

# WAYSIDE ACCESS GATEWAY

## Media Converter

### FEATURES:

- Media Converter for the Wayside Environment
- Provides an interface for Safetran devices equipped with Echelon® LONTALK™ to serial and packet data networks
- Cost effective way to attach legacy field devices to corporate WAN
- Provides IP Connectivity for Legacy Wayside Equipment and Systems
- Hardened for the Wayside Environment
- 10/100 base-T Auto-sensing Ethernet Connection
- DC Power Isolation to Operate on Vital Battery
- Temperature Spec (-40°C to +70°C)



### MEDIA CONVERTER

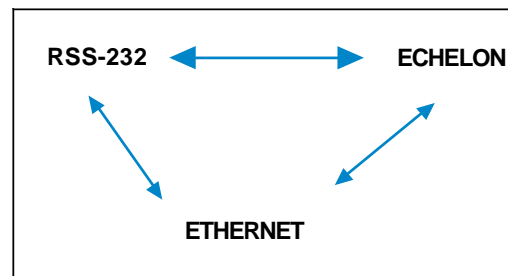
The Wayside Access Gateway (A53457) is designed to serve as a hardened media converter to adapt serial and Echelon® communications equipped field devices to Ethernet transmission systems and networks. The Motorola® 68000 series microprocessor was selected for the Wayside Access Gateway to manage the media conversion operation and provide the required protocol conversion functionality allowing the A53457 to adapt to legacy field devices. In direct support of the Safetran family of vital wayside signaling products, the A53457 Wayside Access Gateway enables Safetran Systems' grade crossing predictor, vital interlocking and I/O equipment to communicate with each other and central office applications via modern packet data transmission systems.

#### Echelon-enabled devices:

- HD/Link Vital I/O
- GCP 4000 Crossing System
- GEO Vital Logic Controller
- SEAR II Event Recorder
- Solid State Crossing Controller & Others

#### Ethernet-enabled devices:

- IP radios
- Routers
- Computers
- Hubs
- Bridges



**EASE OF CONFIGURATION**

The A53457 Wayside Access Gateway is easily configured using a terminal emulator or Telnet session from an available personal computer. Using the embedded configuration tools, the service personnel selects from a menu of configuration items to enter new operating parameters. After editing the configuration, the changes may be saved before exiting. No special or custom configuration utilities are required.

**ADDRESSABILITY**

In support of the media conversion operations across the various transmission mediums, unique addressing characteristics have been incorporated. The A53457 Wayside Access Gateway supports user configurable:

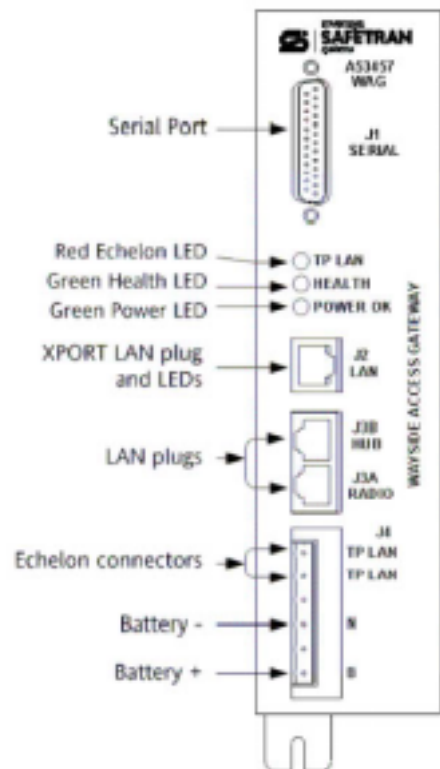
- IP addressing
- ATCS Spec200 (Type-7) addresses
- Echelon® sub-node addresses
- Addressing for custom legacy serial polling protocols

