

2019

ARGUS®

testing the telecom network

THE FAMILY OF ARGUS

intec

GESELLSCHAFT FÜR
INFORMATIONSTECHNIK mbH



ARGUS®

testing the telecom network

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intec

GESELLSCHAFT FÜR
INFORMATIONSTECHNIK mbH

IN USE THROUGHOUT EUROPE

intec Gesellschaft für Informationstechnik mbH is successfully developing products for the international telecommunication markets for 30 years. Meanwhile specialized in high-quality telecommunication measuring devices, we belong to the leading suppliers of xDSL, IP and fiber optic measuring technology in Europe and beyond.

Our ARGUS® testers simplify the day-to-day work e.g. when it comes to physical line qualification and troubleshooting on the last mile, on xDSL and Ethernet connections and the triple play services based thereon.

Our customers have appreciated the quality of our products and services for many years. This trust in our products has enabled us to supply more than 100,000 ARGUS® testers throughout the world during the last 20 years – a large majority of which have been delivered to international companies such as Deutsche Telekom, Vodafone, Telefonica, KPN or A1 Telekom Austria.



ARGUS® MADE IN GERMANY

ARGUS® 166



- G.fast
- VDSL
- ADSL
- SHDSL
- GigE
- SFP
- ISDN
- POTS
- LTE
- Cu
- TDR
- Copper Box
- Data
- IP TV
- Vo IP
- MOS
- PC
- USB
- WLAN

ARGUS 166 ...

- xDSL + GigE tester with larger memory and optimized system performance
- VDSL2 profile 35b (ITU-T G.993.2, Annex Q / super vectoring)
- Supports a lot of different SFP transceivers for fiber Tests (FTTx)
- Highspeed downloads on xDSL and Ethernet (> 900 Mbit/s)
- Ethernet network scan with graphical display lists all IP and MAC addresses in the network
- Active Line Noise graph and graphical xDSL long-time trace to detect infrequent DSL
- HTTP/FTP up-/download tests, IP Ping, trace route; bridge, PC and router modes
- Line monitoring (Line Scope) via optional Probe with sym. / asymm. operation mode
- Free cloud functions, e. g. firmware update, configuration and test result upload
- Supporting PC software (ARGUS Update Tool, WINanalyse, WINplus) for updates, configuration and test results

ARGUS 166 with optional ...

- VDSL2 profile 35b Bonding support
- G.fast extension (G.9700/9701) up to 212 MHz
- ADSL2/2+ modem simulation ADSL2/2+ (Annex A + L + M and / or B + J)
- SHDSL connection tester, 2, 4, 6 and 8 wire SDHSL and SHDSL.bis (ATM, EFM, TDM)
- Supports throughput according to RFC 2544 incl. GigE loop and traffic generator (1 Gbit/s)
- ISDN BRI S/T/U, PRI/E1 interface (TE/NT/monitor) and POTS
- GPON modem simulation (ONT) with throughput tests*
- TDR function for measuring line lengths (up to 6 km) and identifying sources of interference
- Extension of copper test functions with the ARGUS Copper Box (see right)
- Parallel tests of all Triple Play services like Data, VoIP, IPTV via xDSL and GigE
- LTE extension* consisting of LTE scanner and download tests
- WLAN-AP and WLAN client mode with WLAN scan for finding WLAN networks
- Further accessories on the back side

ARGUS® 163



- G.fast
- VDSL
- ADSL
- GigE
- SFP
- LAN cabling
- ISDN
- POTS
- LTE
- Cu
- TDR
- Copper Box
- Data
- IP TV
- Vo IP
- MOS
- PC
- USB
- WLAN

ARGUS 163 ...

- VDSL + ADSL combi tester with larger memory and optimized system performance
- VDSL2 profile 35b (ITU-T G.993.2, Annex Q / super vectoring)
- Highspeed downloads on xDSL and Ethernet (> 900 Mbit/s)
- Ethernet network scan with graphical display lists all IP and MAC addresses in the network
- Supports a lot of different SFP transceivers for fiber Tests (FTTx)
- Active Line Noise graph and graphical xDSL long-time trace to detect infrequent DSL errors
- HTTP/FTP up-/download tests, IP Ping, trace route; bridge, PC and router modes
- Line monitoring (Line Scope) via optional Probe with sym. / asymm. operation mode
- Free cloud functions, e. g. firmware update, configuration and test result upload
- Supporting PC software (ARGUS Update Tool, WINanalyse, WINplus) for updates, configuration and test results

ARGUS 163 with optional ...

