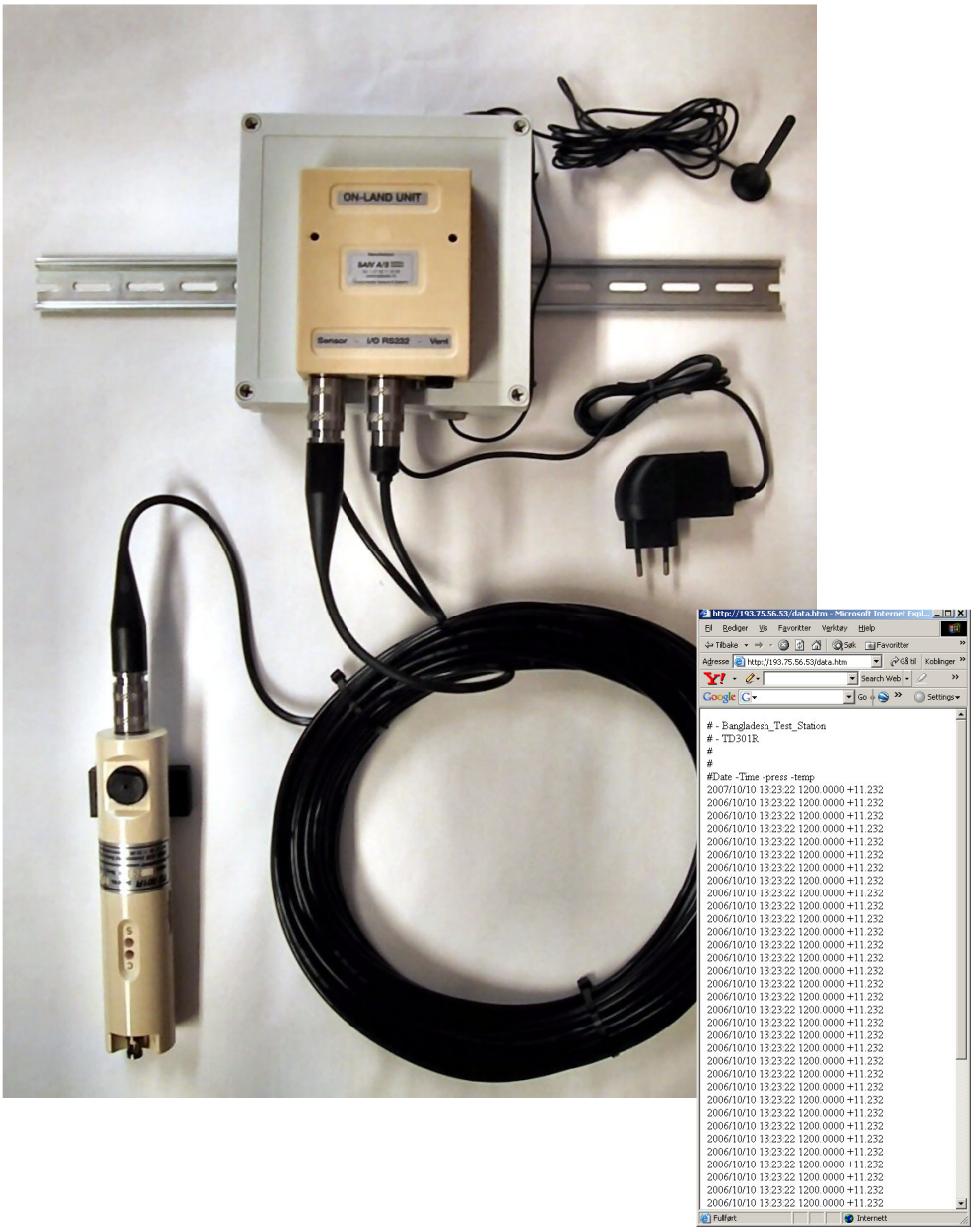
Communication Unit
CU801_WEB_server
Based on version 309 ex fd and up.



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Contents:

Get started:
.....4
About CU801:.....5
Specifications:.....5
Unit 2: CU801_webserver.....6
Connect to the Cu801 internal index.htm webpage.....6
Config: name change page.....7
Change number of lines (default 10).....7
Set time:.....7
Set Date:.....7
Initiate the Instrument:.....8
Data.htm page:
.....9
Direct communication with the Instrument:.....9
To open connection:.....9
Hidden menu:.....9
Screen shot Minisd200w:.....10
Direct data collect with Minisoft sd200w:.....11
Graph view and Alert (e-mail/sms).....12
External and Internal FTP setup: CUF.....12
Internal FTP:.....13
FTP File Format:.....13
Adding more sensors:CUS.....13
Intervall: int.....14
Change IP address on Cu801:.....14
Unit 3: GPRS/LTE router.....15
NAT configuration / already done from manufacturer. 16
APPENDIX:.....17
Connect via cross over cable:.....17
Cu801:.....17
Router:.....17
Connect all at same time:.....17
Public IP:.....18
DynDns:
.....18
SMS under services:
.....19

Get started:

Normally there is now need for changing any settings to get the system up running:

Check list:
1.
If the system is not deliver with power (battery or adapter) Supply the system with DC power 10- 30 voltage, total continuous power consumption is 3 watt.

2.
If network SIM card is not installed by manufacturer. You will need to order a SIM card from a local supplier and insert this card in the slot for SIM card. See "**Unit 3 GPRS/LTE**" and APN and Appendix for connecting via local network cable.
When sim card is connected system should work without any further settings. Default sends data to ftp://station.saivas.net user: (station nunber/name)pass: cu801
and internal FTP. 192.168.1.1, user: root, pass: cu801

3.
Data sending to exsternal FTP is by default set to a specific folder at SAIV AS FTP server. Address for this location is described on the product label. For changing this: See "FTP setup"

4.
Data sending to internal FTP is by default enabled and there is a 32Gbyte USB memory pen for storing data. Folder in root has to be /ctd
"Version 906ex fd" is only sending data to ctd folder, RDCP and sonar have not internal FTP ability yet.

When check list is completed.
Turn power on and use the Mag-Key to swipe the start and confirm label on the instrument.

