Channelizer for IP and COM

Content

1   Overview

The Precisa Channelizer for IP and COM allows you to connect up to the 50 balances to one personal computer (PC). The connection can be RS232, USB, Ethernet with a cable (LAN) or Ethernet wireless (WLAN). For the Ethernet connections you need for each balance additional a Precisa Ethernet Box "wired" 350-8573, a Precisa Ethernet Box "wireless" 350-8588, a 3rd party Ethernet to RS232 converter or a 3rd party Ethernet to USB converter both available from the local market.
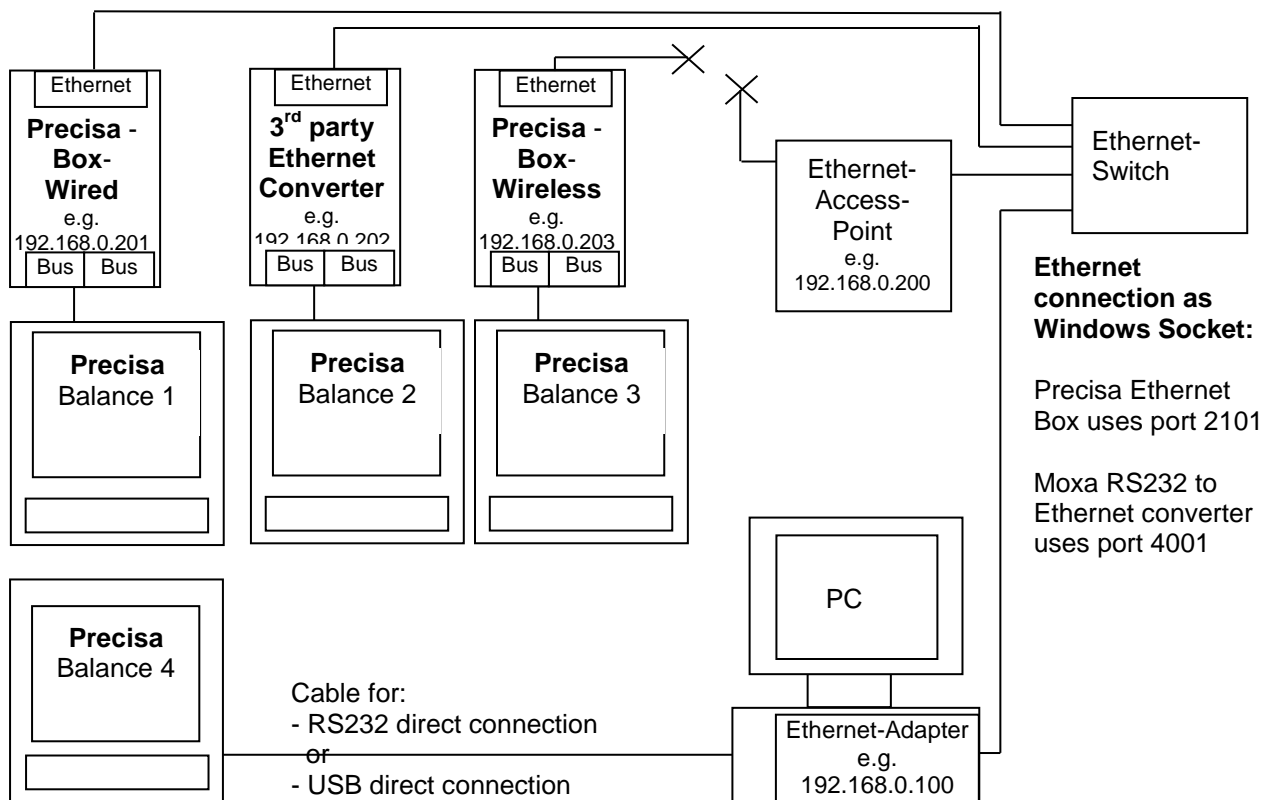
The Channelizer is normally used just to receive on a PC the data sent from a balance as a reaction of some user manipulation like e.g. pressing the <PRINT> key on the balance. All the data received form the balances connected to the PC are received and displayed in balance dedicated text windows and can be stored on the hard disk. There is no limit for the size of the data collected in such a text window.

More advanced you can also choose to request data from the balance by sending a command or repeat sending a command in a freely definably time interval. Sending one command to just a specific balance or to all the connected balances together at the same time is also supported. Last but not least the Channelizer offers to send to the balances the defined command by pressing the function key F12 on the PC keyboard. If the command "PRT" is chosen this works exactly like pressing the <PRINT> key on the balance!

Last but not least the Channelizer can forward all the received data from Channel-1 to the position where to cursor is locate in Windows. This enables you to pass the data send from the balance of Channel-1 direct into e.g. Excel or Word.

1.1   Connection with RS232, USB, Ethernet wired or Ethernet wireless

The picture below shows the connections with different components in the network.

2   Involved system components

The system may consist of the following hardware components beside any other already available network infrastructure like an "Ethernet Switch" and "Ethernet Access Point".

Component	Abbreviation used
Precisa balance	
Personal computer	
RS232 or USB cable (direct connection)	
Precisa Ethernet Box "wired" (for wired network connection)	NW-CON: as Network converter
Precisa Ethernet Box "wirless" (for wireless network connection)	NW-CON: as Network converter
3rd Party Ethernet to RS232 or USB Converter (for wired or wireless network connection)	NW-CON: as Network converter

3   Setting up the Precisa balance

Refer to the balance manual how to reach the configuration menu to adjust the interface and enable the Precisa BUS functionality.
To access the configuration menu normally, just switch the balance off, then switch it on and hold the <MENU> or <MODE> key during starting up until the menu appears.

Note:
We recommend to work in all connections with a baud rate of at least 9600.

If you connect the balance with a Precisa Ethernet Box ensure the balance RS232 interface parameters are set to:

```
SET INTERFACE  --- MODE        STANDARD
               --- BAUDRATE     9600
               --- PARITY       8-NO-1STOP
               --- HANDSHAKE    NO
```

For all other connections (RS2323, USB or with 3rd Party Ethernet Converter) just ensure the interface is matching with the settings of the PC's hardware, the PC's program or the 3rd party converter:

```
SET INTERFACE  --- MODE        STANDARD
               --- BAUDRATE     any  (default is 9600)
               --- PARITY       any  (default is 7-EVEN-1STOP)
               --- HANDSHAKE    any  (default is NO)
```

3.1   Setting the Precisa BUS functionality

If you connect the balance with a Precisa Ethernet Box ensure the Precisa BUS functionality is set to ON.
If you connect the balance direct with an RS232 cable, an USB cable or any 3rd party converter the Precisa BUS functionality needs to be set to OFF.

```
PRECIS BUS     ON           connection with PB-LAN or PB-WLAN
PRECIS BUS     OFF          all other connections
```

4   Setting up the PC

4.1   Balance connected direct over RS232 or USB to the PC

If the balance is connect direct to the PC with an RS232 cable or an USB cable just ensure the PC's interface setting and the balance interface setting are matching in terms of baud rate, parity, … .

