# Beyond The Edge
## Networks

## APPLICATIONS

M2M / IoT

Retail / Point-of-Sale

Home / Building Automation

Security / Surveillance

Energy Management

Mobile Health

- **Modular**
- **Secure**
- **Robust**

**Modular Option Cards**

**Cellular**     **Wi-Fi**     **ZigBee**     **Z-Wave**

## FEATURES

Configurable router for M2M and IoT applications

Remote monitoring & management

Field upgradable option cards including:

– 3G and 4G cellular

– Wi-Fi

– ZigBee, Z-Wave

Dual Cellular option

Bluetooth & GPS options

Network failover option for reliable communication in business critical applications

VPN option with client and server support

PA-DSS certified for financial transactions

The BTE Networks® Intellegent Edge® IoT / M2M Gateway enables remote access to a wide variety of sensors and devices for monitoring and control purposes.

The BTE Networks Gateway is a full-function router, including DHCP and NAT.  Optional Advanced Routing includes firewall capabilities.  With enterprise quality remote management, network configurations can be changed or updated remotely.  The VPN option supports client and server modes using IPSec or OpenVPN.

Support for a wide range of M2M and IoT applications is achieved with modular option cards that may be populated to extend the features and functionality of the gateway.  Option cards may also be installed on location.

The network failover feature provides a connection hierarchy for transitioning from one network to another based on current network health status.  The priority sequence may be uniquely

defined for any application, and includes cellular, Ethernet, and Wi-Fi.

Supports two cellular modules (and dual SIM).  The gateway continuously analyzes connection status and will automatically switch to an alternative cellular network when required.  The network failover and dual cellular features decrease downtime and provide more reliable network connectivity.

The BTE Networks gateway includes an embedded Linux operating system and processor enabling execution of local software.  Your own custom software may be integrated to provide application-specific, value-added features to provide a truly unique solution.  BTE Networks provides the tools for a unified development environment supporting Java, C, C++, Python, Lua,  and other programming and scripting languages.

*Going Beyond the Edge*

# SPECIFICATIONS

## Wireless Communication Options

Integrated Cellular: LTE, EVDO, CDMA, HSPA+, GSM, GPS*, SMA antenna connectors

Option for 2 modems with automatic failover

Option for 2 Mini-SIMs, 1.8v and 3v

Automatic repair of cellular connection

Wi-Fi b/g/n, n=2x2 MIMO*, Access Point and Client modes, WEP, WPA, WPA2, two SSIDs with independent network settings*, up to 32 connections, Reverse female SMA connectors

Bluetooth 4.0 (LE & classic), internal antenna

ZigBee, internal antenna

Z-Wave Plus, internal antenna

## Wired Communication Options

Ethernet: 10/100 Mbps, up to 2 RJ-45 ports

USB 2.0: Type A, Host

External General Purpose I/O option

## Internal Sensor Options

Accelerometer, Temperature

## Standard Router Features

NAT, 802.1X Ethernet port security

Routing rules

Route management

Local DHCP Server

DHCP client

## Advanced Router Options
### (requires –AR option)

MAC address whitelist filtering

IP Address Whitelist filtering

SPI Firewall with DNAT, SNAT, filter rules

Port Access

Port Redirection

Port Forwarding

IP Pass-through

ICMP/Ping flood

Ping Ignore

DMZ

## VPN Options
### (requires –VPN software option)

Client or Server VPN

Open VPN & IPSec tunnel, NAT-T, and transport modes

Certificate support

Hash – MD5, SHA

Encryption – AES, 3DES, DES

Up to 5 concurrent connections

## Failover Option
### (requires –AR software option)

Failover & fallback among all interfaces with selectable priorities

Ex: Cellular, Dual-cellular, Wi-Fi, Ethernet

## Power

90-264 VAC power adapter

9-24 VDC with locking barrel connector

5 VDC option

Typical power 1.5W (with no installed options)

## Applications

Remote access and control

Status monitoring

Cellular network failover

IoT/M2M with SysMAP software (available separately)

## Processor

400 MHZ ARM9G45

Embedded Linux 3.2

256 MBytes Flash (128 Mbytes mirrored)

256 MBytes RAM

## Management

Remote management included at no charge

Local access via Web-based interface

Remote access via Cloud-based interface (HTTP, HTTPS)

Remote firmware upgradable

Configuration files for save and restore

Auto reboot

Ping test

CLI over SSH

Integrated help documentation

Integrated TLS 1.2/SSL security

## Environmental

Operating Temp: -10° to 60°C

Storage Temp: -30° to 65°C

Operating Relative Humidity (non-condensing) 10%-85%

Storage Relative Humidity (non-condensing) 5%-90%
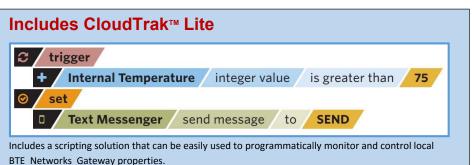
Dimensions: 1.31 x 8.00 x 4.63"

## Certifications

PA-DSS (for PCI compliance)

FCC Class B, CE

UL, IEC

Cellular: AT&T, GFC, PTCRB, Rogers, Sprint, Verizon

Z-Wave Plus

RoHS - EU Directive 2002/95/EC

## Patented Technology

Licensed for Wireless Network Patent Portfolio, including all known mesh network patents

Dual cellular (patent pending)

Note *: Future feature

## Available Options

| Option Tag | Description | Option type |
|---|---|---|
| CVE | Verizon EVDO | PCIe |
| CVL | Verizon LTE | PCIe |
| CV4 | Verizon LTE only | PCIe |
| CZH | AT&T, T-Mobile, Rogers, Europe HSPA+ | PCIe |
| CSE | Sprint EVDO | PCIe |
| W | Wi-Fi | PCIe |
| GPS | GPS (slot still avail for Wi-Fi) | Daughter |
| ZB | ZigBee | Slot |
| ZW | Z-Wave | Slot |
| B | Bluetooth LE | Motherboard |
| TM | Internal Temp & Motion | Motherboard |
| E2 | 2nd Ethernet Port | Motherboard |
| SDxxx | 32, 64, 128GB SD | Motherboard |
| GPExxx | GPIO | USB |
| AR | Advanced Routing | Software |
| VPN | VPN | Software |

## Includes CloudTrak™ Lite



Includes a scripting solution that can be easily used to programmatically monitor and control local BTE Networks Gateway properties.

| | |
|---|---|
| • Powerful scripting language | • Simple to use |
| • Easy remote access via cloud | • Scripts executed locally |
| • Script management for large deployments | • No programming experience necessary |

## IE-7000 Model Configurations

| Model | Ethernet | USB | Cellular | Option Slots | Bluetooth | DDR Mem | Power | Temp/ Motion |
|---|---|---|---|---|---|---|---|---|
| IE-7501 | 1 | - | Single[1] | - | Yes | 128MB | 5v | - |
| IE-7502 | 1 | - | Dual[2] | 1 | - | 128MB | 5v | - |
| IE-7503 | 2 | 1 | Single[1] | 2 | - | 128MB | 5v | - |
| IE-7504 | 2 | 1 | Dual[2] | 1 | - | 256MB | 5v | - |
| IE-7505 | 2 | 1 | Dual[2] | 2 | - | 256MB | 9-24v | - |
| IE-7506 | 2 | 1 | Dual[2] | 2 | Yes | 256MB | 9-24v | Yes |

Note 1: This model supports either a single cellular radio or a single Wi-Fi radio.
Note 2: This model supports up to two cellular radios, and a single Wi-Fi radio, and GPS (simultaneously).