About CU801:

The CU801_WEB server is a unit for displaying data on a web page, based on measurement from SD204/208 and Td30xx station delivered from SAIV AS. Also able to add RDCP, OX sensor from AADI.
For access form World Wide Web (WWW) the CU801_WEB server has to work together with a network router. The router can be a GPRS/LTE router for places without cable or ADSL router with cable.
The GSM/GPRS system has worldwide coverage with limitations. Normally areas without coverage are fare from coast line(about 5-10 km), high mountains and other none populated areas. The coverage area can be checked on numbers of web pages.

The CU801_WEB need constant power. About 120mA. Replaceable built-in back-up battery will support the real-time clock if external power is interrupted or not connected. The programmed set-up will not be lost, even if the back-up battery is removed/discharged, only the real-time clock have to be set after change of back-up battery.
Each CU801_WEB can be programmed from a web configuration page. Configurations options are station name, time, date, and also start/stop initiate on connected instrument.

The CU801_WEB server uses TCP/IP(Transport Control Protocol / Internet Protocol) number 192.168.1.2 gateway 192.168.1.1 network mask 255.255.255.0. It can be accessed from any browser on a LAN network without router; (only a hub/switch or crossover cable, the IP of your computer need to be in the same number series for example: 192.168.1.3) Address line in browser is in this case 192.168.1.2/data.htm.

Specifications:

Dimensions: CU 801_WEB
Length 111mm. Wide 72 mm Heigth 33 mm

Weight: 130g

Power: 10-24 VDC 1,5 – 2 Watt

Data I/O: 6 - RS232 ASCII code.
Baud rate: 9600-115200
7data, 1 , even parity
8data, 1 , none parity

100 BASE-T Ethernet.

CPU : 16 bit , 80 Mhz , boot time 1 sek.

Model: µPAC-7186EX-FD

The system has tree units that have to work together.
SD204/208/TD301 <-> CU801_WEB <-> GPRS/LTE router.

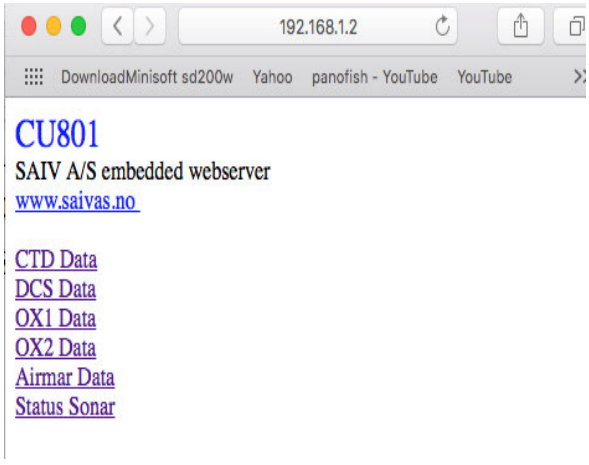
Unit 1: SD204/SD208/TD301

Before connecting the instrument to the CU801_WEB server. The interval and the baud rate have to be set correctly.
Use Interval greater or equal to 20 second, less will not giv the controller time to send FTP and accessing the controller will be often interupted and it will behave slow.
48 lines is maximum before it starts to overwrite date if FTP is enable it will send data before start overwriting. The web page use FIFO “First in First out”. A 1-hour interval will then give 2 days of data before it loses data on the web page. Number of lines can be changed from 3-48 lines.
RS232 communication: Baud rate can be changed, default is 9600, 7 data, 1 stop bit, Even parity.
Use operation manual for instrument for help and use the SD200w minisoft program for configuration, Latest version of SD200w is accesable from http://station.saivas.net

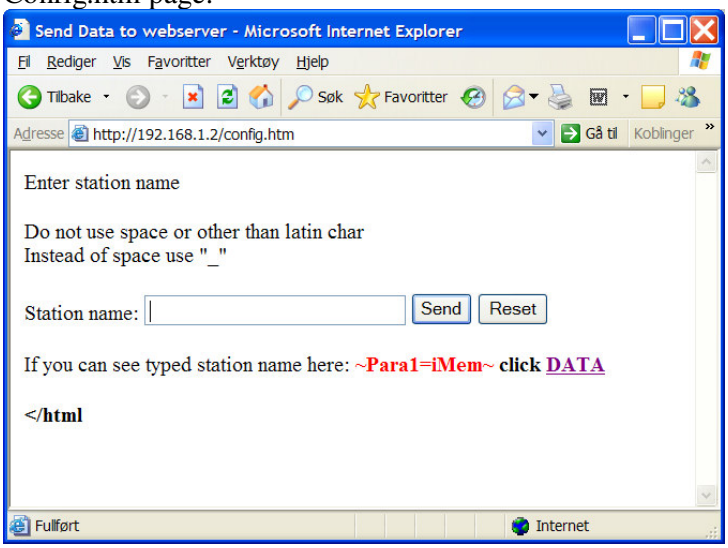
Unit 2: CU801_webserver

There is no critical adjustment on the CU801_WEB server. It will work by default settings.

Connect to the Cu801 internal index.htm webpage
Wifi or Crossover cable or hub (see Appendix)
Wifi: Find the station number marked on controller e.x (station number = 17000068) in the wifi list, log in by password cu801(station number) e.x cu80117000068.
Type 192.168.1.2 in the address URL filed of any browser.
Main page is beeing displayed:



Config: name change page
192.168.1.2/config.htm
Router: “IP”/config.htm or “domain”/config.htm
Config.htm page:

