# **ARGUS43 - Manual**

(This manual applies for ARGUS43s beginning with serial number 3000)

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## **1** Introduction

The **ARGUS 43** is a compact handheld tester for ADSL and POTS (analog) accesses.

It can be used to measure all of the relevant up and downstream line parameters and presents a graphic display of the bit distribution, depending on the version, for both ADSL-over-Pots and ADSL-over-ISDN.

On POTS accesses, the ARGUS 43 can also simulate a POTS terminal, listen-in and measure voltages.

An optional IP ping function and an Ethernet interface with an Ethernet through-mode can be added to enable the ARGUS 43 to also test Internet connections. With these, the tester can exchange data packets with Internet providers to determine the transmission quality of Internet connections. The option(s) extend the testers with support for a whole range of additional test functions, which include among others a trace-route function for displaying all of the routers involved and ADSL data throughput tests for the TFTP and http protocols. A TCP/IP dump includes the IP data and thus permits the user to perform an IP protocol analysis.

An overview of some important ARGUS functions:

#### • ADSL Test

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

Displays the upstream/downstream ATM cell errors and - in conjunction with an Alcatel ATU-C - bit error statistics

Displays the maker of the ATU-C.

Optional: Trace route test

Optional: Download test

Optional: ATM ping test

Optional: VPI/VCI scan test

Optional: Ethernet / LAN extension

#### Analog telephony function

Can a telephone call be placed from this analog access to every other number and/or can this access receive a call?

#### • POTS (analog) Functionality

Tests CLIP and other Caller-ID services in accordance with ETS 300 659/778.

- POTS Line Monitoring (passive listening-in)
- POTS Voltage and Polarity Measurement

### • The Access Acceptance Report

When the ARGUS is linked to a PC via the serial interface, it is, as an example, possible to create and print a comprehensive test report on the PC.

Should you have any further questions, please contact us:

#### intec GmbH

Rahmedestr. 90 D-58507 Lüdenscheid Tel.: +49 (0) 2351 / 9070-0 Fax: +49 (0) 2351 / 9070-70 www.argus.info support@intec-isdn.de

## 2 Safety Instructions

The ARGUS may only be used with the included accessories. Usage of other accessories may lead to erroneous measurements and may even cause damage to 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 12 Replacing the accumulators), disconnect all the test leads and switch the ARGUS off.

Make certain that the polarity is correct when connecting the batteries!

# 3 Technical data

# Dimensions /

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

## Inputs / Outputs

1 RJ45 for ADSL or analog (POTS) (optional)

1 jack for an external power supply

1 RJ-11 for the serial interface

1 RJ-45 10BaseT Ethernet (optional)

# Temperature Ranges

Ambient-temperature: 0  $^{\circ}$  to +50  $^{\circ}$ 

Operating temperature: -5  $^{\circ}$  to +55  $^{\circ}$ 

# Memory

EEPROM Non-volatile memory: 16 K Byte Flash program memory: 2 Mbyte S-RAM: 512 Kbytes

with the optional IP test function an additional

Flash program memory: 4 Mbyte SDRAM: 16 Mbyte

# Power

**Supply** NiMH rechargeables or

9 V, plug-in power supply

#### **Receiver** inset LEDs LCD display 4x16 characters Softkeys ٨ ۸ ARGUS'43 1 Menu control 1 Numerical Confirmation key keypad V Layer 1 measurement л Calling Pickup / Hang up Power / **Display backlighting** Microphone Fastener for shoulder strap

## 4 Operation - a brief guide



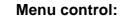
#### Power Key:

- 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 (must be pressed somewhat longer)



#### **Confirmation key:**

- Select menu or continue



- Open the menu list
- Scroll through lists
- Select a menu
- Select a function in an open menu



#### Telephony

- Pickup or hang up
- Simplified overlap signalling: press the telephone key twice.



### Voltage measurement:

Voltage measurement / Polarity display



# Number Pad:

- Entry of the digits 0....9 and of the special characters \*, # (e.g. the call number or numerical entry in a function)
  Direct function call
- Direct function c



#### Softkeys:

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

Connectors on the end:



• 9 V-

Connection for the external 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 103).

Line •



Pin assignment 7/8 POTS, ADSL

- Connection for a POTS (analog network)
- Connection for the ADSL network

#### • 10BaseT (optional Ethernet/LAN extension)

- Connection to the PC's network card via the X-crossed patch cable (Access mode: PC-ARGUS-ADSL (modem replacement or through mode) )
- Connection to the Ethernet interface of the ADSL modem via the 1:1 patch cable (Access mode: ARGUS-Modem-ADSL (PC replacement mode))
- V.24
- Serial interface to connect 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 state of the accumulator charge will be displayed graphically (if the tester is not connected to its plug-in power supply).

In the LCD display, a battery symbol will begin to blink, when there is still approximately 15 minutes reserve. During this period, it is possible that there may be audible interference and in rare cases even malfunctions (see "Accu servicing" on page 103.).

#### **Power Down**

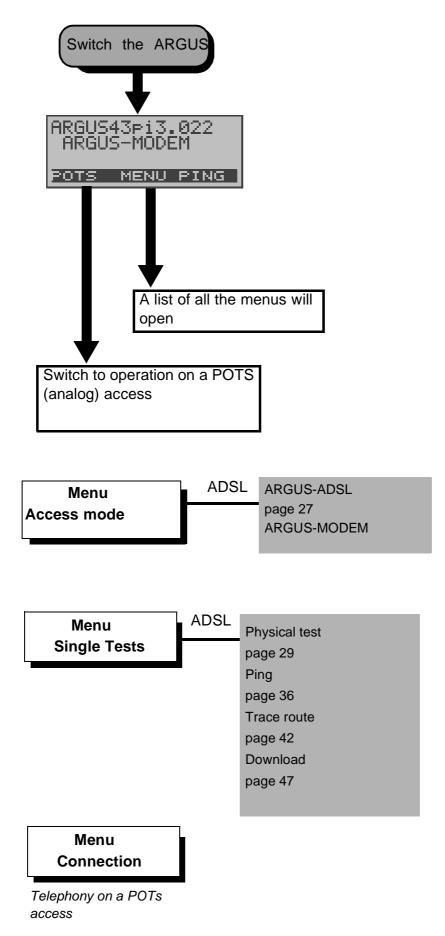
In accu/battery operation, if the ARGUS is idle for 15 minutes, it will automatically switch to the power-down mode (power-down).

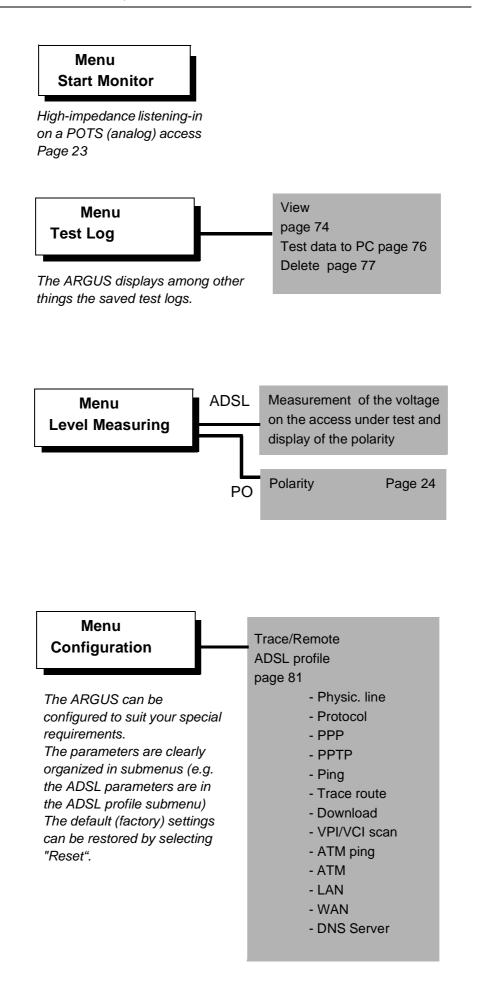
The ARGUS will remain in power-down mode until the Power-Key is pressed again.

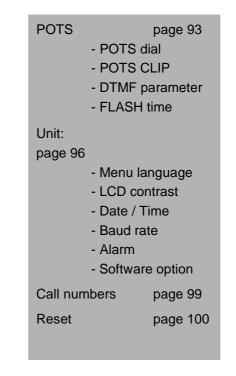
Reasonably enough, the ARGUS will **not** enter power-down mode during a test or when it is in Trace mode.

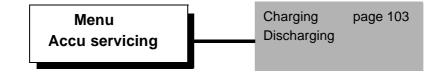
As an alternative, it is possible to operate the ARGUS using the included power supply. If the ARGUS is connected to the plug-in power supply, it will automatically disconnect the accumulators and will not enter power-down mode.

# 5 Menu Hierarchy





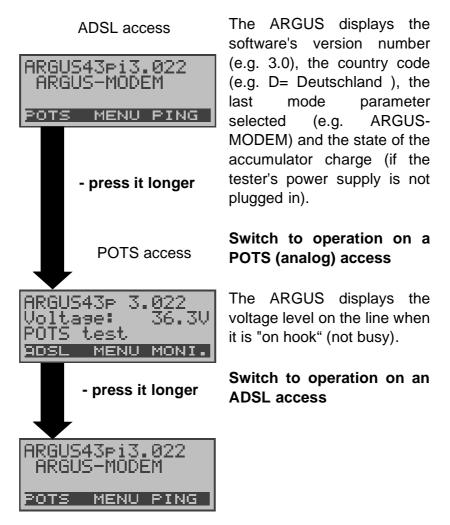




## 6 Start-Up

Using the included cable, connect the ARGUS to the access to be tested.

Power Key: Switch the ARGUS on.



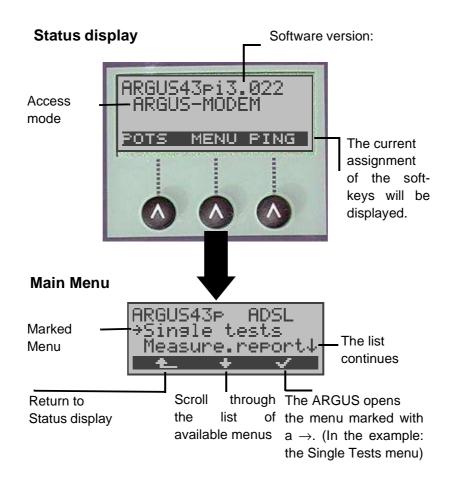
#### Softkeys:

The current assignment of the three softkeys is shown (white on black) in the lower line of the display.

The ARGUS is in largest part operated with the two  $\downarrow \uparrow$  - Keys, the confirmation key  $\checkmark$  and the three softkeys.

On the following pages, only the softkey's meaning in the respective context is shown - enclosed in brackets <> , e.g. <NO>.

The  $<\checkmark$  > softkey serves the same function as the  $\checkmark$  confirmation key and the  $<\downarrow$  > softkey performs the same function as the corresponding arrow key on the ARGUS keypad.

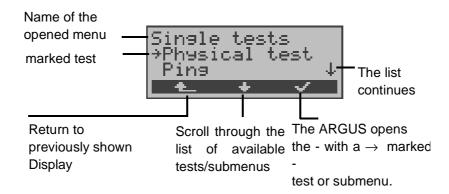


**ARGUS - Main menu** 

Press the  $<\downarrow>$  to scroll though the list of menus available in the Main menu:

ADSL access	POTS access	
	(optional)	
Single Tests	Connection	
Test Log	Start Monitor	
Level Measuring	Test Log	
Configuration	Level Measuring	
Access mode	Configuration	
Accu servicing	Accu servicing	

With the  $< \checkmark >$ , you can open the menu currently marked with the  $\rightarrow$  (in the example Single Tests).



#### Function keys:

Using the digit keys, you can start ARGUS functions directly, regardless of the currently active menu level.

Numeric key 5 Send the selected test log (see Page 76)			
to the PC			
Numeric key 7 Entry of your own and remote			
call numbers in the speed-dialing memory			
numeric key 8 Start the Remote function (optional)			



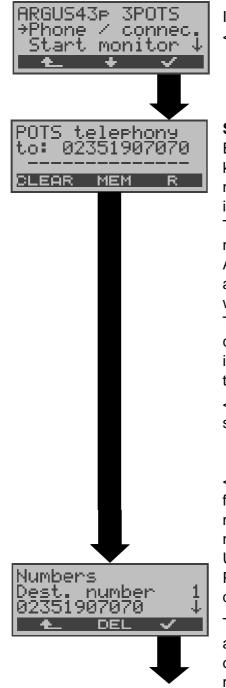
If a function is called where the ARGUS expects the entry of a digit, pressing a number key will be interpreted as the expected input.

# 7 Operation on a POTS access (optional)

## 7.1 Connection

#### Procedure for an Outgoing Call (POTS)

The ARGUS sets up a connection to another terminal. If the terminal is a telephone, the handset integrated in the ARGUS can be used to hold a conversation.



In the Main menu, use the  $<\downarrow>$  to select **Connection**.

#### Setup the connection

Enter the number on the keypad. Each of the number's digits will be dialed individually.

The ARGUS will display the number dialed.

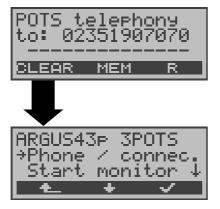
As soon as the remote party answers, a voice connection will be set up.

The ARGUS will display the charges due, if the information is available for the access under test.

<R>: Generate a FLASH signal

<MEM>: Select the number from the call number memory or reenter the number on the keypad Use the <↓> to scroll. Press <DEL> to delete a digit.

The last number dialed will always be used as the default (simplified last number redial)



The ARGUS sends the complete dialing information together.

