

IP-Bridge

v1.11

Installation and User Manual

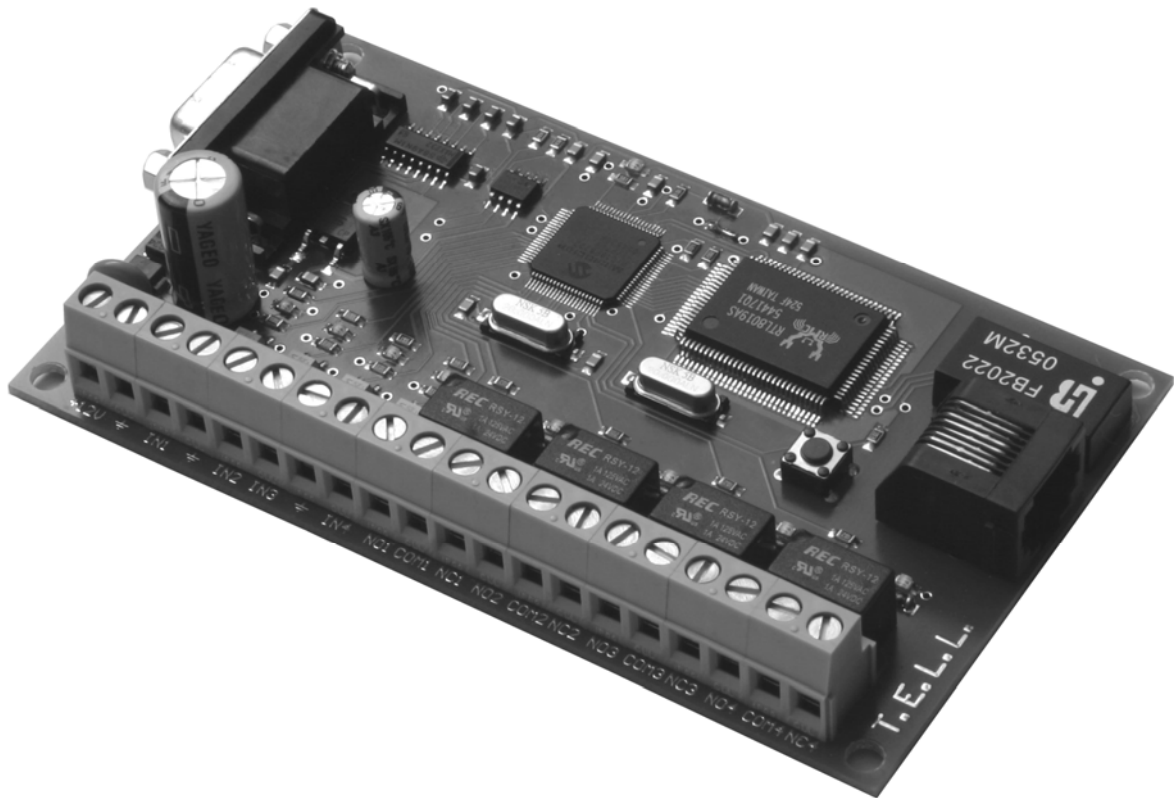


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1. Technical information

Power supply:	12V DC
Maximum power consumption:	300 mA
Operational temperature:	-20°C .. +60°C
Size:	117x68mm
Inputs:	4 pcs of contact inputs
Outputs:	4 pcs of relay outputs (independent, NO/NC)
Serial port:	RS-232 serial port (DB9)
IP connector:	RJ45
Proposed complementary device:	ADSL router

2. The task of the device and areas of use

IP-Bridge modul can be connected to the internet; it is a controlling, supervisory device that can be reached through a Web surface.

Through the Internet the 4 relay output can be remote controlled and the state of the 4 contact input can be enquired.

With the use of IP-Bridge, devices that can be connected to serial port*, can be reached and controlled remotely through the Internet the same way like they were connected to the computer's physical serial port.

The device is suitable to use in all those places where continuous Internet connection is established. (e.g. DSL internet)

Areas of use:

- Remote control programming and inspection of TELL GSM devices.
- Controlling, turning on/off other remote automation devices, checking sensor signals.
- Home automation (e.g. turning on/off heating)
- Office applications, e.g. turning on / off computers through the Internet for establishing "Remote desktop connection".