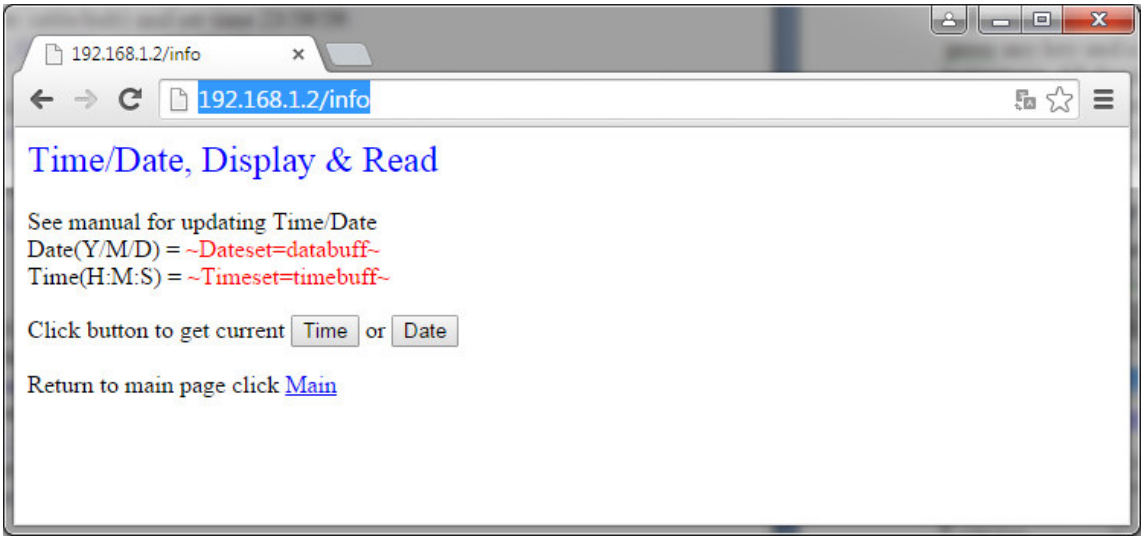


Enter Station Name in the text box and use the send button for update the CU801_web station name.
When successful the new name will be displayed in red coloured text. Use hyperlink “DATA” for accessing the data.htm page.

Change number of lines (default 10)
Change number of lines to for example 09: (Minimum = 03.)
http://192.168.1.2/cgi-bin/CGI_GET?lines=09
The server confirm successful registration when it returns main page.
If FTP is enable data will be send every nine line.

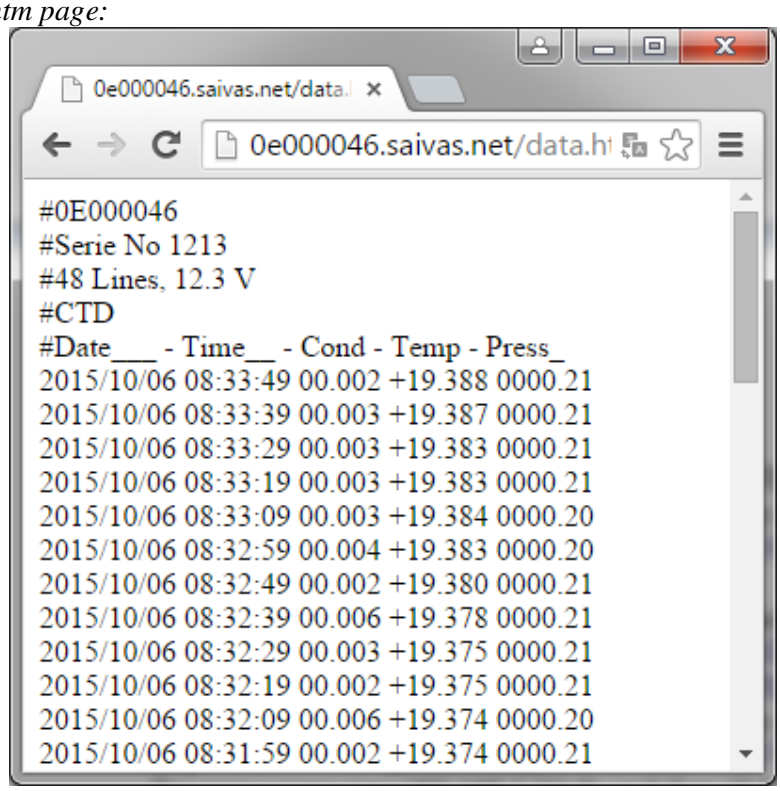
Set time:
There is no page for this setting, use the browsers address line to set time.
http://IP/cgi-bin/CGI_GET?Timeset=HH-MM-SS
The IP is the IP number for the specific CU801_WEB server
For direct connection (crossover cable/hub) and set time 23/59/59:
http://192.168.1.2/cgi-bin/CGI_GET?Timeset=23-59-59

Set Date:
There is no page for this setting, use the browsers address line to set date.
http://IP/cgi-bin/CGI_GET?Dateset=YYYY-MM-DD
The IP is the IP number for the specific CU801_WEB server
For direct connection (crossover cable/hub) and set date 2007/12/30:
http://192.168.1.2/cgi-bin/CGI_GET?Dateset=2007-12-30
For easy access type 192.168.1.2/info and then click TIME or Date button for change time in address line:



Initiate the Instrument:
If instrument need to be started or stopped.
There is no page for this, use the browsers address line for initiate.
http://IP/cgi-bin/CGI_GET?Start =I
For direct connection (crossover cable/hub/switch)
http://192.168.1.2/cgi-bin/CGI_GET?Start =I
There is no verification for start and stop of instrument. User has to see if new data is updated or not in the data.htm web page.
If there is no change try again.

Data.htm page:



Line 1 # = Station name.
Line2 # = Serie number of the instrument attached
Line 3 # = Lines to be stored before overwrite, (Instrument will store data until it is full, see manual for data storage) The system voltage is displayed, heady with use of battery power/solar cells
Line 4 # = Tells about the setup of the CTD.
Line 5 # = Header for data lines.