**SUPPORT FOR THE SAFETRAIN A53325 ETHERNET SPREAD SPECTRUM RADIO**

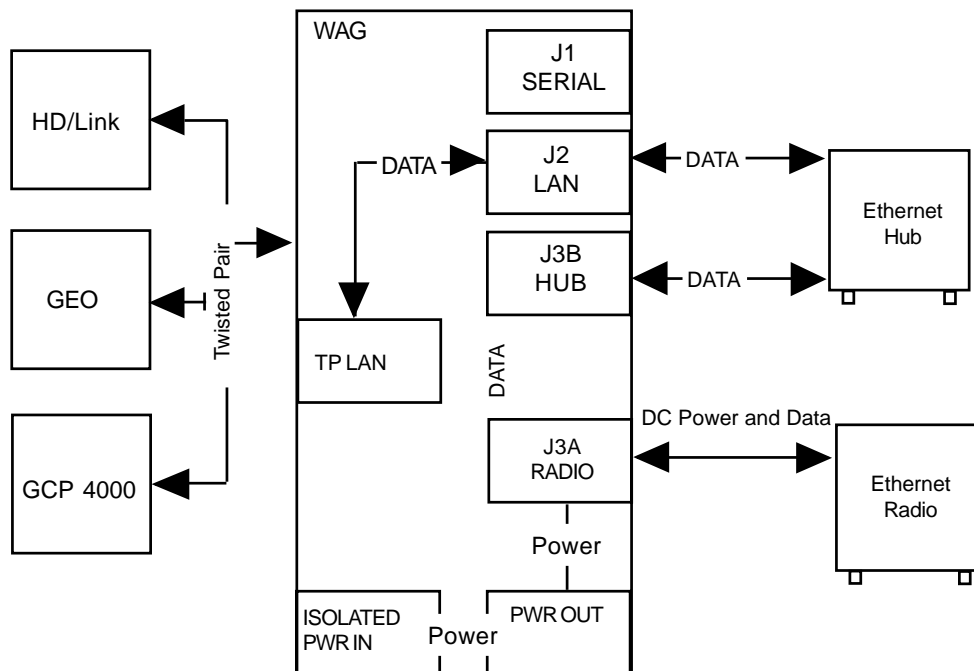
In addition to an Ethernet connection, the Radio port on the A53457 Wayside Access Gateway provides isolated DC power to source an external Ethernet radio such as Safetran Systems' A53325 RF Ethernet Bridge. When connected to the Safetran A53325 RF Ethernet bridge, the A53457 Wayside Access Gateway utilizes a DHCP connection to automatically establish predefined operating parameters for the attached RF device.