4.2   Balance connected with a NW-CON in an existing Network to a PC

If you connect the balance in an existing network where your PC is also connected then your PC has already an IP address. Therefore you do not need to change anything on your PC.
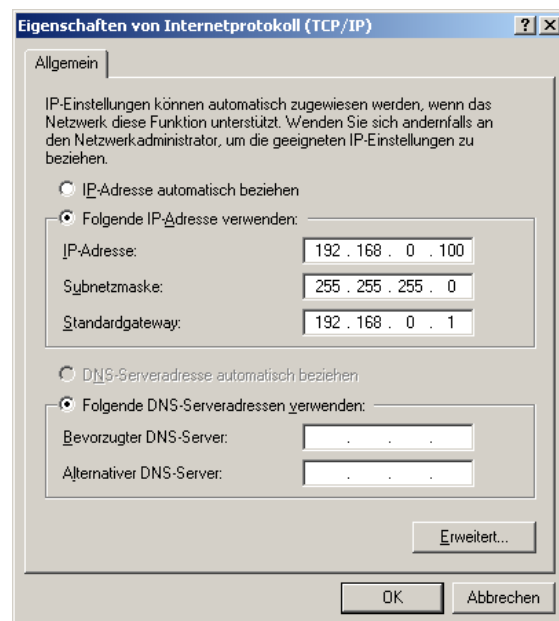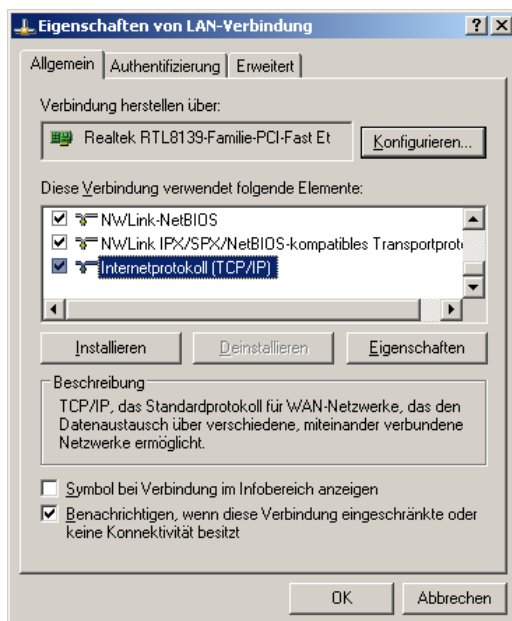Note:
Ensure the IP addresses of the NW-CON is set accordingly. Ask your network system administrator for further assistance what is the correct IP address.

4.3   Balance connected with a NW-CON with a cable direct to a PC

If you connect the balance with a NW-CON direct to the PC with a network cable you need to set a fix IP address into your PC.

Note:
Ensure the IP addresses of the PC and the NW-CON is set accordingly. Ask your network system administrator for further assistance about choosing the correct IP address (e.g. 192.168.0.100) and how to setup in your computer.

5 Setup the Precisa Ethernet Box "wired" or "wireless"

5.1 Setup the Precisa Ethernet Box "wired"

The only thing to do is to setup an IP address in the Precisa Ethernet Box "wired".

Note:
Ensure the IP address of the Precisa Ethernet Box "wired" is set accordingly to your network or PC. Ask your network system administrator for further assistance what is the correct IP address.
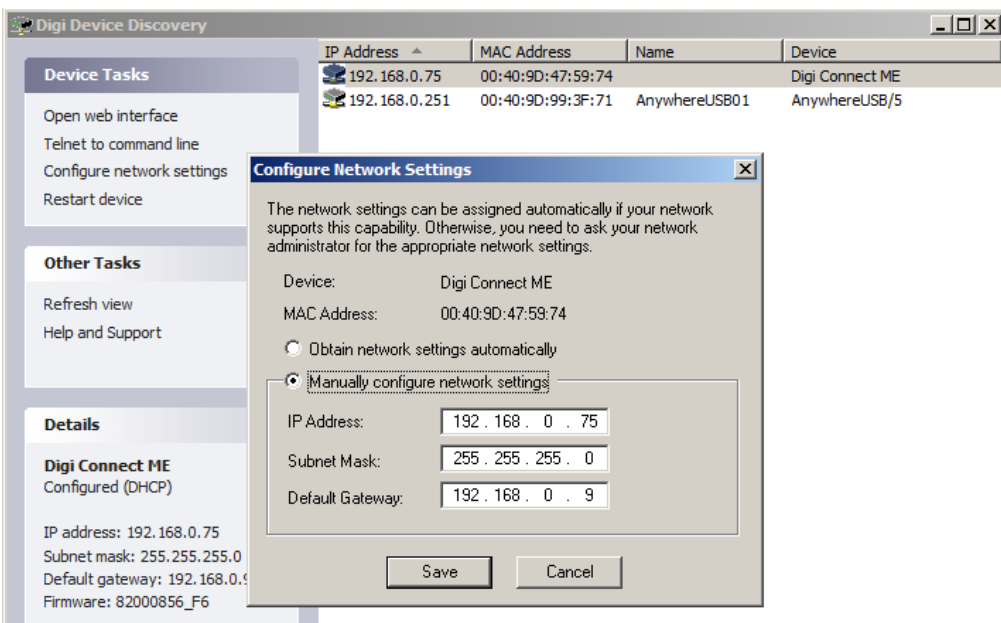
To establish a connection of the PC with the Precisa Ethernet Box "wired" follow the steps:

1. On your PC run the program "DevDscvr.exe" from the "Precisa Data Channelizer USB Stick".
   This program shows you all connected "Precisa Ethernet Boxes" in your network.
2. Search the "Precisa Ethernet Box" named as "Digi Connect ME" by pressing "Refresh view".
3. Press "Configure Network Settings" and set the IP address of the "Precisa Ethernet Box". In case a password is requested use the module specific password mentioned on the enclosure and on a sticker on the module inside the Ethernet Box.

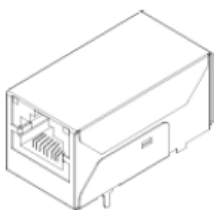**The Precisa Ethernet Box is now ready to communicate with your balance.**

Note:
Do not change any other setting by opening the web interface unless there is a good reason e.g. because of your network system or preferred protocol.

IP adress of this Precisa Ethernet Boxes is set to 192.168.0.75.