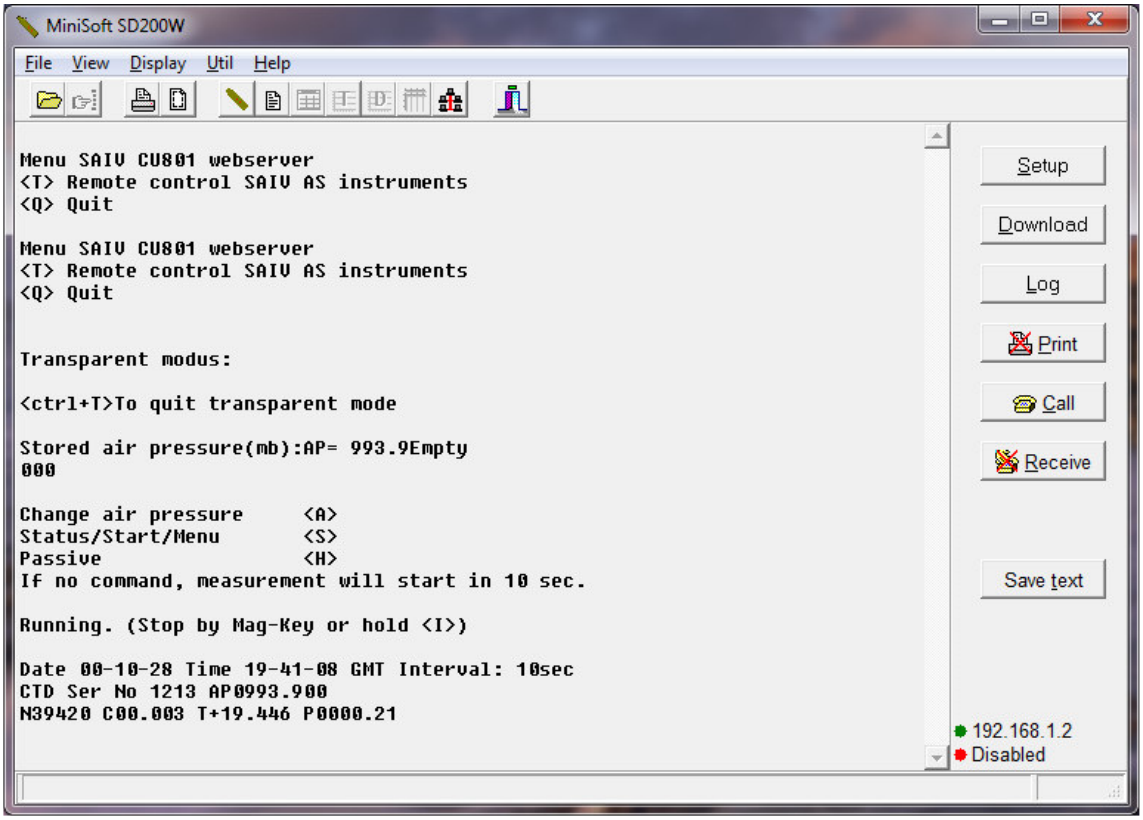
Direct communication with the Instrument:
It is possible to communicate directly with the Instrument by using the SD200w program from SAIV A/S.

To open connection:
If not familiar with the Minisoft sd200w, see manual for this.(download: http://station.saivas.net/manuals/SD208%20manual_total.pdf) The newest version of minisoft can be downloaded her (station.saivas.net)
Under the “setup”-“comport” connection is a TCP/IP option, click this option and type the web address for CU801 and end it with “:10000” (for example: 192.168.1.2:1000)
Important: Look at the bottom right corner of the minisoft sd200w, a green led will be shown in front of the IP address. See also screenshot of minisd200w
press any key and a menu will be displayed. Use this to open communication with instrument. All function that is used inn sd200w will now be available.
When transparent communication is active the web update stops. When <ctrl+T> is pressed the web update is active again. Remember to start the instrument before closing connection; else the web measurement will not be updated.

Hidden menu:
After main menu is displayed. Press <P> and than <L>. A menu will be displayed. Type <P> for programming menu. It possible to activate password on the html page form here.

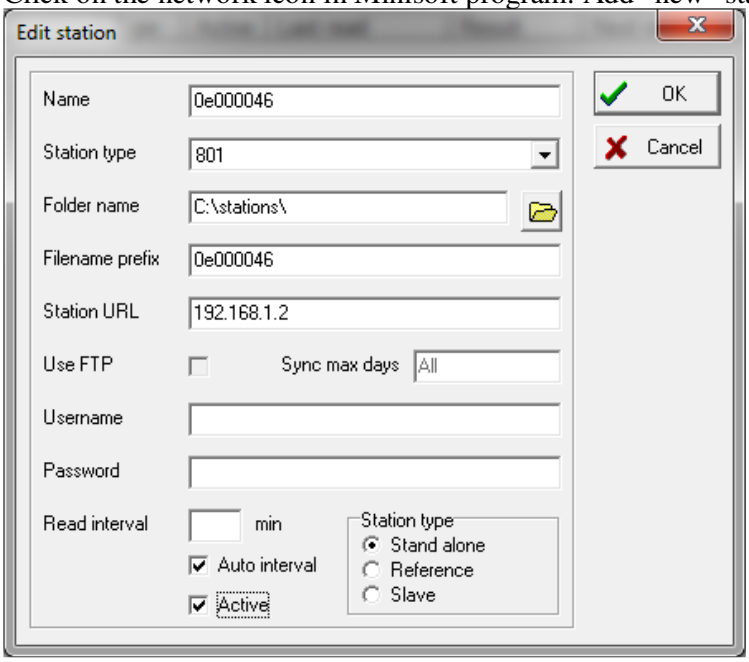
Username default : Admin
Password default : 12345 (max 5 letter)
To change password: use config.htm page.

Screen shot Minisd200w:

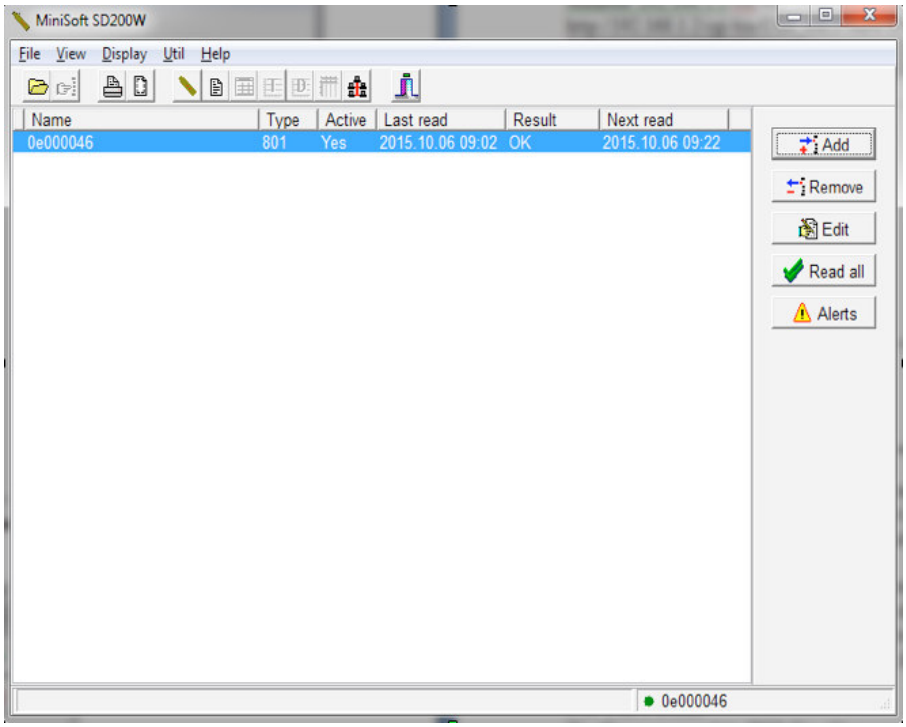


Direct data collect with Minisoft sd200w:

