

# ARGUS<sup>®</sup> 142

VDSL + ADSL COMBI TESTER



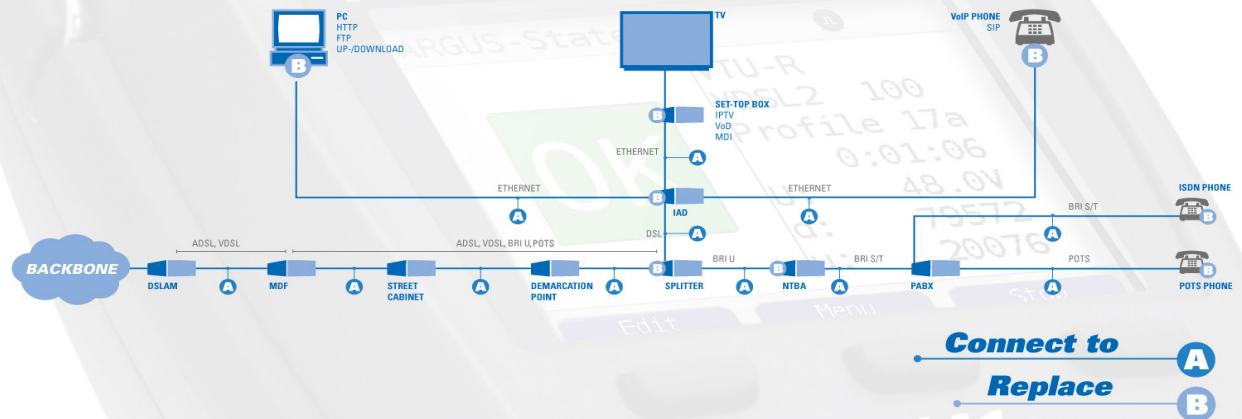
**IPv6  
READY**



**intec**

GESELLSCHAFT FÜR  
INFORMATIONSTECHNIK mbH

## Where to use the ARGUS?



### The VDSL + ADSL universal test set

Multi-functional measuring equipment at a fair price: the ARGUS®142 quickly and reliably tests interfaces and services down to the last detail. VDSL2, ADSL, Ethernet, ISDN BRI S/T/U and POTS, as well as the physical conditions of the subscriber line are extremely easy to test – without having to swap modules.

### Physical analysis of the local loop

The functions of the ARGUS®142 include at least one DSL and an Ethernet interface as standard, plus RC testing and voltage measurement. If desired, the measurement device can also be extended on an individual basis. For example, additional copper tests (Cu tests) can be used to assess the line quality even without synchronization to the receiver. The optional ARGUS® Active Probe II even enables high-impedance measurements on a DSL connection in use without interfering.

With the optional TDR function (Time Domain Reflectometer), line lengths can be measured and sources of faults can be located.

### Line qualification (DELT)

Lines without a DSL receiver (e. g. in the event of rewiring) can optionally be tested by the ARGUS® for DSL suitability even if there is no DSLAM. Irrespective of line condition and length, the user can estimate data rates using two devices and with the line qualification function activated, even when systems consisting of modem (xTU-R) and DSLAM (xTU-C) fail.

### Triple Play and Quality of Service (QoS)

Problem-free Triple Play testing: the handheld tester optionally offers Triple Play analysis for testing VoIP, IPTV and data services via xDSL and Ethernet. As a test receiver, the ARGUS®142 not only simulates terminal equipment such as a telephone, PC or STB, it also determines all relevant quality parameters. In this way, for example, it evaluates the voice quality in accordance with the MOS method or IPTV suitability using the Media Delivery Index (MDI). Optionally, several of these IP tests can also be carried out via the new more powerful IPv6 protocol\*.

