



R E L E A S E 1 . 1

## *MainStreet* Customer Premises Outdoor Radio Equipment

**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.

A key component of the Newbridge broadband wireless solution is the MainStreet® customer premises outdoor radio equipment comprising either a 30 cm (12 in.) or 60 cm (24 in.) high gain antenna and an outdoor transceiver.

The broadband wireless product portfolio is a family of products, that are designed to work together. NIUs (network interface units) are connected to multiservices 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.



**NEWBRIDGE**

Broadband wireless customer premises equipment (CPE) can serve a wide variety of customers such as large- and medium-sized businesses, SOHOs (small office, home office), single unit residences and multiple unit dwellings. It can provide a combination of services, including data, high speed Internet, voice, video and interactive media. Situated at customer premises, this equipment consists of an environmentally sealed, integrated antenna/outdoor transceiver, and an NIU. The NIU provides the termination interface to the customer's in-building network.

The integrated outdoor RF assembly consists of the following:

- 30 cm (12 in.) or 60 cm (24 in.) high gain antenna
- outdoor transceiver

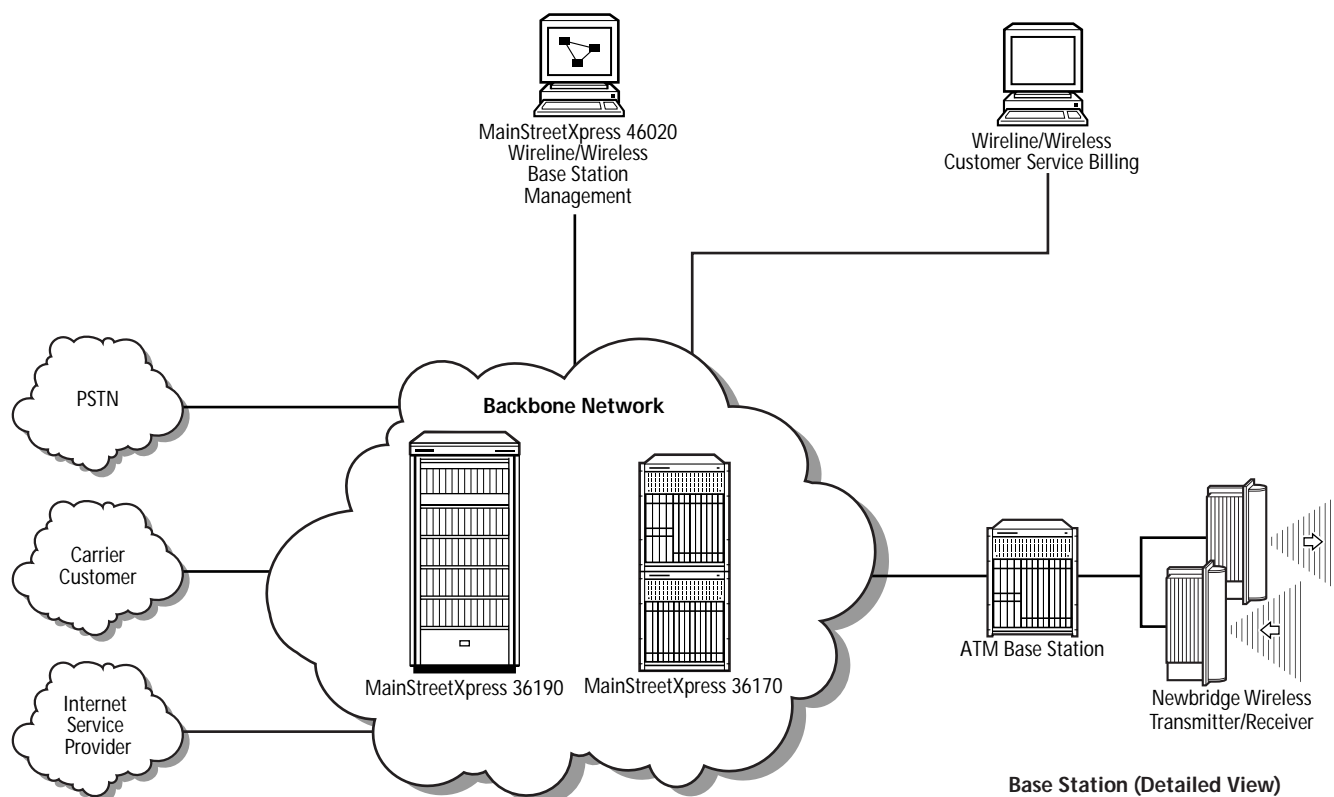
### Solid State Customer Site Outdoor Transceiver