Click on the network icon in Minisoft program. Add “new” station

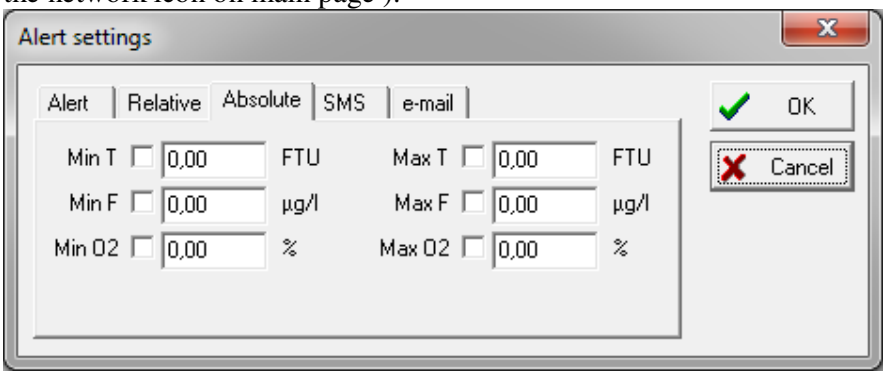


If password is activated by user (see hidden menu) than username and password as to be added. Remember to activate the station. It possible to use time based collection or auto.
Data will be stored as one TXT file in selected folder.



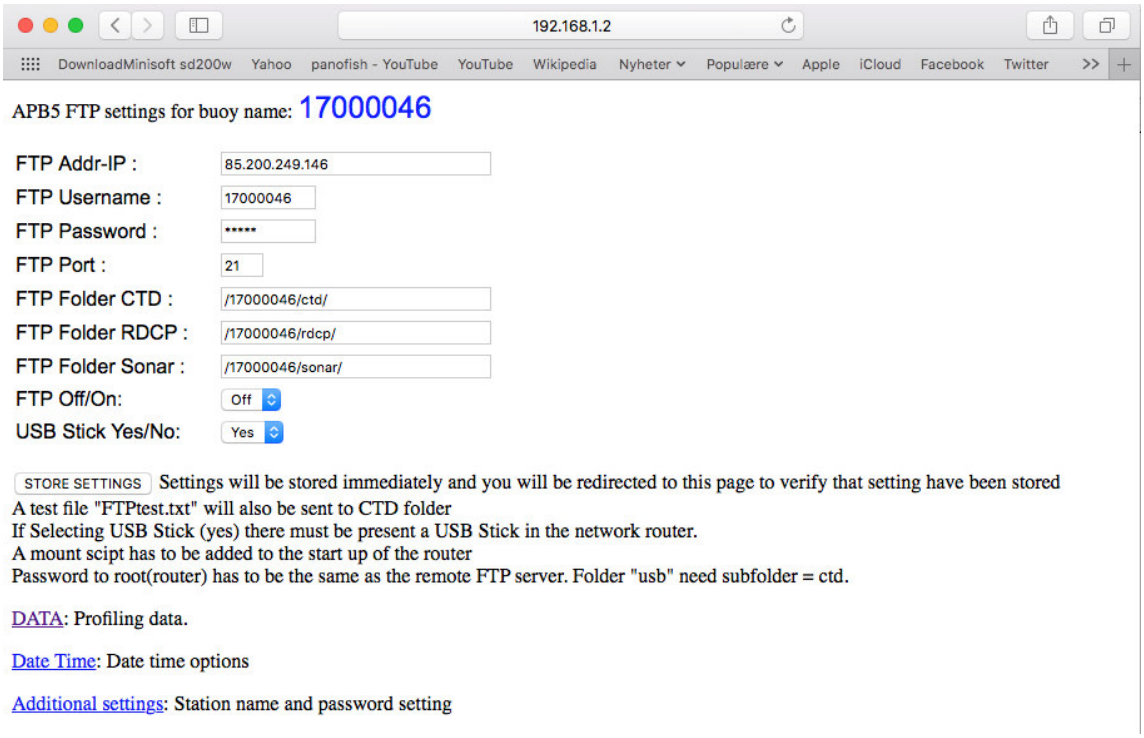
Graph view and Alert (e-mail/sms)

When having extra sensors as FTU (turbidity) and OX (Oxygen) on the instrument it possible to view a graph of present Turbidity over time(right click with mouse on the station and activate graph) Alarm will be sent by e-mail or SMS(setup has to be done) if values goes higher or lower than set point. To access Alert setting, click on button for alert after clicking the network icon on main page).



External and Internal FTP setup: CUF

FTP = File Transport Layer on the TCP/IP network
Address 192.168.1.2/cuf will redirect to
http://192.168.1.2/cgi-bin/CGI_GET?APFTP=



FTP server has to be address with direct IP number not a DNS Name.
FTP folder is only needed for the sensor that is enabled.
Default settings will send data to “Station.saivas.net” at SAIV A/S. The server is a free of charge.
Data will be sent to FTP server when number of lines reaches, with one overlap.
When Store Settings is clicked the CU801 will send a test file to the FTP folder CTD.
Note: This will not work if the network cable is still hooked direct via a cross over cable to a PC/MAC. For testing this, a network switch has to be attached between to the router, CU801 and PC/MAC

Internal FTP:

This is a FTP server that is included in the LR77 LTE router. Default is a USB pen of 32Gbyte included in version 906 and above. And all settings is done.
If the USB pen need to be replaced is only need a “ctd” folder in the root, insert it and power up.
To access the internal USB, Use a client FTP program. e.x filezilla
Server = 192.168.1.1, user = root, password = cu801 (password has to correspond with external password in accessable in the /cuf page.)
Default is root directory, here chould a USB folder be accessable (PS! if upgrade is made, this folder has to be created again)
If a USB memory pen is inserted and a script “mount /dev/sda1 /root/usb”
is added to the start upscript of the router.
For manual, look up on google : LR77 v2 manual

FTP File Format:

The files a sent as plain TXT files. Name on the files are build as follow:
YYMMDDNN.txt
YY = Year
MM = Month
DD = Day
NN = file number that day, file number 0 to max 255 per day. Displayed as HEX, 00 to FF
The file system on your computer will also store the file date and time, this can also be used to arrange the incoming files.

