

SpeedTouch™610

Business DSL Routers

Customer Release Note

Release R4.2.7



THOMSON

speedtouch™

SpeedTouch™

610

Customer Release Note

Release R4.2.7

Status v1.0
Reference E-DOC-CRN-20040405-0005
Short Title CRN ST610(i) R4.2.7
Copyright

© 2004 THOMSON Telecom Belgium. All rights reserved. Passing on, and copying of this document, use and communication of its contents is not permitted without written authorization from THOMSON Telecom Belgium. The content of this document is furnished for informational use only, may be subject to change without notice, and should not be construed as a commitment by THOMSON Telecom Belgium. THOMSON Telecom Belgium assumes no responsibility or liability for any errors or inaccuracies that may appear in this document.

Contents

1	The SpeedTouch™ 610 R4.2.7	5
1.1	SpeedTouch™ 610 Feature Overview	6
1.2	New Features	13
1.2.1	General Release R4.2.x New Features	13
1.2.2	R4.2.7 New Features	20
1.3	Solved Caveats and Restrictions	22
1.4	CLI Command Changes	25
1.4.1	CLI Command Changes in R4.2.7	25
1.4.2	Generic R4.2.x CLI Command Changes	26

2	Release History	31
----------	------------------------------	-----------

3	Delivered Media.....	33
3.1	Documentation	34
3.2	System Software Versions	35

4	Release R4.2.7 Caveats and Restrictions.....	37
4.1	General System Software Restrictions.....	37
4.2	IPSec VPN Software Module Restrictions.....	39
4.3	SIP PBX Software Module Restrictions.....	40



1 The SpeedTouch™610 R4.2.7

Introduction The purpose of this Customer Release Note is to provide delivery information and to define the released items of the Release R4.2.7 maintenance release of the SpeedTouch™610 Business DSL Routers.

Introducing Release R4.2 The Release R4.2 adds many new key features to the SpeedTouch™610 product, including new tools, applications and means to further enhance the services delivered by the SpeedTouch™610 and to improve its long-term reliability for Internet/WAN services.

All these come in addition to the already extended set of features provided in the preceding Release R4.1.x of the SpeedTouch™610 product.

Introducing the Maintenance Release R4.2.7 This maintenance release adds several new features to the SpeedTouch™610 product, and solves in addition a number of caveats that were detected in the previous R4.2.x software releases.

Applicability of this Customer Release Note This Customer Release Note applies to the following SpeedTouch™ DSL products:

- SpeedTouch™610 ADSL/POTS Business DSL Routers
- SpeedTouch™610i ADSL/ISDN Business DSL Routers

1.1 SpeedTouch™610 Feature Overview

-
- ADSL features
- Simultaneous high-speed Internet access over ADSL, on top of existing POTS or ISDN services on the same copper line
 - ADSL throughput performances of:
 - Up to 8Mb/s downstream
 - Up to 832kb/s upstream for ADSL/POTS, 640kb/s upstream for ADSL/ISDN
 - Supports ADSL spectral shaping (versus widely deployed Alcatel DSLAM ADSL line cards)
 - Proven ADSL/POTS and ADSL/ISDN standards compliancy

Operation and Management

-
- Operating System independent Business DSL Router
 - UPnP certified, full Internet Gateway Device model compliant



- Configurable UPnP policy

Note The default UPnP policy for the SpeedTouch™610 is set secure:

- UPnP is enabled
- Connect/disconnect of the SpeedTouch™ IGD Internet Connection is not allowed
- Write NAT entry permission is restricted to the creator host
- User-friendly HTTP web-based management
- Advanced Command Line Interface (CLI) management
- FTP access, allowing for
 - Configuration management
 - System software management
 - Language packs management

System software management

-
- Embedded dual system software management
 - System software upgradeable
 - Digitally signed system software
 - Secure system software Internet download support

Configuration management

Fail-safe configuration management via:

- Easy to use SpeedTouch™ Setup wizard for MS Windows OSs available on SpeedTouch™610 Setup CD-ROM
- Operating System independent easy to use embedded HTTP-driven SpeedTouch™ Easy Setup wizard
- Support for advanced configuration backup, restore and embedded storage of configurations

Performance and service monitoring

- Dr SpeedTouch™ for MS Windows OSs available on SpeedTouch™ 610 Setup CD-ROM to allow continuous service and performance monitoring and user-friendly troubleshooting
- Basic and advanced diagnostics and monitoring, available from both web pages and CLI.
- Extensive remote management via:
 - SNMPv1
 - SNMP traps
 - Syslog
 - Syslog message forwarding
- SNMP

Multi-lingual support

- Selectable multi-lingual graphical user interface supported by:
 - SpeedTouch™ Setup CD-ROM Menu
 - SpeedTouch™ Setup wizard
 - Embedded HTTP-driven SpeedTouch™ Easy Setup wizard
 - Dr SpeedTouch™
 - SpeedTouch™ NAPT manager
- Operating System independent SpeedTouch™ HTTP web-based management and online help pages
 - Intrinsic multi-lingual web pages selection possibility for:
 - English (default language)
 - Spanish
 - German
 - French
- Support for Unicode UTF-8 encoded languages

Product security

- System password authentication for all access methods and levels
- Support for HTTP digest authentication
- Integrated full programmable packet firewalling

local networking and
local interface features

- Available with:
 - Managed four-port 10/100Base-T auto-sensing MDI/MDI-X Ethernet switch
 - Dual-port:
 - One 10/100Base-T MDI-X Ethernet port
 - One ATM-Forum 25.6Mb/s port
- Full configuration of Ethernet switch functionality, allowing for:
 - Per Ethernet port, port enable/disable
 - Per Ethernet port, auto or fixed communication speed and duplex mode configuration
 - Ethernet port monitoring
 - Ethernet port isolation
- Full configuration of ATM-Forum 25.6Mb/s port:
 - Operational line-state detection and policing configuration
 - ATM-Forum cross-connection configuration
 - Triggered ATM continuity check

