

# **ARGUS 41<sup>PLUS</sup>**

## **Manual**

Version: 1.30/EN

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**D-58507 Lüdenscheid, Germany, 2008**

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## **1 Introduction**

The ARGUS 41 PLUS provides the installer or service technician with confirmation that the desired ADSL service (ADSL , ADSL2 or ADSL2+ ) is properly supplied to the subscriber. By determining the ADSL connection rates and the signal-to-noise ratio of the ATU-C, the ARGUS 41 PLUS evaluates the quality of the respective service at the customer's site within a matter of seconds.

By connecting the battery operated ARGUS 41 PLUS to various points in the network (i.e. to the endpoint or before or after the splitter), the technician can determine whether the cabling is adequate for the DSL service or whether it should be further improved.

An overview of some important ARGUS functions:

### **Voltage measurement**

#### **Determines the connection parameters**

Displays the connection's most important upstream/downstream parameters.

- maximum ATM bitrates
- fast or interleaved ATM bitrate
- signal-to-noise ratio
- output power
- line attenuation

#### **Reads the error counters**

Displays the upstream/downstream ATM cell errors and bit error statistics

- Cyclic Redundancy Check (CRC)
- Forward Error Correction (FEC)
- Header Error Checksum (HEC)
- Loss of Cell Delineation (LCD)
- Loss of Signal (LOS)
- No Cell Delineation (NCD)

### **Ping test**

### **Bridge mode (optional)**

### **Configuration of the ARGUS 41 PLUS from a PC via a web interface**

Should you have any further questions, please contact us:

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[support@argus.info](mailto:support@argus.info)

## 2 Safety Instructions

ARGUS ISDN-Testers may only be used with the included accessories. Usage of other accessories may lead to erroneous measurements and could even damage the ARGUS and the connected installation. The ARGUS is only to be used in accordance with the instructions in this documentation. Any other usage may result in bodily injury and destruction of the ARGUS.

- To prevent electrical shocks or damage to the ARGUS, do not connect it to lines with voltages in excess of 100 V!
- Never attempt a measurement with the case open!
- The ARGUS is not watertight. Protect the ARGUS from exposure to water!
- Before replacing the battery (see page 11 Replacing the accumulators), disconnect all the test leads and switch the ARGUS off.
- Make certain that the polarity is correct when connecting the accumulators!
- Unplug the power supply from the mains, as soon as the ARGUS is no longer in use and switched off.

### Return and environmentally acceptable disposal

The RoHS (EU Directive on the “Restriction of Hazardous Substances”) guidelines, which restrict the use of certain hazardous substances in electrical and electronic equipment, apply in eight of the ten categories of the WEEE (EU Directive on “Waste Electrical and Electronic Equipment”) guidelines.

The ARGUS products fall into category 9 and are thus not subject to the RoHS guidelines. Nonetheless, we have decided to voluntarily ensure that ARGUS products built since 1 January 2007 satisfy all of the RoHS guidelines.

Since October 2005 in compliance with WEEE (EU Directive on Waste of Electrical and Electronic Equipment) 2002/96/EU and the German Electrical and Electronic Equipment Act (ElektroG - Elektro- und Elektronikgerätegesetz), we have begun marking our testers with the following symbol



() (DIN EN 50419) .

In other words, the ARGUS may not be disposed of in the household waste.

Regarding the return of old equipment, please contact our Service department.

### 3 Technical data

**Dimensions and Weight**

Height 229 mm, width 72 mm, depth 35 mm

Weight 350 g (without accumulators and protective case)

**Keypad**

21 Keys

**LCD display**

LCD display with switchable background lighting  
4 lines with 16 characters

**Memory**

EEPROM constants memory: 16 Kbytes  
Flash program memory: 10 Mbyte  
SDRAM: 16 Mbyte

**Inputs / Outputs**

1 RJ45 for ADSL  
1 jack for an external power supply  
1 RJ-11 for the serial interface (optional)  
1 RJ-45 10/100 BaseT Ethernet

**Temperature Ranges**

Operating Temperature: 0 °C to +50 °C  
Storage temperature: -15 °C to +70 °C

**Power Supply**

NiMH accumulators or  
9 V / 560mA plug-in switching power supply



## 4 Operation - a brief guide



### Power key:



- Switch the ARGUS ON
- To start up again after a power down
- To switch on the display backlighting  
In battery mode to save power, the backlighting will switch off automatically after 5 seconds.
- To switch the ARGUS OFF: this must be pressed somewhat longer  
If the ARGUS is connected to its power supply, it will automatically charge its accumulators when switched off (see Page 12).

### Arrow keys:



- Scroll through the displayed ADSL connection parameters





## Level key:

- Display the ADSL connection parameter




## Softkeys:

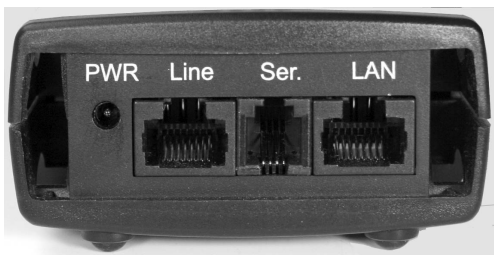
- The function of the 3 softkeys varies with the situation. The current function of each softkey is shown in the bottom, highlighted line of the display.

The ARGUS is in largest part operated with the three softkeys.

On the following pages, only the softkey's meaning in the respective context is shown - enclosed in brackets< >, e.g. < **START** >.

The softkey < ↓ > serves the same function as the  arrow key on the ARGUS keypad.

## Connections at bottom:



### PWR

Connection for the external plug-in power supply.  
If the plug-in power supply is connected, the ARGUS will disconnect the accumulators and, when it is switched off, the ARGUS will automatically recharge the accumulators (see Page 12).

### Line

Connection for the ADSL network  
( PIN assignment 7/8 in Germany  
7/8 and 4/5 international)

### Ser. (optional)

Serial interface to connect a PC

### LAN

10/100 Base-T Ethernet interface to connect the ARGUS to the Ethernet jack on a PC.

### Replacing the accumulators

The battery compartment for the three accumulators (rechargeable batteries) is located on the back of the case. Unscrew the screws to remove the cover of the case and insert the accumulators in accordance with the polarity marking. Use only the accumulators included in the package. The current state of the charge will (if the ARGUS is not connected to the power supply) be displayed graphically. In the LCD display, a battery symbol will begin to blink, when there is still approximately (depending on the mode of operation) 15 minutes reserve. During this period, it is possible that there may be audible interference and in rare cases even malfunctions.

### Power Down



In accu/battery operation, if the ARGUS is idle for 5 minutes, it will automatically switch to the power-down mode (power-down ). The ARGUS will remain in power-down mode until the Power-Key is pressed again.

As an alternative, it is possible to operate the ARGUS using the included power supply. If the ARGUS is connected to the plug-in power supply, it will automatically disconnect the accumulators and will not enter power-down mode.

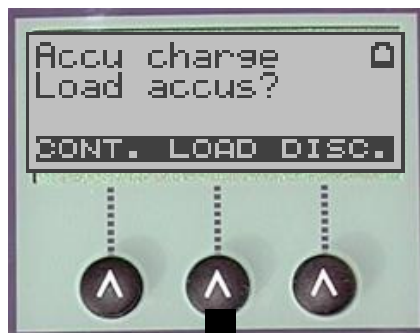


Unplug the power supply from the mains, once the ARGUS is switched off and will no longer be used.

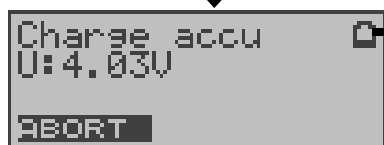
You should always operate the ARGUS with accumulators installed. This will ensure the uninterrupted operation of the real-time clock.

## 5 Accu charge

### Automatic recharging of the accumulators when switched on (trickle charge)



Press the  
<LOAD> softkey



Level of  
charge  
of the accus

The ARGUS automatically recharges the accumulators (also shortened to "accus"), if the ARGUS is connected to the plug-in power supply and switched on and the accumulator voltage is too low (only use the supplied accumulators).

**<DISC.>** The accumulators will first be discharged (this can take up to 7 hours) and will then, after a cool down period of about 30 minutes, be automatically recharged.