Adding more sensors:CUS

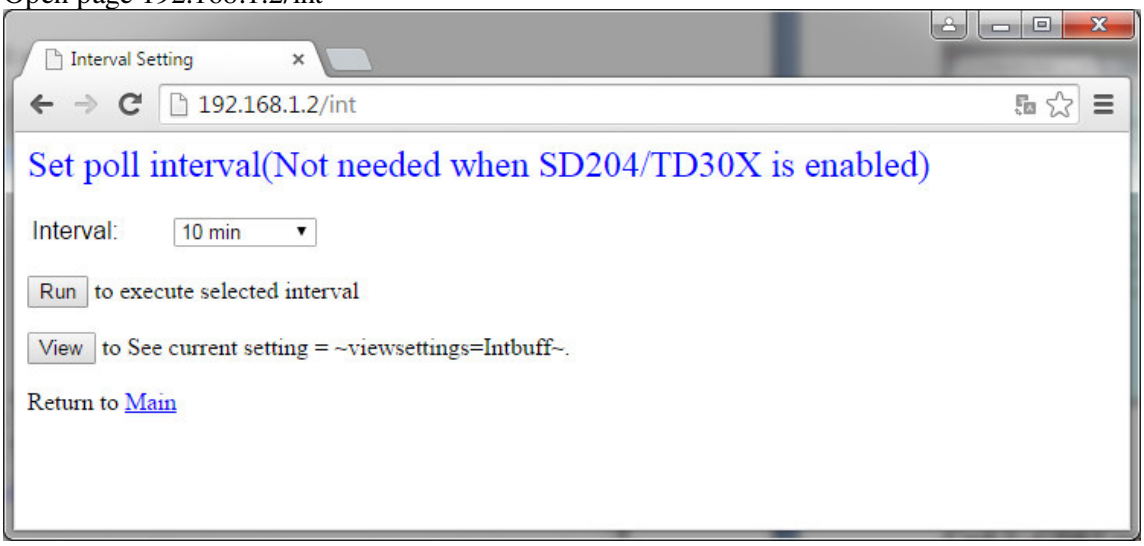
For enable and disable sensor:
After connecting a new sensor to following Comport:

Inst:	Comport:	Baud
TD/CTD (SAIV)	= Com 3	9600, 7, 1, 1
Watchdog	= Com 4	9600, 8 ,0 ,1
RDCP (Aandreaa)	= Com 5	9600, 8, 0, 1
Optical OX (Aanderaa)	= Com 6	9600, 8, 0, 1
Optical OX / SONAR	= Com 7	9600, 8, 0, 1/57600, 8, 0, 1
GPS/ Wheater Station(AIRMAR)	= Com 8	4800, 8, 0, 1

Open page 192.168.1.2/cus will redirect to
http://192.168.1.2/cgi-bin/CGI_GET?cuset=

Intervall: int

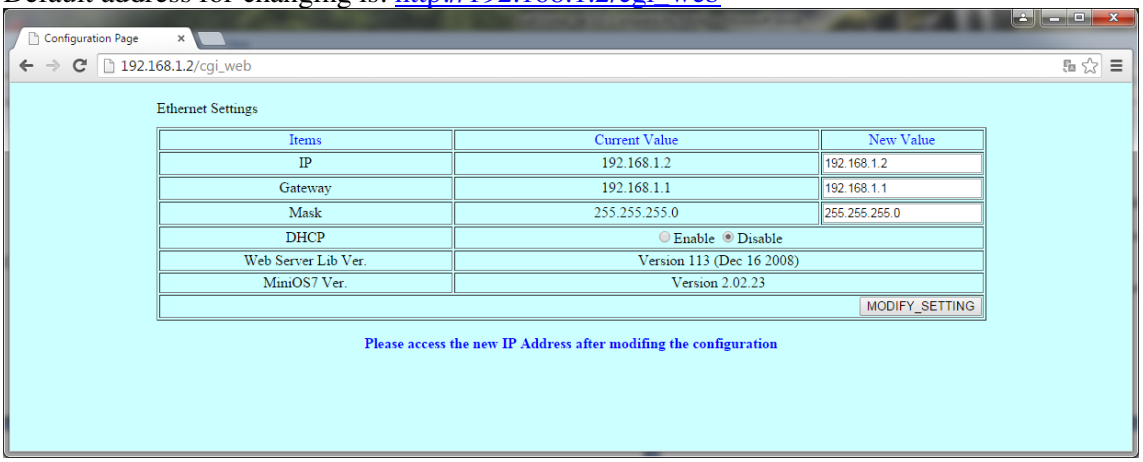
If CTD/TD is not present and only a OX or Doppler is connect the interval has to be done from the CU801. To set this interval:
Open page 192.168.1.2/int



Change IP address on Cu801:

If CU801 is to be working on a different IP network it is possible to change IP number on the server. Be aware that change on this settings will give the router a different address and it will not work as default according to this manual. Remember to make a note when changing this address for later.

Default address for changing is: http://192.168.1.2/cgi_web



Unit 3: GPRS/LTE router.