**BUILDING OUT A NETWORK**

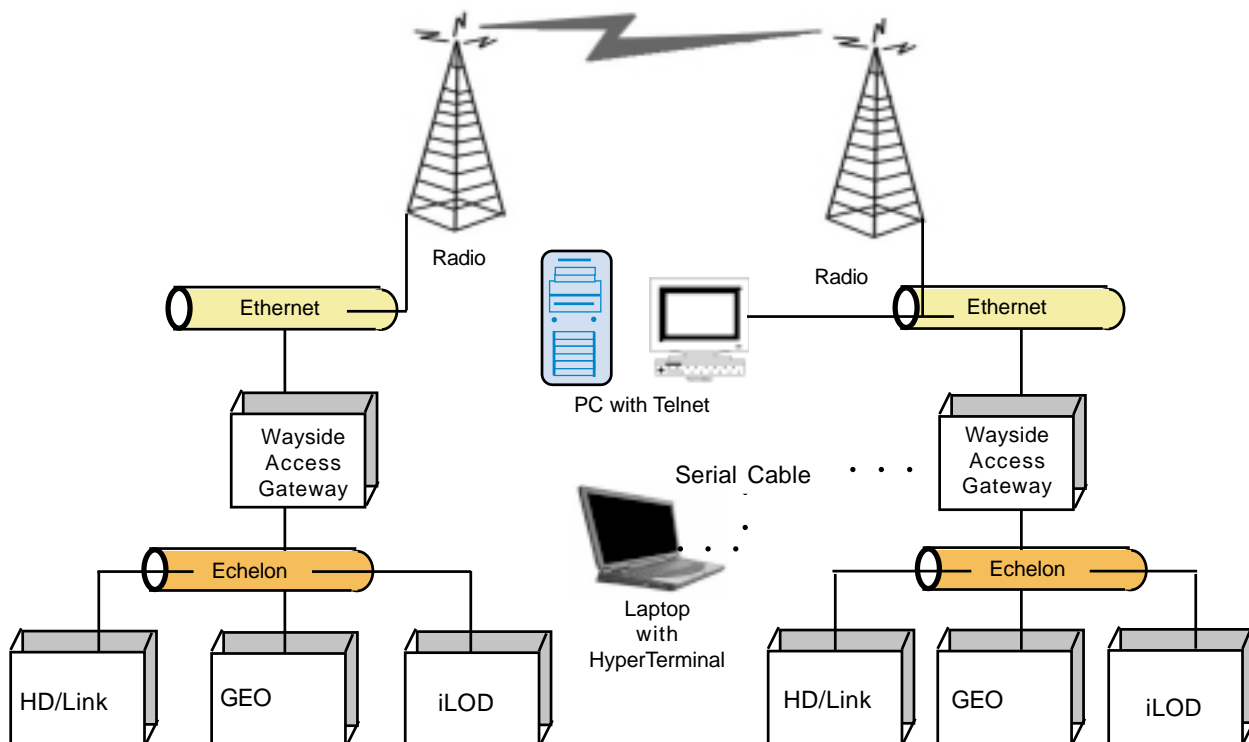
The A53457 Wayside Access Gateway was designed to support the build out of a wire-line or wireless Ethernet network in the rugged field environment. The following diagram provides an example of the typical field connections associated with the support of a Safetran Systems vital wayside system device such as the GEO Vital Logic Controller or the GCP4000 Grade Crossing Predictor.



**NOTE:** the J3A Radio Port provides both an Ethernet connection and Isolated DC Power to allow the radio to operate from vital signal battery systems.



Safetran Vital Wayside System Components Connected to either a Wire-line or Wireless Ethernet Network through the A53457 Wayside Access Gateway Module.



**Typical Field Configuration of Safetran A53457 Wayside Access Gateways and the Safetran A53325 Wireless Ethernet Spread Spectrum Radio**

## WAYSIDE ACCESS GATEWAY

### SPECIFICATIONS

#### **Data Interfaces**

##### **Serial Data:**

DB 25 Receptacle  
RS-232, Synchronous/Asynchronous  
RS-422 or RS-485  
Internal or external transmit and/or receive clocking  
Selectable serial data rates up to 115Kb  
Hardware Flow Control

##### **Ethernet Ports:**

10Base-T and 100Base-T with auto-sensing (J2 LAN, RJ45)  
Secondary Dual RJ45 connectors for inserting 12V DC power output at 1 Amp to provide DC power for an attached A53325 Ethernet radio; The wiring for J3A is non-standard.

##### **Echelon Network:**

Data Transfer Rate: 1.25 Mbps; Transmission Medium: Level 4 (NEMA) twisted pair cable, shielded or unshielded, solid or stranded;  
Topology: Bus (direct daisy-chain); Termination: Normally not needed;  
Number of Nodes: No more than 8 (including any terminations used) in any 16-meter (53 feet) length of transmission cable; 16 maximum total per network segment.

Network Length: 53 feet (16m) recommended maximum, 426 feet (130m) absolute maximum per network segment (with certain restrictions)

#### **Power Requirements**

##### **Input Voltage:**

Nominal 12V (Operating Range 9V to 24V DC)

##### **DC Isolation:**

2000VRMS, 60Hz, 60Sec

**Power Consumption:** Less than 7 Watts

#### **Environment**

##### **Temperature:**

-40° F to +158° F (-40° C to +70° C)

##### **Maximum humidity:**

0 – 95% non-condensing

#### **Mechanical**

##### **Dimensions:**

H x W x D: H. 9.75" (include mounting tab), W. 2.25", D. 7.5"  
(24.77 cm x 5.72 cm x 19.05sm)

##### **Weight:**

3 lbs 7 oz (1.67 kilograms)

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