#### Disconnect

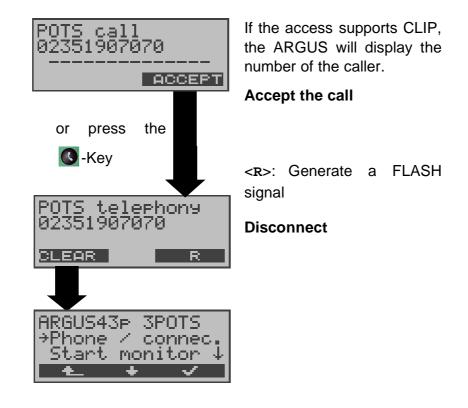


# Simplified overlap signaling using the telephone key

If you press the **O**-Key, the ARGUS will open the POTS telephony window directly from any menu. Once the call number is entered, the call will be setup.

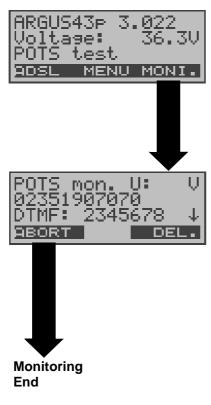
#### Procedure for an Incoming Call (POTS)

The ARGUS signals an incoming call both audibly and on the display.



## 7.2 POTS monitor

Essentially, the POTS (analog) monitor provides a high impedance tap that does not influence the interface. You can listen to the line with the integrated handset without having the ARGUS send on the interface.



If the line is "on hook" (not busy), the ARGUS will first display its voltage level.

#### Start monitoring

(or via "Start Monitor" in the Main menu)

The ARGUS displays the voltage (when "off hook"), the number of the caller (if CLIP is supported) and the DTMF characters dialed by both telephone subscribers and the SMSs received (optional). Any received DTMF-characters will be appended to the line, which will shift left for each character once it is full.

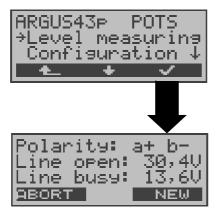
An incoming call will be signalled acoustically.

Using the  $<\downarrow>$ , you can view any other Information that is available (e.g. advice of charges).

Using the **<DEL>**, you can clear the display.

# 7.3 Level measuring on a POTS access

The ARGUS measures the voltage level in both the normal case and when the line is "busy" (trunk line).



Use the  $<\downarrow>$  to select **Level** measuring.

#### Start measurement

The ARGUS will display the polarity of the 2-wire POTS line (red plug "a"; black plug "b") as well as the "on hook" and "off hook" voltage levels. Press **NEW**> to repeat the measurement.

### 8 ADSL Tests

The ARGUS supports a variety of access types:

**ARGUS-ADSL:** Connection of the ARGUS directly to the ADSL access (before or after the splitter). The ARGUS replaces both the modem and the PC.

**PC-ARGUS-ADSL (optional):** Insertion of the ARGUS between the ADSL access and the PC. The ARGUS replaces the ADSL modem (Modem replacement mode).

**ARGUS-MODEM (optional):** Connection of the ARGUS to the ADSL modem. The ARGUS replaces the PC (PC replacement mode).

Depending on the access mode selected (and the protocol), the following ADSL tests are supported:

Access mode	
ARGUS-ADSL	- Physical test
(PC-Modem	- Ping test
replacement mode)	- Trace route test
	- Download test
	- VPI/VCI scan
	- ATM ping
ARGUS-MODEM	- Ping test
(PC replacement	- Trace route test
mode)	- Download test
PC-ARGUS-ADSL	- Physical test
(Modem	- Bridge mode
replacement mode)	- Router mode

The ARGUS displays the results during the test.

If desired, the ARGUS will save the test results (even if the test is aborted) together with the date and time in its internal Flash memory.

The saved results can later be sent to a PC or viewed on the display.

The ARGUS supports the following ADSL modes (depending on the national variant and the installed options)

	ADSL Mode	Standard
-	Annex B (DT)	T-DSL (UR2)
-	Annex B (ETSI)	ETSI DTS
-	Annex A auto	automatic Annex A
		detection
-	ANSI T1.413	ANSI T1.413.2
-	G.Lite	ITU-T G.992.2
-	G.DMT	ITU-T G.992.1



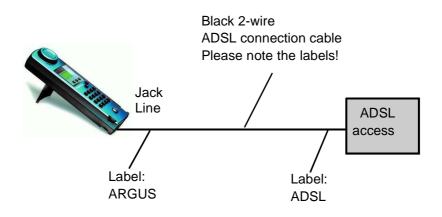
We must point out that the ARGUS records and stored data (e.g. in tracing IP data). The user must comply with the statutory regulations governing the collection and storage of such data and his obligation to give notice in this connection.

## 8.1 The ARGUS in Access Mode Access Mode: ARGUS-ADSL

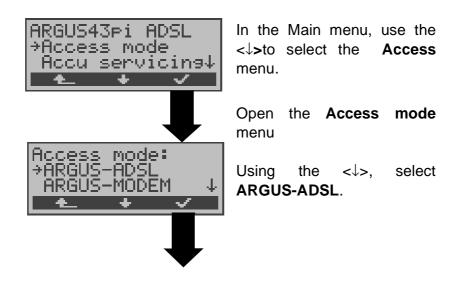
Using the ADSL 2-wire connection cable, the ARGUS is connected directly to the ADSL access (either before or after the splitter). In this case, the ARGUS replaces both the modem and the PC.

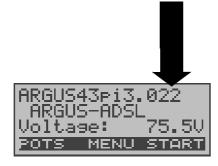
In the ARGUS-ADSL access mode, the following tests can be performed:

- Physical test
- Ping test
- Trace route test
- Download test
- VPI/VCI scan test
- ATM ping test



#### Setting the device to the ARGUS-ADSL access mode:





The ARGUS will open the Status display

The ARGUS will display the selected access mode, ARGUS-ADSL, and the DC voltage on the access interface.



If the ARGUS is not yet active, you must first select a test and start it (see the following pages).

If you press the < 1, the ARGUS will return to the previous display.

#### 8.1.1 Physical test (ADSL line test)

The ARGUS will setup an ADSL connection and determine all of the relevant ADSL line parameters.

The ARGUS displays the results during the test and saves them in the internal FLASH memory when the test is finished or aborted.

#### Parameter settings:

The following parameters must/can be set in the ADSL profile for the physical test (see "Configuring ADSL profiles" on page 81):

- Physic. line: ADSL mode, Link-up time, Rated value, SNR margin DS, Shutdown mode

The ARGUS Status display

If you press **Menu**, the ARGUS will open the Main menu. Press **START>** to open the ADSL profile menu

Using the  $<\downarrow>$ , select the **Single tests** menu.

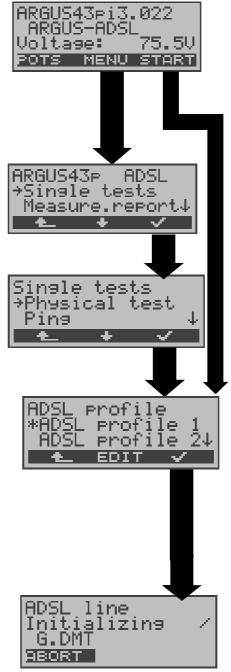
Open the Single tests menu

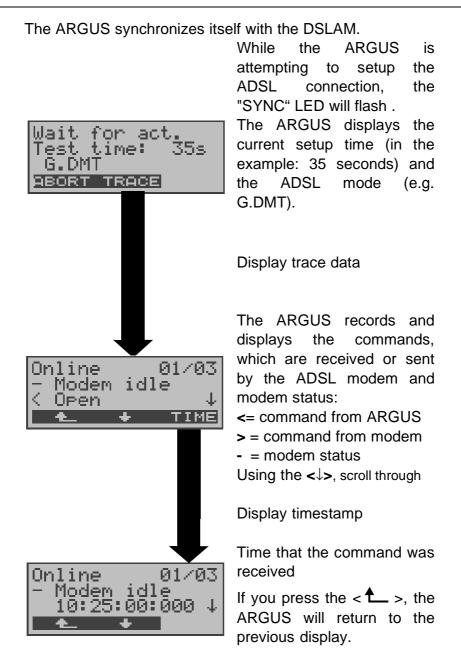
Using the  $<\downarrow>$ , select **Physical test**.

The ADSL profile window will open.

Using the  $<\downarrow>$ , select ADSL profile.

If you press on <EDIT>, the ARGUS will open the settings menu for the profile. In this menu, you can adjust the parameters of the selected profile to suit the respective test situation (see "Configuring ADSL profiles" on page 81).



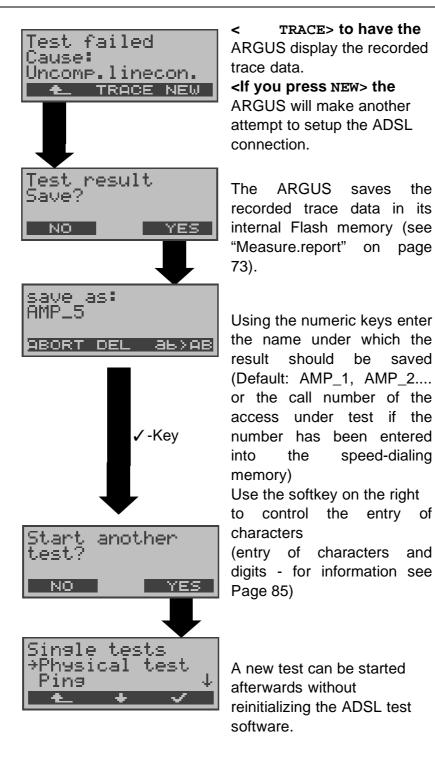


If the connection is not successfully setup within a specific time (a maximum of 2 periods of 4 minutes = "Time out") or if an error occurs during the setup, the ARGUS will display a corresponding error message (see "Error message: ADSL connection" on page 111):

the

saved

and

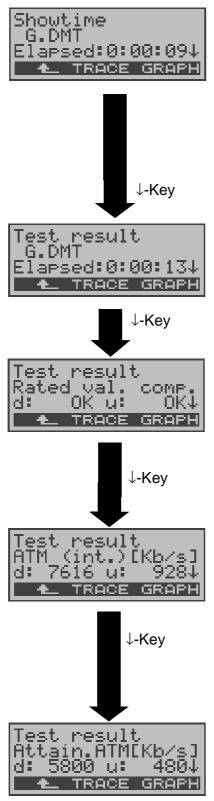


Once the connection has been setup (Sync LED ON constantly), the ARGUS will determine the ADSL line parameters.

After the period set for the test has elapsed (see "Link-Up Time" on page 83 ), the ARGUS will automatically clear down the connection (unless: the test time has been set to "continuous", in which case the test must be terminated manually by pressing <ABORT>).

The ARGUS will display the already determined results during the test.

Once the test is over, the ARGUS will automatically open the results display:



The test has run for 9 seconds.

Use the  $<\downarrow>$ -Key to scroll through the results.

Use the <↑ > -Key to scroll back. Press on <TRACE> to view the trace data. Press <GRAPH> to view the bit distribution (Page 35)

#### Viewing the results

The ARGUS displays the ADSL mode (in this example G.DMT) and the current duration of the test.

#### Rated value comparison:

The rated value, which was set for the bit rate, is compared with the rate actually achieved (see Page 83) d: Downstream

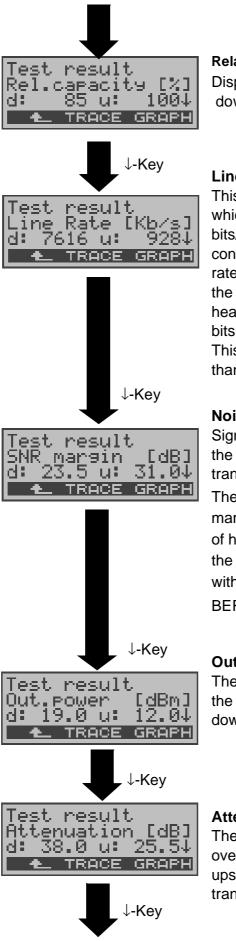
u: Upstream

#### ATM:

Actual usable ATM data rate in kBit/s for downstream and upstream. 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).

#### Attainable ATM

This is the theoretically attainable ATM data rate in kBit/s.



#### **Relative Capacity Occupation**

Displays the upstream and downstream line load.

#### Line Rate

This is the gross data rate, which is calculated from the bits/tone spectrum. In contrast to the ATM data rate, this value also includes the overhead for the ATM header, additional framing bits and checksums.

This value is always higher than the ATM data rate!

#### Noise margin (SNR margin)

Signal-to-noise ratio in dB for the upstream / downstream transmission

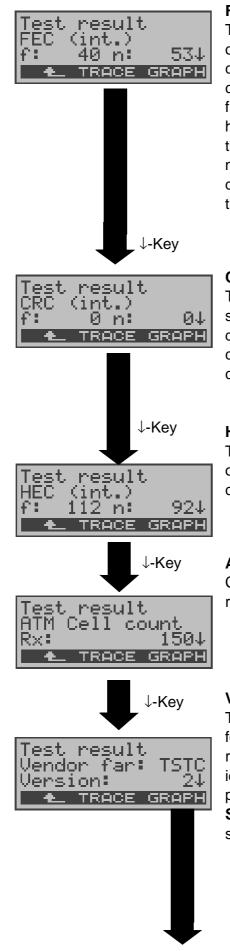
The SNR margin or Noise margin - is a measure (in dB) of how much additional noise the transmission can withstand and still achieve a BER (Bit Error Rate) of 10<sup>-7</sup>.

#### **Output power**

The output power in dBm for the upstream and downstream transmission

#### Attenuation

The line's attenuation in dB over the entire line for upstream and downstream transmissions



#### **Forward Error Correction**

The FEC shows the number of transmission errors corrected by 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.

