

D2061 ADSL TESTER

OVER POTS – OVER ISDN



Smart troubleshooting tool
Powerful background monitor

Multi layer tester
ADSL, ATM and IP layers test

Ideal companion for installers
Light weight, small footprint, robust

OVERVIEW

The D2061 has been specifically realized for ADSL lines and turns out to be one of the smallest, lightest and easy to handle devices on the market. Thanks to the 'Universal Modem' feature, this tester is able to simulate the user's modem and host checking each critical point of an ADSL connection and obtaining a complete set of parameters such as line bit rate and occupation capacity, but also connection bit rate both Fast and Interleaved, noise margin and bit per tone allocation.

As with all the measurement devices made by Aethra®, it offers helpful features for the technician in installation, maintenance and troubleshooting phases.

The graphic interface, common to the new generation test equipment family made by Aethra®, satisfies all the user's needs. Navigating through the various menus is both easy and immediate thanks to the bright, back-lit, high resolution display as well as the zoom feature.

The features PREDEFINED TESTS and HISTORY, are used to manage and store personalized test setup and to recall the results of each test performed. These, together with the possibility to setup a personal most used tests list, make a technicians daily tasks simpler by avoiding possible setup errors or subsequent analysis of the results obtained. The Smart Status™ feature allows the modem, the line and the device status to be displayed immediately. In particular, is shown the number of bits per tone assigned both in graphical and tabular format, the error count, events and anomalies on the line, the current and historical alarm status and evolved statistics about the ATM level are displayed.

Thanks to Smart Status™ the user has all the necessary information at a push of a button.

FEATURES AT A GLANCE

- Specific ATM layer tests
- Complete IP layer feature including PPP and file transfer simulation
- Predefined test set-ups to save time on site
- Possibility to save test results for later analysis
- Multi protocol monitor and analysis including frames decoding
- Includes PC108 for Windows™ software for powerful analysis and remote management
- Different ordering codes for ADSL over POTS and ADSL over ISDN
- In field upgradable firmware



BACKGROUND MONITOR

The device captures and decodes all modem events. During the active phase of the connection, all the AAL-5 packets are also captured.

Moreover, it is possible to capture and decode communication protocol events over ISDN D channel¹.

In POTS mode, the D2061 is able to perform high impedance monitoring of POTS² events.

Advanced analysis through the PC software³ issued with the device, helps to solve also more complex ADSL connections problems.

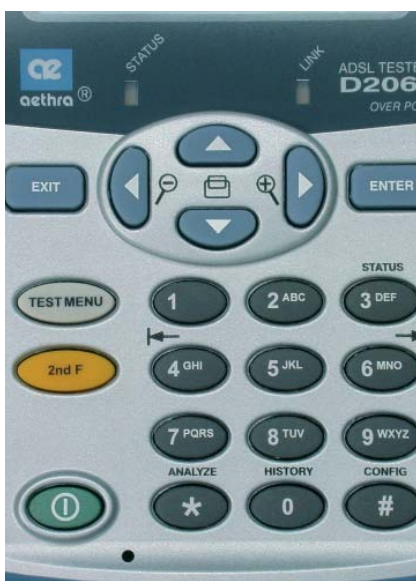
- Physical layer monitoring with alarms and error checks
- Line events analysis
- AAL-5 encapsulation decoding
- D¹ channel and POTS² line monitoring
- Real time and off-line decoding
- Capturing filters
- G.826/M.2100 statistics information

CONNECTION

Using this test, it is possible to control all ADSL connection data both for Upstream and Downstream sides.

The customer's contractual parameters verification is immediate and easily interpretable.

- ATM Fast/Interleaved bit rate
- ATM maximum line rate
- Relative capacity
- Noise margin
- Attenuation
- Output power



ATM⁵

Using of this test, it is possible to verify if the ATM layer is working correctly up to the ATM termination unit.

This test allows OAM as well as AAL-5 cells generation to be performed with response times (ms), errors and statistics⁵.

- OAM cells generation, F4 and F5 type
- AAL-5 packets generation test
- Loop-back OAM cells management
- Programmable number of Ping requests
- Errors and statistics
- Waiting response time (sec.)

IP⁶

Thanks to IP PING test, the D2061, checks the connection to the Internet Provider, the reachability of a remote host and the relative response times⁶.

Moreover, all the information from the server such as messages and local, remote and server IP addresses is provided. This allows the correct connection settings of the user to be checked. The test IP GENERATE TRAFFIC, allows a data transfer between hosts to be simulated. This test, more exhaustive than IP PING, is able to measure the throughput of the connection in progress.