* For restrictions referring to devices to be connected to serial port, see chapter 7

3. How to install the modul

3.1. How to install inputs

The 4 pcs of inputs (IN1, IN2, IN3, IN4) get activated by closure to GND. LEDs at the inputs also signals active state.

3.2. How to install outputs

The panel has 4 pcs of independently usable relay outputs (NO/COM/NC).

Relay capacity: 24V / 1A

If the relays on the panel are used to control a bigger relay, make sure to connect a diode parallelly with the big relay's coil to avoid current pushback.

3.3. Serial port connection

Standard serial port (RS232) to PC connection, or external device (connectable to PC) with serial port for control.

For connection, use "**DB-9 to DB-9 Male to Male NullModem Adapter**".

3.4. Installation of power supply

Power supply: 12V DC

For appropriate operation the panel requires continuous power provided by a power supply equipped with accumulator .

Make sure to power on the device only after everything has been installed and there are no hanging cables around.

Ascertain that there are no metallic contact or litter on or under the panel.

4. Selecting IP address, restore of original setting

The module's local IP address can be set in two steps:

- By reloading default setting the module's IP address can be changed to 192.168.1.199 or 192.168.2.199.
- If the module's webpage can be reached, there any IP address can be set as to '6. Possible alternatives of setting the module'.

To reset to defaults, proceed as follows:

- Power on the module
- Hold down the push button.
- Within 5-6 seconds the LED starts blinking slowly
- If then the push button is released, the panel gets back to default setting, and its address will be 192.168.1.199. Furthermore, the password restores to 1234.
- If the push button is not released, within a further 5-6 seconds LED starts blinking faster.
- If the push button is released now, the panel gets back to default setting, and its address will be 192.168.2.199. Furthermore, the password restores to 1234.

Note: When selecting, adjust to the local network router's sub-network address (E.g. if the router' address is 192.168.1.1, select the suitable 192.168.1.199 address, that is in the address the third figure has to be the same)

If the subnet address is different, it has to be set through the module's webpage as it is described in '6. Possible alternatives of setting the module'.

After resetting the module, you can reach its web page, where you can change to any desired IP address. It is necessary if your subnet is not 192.168.1.xxx nor 192.168.2.xxx

This case, if eg. the subnet is 192.168.5.xxx, first you will need to change your computer's IP address temporarily, to match the default setting, (eg. set it to 192.168.5.100). Otherwise you will not see the IP-Bridge module's web page, if the computer's and the IP-Bridge's IP addresses are not in the same subnet range. After reaching the web page and setting the desired new local IP address for the IP-Bridge, match the subnet, you have to restore the original IP settings of your computer.

5. Putting the panel into operation

After the installation of the inputs/outputs and the power supply, connect the module to the ROUTER or HUB of the local computer network.

Open Internet explorer on one of the computers then enter 192.168.1.199 (or 192.168.2.199) in the address line.

If the module's IP address does not correspond to the local network address (the third number does not correspond) the module's webpage cannot be displayed.