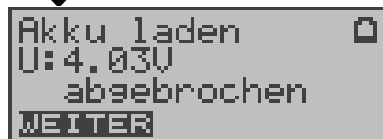
**<NO>** ARGUS will open the "Voltage" display (see Page 13) without recharging the accumulators.

The ARGUS will display the level of charge and the voltage while charging the accumulators.

### Automatic recharging of the accumulators when the ARGUS is switched on

The ARGUS automatically recharges the accumulators (also shortened to "accus"), if the ARGUS is connected to the plug-in power supply and switched off and the accumulator voltage is too low (only use the supplied accumulators). While charging, the ARGUS displays the message "Charge accu". Otherwise, the ARGUS will switch itself off automatically as soon as the accumulators are recharged. If you press and hold the power switch, the ARGUS will switch off before the accumulators are recharged.

**< ABORT>** The download is stopped.



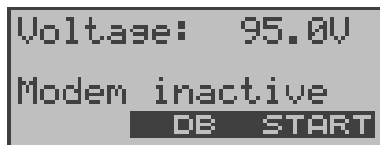
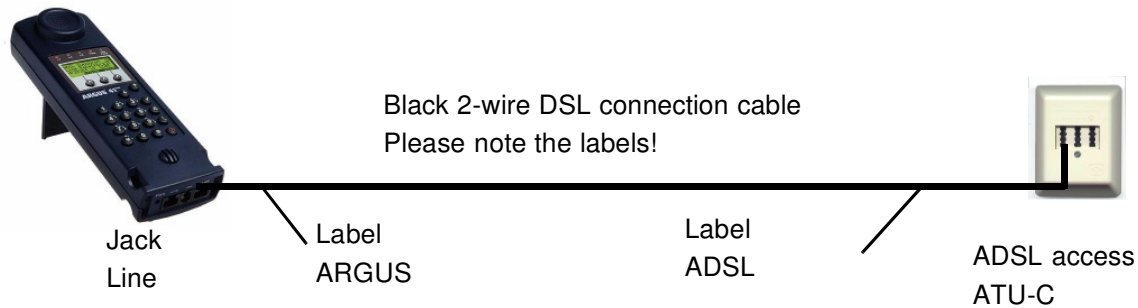
**<CONTI.>** ARGUS will open the "Voltage" display (see Page 13) without recharging the accumulators.

## 6 Voltage measurement after being switched on

Using the ADSL 2-wire connection cable, the ARGUS is connected directly to the ADSL access (either before or after the splitter). In this case, the ARGUS replaces both the modem and the PC.



Use only the cables included in the package.



Press the Power key to switch the ARGUS on. The ARGUS will display the DC voltage on the access interface.

Evaluating the voltage measurement when the ARGUS is connected ahead of the splitter:

0 Volts:              No definite assessment possible.

approx. 90-96 Volts:      ISDN access

less than or equal to 63.5 Volts:      POTS access

approx. 63-89 Volts:      No definite assessment possible:  
In Germany there are still some older accesses, which range in voltage from 60 V to 90 V, that can be used for ISDN (U-interface) or POTS.

It is not possible to evaluate a voltage measurement made with the ARGUS connected behind the splitter:

0 Volts:              ISDN or POTS access

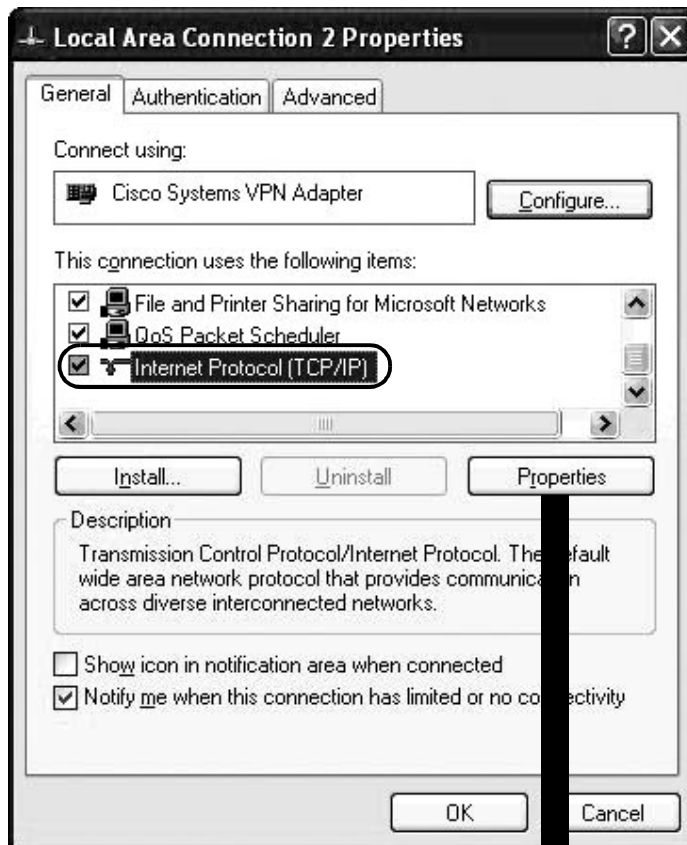


## 7 ARGUS Configuration

### 7.1 Connection of the ARGUS to a PC

The ARGUS is configured from a PC with the aid of a web interface. This same setup is also used to display the test results.

PC settings:



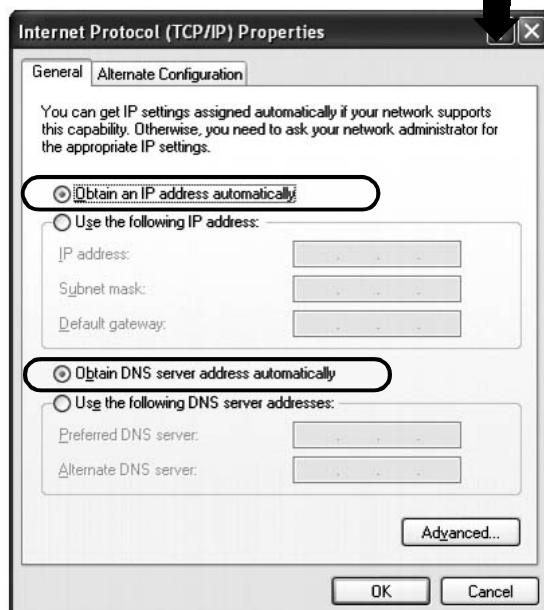
First start Windows on your PC. The following steps describe the procedure when the PC is running Windows XP Professional.

In the taskbar, click on the "Start" button (generally at the lower left-hand corner of the screen) and then click on "Control Panel" to open it.

In the "Control Panel" window, double-click on "Network Connections" to open it and then, in the list, select "LAN Connections". Next right click on "LAN Connections" and then select "Properties" from the now open list. The window at the side will now open.

Select "Internet Protocol (TCP/IP)".

Click on the "Properties" button.



In the now open window, select "Obtain an IP address automatically" and "Obtain DNS server address automatically".

Click on the "OK" button.



As it comes from the factory, the ARGUS is set to "DHCP server mode" and uses the IP address 192.168.10.1 on the LAN side.

When the ARGUS is first used, it should not be connected to a network via a router or switch, since in "DHCP Server mode", the ARGUS will assign IP addresses to any network devices which are in "DHCP Client mode". Furthermore, it can cause conflicts with any other device in the network which is also in "DHCP Server mode". Using a PC and the web interface, the ARGUS LAN settings can be changed as needed to suit your network infrastructure (see Page 25).



## 7.2 Configurig the ARGUS

To connect the ARGUS to the PC, plug one end of the included patch cable (twisted pair) into the "LAN" jack on the ARGUS and the other end into the PC's Ethernet jack. Switch the ARGUS on and the "LAN" LED will light.

Start any common Internet browser and enter the following address <http://192.168.10.1>. The web interface will open.

### 7.2.1 Setting the profile parameters

The ARGUS saves all of the parameters required for setting up a PPP connection and running the Ping test in profiles. Using the web interface, you can configure up to 10 user-defined profiles and send them to the ARGUS. Before a PPP connection can be set up, you must first select a profile on the ARGUS 41 PLUS (see Page 36).