#### Cyclic Redundancy Check

The superframe checksum sent from the opposing end does not match the one calculated locally. Possible cause: Fault on the line.

#### Header Error Checksum

The HEC shows the number of ATM cells with bad header checksums.

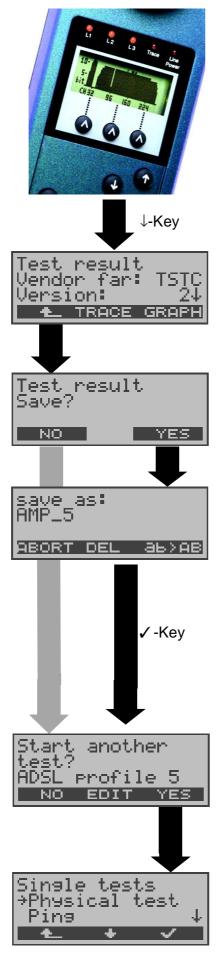
#### **ATM Cell count**

Counter for the sent (Tx) and received (Rx) ATM cells

#### Vendor far

The hexadecimal ID number for the manufacturer of representation (see "Vendor identification numbers" on page 106) **SW version** on the ATU-C

side



#### **Bit distribution**

i.e. bits transported per carrier frequency (y-axis: bits per carrier frequency (tones); x-axis: carrier frequency) Based on the bit distribution, it is possible to detect line disturbances (e.g. HDB3, HDSL, RF.....)

Return to the ADSL line parameters e.g. Vendor far

Close the results display

Press **YES**> to have the ARGUS save the result in the first available record in the FLASH memory (see "Measure.report" on page 73).

Using the numeric keys enter the name under which the result should be saved (Default: AMP\_1, AMP\_2.... or the call number of the access under test if the number has been entered into the speed-dialing memory)

Use the softkey on the right to control the entry of characters (entry of characters and digits - for information see Page 85)

Press **<EDIT>** to edit the parameters of the displayed ADSL profile (see Page 81)

Any ADSL test desired can be started without reinitializing the ADSL test software.

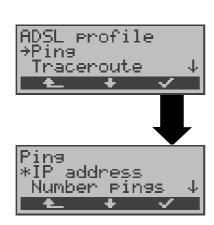
#### 8.1.2 Ping test

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 test packet 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. It is also possible to determine the network's maximum data packet size.

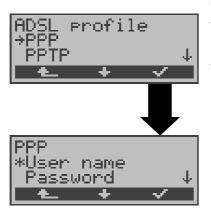
The following parameters (which are stored in the ADSL profile, see Page 81) are required for the Ping test:

#### **Protocol independent parameters**



#### Ping - Parameter

IP address: Address of remote site
Number of pings: Number of test packets, sent by ARGUS
Pause: Pause between sending two test packets
IP packet size: Size of the test packet
Fragmentation: Sets the fragmentation of the test packet (see "Ping:" on page 86)



#### PPP parameters

User name for the Internet connection
Password (see "PPP:" on page 84)

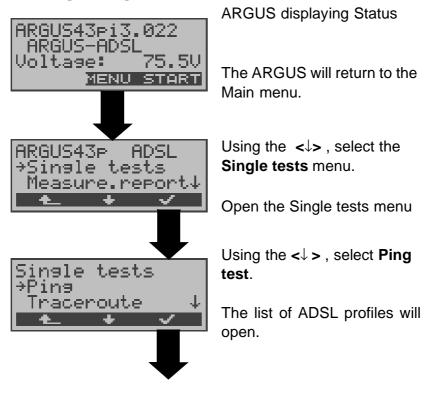
Protocol

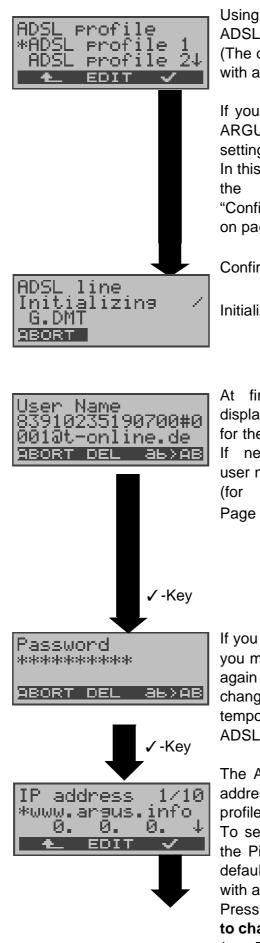
dependent

Protocol	PPPoE / PF	PoA	IPoA / EoA
Parameter	ATM		ATM
	- VPI / VCI - Encapsulat	ion	- VPI / VCI - Encapsulation
	PPP		
	- User name - Password		
	ADSL mode		ADSL mode
			WAN:
			<ul> <li>IP mode (Static IP)</li> <li>own IP address</li> <li>IP network mask</li> <li>remote IP address</li> </ul>
			DNS server: - DNS Server 1 - DNS Server 2

#### parameters

# **Starting a Ping test:**





Using the  $<\downarrow>$ , select an ADSL profile. (The default profile is marked with an "\*".)

If you press on **<EDIT**>, the ARGUS will open the settings menu for the profile. In this menu, you can change the parameters (see "Configuring ADSL profiles" on page 81).

Confirm selection of profile.

Initializing the ARGUS

At first, the ARGUS will display the user name stored for the ADSL profile.

If necessary, change the user name

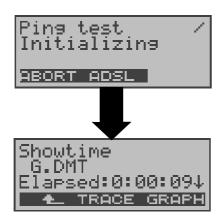
(for instructions, see Page 85)

If you change the user name, you must enter the password again (see Page 85). The changes are placed in temporary storage. The ADSL profile is not modified.

The ARGUS displays the IP address stored in the ADSL profile.

To select the IP address for the Ping, use the  $<\downarrow>$  (The default address is marked with an "\*".)

Press <EDIT> if you want to change the IP address. (see Page 86).



**Ping test** 

Ping test	1
Sent: Received:	5
ABORT ADSL	

Initializing the test software

Press the **<ADSL**> or Level-Key to display the ADSL mode, ADSL line parameters (scroll through with the ↓-Key), trace data (**<TRACE**>), bit distribution (**<Graphic**>).

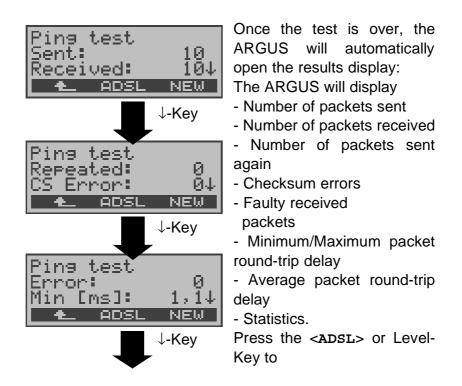
The ARGUS will start the Ping test

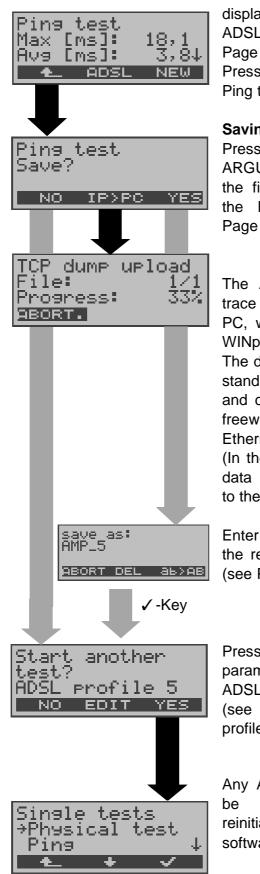
During the test, the ARGUS will display the current number of test packets sent and the number of packets received in reply.

Depending on the access mode and protocol, the LAN, WAN, PPP and ATM statistics will also be displayed (scroll through with the  $\downarrow$ -Key).

If you press **<ADSL**>, the ADSL line parameters will be displayed.

Press **<ABORT>** to cancel the test. The ARGUS will display the results collected thus far and will inquire whether to save them.





display the ADSL mode, ADSL line parameters... (see Page 29). . Press <**NEW**> to start a new Ping test.

#### Saving a Ping test

Press <**YES**> to have the ARGUS save the result in the first available record in the FLASH memory (see Page 73).

The ARGUS will send the trace file to the connected PC, which must be running WINplus or WINanalyse.

The data will be saved in the standard "libpcap" format and can be decoded with a freeware tool, such as Etherreal.

(In the example, 33% of the data was already uploaded to the PC.)

Enter the name under which the results should be saved (see Page 35).

Press **<EDIT>** to edit the parameters of the displayed ADSL profile (see "Configuring ADSL profiles" on page 81)

Any ADSL test desired can be started without reinitializing the ADSL test software.

Ping Test – Error messages



If an error occurs, the ARGUS will stop the test and display an error message. Press *<NEW>* to start a new Ping test.

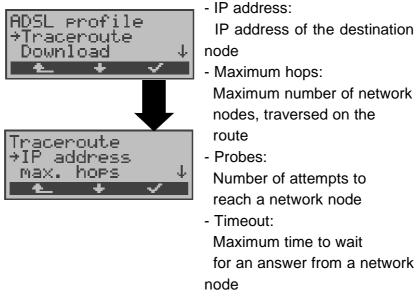
For a description of the error messages, please see the appendix.

# 8.1.3 Trace Route - Test

In a Trace Route test, the ARGUS sends a test packet and then displays a list of all of the network nodes (hops) and their response times on the way to the destination address. This information can then be used to precisely locate delays in the network.

The following parameters (which are stored in the ADSL profile, see Page 81) are required for the Trace Route test:

#### Protocol independent parameters



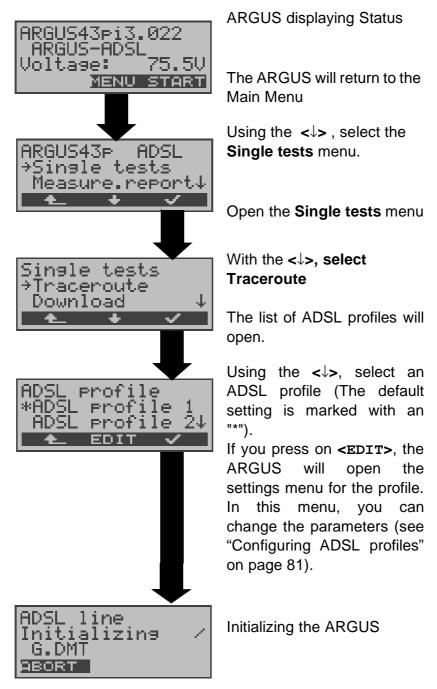
(see "Traceroute:" on page 88)

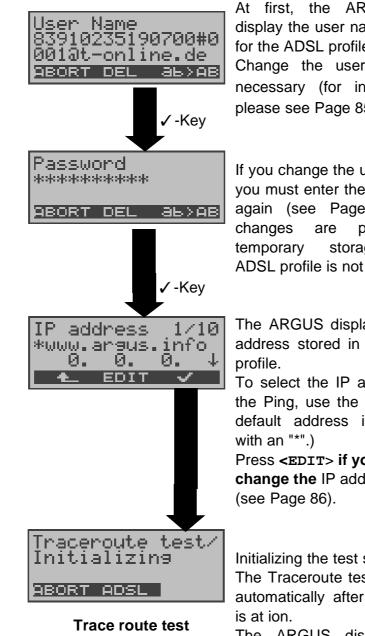
#### **Protocol dependent parameters**

ATM
- VPI / VCI - Encapsulation
ADSL mode

	WAN:
	<ul> <li>IP mode (Static IP)</li> <li>own IP address</li> <li>IP network mask</li> <li>remote IP address</li> </ul>
	DNS server:
	- DNS Server 1 - DNS Server 2

# Trace Route Test - starting





raceroute test/ -1 : 0,0 192.168. ABORT ADSL



At first, the ARGUS will display the user name stored for the ADSL profile. Change the user name if necessary (for instructions, please see Page 85)

If you change the user name, you must enter the password again (see Page 85). The placed in storage. The ADSL profile is not modified.

The ARGUS displays the IP address stored in the ADSL

To select the IP address for the Ping, use the  $<\downarrow>$  (The default address is marked

Press <EDIT> if you want to change the IP address.

Initializing the test software The Traceroute test will start automatically after the initial

The ARGUS displays the current hop and probe (2 -1: 2nd hop and 1st probe),

the current response time of the hop to the current probe (0.022 seconds) and the IP address of the current hop (in the example: 192.168.4.253).

Depending on the access mode and protocol, the LAN, PPP and WAN, ATM statistics will also be displayed (scroll through with the  $\downarrow$ -Key)

Press < ABORT > to cancel the test. The ARGUS will display the results of the test thus far

and inquire whether to save them.

Showtime<br/>G.DMTDisplay of the ADSL mode,<br/>ADSL line parameters... (see<br/>"Physical test (ADSL line test<br/>)" on page 29)

At the end of the test, the ARGUS will display the test results:

The ARGUS displays all of the hops and the average response time (calculated for all probes) and - depending on the access - the LAN, WAN, PPP and ATM statistics.

In this example: 1st hop (**1** - av) with the average response time of 0.005sec (1 -av) and the IP address 192.168.4.253

Use the  $\downarrow$ -Key to scroll through the results.

Press **<NAME**>to display the IP address of the hop as a name (if possible).

# Traceroute result - saving

Press <**YES**> to have the ARGUS save the result in the first available record in the FLASH memory.

(see "Measure.report" on page 73 and Display Results on page 74)

The ARGUS will send the trace file to the connected PC, which must be running WINplus or WINanalyse.