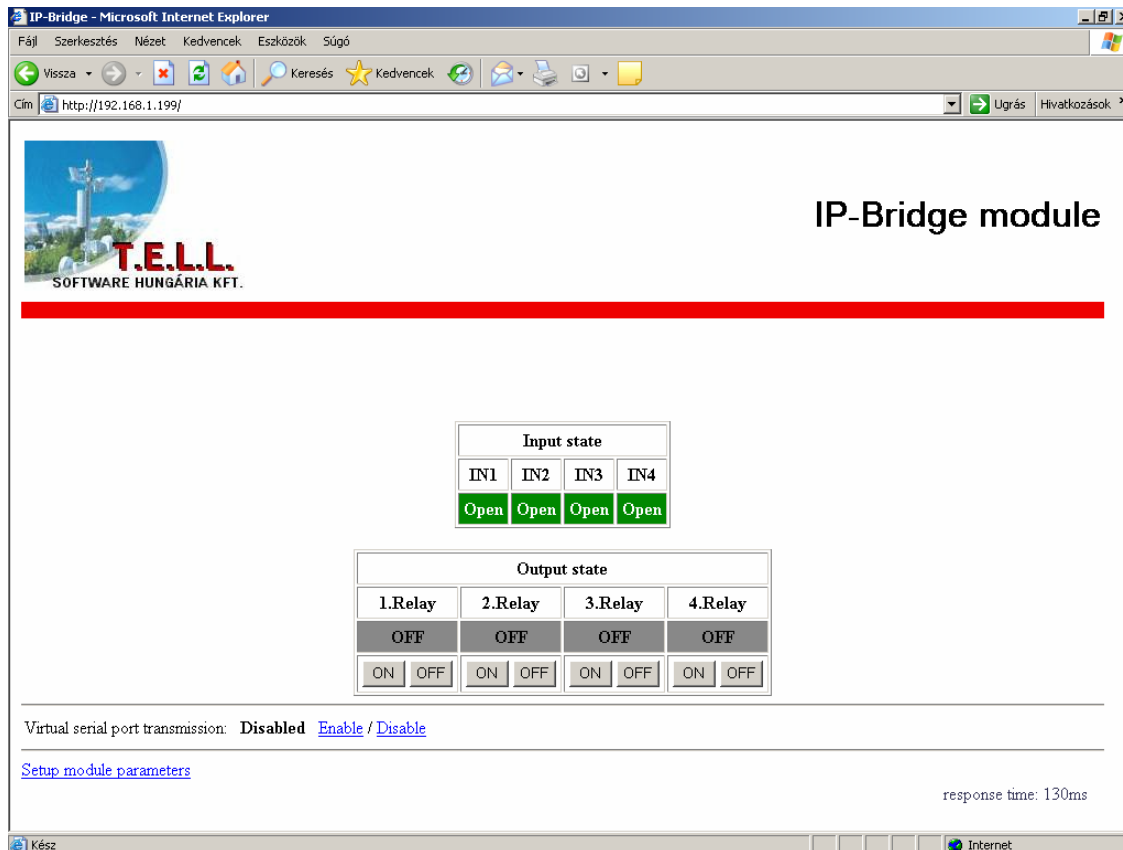
In this case it is necessary to change the computer's IP address temporarily in a way that the third number marking the subsystem should be the same as the IP address' third figure set on IP-Bridge module (that is it should be either 1 or 2)

If the module is correctly connected, and the module's and the computer's IP addresses are in the same subnet range, the following webpage will appear.



Enter the password (default is 1234), then click on "Login".

The following window will appear.



In this window the four inputs' state can be viewed and the four output relays can be turned on and off.

For more secure operation it is recommended to change the password by clicking on "change password".

Enabling/disabling of "Virtual serial port" is necessary for chapter "7. Remote control of serial device".

6. Possible alternatives of setting the module

On the above screen, clicking on "Setting the module's parameters" the following window will appear.



IP-Bridge module

IP-Address:	<input type="text" value="192.168.2.199"/>	(default: 192.168.1.199)
HTML port:	<input type="text" value="80"/>	(default: 80)
Virtual serial connection's port:	<input type="text" value="23"/>	(default: 23)
Enable 'NVT protocol' for virtual serial port (autobaud) :	<input type="checkbox"/>	
Serial port's default baudrate:	<input type="text" value="19200"/>	
	<input type="button" value="Submit"/>	

On frequent use it is recommended to [Change Password](#) sometimes for more secure operating.

[Back](#)

In the first line you can set the module's desired local IP address.

Note! After rewriting the IP address and pressing the 'Submit' button the module restarts and will immediately be available on the newly set address. If e.g. you have changed the modul's subsystem address (third figure) and it does not correspond to the (third) figure of the IP address subsystem set on the computer, the computer is unable to display the page until its address is adjusted to the module's address.

Example: If the computer subsystem, where IP-Bridge will be installed, has subsystem address no 5, that is your computer's local IP address is e.g.