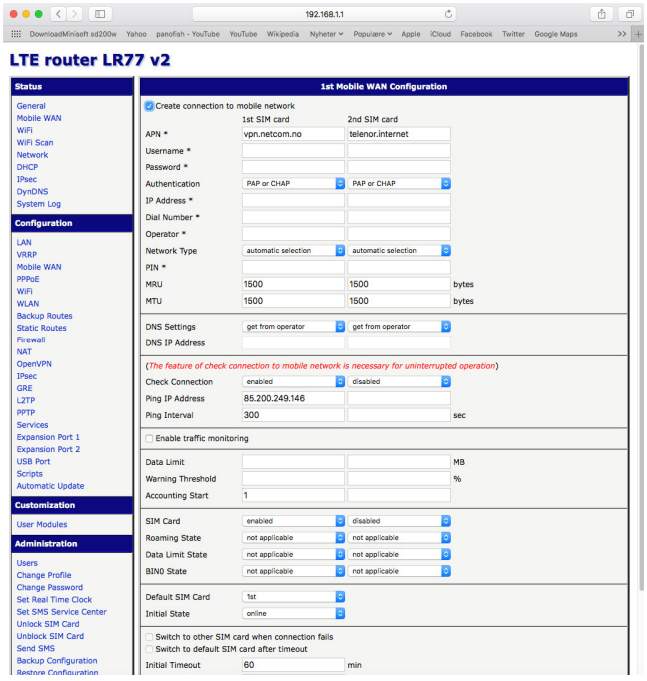
Any type of router can be used. The default IP is 192.168.1.2 Gateway is 192.168.1.1 and net mask is 255.255.255.0
Default TCP port is 80.
The CU801_WEB server uses the 100 BASE-T Ethernet with a RJ-45 connector to send TCP traffic.
By use of a crossover Ethernet cable between the CU801_WEB and the router there is no need of a hub/switch.

In our total product delivery we have chosen a GPRS/LTE router based on its size, stability and connection speed and has internal FTP server.

The chosen GPRS/LTE router is not covered in this manual, but the basic settings and name of configurations tools are the same for most routers. Use the router manual for additional information. Look up LR77 v2 manuel via google to see complete manual.

Insert mobile SIM card in SIM1 and access the router configuration web page.

By wifi connect to the GPRS/LTE router via address: 192.168.1.1 or
Connect the GPRS/LTE router to a hub/switch make sure that the IP number on your computer is 192.168.1.3/255. Type the default IP 192.168.1.1 in the browser address line:



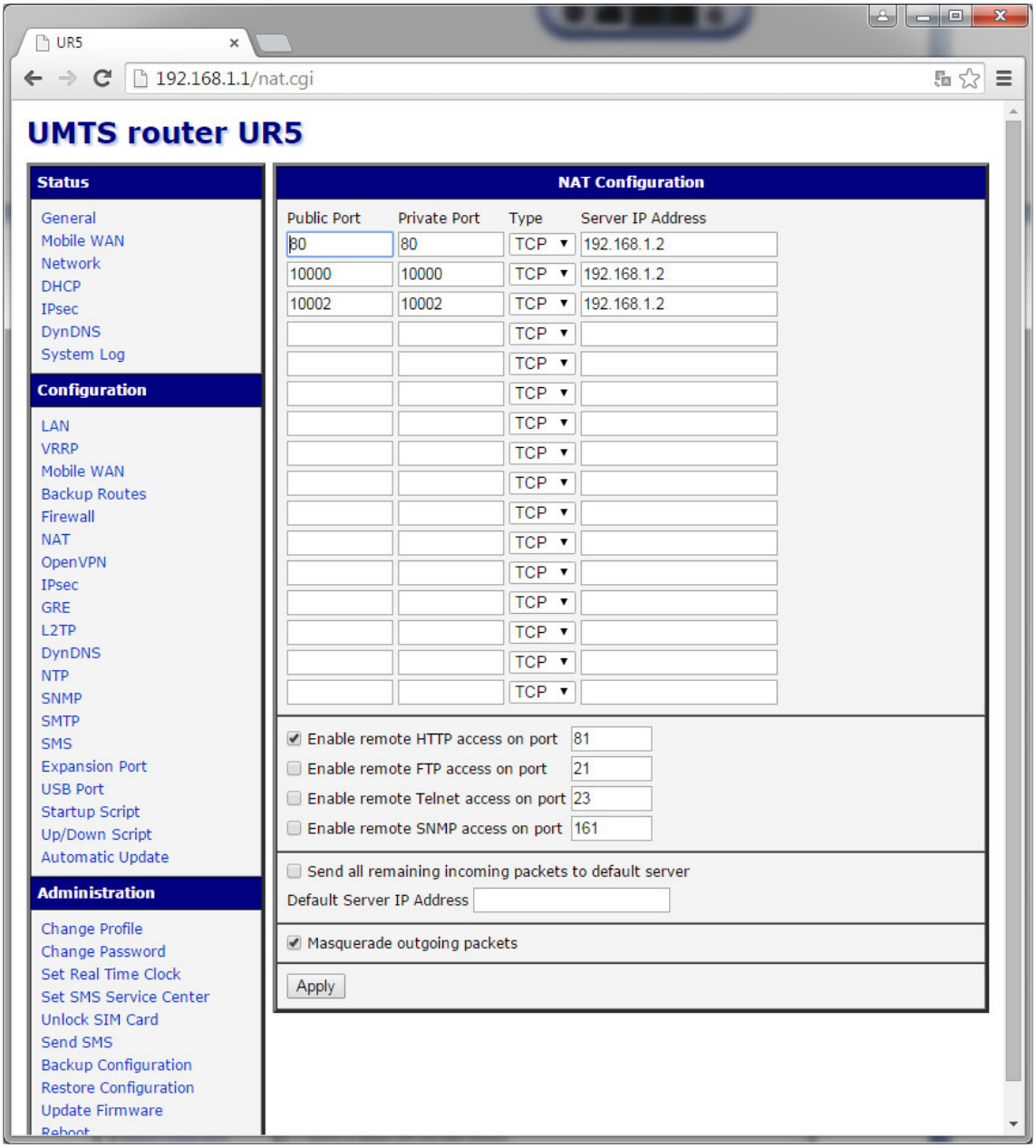
Use ***root*** for user and ***cu801*** for password.
There are 3 important settings that have to be configured and some other for optional use.

1. Set the APN(Access point name) name (in the Mobile wan setting left menu under configuration)

2. Set the NAT(Network Address Translation) details (Route the CU801_WEB IP through the router) Done default from manufacturer

NAT configuration / already done from manufacturer. .