- VDSL2 profile 35b Bonding support
- G.fast extension (G.9700/9701) up to 212 MHz
- ADSL2/2+ modem simulation (Annex A + L + M and / or B + J)
- ISDN BRI S/T/U, PRI/E1 interface (TE/NT/monitor) and POTS
- LAN cabling tests (multi cable test) with up to 100 measurements for detecting cabling faults
- Allocate up to 100 active ARGUS LAN Probes with programmable ID
- PoE load tests ("Power over Ethernet"), class 0 to 4 automatic
- GPON modem simulation (ONT) with throughput tests*
- TDR function for measuring line lengths (up to 6 km) and identifying sources of interference
- Extension of copper test functions with the ARGUS Copper Box (see right)
- Parallel tests of all Triple Play services like Data, VoIP, IPTV via xDSL and GigE
- LTE extension* consisting of LTE scanner and download tests
- WLAN-AP and WLAN client mode with WLAN scan for finding WLAN networks
- Further accessories on the back side

ARGUS® 156



- G.fast
- VDSL
- ADSL
- SHDSL
- GigE
- ISDN
- POTS
- LTE
- Cu
- TDR
- Copper Box
- Data
- IP TV
- Vo IP
- MOS
- PC
- USB
- WLAN

ARGUS 156 ...

- xDSL tester with larger memory and optimized system performance
- VDSL2 profile 35b (ITU-T G.993.2, Annex Q / super vectoring)
- Highspeed downloads on xDSL and Ethernet (> 900 Mbit/s)
- Measurement of xDSL up-/downstream parameters, as well as bits/tonne (graphic) and more
- Active Line Noise graph and graphical xDSL long-time trace to detect infrequent DSL errors
- HTTP/FTP up-/download tests, IP Ping, trace route; bridge, PC and router modes
- Supports the protocols IPv4 and IPv6 as well as the dual-stack mode
- Line monitoring (Line Scope) via optional Probe with sym. / asymm. operation mode
- Free cloud functions, e. g. firmware update, configuration and test result upload
- Supporting PC software (ARGUS Update Tool, WINanalyse, WINplus) for updates, configuration and test results

ARGUS 156 with optional ...

- VDSL2 profile 35b Bonding support
- G.fast extension (G.9700/9701) up to 212 MHz
- Ethernet network scan with graphical display lists all IP and MAC addresses in the network
- ADSL2/2+ modem simulation (Annex A + L + M and / or B + J)
- SHDSL connection tester, 2, 4, 6 and 8 wire SDHSL and SHDSL.bis (ATM, EFM, TDM)
- ISDN BRI S/T/U, PRI/E1 interface (TE/NT/monitor) and POTS
- Expandability of line monitoring, TDR, symmetry measurement (up to 30 MHz) and more
- TDR function for measuring line lengths (up to 6 km) and identifying sources of interference
- Extension of copper test functions with the ARGUS Copper Box (see right)
- Parallel tests of all Triple Play services like Data, VoIP, IPTV via xDSL and GigE
- LTE extension* consisting of LTE scanner and download tests
- WLAN-AP and WLAN client mode with WLAN scan for finding WLAN networks
- Further accessories on the back side

ARGUS® 153



ARGUS 153 ...

VDSL + ADSL tester with larger memory and optimized system performance

VDSL2 profile 35b (ITU-T G.993.2, Annex Q / super vectoring)

Highspeed downloads on xDSL and Ethernet (> 900 Mbit/s)

Incl. IP ping and trace route tests, bridge, PC and router modes

Supports the protocols IPv4 and IPv6 as well as the dual-stack mode

Active Line Noise and graphical xDSL long-time trace to detect infrequent DSL errors

Line monitoring (Line Scope) via optional Probe with sym. / asymm. operation mode

Free cloud functions, e. g. firmware update, configuration and test result upload

Supporting PC software (ARGUS Update Tool, WINanalyse, WINplus) for updates, configuration and test results

ARGUS 153 with optional ...

VDSL2 profile 35b Bonding support

G.fast extension (G.9700/9701) up to 212 MHz

Ethernet network scan with graphical display lists all IP and MAC addresses in the network

ADSL2/2+ modem simulation (Annex A + L + M and / or B + J)

HTTP download-/FTP up- and download-tests via FTP server

Parallel tests of all Triple Play services like Data, VoIP, IPTV via xDSL and GigE

TDR function for measuring line lengths (up to 6 km) and identifying sources of interference

Extension of copper test functions with the ARGUS Copper Box (see right)

Transferring of test results via WLAN or QR code to systems of an electronic order processing

LTE extension* consisting of LTE scanner and download tests

WLAN-AP and WLAN client mode with WLAN scan for finding WLAN networks

Further accessories on the back side

ARGUS® Copper Box



Copper Box test	
Auto	U C _{sym} C Iso.
22.30 nF	
Wire type 1	
49 pF/m → 455 m	

Copper Box test	
Capacitive symmetry	
Cm	86.87 nF
CaE	92.02 nF
CbE	69.86 nF
AC	0.35 nF
Relative	0.50 %

