

ARGUS® 152

VDSL + ADSL COMBI TESTER

**VDSL
VECTORING**



ADSL

VDSL

GigE

ISDN

POTS

Cu

TDR

LQ

**Copper
Box**

**Data
101101011011**

**IP
TV**

**Vo
IP**

MOS

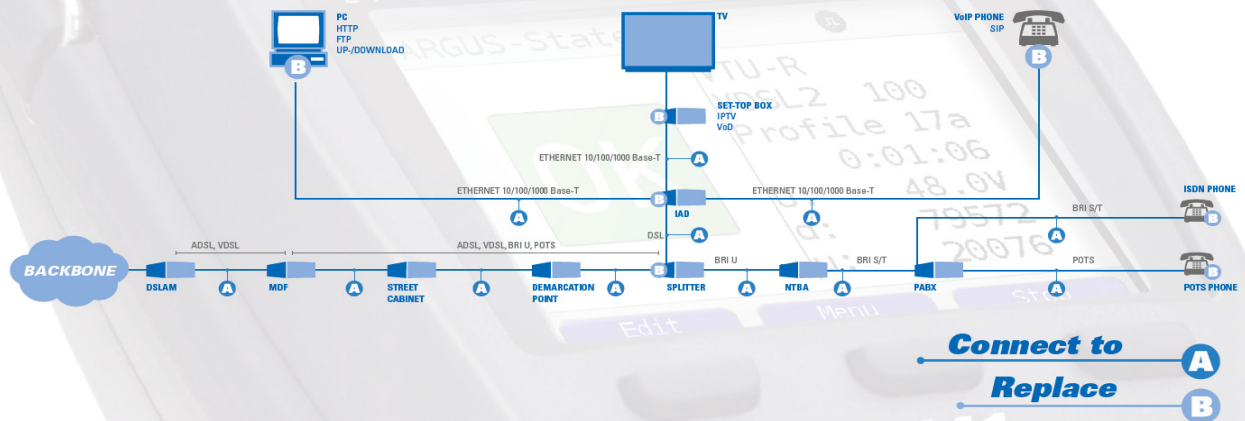
PC

USB

intec

GESELLSCHAFT FÜR
INFORMATIONSTECHNIK mbH

Where to use the ARGUS?



The VDSL + ADSL universal test set

Compact, lightweight and robust: The ARGUS 152 multifunction tester checks interfaces and services quickly and reliably - and at a very reasonable price! VDSL2, ADSL, Ethernet, ISDN (BRI S/T/U) and POTS, as well as the physical condition of the local loop, can be easily tested without having to swap modules.

GigaBit Ethernet interface and tests

A new high-quality ADSL/VDSL chipset with improved efficiency ensures that the ARGUS 152 delivers high-performance testing and rapid analysis. In addition to resistance, capacitance and voltage measurement, the ARGUS 152 features, when using its Gigabit Ethernet interface, an optional HTTP download, which enables speeds at more than 200 Mbit/s on the protocol level. The ARGUS 152's optional Ethernet cabling tests make it possible to detect shorts, opens or mismatches, but also the delay or polarity of the wire pairs, among other things.

Physical analysis of the local loop

On request, the universal tester can also be extended on an individual basis, thus offering the user a high degree of flexibility. For instance, additional copper tests (Cu tests) can be used to assess line quality, even without synchronization with the DSLAM. If necessary, these tests can also be considerably extended in the field by simply connecting the new compact ARGUS Copper Box via USB, thus enabling all important electrical parameters such as voltage, current, isolation resistance, symmetry (at 1 MHz), and many more, to be automatically and quickly determined via tip, ring and ground. The optional Active Probe II can even be used to carry out high-impedance measurements on an existing DSL connection, without creating interference on it.

To quickly identify any asymmetries between the wires, if required, a symmetry test compares the balance over the whole DSL frequency spectrum (up to 30 MHz) between the tip wire and the ring wire with reference to ground. In the event of damage, the integrated TDR (Time Domain Reflectometer) function can be used to measure line lengths and trace sources of faults, such as bridged taps. Moreover, if required, an Advanced TDR function (Adv. TDR) can be integrated, with which line lengths and sources of faults can be detected even more accurately.

If lines without a DSL receiver (e.g. in the case of a rewiring) need to be tested for their DSL suitability, the ARGUS 152 can optionally check this without any problem, even if there is no DSLAM. Regardless of line condition and length, the user can use two devices and an activated Line Qualification (LQ) function to determine data rates, even when systems consisting of a modem (xTU-R) and DSLAM (xTU-C) fail.

Triple Play and Quality of Service (QoS)

Easy Triple Play testing: The handheld tester also offers an optional Triple Play analysis for testing VoIP, IPTV and data services over xDSL and Ethernet. Thanks to its handset, the ARGUS 152 can simulate not only terminal equipment such as a telephone, PC or STB, but can also determine all relevant quality parameters. In this way, for example, voice quality can be evaluated according to the MOS method. Several of these IP tests can also optionally be performed using the new, more powerful IPv6 protocol.