Reliable and cost-effective, the customer site outdoor transceiver (OTR) is integrated with its respective antenna and provides the following functionality:

- Multicarrier, wide bandwidth low noise amplification and down-conversion
- Single carrier up-conversion and power amplification
- Integrated antennas are available in both high gain (+42 dBi) and low gain (+36 dBi) variants, and are designed to be installed on the antenna tower or building rooftop at the customer premises
- DC power and up/down IF signals delivered via single coaxial cable

### Customer Site Antenna (24 - 31.3 GHz)

The high gain (+42 dBi) or low gain (+36 dBi) customer site antenna is collocated with its respective transceiver. The antenna is a Cassegrain design, approximately 60 cm (24 in.) or 30 cm (12 in.) in diameter, and provides a highly focused beam. A single antenna is employed for both contiguous or split band licensing.



## Technical Specifications

### Solid State Customer Site Outdoor Transceiver: Electrical Performance Attributes

- RF output frequency: 24 – 31.3 GHz range, bandwidth and center frequency defined/selected to meet license and usage requirements
- Transmit mode:
  - Maximum output RF power: 100 mW at P1dB
  - Typical power delivered to transmitted carrier: +17 dBm typical
- Receive mode:
  - RF noise figure: < 4 dB at 25° C
  - Out-of-band rejection: > 25 dB at 50 MHz from defined band edge
  - Input RF compression: -30 dBm at P1dB, for single carrier operation
- Phase noise: available in two variants; QPSK (low stability variant) and 16/64 QAM (high stability variant)
- DC power consumption: < 15 W

### Customer Site Antenna (24 – 31.3 GHz): Electrical Performance Attributes

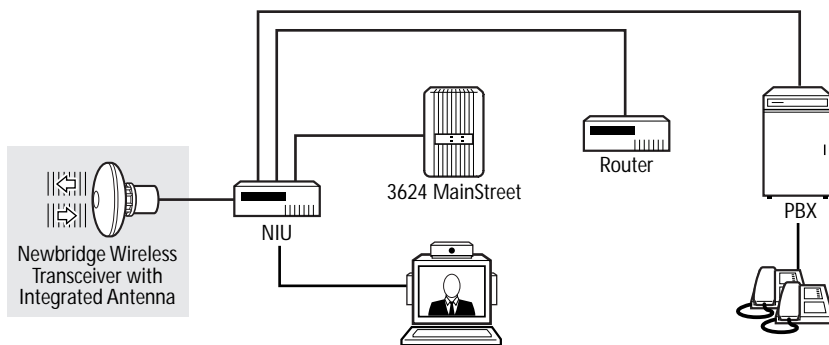
- RF output frequency: 24 – 31.3 GHz range
- Polarization: vertical or horizontal linear, selected at time of deployment
- Cross polarization isolation:
  - 30 dB, mainbeam
  - 15 dB, side and backlobes
- Peak gain: +42 dBi, copolarized (high gain variant), +36 dBi copolarized (low gain variant)
- Beamwidth (3 dB): approximately 1.2° (high gain variant), approximately 2.2° (low gain variant)
- Sidelobe levels (typical):
  - 15 dB, first sidelobe
  - 40 dB, backlobe

### Operating Environment

- -40° to 50° C
- 0% to 100% relative humidity

### Dimensions

- low gain variant: 30 cm (12 in.) diameter
- high gain variant: 60 cm (24 in.) diameter



Customer Premises Equipment

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