



Alcatel 7310 LVG Loop Voice Gateway (ETSI Version) | Release 4.3/4.4



With a platform based on the Alcatel 7300 Advanced Services Access Manager (ASAM), the Alcatel 7310 Loop Voice Gateway (LVG) is a key network element in realizing the best voice over digital subscriber line (VoDSL) solution in the DSL market.

The Alcatel 7310 LVG allows operators to offer bundled multiline telephone and high-speed data services over a single DSL line to a variety of customers, from small and medium sized businesses to high-end residential customers.

The Alcatel 7310 LVG simplifies deployment of broadband services like high-speed Internet access and toll-quality voice over broadband (VoB) networks and, more specifically, VoDSL. With its carrier grade reliability, the Alcatel 7310 LVG is an ideal solution for bundled voice and high-speed data services. The Alcatel 7310 LVG platform offers superior density and scalability. It guarantees true transparent PSTN (analog voice, fax, and modem), and ISDN services for the end user, offering toll-quality voice services and all value-added local exchange features, without having to change the end user equipment already in place.

The best VoDSL solution in the market, for bundled voice, high-speed data, and revenue generation

Technical Summary

Features

- > Integrated in the Alcatel 7300 ASAM (plug-in voice gateway module)
- > VoDSL signal transmitted through V5.2 to the PSTN
- > Supports quality of service (QoS) for multiple VCs and classes of service over a DSL local loop, making it possible to provision voice alongside data traffic
- > Supports multiple ATM classes of service, including constant bit rate (CBR) and real time variable bit rate (rt-VBR), with full QoS for each class
- > Dynamic bandwidth allocation automatically increases the available bandwidth for data applications when voice traffic is not present
- > Scalable hardware architecture allows a "pay as you grow" strategy

Architecture

VoDSL implementation

- > DSL Forum TR-036, Annex A
- > Broadband loop emulation service (BLES)

Interface with integrated access devices

- > ATM Forum AF-VMOA-0145, common channel signaling (CCS) option
- > ATM adaptation Layer 2 (AAL2) conforming with ITU-T I.363.1, I.366.1 and I.366.2

Supported IADs

- > Speed Touch family of integrated access devices (IADs)
- > RAD, Netopia, Polycom, Allied Data, and others

Gateway Interfaces

Packet network interfaces

- > STM-1 or OC-3c
 - Multimode fiber for intraoffice use, 200 m (656.16 ft.)
 - Single mode fiber for short haul, maximum 15 km (9.32 mi.)
- > E3 or DS3 for intraoffice use, 200 m (656.16 ft.)

PSTN interfaces

- > V5.2 over up to eight E1 links
- > Up to eight V5.2 groups
- > Intraoffice use, typically 300 m (984.24 ft.)

Gateway Functions

- > AAL2 termination
- > Call handling
- > Narrowband switch interface
- > V5.2 and gateway management
- > Voice handling (including echo cancellation)

Signaling

- > Common channel signaling option (to IAD)
- > V5.2, including protection switching (to narrowband switch)

Voice Coding

- > ITU-T G.711 PCM, A-law and μ -law
- > ITU-T G.726 ADPCM compression
- > Silence suppression/comfort noise generation option

Echo Cancellation

- > ITU-T G.168, 32 ms window up to 128 ms

Transport Modes

- > Autoswitch to ITU-T G.711 on tone detection indicating dialup modem and fax
- > Multiple profiles supported

ATM Connectivity

- > PVC (typically one per IAD)
- > ATM traffic classes: CBR and rt-VBR
- > Up to 10,368 connections

Gateway Dimensioning

Overbooking

- > Typical concentration factor for residential users: 8, 9 or 10
- > Typical concentration factor for business users: 4

Simultaneous calls

- > Modularity of 240 simultaneous calls per card
- > Linear extendable to 1,920 simultaneous calls per shelf

Subscriber telephone lines or equivalent

- > Modularity of 4,000
- > Maximum 32,000

Number of PSTN interfaces

- > Modularity of eight E1s per card
- > Maximum 8 x 8 E1s per shelf

Gateway Equipment/Physical

Line redundancy

- > Automatic protection switching (APS) to packet network

Equipment redundancy

- > 1+1 for packet network interface module

Timing

- > Clock recovery from PSTN (any E1)
- > Internal oscillator (holdover)

Connectors

- > SC/PC for optical (packet network)
- > Mini-coax: 75 Ω (PSTN via E1) in Release 4.3
- > Twisted pair: 120 Ω (PSTN via E1) in Release 4.4

Dimensions

- > Shelf
 - Height: 95.0 cm (37.43 in.)
 - Width: 53.5 cm (21.08 in.)
 - Depth: 28.5 cm (11.23 in.)
 - Rack mounting is ETSI compliant (60 cm/23.62 in.)
- > Rack for two shelves
 - Height: 220 cm (86.68 in.)
 - Width: 60 cm (23.64 in.)
 - Depth: 30 cm (11.82 in.) (per ETS 300 119-2)

Environmental Standards

- > ETS 300 019-1-1 Class 1.1, ETS 300 019-1-2 Class 2.3, ETS 300 019-1-3 Class 3.1 and 3.1E
- > ETS 300 386, referring to EN 55022 (Class A), EN 61000 4-2, EN 61000 4-3, EN 61000 4-4, EN 61000 4-5, and EN 61000 4-6

Operating Humidity

- > 0% to 90% noncondensing

Operating Temperature

- > 0 C to 45 C (32 F to 113 F)

Power

- > Voltage tolerance: -40.5 VDC to -57 VDC (-48 VDC source)

Management

- > Element management layer (EML) through Alcatel 5523 AWS Element Manager (AWS)
- > Network management layer (NML) through Alcatel 5620 Network Manager (NM)
 - Interfacing with other (legacy) OSSs, including CORBA
- > V5.2 management, GUI based, also called Voice over ADSL Ethernet Manager (VADEM)
- > CLI options on Alcatel 5523 AWS
- > Connectivity:
 - Through ATM network, in-band PVC (ATM VP/VC)
 - Out-of-band through 10/100 Ethernet port
- > Local management through web based craft terminal. Runs on a standard PC, with Windows 2000 or higher, and any browser software.

For more information on the Alcatel 7300 ASAM family visit www.alcatel.com/7300



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