The data will be saved in the standard "libpcap" format and can be decoded with a freeware tool, such as



raceroute test

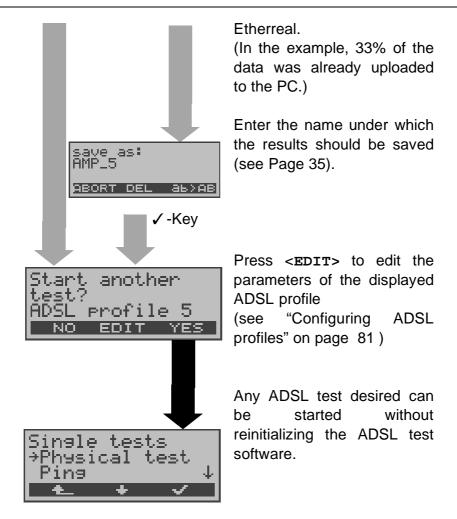


TCP dump upload

33ž

ile:

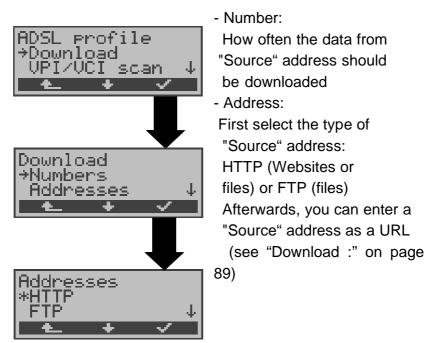
Progress: BBORT.



# 8.1.4 Download Test

In the Download test, the ARGUS will attempt to download data from a web site or file. The Argus will display the current download rate and once the test is over the average speed (g.g. in the case of multiple download attempts). The following parameters (which are stored in the ADSL profile, see Page 81) are required for the Download test:

#### **Protocol independent parameters**





If an alias www address is entered as the "Source" address (e.a. www.argus.info/web/download/ software/Software32.ZIP), the ARGUS will "only" load the HTML pages during the Download test (in the example ca. 600 bytes). The ARGUS does not evaluate the HTML code, so any link to a "true" www address (e.g. www.isdntester.com) will be ignored. In this case, the ARGUS will not display an error message since the "Source" address specified will have been loaded without error. When entering the "Source" address make certain notation you use the correct that (e.g. www.isdntester.com/web/download/software/ Software32.ZIP), otherwise the ARGUS will report an Error 301 (Moved Permanently) or Error 404 (Not Found).



In the case of a Download test of less than 10 seconds, it is not possible to accurately determine the transmission speed.

# **Protocol dependent parameters**

Protocol	PPPoE / PPPoA	IPoA / EoA
Parameter	АТМ	ATM
	- VPI / VCI - Encapsulation	- VPI / VCI - Encapsulation
	PPP - User name - Password	
	ADSL mode	ADSL mode
		WAN: - IP mode (Static IP) - own IP address - IP network mask - remote IP address
		DNS server: - DNS Server 1 - DNS Server 2

# **Download test - starting**

ARGUS43pi3.022 ARGUS-ADSL	ARGU
Voltase: 75.5V MENU START	The AF Main n
ARGUS43₽ ADSL →Single tests Measure.report↓	Using Single
	Open t
Single tests	With th <b>Down</b> l
VPI/VCI scan ↓ ★ ★ ✓	Open profiles
ADSL profile *ADSL profile 1 ADSL profile 24 • EDIT •	Using ADSL The selecte in the l
	Press profile
	Initializ
ADSL line Initializing / G.DMT <u>980RT</u>	

RGUS displaying Status

Main menu.

Using the  $<\downarrow>$ , select the **Single tests** menu.

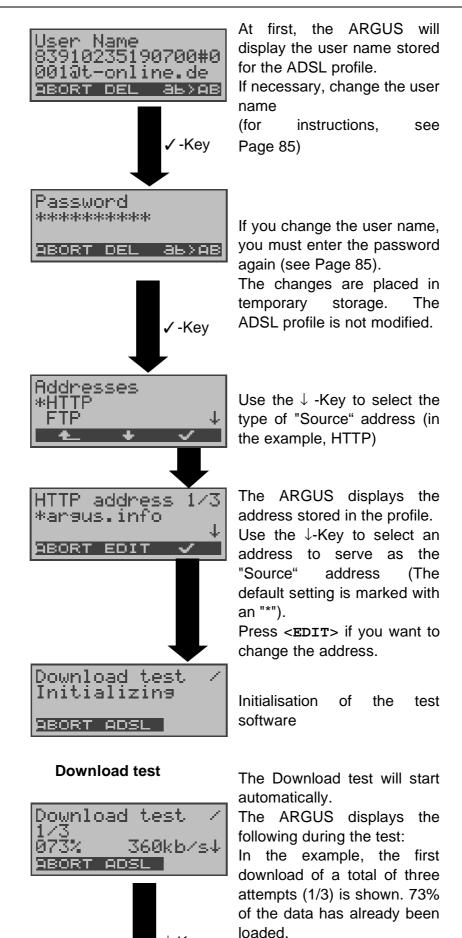
Open the Single tests menu

With the <↓, select> **Download**.

Open the list of ADSL profiles.

Using the <↓>, select an ADSL profile. The parameters in the selected profile will be used in the Download test. Press <EDIT> to edit the profile (see Page 81)

Initializing the ARGUS



↓-Key

The current download rate is 360 kBits per second.

Download test 080% 3 1,92MB/ 360k6∕s 2,40MB↓ ABORT ADSL

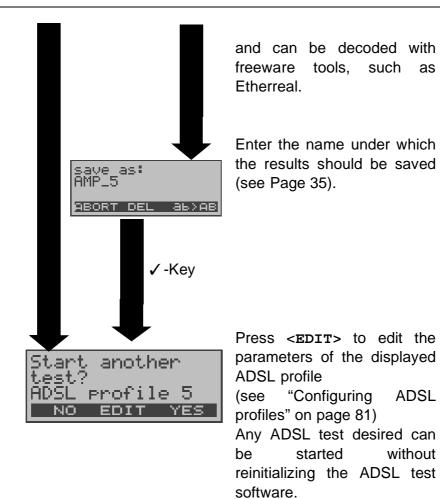
Thus far 1.92 MB has been downloaded. The total file size is 2.4 MB.

Use the  $\downarrow$ -Key to scroll down to view how long the download has been in process.

( in h.min.sec:msec ) and the time remaining until it will be done.

Depending on the access mode and protocol, the LAN, WAN, PPP and ATM statistics will also be displayed (scroll through with the  $\downarrow$ -Key)

Download test Result	<ul> <li>At the end of the test, the ARGUS will automatically display the result.</li> <li>The ARGUS will display</li> <li>the achieved average speed of the download process (323.38 kb/s)</li> <li>the minimum download rate (20.00 kb/s)</li> <li>the maximum download rate (20.00 kb/s)</li> <li>the size of the file downloaded</li> <li>the size of the file downloaded</li> <li>the average time for a download</li> <li>statistics</li> <li>(scroll with the ↓ -Key).</li> <li>Press <new> to start a new Download test (without reinitialising).</new></li> </ul>
Download test Save? NO IP>PC YES	Press <b><yes></yes></b> to have the ARGUS save the result in the first available record in the FLASH memory (see "Measure.report" on page 73 and Display Results on page 74) Press <b><ip>PC&gt;</ip></b> to upload the trace file to the PC. The data will be saved in the standard "libpcap" format

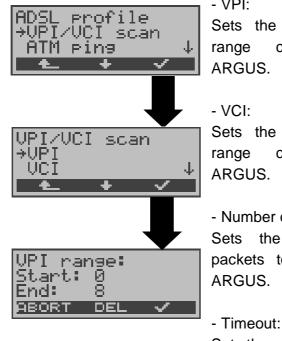


# 8.1.5 VPI/VCI scan test

In the VPI/VCI scan test, the ARGUS checks which VPI/ VCI combinations are active on the access under test: The ARGUS will send a test packet for each of the possible VPI / VCI combinations and wait for a packet in response.

The following parameters (which are stored in the ADSL profile, see Page 81) are required for the VPI / VCI scan test:

### **VPI/VCI** scan test parameters:



# - VPI:

Sets the limits of the VPI checked by the

Sets the limits of the VCI checked the by

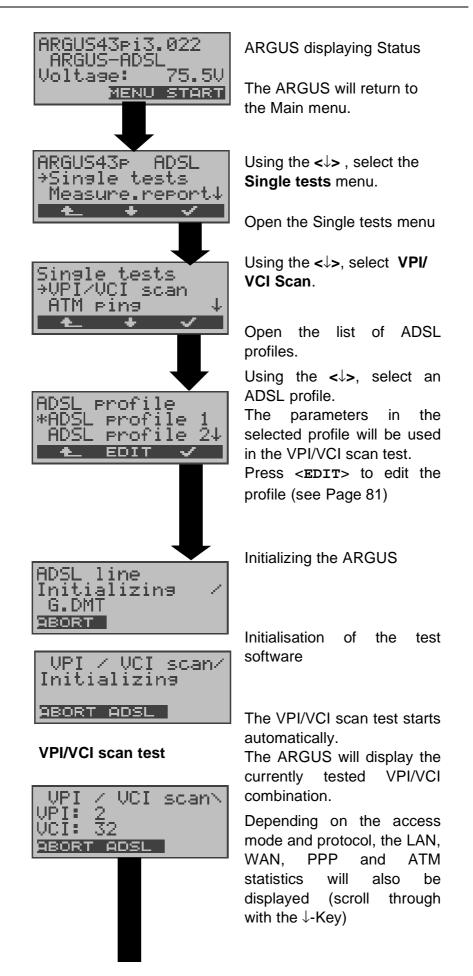
- Number of pings:

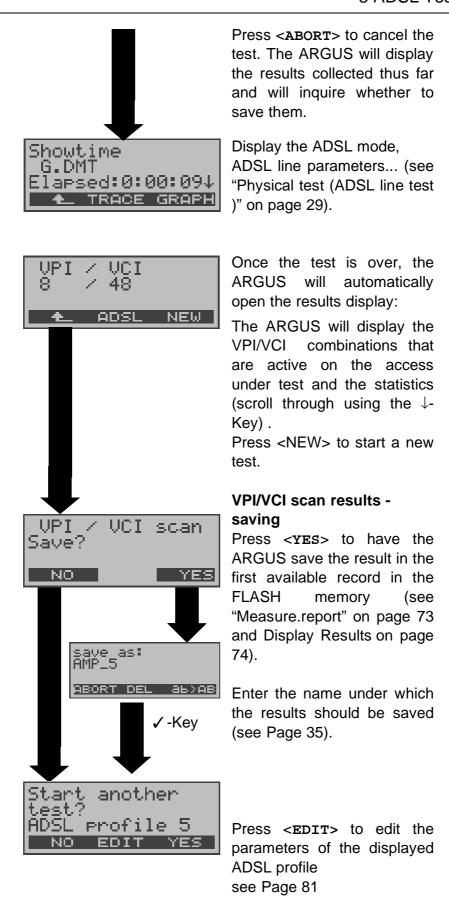
Sets the number of test packets to be sent by the

Sets the maximum time to wait for a response from an ATM network node.

(see "VPI/VCI scan:" on page 89)

# **VPI/VCI scan test - starting**



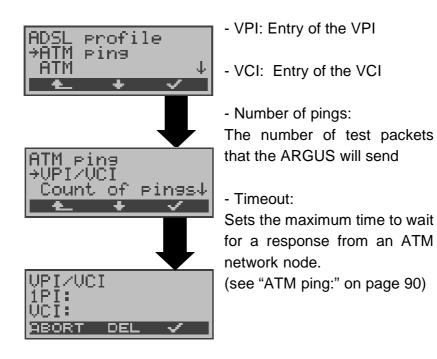


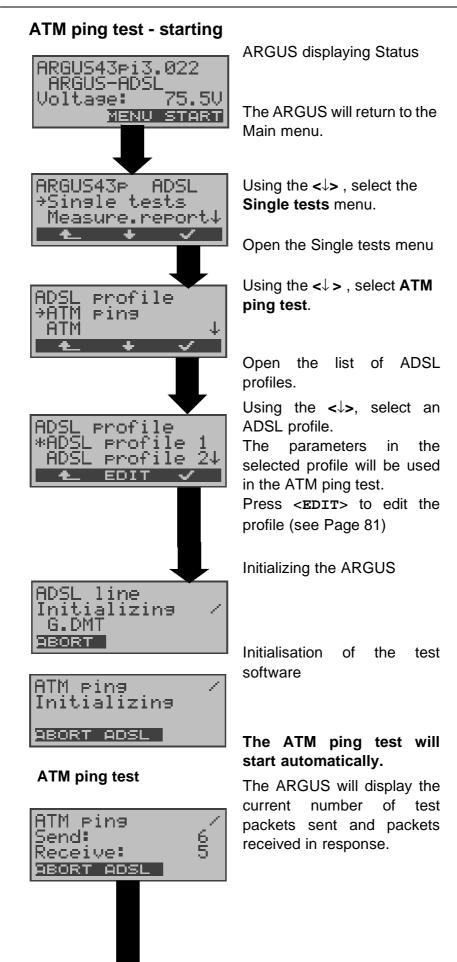
Any ADSL test desired can be started without reinitializing the ADSL test software.

