp |        |   |                                 |                                       |                |                |                      |             |      |                 |                |
| Pricesign                                | Firr   | nware 🏾 🏾 🛞 Co                          | nfiguration 🛛                   |                                       |                |                |                      |             |      |                 | - 8            |
|  | Cor    | nfigure Device                          |                                 |                                       |                | Configurati    | on file              |             |      |                 |                |
|  |        |   |                                 | C Defende For                         |                | 🕒 Open o       | onfiguration file    |             |      |                 |                |
| Chattan .                                |        | nterfaceController                      | •01 •                           | Kefresh list                          |                | Save co        | onfiguration to file |             |      |                 |                |
| Status                                   |        | Read configurat                         | ion from device                 | 1                                     |                |                |                      |             |      |                 |                |
| 202                                      |        | Write configura                         | tion to device                  |                                       | (0))           | File name:     | no file opened       |             |      |                 |                |
| 500                                      |        | onnected device:<br>onfiguration versig | InterfaceCo<br>on:19 (Interface | Ontroller-01 (1.4.5<br>Controller-01) | (0))           | Description    |                      |             |      |                 |                |
| Configuration                            |        | oningunation versit                     | n. 1.5 (interface               | controller or)                        |                |                |                      |             |      |                 |                |
| =  | Cor    | nfiguration                             | ourstion in the                 | connected device                      |                |                |                      |             |      |                 |                |
|  | Dis    | played version: 1.9                     | (InterfaceCont                  | roller-01)                            | c.             |                |                      |             |      |                 |                |
| Firmware                                 |        | outions                                 |                                 | المتعادية والمتعادية                  | 5MC C-111      |                |                      |             |      |                 |                |
| 💼 Conn. to COM21 - 19200                 |        | options Options                         | Prices   LCD Dis                | play Extension :                      | Sivis Settings |                |                      |             |      |                 |                |
| Close current connection                 |        | Protocol in settir                      | igs                             |                                       | Protoc         | col out settii | ngs                  |             |      |                 |                |
| POS Simulation                           |        | Protocol                                | Protoc                          | ol 27 🔹 👻                             | Proto          | col            | Bevernet (a          | ctive) 👻    |      |                 |                |
| P  |        | Baudrate                                | 9600                            | •                                     | Baudi          | rate           | default              | •           |      |                 |                |
|  |        | Channel                                 | R\$485                          | •                                     | Chan           | nel            | default              | -           |      |                 |                |
|  |        | Protocol Dot Por                        | ition                           | •                                     |                |                | default              | •           |      |                 |                |
| Simulation                               |        | 1101000100110                           |                                 |                                       |                |                |                      |             |      |                 |                |
| Not connected                            |        | Protocol Price le                       | ngth                            |                                       |                |                |                      |             |      |                 |                |
| Create a connection                      |        | Protocol Address                        | ;                               |                                       |                |                |                      |             |      |                 |                |
| Spy traffic                              |        |   |                                 |                                       |                |                |                      |             |      |                 |                |
|  |        |   |                                 |                                       |                |                |                      |             |      |                 |                |
|  |        |   |                                 |                                       |                |                |                      |             |      |                 |                |
|  |        |   |                                 |                                       |                |                |                      |             |      |                 |                |
| Spy                                      |        |   |                                 |                                       |                |                |                      |             |      |                 |                |
| Not connected                            |        |   |                                 |                                       |                |                |                      |             |      |                 |                |
| Create a connection                      |        |   |                                 |                                       |                |                |                      |             |      |                 |                |
|  | 🕸 Tra  | ffic log 🛿                              |                                 |                                       |                |                |                      |             |      | 🖉 🚰 III   🕒 🖄 😫 | 🍬 + 🗶 🗖 🗖      |
|  | Bevern | et - Configuration                      | connection                      |                                       |                |                |                      |             |      |                 |                |
|  | Nr     | Time                                    | Source                          | Destination                           | Command        | Flags          | Sequence Nr          | Data length | Info |                 | ^              |
|  | 1984   | 15:34:10.173                            | 0x9800                          | 0xB800                                | 0              | F              | 75                   | 0           |      |                 |                |
|  | 1985   | 15:34:10.184                            | 0x8800                          | 0x9800                                | 0              | ΑF             | 75                   | 0           |      |                 |                |
|  | 1300   | 10.04.10.200                            | 0,5000                          | 370000                                | •              | 0              | 10                   | v           | 1    |                 | •              |
|  |        |   |                                 |                                       |                |                |                      |             |      |                 |                |