5.1.1 Diagnostic with LED

LED	Function	Status
Yellow	Network Link	Off: No network connection On: A network connection is available
Green	Network Activity	Off: No network traffic detected Flashing: Network traffic detected 3 times flashing immediate after startup: Indicates a successful startup

5.2 Setup the Precisa Ethernet Box "wireless"

Here you need to setup the Precisa Ethernet Box "wireless" have access to your wireless network and setup an IP address in the Precisa Ethernet Box "wireless".
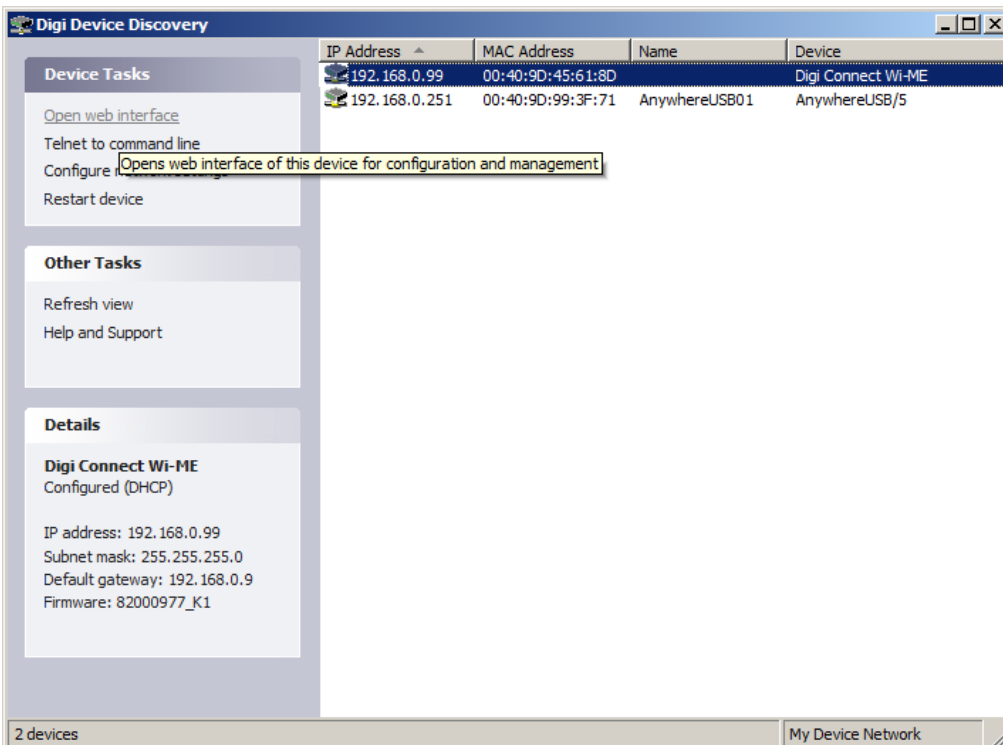
Note:
Ensure the IP address of the Precisa Ethernet Box "wireless" is set accordingly to your network or PC. Ask your network system administrator for further assistance what is the correct IP address.
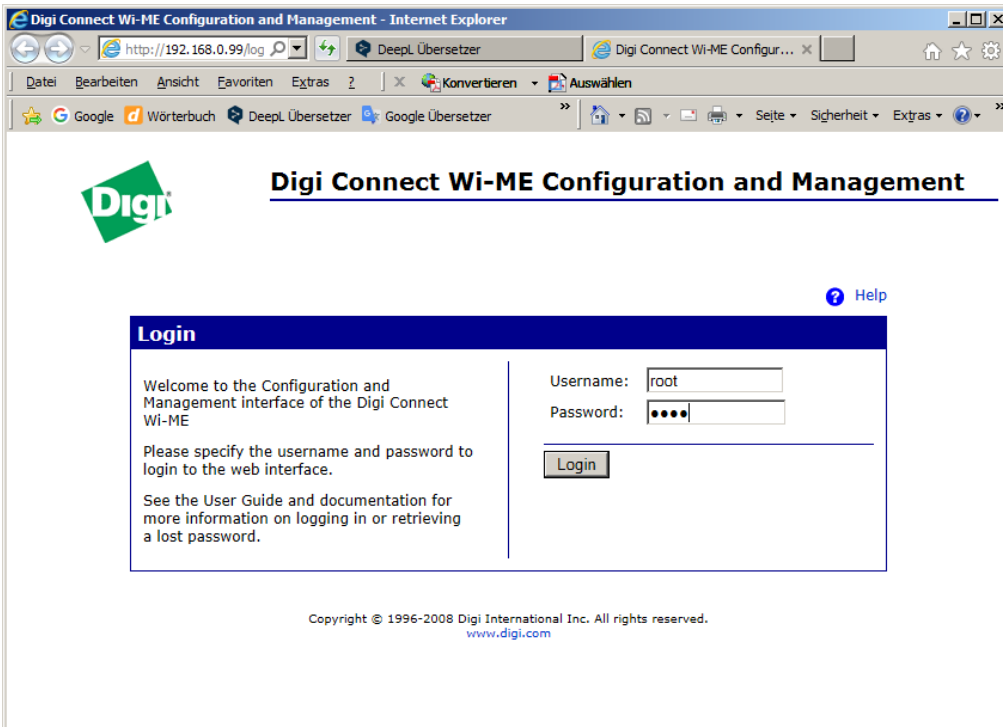
During the setup the Precisa Ethernet Box will "wireless" connect to the wireless access point what delivers the strongest network signal. This is given most of the time when the wireless access point is placed next to the Precisa Ethernet Box. After the setup the Precisa Ethernet Box will connect to the defined wireless network, independent this is the strongest network signal or not.