Routing services

- IP address multi-homing of SpeedTouch™ 610
 - Auto-IP configuration
 - Unnumbered addressing and routing
- Simultaneous IP Routing to multiple destinations
- IGMP forwarding
- Extended IP Routing capabilities, allowing for:
 - Destination IP routing
 - Interface routing
 - Packet classified routing (via programmable packet classification)
 - IP Quality-Of-Service
- Supports Routing Information Protocol (RIP):
 - Supported RIP versions:
 - Full RIPv1 support
 - Full RIPv2 support
 - Supports RIP configuration per IP interface

Service transparency features

- Extended IPsec VPN pass-through functionality and transparency supporting simultaneous access from any number of IPsec VPN clients to any number of IPsec VPN servers.
- Improved NAT experience via service specific NAT algorithms for:
 - ESP
 - FTP (including passive FTP)
 - GRE
 - H.323
 - IKE / IPsec pass-through
 - ILS
 - IPv6-to-IPv4
 - IRC
 - JABBER (for the purpose of e.g. instant messaging Voilà Messenger)
 - PPTP
 - RAUDIO(PNA)
 - RTSP
 - SIP
- Support for Multi-NAT (Basic NAT)
- Static NAT configuration
- Default NAT server configuration
- Transparent NAT
- Secured UPnP NAT traversal
- Configuration via SpeedTouch™ NAT Manager

SLA services

- SLA monitoring via CLI:
 - IP ping functionality
 - Extended IP traceroute
 - HTTP probe

Quality of Service

- ATM Quality of Service
 - CBR, VBR-rt, VBR-nrt, UBR ATM QoS categories
 - Per VC queuing and SAR
 - Per VC shaping:
 - PCR shaping for UBR and CBR
 - PCR, SCR, MBS shaping for VBR
 - Per QoS category queuing and strict priority scheduling
 - Connection Admission Control for resource reservation
 - Upstream policing (UPC/NPC) for ATM-Forum cross-connected virtual paths and channels
- IP Quality of Service
 - VLAN 802.1p User Priority Mapping
 - IP, TCP, UDP, ICMP header based packet classification, prioritization and forwarding
 - IP header TOS byte / DSCP field marking
 - IP QoS queues instantiated per upstream interface (ATM VP/VC)
 - 6 Queue topology:
 - realtime queue with strict priority over all other queues
 - 4 WFQ queues with strict priority over the best effort queue
 - best effort queue
 - Queue scheduling algorithms:
 - Strict priority scheduling
 - Weighted Fair Queuing (WFQ) with configurable queue weights
 - Packet Discard Strategies:
 - Tail Drop
 - Early Packet Discard active queue management (BLUE algorithm)
 - Configurable queue propagation to enqueue in lower priority queue in case of congestion
 - Rate-limiting and/or shaping of real-time queue data to a percentage of the interface bandwidth
 - Prioritization of upstream TCP ACK segments
 - RFC2475/3260 Differentiated Services Architecture
 - RFC2474 Differentiated Services Field and Best Effort (BE) and Class Selector Per-Hop Behaviour (PHB)
 - RFC2597 Assured Forwarding (AF) PHB
 - RFC3246 Expedited Forwarding (EF) PHB
 - RFC2983 Differentiated Services and Tunnels
 - RFC2309 Queue management and Congestion avoidance (BLUE algorithm)

ATM services

- Over ATM automatic service configuration support:
 - ILMI 4.0
 - Auto configuration of Bridged Ethernet on auto-configured PVCs
 - Auto configuration of PPPoE Relay on auto-configured PVCs
 - Upstream shaping on existing terminated PVCs
- Extended F4/F5 ATM OAM features:
 - Configurable ATM loopback identifier
 - ATM ping command
 - Triggered ATM Continuity Check configuration and initiation

IPSecurity VPN software module features

- Additional IPSec VPN software module via software key
- Integrated IPSec VPN client/server supporting multiple IPSec VPN tunnels
- Supported dynamic key/certificate distributions:
 - Public key infrastructure (PKI) (RFC2459, ITU-T Q.817) with X.509 digital certificates
 - On-line PKI enrollment: CEP interoperable with Entrust, Verisign, Netscape and Baltimore CAs
 - Off-line PKI enrollment: PKCS#10 “Certification Request Syntax Standard” and PKCS#7 “Cryptographic Message Syntax Standard”, compatible with Entrust, Verisign, Netscape, RSA Security (RSAS) and Xcert
- Proven interoperability with full compliant IPSec VPN client/servers
- ICSA labs certified:



Full certification reports available at <http://www.icsalabs.com>.

SIP multi-media PBX software module features

- Additional SIP multi-media PBX software module via software key
- Integrated Session Initiation Protocol (SIP) multi-media Private Branch eXchange (PBX) service
- SIP session registration and blocking with automatic re-registration
- Call logging and active user's tracking
- Support Plug and Play IP phone installation
- Supports multiple incoming calls on a single public IP connection.
- Local call handling and PBX

WAN protocol and Internet services

- Supports following Connection Services:
 - Ethernet over ATM
 - PPP over ATM
 - IP over ATM
- Simultaneous support:
 - Bridged Ethernet
 - Routed Ethernet
 - Relayed PPPoA
 - Routed PPPoA
 - Routed IPoA
 - Classical IP over ATM
- Support for PPPoE:
 - Basic Bridged PPPoE
 - Basic Routed PPPoE
 - PPPoE server mode or client mode
- PPPoE Relay extended support:
 - (Multi-) PPPoE pass-through
 - (Multi-) Routed PPPoE
 - PPPoE towards local network.
- Bridge port filtering with pre-defined bridge filters

Local network services

- DHCP server support:
 - Auto-sensing DHCP server start/stop mechanism
 - Per WAN interface DHCP pool configuration and selection
 - IPCP subnet mask DHCP pool propagation support for Routed PPPoA and Routed PPPoE
- DHCP Relay Extended support with support for DHCP Relay Agent Information Option
- Network aware auto-IP configuration
- DNS server and forwarding

LED functionality control

- Configurable LED functionality

1.2 New Features

1.2.1 General Release R4.2.x New Features

Introduction

In the following the extensive list of new and improved features, functionalities and tools provided by Release R4.2.x is presented as compared to Release R4.1.x.

