



# NTX

## iDSL modem with X.21 interface

- NTX is ISDN NT1 modem with U interface (2B+D), 64, 128, 144 kbit/s
- Enables connectivity of distant DTE devices with X.21 interface to telecommunication network, using existing access multiplexers FM2x2 or FM-MSAN with PIU-LT or PN64 tributary units
- Point to point connection of devices based on X.21 interface using single twisted pair transmission medium (NTX LT and NT mode)



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## Basic features

- One ISDN BRI U Line Termination (LT) or Network Termination (NT) interface with maximum user throughput of 144 kbit/s
- Single copper pair transmission by using 2B1Q line code with near end echo cancellation
- Automatic or manual Embedded Operation Channel management
- Accepts remote power supply provided by LT side
- One X.21 interface, contradirectional, DCE or DTE type for 64, 128 or 144 kbit/s transmission
- In DCE mode synchronization is on internal reference
- In DTE mode synchronization on X.21 S timing signal
- Management through the PC Graphical User Interface based application via RS232 interface
- Front panel LED alarm and basic configuration status display
- Testing and performance facility
  - Built In Self Test
  - Local and Remote test loops.
  - Far End and Near End Block Error monitoring
- Desktop mountable case
- External (220/110V AC/unregulated 5V DC) or (-48 V DC/5V DC) adapter options

## Applications

NTX is basic ISDN NT1 modem with U interface (2B+D). In modem version NTX enables connectivity of distant DTE devices with X.21 interface by using the existing telecommunication network. Access to the existing network could be realized by using Flexible Multiplexer FM2x2 or FM-MSAN through the proper tributary units like PIU-LT or PN64. In this particular application NTX is Network Terminating (NT) device while tributary unit performs ISDN BRA Line termination (LT). Line Termination side, PIU-LT cards, besides of all other LT functionality provides remote power for NTX devices.

Another typical NTX devices application is bidirectional point to point connection by using single twisted pair transmission medium. Typically this configuration is suitable for direct routers connection in campus or other similar inter-building applications. In order to connect distant routers it is necessary to configure NTX device in one, for instance central or corporate site, in X.21 DCE and ISDN U LT mode. The other NTX, remote device, have to be configured as, X.21 DCE and ISDN U NT. In this case synchronization is obtained from internal reference at the ISDN U LT side; NT side is always synchronized to the peering LT device. Also by adding Remote Power Supply (RPS) device it is possible to power both NTX devices.

## TECHNICAL DATA

<b>ISDN U interface</b>	ITU-T G.960, G.961	<b>RS232 interface</b>	ITU-T V.24, V.28
Transport type	duplex	<b>X.21 interface</b>	ITU-T X.21/27, V.11
Transport medium	one twisted-pair	Transport type	duplex
Line code	2B1Q	Transport medium	6 twisted-pair
Line speed	80 kboud ± 100 ppm	Connector	15 pin SUBD female
64kbit/s channels per interface	2,5	Line rate	64, 128, 144 kbit/s
Maximum line attenuation		Maximum line length	
at 40 kHz	36 dBm	128 kbit/s	1300 m
at 80 kHz	45 dBm	Copper pair termination	
Maximum line resistance		DCE Transmit (R, S, I)	120 Ω
without repeaters	1048 Ω	DCE Receive (T, X, C)	120 Ω
with repeaters	1300 + 700 Ω	<b>Power</b>	
Synchronization		External AC/DC adapter	220V ac/6V dc
frame	1.5 ms	Remote power supply	40-105 V
multiframe	12 ms	Power consumption	up to 1 W
Scrambling	$1 + X^{-18} + X^{-23}$	<b>Temperature</b>	-5°C to +45°C
CRC12	$X^{12} + X^{11} + X^3 + X + 1$	<b>Dimensions</b>	178 x 131.5 x 36 mm
Remote power	105 V		