#### Web interface

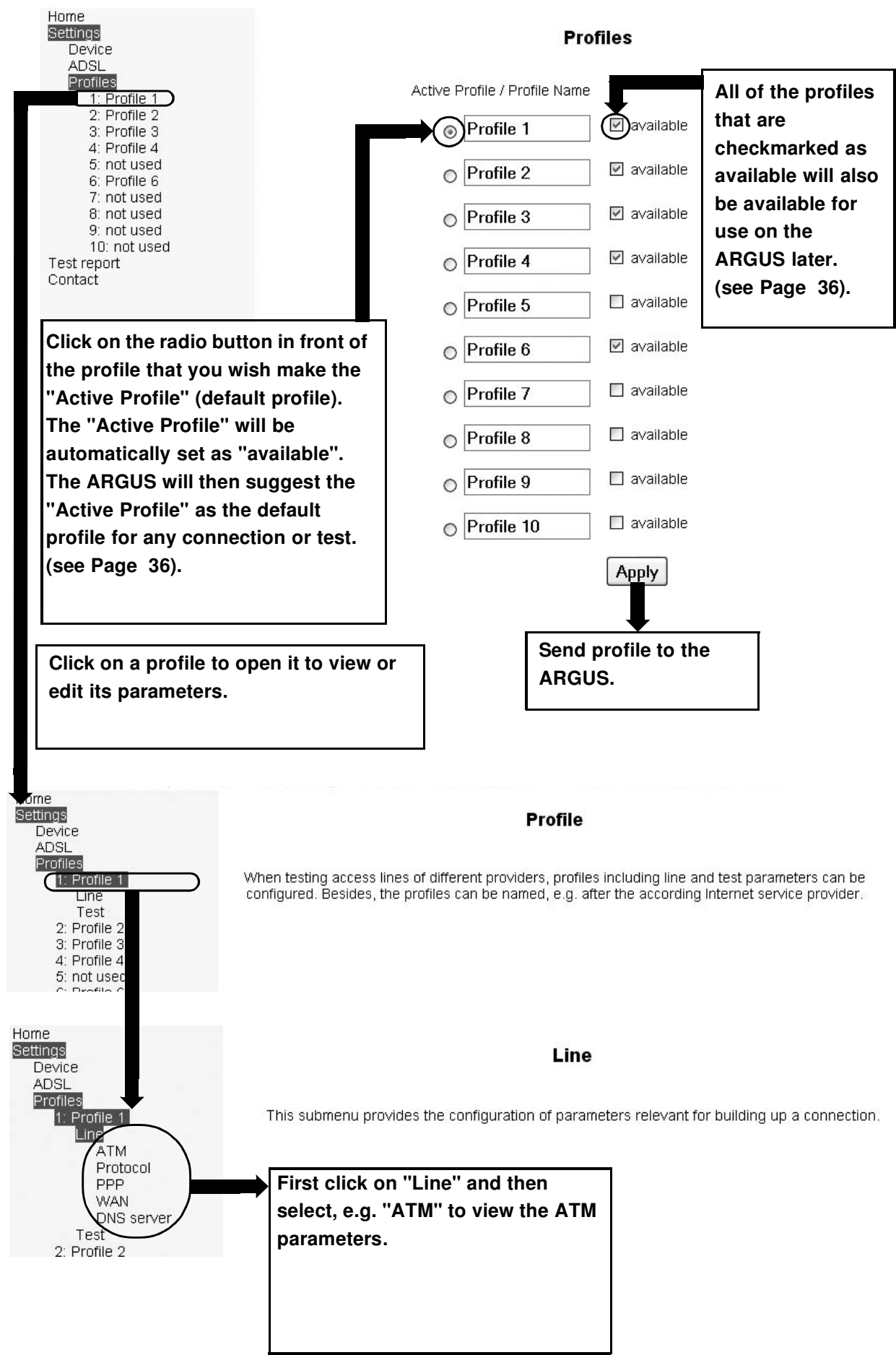
The top screenshot shows the ARGUS web interface. The header includes the ARGUS logo and a navigation menu with links: Home, Settings, Test report, and Contact. The 'Settings' link is highlighted with a red circle and a red arrow pointing down. The main content area is titled 'Info' and displays the following details:

- Type: ARGUS 41<sup>PLUS</sup>
- FW version: V1.55.U
- FW date: 19.12.07
- Serial no.: 3255

The bottom screenshot shows the same web interface but with the 'Settings' page loaded. The 'Settings' link in the navigation menu is highlighted with a red circle and a red arrow pointing down. The main content area is titled 'Settings' and contains the following text:

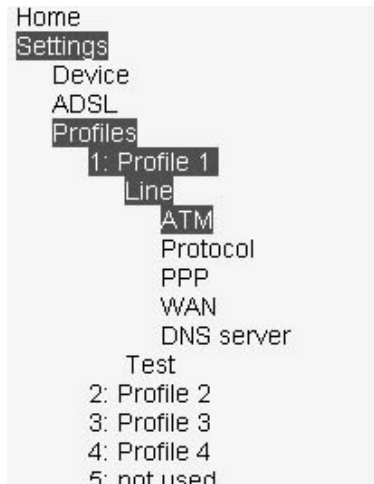
In these submenus, the ARGUS itself can be configured. On the one hand, one can change device parameters. On the other hand, one can setup or change parameters required for testing.

A red box with a black border contains the text: **First click on "Settings" and then on "Profiles".**



### 7.2.1.1 Setting the ATM parameters

In the "Line" submenu,  
click on "ATM".



#### ATM

VPI   
VCI   
Encapsulation ☐ VC MUX  
☒ LLC

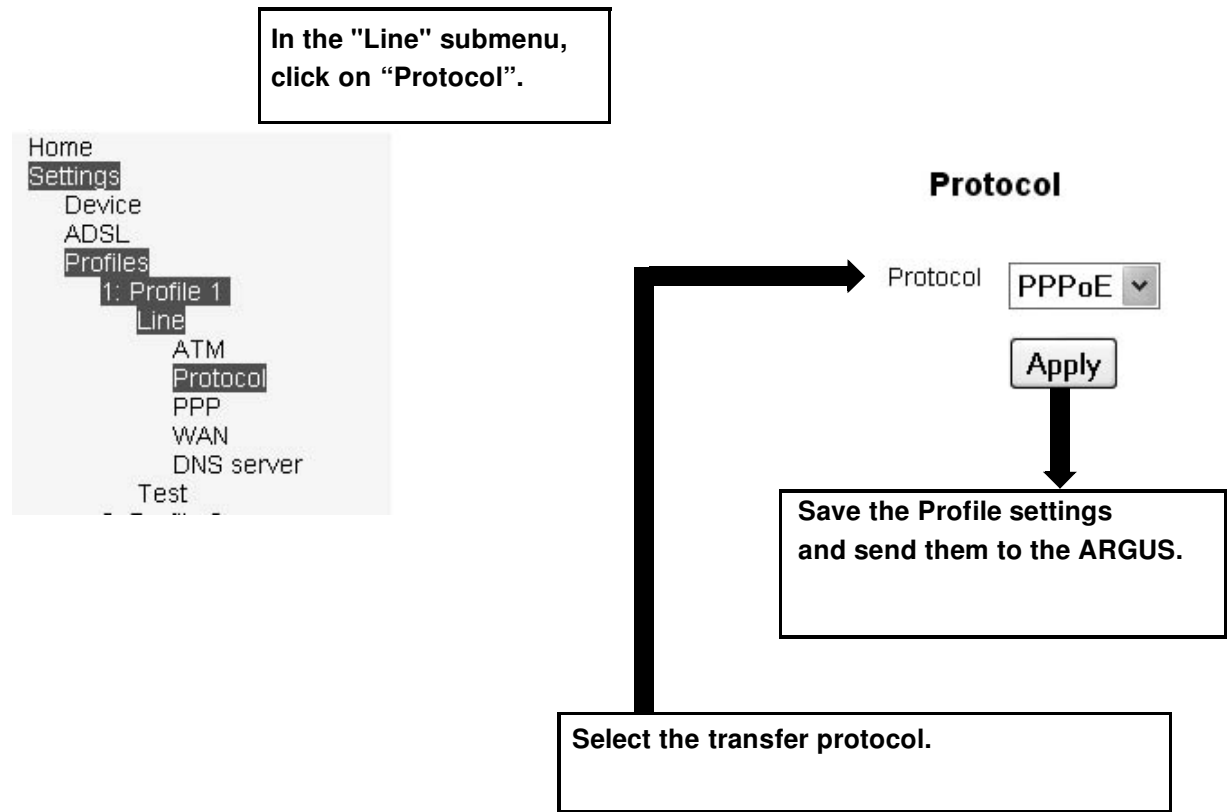
**Apply**

Save the Profile settings  
and send them to the ARGUS.