| Bever Innovations I-Config 2.3 | _                                   | _                | _                  | _                     | _              | _            | _                   | _           | -    |   |   |  |
|--------------------------------|-------------------------------------|------------------|--------------------|-----------------------|----------------|--------------|---------------------|-------------|------|---|---|--|
| <u>W</u> indow <u>H</u> elp    |                                     |                  |                    |                       |                |              |                     |             |      |   |   |  |
| Pricesian                      | Firmware @ Configuration 🛛          |                  |                    |                       |                |              |                     |             |      |   |   |  |
| _                              | Configure Device Configuration file |                  |                    |                       |                |              |                     |             |      |   |   |  |
|                                | _                                   |                  |                    |                       |                |              |                     |             |      |   |   |  |
|                                | Inter                               | faceController   | -01 🔻              | 🔁 <u>Refresh list</u> |                | Den co       | onfiguration file   |             |      |   |   |  |
| Status                         | <b>ě</b>                            | lead configurat  | tion from devic    | <u>e</u>              |                | Save co      | nfiguration to file |             |      |   |   |  |
| 5m                             | @ <u>\</u>                          | Vrite configura  | tion to device     |                       |                | File name:   | no file opened      |             |      |   |   |  |
| 2 And                          | Conr                                | ected device:    | InterfaceCo        | ontroller-01 (1.4.    | 5 (0))         | Description: |                     |             |      |   |   |  |
| Configuration                  | Conf                                | iguration versio | on: 1.9 (Interface | eController-01)       |                |              |                     |             |      |   |   |  |
| =                              | Config                              | uration          |                    |                       |                |              |                     |             |      |   |   |  |
|                                | Conte                               | nts of the confi | iguration in the   | connected device      | e.             |              |                     |             |      |   |   |  |
|                                | Displa                              | yed version: 1.9 | (InterfaceCont     | roller-01)            |                |              |                     |             |      |   |   |  |
| Firmware                       | C-112                               | outions          |                    | المتحمية المتعاد      | Ch 40 C - Him  |              |                     |             |      |   |   |  |
| Conn. to COM21 - 19200         | Setti                               | ngs Options      | Prices   LCD Dis   | play extension        | Sivis Settings |              |                     |             |      |   |   |  |
| Close current connection       | Op                                  | tions            |                    |                       | RF module se   | ttings       |                     |             |      |   |   |  |
|                                |                                     | Show prices a    | t startup          |                       |                | -            |                     |             |      |   |   |  |
| 35 Simulation                  |                                     | pilow pileose    |                    |                       | Preset         | Stand        | lard 1 (DT:0003 HF  | •           |      |   |   |  |
|                                | Mu                                  | Iltiple Signcon  | trollers           |                       |                |              |                     |             |      |   |   |  |
|                                | V                                   | Enable Signco    | ontroller 1        |                       |                |              |                     |             |      |   |   |  |
| Simulation                     |                                     | Enable Signed    | ontroller 2        |                       |                |              |                     |             |      |   |   |  |
|                                |                                     | Enable Signed    | ontroller 4        |                       |                |              |                     |             |      |   |   |  |
| Not connected                  |                                     | , chable signed  |                    |                       |                |              |                     |             |      |   |   |  |
| Create a connection            | 6                                   | nfigure exteri   | hal device at st   | artup                 |                |              |                     |             |      |   |   |  |
| w traffic                      | V                                   | Configure RF     | module             | ->                    | LON module     | settings     |                     |             |      |   |   |  |
|                                |                                     | Configure LO     | N module (onc      | e)                    | Device addre   | ss           | 0x0801 (default)    | -           |      |   |   |  |
|                                |                                     |                  |                    |                       | Protocol vers  | ion 🛛        |                     |             |      |   |   |  |
|                                |                                     |                  |                    |                       | 110101011101   | len le       | L.16 (default)      | Ŷ           |      |   |   |  |
| Spy                            |                                     |                  |                    |                       |                |              |                     |             |      |   |   |  |
| Not connected                  |                                     |                  |                    |                       |                |              |                     |             |      |   |   |  |
| Create a connection            |                                     |                  |                    |                       |                |              |                     |             |      |   |   |  |
|                                | Traffic                             | log M            |                    |                       |                |              |                     |             |      | / | ■ |  |
|                                |                                     |                  |                    |                       |                |              |                     |             |      |   |   |  |
|                                | Severnet -                          | Configuration    | connection         |                       |                |              |                     |             |      |   |   |  |
|                                | Nr Ti                               | me               | Source             | Destination           | Command        | Flags        | Sequence Nr         | Data length | Info |   |   |  |
|                                | 1984 15                             | 0:34:10.173      | 0x9800             | 0x8800                | 0              | F            | 75                  | 0           |      |   |   |  |
|                                | 1986 15                             | :34:10.209       | 0x9800             | 0x8800                | 0              | Δ            | 76                  | 0           |      |   |   |  |
|                                |                                     |                  |                    |                       | 1.7            | 1.1.1        |                     | -           |      |   |   |  |