SIP multi-media PBX software module

The integrated SIP multimedia PBX is both an outbound proxy server and an outbound registrar server. Optionally, incoming Register requests from devices on the LAN can be forwarded to a pre-configured outbound proxy server and outbound registrar server on the WAN.

The SIP multi-media PBX supports:

- Plug and Play IP phones installation
- Automatic re-registration
- Multiple incoming calls on single public IP address
- Local call handling
- SIP registration (list of SIP URLs and / or IP addresses) blocking
- SIP session blocking (per user: outgoing black list of unauthorized callees; incoming black list of unauthorized callers) blocking
- Logging on Web and CLI of SIP calls
- Active users tracking via the web pages

Note This software module can be activated by software key. Software keys can be obtained (single or batch) from your local THOMSON Telecom Belgium SpeedTouch™ sales representative.

Managed Ethernet switch

Each of the Ethernet ports of the managed four-port Ethernet switch can be configured:

- 10/100Base-T, Half/Full Duplex, Negotiation on/off, enabled/disabled
- Isolation of Ethernet ports such that no direct (bridged / switched) traffic between Ethernet ports of different groups is possible
- Mirroring of a port such that one port can monitor the traffic sent to another port

Management and monitoring of the Ethernet switch is provided via:

- Diagnostics on SpeedTouch™ 610 web pages and CLI
- SNMP MIBs: Bridge MIB in line with IETF RFC1493, Ethernet-Like MIB in line with IETF RFC1643, MIB II Interface in line with IETF RFC1213 and IETF RFC1573 and MAU (Medium Attachment Unit) MIB in line with IETF RFC2668

ATM QoS, monitoring and management

- In addition to the already supported CBR, VBR-nt, and UBR ATM QoS classes, now also VBR-rt is supported (as required for ILMI).
- ATM ping command via ATM F5 loopback cells
- Improved ATM statistics via SNMP (RFC2515 ATM MIB support)
- Improved ATM statistics via CLI (at port, virtual channel and AAL5 connection)

DSL features

ADSL features:

- Support of SpeedTouch™ 610 identification over ADSL EOC protocol
- UR-2 compliancy (ADSL/ISDN variants only)

Auto-PVC and ILMI 4.0

The SpeedTouch™ 610 is able to retrieve information from the network to set up its functionality and protocol stacks without user intervention.

- **Auto-PVC**
Allows detection of virtual channels via the Alcatel proprietary mechanism for communicating ATM Layer information from DSLAM to the SpeedTouch™.
- **ILMI**
Allows for automatic configuration by means of PVC Auto-configuration and ILMI Auto Addendum:
 - **Bridging on new PVCs**
The SpeedTouch™ 610 can automatically add new PVCs learned via Auto-PVC or ILMI 4.0 to the bridge function, and can perform correct upstream shaping in line with the QoS parameters received via Auto-PVC or ILMI 4.0.
 - **PPPoE relay on new PVCs**
The SpeedTouch™ 610 can automatically add new PVCs learned via Auto-PVC or ILMI 4.0 to the PPPoE relay function, and can perform correct upstream shaping in line with the QoS parameters received via Auto-PVC or ILMI 4.0.
 - **Upstream shaping on existing terminated PVCs**
The SpeedTouch™ 610 can automatically adapt the upstream shaping parameters of existing terminated PVCs, in line with the QoS parameters received via Auto-PVC or ILMI 4.0.
 - **ATM-Forum connections**
SpeedTouch™ 610 devices equipped with the ATM-Forum 25.6Mb/s port can automatically cross-connect new VP and VC PVCs learned via ILMI 4.0 towards the ATM-Forum 25.6Mb/s port, and can perform correct upstream policing in line with the QoS parameters received via Auto-PVC or ILMI 4.0 both for existing and new cross-connect PVCs.
- Monitoring and maintenance of the Auto-PVC and ILMI 4.0 functionality is provided via the CLI.

PPPoE Relay and PPPoE pass-through

The SpeedTouch™ 610 is equipped with PPPoE Relay functionality to allow:

- PPPoE pass-through
- Multi-PPPoE-pass through + Multi-Routed PPPoE + IPoE / MER on one PVC
The SpeedTouch™ 610 simultaneously supports multiple PPPoE sessions from the LAN in parallel to multiple Routed PPPoE sessions from the SpeedTouch™ 610 and optionally one Routed Ethernet (MER) / IP over Ethernet connection from the SpeedTouch™ 610 on the same virtual channel.
- Bridging + Multi-Routed PPPoE on one PVC
The SpeedTouch™ 610 simultaneously supports bridging from the LAN in parallel to multiple Routed PPPoE sessions from the SpeedTouch™ 610 on the same bridging PVC.
- PPPoE client/server towards the local network
The SpeedTouch™ 610 supports multiple Routed PPPoE sessions from the Speed-Touch™ 610 over the Ethernet LAN to the network.

Bridge filtering

The SpeedTouch™ 610 supports bridge filtering with three pre-defined operation modes: no filtering, no broadcast messages from OBC to the WAN, only PPPoE to the WAN.

PPP authentication configuration

The SpeedTouch™ 610 allows following PPP authentication modes to be configured by the user:

- Preferred CHAP, allowed PAP
- Force CHAP
- Force PAP

PPP idle session trigger

The SpeedTouch™ 610 allows to configure whether the session should be considered idle, hence terminated, in case:

- RxTx: no traffic is received and no traffic is sent during idle time
- Rx: no traffic is received during idle time
- Tx: no traffic is sent during idle time

Redundancy support

- Syslog message generation for changed default gateway to track switching to/from redundant back-up connection
- Supports redundant back-up connection trigger by DSL physical layer failure
- Supports redundant back-up connection trigger by F4/F5 AIS/RDI
- Seamless interoperability with SpeedTouch™ 210i ISDN Back-up Router for ISDN

IGMP forwarding

The SpeedTouch™ 610 supports stateless forwarding of video-related IGMP zapping requests to a dedicated private virtual channel towards the video zapping handler.