Enter the virtual channel in the  
ATM cells  
Default values: VPI = 1, VCI = 32

Set the encapsulation of the  
packets to be sent  
(LLC or VC-MUX)

7.2.1.2 Setting the protocol



### 7.2.1.3 Setting the PPP parameters

In the "Line" submenu,  
click on "PPP".

Home  
Settings  
Device  
ADSL  
Profiles  
1: Profile 1  
Line  
ATM  
Protocol  
PPP  
WAN  
DNS server  
Test  
2: Profile 2

**PPP**

User name

Password

**Save the Profile settings  
and send them to the ARGUS.**

**Enter the user name  
and password  
(assigned by the  
network operator)  
for the Internet  
connection.**

### 7.2.1.4 Setting the WAN parameters

If the DHCP Client (Dynamic Host Configuration Protocol) is on, it is possible for a new computer to automatically join an existing network without any further configuration (In the web interface, set DHCP Client "on").

If the DHCP Client is off (In the web interface set DHCP Client "off"), the following setting must be made manually:

<b>local IP address:</b>	This is the IP address of the ARGUS on the WAN side
<b>IP netmask:</b>	WAN IP netmask
<b>remote IP address:</b>	Gateway IP address in the WAN network
<b>DHCP timeout:</b>	This sets the amount of time (in seconds) that a client should wait for an IP address (relevant for the IP mode DHCP client)

In the "Line" submenu,  
click on "WAN".

**WAN**

DHCP client ☐ on ☒ off

local IP address

IP net mask

remote IP address

DHCP timeout [s]

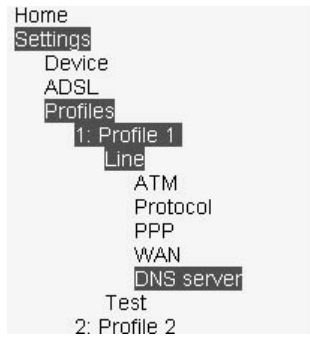
**Apply**

**Save the Profile settings and send them to the ARGUS.**

**Set the IP mode "DHCP Client" on or off. If DHCP Client is set to off, the IP addresses and the DHCP Timeout must be set manually.**

### 7.2.1.5 Setting the IP address of the DNS server

In the "Line" submenu,  
click on "DNS Server".



#### DNS server

DNS server 1

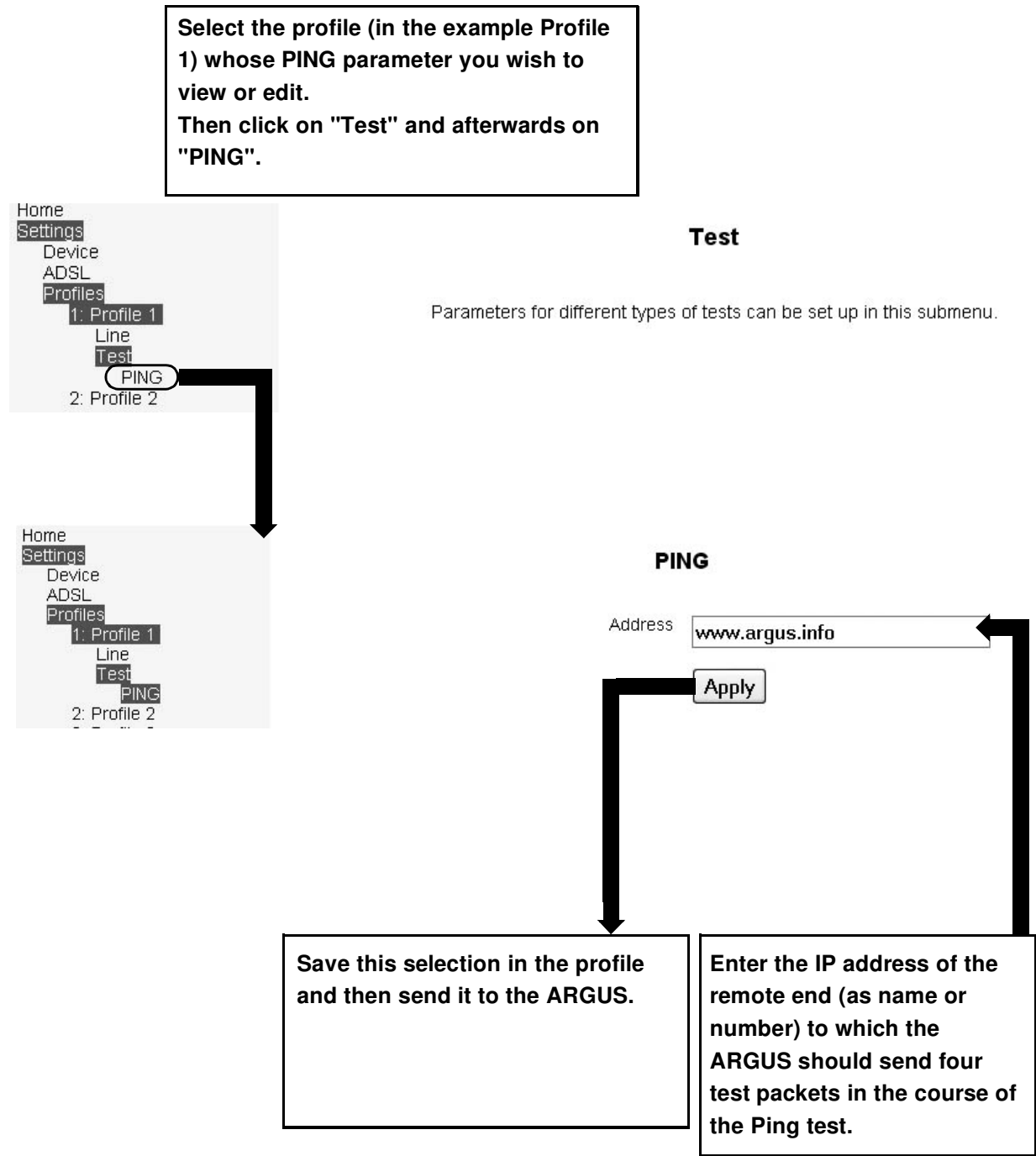
DNS server 2

Apply

Save the Profile settings  
and send them to the ARGUS.

Use the keyboard to enter the IP  
address of the DNS server.

7.2.1.6 Setting the Ping parameter



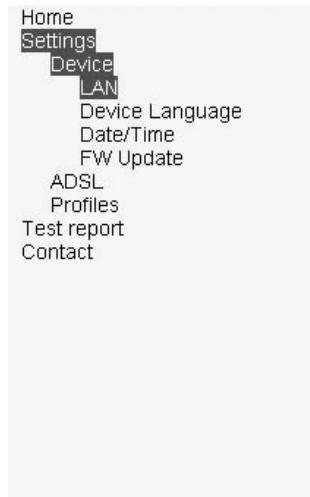


## 7.2.2 Setting the device parameters

### 7.2.2.1 Setting the LAN parameters

Using a PC, you can change the default LAN settings of the ARGUS as needed to suit your network infrastructure.

First click on "Settings" and then, under "Device", click on "LAN".



#### LAN

local IP address 192 . 168 . 10 . 1

IP net mask 255 . 255 . 255 . 0

DHCP server  
☒ on  
☐ off

Address pool start 192 . 168 . 10 . 30

Address pool end 192 . 168 . 10 . 40

Apply

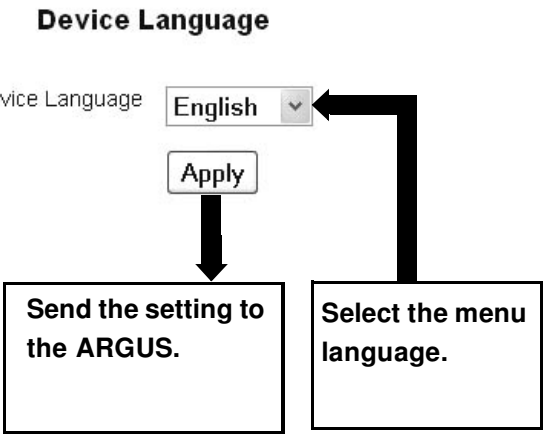
Send the LAN parameters  
to the ARGUS.

