

# NETRIX

## Network Exchange 2222X

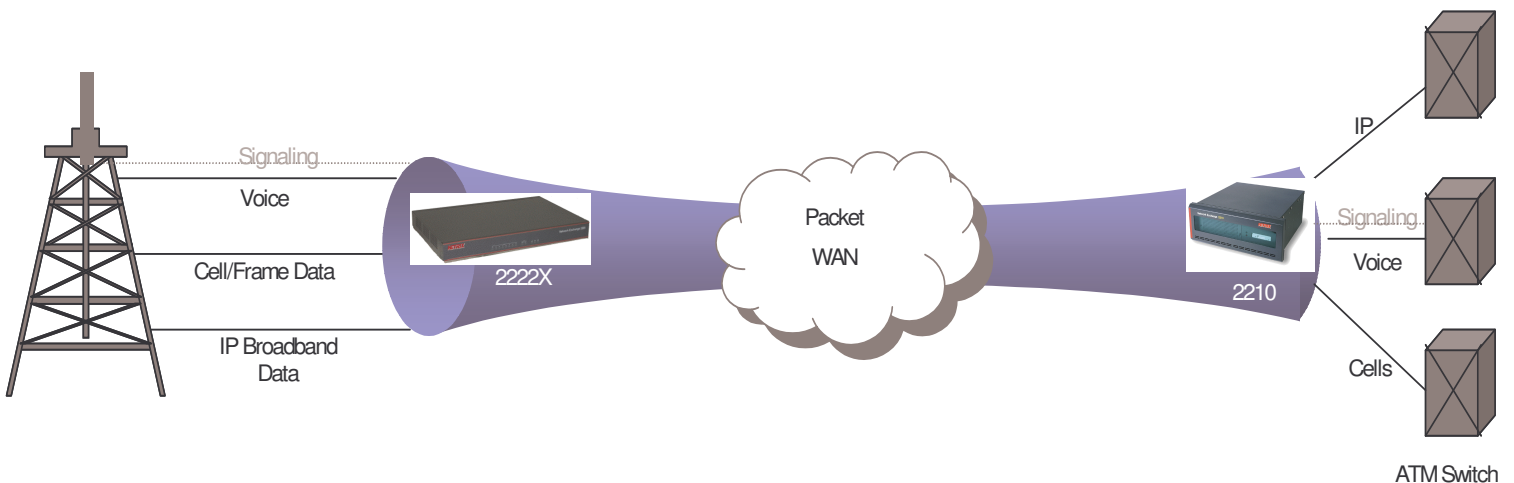
### Network Exchange (Nx) 2222X Cellular Site Line Optimization

- **Increased backhaul efficiency**
- **Reduced backhaul costs**
- **Rapid Return-On-Investment (ROI)**
- **Hardware designed for manned and un-manned sites**
- **Scalable to Modular system, for easy expansion and always-available operation**
- **Small footprint optimizes rack space and mounting options**

The demand for new broadband services in the mobile communications business is fueling continued rapid growth for wireless service providers. Many of these services involve high-speed data, video or other functions that create an ever-increasing demand on the backhaul links to the core network. From their introduction, such services require the continuous availability of high bandwidth, even though they may only be used sporadically at first. Unfortunately, the cost of adding the additional bandwidth to an existing network can be prohibitively expensive. The Netrix Network Exchange (Nx)2222X by NSGDatacom offers service providers an ideal solution to bandwidth optimization, minimizing bandwidth usage for both voice and data transport while maintaining high quality of service to existing users, and facilitating the gradual deployment of additional backhaul circuits to support new services.

Leveraging years of experience in building integrated communication solutions, NSGDatacom offers the Nx2222X, a product that can dramatically improve efficiency of your backhaul network by using intelligent bandwidth optimization. The Nx2222X is designed to operate efficiently where there is a combination of TDM, ATM, and IP or other soft protocols, operating into shared transport circuits. The Nx2222X reduces the unused bandwidth in backhaul circuits by combining the use of voice compression, data compression, dynamic timeslot re-allocation in TDM circuits, and voice/data packet optimization. This enables legacy and next-generation technologies to be integrated in a single transport architecture, simplifying backhaul design, reducing bandwidth requirements and significantly reducing operating expenses.

The Nx2222X is an affordable solution that provides a rapid pay-back on investment. By eliminating the need for even one backhaul facility, the Nx2222X offers an average return-on-investment (ROI) of only a few months.



Communication Solutions from  
**NSGDatacom**  
 extend. evolve. innovate.