### Easy operation

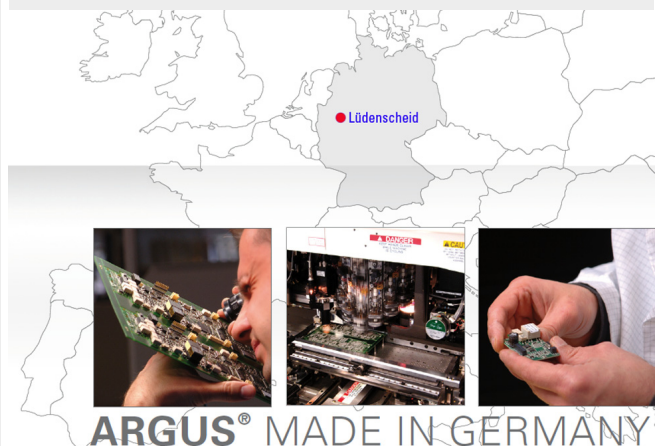
The ARGUS®142 is extremely user-friendly: this is thanks to the 320 x 240 pixel color display and intuitive menu structure, amongst other things. A powerful field-replaceable Lithium-Ion battery pack ensures long operation times.

### intec Gesellschaft für Informationstechnik

With more than 20 years of experience, intec GmbH is one of the leading suppliers of xDSL, ISDN and IP measurement technology in Europe. With the ARGUS® range, intec is offering practical solutions for installation and troubleshooting of xDSL and ISDN connections.

Developed specifically for the needs and daily use by technicians working for international network operators, service providers and installation companies.

More than 60 000 ARGUS® testers are already in the field with companies such as Deutsche Telekom, Vodafone, Telefonica, KPN, British Telecom and Telekom Austria who are completely satisfied in the quality of "Made in Germany" intec products.



## VDSL2, ADSL, Ethernet, ISDN, POTS, copper as well as VoIP and IPTV tester

ARGUS<sup>®</sup>142 is a compact universal handheld tester for testing all current customer interfaces.

### Broadband interfaces:

- Synchronisation with the DSLAM (xTU-C) and evaluation of all relevant line parameters and error counters
- Including bridge, router and PC replacement mode
- **ADSL2/2+** + modem simulation, ADSL tester, ATU-R
  - Supports ITU-T G.992.5 et alii; Annex A+B+J,+L+M; INP, SRA
  - Display of Bits, SNR, QLN and Hlog/tone graphs
- **VDSL2** modem simulation, VDSL tester, VTU-R
  - Supports ITU-T G.993.2 (8, 12, 17, 30 MHz + var. bandplans)
  - Display of Bits, SNR, QLN and Hlog/tone and stream graphs
- **Ethernet** interface for Triple Play and service tests
  - 1 Ethernet interface (10/100 Base-T), RJ-45
  - Support Ethernet terminal mode (PC replacement)
  - Ethernet-Loop (10/100 Base-T) across different layers

### Triple Play testing via ADSL, VDSL2 and Ethernet:

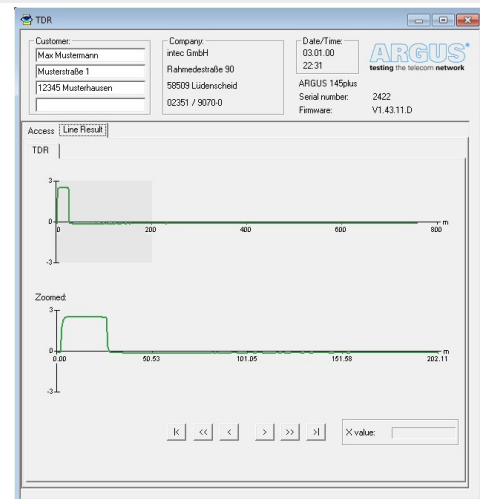
- **ATM layer** tests when using ADSL and ADSL2/2+
  - ATM-OAM ping and ATM-OAM cell loop, VPI/VCI scan
- **Data:** testing the data throughput (IPv4 and IPv6\*)
  - IP ping and trace route tests (BRAS info, PPP trace, VLAN)
  - HTTP/FTP download tests for throughput determination
  - FTP server test, up-/download from ARGUS to ARGUS
- **Voice:** testing VoIP connections based on SIP standard
  - VoIP terminal simulation, incl. acoustics (various codecs)
  - OK/FAIL evaluation and display of quality parameters
  - Evaluation of the VoIP speech quality (QoS) according to:
    - MOS<sub>CQE</sub> (ITU-T P.800) based on E model (ITU-T G.107)
- **Video:** testing IPTV and VoD services (STB mode)
  - Stream request (set-top box mode), IPTV channel scan
  - OK/FAIL evaluation and display of quality parameters (QoS)
  - Determination of MDI (Media Delivery Index), RFC 4445