Set the LAN  
parameters.

7.2.2.2 Setting the ARGUS menu language

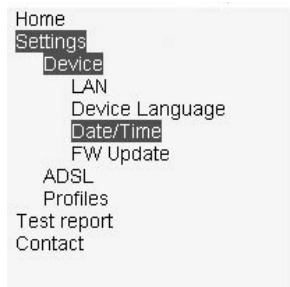
First click on "Settings" and then, under "Device", click on "Device Language".

- Home
- Settings
- Device
- LAN
- Device Language
- Date/Time
- FW Update
- ADSL
- Profiles
- Test report
- Contact



### 7.2.2.3 Setting the date and the realtime clock

In the "Device" submenu, click on "Date/Time".



#### Date/Time

Date  .  .

Time  :

Using the keyboard, enter the date and time.


Send the settings the ARGUS and save them there.  
The ARGUS will later enter the date and time in the test reports (see Page 41).

### 7.2.2.4 Firmware Update

You can download a firmware update from [www.argus.info](http://www.argus.info) free-of-charge and save it on your PC. You can then use the web interface to transfer the update to your ARGUS tester.

Go to [www.argus.info](http://www.argus.info) and, in the headings on the left, click on "Service". On the web page that opens click on "to the download area". Afterwards, select the "ARGUS 41 plus" handheld tester from the list on the left. A web page will open showing all of the updates currently available for the ARGUS 41 plus. Click on the firmware version that you want to download and save the zipped folder on your computer. On your PC, unpack the zipped folder (click on the packed folder, and then click on "Extract all files").

Connect your ARGUS to your PC's Ethernet jack and start the web interface.

 **Do not, under any circumstances, start to update the firmware if the ARGUS is running on its batteries (accumulators). First connect your ARGUS to the plug-in power supply, before you send the firmware update file to the ARGUS.**

In the "Device" submenu, click on "FW Update".



#### FW Update

While updating the firmware, the ARGUS must be powered by the mains adaptor.

File name

**The ARGUS must be powered from the mains!**

**Send the firmware update file to the ARGUS.**

**Click on the unpacked folder.**

### 7.2.3 Setting the ADSL mode

Different ADSL modes can be selected depending on the national variant of the ARGUS. The selected ADSL mode must be compatible with the network-side (ATU-C).

If the ADSL mode "Annex A(B) Auto" is selected, the ARGUS will automatically determine the configuration of the DSLAM ( G.DMT or ANSI) and set itself accordingly. If the ADSL mode is set to "manual", the ADSL mode can be chosen on the ARGUS before the DSL connection is set up.

First click on "Settings"  
and then on "ADSL".

ARGUS<sup>®</sup>  
testing the telecom network

Home  
Settings  
Device  
ADSL  
Profiles  
Test report  
Contact

ADSL

Mode **Annex A** ▼

Apply

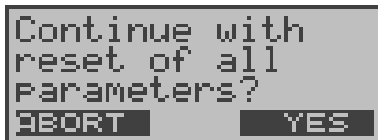
Select the ADSL Mode.

Send the setting the ARGUS and save it there.

### 7.3 Resetting all of the parameters on the ARGUS

The ARGUS will reset all of the parameters to their default values (factory settings). The results saved in the ARGUS will be deleted (see Page 33).

Switch your ARGUS on. Then press one after the other the keys \* and 2.



Continue with  
reset of all  
parameters?  
ABORT YES



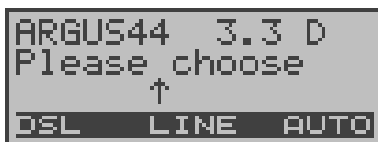
Reset  
parameters

### 7.4 Setting the contrast of the ARGUS display


The contrast of the ARGUS display can be adjusted to suit the individual user.

The contrast can be adjusted in a total of 16 steps.

Switch your ARGUS on. Then press one after the other the keys \* and 3.



ARGUS44 3.3 D  
Please choose  
↑  
DSL LINE AUTO



Use the new  
contrast setting

The two arrow keys on the ARGUS keypad can be used to increase or decrease the display contrast. The vertical arrow in the display indicates the currently setting on a scale from low to high contrast.

## 7.5 Enabling a software option

Switch your ARGUS on. Then press one after the other the keys \* and 1.

The ARGUS will first display the current software version. Press the < ↓ > softkey to view additional information (e.g. ADSL mode, enabled options etc.).

```
ARGUS41  1.5 D
SW: V1.55.0.D/
Date: 21.12.07
< ↑ > < ↓ > OPTION
```

```
Softwareoption
Insert key:
ABORT DEL ✓
```

Enable the  
software option

To enable a software option, you must first enter the associated software key via the ARGUS keypad.

- < **DEL** > Delete the character before the cursor
- < **ABORT** > Return to the previous display without utilizing the software key.





## 8 Operation on ADSL, ADSL2 and ADSL2+ Accesses

### 8.1 Determining the ADSL connection parameter

Use the ADSL 2-wire connection cable to connect the ARGUS directly to the ADSL access (either before or after the splitter). The ARGUS supports the Annex B (ADSL via ISDN) ADSL mode and the following standards:

- ADSL: ANSI T1.413.2
- G.DMT: ITU-T G.992.1
- G.Lite: ITU-T G.992.2
- ADSL2: ITU-T G.992.3 and ITU-T G.992.4
- ADSL2+: ITU-T G.992.5

The ARGUS automatically determines the DSLAM configuration ( G.DMT or ANSI) and sets itself accordingly.

The ARGUS will set up an ADSL connection on the ADSL access and determine all of the relevant ADSL connection parameters. The ARGUS displays the connection parameters and saves these parameters in the internal FLASH memory after the connection is cleared down if desired. The connection parameters last saved will be automatically sent to the connected PC where they will be clearly presented in a measurement report see Page 41.

```
Voltage: 95.0V
Modem inactive
DB START
```

ARGUS display after being switched on

Initialization

Set up an ADSL connection (synchronisation between the ARGUS and DSLAM)

While the ARGUS is attempting to set up the ADSL connection, the "L1 Sync" LED will flash. The ARGUS will display the ADSL mode.

Once the connection has been set up ("L1 Sync" LED on constantly), the ARGUS will determine and display the ADSL connection parameters.

```
ADSL synchron
ATM (int.) [Kb/s]
d:24393 u: 1349
SAVE ISP STOP
```

The ARGUS will next display the actually useable upstream and downstream data rate.

< ISP > Set up a PPP connection (see Page 36)

< SAVE > Save the results in the internal Flash memory

< STOP > Clear down the ADSL connection

Display the ADSL connection parameters

```
Showtime
ADSL2+ Annex B
Elapsed 0:00:42↓
└─┘
```

The ARGUS will display the ADSL mode and the duration of the ADSL connection.

↓,↑ Keys

Scroll through the test results,  
(see the table on Page 34).