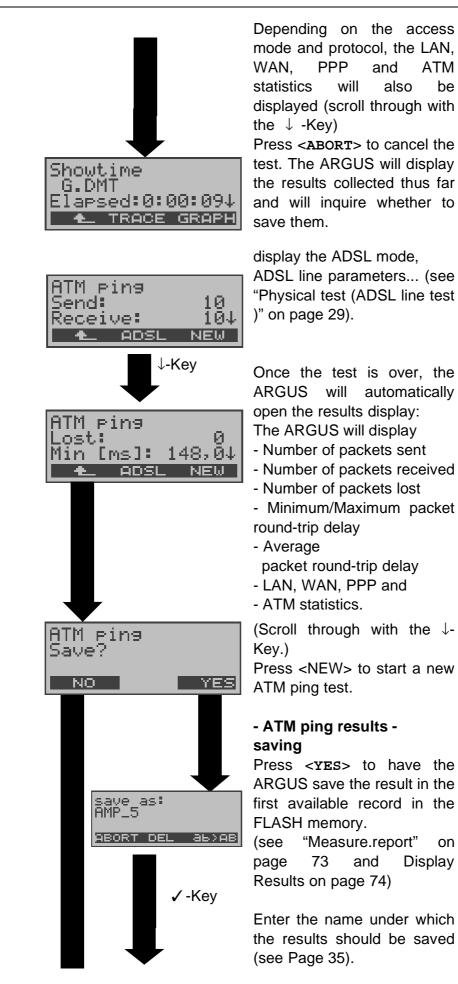
# 8.1.6 ATM Ping Test

In the ATM ping test, the ARGUS checks the availability of individual ATM network nodes or an ATM subnet.

The following parameters (which are stored in the ADSL profile, see Page 81) are required for the ATM ping test:









Press **<EDIT>** to edit the parameters of the displayed ADSL profile (see "Configuring ADSL profiles" on page 81 )

Any ADSL test desired can be started without reinitializing the ADSL test software.

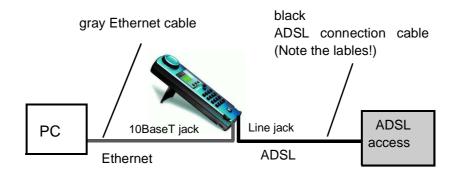
# 8.2 The ARGUS in Modem Replacement Mode Access Mode: PC-ARGUS-ADSL (optional)

The ARGUS is connected to the PC with the (x-crossed) Ethernet cable and to the ADSL access with the black ADSL cable (Ethernet-LAN extension).

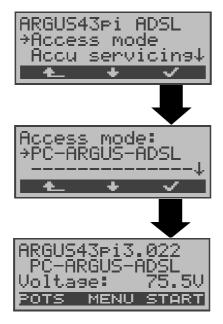
In this case, the ARGUS replaces the ADSL modem.

In the PC-ARGUS-ADSL access mode, the following tests can be performed:

- Physical test (ADSL line test)
- Bridge mode
- Router mode



# Setting the device to the PC-ARGUS-ADSL access mode



In the Main menu, use the  $<\downarrow>$  to select the **Access** menu.

Open the **Access mode** menu

Using the  $<\downarrow>$ , select **PC-ARGUS-ADSL**.

The ARGUS will jump to the status display

The ARGUS displays the access mode and the DC voltage on the access under test.



If the ARGUS is not yet active, you must first select a test and start it (see the following pages).

#### 8.2.1 Physical test (ADSL line test)

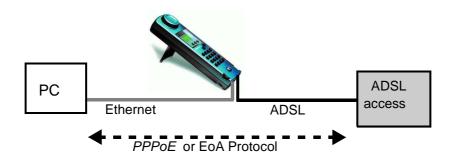
The ARGUS will setup an ADSL connection and determine all of the relevant line parameters (see "Physical test (ADSL line test)" on page 29).

The following parameters must be set in the ADSL profile for the physical test (see "Configuring ADSL profiles" on page 81):

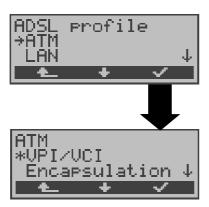
- Physic. line: ADSL mode, Link-up time, Rated value, SNR margin DS, Shutdown mode

#### 8.2.2 Bridge mode

In Bridge mode, the ARGUS acts like an 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.

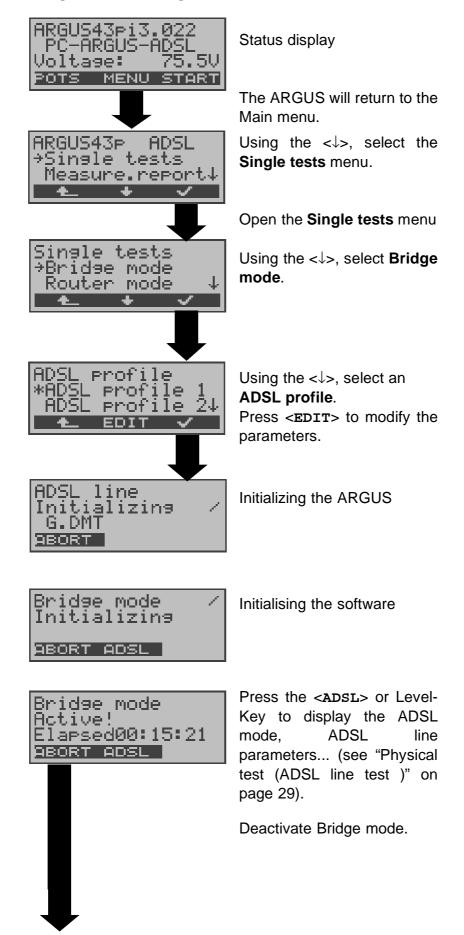


#### Setting the parameters:



In addition to the physical parameters (Physic. line), Bridge mode also requires that the two ATM parameters - VPI/VCI (Page 90) and - Encapsulation (Page 90) be set.

#### Bridge mode - setting:



Bridge mode Aborted

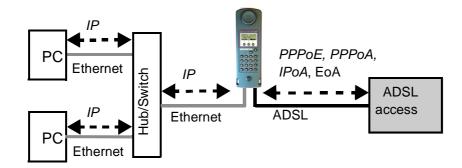
ABORT IP>PC

Use <IP>PC> to download the two trace files (LAN and WAN side) to the PC. The data will be saved in the standard "libpcap" format and can be decoded with a freeware tool, such as Etherreal.

# 8.2.3 Router Mode

In Router mode, the ARGUS replaces not only the modem but also the router. In this case, several PCs (connected via a hub/switch) can access the connection to the network provider.

The network IP addresses can either be assigned statically or the ARGUS can serve as a DHCP server and assign IP addresses to the connected PCs.



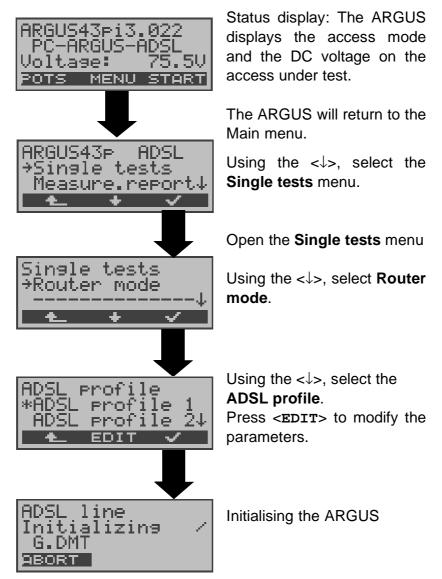
# **Protocol dependent parameters**

Parameter settings in an ADSL profile, see Page 81

Protocol	PPPoE / PPPoA	IPoA / EoA
Parameter	ADSL mode	ADSL mode
	ATM:	ATM:
	- VPI / VCI - Encapsulation	- VPI / VCI - Encapsulation
	PPP:	
	- User name - Password	
	LAN:	LAN:
	- IP mode - own IP address - IP network mask	<ul> <li>IP mode</li> <li>own IP address</li> <li>IP network mask</li> <li>IP mode</li> <li>DHCP server</li> <li>DHCP timeout</li> </ul>

	WAN: - IP mode (Static IP) - own IP address - IP network mask - remote IP address - DHCP timeout
	DNS server: - DNS Server 1 - DNS Server 2

#### Router mode - setting:

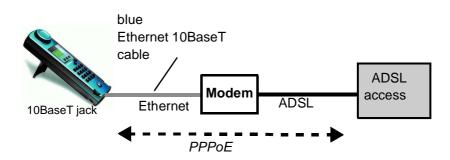


Router mode / Initializing ABORT ADSL	Initialising the software
Router mode Active! Elapsed00:11:48 980RT ADSL	Press the <b><adsl></adsl></b> or Level- Key to display the ADSL mode, ADSL line parameters (see "Physical test (ADSL line test )" on page 29).
	Deactivating Router mode
Router mode Aborted ABORT IP>PC	Use <ip>PC&gt; to download the two trace files (LAN and WAN side) to the PC. The data will be saved in the standard "libpcap" format and can be decoded with a freeware tool, such as Etherreal.</ip>

# 8.3 The ARGUS in PC Replacement Mode Access Mode: ARGUS-MODEM (optional)

In PC replacement mode, the ARGUS serves as a replacement for the PC and is connected to the ADSL modem's Ethernet interface with the Ethernet cable (blue) (Ethernet-LAN extension).

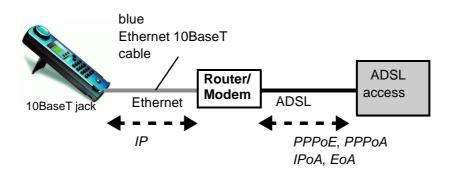
# Connection to the modem:



ADSL profile settings:

- Protocol: PPPoE
- PPP parameters: User name and Password

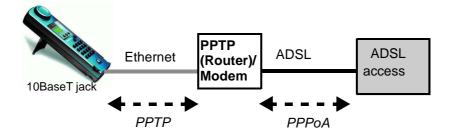
# Connection to the router/modem:



ADSL profile settings:

- Protocol: IP
- LAN: IP mode, own IP address (Static IP), IP netmask (Static IP), Gateway-IP (Static IP under PPoE and PPPoA)
- DNS server: DNS Server 1 (Static IP under PPoE), DNS Server 2 (Static IP under PPoE)

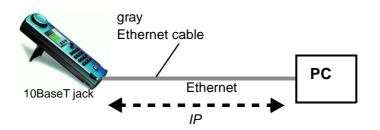
#### Connection to a PPTP router/modem:



ADSL profile settings:

- Protocol: PPTP
- PPTP: IP address of the PPTP modem
- PPP: User name and Password

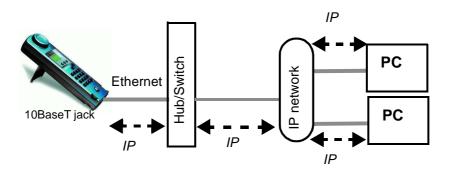
# Connection to PC via IP



ADSL profile settings:

- Protocol: IP
- LAN: IP mode, own IP address (Static IP), IP netmask (Static IP), Gateway-IP (Static IP)
- DNS server: DNS Server 1, DNS Server 2

# **Connection to IP network**



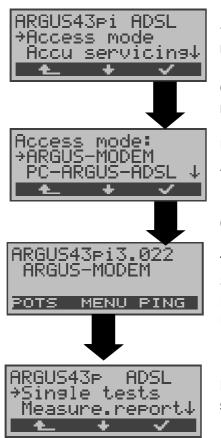
#### ADSL profile parameter settings:

- Protocol: IP
- LAN: IP mode, own IP address (Static IP), IP netmask (Static IP), Gateway-IP (Static IP)
- DNS server: DNS Server 1, DNS Server 2

In the ARGUS-MODEM access mode, the following tests can be performed:

- Ping test (see Page 36)
- Trace route test (see Page 42)
- Download test (see Page 47)

### **ARGUS-MODEM** access mode settings



In the Main menu, use the  $<\downarrow>$  to select the **Access** menu.

Open the **Access mode** menu

Using the  $<\downarrow>$ , select **ARGUS-MODEM**.

#### Confirm

The ARGUS will open the Status display Press <**NEW**> to start a new Ping test (see Page 36).

In the **Single tests** menu, start other tests

### 9 Measure.report

The ARGUS saves the test results of the various ADSL tests together with the date and time (from the internal clock of the ARGUS). The ARGUS will also save the call number of the access under test (only if the number has been saved in the speed-dialling memory see Page 99) or an alphanumeric name (default: AMP\_1, AMP\_2 ....).

The test results are not lost when the ARGUS is switched off.

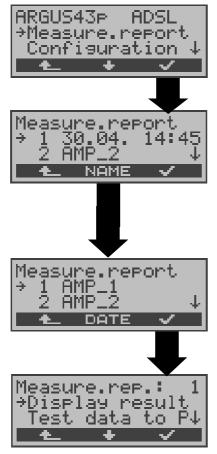
The saved test results can also be shown again on the ARGUS display at any time or - using the Intec software, WINplus or WINanalyse - saved on a PC, where they can be presented in a comprehensive measurement report and printed.



The ARGUS saves the results of multiple ADSL tests (records 1,2,3... ) .

Each function in the **Measure.report** menu refers to one of the tests saved as a record.

Therefore, the first step will open a dialog in which you must select the desired data record.



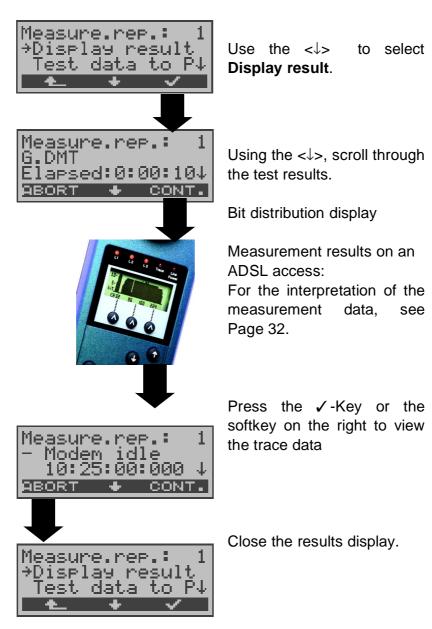
In the main menu, use the  $<\downarrow>$  to select Measure.report.