- IP Bridge, IP Router, PPPoE, PPPoA, Protocols
- PPP, IP, UDP, DHCP, DNS, ICMP, TFTP support
- PAP and CHAP (MD5) authentication
- Static and Dynamic IP address
- Gateway management and address
- Settable packet length and testing file
- IP statistics and response times
- Throughput calculation
- IP address book, password and User ID for immediate Internet login

BER

Through an appropriate option¹ D2061 can perform specific tests over S/T-Bus for line quality verification (BERT) and for ISDN basic access general control.

- G.821
- Different test pattern
- Test modes End-to-End and Selfcall
- Errors injection

AUTOMATIC TESTS

This test is used to verify immediately and automatically the ISDN line under measurement.

If not otherwise specified, the device automatically generates a series of calls toward a remote user or in autocal mode and verifies the complete status of the line. With the possibility to set up and save a personalized test sequence, the control of several line typologies is easier and more immediate.

- ST2061option
- Physical layer settings control
- Layer 2 configuration
- Availability status of the several bearer services, teleservices and supplementary services
- Availability check of single B channels

MISCELLANEOUS

Thanks to the integrated microphone and loudspeaker the D2061 is able to simulate both analogue POTS² and ISDN¹ telephones. For the version over POTS, an external splitter⁴ is also available, to substitute the user's one. The D2061 does not require an external splitter to work.

- ISDN terminal simulation
- Loopbox
- Evolved POTS terminal simulation
- CLI displaying

¹ ST2061

² AB2001N

³ Pc108forWindows™

⁴ MF206x

⁵ ATM2061

⁶ IP2061

TECHNICAL SPECIFICATIONS

TELECOM INTERFACES

- ADSL access
ATU-R ITU-T (CCITT) Rec. ITU-T-I.361,
ITU-T- I.363.5, ITU-T- I.432,
ITU-T- I.610, ITU-T-I.731
- ISDN Basic Rate [ST2061]
S/T ITU-T (CCITT) Rec.I.430,
ETS 300 012

ADSL LAYER

- D2061 over POTS¹
Full Rate ANSI T1.413 issue 2
G.DMT G.992.1,AnnexA (ADSL over POTS)
G.Lite G.992.2
Multimode
- D2061-I over ISDN²
G.DMT G.992.1,Annex B (ADSL over ISDN)
Others ADSL over POTS/ISDN
U-R2 (T-DSL)
Alcatel ADSL over ISDN ETSI DTS/TM
G.994.1 (ex G.Hs)
¹⁻²Only one module at time is available from the factory
- Handshake

ATM LAYER [ATM2061 OPTION]

- Stack
OAM Implementation F4 and F5 OAM loopback cells
OAM ITU-T I.610
ATM Adaptation Layer AAL-5
VC channel selection Settable by the User
- Multiplexing methods LLC/SNAP or VC Multiplexed

IP/PPP LAYER [IP2061 OPTION]

- Stack
Data encapsulation methods IP over ATM Bridged, IP over
ATM Routed, PPP over ATM,
PPP over Ethernet
- RFC number RFC2684 (ex 1483), 2225,
2364, 2516
- PPP Client, Server

AVAILABLE OPERATING MODES

- ADSL
ATU-R
ATU-R + Host
- ISDN
TE-S (BRI) ST2061 option
- POTS
TE AB2001N option
MON AB2001N option

BACKGROUND MONITOR

- Events ADSL parameters, alarms,
errors, AAL-5 packets
- ISDN D channel monitor [ST2061option]
- POTS line Monitor [AB2001 option]
- Programmable filters Independent filters capture
and displaying
- Analysis of results stored into PC
PC108 for Windows™

SMART STATUS™

- Physical layer G.826 / M.2100
- ADSL line ES, SES, BBER,UAS DMT bits per
tone, graphical and table
format, alarms and errors
- ATM layer Tx/Rx cells counters,
AIS-RDI-LB OAM cells
counters, unmapped cells
counter, VCs (VCI/VPI) of
unmapped cells [ATM2061]
- ISDN line Status levels ISDN 1, 2 and
3 clearly displayed [ST2061]

ADSL MONITOR ANALYSIS

- Stand alone decoding ADSL and AAL-5
- ADSL events decoding Graphical and tabular format
- ATM header decoding
- AAL-5 decoding
Hexadecimal decoding LLC, Discovery PPPoE,
grouped by levels Discovery ARP and MAC
Address Payload, Trailer