↓,↑ Keys

Display the ADSL  
connection parameters

```
Showtime
ADSL2+ Annex B
Elapsed 0:00:42↓
└─┘
```

Close the results display.

```
ADSL synchron
ATM (int.)[Kb/s]
d:24393 u: 1349
SAVE ISP STOP
```

Clear down the ADSL connection

```
Save
result?
NO YES
```

< YES >

Save the results in the internal Flash memory.  
The ARGUS saves the results of the test. The  
ARGUS displays the results on the PC (see  
Page 41).

```
Voltage: 95.0V
Modem inactive
DE START
```

< START > Set up an ADSL connection

The ARGUS determines the following ADSL line parameters and error counters - downstream (d:) and upstream (u)::

ADSL Connection Parameters	Meaning
<b>ATM (int. / fast)</b>	The actual useable ATM datarate in kBit/s. The ARGUS will indicate which mode is configured in DSLAM (Interleaved or Fast Mode) by appending either "int." (for interleaved) or "fast" (for Fast Mode).
<b>Attain. ATM [kB/s]</b>	Currently attainable data rate in kBit/s

<b>SNR Margin</b>	Signal-to-noise ratio in dB The SNR margin or Noise margin - is a measure of how much additional noise the transmission can withstand and still achieve a BER (Bit Error Rate) of $10^{-7}$ .
<b>Output PWR</b>	Output power in dBm
<b>Attenuation</b>	The line's attenuation in dB over its entire length.
<b>Interleave Depth</b>	Interleave depth in bytes
<b>CRC (int. / fast) Cyclic Redundancy Check</b>	The superframe checksum sent from the opposing end does not match the one calculated locally. Possible cause: Fault on the line. f (far): Errors that the DSLAM has detected and informed the ARGUS. n (near): Errors which were detected by the ARGUS in the blocks it received. The ARGUS will indicate which mode is configured in DSLAM (Interleaved or Fast Mode) by appending either "int." (for interleaved) or "fast" (for Fast Mode).
<b>FEC (int. / fast) Forward Error Correction</b>	The FEC shows the number of transmission errors corrected using the ATM cell checkbytes. f (far): Errors that the DSLAM has detected and informed the ARGUS. n (near): Errors which were detected by the ARGUS in the blocks it received. The ARGUS will indicate which mode is configured in DSLAM (Interleaved or Fast Mode) by appending either "int." (for interleaved) or "fast" (for Fast Mode).
<b>HEC (int. / fast) Header Error Checksum</b>	The HEC shows the number of ATM cells with bad header checksums. f (far): Errors that the DSLAM has detected and informed the ARGUS. n (near): Errors which were detected by the ARGUS in the blocks it received. The ARGUS will indicate which mode is configured in DSLAM (Interleaved or Fast Mode) by appending either "int." (for interleaved) or "fast" (for Fast Mode).

### 8.2 Ping test

In the Ping test, the ARGUS checks whether it is possible to setup a connection to an Internet Service Provider (ISP) via the DSLAM and ATM network:

The ARGUS sends a total of four test packets to a predefined IP address (remote site) and then waits for a packet in reply. Based on the received packet, it is possible to evaluate the ATM network availability and delay.

The following parameters, which can be configured from the PC using the web interface, are required for the ATM ping test:

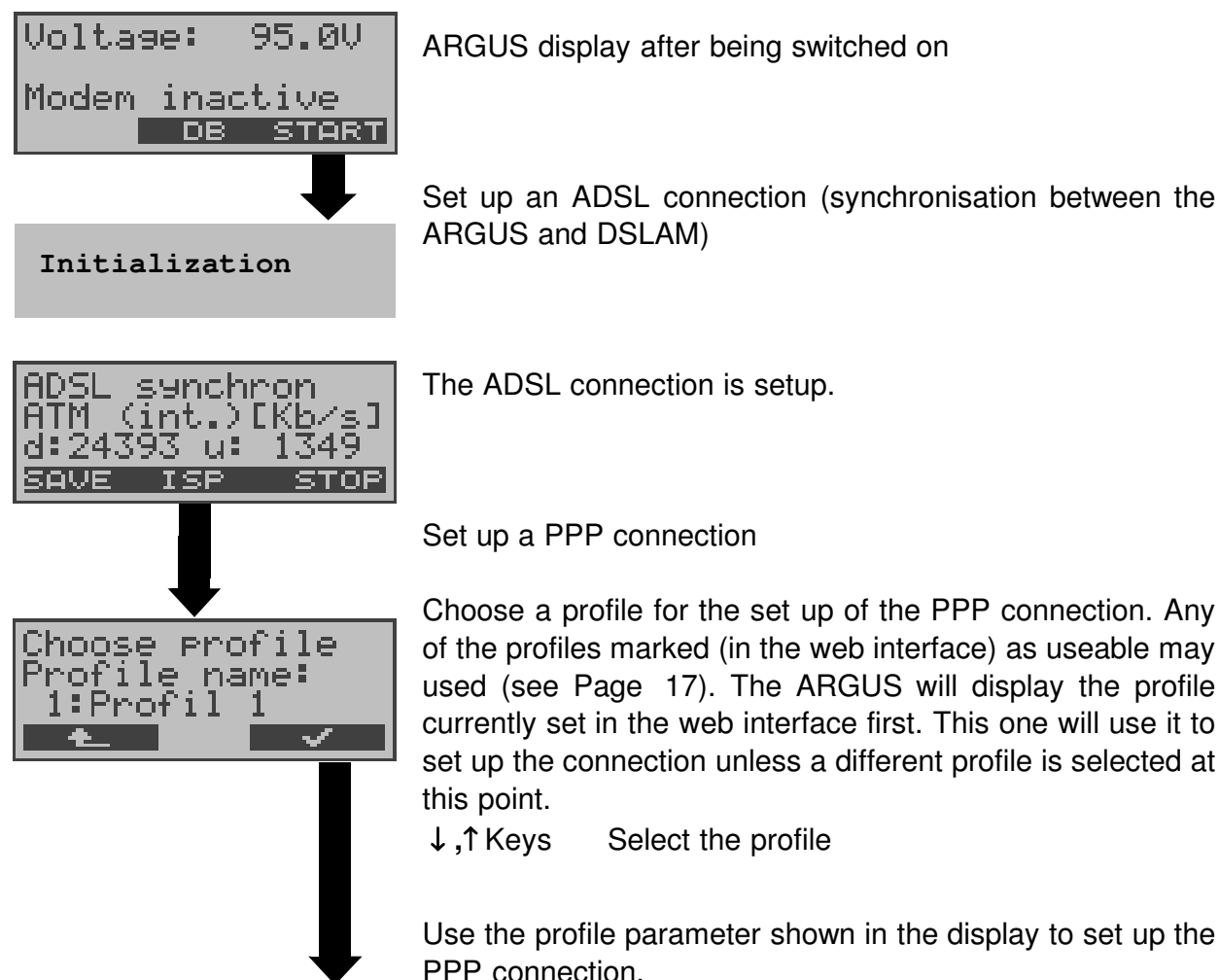
#### Ping parameter (see Page 24)

- IP address: address of the remote site (default: www.argus.info)

#### PPP parameters (see Page 21)

- User name for the Internet connection
- Password for the Internet connection

#### Starting a Ping test:



```

PPP connection
Initializing
  ABORT STOP
  
```

Initialization

&lt; ABORT &gt; Abort the set up of the PPP connection

&lt; STOP &gt; Clear down the ADSL connection

```

PPP connection
active
  PING LOGOUT STOP
  
```

&lt; LOGOUT &gt; Tear down the PPP connection

&lt; STOP &gt; Clear down the ADSL connection



```

Ping test
Initializing
  ABORT ADSL
  
```

Initialization

&lt; ADSL &gt; Display the ADSL connection parameter

### Ping test

```

Ping result:
www.argus.info
Rx:4      Tx:4
  PING LOGOUT STOP
  
```

The ARGUS will display the IP address of the remote end, the current number of test packets sent (Rx) and the number of packets received in reply (Tx).



Display the ADSL connection parameter (see Page 34)

< PING > Start a new Ping test  
You will now be prompted as to whether the results (Ping result and the ADSL connection parameters) should be saved.

< LOGOUT > Tear down the PPP connection  
You will now be prompted as to whether the results (Ping result and the ADSL connection parameters) should be saved.

```

Save
result?
  NO      YES
  
```

&lt; YES &gt; Save the results in the internal Flash memory. The ARGUS will save the results of the test (Ping results and the ADSL connection parameters). The ARGUS displays the results on the PC (see Page 41).

```

Voltage: 95.0V
Modem inactive
  DE START
  
```



A screenshot of a terminal window with a grey background. The text displayed is: 'Ping test', 'Error:', 'No PPP connec.', and a prompt '➔ ADSL NEW'.