Use the <\$>-Key to select the record holding the saved test results. The ARGUS will display for each record number the corresponding date and time. Empty records are labled as "free".

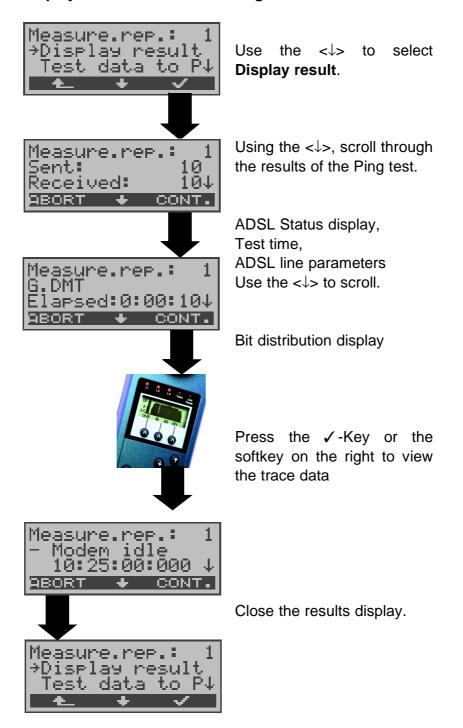
The ARGUS will display the names of the records.

# 9.1 Display Results

#### **Display result - Physical test:**



**Display for an ADSL access Ping test:** 

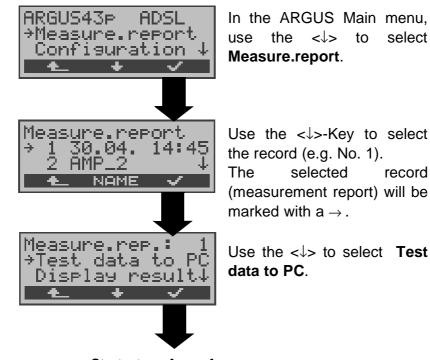


The other test results (e.g.Traceroute test) are displayed in the same manner.

# 9.2 Sending the results of a tests to a PC

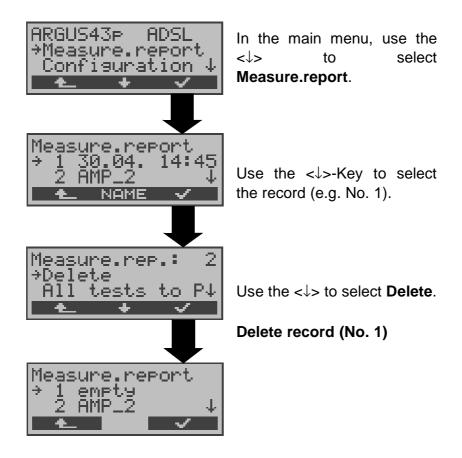
To visualize and archive the test results on the PC, the data records can be transferred to the PC via the serial interface using the included cable (labeled as PC Interface) (connect the cable between the ARGUS "V.24" jack ---- PC's serial interface).

Connect the ARGUS to your PC and start the **ARGUS WINplus** program.



Start transfer of data to PC

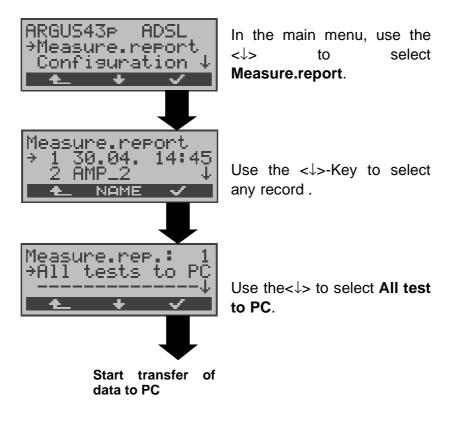
## 9.3 Deleting the results of a test



For information on how to delete all **records**, please see on page 100 "Reset".

# 9.4 Sending the results of all of the tests to a PC

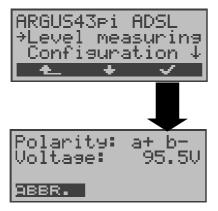
The ARGUS will send the results of all of the tests to the PC at one time.



# **10 Level Measuring**

## 10.1 Level measuring on an ADSL access

The ARGUS determines the polarity and DC voltage level on the interface under test (POTS or U-interface). The measurement will be updated continuously.



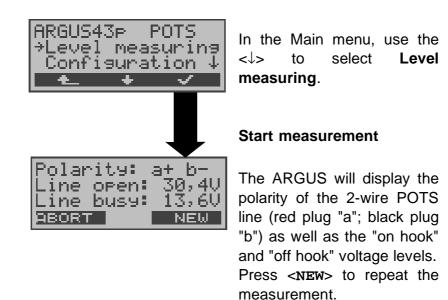
In the Main menu, use the  $<\downarrow>$  to select **Level** measuring.

#### Start measurement

The ARGUS displays the polarity and the DC voltage on the access under test.

# 10.2 Level measuring on a POTS access

The ARGUS measures the voltage level in both the normal case and when the line is "busy" (trunk line).

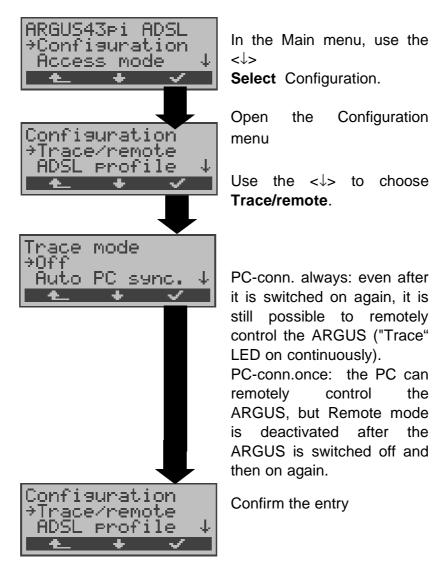


# **11 Settings**

The ARGUS can be configured to suit your special requirements. The default (factory) settings can be restored by selecting "Reset" (see page 100 Reset).

# 11.1 Remote (optional)

The Remote function is optional.

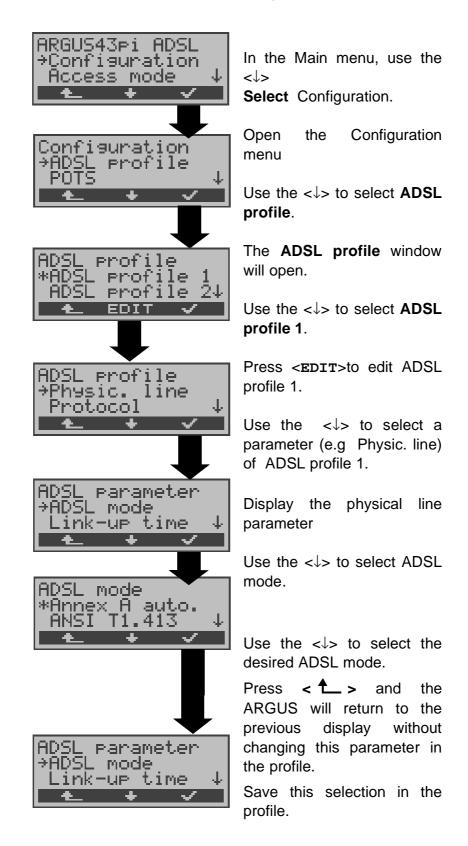


If the connection to the PC is faulty, the "Trace" LED will flash at 5Hz (5 times per sec).

The currently active settings will be marked in the display with an  $_{\star}.$ 

#### **11.2 Configuring ADSL profiles**

The ARGUS stores all of the parameters the various ADSL test varieties in the ADSL profiles. Up to 5 user-defined ADSL profiles can be created. An ADSL profile must be selected before an ADSL test run. Only those settings which are relevant will be used for the respective test situation.



# ADSL settings:

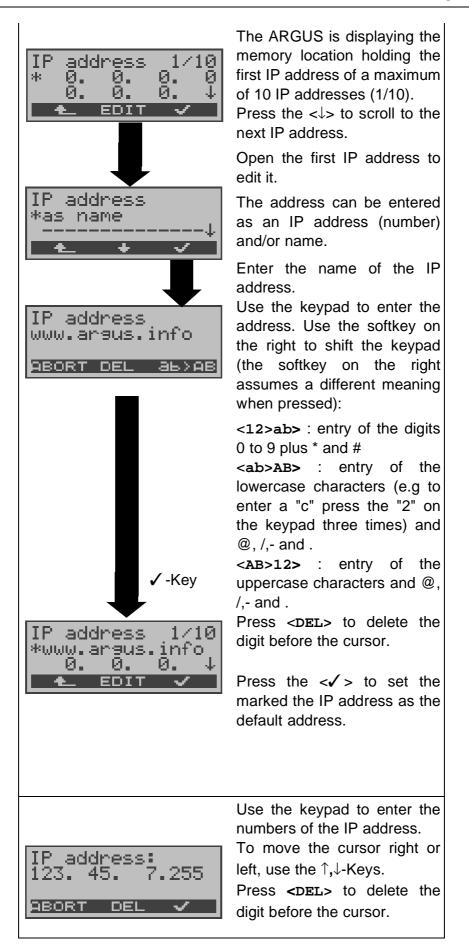
Display Name on the ARGUS	Comment
Physic. line:	The following ADSL line parameters are grouped under this heading:
ADSL mode	Different ADSL modes can be selected depending on the national variant of the ARGUS. The selected ADSL mode must be compatible to ATU-C (network-side). ADSL Mode Standard - Annex B (DT) T-DSL (UR2) - Annex B (ETSI) ETSI DTS - Annex A auto automatic detection - ANSI T1.413 ANSI T1.413 .2 - G-Lite ITU-T G.992.2 - G.DMT ITU-T G.992.1 If the ADSL mode "Annex A Auto" is selected, the ARGUS will automatically determine the configuration of the DSLAM (G.DMT or ANSI) and set itself accordingly.

When the link-up time is set to "Continuous", we recommend that you operate the ARGUS on the power supply to save the accumulators (rechargeable batteries).	"Continuous", we recommend that you operate the ARGUS on the power supply to save the accumulators (rechargeable batteries).           Rated value         Use the keypad to enter the upstream	Link-Up Time	Once the connection to the DSLAM is setup (Sync-LED ON constantly), the ARGUS will continually measure the data for the selected period of time. During this ADSL link up time, the ARGUS will display "Showtime". Once the measurement time has elapsed, the connection will be automatically cleared. If the link-up time was set to "Continuous", the connection to the DSLAM must be cleared manually.
und downstream comparison value for	ATM [Kb/s].	Rated value	When the link-up time is set to "Continuous", we recommend that you operate the ARGUS on the power supply to save the accumulators (rechargeable batteries).

	1
SNR margin DS	Setting for the SNR margin DS.
	This parameter can be set to "6 dB" or "3 dB". In the activating phase the CPE-side (Argus) requests that the CO-side (DSLAM) reduce its transmit power until the Target Noise Margin of 6 dB or 3 dB is achieved.
	Some DSLAMs do not support this. Either they will not reduce the transmit power at all or only to a certain value, e.g. half the maximum transmit power. In this case, the current transmit power is less than the maximum. In this case the Noise Margin is still higher than the Target Noise Margin (e.g. 31 dB instead of 6 dB or 3 dB).
	The "max. dB" setting The max. dB setting on the CPE-side (Argus) does not influence the transmit power of the CO-side (DSLAM). The CO-side transmits at maximum power and the Noise Margin also reaches the maximum possible value.
Shutdown mode	The type of disconnect used for the ADSL connection.
Protocol:	This setting is used to define which protocol should be used by the ARGUS in the ADSL test.
PPP:	PPP parameter for the Internet connection:

User name	
User Name 83910235190700#0 0010t-online.de ABORT DEL AB>AB	Entry of the assigned (by the network operator) user name. Use the keypad to enter the user name. When the right softkey is pressed it assumes a different meaning and thus influences the entries made from the keypad (letters or digits) : <12>ab> : entry of the digits 0 to 9 plus * and # <ab>AB&gt; : entry of the lowercase characters and @, /,- and . (e.g. to a "c" press the "2" on the keypad three times) <ab>12&gt; : entry of the uppercase characters and @, /, - and . To move the cursor right or left, use the ↑,↓-Keys. Press <del> to delete the digit before the cursor.</del></ab></ab>
	-Key to save the user name <abort> : Do not save user name</abort>
Password Entry of th	ne assigned
(by the Password ******** <u>ABORT DEL аь&gt;AB</u>	ne assigned e network operator) password: For instructions, see User name ✓-Key: Save password <abort> : Do <b>not</b> save password</abort>
PPTP: PPTP pa	arameter

Server address	IP	Use the keypad to enter the Server IP address. To move the cursor right or left, use the ↑,↓-Keys. Press <del> to delete the digit before the cursor.</del>
Ping:		
IP address		Address of the remote side. The ARGUS can save up to 10 IP addresses. The saved IP addresses are available to all of the profiles.



t
Enter the number of test packets that the ARGUS should send to the IP address. If you enter "0", the ARGUS will send packets continuously until the test is stopped manually.
This setting determines the amount of time that the ARGUS will wait between sending test packets.
This setting determines the size of the test packets. By varying the size, it is possible to determine the maximum data packet size and the relationship between size and response time.
This parameter sets the fragmentation: ON: Depending on the network (or router), test packets may be divided into multiple packets. OFF: Fragmentation is not permitted, i.e. the test packets may be rejected by the network (or router). In this case, the ARGUS will not receive a packet in reply. Auto: The ARGUS determines the maximum packet size for the path to the destination address (Path-MTU) and splits the test packet into smaller packets. These can then be sent with the minimum of delay (since the network/router need not fragment the test packet).
IP address of the destination node: This can be entered as an IP number or as a name (for instructions, see Ping/ IP address).
This sets the maximum number of hops that will be taken in the path to the destination node.
This sets the number of attempts that will be made to get a response from a

Timeout	that the	s the maximum amount of time ARGUS will wait for a response etwork node.
Download :		
Qty		s how often the ARGUS will d the data from the "Source"
Addresses	The AR	the "Source" addresses: GUS can save up to three FP addresses.
Addresses *HTTP FTP	↓ ✓	Press the $<\downarrow>$ to select the type of "Source" address (http or ftp). Depending on the type of server and the data: for websites, http; for files http or ftp.
HTTP addres: * <u>980RT EDIT</u>	5 1∕3 ↓	The ARGUS displays the first (the first memory location) of three possible addresses. ↓ -Key: Scroll to the desired memory location [address].
Download address argus.info ABORT DEL AB>AB		Entry or editing of the address (Caution - see Page 47 regarding the entry of alias www addresses) (for instructions, see Ping: IP address)
	/ -Key	Save address
HTTP address 1/3 *argus.info ↓ <u>ABORT EDIT ✓</u>		Press the $<\checkmark$ > to set the top address as the default.
VPI/VCI scan:		
VPI		ts the VPI range, which the should check with the VPI/VCI t.
VCI		ts the VCI range, which the should check with the VPI/VCI t.