192.168.5.102, you have to proceed as follows:

- by loading default setting, set the module to 192.168.1.199 address
- temporarily change the computer's IP address to e.g. 192.168.1.102 (Start / Settings / Network connection / Local connection / Properties / TCP-IP / Properties / IP-address)
- Open 192.168.1.199 address in Internet Explorer
- Enter 1234 (password) and in the appearing window click on setting
- In the appearing 'Setting' window enter e.g. 192.168.5.199 address in the IP address field
- Click on 'Validate'
- Restore the computer's default IP address (e.g. 192.168.5.102)
- Check if the module can be appeared at the new 192.168.5.199 address in the Internet Explorer.

If you wish to install more modules to one network, set their IP address in a way that they should differ in their last figure.

Here you can also adjust HTML port and serial device access port on the virtual serial port. See: *8. Remote control of serial device*.

Note! If HTML port is not set to the default 80 but e.g. 81, you can refer to the page in Internet Explorer by entering 81 after the IP address (e.g. 192.168.1.199:81).

Further settings relating to serial port are dealt with in *8. Remote control of serial device*.

By clicking on 'Change password' you can change the password.

7. Setting router

Some terms are necessary to be fulfilled so that IP-Bridge should be reached from anywhere on the Internet:

- The module shall permanently be connected to the Internet
- It is necessary to know its existing external IP address (fix IP address or DynDNS address)

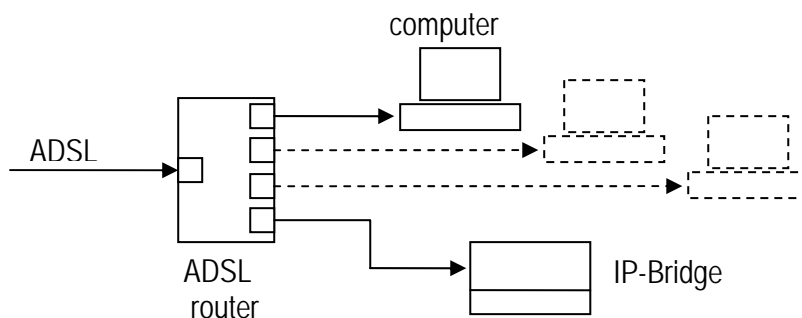
ADSL is the most frequently used permanent Internet access.

In case of ADSL, an ADSL router is necessary to proceed the above tasks.

The task of ADSL router:

- It divides ADSL connection between one or more computers and the IP-Bridge.
- It assures continuous connection with the internet provider. If connection fails for some reason ADSL router gets connected to the net again.
- It can be set to handle dynamic DNS addresses

You need to have some experience to set the settings below, and they can vary by router types. If necessary, ask a computer expert for advice.



1.figure Installation of ADSL router

7.1. Setting permanent Internet connection

ADSL router can be set through „internet explorer”.

Write the router’s address into „internet explorer” (most frequently 192.168.1.1 or 192.168.2.1 however you can find it in the router’s manual)

A window appears asking for the password, where the administrator password is to be entered. (Router’s Manual contains the default, which is e.g. 'smcadmin' in case of SMC routers)

In the appearing menu you have to find where to enter login identifier and password provided by ADSL provider, which is necessary for automatic login. E.g. in case of SMC router these details have to be entered under 'WAN / PPPoE / More configuration'.

7.2. Setting port redirection

It is necessary to redirect the ports used by IP Bridge so that the router should be aware to forward packets towards the IP Bridge in case of external access.

Find NAT in the router’s menu and direct the incoming TCP ports below to the IP Bridge address (eg.192.168.1.199):

port 80 : to contact the web surface of IP-Bridge externally

port 23 : to contact virtual serial port described later

port 8989 : port necessary to remote program TELL devices (cannot be changed)
(see. E.g.. GSM-Ultimate Remoter v1.30)

7.3. Setting dynamic IP-address

It is necessary to know the modul’s external IP address to reach IP-Bridge remotely any time through the Internet.

Since most ADSL services do not consist of a fix IP address, it is inevitable to use dynamic DNS service. This kind of dynDNS address can be registered free for example, on www.no-ip.com (No-IP Free), or www.dyndns.org.

