

Alcatel's 2902 MainStreet Network Termination Unit (NTU) delivers managed bandwidth access of up to 2 Mb/s over existing copper pairs (HDSL) or E1 facilities. Network operators can deploy the same platform throughout the entire network and use customized interfaces to deliver data and voice services as required by their customers. Within a single unit, service providers can deliver integrated data and digital voice access with a high degree of flexibility and reliability while making use of existing network infrastructure.

By integrating E1 and HDSL technology, the 2902 MainStreet NTU offers greater equipment flexibility for service providers and private network operators alike, and the potential for substantial savings without the associated costs of replacing existing copper facilities.

The 2902 can be configured to deliver $n * 64$ kb/s to 2 Mb/s voice and data services over two regular twisted copper pairs up to 5 kilometers (3.1 miles), without requiring repeaters.



Integrated data
and digital voice
access through
existing network
infrastructure



The 2902 enables efficient remote management of access circuits that have traditionally been costly for public network operators. Once installed, the 2902 can be monitored and reconfigured from a centralized location.

Integrated solution

The 2902 MainStreet NTU allows service providers to multiplex data, router and LAN hub traffic into a single, versatile gateway. It provides a flexible, cost-effective way to integrate digital voice and data traffic from a business site onto a high speed E1 digital link for customer access to public or private networks, or for point-to-point operation.

The 2902 integrates HDSL without the use of any standalone equipment. The entire network, including the HDSL/E1 transmission facility, is managed by a common network management system. No additional rack space or management terminals are required for the 2902 or 3600 MainStreet Multiservice Bandwidth Manager family of products.

HDSL technology

HDSL is becoming an increasingly popular component of access networks today. It has become the method of choice for delivering E1 data rates over unconditioned copper wires.

HDSL eliminates the need for mid-span repeaters and cable pair separation for E1 transmission and access lines. It will also compensate for individual non-ideal characteristics of the copper loop.

Flexible interfaces

The 2902 MainStreet NTU supports HDSL, fiber optic and G.703 E1 WAN connections. The 2902 provides two E1 interfaces that can be configured for either E1 HDB3 or E1 HDSL through the use of plug-in link interface modules (LIMs). For example, a 2902 NTU can be connected to a PBX with the 2902 acting as a drop-and-insert multiplexer merging the PBX and data traffic onto a single E1 stream.

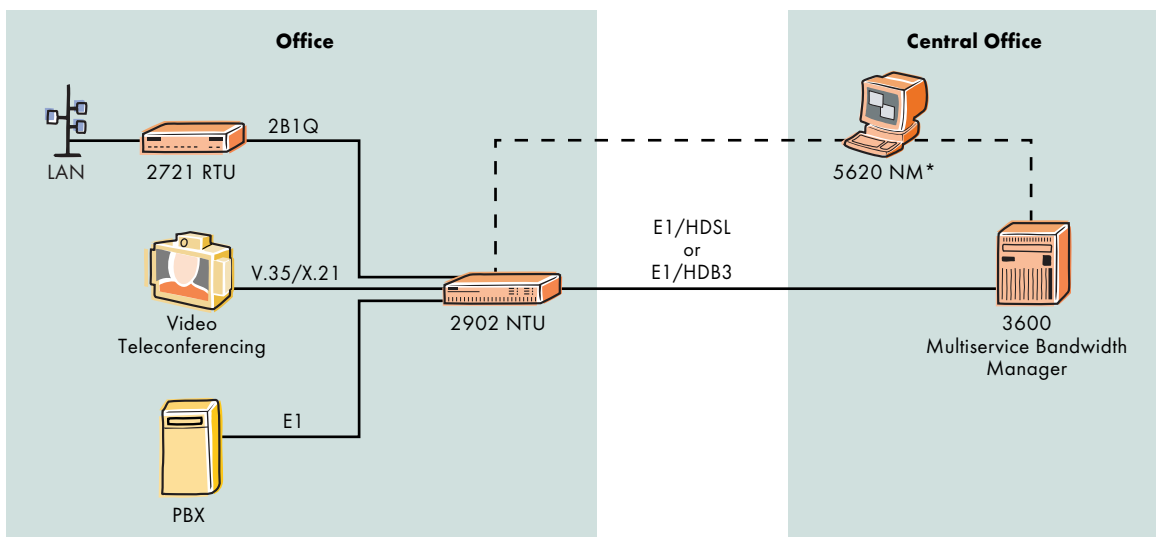
Two plug-in X.21 or V.35 data interfaces are accommodated. The 2902 NTU can be connected to Alcatel's 275x MainStreet Data Termination Units (DTUs). The DTU family of products allows remote connection of up to 5.5 kilometers (3.4 miles) over unconditioned copper for TIA/EIA-232, X.21 and V.35 devices.

Node and network management

In common with other Alcatel products, the 2902 MainStreet NTU can be configured using network management executive applications to provide time of day scheduling for typical services, such as video conference booking.