Number of pings	This sets the number of test packets that the ARGUS will send. If you enter "0", the ARGUS will send packets continuously until the VPI/VCI scan test is stopped manually.
Timeout	This sets the maximum amount of time that the ARGUS will wait for a response from an ATM network node to a test packet (ping) which it sent.
ATM ping:	
VPI	Entry of the VPI
VCI	Entry of the VCI
Number of pings	This sets the number of test packets that the ARGUS will send. If you enter "0", the ARGUS will send packets continuously until the ATM Ping test is stopped manually.
Timeout	This sets the maximum amount of time that the ARGUS will wait for a response from an ATM network node to a test packet (ping) which it sent.
ATM:	
VPI / VCI	The identifier of the virtual channel in the ATM cells - Virtual Path (Channel) Identifier
Encapsulation	This sets the encapsulation of the packets to be sent (LLC or VC-MUX).
LAN:	

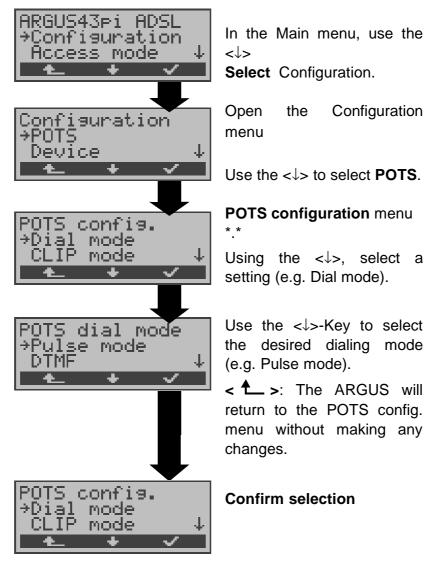
IP mode	This is used to set the assignment of IP addresses: Static IP: fixed IP addresses DHCP-Client: Assigned by the server DHCP-Server: Assigned by the ARGUS DHCP-Auto: The ARGUS will check whether there is a DHCP server in the network. If yes, the address will be assigned by this server. Otherwise, the ARGUS will assign the address.
Own IP address	This is the IP address (of the ARGUS) of the LAN side
IP network	LAN IP network mask
mask	
GW-IP	Gateway IP address in the LAN network
DHCP server	Settings for the DHCP server: Start and End IP addresses The period for which the IP addresses are reserved Domain Name
DHCP timeout	This sets the amount of time that a client should wait for an IP address (relevant for the IP mode DHCP client)
MAC address	This displays the LAN MAC address of the ARGUS.
WAN:	
IP mode	This is used to set the assignment of IP addresses.
Own IP address	This is the IP address (of the ARGUS) of the WAN side
IP network mask	WAN IP netmask
Remote IP address	Gateway IP address in the WAN network
DHCP timeout	This sets the amount of time that a client should wait for an IP address (relevant for the IP mode DHCP client)

11 Settings

MAC address	This displays the WAN MAC address of the ARGUS.
DNS server:	
DNS Server 1	IP address of the DNS server
DNS Server 2	IP address of the DNS server
Profile name:	Enter the profile names, which should later be displayed by the ARGUS.

# **11.3 Configuration: POTS**

The operation is the same for all configurations and will be illustrated with a single example:



#### Settings on a POTS access:

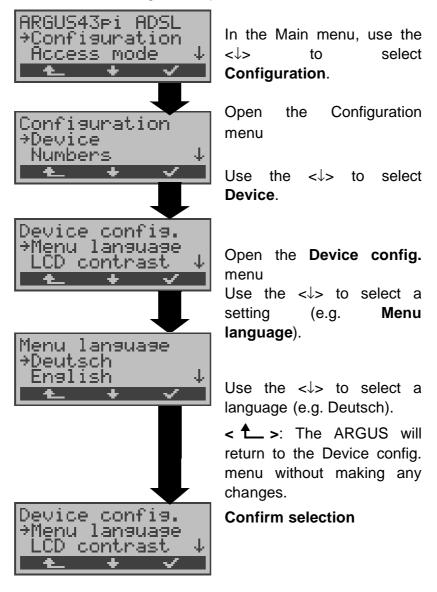
Display on ARGUS		Comment
Analog	dial	Selection of the dialing mode:
mode		DTMF or pulse dialing

POTS CLIP	Select the transfer procedure used to pass the call number: <b>FSK:</b> CLIP via a procedure similar to a modem (for Germany and some other places in Europe) <b>DTMF</b> : CLIP via DTMF (for Scandinavia and the Netherlands) The ARGUS will automatically detect that a CLIP was sent using DTMF with the polarity reversal and will set itself accordingly (e.g. Netherlands).
DTMF parameter	Settings for the three parameters Level, Duration and Interval of the DTMF signals generated during POTS (analog) operation.
Level	Setting the DTMF level: The level can take any value ranging from -21dB to +12 dB and can be raised (< $\uparrow$ > or $\uparrow$ -Key) or lowered ( $\downarrow$ - Key) by 3 dB steps. Default setting: 0 dB
Duration	Setting the DTMF time: The duration of the signal can take a value between 40ms and 1s (default: 80ms). The value can be raised or lowered using the $\uparrow,\downarrow$ -Keys: In the range 40 - 200ms in 10ms increments In the range 200 - 300ms in 20ms increments In the range 300 - 1000ms in 100ms increments When the upper limit is reached (1000ms), the softkey <1> will automatically change to a < $\downarrow$ > and vice versa when the lower limit (40ms) is reached.

DTMF interval	Setting the interval between two DTMF characters: The duration of the signal can take a value between 40ms and 1s (default: 80ms). The value can be raised or lowered using the ↑,↓-Keys:
	In the range 40 - 200ms: in 10ms increments In the range 200 - 300ms: in 20ms increments In the range 300 - 1000ms: in 100ms increments
	When the upper limit is reached (1000ms), the softkey $<\uparrow>$ will automatically change to a $<\downarrow>$ and vice versa when the lower limit (40ms) is reached.
Reset to	Restores the default settings: Level = 0 dB, Time = 80 ms Interval = 80 ms
FLASH time	Sets the length of a FLASH. This setting is needed in order to use special features of a PBX. The FLASH time can take a value between 40ms and 1s. The value can be raised or lowered using the $\uparrow,\downarrow$ -Keys: In the range 40 - 200ms: in 10ms increments In the range 200 - 300ms in 20ms increments In the range 300 - 1000ms: in 100ms increments When the upper limit is reached (1000ms), the softkey < $\uparrow$ > will automatically change to a < $\downarrow$ > and vice versa when the lower limit (40ms) is reached.

# **11.4 Configuration: ARGUS**

The operation is the same for all configurations and will be illustrated with a single example:



#### Settings on the ARGUS:

Display on ARGUS	Comment
Menu language	Selection of the menu language

LCD contrast	Setting the display contrast (The contrast can be changed in 16 steps).
	Display contrast lowhigh ↑ 9BORT
	The contrast can be increased or decreased using the ↑,↓-Keys: The display shows a vertical arrow, which shows the current setting on a scale from low to high contrast.
Enter date / time	Enter the date and time. (Initialisation of the internal clock) via the keypad.
	Date / time Date: 24.04.01 Time: 16:30 <u>ABORT DEL -/ </u>
	Use the $\downarrow$ -Key to scroll to the next line.
	The entered time will be continuously updated by the ARGUS's real time clock as long as the power is not switched off.
	When the power is switched off (the ARGUS switched off without batteries), the clock will run a few more weeks on its internal supply. If the backup supply is exhausted, the time will be undefined and must be set again.
Baud rate	Sets the maximum Baud rate to be used by the ARGUS to communicate with a PC.
Alarm bell	The ARGUS signals with an alarm in a variety of situations. When this parameter is set to "off", all audible alarms are suppressed.

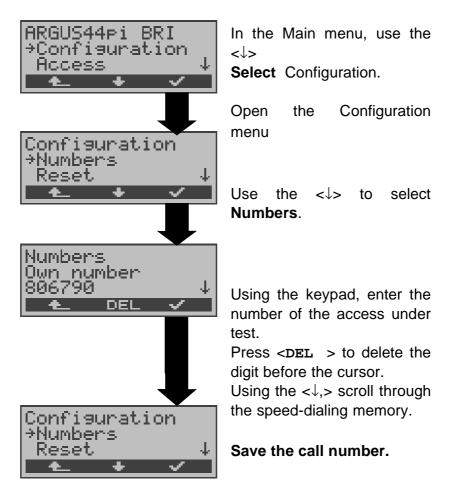
# 11 Settings

Software	To enable a software option (e.g.
	additional functions), you must first enter a software key via the keypad.
	enter a software key via the keypad.

## **11.5 Saving Call Numbers**

Ten call numbers with a maximum of 24-places can be entered in the speed-dialing memory.

In the "Remote No.1-9" memory locations, you can save remote call numbers.



# 11.6 Reset

The ARGUS will reset all of the parameters to their default values.



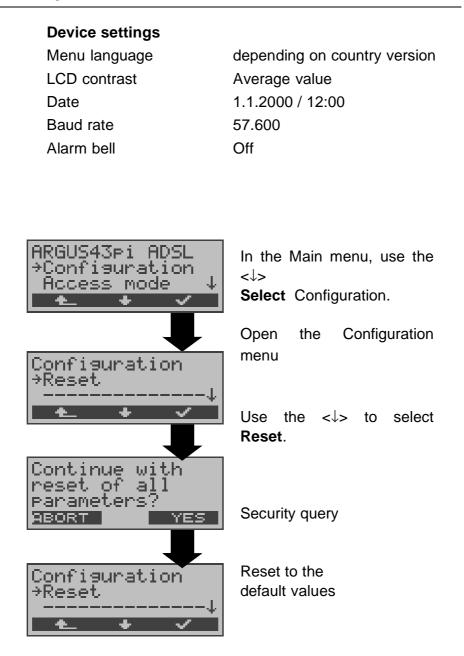
The speed-dialing memory with the call numbers, PPP user name, PPP password, IP addresses, Download addresses and all of the test results stored in the ARGUS (e.g. Measurement reports) will be deleted.

The following settings are possible:

	Default	
ADSL profile:		
ADSL mode	depending on the country and ARGUS variant	
Link-Up Time	10sec	
Rated value	0/0	
Protocol	PPPoE	
PPTP server IP addr.	0.0.0.0	
Ping IP address	1	
Number of pings	10	
Ping pause	1 sec.	
Ping packet size	84 Bytes	
Ping fragmentation	on	
Traceroute IP address	1	
Traceroute max. hops	30	
Traceroute probes	3	
Traceroute timeout	3000	
Download number	3	
Download address	http	
(Type)		
Download address http (Index)	1	
Download address ftp (Index)	1	
VPI range in a VPI/VCI scan	0 to 8	
VCI range in a VPI/VCI scan	32 to 48	
Number of pings in a VPI/VCI scan	3	

Timeout in a VPI/VCI	0.1 sec.
scan VPI in an ATM ping	1
VCI in an ATM ping	32
Number of pings in an	3
ATM ping	-
Timeout in an ATM	1 sec.
ping	
ATM VPI/VCI	1/32
ATM Encapsulation	LLC
LAN IP mode	static
LAN own IP address	0.0.0.0
LAN IP network mask	255.255.255.0
LAN DW-IP	0.0.0.0
LAN DHCP-Server	0.0.0.0 /
Start / End address	0.0.0.0
LAN DHCP-Server Domain	none
LAN DHCP-Server	10 hours
Reserv. time	
LAN DHCP-Server Timeout	20 sec.
WAN IP mode	static
WAN own IP address	0.0.0
WAN IP network	255.255.255.0
mask	
WAN remote IP	0.0.0.0
address	
WAN DHCP timeout	20 sec.
DNS Server 1	0.0.0.0
DNS Server 2	0.0.0.0
POTS settings (optional)	):
POTS dialing mode	DTMF
POTS CLIP	FSK
POTS AOC pulse	depending on cou
Analog FLASH time	80 msec

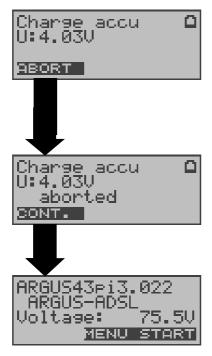
POTS dialing modeDTMFPOTS CLIPFSKPOTS AOC pulsedepending on country versionAnalog FLASH time80 msecDTMF parameterUdBLevel0dBDuration80msDTMF interval80ms



## 12 Accu servicing

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

The ARGUS automatically recharges the accumulators, if the ARGUS is connected to the plug-in power supply and the accumulator voltage is less than 3.90 volts (only use the supplied accumulators).