### Circuit-switched interfaces:

- **ISDN:** integrated comprehensive ISDN test set
  - ISDN BRI U interface (2B1Q or 4B3T\*) acc. to ANSI T1.601
  - ISDN BRI S/T interface acc. to ITU-T I.430 in TE mode
  - Testing of BRI S/T (S bus) leased lines
  - Automatic testing of services and supplementary services
  - Bit error rate testing (BERT) with various bit pattern and analysis according to ITU-T G.821 with OK evaluation
  - Evaluation of speech quality via the integrated acoustics (speaker, mic., headset) straight on BRI S/T/U interface
- **POTS:** integrated comprehensive POTS test set (analog)
  - With DTMF and CLIP display, including pulse dial mode
  - Non-intrusive high-Z monitor, incl. voltage measurement
  - Evaluation of speech quality via the integrated acoustics

### Documentation and analysis:

- **Documentation** of all the parameters recorded via automatic access tests in test reports (in device and on PC)
- **Update-Tool** for updating the firmware at no charge
- **WINplus** PC software for generating, saving, archiving and printing test reports and for configuring the ARGUS<sup>®</sup> (opt.)
- **WINanalyse** PC software for analysis (optional)
  - Long-term analysis of ADSL and VDSL parameters (graphic)
  - Long-term analysis of IPTV parameters (graphic)



### Copper testing (Cu tests):

- **RC measurement:** resist., capacitance, continuity check
  - Including loop length calculation (distance to open / short)
  - DC voltage measurement: up to +200 V; res.: 0.1 V; acc.: ±2 %
- **Line Scope:** high performance real time line monitor with display of frequency domain (FFT) and time domain
  - Input impedance: 3.6 k $\Omega$  || 20 pF, adjustable gain
  - Frequency range: 20 kHz to 30 MHz; res.: 1 kHz; acc.: ±0.1 %
  - Level range (at 0 dB): -130 to +10 dBm/Hz, res.: 0.1 dB, ±1 dB
  - Voltage range in time domain, AC: 40 V<sub>pp</sub>; resolution: 2 mV<sub>pp</sub>
  - Input protection, DC: 250 V; AC: 100 V<sub>pp</sub>
- **DMT Analysis:** Power spectral density (PSD) assessment helps detecting noise, using 4096 DMT tones (e.g. VDSL2);
  - Input impedance: 100  $\Omega$
  - Frequency range: 130 kHz to 30 MHz (-3 dB); 4.3 kHz; ±0.1 %
  - Level range: -140 to -40 dBm/Hz; 0.1 dB
- **ARGUS Active Probe II\*:** high-impedance probe
  - Impedance: 70 k $\Omega$  || <1 pF; range: 10 kHz to 30 MHz (±1.5 dB)
  - Switch between sym./asymmetric measurement mode
  - Power supplied by ARGUS USB host interface
- **TDR:** Time Domain Reflectometry function for measuring line lengths and locating the faults
  - Measuring range: 3.5 up to 6000 m; res.: 0.3 %/range; ±2 %
  - Pulse width (adjustable): 15 ns to 16  $\mu$ s, amplitude: 5 or 20 V
  - Velocity of propagation (VoP): 30 % up to 99.9 %
- **DELT (Line Qualification):** Dual-Ended Line Test
  - DSL data rate estimation, idealized with slave + master
  - Bandwidth (ADSL, VDSL2) + bandplan (VDSL2) configurable
  - Sender, Tx power: 12 dBm, 6 dBm, 0 dBm, configurable
  - Receiver (Rx), sensitivity: up to -150 dBm/Hz
  - Frequency range: 4,3125 kHz up to 30 MHz (±3 dB)
  - Impedance: 100  $\Omega$ , 120  $\Omega$  and 135  $\Omega$ , configurable
  - Supports Bits, SNR, QLN and Hlog per tone diagrams