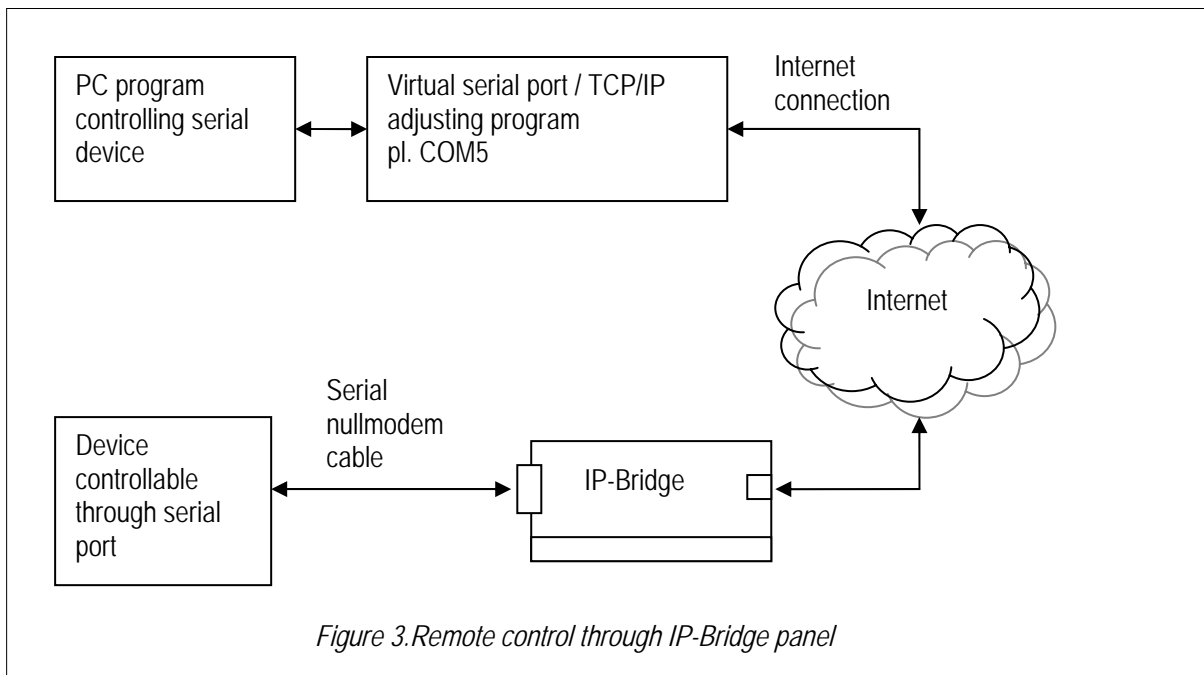
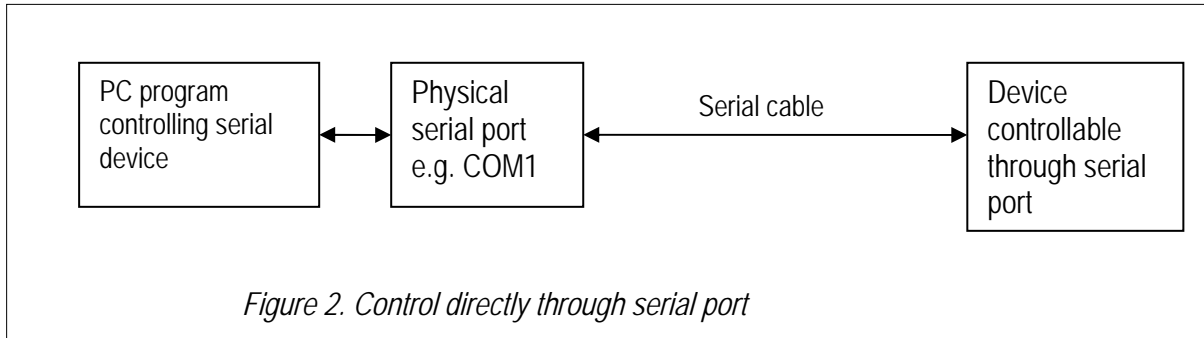
Here you can create e.g. a *username.sytes.net* address.

If username and password are appropriately set in the router, dynDNS service makes it possible that e.g. referring to *username.sytes.net*, router as well as IP Bridge can be reached at any time.

Find DDNS or dynDNS in the router’s menu, where the chosen DDNS provider, the received username and password (e-mail address) can be entered.