To establish a connection of the PC with the Precisa Ethernet Box "wireless" follow the steps:
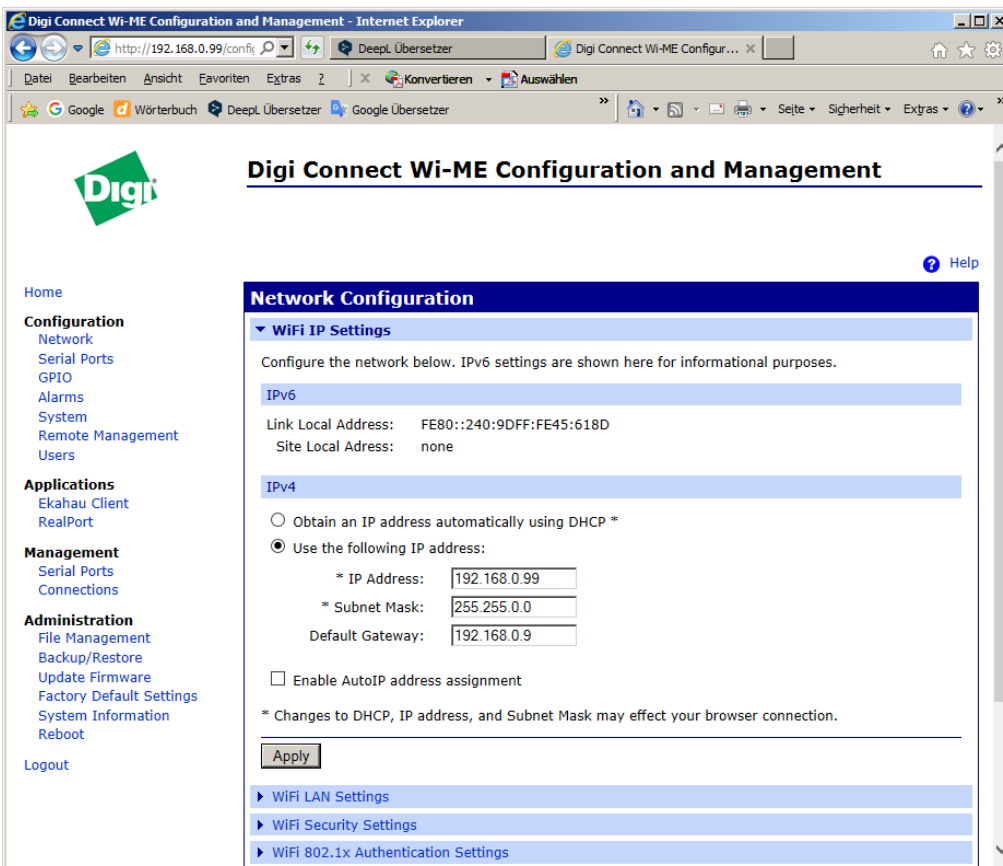
1. Set you wireless access point to:
   - Security: no (e.g. "open" or "disabled")
   - SSID: "Connect"
   - DHCP: Enable DHCP server if not other DHCP server is available in the network. Ask your network system administrator for further assistance about DHCP.
2. On your PC run the program "DevDscvr.exe" from the "Precisa Data Channelizer USB Stick".
   This program shows you all connected "Precisa Ethernet Boxes" in your network.
3. Search the "Precisa Ethernet Box" named as "Digi Connect ME" by pressing "Refresh view".
4. Press „Open web Interface" to access the "Precisa Ethernet Box" setup with user „root" and the default password "dbps".
   For newer boxes use the module specific password mentioned on the enclosure and on a sticker on the module inside the Ethernet Box.
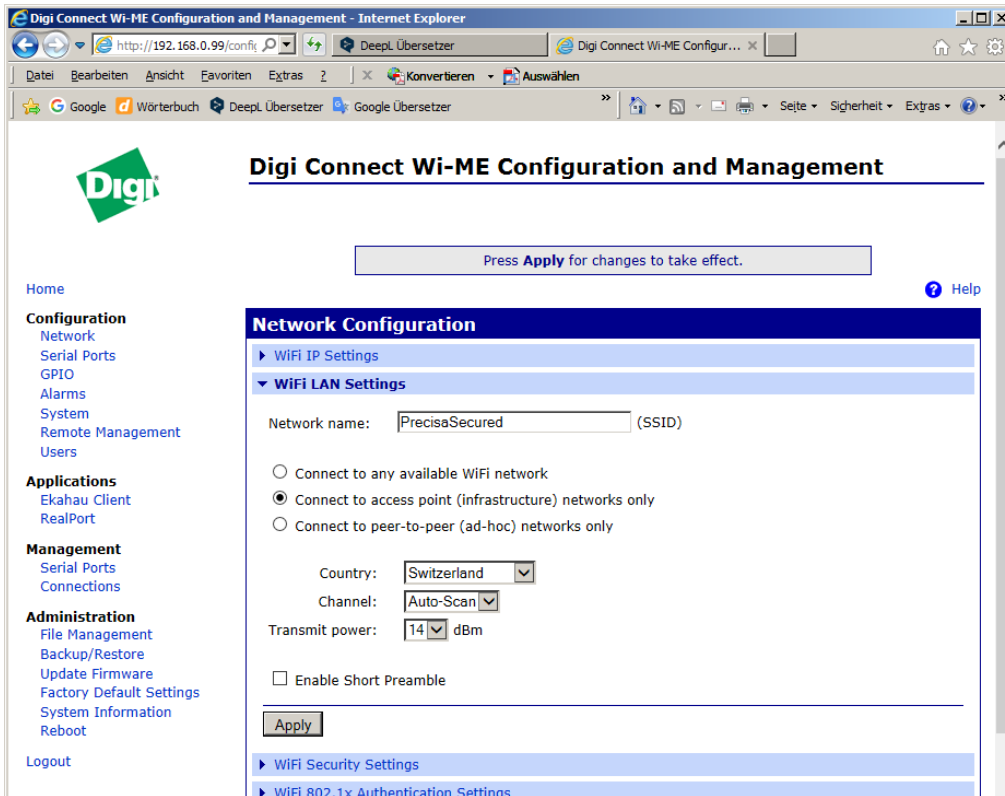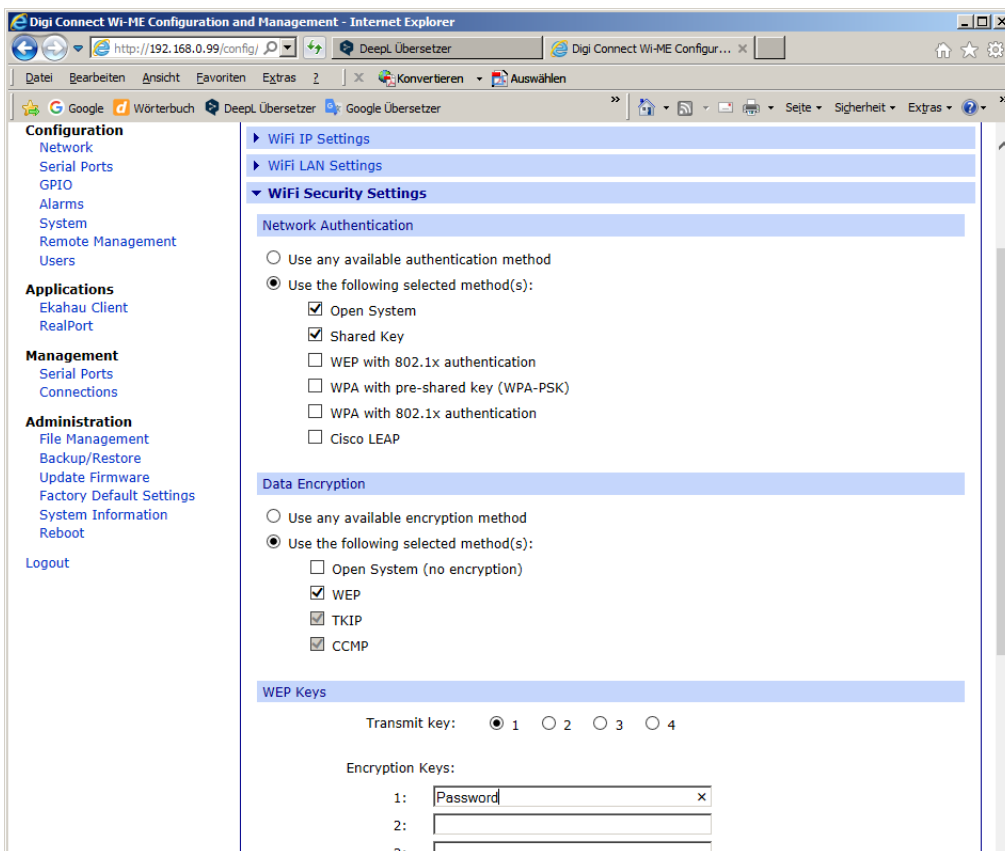5. Follow the further steps below

