



R E L E A S E 1 . 1

## **28110/28120 MainStreet** Network Interface Units

**Highly scalable and fully managed as part of a multiservices solution, Newbridge broadband wireless products together provide a powerful, cost-effective broadband wireless access solution for last-mile delivery of a wide range of data, Internet, voice and video services.**

Quick and easy to deploy, the Newbridge® broadband wireless access solution enables operators to capture new markets and revenue immediately. Its multiservices platform supports the simultaneous delivery of data, Internet, voice and video, and its integrated network and service management permits one-platform management of both wireline and wireless resources. Value-added applications also provide a host of differentiated business and residential services.

Key components of the Newbridge broadband wireless solution are the 28110/28120 MainStreet® NIUs (network interface units). NIUs provide the native termination interface to the customer's in-building network.

The broadband wireless product portfolio is a family of products that are designed to work together. NIUs are connected to multi-services base stations via wireless links, and the base stations are, in turn, connected to the backbone network through wired or point-to-point wireless links. The system provides a communications infrastructure with both narrowband WAN and broadband ATM points of attachment. The entire network is managed, end-to-end by the industry-leading MainStreetXpress™ network and service management suite.

# 28110/28120 MainStreet

## NETWORK INTERFACE UNITS

### 28110/28120 MainStreet NIUs

In order to take advantage of the wide range of services enabled by the Newbridge broadband wireless solution, the NIUs must be able to handle multiple high speed services. Newbridge offers various types of in-building NIUs to deliver high speed data and Internet, voice, video and multimedia services to the desktop.

Small office home office (SOHO) environments can benefit from NIUs designed to provide Ethernet LAN connectivity and PBX extension from the corporate network. Remote offices gain communications advantages through the cost-effective provisioning of high speed Internet access via Ethernet, as well as connections supporting POTS or T1/E1 through multiple T1/E1 or fractional OC-3c/STM-1 links.

The NIU resides on the customer premises and is connected on the network side to an external transceiver that combines the functions of transmitter and receiver. The customer side connects to customer premises equipment, such as specialized NTUs (network termination units), PBXs (private branch exchanges), routers or video servers.

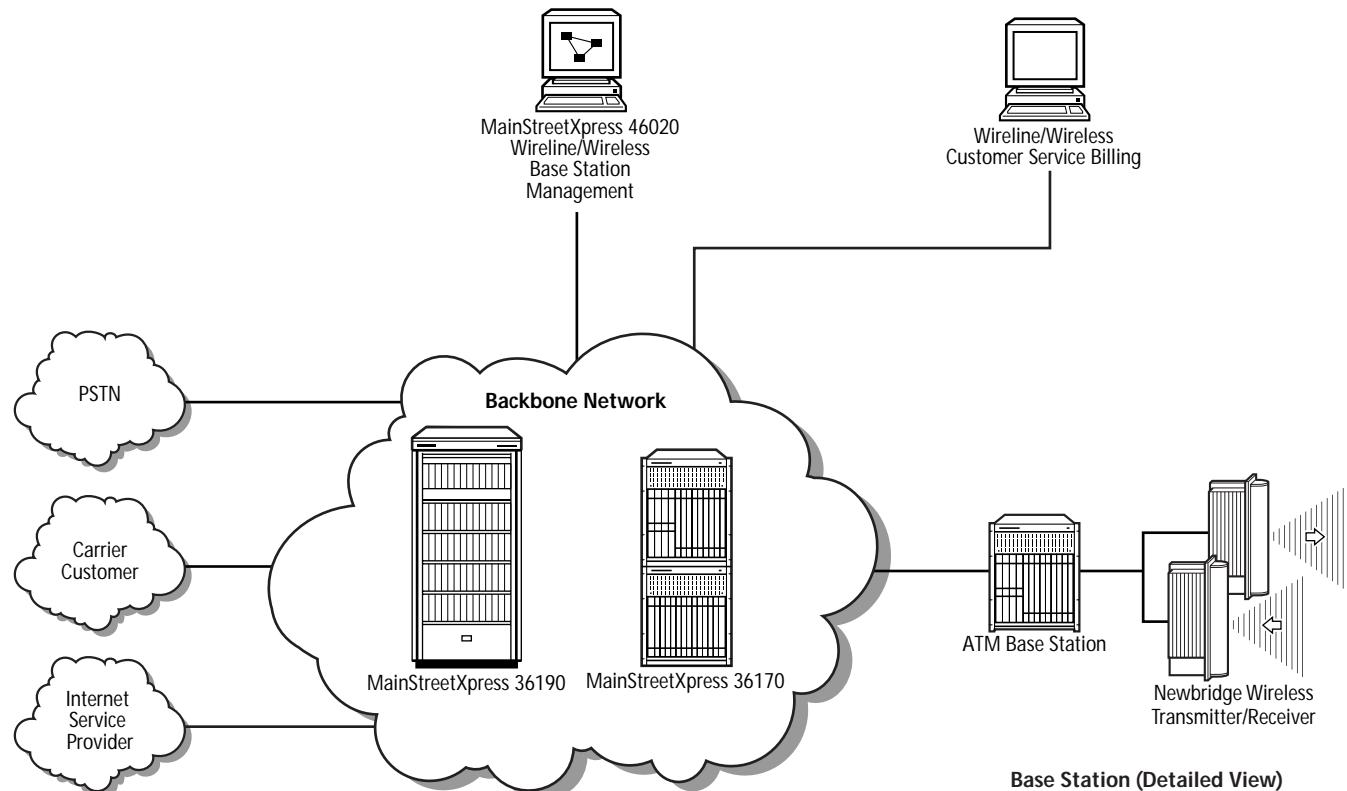
NIUs can "see" the entire downstream spectrum and transmit on any upstream frequency. However an NIU receives on one tuned frequency channel and transmits on one frequency channel at a time.