Easy operation

The large 320 x 240 pixel colour display and an intuitive menu structure, among other things, guarantee user-friendly operation. A high-performance Li-Ion battery pack ensures long operating times in the field.

intec Gesellschaft für Informationstechnik

With 25 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 70 000 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, ADSL2+, GigaBit Ethernet, ISDN, POTS, copper as well as VoIP and IPTV tester

ARGUS®152 is a compact universal handheld tester for testing all current telecom 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)
 - Supports ITU-T G.998.4, G.INP (Retransmission)
 - Supports ITU-T G.993.5, G.vector (Vectoring)*
 - Display of Bits, SNR, QLN and Hlog/tone and stream graphs
- **Ethernet** interface for Triple Play and Ethernet tests
 - 1 GigaBit Ethernet test interface (10/100/1000 BT), RJ-45
 - Supports Ethernet terminal mode (PC replacement)

Triple Play testing via ADSL, VDSL2 and Ethernet:

- **ATM layer** tests when using ADSL and ADSL2/2+
 - ATM-OAM ping and ATM-OAM cell, VPI/VCI scan
- **Data:** testing the data throughput (IPv4 and IPv6*)
 - IP ping and trace route tests (BRAS info, PPP trace, VLAN)
 - HTTP- and FTP download tests up to 200 Mbit/s
 - 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_{CQE} (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)
 - IPTV long-term analysis (WINanalyse)

Ethernet tests*:

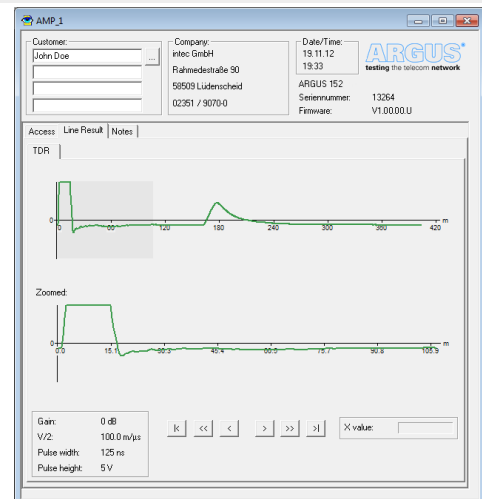
- Cabling tests for checking the Ethernet wiring
 - Detecting shorts, opens and mismatches and lots more

Circuit-switched interfaces:

- **ISDN:** integrated comprehensive ISDN test set
 - BRI U interface (2B1Q or 4B3T*) acc. to ANSI T1.601
 - BRI S/T interface acc. to ITU-T I.430 in TE and NT modes
 - 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 acoustic

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 from www.argus.info/en



Copper testing:

- **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: 2 kΩ || 10 pF, adjustable gain
 - Frequency range: 10 kHz to 30 MHz; res.: 0.5 kHz; acc.: ±0.1 %
 - Level range: -130 to -2 dBm/Hz, res.: 0.1 dB, ±2 dB (at 0 dB)
 - Voltage range in time domain, AC: 16.5 V_{pp}; resolution: 0.2 mV_{pp}
- **ARGUS Active Probe II:** high-impedance probe
 - Impedance: 70 kΩ || <1pF; 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: 1 up to >6,000 m; res.: 0.025 %/range; ±1 %
 - Pulse width (adjustable): 5 ns to 6 μs, amplitude: 7 V
 - Velocity of propagation (VoP): 30 % up to 99.9 %
- **Line Qualification:** Qualifying local loops
 - 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 (±2 dB)
 - Impedance: 100 Ω, 120 Ω and 135 Ω, configurable
 - Supports Bits, SNR, QLN and Hlog per tone diagrams
 - WB symmetry measurement
- **Copper Box:** Field upgradeable box for expanding the copper tests (see ARGUS Copper Box data sheet)
 - Determines all important electric variables
 - e.g. DC, AC, current DC, loop and isolation resistance, capacitance and symmetry at 1 MHz for the line
 - Automatic TRG measurements (Tip, Ring, Ground)

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® (opt.)
- **WINanalyse** PC software for analysis (including WINplus)
 - Long-term analysis of ADSL and VDSL parameters (graphic)
 - Long-term analysis of IPTV parameters (graphic)

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 management port
- **1 x Ethernet** (10/100/1000 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. 810 g (1.79 lbs) - incl. battery pack

Standard package:

ARGUS®152 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 152 ADSL Annex A + L + M

Order number: 115202

ARGUS 152 ADSL Annex B + J

Order number: 115232

ARGUS 152 ADSL Annex A + B + J + L + M

Order number: 115252

ARGUS 152 VDSL2

Order number: 115272



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* Options:

Additional interfaces:

(Additional test leads included, if required)

ADSL Annex A + L + M interface

Order number: 015205 (interface) or 015245 (extension)

ADSL Annex B + J interface

Order number: 015206 (interface) or 015246 (extension)

VDSL2 interface

Order number: 015208

POTS interface

Order number: 015216

ISDN BRI S/T TE interface

Order number: 015215

ISDN BRI U (TE) interface

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

ISDN BRI S/T TE and POTS interface

Order number: 015217

ISDN BRI S/T NT (incl. Monitor, 128kBERT, X.31)

Order number: 015219

Additional test features:

(depends on existing interface)

ATM test (only ADSL)

Order number: 015222

IP Download package (via ADSL, VDSL, Ethernet)

Order number: 015229

VoIP test (via ADSL, VDSL, Ethernet)

Order number: 015230

IPTV / IPTV ext. (via ADSL, VDSL, Ethernet)

Order number: 015237 / 015239

TDR (Time Domain Reflectometer)

Order number: 015052

ARGUS Active Probe II

Order number: 015091 (for Line Scope)

ARGUS Copper Box (incl. protective cover)

Order number: 015095

Line qualification (LQ) / Adv. copper tests (incl. Adv. TDR)

Order number: 015261 / 015262

Line qualification + Advanced copper tests

Order number: 015260

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: 015062

WINanalyse (incl. CD and Manual)

Order number: 015042

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