# Network Exchange 2222X

## A Powerful Engine

At its core, the Nx2222X uses a latest generation ultra high-speed communications processor to handle traffic natively as packets or cells, as well as support a bit-timed digital cross-connect for TDM traffic. The processor core works in conjunction with the high speed Digital Signal Processors (DSP's) to provide a powerful combination of circuit switched and protocol aggregation functions in this exceptionally low cost platform. The Nx2222X is built upon a well established and field proven suite of high performance protocol stacks and voice/data compression algorithms developed and used by the company in predecessor products widely deployed by Carriers throughout the world.

Each high-speed processing card in the Nx2222X is capable of simultaneously handling multiple protocol streams, with data and voice compression selectable on a TDM or logical circuit basis. Functions such as protocol conversion and standards based voice or data compression on a per channel basis that are challenging to other solutions are easily supported by the Nx2222X with minimum latency. A high-speed bus that scales to provide cost effective aggregation at the both ends of the backhaul link can connect multiple Nx2222X cards for higher port count and density.

In cell applications where multiple voice channels are compressed onto sub-DS0 timeslots, the Nx2222X can take advantage of the unused sub-DS0 channels by re-using the unused sub-DS0 bandwidth. The power of the processing engine is leveraged by monitoring the call signaling channels, giving it the ability to dynamically reassign individual voice channels from multiple T1/E1 sources onto a single backhaul circuit, thereby minimizing the amount of bandwidth needed to backhaul voice traffic. After being optimized by streaming data compression techniques and applying protocol-level rate shaping, the remaining available bandwidth can be used for data applications.

## Product Specifications

### Physical Interfaces

- **T1/E1 (6 port)**
  - ANSI T1.403, ITU G.703, ITU G.704, ITU G826, TR 62411, TR 54016
  - Framing: D4, ESF, or G.70x
  - Line Coding: AMI, B8ZS, HDB3
  - Physical: 4x RJ-48c
  - Selection by module for T1 or E1, Short or long haul, APS 1:1 and 1+1 functionality with revertive and non-revertive modes
  - BERT and loopback diagnostics, software enabled per line or per timeslot
- **High Speed Serial Interface**
- EIA-232, EIA-442/449, EIA-530, ITU X.21, ITU V.35
- Physical: Micro DB26
- Handles Nx56/64kbps data rates up to 2.048 Mbps
- **Switched Ethernet**
  - ANSI T1.617IEEE 802.3, 802.1p/Q
  - Physical: 4x RJ-45
  - Autosensing 10/100 Mbps Switched Ethernet autosensing DI/DIX (auto-polarity)
  - Software configurable switching characteristics, QoS and ToS characteristics

### Management

- SNMP, SNMPv2, Telnet CLI, SSH CLI, serial CLI, Web browser (HTML, SHTML)

### General

- **Physical**
  - Size: 16.6" w x 9"D x 1.75"H (IU height) (419.1 mm x 228.6 mm x 44.45 mm)
  - All physical interfaces are on one side to ease cable management in tight confines
- **Power**
  - 30 watts maximum draw
  - +/- 20vDC to +/- 65vDC, 1.5 amps max
  - +/- 90vAC to +/- 265 vAC, 50-60 Hz, 0.030 amps max
  - Optional PSU redundancy (with load sharing)
  - Optional 110vAC/220vAC external converter
- **Console Port**
  - RS-232
  - Physical: RJ-45
  - Autosensing async serial at data rates from 2.4 kbps to 230 kbps, serial settings 8N1 or 7E2, autosensing DTE or DCE mode (auto-polarity)
- **MTBF**
  - >65,000 hours @ +45C
- **Environmental**
  - Temperature: Operating - 4° to +149°F (-20° to +65°C)
  - Humidity: 0-95% non-condensing

- **Safety**
  - FCC 47 CFR part 68,
  - IC CS-03,
  - IEC 950,
  - EN 60950,
  - ANSI/UL 60950-1-2002,
  - CAN/CSA-C22.2 No. 50950-1-03,
  - Telecordia GR-63,
  - Telecordia GR-1089
- **Other**
  - Telecordia GR-1244,
  - Telecordia GR-3108 (OSP, 07-2004)
- **Optional Accessories**
  - Console Port Adaptot
    - DB-9 to RJ-45 converter
    - Allows the operator to use a standard Ethernet cable to connect to the console port
  - Rack Mounts
    - Mounting ears for 19" or 23" open frame telco racks or enclosed equipment cabinets
    - Front mount, and rear mount options available. Kit includes mounting ears, screws, and instructions
  - Wall Mounts
    - Mounting brackets for perpendicular or parallel wall mount
    - Kit includes mounting ears, screws, and instructions

# NSGDatacom

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