"Open web interface"

Login as „root" with the default password „dbps".
For newer boxes use the module specific password mentioned on the enclosure and on a sticker on the module inside the Ethernet Box.
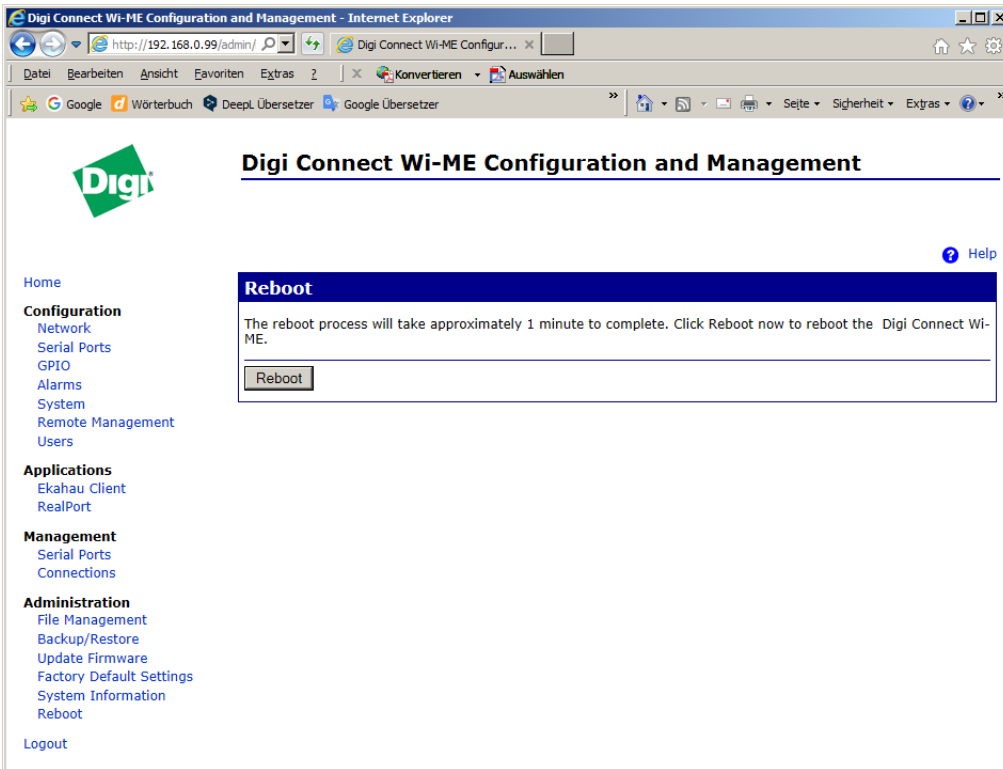

Go to "Newtork" and chosse "WiFi IP Setting" to set the IP address of the "Precisa Ethernet Box" corresponding to your network and PC. Ask your network system administrator for further assistance.

Chosse "WiFi LAN Settings" to set this parameters corresponding to your network. Ask your network system administrator for further assistance.
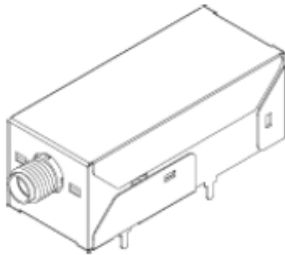

Chosse "WiFi Security Settings" to set this parameters corresponding to your network. Ask your network system administrator for further assistance.

Press „Reboot" to reboot the Precisa Ethernet Box with the new settings

The Precisa Ethernet Box is now connected to the defined wireless network and ready to communicate with your balance.
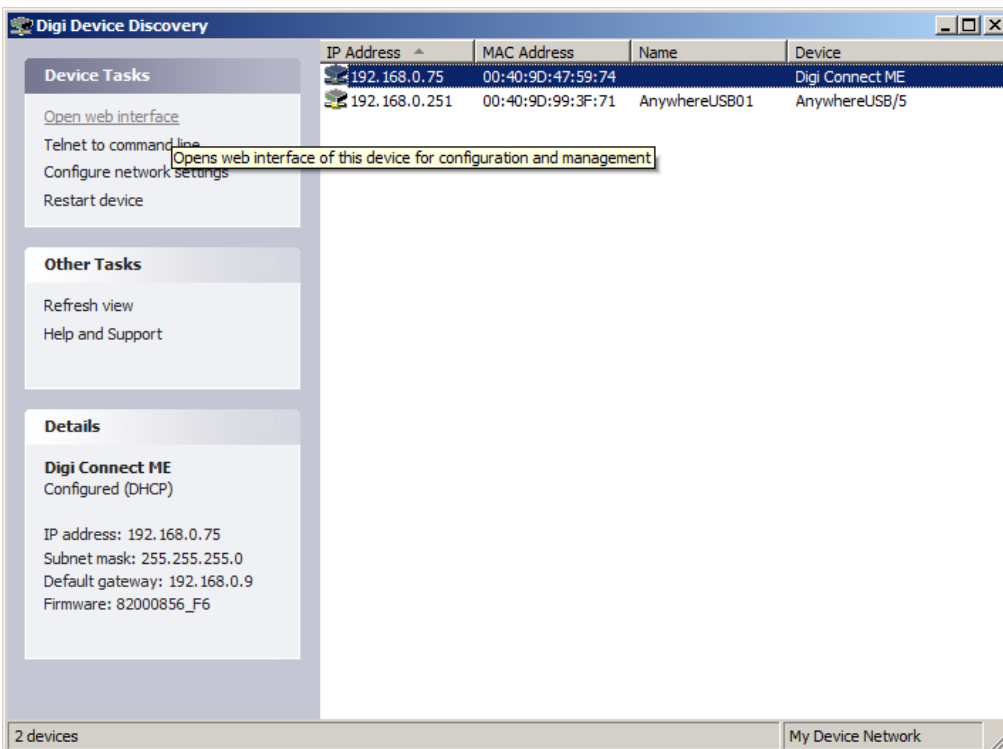
5.2.1 Diagnostic with LED