The LED "Line Power" flashes while the accumulators are recharging.

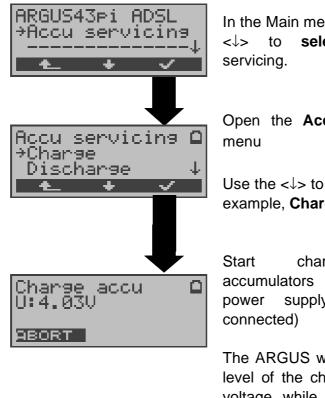
If you press and hold the power switch, the ARGUS will switch off before the accumulators are recharged.

Otherwise, the ARGUS will switch itself off automatically as soon as the accumulators are recharged.

#### Accu servicing

The ARGUS will display the current charge of the accumulators, if no power supply is connected.

When the power supply is connected, the accumulators in the ARGUS can be completely discharged or immediately (without being first discharged) recharged. The discharge procedure takes up to 6 hours. The ARGUS will automatically begin recharging the accumulators after a break of about 30 minutes (depending on the capacity of the accumulators, it can take up to 7 hours to recharge them).



In the Main menu, use the select Accu

Open the Accu servicing

Use the  $<\downarrow>$  to select, for example, Charge.

charging the accumulators (the plug-in supply must be

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

Discharge U:3.87V	accu	
ABORT		

#### Discharging the accumulators

The accumulators will first be fully discharged and then - after a brief pause automatically recharged.

# 13 Appendix

# A) ADSL Acronyms

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

# B) Vendor identification numbers

0000	not allocated
0001	not allocated
0002	Westell, Inc.
0003	ECI Telecom
0004	Texas Instruments
0005	Intel
0006	Amati Communcations Corp.
0007	General Data Communications, Inc.
0008	Level One Communications
0009	Crystal Semiconductor
000A	Lucent Technologies
000B	Aware, Inc.
000C	Brooktree
000D	NEC
000E	Samsung
000F	Northern Telecom, Inc.
0010	PairGain Technologies
0011	Paradyne
0012	Adtran
0013	INC
0014	ADC Telecommunications
0015	Motorola
0016	IBM Corp.
0017	Newbridge Network Corp.
0018	DSC
0019	Teltrend
001A	Exar Corp.
001B	Siemens Telecom Networks
001C	Analog Devices
001D	Nokia
001E	Ericsson Information Systems
001F	Tellabs Operations, Inc.
0020	Orckit Communications, Inc.
0021	AWA
0022	Alcatel Network Systems, Inc.
0023	National Semiconductor Corp.
0004	10 - 10 - 1

0024 Italtel

- 0025 SAT Société Anonyme de Télécommunications
- 0026 Fujitsu Network Trans. Systems
- 0027 MITEL
- 0028 Conklin Corp.
- 0029 Diamond Lane
- 002A Cabletron Systems, Inc.
- 002B Davicom Semiconductor, Inc.
- 002C Metalink
- 002D Pulsecom
- 002E US Robotics
- 002F AG Communications Systems
- 0030 Rockwell
- 0031 Harris
- 0032 Hayes Microcomputer Products, Inc.
- 0033 Co-optic
- 0034 Netspeed, Inc.
- **0035** 3-Com
- 0036 Copper Mountain, Inc
- 0037 Silicon Automation Systems, Ltd
- **0038** Ascom
- 0039 Globespan Semiconductor, Inc.
- 003A STMicroelectronics
- 003B Coppercom
- 003C Compaq Computer Corp.
- 003D Integrated Technology Express
- **003E** Bay Networks, Inc.
- 003F Next Level Communications
- 0040 Multi-Tech Systems, Inc.
- **0041** AMD
- **0042** Sumitomo Electric
- 0043 Philips M&N Systems
- **0044** Efficient Networks, Inc.
- 0045 Interspeed
- 0046 Cisco Systems
- **0047** Tollgrade Communications, Inc.
- 0048 Cayman Systems
- **0049** FlowPoint Corp.
- **004A** I.C.COM
- 004B Matsushita

004C	Siemens Semiconductor
004D	Digital Link
004E	Digitel
004F	Alcatel Microelectronics
0050	Centillium Corp.
0051	Applied Digital Access, Inc.
0052	Smart Link, Ltd.

## C) ARGUS Error Messages

Fault Number	Fault Class	Cause	Description
0	Е	Network	The network is not in a state defined for DSS1 or 1TR6. It may be that this state is normal for a PBX.
1 to 127	B,C,D,E	Network	DSS1 or 1TR6 causes
150	Е	ARGUS	An error occurred during the supplementary service test. Frequent cause: no response from network
152	В	ARGUS	The CF-Test was started with the wrong own number.
153	Е	ARGUS	no HOLD is available, but HOLD is required to test the supplementary service (ECT, 3pty)
154	E	ARGUS	CLIR or COLR could not be tested, since CLIP or COLP is not available
161	В	ARGUS	The party called did not answer within the prescribed time (approx.10 sec)
162	В	ARGUS	A call was setup to a remote subscriber, instead of being setup – as was expected – to your own number.
163	Е	ARGUS	The Auto-Test could not setup a connection and therefore the AOC/D supplementary service could not be tested.
199	В	ARGUS	A call number was entered.
201	A	ARGUS	Network did not confirm acceptance of the call (CONN sent, no CONN_ACK received from network)
204	A	ARGUS	<ul> <li>Layer 2 connection was cleared-down</li> <li>No response to SETUP (call setup)</li> <li>Layer 2 connection could not be setup</li> </ul>
205	A	ARGUS	Reestablish the Layer 2 Connection

210	A	ARGUS	No response to the clear-down ( REL sent, no REL_CMP/REL_ACK received from network)
220	A	ARGUS	Remote end signaled that it is in State 0.
245	E	ARGUS	Keypad sent via ESC, but no response was received from network
250	E	ARGUS	FACility was sent, but no response was received from network

# D) Error message: ADSL connection

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

## E) Error message: PPP connection

Display on ARGUS	Description
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.
Port lock error	PPPD communications error Serial port could not be locked.
Port open error	PPPD communications error. Serial port could not be opened.
Con.script err.	Error when calling the connection script.
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.
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.
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.

## F) Error message: Download test

Display on ARGUS	Description
Download OK	No error occurred.
Buffer overflow	Buffer overflow when using base64 encoding.
Process error	Error when setting up the Exit handler.
Buffer too small	Buffer too smallBuffer too small for the extra_header.
Continue error	Download cannot be continued without specifying a file.
File fstat error	File system error when calling fstat().
Http redir.error	Fault: Too many HTTP redirects.
Http no response	No answer from HTTP server.
Http serv.error	HTTP server has returned an error. (for details see the table below "HTTP Error Messages")
Http encod.error	Due to an encoding problem, data transfer with HTTP is not possible.
Ftp open error	Error when opening the FTP connection.
Ftp login error	FTP login error: Wrong user name or password or anonymous login not supported.
Ftp passiv err.	FTP server does not support passive transmission mode.
Ftp rec. error	FTP receive error.
File write error	File system error when calling fwrite().
Network error	Network error
Ftp error	General FTP error.
URL error	Fault: No HTTP or FTP URL specified.
Socket error	Error when opening a socket.
Socket error 2	Error when connecting a socket. The server's HTTP service is not available.
FDopen error	Error when opening a file.
Http Head.error	Error in the header of the requested HTTP file.
Ftp no file	FTP download error: No such file or directory found.

	Unknown host address. Possible cause: Error in the address entered, DNS resolution not working or network not accessible.
Unknown dl error	Unknown download error

### **HTTP Error Messages**

Display on ARGUS:	Meaning
Code No.	
100	Client should continue its request.
101	The protocol is being changed at the Client's request.
200	The Client's request has succeeded.
201	The Client's request that a new document be created was successful.
202	The Client's request has been accepted for processing.
203	The Client's request will be answered with information from a source other than the server.
204	The Client's request was successful. The server sends [no content] only the HTTP header.
205	The Client's request was successful. The server [resets content] sends a new HTTP body.
206	The Client's request was successful. The server sends only part of the requested document [partial content].
300	The request was not precise enough so multiple documents have been returned.
303	The requested resource has been found at a different URI and should be retrieved from there.
304	The requested document has not been changed in the interim.
305	The requested document must be retrieved from a proxy instead of from the server.

temporarily relocated to a different UR [temporary redirect].400Syntax error in the Client's request [Clien error].401The request requires user authentication.402Payment is required to process this request403The Client's request has been refused. (e.g. because authentication failed.)404The requested document was not found (e.g. because of an error in the URL entered or while the document is no longe available).405The method specified by the Client in its request is not allowed by the server.406The requested document in a format that is not supported by the Client.407The request requires that the Clien authenticate itself with a proxy.408The Client did not place its request within the time allowed by the server [Reques Timeout].409Due to a conflict (e.g.another request) the Client's request during request used by the server.410The requested URL is [gone] no longe available on the server.411The Client sent data to the server without a defined Content Length.412The preconditions in the Client's request could not be satisfied by the server.413The Client's request has been refused by the server because the request entity is to large.414The Client's data is not supported by the server.		
401       The request requires user authentication.         402       Payment is required to process this request         403       The Client's request has been refused. (e.g. because authentication failed.)         404       The requested document was not found (e.g. because of an error in the URL entered or while the document is no longe available).         405       The method specified by the Client in its request is not allowed by the server.         406       The requested document in a format that is not supported by the Client.         407       The request requires that the Clien authenticate itself with a proxy.         408       The Client did not place its request within the time allowed by the server [Request Timeout].         409       Due to a conflict (e.g.another request) the Client's request cannot be completed by the server.         410       The requested URL is [gone] no longe available on the server.         411       The Client's request has been refused by the server.         413       The Client's request has been refused by the server.         414       The Client's request has been refused by the server because the request entity is too large.         414       The Client's data is not supported by the server.         415       The Client's data is not supported by the server.	307	The requested resource has been temporarily relocated to a different URI [temporary redirect].
authentication.         402       Payment is required to process this request         403       The Client's request has been refused. (e.g. because authentication failed.)         404       The requested document was not found (e.g. because of an error in the URL entered or while the document is no longe available).         405       The method specified by the Client in its request is not allowed by the server.         406       The requested document in a format that is not supported by the Client.         407       The request requires that the Clien authenticate itself with a proxy.         408       The Client did not place its request within the time allowed by the server [Requess Timeout].         409       Due to a conflict (e.g.another request) the Client's request cannot be completed by the server.         410       The requested URL is [gone] no longe available on the server.         411       The Client's request has been refused by the server.         412       The preconditions in the Client's request could not be satisfied by the server.         413       The Client's request has been refused by the server because the request entity is to large.         414       The Client's data is not supported by the server.         415       The Client's data is not supported by the server.	400	Syntax error in the Client's request [Client error].
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416 The range (in a document) requested by the	414	The Client sent a URL to the server that is too large. (e.g. because of the form values contained.)
5 ( , , , , , , , , , , , , , , , , , ,	415	The Client's data is not supported by the server.
	416	The range (in a document) requested by the Client [is not satisfiable] does not exist.

417	The server could not (or did not wish to) satisfy the Client's expectation given in the Expect request header field.
424	For aesthetic reasons, the requested document will not be sent by the server.
500	Due to an unexpected condition, the server cannot fulfill the Client's request (e.g. faulty configuration, missing or wrong CGI program).
501	The server does not support the function required to fulfill the Client's request.
502	The server received an invalid response from an upstream server or proxy which it accessed in attempting to fulfill the request.
503	The server is currently unable to handle the request due to a temporary overloading of the server.
504	The Client's request (of a gateway or proxy) did not receive a response within the specified time.
505	The server does not support the HTTP protocol version that was used in the Client's request.

## G) General Error Messages

Display on ARGUS	Description
Mode not supp.	Mode currently not supported. The following modes are supported: PC_REPLACEMENT_MODE, PC_MODEM_REPLACEMENT_MODE, MODEM_REPLACEMENT_MODE
Prot. not supp.	The protocol (IP, PPPoE, etc.) is not supported in the selected mode.
Test not supp.	The test (Ping, Traceroute, etc.) is not supported for the selected mode and protocol.
Unknown error	Unknown error occurred.
No PPP connec.	No PPP connection can be setup. (for details see Page 112)
Test aborted	Test aborted by user.
Pingstart error	Error when starting the Ping test.
Unexp. IP down	Unexpected termination of the PPP connection. (for details see Page 112)
Unexp. PING end	Unexpected termination of the Ping test.
Interface error	Error while starting/terminating the network interface. (for details see the error codes of the interface script)
No TR answer	Error when starting the Traceroute test.
TR timeout	The test timed out since the traceroute answer packet did not arrive within the specified time.
DHCP timeout LAN	DHCP Client timeout (LAN)
DHCP NAK err LAN	The DHCP server refused the DHCP client (LAN)
Download timeout	Error when starting the Download test.
No DL answer	Error while performing the Download test (for details see Page 114).
MASQ error	Error while starting/terminating the routing rules. (for details see the error codes of the routing rules)

TR unreachable	The destination host cannot be reached with UDP packets from traceroute. Possible cause: Router or firewall is discarding UDP packets
DHCP timeout WAN	DHCP client timeout (WAN)

## H) ARGUS Messages - Script Errors

Display ARGUS	on Description
Error Code	
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 modes: BRIDGE or ROUTER

## I) ARGUS Messages - Routing Rules

Display ARGUS	on	Description
Error Code		
0		No error occurred.
77		Wrong parameter. Possible parameter: 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 selection: DYNAMIC or STATIC