8. Remote control of serial device

Devices that can be controlled from a computer through serial port can be remote controlled and accessed through the Internet by means of IP-Bridge. For this the below mentioned virtual serial port program, which creates a TCP/IP connection between the remote IP-Bridge panel and the program for controlling serial device, is necessary.



To use virtual serial connection first this function has to be enabled on the webpage of IP-Bridge:

On the figure seen in chapter "5. Putting the panel into operation" click on "Enable" next to "Virtual serial port".

The remote device can be reached through the created virtual serial port described in the next chapter the same way like it was connected to the local computer's physical serial port.

After use, close virtual serial port program and by this TCP/IP connection between the computer and IP-Bridge will be disconnected as well.

It is recommended to disable **„Virtual serial connection"** on the webpage of IP-Bridge to avoid unauthorized use.

Remote serial port contact has a few restrictions:

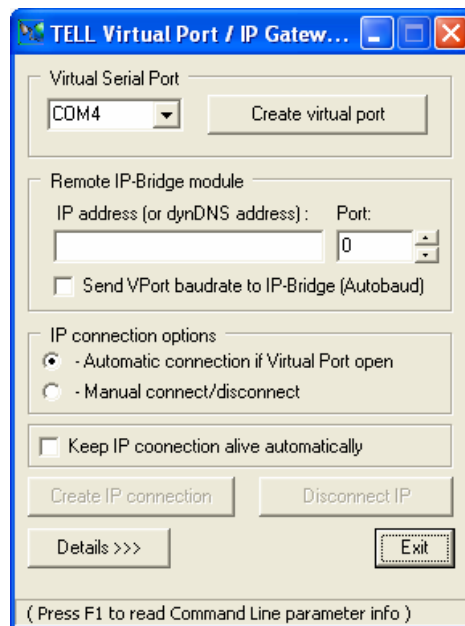
- Serial port of IP-Bridge supports the following speed:
2400, 4800, 9600, 19200, 38400, 57600, 115200 baud
- It does not handle serial port modem's controlling signals (RTS,CTS,
DTR,DSR)
(In case of devices requiring controlling lines, re-installed controlling lines by
the device's cable according to null-modem installation can solve the
problem.)
- At the same time only one computer can be connected to IP-Bridge serial port
remote contact.
- Depending on Internet connection, connection speed and other technical
conditions, delay and slower operation can be experienced in the serial
connection like in case of direct serial port connection

8.1. Programming „VPort2TCPIP.exe” virtual serial port program

„VPort2TCPIP.exe” virtual serial port program can be downloaded from www.tell.hu.

At opening, it checks whether the necessary virtual serial port program component is installed. If it is still not installed, it offers to do it and within a few seconds does the installation.

The following window appears when starting the program:



Choose a so far not used COM port serial number, enter IP-Bridge module's IP address or dynDNS address, set the port (this has to be the same as the port number set in section 6. *Possible alternatives of setting the module.*)

You can select whether you wish to establish or disconnect IP connection manually or they should occur automatically when the virtual port is opened or closed.

By enabling NVT protocol, at opening virtual serial port, the program forwards at what speed (baud) the port has been opened and IP Bridge will set serial port speed accordingly. (If you enable NVT protocol here, you need to enable it on IP-Bridge module too in the window seen in section 6. *Possible alternatives of setting the module.*)

If you do not enable this, you need to set that too on both sides, and in this case you need to set serial port speed fix on IP-Bridge side.

After the settings, click on 'Establishing virtual port' button, and select the established COM port on the serial device's driver. (If you have chosen manual IP connection, also press „establishing IP connection” button.)