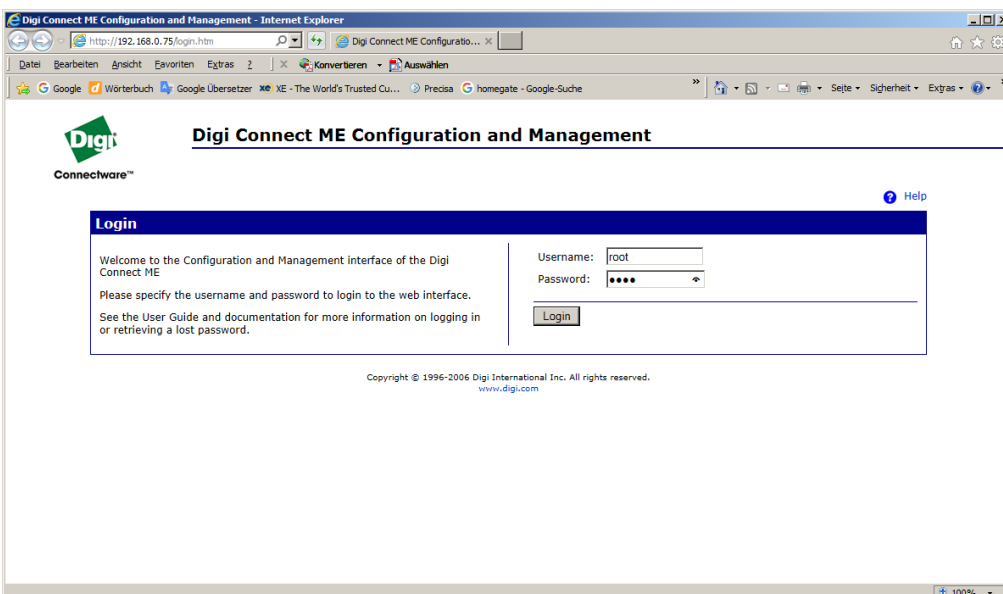| LED	Function	Status
Yellow	Network Link	On: Connected to an access point Flashing slow: Scanning for a network Flashing 3 times immediate after startup: Indicates a successful startup
Green	Network Activity	Off: No network traffic detected Flashing: Network traffic detected

5.3 Trouble shooting on the Precisa Ethernet Boxes

If the "Precisa Ethernet Box" cannot connect or the balance does not communicate follow the steps below:

1. Follow the steps as in the chapter before to "Setup the Precisa Ethernet Box wired" or "wireless" including the step to run on your PC the program the program "DevDscvr.exe" from the "Precisa Data Channelizer USB Stick.
2. Search the "Precisa Ethernet Box" named as "Digi Connect ME" by pressing "Refresh view".
3. Press „Open web Interface" to access the "Precisa Ethernet Box" setup with user „root" and the default password: "dbps"
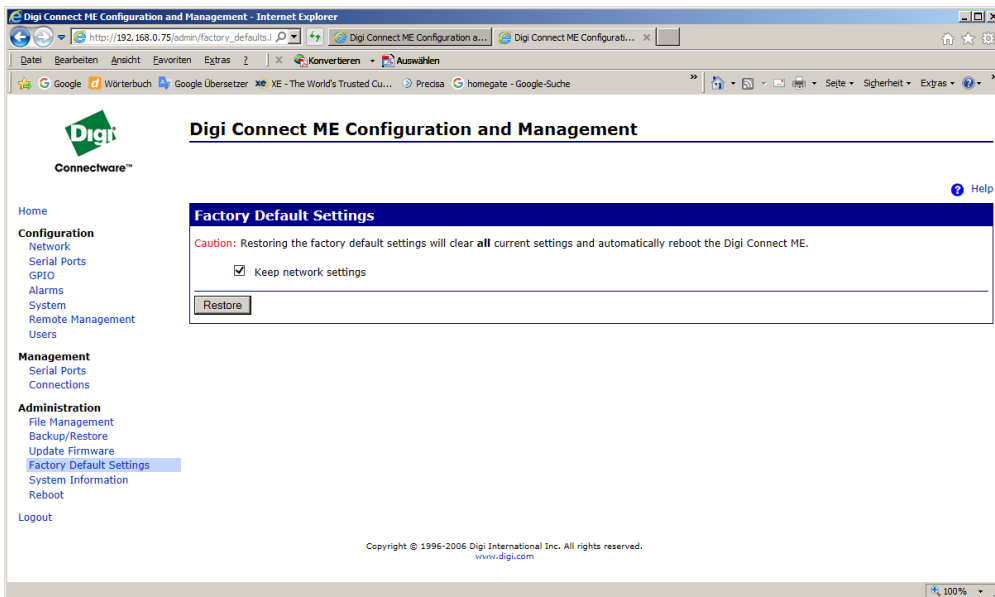4. Follow the further steps below

"Open web interface"

Login as „root" with the default password "dbps".
For newer boxes use the module specific password mentioned on the enclosure and on a sticker on the module inside the Ethernet Box.

Chose "Factory Default Settings"
Mark "Keep network settings" and press "Restore".
Wait about 2 minutes

Follow the steps in the chapter "Setup the Precisa Ethernet Box wired" or "Setup the Precisa Ethernet Box wireless".

6   Setup a 3rd party Ethernet converter

To setup a 3rd Party Ethernet Converter and it's IP address please consult the documentation of the manufacturer.

Notes:

- Ensure the IP address of the 3rd Party Ethernet Converter is set accordingly to your network or PC. Ask your network system administrator for further assistance what is the correct IP address.
- The Windows Socket port setting will most probably different from 2101 (for Precisa Ethernet Box) or 4001 (for MOXA NPort 5110A Adapter).
- The Converter must most probably set into a "TCP server mode" or equivalent.

7 Working with the Channelizer

7.1 Settings - Channels

The IP Port or COM Port settings of each channel must defined. This setting is found in the Menu "Settings – Channels". Click onto the "Settings" of a channel in the "Channel List" to reach the "Communication Settings" dialog.
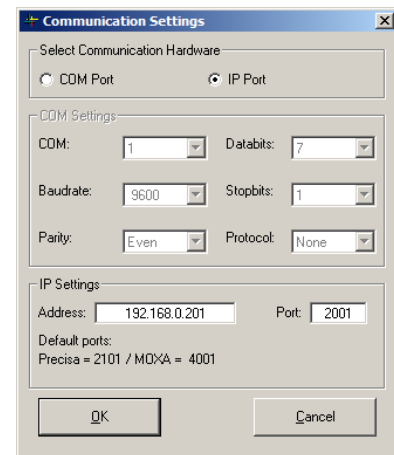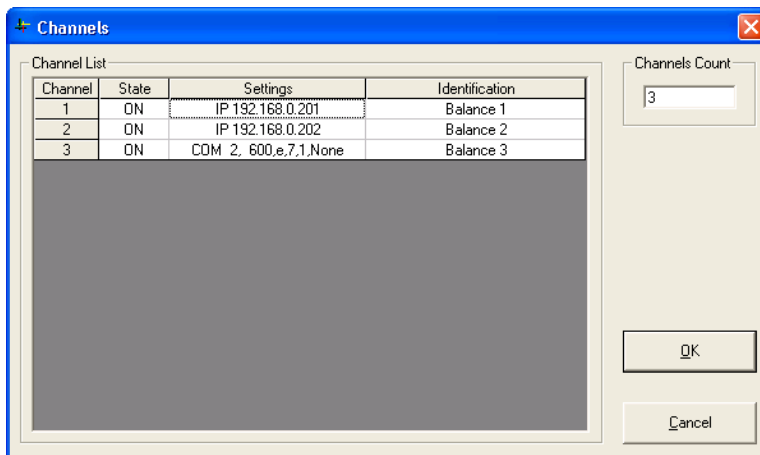We recommend to note the IP address of an Precisa Ethernet Box on the label on the backside of the Box.