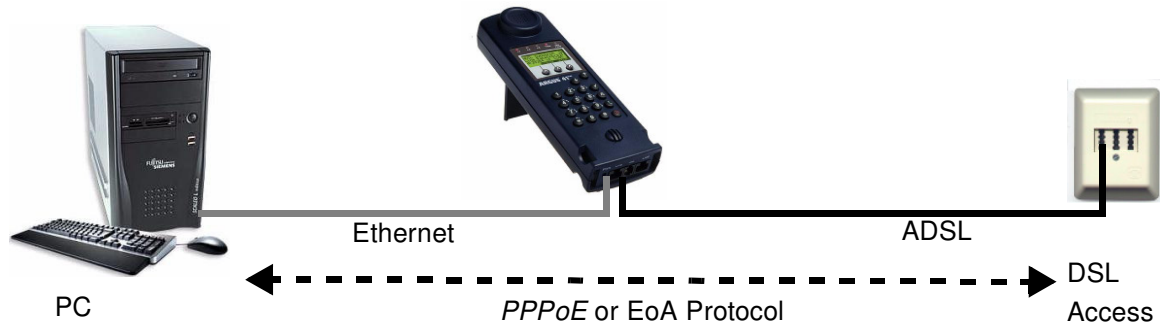
### **Ping test – Error messages**

If an error occurs, the ARGUS will stop the test and display an error message (see Page 48).

**< NEW >**      Start a new Ping test

### 8.3 Bridge mode (optional)

In Bridge mode, the ARGUS acts like a simple ADSL modem, i.e. the ARGUS passively passes all packets from the Ethernet side to the ADSL access (and vice versa). In this case, the PC is responsible for setting up the connection.



#### Setting the parameters:

The following ATM parameters are required for Bridge mode:

- VPI/VCI (see Page 19)
- Encapsulation (Page 19)

#### ADSL connection in Bridge mode:

```
Voltage: 95.0V
Modem inactive
DB START
```

ARGUS display after being switched on

Initialization

Set up an ADSL connection (synchronisation between the ARGUS and DSLAM)


While the ARGUS is attempting to set up the ADSL connection, the "L1 Sync" LED will flash. The ARGUS will display the ADSL mode.

```
ADSL synchron
ATM (int.) [Kb/s]
d:24393 u: 1349
SAVE ISP STOP
```

Once the connection has been set up ("L1 Sync" LED on constantly), the ARGUS will display the actually useable datarates for downstream and upstream.



```
Bridge mode
Active!
Elapsed00:03:47
└─┬─┘ ADSL
```

The ARGUS will display how long Bridge mode is active.  
<  > The ARGUS will return to the previous display

```
Showtime
ADSL2+ Annex B
Elapsed 0:00:42└
└─┬─┘
```

The ARGUS will display the ADSL mode and the duration of the ADSL connection.

↓,↑ Keys Scroll through the test results,  
(see the table on Page 34).

```
ADSL synchron
ATM (int.)[Kb/s]
d:24393 u: 1349
SAVE ISP STOP
```

< **ISP** > Set up a PPP connection (see Page 36)  
Start a Ping test (see Page 36)

< **SAVE** > Save the results in the internal Flash memory

< **STOP** > Clear down the ADSL connection  
When the connection is being cleared down,  
you will be prompted as to whether the results  
should be saved (see Page 34).



## 8.4 Displaying the test results on the PC

To connect the ARGUS to the PC, plug one end of the included patch cable (twisted pair) into the "LAN" jack on the ARGUS and the other end into the PC's Ethernet jack. Switch the ARGUS on and the "LAN" LED will light (for the settings on the PC, see Page 15).

Start any common Internet browser and enter the following address <http://192.168.10.1>. The web interface will open. The results last saved in the internal Flash memory of the ARGUS will be displayed on the PC.

Click on "Test report".

Home  
Settings  
**Test report**  
Contact

### Test report

Type	ARGUS 41 <sup>PLUS</sup>
FW version	V1.55.D
Serial no.	3255
Date	24.02.00
Time	00:04

### Settings

Access	ADSL
Access mode	ATU-R Bridge
VPI	1
VCI	32
Encapsulation	LLC

The ARGUS will display the parameter settings used for the test.



Three additional error counters, which are not shown on the ARGUS display (see Page 34), are included in the test report:

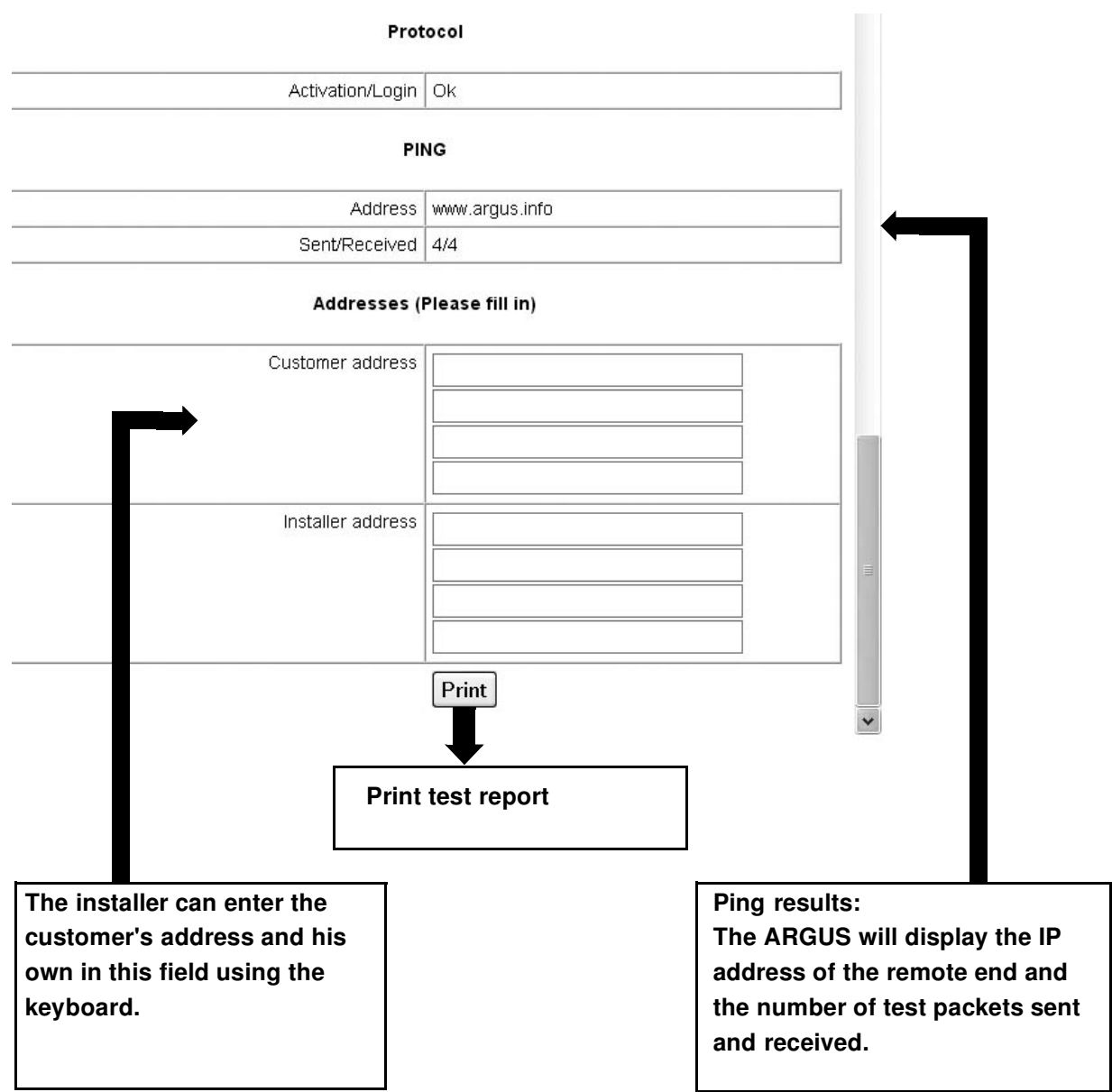
Results		
ADSL		
Synchronisation	Ok	
Activation time [s]	23	
Showtime [hh:mm:ss]	00:00:46	
Mode	ADSL2+ Annex A	
ADSL values	Downstream	Upstream
ATM interleaved Bitrate [kbit/s]	25995	1273
Attainable ATM Bitrate [kbit/s]	26088	1296
Noise Margin [dB]	9.2	6.9
Attenuation [dB]	0.0	1.7
Output Power [dBm]	13.2	5.1
Interleave Depth [B]	64	8
Error counter	Far end	Near end
CRC	0	0
FEC	0	0
HEC	0	0
LCD	0	0
LOS	0	0
NCD	0	0

**LCD (int./fast)**

This value is not shown on the ARGUS display but only in the test report on the PC!