11. Once the adjustments have been made click on "Write configuration to device". All settings will be written in the interface controller and the unit is ready to use.

## **Testing protocol**

For testing the Protocol on the Interface Controller we will use the program Hterm which you can download from the cloud location. If possible, connect the second HC02 tool to your laptop. If not possible, close connection in the I-Config program so the Configuration tool is available for use in Hterm.

- 1. Connect the Spy cable to the HC02 Tool
- 2. Connect the blue wire to pin 1 of the protocol connector (9pin) at the Interface controller and create a wire bridge to pin 3.
- 3. Connect the blue-white wire to pin 2 of the connector, create a wire bridge to pin 4.

The program (Hterm.exe) can be started and should look like the image below (if version from cloud is taken)



Theoretically the settings should be correct already, but please recheck and make sure the Baud, data, stop and parity are exactly the same as above.



Select the correct comport number that corresponds with the HC02 configuration that you use for this and click on connect.

On the left side of the program there is a section called "sequence overview". Here I have made a script with preset price options. If you double click on the text line, A a data package will be send to the interface controller corresponding with the protocol. What is send can be seen below at the section "Transmitted Data".

#### Example:

Double click on "Sign 1, price 1 - 1100 (Shop) If all is correct then Display 1 (Port 1 side 1 or 2), should come up with "1100" Double click on "Sign 1, price 1 -???? (Shop) This should result in Blanks on the first display. Only decimal remains ON. The data package is build up as follow In ASCI written

001000??????<cr>
012222??????<cr>
023030??????<cr>
03???????<cr>
03?????????<cr>
Result
Sign 1, Price 1: 1000
Sign 1, Price 2: 2222
Sign 1, Price 3: 3030
Sign 1, Price 4: 000 (blanks)

This means that behind Type "ACS" in section **input control** you can also send something else Manually.

For Example:

Fill in: 025656???????? and press Enter (don't click the button "Asend"). Hterm will add <CR> to it. Result:

<mark>Sign 1</mark>, <mark>Price 3</mark>: <mark>5656</mark>.