ARGUS Copper Box

Extension for ARGUS testers 153, 156, 163 and 166

Easy connection to an ARGUS tester using its USB Host interface

Autotest with various predefined measurement profiles

DC voltage measurement determines the type of access (e. g. ISDN or POTS), supply voltage (e. g. SHDSL) and interference voltage

AC voltage measurement detects dangerous interference voltages

Capacitance symmetry detects anomalies in cabling, which can lead to signal or transmission errors

Capacity measurement indicates interruptions and typical input capacitance of the connected equipment and can be used to assess whether the wire pair is unbalanced

Isolation resistance measurements detect damaged cable isolation, moisture in the cable or oxidized contacts

Resistive symmetry detects anomalies in cabling, which can lead to signal distortion or transmission errors

Loop resistance measurements detect short-circuits and estimate the line length

DC current measurements detect emergency, external or supply and determine whether the line is too long or

Symmetry measurement (LCL): Attenuation measurement at a frequency of 1 MHz can be used to assess whether the wire pair is unbalanced

NEXT measurement: Measures the Near-End Crosstalk at a frequency of 1 MHz

Signature detection evaluates the signature or PPA from the subscriber's line

For measurements in lab and field, the standard jacks are equipped to accept 4 mm shrouded banana plugs

Standard equipment includes three high quality connection banana cables (twisted and shielded) and is delivered together with the manual

Standard equipment includes USB Box, which can be tied together with the tester using a specific shock absorbing rubber jacket

ARGUS® 3u
BASIC / PLUS / NT

ARGUS 3u basic ...

ISDN BRI access tester with integrated handset

ARGUS 3u basic with support for S/T and U interfaces (2B1Q or 4B3T) in TE mode

Intuitive menu navigation using soft and cursor keys

Automatic test sequence (auto test) – results are saved

Data transfer to a PC using optional PC software

Voltage and signal level measurement

Leased line tests (including the D channel)

Powered on S/T interface, rechargeable batteries or mains adaptor, integrated charger

Supporting PC software (ARGUS Update Tool, WINanalyse, WINplus) for updates, configuration and test results

ARGUS 3u plus ...

POTS interface with an integrated mini-splitter

POTS monitor with CLIP and DTMF display

HF test, reporting the presence of frequencies on the line (e. g. ADSL)

RC measurements complemented by a loop length calculation

Option: Cabling test for BRI S/T interfaces

ARGUS 3u NT additionally with ...

BRI S/T interface NT mode with D channel monitoring

POTS interface with an integrated mini-splitter

	166	163	156	153	3u NT/plus/basic
VDSL2 Profile 35b	✓	✓	✓	✓	
VDSL2 Profile 35b Bonding	✓	✓	✓	✓	
G.fast (up to 212 MHz)	✓	✓	✓	✓	
ADSL2/2+	✓	✓	✓	✓	
SHDSL (2/4/8 w)	✓		✓		
ETH 10/100/1000 BT	✓	✓	✓	✓	
FTTx/GPON ¹ /OPM	✓	✓			
BRI U + BRI S/T TE	✓	✓	✓		✓
BRI S/T NT	✓	✓	✓		✓ ²
PRI/E1	✓	✓	✓		
POTS	✓	✓	✓		✓ ³ ✓ ⁴
LTE ¹	✓	✓	✓	✓	
WLAN/2G4 Scope	✓	✓	✓	✓	
Line Scope	✓	✓	✓	✓	
TDR	✓	✓	✓	✓	
RF-Current Clamp	✓	✓	✓	✓	
Copper Box	✓	✓	✓	✓	
LAN Cabling/PoE		✓			
ETH Network Scan	✓	✓	✓	✓	
RFC2544	✓				
IP Tests	✓	✓	✓	✓	
Download/Upload	✓	✓	✓	✓	
IPTV	✓	✓	✓	✓	
VoIP + MOS	✓	✓	✓	✓	

¹ On request/customer specific
² only 3u NT ³ only 3u NT/plus ⁴ only 3u basic



Inclusive



Optional



minimum one DSL interface is part of the standard package

ARGUS ACCESSORIES

ARGUS[®] 2G4 Scope



ARGUS 2G4 Scope

- Graph. WLAN spectrum analysis for 2.4 GHz
- For the specific WLAN troubleshooting (e.g. Bluetooth, motion sensor, microwave oven etc.)
- Passive application that does not affect the WLAN

ARGUS[®] RF-Current Clamp



ARGUS RF-Current Clamp

- For non-intrusive detection of interferers (e.g. power supplies) with Line Scope (graphical)
- Easy detection of interferers by acoustic tone tracking
- Displays interference signal and useful signal

ARGUS[®] Optical Power Meter



ARGUS Optical Power Meter

- Powerful and high-precision Optical Power Meter in SFP form factor
- Live display of the level and storage of the measurement, output in QR code
- Measures different wavelengths (e.g. GPON) and has a universal SC connector (2.5 mm)