Loss of Cell Delineation (loss of cell synchronisation)  
 The cell synchronisation, which is based on the recognition of the ATM cell header, has been lost.  
 The ARGUS will indicate which mode is configured in DSLAM (Interleaved or Fast Mode) by appending either "int." (for interleaved) or "fast" (for Fast Mode).

<p><b>LOS (int./fast)</b></p> <p> This value is not shown on the ARGUS display but only in the test report on the PC!</p>	<p>Loss of signal</p> <p>The level of the received pilot signal was 6dB below the limit value for more than 100ms.</p> <p>The ARGUS will indicate which mode is configured in DSLAM (Interleaved or Fast Mode) by appending either "int." (for interleaved) or "fast" (for Fast Mode).</p>
<p><b>NCD (int./fast)</b></p> <p> This value is not shown on the ARGUS display but only in the test report on the PC!</p>	<p>No Cell Delineation (no cell synchronisation)</p> <p>The ATM cell synchronisation was not achieved.</p> <p>The ARGUS will indicate which mode is configured in DSLAM (Interleaved or Fast Mode) by appending either "int." (for interleaved) or "fast" (for Fast Mode).</p>



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## 9 Appendix

### A) ADSL Acronyms

<b>ADSL</b>	Asymmetric Digital Subscriber Line
<b>ANT</b>	ADSL Network Termination Unit
<b>ANSI</b>	American National Standards Institute
<b>ATM</b>	Asynchronous Transfer Mode (network-side transmission protocol)
<b>ATU-C</b>	ADSL Transceiver Unit - Central Office (network-side/DSLAM)
<b>ATU-R</b>	ADSL Transceiver Unit - Remote (ADSL modem)
<b>BER</b>	Bit Error Rate
<b>CRC</b>	Cyclic Redundancy Check (checksum)
<b>CTRL-E</b>	Control External
<b>DMT</b>	Discrete Multi-Tone
<b>DRA</b>	Dynamic Rate Adaptation
<b>EOC</b>	Embedded Operations Channel
<b>ES</b>	Errored Seconds
<b>FEC</b>	Forward Error Correction
<b>HEC</b>	Header Error Control
<b>LOCD</b>	Loss of Cell Delineation
<b>LOF</b>	Loss of Frame
<b>LOP</b>	Loss of Power
<b>LOS</b>	Loss of Signal
<b>LT</b>	Line Termination
<b>ME</b>	ADSL Management Entity
<b>MIB</b>	Management Interface Base
<b>NIC</b>	Network Interface Card (network adapter card)
<b>NT</b>	Network Termination (network-side)
<b>OAM</b>	Operations, Administration and Maintenance
<b>OBC</b>	On Board Controller
<b>POTS</b>	Plain Old Telephone Service (Analog)
<b>PSD</b>	Power Spectral Density
<b>QOS</b>	Quality of service
<b>RA</b>	Rate Adaptation
<b>SAR</b>	Segmentation and Reassembly Unit

**SER** Severely Errored Seconds

**SNR** Signal-to-Noise Ratio

## B) Error message: ADSL connection

<b>ARGUS Error Message</b>	<b>Meaning of the Error Message</b>
<b>Incomp.linecon.</b>	Incompatible line conditions: One or more of the following conditions could not be met on the line: ATM data rate, signal-to-noise ratio or transmit power.
<b>No lock possib.</b>	No lock possible: A connection to ATU-C is not possible.
<b>Protocol error</b>	An error occurred during the activation phase.
<b>Message error</b>	During the activation, a message arrived from the ATU-C side that could not be understood. (possibly the wrong format or a CRC error)
<b>Spuri. ATU det.</b>	Spurious ATU detected: This error will be displayed when: An activation signal has been detected on the line, but it is not from the ATU-C. (Fault on the line) 2. An error occurred before the ARGUS received a complete message with a correct CRC sum..
<b>Forced silence</b>	The idle (silent) phase (1 minute) initiated by the ATU-C side was not kept. During this period, an activation may not be initiated.
<b>Unsel.op.mode</b>	Unselectable operation mode: Operation mode not supported.
<b>Cancelled</b>	The test was interrupted or timed out.

### C) Error message: PPP connection

ARGUS Error Message	Meaning of the Error Message
No error	No PPPD error occurred.
Fatal error	Fatal PPPD error occurred. Possible cause: system or memory error
Option erro	The PPPD options are faulty: wrong parameters for PPP setup
PPP: not root	The PPPD must be called by the Linux "root" user.
No PPPD support	Operating system does not support PPP connections.
Rec.sig.error	The PPP setup was canceled by a SIGINT, SIGTERM or SIGHUP signal, e.g. canceled by the user or because the waiting time has elapsed.
PPP: Port open error	PPPD communications error: Serial port could not be locked.
PPP: Port open error	PPPD communications error: Serial port could not be opened.
Con.script err.	Error when calling the connection script.
PPP: Command erro	Not possible to start with the PPPD's pty option
Negotiation err	Cannot negotiate the network protocol for PPPD, so the remote site is not reachable.
Peer auth. error	The other end did not provide authentication
Idle release	Connection was terminated, since there was no activity.
Time out rel	Connection was terminated, since the maximum connection time elapsed.
PPP Callback	Callback was initiated, an incoming call is expected soon.
PPP: Echo req. error	Remote site did not answer echo requests so the connection has been terminated. (PPP connections are tested at regular intervals by sending echo requests to the remote site.)
Hanging up rel	Disconnected by remote site.
Loopback erro	The setup of the PPP connection was cancelled, since a loopback was detected.
Init script err.	Error caused by the PPPD's init script.
Authent. Error	Authentication error: Wrong user name or password - rejected by remote site.
PADO timeout	No PADO packet received.
PADS timeout	No PADS packet received.





## D) General Error Messages

ARGUS Error Message	Meaning of the Error Message
<b>Mode not supp.</b>	Mode currently not supported. Presently, the following modes are supported: PC_REPLACEMENT_MODE, PC_MODEM_REPLACEMENT_MODE, MODEM_REPLACEMENT_MODE
<b>Prot. not supp.</b>	The protocol (IP, PPPoE, etc.) is not supported in the selected mode.
<b>Test not supp.</b>	The test (Ping) is not supported for the selected mode and protocol.
<b>Unknown error</b>	Unknown error occurred.
<b>No PPP connec.</b>	No PPP connection can be setup. (for details see Page 48)
<b>Test aborted</b>	Test aborted by user.
<b>Pingstart error</b>	Error when starting the Ping test.
<b>Fault: Unexp. IP down</b>	Unexpected termination of the PPP connection. (for details see Page 48)
<b>Unexp. PING end</b>	Unexpected termination of the Ping test.
<b>Interface error</b>	Error while starting/terminating the network interface. (for details see the error codes of the interface script)
<b>Fault: TR Start</b>	Error when starting the Traceroute test.
<b>Fault: TR Packet</b>	The test timed out since the traceroute answer packet did not arrive within the specified time.
<b>DHCP timeout LAN</b>	DHCP Client timeout (LAN)
<b>DHCP NAK err LAN</b>	The DHCP server refused the DHCP client (LAN)
<b>MASQ error</b>	Error while starting/terminating the routing rules. (for details see the error codes of the routing rules)
<b>TR unreachable</b>	The destination host cannot be reached with UDP packets from traceroute. Possible cause: Router or firewall is discarding UDP packets
<b>DHCP timeout WAN</b>	DHCP client timeout (WAN)

## E) ARGUS Messages - Script Errors

ARGUS Error Message	Description
0	No error occurred.
33	Wrong parameter. Possible parameters: PRE_UP, UP or DOWN
44	Mode not supported for selected parameter.
55	Protocol not supported for selected parameter and mode.
66	Selected modem replacement mode is not supported. Possible mode: BRIDGE

## F) ARGUS Messages - Routing Rules

ARGUS Error Messages	Description
0	No error occurred.
77	Wrong parameter. Possible parameters: START and STOP
88	Packet filter mode is not supported. Possible modes: STRICT and ALL
99	Error in the selection of dynamic or static. Possible selections: DYNAMIC or STATIC