Note:
We recommend to work for RS232 connections with baud rate of at least 9600.

Note:
If you use a 3rd Party Ethernet Converter the port setting will most probably different from 2101 (for Precisa Ethernet Box) or 4001 (for MOXA NPort 5110A Adapter).
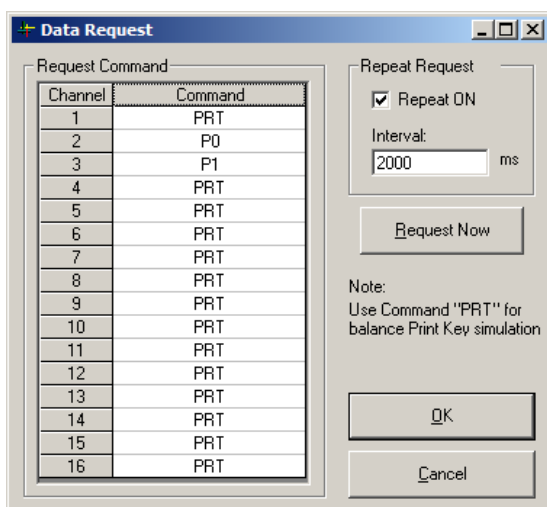

7.2 Settings - Data Request

The "Request Command" and "Request Mode" for the different balances must be defined. This setting is found in the Menu "Settings – Data Request".
Click onto the "Command" of a channel in the "Request Command List" to define the command.
With "Repeat ON" in the "Repeat Request Frame" you can select to send the command automatically every time "Interval".

7.2.1 Commands

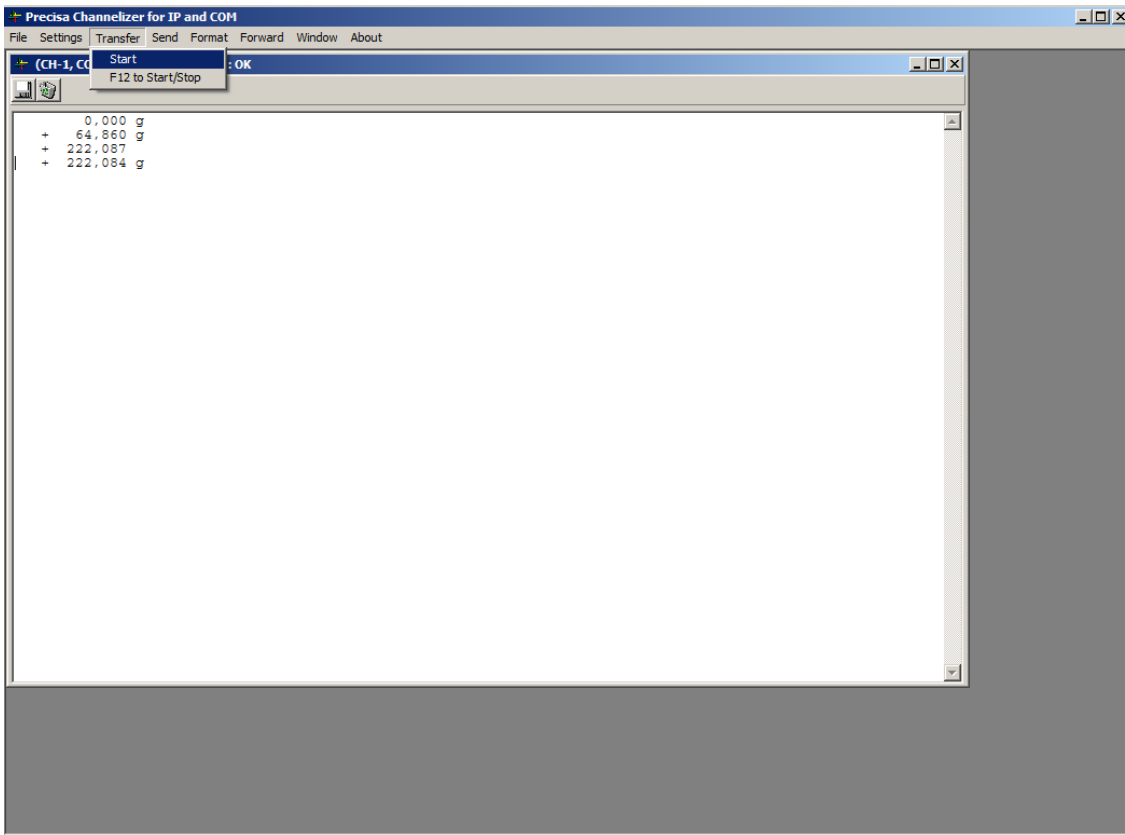"PRT": is equivalent as pressing the <PRINT> key on the balance
"P0": returns the weight of the balance immediate and independent it is stable or not
"P1": returns the weight of the balance once the weight is recognized as stable

7.3 Transfer – Start/Stop

In the Menu "Transfer – Start" you can start and stop the data transfer. The "Precisa Data Channelizer" is requesting the data form the different Channels according the setting of the "Data Request".
Start and stop the data requests with "Transfer – Start" or with F12 –what is recognized over the whole Windows system to e.g. manually start a transfer. When forwarding data to Excel make sure you us Channel-1, see also 7.5 Forward.