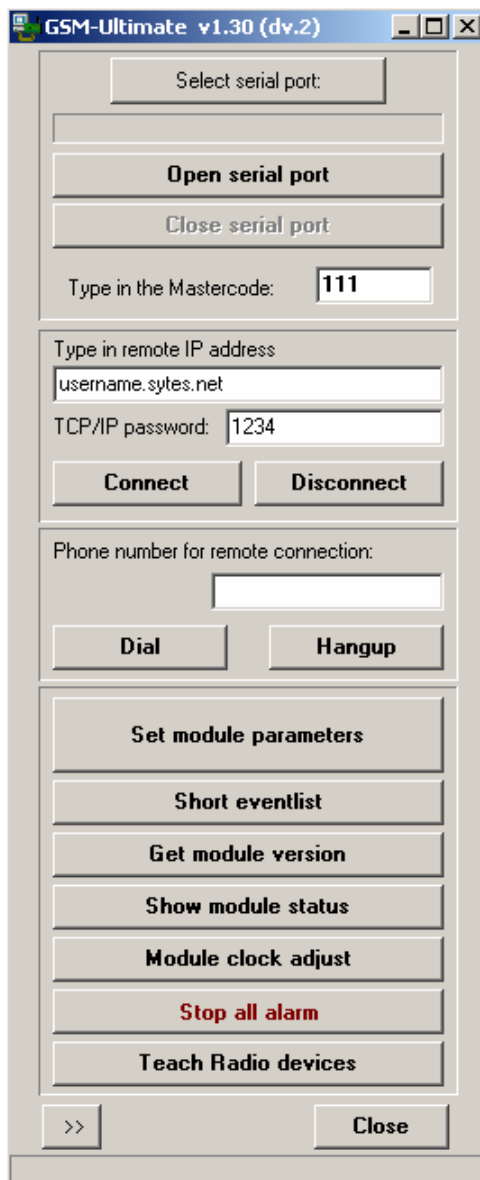
After these settings, the remote device can be operated the same way as it would be connected to one of the physical serial ports of the computer (with the above mentioned limitations).

9. Remote control program and inspection of TELL GSM devices

The newer remote control programs of TELL GSM devices contain TCP/IP connecting surface for remote control program and inspection through IP-Bridge. IP-Bridge module connected to serial port of TELL GSM device connects to “Remoter” program similar way as it was described in earlier parts of the Manual with the difference that it is not necessary to use virtual serial port here. “Remoter” programs are able to handle direct TCP/IP connection.

“Remoter” programs get connected to TELL modules by using a password protected encoding procedure.

In the example below the necessary settings can be viewed in “GSM-Ultimate v1.30 Remoter” program.



- In case of using IP-Bridge it is not necessary to select serial port
- It is inevitable to specify:
 - o Installation code
 - o IP address or dynamic DNS name
 - o IP-Bridge module's password
- By clicking on “Login” connection is established the same way as in case of serial port connection.

10. How to reach the module through WAP

With the help of a suitable mobile phone the modul can be reached remotely, its inputs can be inspected and outputs controlled through WAP.

To be able to do this the driver of IP-Bridge has to be downloaded through the mobile phone's browser or on www.tell.hu/eng/wap.wml in 'download application'. (about 25Kbyte)

Starting the program on the telephone the module's IP address (e.g. its dynDNS address, which can be established as to 7.3. Setting dynamic IP-address) and the password have to be entered.



As to mode of connection you can choose from two alternatives:

- **continuous connection:** The program enquires about the module's state in 2-3 seconds so the change in inputs can be followed continuously. (Data flow in this case is about 12 Kbyte/minute)

- **economical mode:** In this case the mobile requests data only when you move with the right, left arrows or when the relay outputs are switched on and off with the up and down arrows. The program restores to pause mode within a few seconds this is shown by the dotted lines on the graphic. So even if the program runs on the phone for a longer time it will not generate a great data flow. In this case, naturally the change of input mode can only be seen if you start data flow with the above mentioned buttons.

By choosing back you can reach the graphic surface:

In case of 'economical' mode press right or left button to establish connection.

At the top of the graphic surface input state and below it relay output state can be viewed. You can select between relay output switches by means of the right and left arrows. The selected switch is signalled with a thickened frame. The selected relay can be turned on by means of the up button and turned off by means of down button. The output reacts with a little delay after being turned on or off and the belonging red signal shows the change only if that really has happened on the module.

The driver has primarily been prepared for Nokia telephones, and though due to its general layout it also operates on various other telephones, however because of the differences among the telephones you can get sure by trying it first.

You can enquire about necessary WAP settings from your mobile telephone provider. In case of certain telephones it is sometimes necessary to set a proxy server address for the operation of the program. Due to WAP limitations, only modules set to 80 HTML can be reached with the program.