Therefore the SpeedTouch™ 610 allows to be configure for:

- Polling of multi-cast IGMP zapping Ethernet addresses
- IP Time-To-Live overruling via packet classified routing to allow routing/forwarding of IGMP packets with TTL field equalling 1 (one).

Packet classified IP Routing and SLA/QoS monitoring

- The existing IP Routing functionality of the SpeedTouch™610 has been extended to full packet classified IP Routing.
 - Label configuration via CLI
Allows to create a set of criteria to classify a traffic stream. The set of criteria is fully to be determined by the user (chains and rules model), and is referred to as 'label'.
 - Packet Classification
Allows to associate a label to a traffic stream based on source interface, source and / or destination IP address and / or port, protocol and / or DSCP / TOS (Type Of Service) bits or any combination of, as defined by the user in the label configuration.
 - Packet classified IP Routing
Packet classified routing can be used to send high priority traffic to a high Quality of Service PVC. Packet classified routing extends upon and replaces source routing (since source IP address is one of the criteria that can be used by packet classification to assign a label to a traffic stream).
 - Label-based DSCP/TOS marking
The SpeedTouch™610 is able to mark the DSCP/TOS bits of routed IP packets based on the label assigned to a traffic stream.
- The SpeedTouch™610 supports Service Level Agreement SLA/QoS monitoring on a one-shot basis by launching an extended trace route command on the CLI from the SpeedTouch™610 to another node in the worldwide IP network, to measure the QoS (round-trip delay) to this other node and all intermediate nodes.
- Allows now for up to 256 IP Routing entries

NAPT algorithms

The SpeedTouch™610 provides new NAPT algorithms for application transparency through the SpeedTouch™610 NAPT engine:

- IPv4-to-IPv6
- Jabber (for the purpose of e.g. Instant Messaging Voilà Messenger)
- FTP algorithm extension for Passive FTP
- PPTP
- GRE
- IPSec
- SIP

NAPT traversal and Multi-NAT

- NAPT traversal using UPnP
 - Multi-NAT
NAT with n public IP addresses (in the context of the PPP IPCP subnet mask option or of IPoA / CIP) allowing for:
 - Basic NAT is performed on n public IP addresses, for n servers (with a static NAT entry per server) - no NAT/PAT is performed
 - Basic NAT is performed on n-1 public IP addresses, for n-1 servers (with a static NAT entry per server), and NAT/PAT is performed on 1 public IP address (typically the first IP address of the range) for all other web surfing computers
 - Transparent NAT
If an outgoing packet has a source IP address that is a public IP address, then the source address is not translated.
-

NAPT manager

The SpeedTouch™ 610 supports automatic NAPT port configuration for popular Internet applications via the SpeedTouch™ NAPT Manager MS Windows application, available on the SpeedTouch™ 610 Setup CD-ROM.

DHCP Relay functionality

The SpeedTouch™ 610 supports DHCP relay:

- A DHCP request received (using broadcast) over the LAN can be relayed via Unicast or Broadcast to a DHCP server on the WAN-side of the Speed-Touch™ 610. Multiple simultaneous DHCP unicast destinations are supported to provide DHCP server redundancy.
 - DHCP Relay Agent Information Option
The SpeedTouch™ 610 supports the DHCP Relay Agent Information Option.
 - DHCP server lease lock
The SpeedTouch™ 610 allows to “lock” a dynamic DHCP leases to a static DHCP lease.
-

UPnP IGD and UPnP security

- The SpeedTouch™ 610 is a certified UPnP Internet Gateway Device.
- For additional UPnP security the SpeedTouch™ 610 allows to:
 - Disable UPnP functionality
 - Enable UPnP functionality with - for MS Windows XP systems - following configuration options:
 - Connect/disconnect of the SpeedTouch™ 610 Internet connection is permitted or not
 - Configuration access for UPnP NAPT entries
 - Read-write permission of NAPT entries

Note By default the SpeedTouch™ 610 has UPnP enabled, connect/disconnect not allowed, write NAT entries restricted to own host.

Auto-IP configuration

The SpeedTouch™ 610 supports auto-IP configuration, to support UPnP functionality.

Embedded Easy Setup wizard

The SpeedTouch™610 features an embedded Easy Setup wizard, available from its web pages, by default providing three standard configuration templates:

- Bridged Ethernet
User specified Bridged Ethernet configuration using a fixed IP address for the host computers.
- Routed PPPoE
Routed PPPoE Packet Service configuration using always-on session connectivity, with enabled PPPoE Relay functionality for PPPoE pass-through.
- Routed PPPoA
Routed PPPoA Packet Service configuration using always-on session connectivity.

Multiple template files, stored on the SpeedTouch™610 permanent storage provide for additional configuration setups.

Multiple configurations and configuration management

The SpeedTouch™610 allows to store multiple configuration files on its permanent storage.

Configuration via the CLI provides for:

- Save of configuration in custom configuration files
 - Applying stored configuration files
 - Stored configuration dump
-

Web-based and CLI Diagnostics

- The SpeedTouch™610 provides layer-by-layer diagnostics via its web pages. Detailed information is provided for:

- System variables
- WAN
 - DSL Statistics and properties
 - Per WAN interface [Routed IPoA, Routed Ethernet, Routed PPPoE, routed PPPoA, PPPoE relay, Bridged Ethernet, Classical IP] type, traffic counters, general settings, IP connectivity check information
- LAN
Ethernet, Ethernet switch statistics and properties
- System monitoring via the CLI:
 - SpeedTouch™610 memory and processor load counters

Dr SpeedTouch

The SpeedTouch™ 610 supports monitoring and troubleshooting via the Dr SpeedTouch™ MS Windows application, available on the SpeedTouch™ 610 Setup CD-ROM.