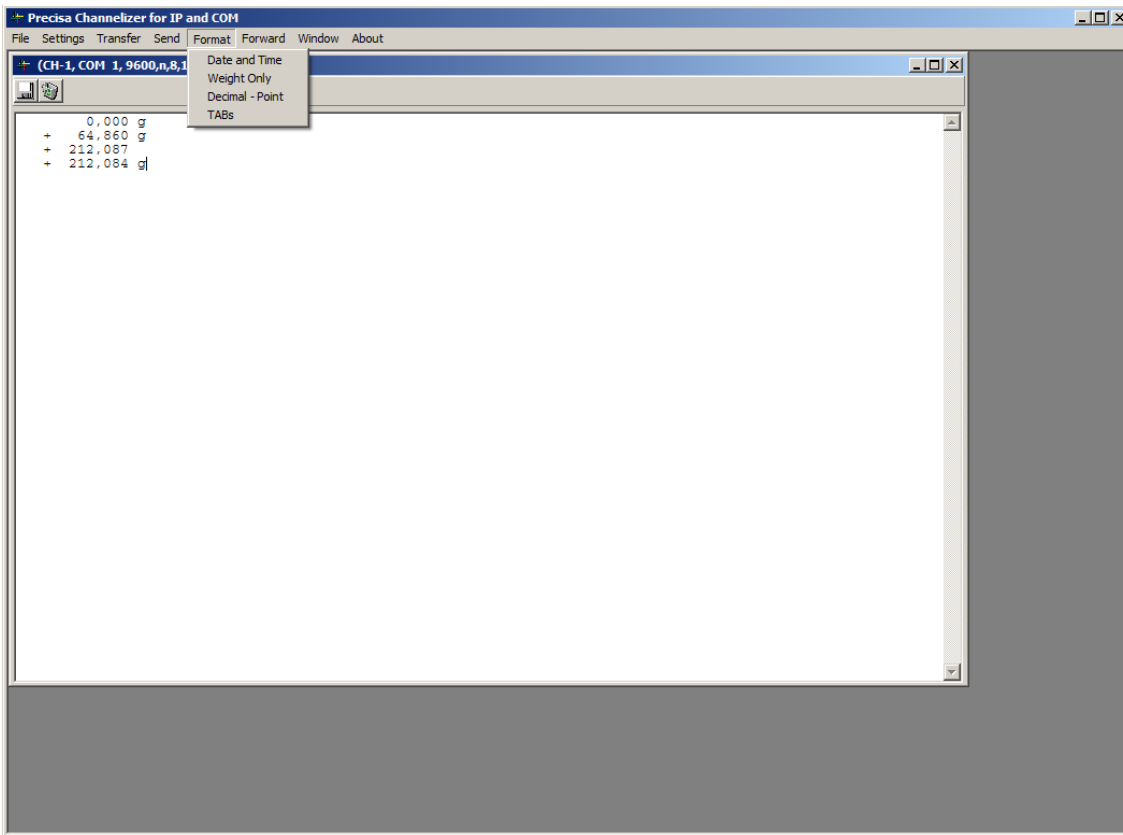Start and stop the data request

"Transfer – Start/Stop"
After pressing "Start" the PC is sending the command to each balance once or repeatedly, according the "Settings - Data Request". To stop the repeated transfer open "Transfer – Start/Stop" again.

"Transfer – F12 to start Stop"
Activate to start/stop the transfer from anywhere in Windows with the function key F12.
So you can trigger the data out from the balance by pressing the function key F12 on the PC keyboard. With the request command set to "PRT", this function is working exactly like pressing the <PRINT> key on the balance.

7.4 Format

Use the Menu "Format …" to define the format of the received data, add date and time or optimize the data for a transfer to Excel, Word or any other Windows application.

Set the fromat for the received data

"Format – Date and Time"
Each received line of data in the PC's will have the PC's date and time added.

Example:
```
30:2017 13:56:52          0,000 g
10:30:2017 13:56:57       +    64,856 g
```

"Format – Weight only"
Only numeric values are received.

Example:
```
0,000
+64,856
```

"Format – Decimal point"
The semicolon is replaced by a decimal point.

Example:
```
      0.000 g
  +   64.859 g
```

"Format – TABs"
In the received data the spaces used to separate the data are replaced with tabulators. Use this to have e.g. in Excel the different parts of the data in different rows.
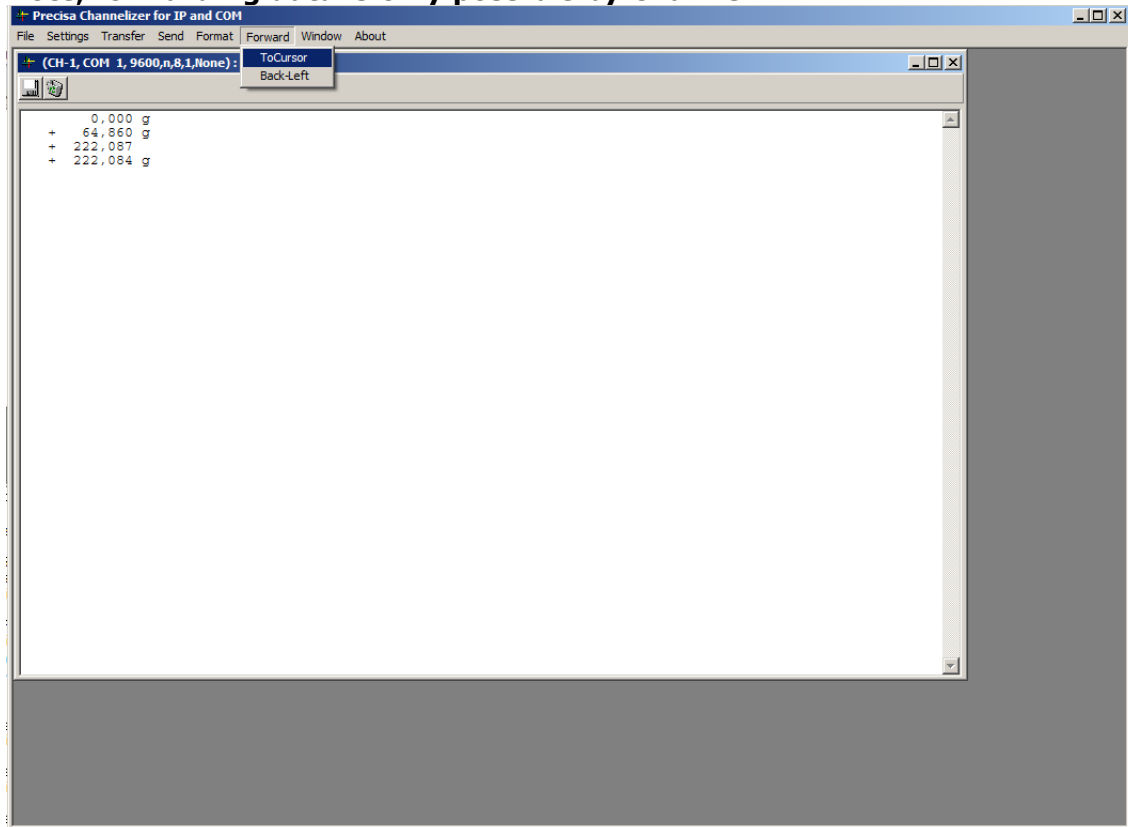
Example:
```
+    0,001[Tab]g
+   64,859[Tab]g
```

7.5 Forward

Use the Menu "Forward – …" to forward the received data of Channel-1 to Excel, Word or anywhere else in a Window system.

Note, forwarding data is only possible by Channel-1.

Forward the received data of Channel-1 to e.g. Excel

"Forward – ToCursor"

All received data is forward to the current cursor position in a Windows system.

"Forward – Back-Left"

Moves to cursor back to the left after some data has been forwarded.

7.6 Send – Send Command

In the Menu "Send – Send Command" you can send a command to a specific balance or to all balances together.

Sending "PRT" is as pressing the <PRINT> key on a balance.