CONNECTION

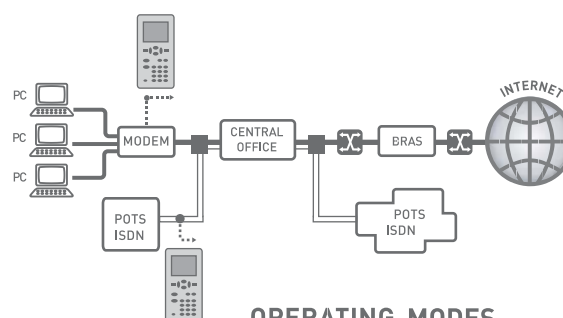
- ADSL line mode
- ADSL maximum bit rate Kbps (DW/UP)
- Operative ATM speed rate
Fast mode Kbps (DW/UP)
Interleaved mode Kbps (DW/UP)
- Relative Capacity % (DW/UP)
- Noise Margin dB (DW/UP)
- Attenuation dB (DW/UP)
- Output Power dBm (DW/UP)
- ATU-C manufacturer & version ANSI mode

BIT PER TONE

- Number of bits per tone, frequency and bit per tone value
- Cursors Moved along the graphic,
provides information for each tone
- Display 128, 256 tones
- Results format Table, Graphic

ATM [ATM2061 OPTION]

- VCI / VPI Statistics and Errors
- Type of cell F4 end-to-end, F4 segment,
F5 end-to-end, F5 segment
User defined
- Location ID (end-to-end)
- ATM OAM cell Management
- Type of Test ATM PING, OAM & AAL-5
packets test, traffic generator



OPERATING MODES



IP [IP2061 OPTION]

- | | |
|-------------------------------|--|
| • IP address supported | Static, Dynamic (DHCP) |
| • Authentication protocol PPP | PAP, CHAP (MD5) |
| • Gateway selection | IP Bridged mode |
| • LLC/SNAP encapsulation | User defined |
| • Type of Test | IP Ping (ICMP), IP generate traffic (TFTP) |

LOOP-BOX FEATURE [ST2061 OPTION]

AUTOMATIC ACCESS TEST [ST2061 OPTION]

- Fully automated Access test
- Automatic supplementary services test
- Programmable test sequence

BIT ERROR RATE TEST [ST2061 OPTION]

- | | |
|------------------------------|---|
| • G.821 statistics | ES, SES, US, DM, PASS/FAIL |
| • Pseudo-Random bit sequence | User definable 2^{11-1} , 2^{15-1} , 2^{23-1} , 16 bits octet |
| • Error Injection | User menu selectable: Manual, Single, Automatic |

HISTORY AND PREDEFINED TESTS FEATURES

- Saving and recalling of 10 different setup and results for each kind of tes

CONNECTORS

- | | |
|-----------------------|--------------------------------|
| • ADSL line interface | 2 wires RJ11 |
| • AUX | DB15-HD |
| • RS232 | Mini - DIN 4 (ISO 4902) |
| • Handset | 4 wires RJ9. Balanced |
| • Power in | External AC/DC adapter 4 wires |

ENVIRONMENTAL CHARACTERISTICS

- | | |
|-------------------------------|---|
| • Dimension | |
| Weight, with battery | ≈ 500 gr. |
| Dimensions, with holster (mm) | 100 (w) x 180 (l) x 50 (d) |
| • Power | |
| Battery Type | Rechargeable, Ni-MH |
| Battery life | ≈ 3 hrs @ 25°C, LCD back-lit off |
| External AC/DC adapter | 115/230Vac ±10% @ 50/60Hz |
| • Temperature | |
| Storage/Transport | -40°C to +70 °C |
| Operating, nominal | -5°C to +45 °C |
| Operating, limits | -10°C to +55 °C |
| • Humidity, non-condensing | |
| | ≤ 93% RH @ 40 °C |
| | ≤ 70% RH @ 55 °C |
| • User's Safety Aspects | EN 61010-1, EN 60950, EN 41003 |
| • EMC Aspects | EN 55022, EN 55024, EN 61000-3-2 / -3-3 |
| • CE Marking | Class B (residential devices) |

MISCELLANEOUS

- | | |
|-------------------------------------|--|
| • LCD display | 320x200 Graphic display wide bright and back-lit, with Zoom function |
| • Internal microphone & loudspeaker | |
| • Upgradable firmware | By RS232 port |
| • MF206x, POTS Microfilter | Option |

OPTIONS

- | | |
|-----------|-------------------------------------|
| • ATM2061 | ATM Stack and Statistics |
| • IP2061 | IP Suite Test |
| • ST2061 | ISDN BRI-S/T terminal simulator |
| • AB2001N | POTS Terminal Simulator and Monitor |

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