The NIU is connected to an external transceiver in a fixed position with one antenna. Multiple NIUs can be combined at the customer premises (up to two per outdoor transceiver/antenna), by splitting the IF

cabling using inline passive combiners and splitters. NIUs are managed using SNMP (simple network management protocol). In addition, once it has registered with the network, NIUs can be configured from a MainStreetXpress 45020 Element Manager or an NMTI session can be initiated via Telnet from a MainStreetXpress 46020 Network Manager.

This data sheet provides specifications for the following NIUs:

- 28110 MainStreet T1 CE (circuit emulation) + Ethernet NIU, with a single T1 interface supporting either full or fractional T1 services, and a single 10Base-T Ethernet port
- 28120 MainStreet E1 CE + Ethernet NIU, with a single E1 interface supporting either full or fractional E1 services, and a single 10Base-T Ethernet port



## T1 Circuit Emulation NIU

The 28110 MainStreet T1 CE + Ethernet NIU supports a standard T1 circuit emulation interface, and provides both full and fractional interfaces. In addition, the T1 CE NIU supports a single 10Base-T Ethernet port that provides RFC 1483 bridging functionality.

The T1 CE + Ethernet NIU supports local configuration via a TIA/EIA-232 port. The NIU may be configured from the MainStreetXpress 46020 Network Manager or the MainStreetXpress 45020 Element Manager.

## E1 Circuit Emulation NIU

The 28120 MainStreet E1 CE NIU supports a standard E1 circuit emulation interface and provides both full and fractional interfaces. In addition, the E1 CE NIU supports a single 10Base-T Ethernet port that provides RFC 1483 Bridging functionality.

The E1 CE + Ethernet NIU supports local configuration via a TIA/EIA-232 port. The NIU may be configured from the MainStreetXpress 46020 Network Manager or the MainStreetXpress 45020 Element Manager.

## Technical Summary

### System Features

- T1/E1 (clear or channelized with 10Base-T Ethernet)
- Fractional T1/E1

### Asymmetric Services

- Up to 4:1 up link- downlink asymmetry for Ethernet traffic
- QPSK-based NIUs

### Network and Element Management

- MainStreetXpress 46020 Network Manager
- MainStreetXpress 45020 Element Manager

### Related Products

- MainStreetXpress 36170 Multiservices Switch
- ARIC card for MainStreetXpress 36170 Multiservices Switch
- ISC card for MainStreetXpress 36170 Multiservices Switch
- Customer premises RF transceivers and antennas

### Minimum Component Requirements for Broadband Wireless Solution

- One 36170 peripheral shelf
- One control card interconnect panel
- One system synchronization unit
- One switching hub card (two for redundancy)
- One control card (two for redundancy)
- One ATM radio interface card
- One OC-3/STM-1 card (assuming the base station is connected to an ATM backbone)
- One transmitter
- One receiver
- External power supply for the transmitter and receiver
- Two 90° sectorized antennas (one for transmit, one for receive)

### Software Distribution

- NIUs use FLASH EEPROM memory
- Local/remote software downloading

### Operating Environment

- Operating temperature 0° to 40° C (32° to 104° F)
- 5% to 95% relative humidity, non-condensing
- Up to two NIUs can be connected to one rooftop transceiver/antenna

### Dimensions

- |      |                     |
|------|---------------------|
| high | 8.89 cm (3.5 in.)   |
| wide | 43.18 cm (17 in.)   |
| deep | 46.99 cm (18.5 in.) |

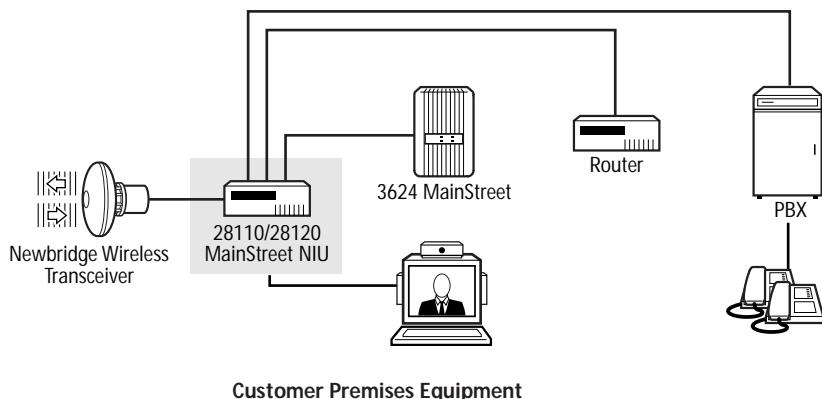
### Cable Length

- Up to 65 m (approximately 200 ft.) using RG-11 cable

### Power

#### T1/E1 CE NIU

- Voltage range: 110/240 V AC, 50/60 Hz
- Power factor: Compliant to EN61000-3-2
- Heat dissipation: 55 W maximum





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