Dr SpeedTouch™ allows for:

- Status dialog to monitor current network activity
- Systray icon displaying the current device and network status
- Computer, SpeedTouch™ 610, ISP, internet connectivity diagnosis
- Script-based troubleshooting allowing powerful problem testing and troubleshooting
- Creation of a XML log-file with system and device information
- Sending of log-file to help-desk via e-mail
- Extended monitoring of servers, internet connectivity
- Extended host system information and testing

Customization and internationalisation

- The SpeedTouch™ CD-ROM Menu, SpeedTouch™ Setup Wizard, Dr SpeedTouch™, SpeedTouch™ NAPT Manager and the SpeedTouch™ web pages (including the embedded Easy Setup wizard and the online help pages) are provided with following language support:
 - English
 - Dutch
 - French
 - German
 - Italian
 - [Brazilian] Portuguese
 - Spanish
 - Swedish.
- The SpeedTouch™ CD-ROM Menu, SpeedTouch™ Setup Wizard, Dr SpeedTouch™ and SpeedTouch™ NAPT Manager allow for customization of functionality and behaviour, and graphical appearance.

1.2.2 R4.2.7 New Features

Introduction In the following an extensive list of new and improved features, functionalities and tools provided by this specific maintenance Release R4.2.7 is presented and described.

Modem label updates The SpeedTouch™610 features updated:

- ADSL/POTS and ADSL/ISDN modem labels, providing for:
 - improved performance in certain scenarios
 - improved stability versus certain DSLAMs
 - ADSL spectral shaping, allowing to reduce the upstream bandwidth in favour of downstream bandwidth on long loops. This is done by shaping the upstream power of ADSL, anticipating on the spectral compatibility rules of ADSL2 Annex L.

Note Proven interoperability against widely deployed Alcatel DSLAM ADSL line cards.

Extended multi-lingual graphical user interface support

- The SpeedTouch™610 web pages and online help pages support the use of Unicode UTF-8 encoded language translations.
- By default the SpeedTouch™610 system software supports intrinsically to select following web page languages:
 - English (default)
 - Spanish
 - German
 - French

Note Additional language packs are available on the SpeedTouch™610 Setup CD-ROM.

System LED control Via the CLI it is possible to change the behaviour of the Pwr/Alarm system LED of the SpeedTouch™610.

IPSec NAPT algorithm The functionality of the IPSec NAPT algorithm has been extended to allow the operation of the algorithm to be interoperable with the Nortel IPSec VPN server/client using propriety NAT-T mechanisms.

Route filtering for RIP

- The SpeedTouch™610 allows for RIP route update blocking per IP interface
- Per interface configurable whether to block:
 - incoming RIP route updates
 - outgoing RIP route updates

This allows to provide simultaneously Internet access (typically a default route to the Internet) and MPLS VPN access (with RIP enabled between the SpeedTouch™610 and the edge-router of a BGP-MPLS VPN), without distribution of the route updates applicable for Internet access to the MPLS VPN.

IP Quality of Service

- VLAN 802.Ip User Priority Mapping
- IP, TCP, UDP, ICMP header based packet classification, prioritization and forwarding
- IP header TOS byte / DSCP field marking
- IP QoS queues instantiated per upstream interface (ATM VP/VC)
- 6 Queue topology:
 - real-time queue with strict priority over all other queues
 - 4 WFQ queues with strict priority over the best effort queue
 - best effort queue
- Queue scheduling algorithms:
 - Strict priority scheduling
 - Weighted Fair Queuing (WFQ) with configurable queue weights
- Packet Discard Strategies:
 - Tail Drop
 - Early Packet Discard active queue management (BLUE algorithm)
- Configurable queue propagation to enqueue in lower priority queue in case of congestion
- Rate-limiting and/or shaping of real-time queue data to a percentage of the interface bandwidth
- Prioritization of upstream TCP ACK segments
- RFC2475/3260 Differentiated Services Architecture
- RFC2474 Differentiated Services Field and Best Effort (BE) and Class Selector Per-Hop Behaviour (PHB)
- RFC2597 Assured Forwarding (AF) PHB
- RFC3246 Expedited Forwarding (EF) PHB
- RFC2983 Differentiated Services and Tunnels: the DHCP/TOS bits of a packet that is being encrypted are copied to the outer header.
- RFC2309 Queue management and Congestion avoidance (BLUE algorithm)

HTTP Probe Service Level Agreement monitoring service

The SpeedTouch™610 supports an HTTP probe CLI command which allows to report for a free to configure web page (URL):

- DNS resolution duration
- TCP connection setup round-trip duration
- Duration calculation for download of the web page
- Total number of downloaded bytes for download of the web page

MIBs services

The following SNMP MIBs are made available on the SpeedTouch™610 Setup CD-ROM from now on:

- RFC1695 ATM MIB and ATM-TC MIB

1.3 Solved Caveats and Restrictions

Solved R4.1 caveats

Following caveats and restrictions that were detected in the previous R4.1 release of the SpeedTouch™610 have been solved in the initial release R4.2:

- 1** UR-2 Certification of the SpeedTouch™610i is still on-going.
- 2** ICSA Certification of the SpeedTouch™610 is still on-going.
- 3** Between the same two IPSec peers, only one IPSec tunnel can be used.
- 4** In a meshed IPSec network, the red IP address range behind the different peers are not allowed to overlap.
- 5** Import (copy-paste) of large IPSec CRLs doesn't work via direct telnet or CLI-command.
- 6** When using IPSec NAT Traversal (NAT-T, IPsec ESP over UDP), it might happen that the NAT entry for IPsec in the intermediate NAT box times out, thereby prematurely ending the tunnel.
- 7** When the SpeedTouch™610 detects that NAT is used between itself and the other IPSec peer, but the other peer doesn't support IPSec NAT Traversal (NAT-T, IPsec ESP over UDP), then the phase 2 tunnel will not be set up correctly.
- 8** When subsequently deactivating and re-activating Continuity Checks, no RDI cells are sent by the SpeedTouch™610.
- 9** Corrupt fragmentation of outgoing ICMP packets with payload sizes bigger than 2952 bytes using a Routed interface.
- 10** The statistics provided by the "atm portstats" CLI command are not relevant.