### Further highlights:

- Brilliant QVGA colour display (LCD) with 320 x 240 pixels
- Lightweight, compact and easy- to use
- Intuitive menu navigation and instant readiness for operation
- Free firmware and software updates (WINplus/WINanalyse) from [www.argus.info/en](http://www.argus.info/en)



## Technical features:

- **Power supply** by Li-Ion battery pack or mains adaptor
- **Hotkeys** for quick start of various tests
- **Power management**, user configurable
- **Keypad**: 18 keys, 4 cursor keys, 3 context-specific softkeys
- **LCD colour display** (QVGA - 320 x 240 pxs.), backlit
- **LEDs**: 6 LEDs to indicate the status + Ethernet LEDs
- **Handset** with integrated earpiece and microphone
- **CE marking**: complies with CE directives
- **User safety**: fulfils EN 60950-1:2006-11
- **RoHS** conformance according to WEEE directive

## Interfaces:

- **2 x RJ-45** jacks for xDSL, copper tests, POTS and ISDN
- **1 x Ethernet** (10/100 Base-T), RJ-45 test port
- **USB client** interface (type mini B)
- **USB host** interface (type A)
- **Headset** plug socket (TRS 2.5 mm, approx. 3/32")

## Environmental conditions:

- **Operating temperature**: 0 °C (+32 °F) up to +50 °C (+122 °F)
- **Storing temperature**: -20 °C (-4 °F) up to +60 °C (+140 °F)
- **Relative humidity**: up to 95 %, non-condensing

## Dimensions:

- **Size**: H x W x D: 235 x 97 x 65 mm (9.25 x 3.8 x 2.56 in)
- **Weight**: ca. 730 g (1.61 lbs) - incl. battery pack

## Standard package:

ARGUS®142 with Li-Ion battery pack, mains adaptor, minimum one DSL interface w/ test leads for this interface, mini USB cable, RC measurement, WINplus PC software (online) printed user manual and carrying case

## Basic packages:

### ARGUS 142 ADSL Annex B + J

Order number: 114232

### ARGUS 142 ADSL Annex A + L + M

Order number: 114202

### ARGUS 142 ADSL Annex A + B + J + L + M

Order number: 114252

### ARGUS 142 VDSL2

Order number: 114272



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## \* Options:

### Additional interfaces:

(Additional test leads included, if required)

#### ADSL Annex A + L + M interface

Order number: 014205 (interface) or 014245 (extension)

#### ADSL Annex B + J interface

Order number: 014206 (interface) or 014246 (extension)

#### VDSL2 interface

Order number: 014208

#### POTS interface

Order number: 014216

#### ISDN BRI S/T TE interface

Order number: 014215

#### ISDN BRI U (TE) interface

Order number: 015051 (2B1Q) or 015050 (4B3T\*)

#### ISDN BRI S/T TE and POTS interface

Order number: 014217

## Additional test features:

(depends on existing interface)

#### Ethernet loop (10/100 Base-T)

Order number: 014228

#### ATM test (only ADSL)

Order number: 014222

#### IP Download package (via ADSL, VDSL, Ethernet)

Order number: 014229

#### VoIP test (via ADSL, VDSL, Ethernet)

Order number: 014230

#### IPTV test (via ADSL, VDSL, Ethernet)

Order number: 014235

#### DMT Analysis

Order number: 014231

#### TDR (Time Domain Reflectometer)

Order number: 015052

#### ARGUS Active Probe II\*

Order number: 015091 (for DMT Analysis and Line Scope)

#### DELT (LQ: Line qualification)

Order number: 014232

## Additional PC software: (for Windows operating systems)

#### WINplus (incl. CD and Manual)

Order number: 010012

#### WINanalyse online (only key, no CD and Manual)

Order number: 015060

#### WINanalyse (incl. CD and Manual)

Order number: 015042

\* We would be glad to provide further details and information about additional accessories on request.