Default public port “80” Private (CU801_WEB) port “80” CU801_WEB server IP address “192.168.1.2”



The system is now ready for use:

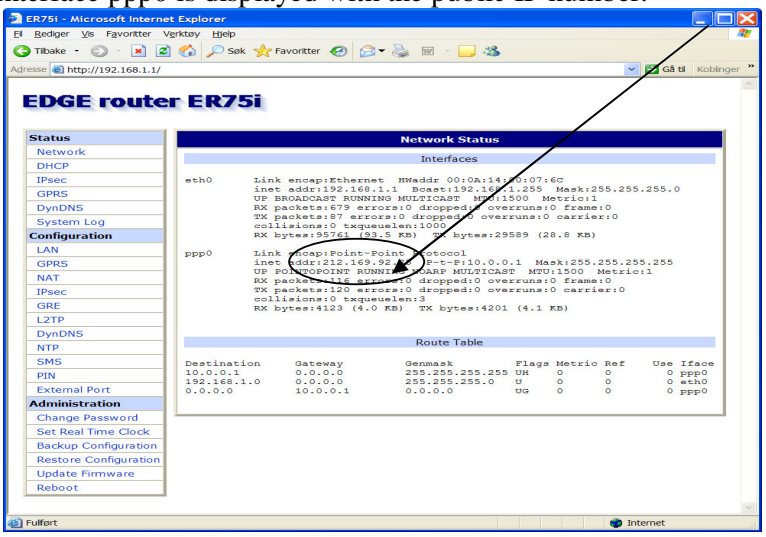
APPENDIX WIFI connect :

Cu801:

Turn on power. Find WIFI name (station name e.x 17000XX) log on wifi network with password written on top of the router (have to open box)
To access router: Type 192.168.1.1 in browser
To access web controller 192.168.1.2

Public IP:

Public IP (static/dynamic) is only available from some Network suppliers and with a spesial APN.
To see the public IP. Click submenu Network in the Status menu. If GPRS is running the interface ppp0 is displayed with the public IP number.



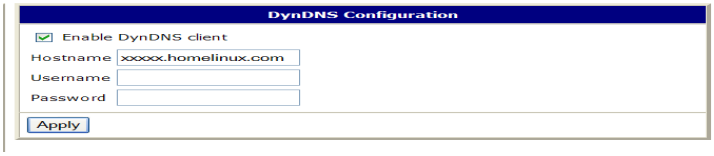
In this case IP 212.169.92.25 Type 212.169.92.25/Data.htm in the address line in any browser to access the data.htm page.

The routers configuration page can be reached from internet with same IP, but has ":81" in the end, for example 212.169.92.25:81

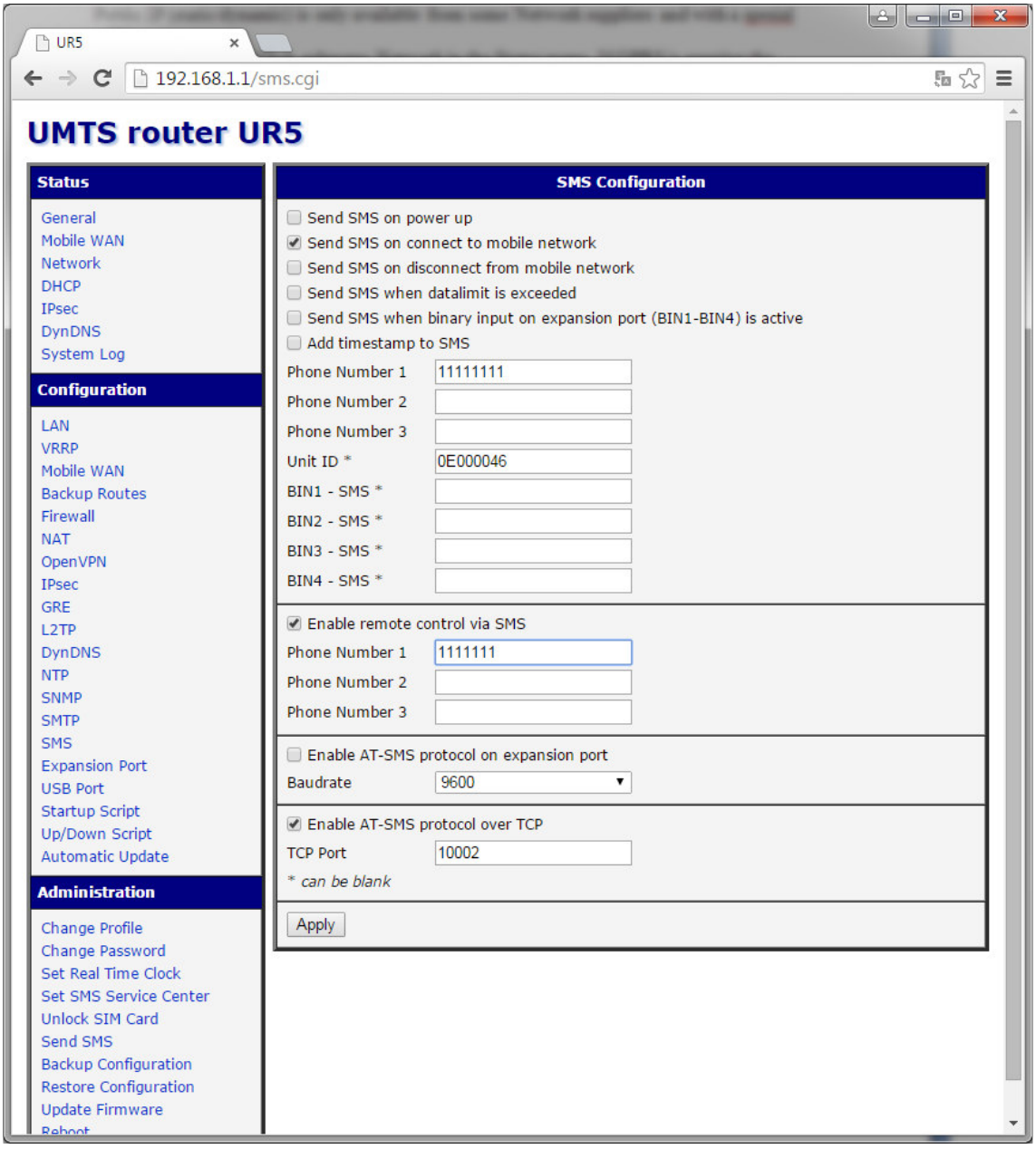
Additional/optional setting:

DynDns:

If the IP number is dynamic, it will be changed every time the GPRS reconnect.
To keep track of IP change there is a possibility of register the router at www.dyndns.com. To register is free and after getting a username, password and domain example "xxxx.homelinux.com" add the detail in the DynDns.



The data.htm is now access able by xxxx.homelinux.com/data.htm

SMS under services:

To get a message if the GPRS connection is down or reconnected.