Solved R4.2 caveats

Following caveats and restrictions that were detected in the previous R4.2 release have been solved in maintenance release R4.2.3:

- 1** Sending a crafted fragmented ICMP echo-request ("ping") from a host on the local network through the SpeedTouch™610 may cause the device to fail service under some circumstances.
- 2** DHCP NACKs are not sent by the SpeedTouch™610 if it answers to a DHCP renewal for an IP address being not part of any SpeedTouch™610 DHCP address pool.

Solved R4.2.3 caveats

Following caveats and restrictions that were detected in the previous R4.2.3 release have been solved in maintenance release R4.2.7:

- 1** The adslAtucCurrSnrMgn (1.3.6.1.2.1.10.94.1.1.2.1.4.601) and adslAtucCurrAtn (1.3.6.1.2.1.10.94.1.1.2.5.601) are missing in the adslAtucPhysTable (1.3.6.1.2.1.10.94.1.1.2) MIB table of the MIB-II Interface in line with IETF RFC1213.
- 2** The SpeedTouch™610 can only respond to SNMP packets containing request identities consisting of 31 bits or less. This causes the SpeedTouch™610 to fail responding SNMP requests containing “negative” request IDs consisting of 32 bit (as defined in RFC1157, section 4.1.1).
- 3** A SIP phone can not make an outgoing call, using the SpeedTouch™610 SIP multi-media PBX, from a subnet different than the SpeedTouch™610 IP address subnet.
- 4** The SIP NAPT algorithm is not translating the local IP address in the Connection Info field of SDP unless the local IP address is in the default IP subnet (10.0.0.0/24) of the SpeedTouch™610. As a consequence, connections can be established, but voice packets - having the non-translated local IP address as destination - will be dropped on the WAN.
- 5** The ISP.def file settings - if present - are ignored when resetting the SpeedTouch™610s to defaults, consequently always invoking a reset to the hard-coded default settings.
- 6** On SpeedTouch™610 variants equipped with a single 10/100Base-T Ethernet port, if this port is configured to operate in full-duplex mode, the port is actually still operating in half-duplex mode.

R4.2.7 improvements

Following improvements have been implemented in this release R4.2.7:

- 1** In the previous releases the SpeedTouch™610 system software supported THOMSON's existing Organizational Unique Identifier (OUI) only. A new OUI has been assigned for THOMSON's SpeedTouch™610 DSL products, which is supported by the SpeedTouch™610 system software in extension to the existing OUI.
- 2** The SpeedTouch™ supports the configuration of IPSec connections with IP ranges defined by a range declaration of t, e.g. [128-129].x.x.x.
- 3** The SIP NAPT algorithm is able to handle simultaneous usage of multiple SIP phones and multiple Messenger clients.
- 4** The SpeedTouch™610 IPSec NAPT algorithm has been improved to support the Nortel Contivity IPSec VPN client - using propriety NAPT traversal mechanisms - for traversing the algorithm.
- 5** Improved embedded PPPoE client with better compatibility with certain BASs (PADI/PADR retransmission time-out has been increased from 200ms to 10s)

- 6** The PPP password fields for Routed PPPoE and Routed PPPoA entries on the SpeedTouch™610 web pages have been extended to comply with UR-2 requirements.
- 7** The SpeedTouch™Setup wizard has been improved:
 - Support of 'hex' type variables to allow input of hexadecimal values.
 - In case no language packs are transferred to the SpeedTouch™610 by the SpeedTouch™Setup Wizard, existing language packs on the SpeedTouch™610 are not flushed.
 - Inputs for fixed-length string, password and hexadecimal variables are checked for validity (of length).
 - Future-proof extended SpeedTouch™ product interoperability.

1.4 CLI Command Changes

Introduction For your convenience this section provides an overview of all CLI command groups and CLI commands, added in Release R4.2.7 with respect to the previous system software releases.

1.4.1 CLI Command Changes in R4.2.7

New CLI commands

- HTTP probe:
 - :ip httpprobe
- IP Quality of Service:
 - :ipqos config
 - :ipqos list
 - :ipqos queue config
 - :ipqos queue list
 - :ipqos queue stats
 - :ipqos queue clear
- RIP route filtering:
 - :grp rip rtfadd
 - :grp rip rtfdelete
 - :grp rip rtflist
- System LED control
 - :system config led = <{green|red|flash|off}>

Extended CLI commands

- :label config
 classification = <{ignore|overwrite|increase}>
 defclass = <number {0-15}>
 ackclass = <number {0-15}>
 ttloverwrite = <{disabled|enabled}>
 ttl = <number {0-255}>

Removed CLI commands

- :atm vcstats
- :atm aal5stats
- :atm gstats

1.4.2 Generic R4.2.x CLI Command Changes

- New CLI commands
- ATM ping
 - :atm oam ping
 - Continuity Check generation
 - :atm oam ccconfig
 - :atm oam ccsend
 - :atm oam cclist
 - ILMI 4.0
 - :autopvc config
 - :autopvc info
 - Multiple configurations and show configuration
 - :config backup
 - :config list
 - :config dump
 - DHCP Relay
 - :dhcp relay ifconfig
 - :dhcp relay iflist
 - :dhcp relay add
 - :dhcp relay delete
 - :dhcp relay list
 - :dhcp relay config
 - :dhcp relay stats
 - :dhcp relay flush
 - Managed switch
 - :eth config
 - :switch group list
 - :switch group move
 - :switch group flush
 - :switch mirror capture
 - :switch mirror ingress
 - :switch mirror egress