All operating parameters are software configurable and a direct connection to the 2902 can be made via either of two maintenance ports. The Alcatel network manager provides full controlled network management of the 2902 over the Alcatel packet-based control packet switching system (CPSS). Performance statistics are collected to allow for a detailed evaluation of system status at any time.

▼ The 2902 can aggregate PBX and data traffic over two copper pairs.



* The Alcatel 5620 Network Manager (NM), formerly the 46020 Network Manager. This product belonged to the Newbridge family. Newbridge was acquired by Alcatel in May 2000.

Feature Summary

Voice Interfaces	2902	3612	3624	3630
E&M		•	•	•
LS/GS Subscriber (LGS)		•	•	•
LS/GS Exchange (LGE)		•	•	•
T1 RBS			•	•
E1 CAS		•		•
MRD/GEN-GEN		•	•	•
Data Interfaces				
V.24, V.28, T1A/E1A-232-C	•	•	•	•
2WTO and 4WTO			•	
V.35	•	•	•	•
X.21/V.11	•	•	•	•
OCU-DP			•	•
2B1Q (interfaced with 275x DTUs)	•	•	•	•
Aggregate Interfaces				
1.544 Mb/s T1 (D4, ESF, 64 kb/s chan.)			•	•
2.048 Mb/s E1 (CAS, CCS, 64 kb/s chan.)	•			•
E1 HDSL				•
Fractional E1		•		
X.21		•		
V.35		•		
ISDN S/T BRI		•		
Optical Extension E1				•
DSP Applications				
Voice compression				
▼ 8 and 16 kb/s HCV compression		•		
▼ 8 kb/s A-CELP (ITU-T Rec. G.729)		•		
▼ 16 kb/s LD-CELP (ITU-T Rec. G.728)		•		
▼ ADPCM (ITU-T Rec. G.721) 32 kb/s		•		
G3 fax support (V.17) over compressed voice (14.4 kb/s max.)		•		
Modem (V.32bis) tones support over compressed (CELP) voice (14.4 kb/s)		•		
Subrate multiplexing		•	•	•
Echo cancellation		•		
Voice conference bridging				•
Multidrop data bridging	•	•	•	•
High capacity multiplexing (HCM)	•	•	•	•
DDS rate adaptation			•	
Packet Services				
Frame relay switching		•		
Transport HDLC encapsulation		•		
Voice over frame relay		•		
DLCL multiplexing		•		
General (maximum)				
# of E1 ports	2			2
# of fractional E1 ports		4		
# of T1 ports			1	2
# of circuits	4	24	24	32

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Technical Summary

E1 Interfaces

- ▼ Compatible with applicable sections of ITU-T G.703, G.704
- ▼ HDSL 2B1Q
- ▼ HDB3
- ▼ 75/120 line impedance
- ▼ BNC/RJ-45 connectors
- ▼ Single mode optical fiber via FC/PC connector
- ▼ Typical range up to 18 km (11.16 mi.)

Termination Interfaces

Any two DCMs:

- ▼ X.21 (up to 1.92 Mb/s)
- ▼ V.35 (up to 1.92 Mb/s)
- ▼ Dual port V.24, TIA/EIA-232 (up to 64 kb/s)
- ▼ 2B1Q (up to 128 kb/s)
- ▼ Co-directional (fixed at 64 kb/s)

Data Termination Units

With 2B1Q DCM installed:

- ▼ 275x DTUs
- ▼ Synchronous data rates up to 128 kb/s
- ▼ Asynchronous data rates up to 38.4 kb/s (including 14.4 kb/s)

Data Connectors/ Interface Adapters

- ▼ X.21: single 15 pin D-type female
- ▼ V.35: single 25 pin D-type female
- ▼ TIA/EIA-232: dual RJ-45 socket
- ▼ Codirectional: dual RJ-45 socket
- ▼ 2B1Q: RJ-45 socket

Maintenance

- ▼ All parameters are software configurable
- ▼ DTE and DCE maintenance ports
- ▼ Multilevel password protection
- ▼ Automatic self-diagnostics and directed diagnostics with statistics
- ▼ Alarm storage buffer
- ▼ Remote alarm signaling
- ▼ Local and remote loop backs
- ▼ Alarm contacts and sensors
- ▼ Compatible with G.821 CRC4 statistics over E1

Physical Description

- ▼ The standard case is a desktop design with brackets available for rackmount installation
- ▼ Height: 9.3 cm (3.66 in.), 2VU
- ▼ Width: 43.2 cm (17 in.) without rack-mounting ears; 48.2 cm (19 in.) with rack-mounting ears
- ▼ Depth: 28.14 cm (11.08 in.)
- ▼ 48.26 cm (19 in.) and 58.42 cm (23 in.) sliding drawer mountings are available as options

Operating Environment

- ▼ Temperature: 0 C to 40 C (32 F to 104 F)

Power

- ▼ Universal AC power supply 90 V AC to 240 V AC