- Auto-IP configuration
 - :ip auto ifadd
 - :ip auto ifdelete
 - :ip auto ifattach
 - :ip auto ifdetach
 - :ip auto ifconfig
 - :ip auto iflist
 - :ip auto flush
- SLA monitoring
 - :ip traceroute
- Improved IPSec tracing
 - :ipsec dump
- Packet classification
 - :label tron
 - :label troff
 - :label add
 - :label config
 - :label delete
 - :label flush
 - :label list
 - :label chain create
 - :label chain delete
 - :label chain list
 - :label chain flush
 - :label rule list
 - :label rule create
- SIP multi-media PBX
 - :sip proxy
 - :sip regcreate
 - :sip regdelete
 - :sip reglist
 - :sip loglocation
 - :sip logcall
 - :sip flush
 - :sip screen outcreate
 - :sip screen outdelete
 - :sip screen increate
 - :sip screen indelete
 - :sip screen outlist
 - :sip screen inlist

- Improved SNMP walk
 - :snmp getNext
 - :snmp walk
- SpeedTouch™ memory and processor load
 - :system stats
- UPnP
 - :upnp config
 - :upnp flush
 - :upnp list

Renamed CLI commands

- :dhcp server config
Replaces :dhcp server start and :dhcp server stop
- :ethoa CLI command group
Replaces :mer CLI command group
- :pppoa and :pppoe CLI command groups
Replace :ppp CLI command group

Extended CLI commands

- :adsl config
trace=..
- :atm oam config
loopbackid=..
- :bridge
config filter =..
- :eth ifconfig
int=1..4
- :ipsec config
trace=..
natdetection=..
- :ipsec peer config
xauthuser=..
xauthpass=..
- :nat bind
application=IP6TO4|GRE|PPTP|ESP|IKE|SIP
port_end=..
- :pppoa ifconfig
auth=auto
dnsmetric=..
idletrigger=..
- :pppoe ifconfig
concentrator=..
auth=auto
dnsmetric=..
idletrigger=..

-
- :qosbook add
class=vbr-rt
framediscard=..
 - :system config
drst=..
digestauth=..
strictusername=..

Replaced CLI commands

- :ipsec connection config
Parameters xauthuser and xauthpass removed (moved to :ipsec peer config)
- :snmp get
Parameter option removed (new commands snmp getNext and snmp walk).

2 Release History

Release overview The existing SpeedTouch™ 610 releases are listed in following table:

Release	Identifications	Remarks
R4.1.0	Platform: ADNT-R, SHNT-B	Introduction and initial release
	ADNT-R System software: LLT5AA4.110 SHNT-B System software: LJK9AA4.110 Setup wizard version: v1.2.0.11	
R4.1.2	Platform: ADNT-R, SHNT-B	Maintenance release
	ADNT-R System software: LLT5AA4.120 SHNT-B System software: LJK9AA4.120 Setup wizard version: v1.2.0.11	
R4.2	Platform: ADNT-R, SHNT-B	New release
	ADNT-R System software: LLT5AA4.20L SHNT-B System software: LJK9AA4.20L Setup wizard version: v4.2.0.15 SpeedTouch™ NAPT Manager version: v4.2.0.24 Dr SpeedTouch™ version: v1.0.0.17	
R4.2.3	Platform: ADNT-R, SHNT-B	Maintenance release
	ADNT-R System software: LLT5AA4.230 SHNT-B System software: LJK9AA4.230 Setup wizard version: v4.2.0.15 SpeedTouch™ NAPT Manager version: v4.2.0.24 Dr SpeedTouch™ version: v1.0.0.17	
R4.2.7	Platform: ADNT-R	Maintenance release
	ADNT-R System software: LLT5AA4.27E Setup wizard version: v4.2.1.4 SpeedTouch™ NAPT Manager version: v4.2.0.24 Dr SpeedTouch™ version: v1.0.0.17	

3 Delivered Media

Introductory Note

The SpeedTouch™ 610 offers full customizability and internationalization possibilities, both regarding configuration templates, application settings and the contents of the delivery package.

The SpeedTouch™ 610 Setup CD-ROM allows immediate use by the end customer without the need for customization.

It contains the fully functional SpeedTouch™ CD-ROM Menu application, all Speed-Touch™ tool applications and all user documentation, as well as a set of basic configuration templates.

For more information contact your local sales contact.

3.1 Documentation

Operator documentation

Item number	Description
E-DOC-CRN-20040405-0005 v1.0	SpeedTouch™ 610 Customer Release Note Release R4.2.7
E-SIT-CTC-20030415-0001 v4.0	Operator's Customization Guide Release R4.2.7

Customer documentation

Item number	Description
E-SIT-CTC-20030306-0004 v2.0 TCM3572299A	SpeedTouch™ 610 Orientation Guide English
E-SIT-CTC-20040210-0028 v1.0	SpeedTouch™ 610 CLI Reference Guide Release R4.2.7

Miscellaneous documents

An extensive number of Application Notes, White Papers, reports and other kinds of informative documents are made available on the SpeedTouch™ 610 Setup CD-ROM and from the SpeedTouch™ support web pages. As existing documents are updated regularly and new documents are made available, check the SpeedTouch™ web pages at www.speedtouch.com or contact your local Sales contact.

Certifications

The SpeedTouch™ 610 has been submitted to several certification and patent programs, resulting in a number of formal certificates and patents.

For more information regarding these certificates and patents, check the SpeedTouch™ web pages at www.speedtouch.com or contact your local Sales contact.

3.2 System Software Versions

Platform Software

ADNT-R Software Components			
Component		Identification	Remarks
System software	operational	LLT5AA4.27E	File System
Modem Label		MOD_SACHEM_SEA_CPE_V2.11.36	
Tag Parser version		v1.2.0	-

CD-ROM software components

CD-ROM Software Components		
CD-ROM version v4.2.7.6		
Software Component	Version	Remarks
CD menu	4.2.0.15	-
Setup wizard	4.2.1.4	-
NAPT manager	4.2.0.24	-
Dr SpeedTouch™	1.0.0.17	-
tpl-files version	-	R4.2.7
System software	4.2.7.14	File system

4 Release R4.2.7 Caveats and Restrictions

4.1 General System Software Restrictions

System software restriction 1	<p>When using managed Ethernet switch port mirroring in case both ingress and egress are configured at the same time, reconfiguring those parameters won't have any result.</p> <p>Workaround Don't use ingress and egress at the same time</p>
System software restriction 2	<p>ATM-Forum connections that are automatically configured via auto-PVC do not have a configurable CDVT value in their QoS profile.</p> <p>Workaround The SpeedTouch™ 610 uses a fixed CDVT value, depending on the applied QoS class instead.</p>
System software restriction 3	<p>When running the embedded Easy Setup wizard on a SpeedTouch™ 610 variant equipped with an ATM-Forum 25.6Mb/s interface, following error message is wrongly generated at the end of the Setup wizard procedure: "Failed to create ATM-Forum connection".</p> <p>Workaround Ignore the error message.</p>
System software restriction 4	<p>Some IPSec VPN clients that use proprietary NAPT traversal mechanisms cannot traverse the SpeedTouch™ 610 IPSec NAPT algorithm.</p> <p>Workaround This problem has been resolved for the Nortel Contivity IPSec VPN client.</p> <p>Workaround In general, use standard-compliant IPSec VPN clients, or unbind the SpeedTouch™ 610 NAPT IPSec NAPT algorithm.</p>
System software restriction 5	<p>It is not possible to apply IP Quality of Service for packets on which simultaneously a Multi-NAT entry is applicable. This is caused by the creation of a labelled source route when configuring a Multi-NAT entry. As a result, a packet is always validated against one of the two labels first, and classified by this label, hence not validated anymore against any subsequent label.</p> <p>Workaround None.</p>

System software
restriction 6

The SpeedTouch™ 610 supports only an SNMP “Ethernet link up/down” trap to be sent in case all Ethernet ports of the four-port managed Ethernet switch are disconnected; i.e. SNMP traps are not sent to reflect Ethernet link changes of the individual Ethernet ports.

Workaround The correct state of each Ethernet port can be read from the MAU SNMP MIB.

System software
restriction 7

Some Windows Messenger applications following the RFC326x range of recommendations for event notification (SUBSCRIBE, NOTIFY, INFO and MESSAGE messages) like the “whiteboard” and “chat” services, may not be processed correctly by the SIP NAPT algorithm.

Workaround None.

System software
restriction 8

The bridge group MAC address (01-80-C2-00-00-00) and the 16 reserved MAC addresses of IEEE802.1D (from 01-80-C2-00-00-01 up to 01-80-C2-00-00-0F) are dropped by the SpeedTouch™ 610 instead of being forwarded.

Workaround None.

4.2 IPSec VPN Software Module Restrictions

IPSec software module restriction 1

Multicast and Broadcast packets cannot be routed over an IPSec VPN tunnel by the SpeedTouch™610.

Workaround In case of DHCP broadcast packets, to pass DHCP over IPSec VPN tunnels, the SpeedTouch™610 DHCP Relay can be used.

IPSec software module restriction 2

The remote range of an IPSec VPN tunnel cannot be *.*.*; i.e. it is not possible to send all traffic (independent of the destination IP address of the packet) through only one IPSec VPN tunnel.

Workaround Set up two “half” IPSec VPN tunnels, one with as remote range [0-127].*.*. and one with remote range [128-255].*.*.

IPSec software module restriction 3

Re-routing of an encrypted IPSec stream to a redundant end-to-end connection due to lost PPP connectivity, will cause the IPSec stream to remain on the redundant line, even if the PPP connection is restored again afterwards.

Workaround As soon as the PPP session is restored on the SpeedTouch™610, executing the :ipsec saclear CLI command will invoke a re-connection of the IPSec tunnel via the restored PPP connection.

IPSec software module restriction 4

The parsing of Phase 1 descriptor by the SpeedTouch™610 is not liberal in accepting the encryption algorithm. For example DES does not equal 3DES. This could lead to possible interoperability issues with liberal IPSec VPN client/servers.

Workaround Make sure that for both IPSec peers the identical encryption algorithms are used.

IPSec software module restriction 5

The SpeedTouch™610 does not accept FQDN, e-mail, or IP as ID payload when using certificates (RSA-SIG mode).

Workaround Use Distinguishes Name (DN) as ID payload.

4.3 SIP PBX Software Module Restrictions

SIP software module restriction 1

When using SIP functionality on Windows Messenger version 4.7, it will be able to register at the SpeedTouch™ 610 SIP multi-media PBX, but the list of online clients is not distributed by the SpeedTouch™ 610 SIP multi-media PBX.

Workaround Use Windows Messenger version 4.6 instead.

SIP software module restriction 2

SIP applications using Record-Route information, like the SpeedTouch™ I 90, some MSN applications, the Ubiquity client and stateful SIP softswitches (e.g. the Alcatel MMAS) are not supported by the SpeedTouch™ 610 SIP multi-media PBX.

Workaround None.

SIP software module restriction 3

A SIP application cannot register over an IPSec VPN tunnel to the SpeedTouch™ 610 SIP multi-media PBX in case the SIP multi-media PBX is configured for using an outbound proxy (e.g. an inverse gateway or an operator softswitch).

Workaround None.

SIP software module restriction 4

Some Windows Messenger applications following the RFC326x range of recommendations for event notification (SUBSCRIBE, NOTIFY INFO and MESSAGE messages) like the “whiteboard” and “chat” services, may not be processed correctly by the SpeedTouch™ 610 SIP multi-media PBX.

Workaround None.

SIP software module restriction 5

In case the WAN connection was temporarily disconnected for a short time (e.g. due to PPP session re-establishment, or DSL line re-synchronization), after WAN connection re-establishment, the SpeedTouch™ 610 SIP multi-media PBX does not send any new register messages to an outbound proxy or registrar server. As a consequence the local SIP telephony devices’ registries will expire, and none of them, nor any new SIP phone will be able to register (again).

Workaround None.



www.speedtouch.com



Built for excellence

speedtouch™