

## Overview

At the core of the GE fire solution is the EST3 platform, a globally-proven product deployed in some of the world's most important and high profile facilities. Now you can benefit from the confidence of a world-leading platform that meets Australia's and New Zealand's unique legislative standards.

The EST3 is scalable to any size facility. You can be confident that the system can handle your future growth. The EST3 fire system network supports up to 64 panels, with each panel supporting up to 2,500 addressable points. It delivers a fast alarm response time across all network sizes, and up to an overall length of 90 km. Even greater distances can be achieved over fibre optic network using GE's own multi-mode or single mode fibre optic interface modules.

EST3 has a number of audio and visual warning options available to complement its fire detection capability. For simple applications 24VDC Genesis signalling devices can provide basic cost effective warning with synchronised T3 tones. For systems requiring PA and single zone evacuation, GE offers a single zone OWS (Occupant Warning System) that can be fitted within the 19" rackmount EST3 cabinets. For applications requiring a multi-zone warning and fire phone system, EST3's own integrated audio solution via plug in audio and fire phone modules allows for up to eight channels of digital audio anywhere on the EST3 network using just a single pair of wires. For sites requiring an Emergency Warning and Intercommunication System, GE's EWIS is fully compliant to AS2220 Australian standards and can even be fitted in the same 19" cabinet as an EST3 panel.

GE's EST3 Fire Panel features high level integration with GE's EWIS for synchronised zone alarm and evacuation sequencing. The integration enables both systems to communicate seamlessly eliminating costly and cumbersome wiring of output modules to individual zone triggers providing a more cost effective and robust integrated solution.

EST3 is built from the ground up to minimise labour and wiring costs in new and retrofit installations, while making system maintenance and even upgrades a breeze. In addition to supporting GE's world-renowned Signature series detectors, the EST3 platform will soon be capable of backwards compatibility with GE's Ziton legacy detectors and devices widely used in the Australian and New Zealand market. (Expected late 2009)

# EST3 Fire and Life Safety System



## Standard Features

- Meets international and Australian Fire Standards including AS4428 Compliance
- Seamless integration of Fire, CCTV and Evacuation Control functions
- 168-character LCD
- Fast alarm response times
- Total network wiring up to 90 kilometres
- In retrofit applications, existing (code compliant) wiring may be used
- Networkable up to 64 panels (nodes)
- Up to 2,500 addressable points per panel
- CCTV system integration
- Integration with GE's Facility Commander Wnx Access Control System
- Supports GE Security Signature Series detectors and modules
- Support for GE Ziton legacy detectors (expected late 2009)
- High-level integration with GE's EWIS Evacuation System



## Life Safety Redefined

The FireWorks PC-based graphic annunciation and event management control package is available to coordinate system events on a multi-sector display. This event-driven system places all system events in immediate view and command of the operator. Drivers are available for many major CCTV equipment manufacturers, facilitating the smooth integration of CCTV with fire, and EWIS (Evacuation) control functions. Cameras can automatically be directed to preset locations and easily maneuvered by the operator, all from the same screen.

## Outstanding Features

The EST3 is a modular life safety system uniquely designed to meet the needs of any size facility, be it a single panel system or a multi-panel network.

System components are arranged in layers, starting with the backbox and finishing with inner and outer doors. Cabinets are available with room for up to 20 modules and system batteries up to 200 AH. A single 24-volt battery can act as the secondary power supply for all four internal power supplies. Once the backbox is installed, up to four power supplies can be installed in the chassis assembly. The power supplies use a unique paralleling arrangement that ensures the optimum use of each supply. Each supply has the capacity to deliver up to 7 amps at 24 Vdc (28 amps total).

The function of each life safety network panel is determined by the Local Rail Modules (LRMs) plugged into the panel's chassis. An extensive variety of modules are available, including central processing units, input/output circuit modules, communication modules, and loop drivers for Signature series detectors occupant warning amplifiers and soon to be released (expected late 2009) loop driver for GE legacy Ziton detectors. Please refer to the individual LRM module catalogue sheets for specific details of module functionality.

The top layer of the LRMs is referred to as the user interface layer. This layer is made up of the Main Display Interface module and a system of generic control/display modules. Any control/display module can mount on any LRM. This maximizes flexibility of design for custom systems. The inner and outer doors finish and secure the enclosure.

A single panel can support up to 2,500 addressable points, provide 28 amps @ 24 Vdc, and still have room for future expansion. If a single panel is not large enough or you need to distribute functionality throughout the project, then you can network up to 64 panels together!

## Networking/Communications

The EST3 Life Safety Network uses a multi-priority peer-to-peer token ring protocol. The protocol gives EST3 the exceptionally fast alarm response time of less than three seconds across the network, virtually independent of the total number of nodes. The EST3 token ring network configuration also affords long distances between panels. The distance between panels is 1,523 m for network control signals (for 1.0 mm<sup>2</sup> cable). Supporting a maximum of 64 panels on a network, the total network length can be in excess of 90 km. Fibre optic media is also available.

## Enhanced Reliability & Survivability

The EST3 uses distributed technology, designed to survive expected and unexpected events. Intelligent Signature series detectors can make alarm decisions on their own, and do not involve other system components in this important decision-making process. Sensor-based technology must communicate data to a remotely located common panel where alarm decisions are made. Failure of this centralized processor can cripple sensor-based systems. With EST3, a panel CPU failure does not disable a panel's ability to provide protection. In the event of a CPU failure, the intelligent device controllers can still receive alarms and distribute the alarm information to all other modules in the panel. Modules in the panel are capable of responding with a programmed standalone alarm response.

A single break or short on the network wiring causes the system to isolate the fault, and network communication continues uninterrupted – without any loss of function. Should multiple wiring faults occur, the network re-configures into many sub-networks and continues to respond to alarm events from every panel that can transmit and receive network messages. Survivability is maximized as responses originating and executed by a single panel are always carried out because a copy of the system database is stored in the panel's memory.

Scheduled maintenance improves system availability, and EST3 is designed to make system maintenance easy. System components are designed to assist in routine and time-consuming service functions.

- EST3 service groups are defined by location, not by system wiring. There is no need to disable an entire floor to test a single device.
- According to their UL listings, Signature Series detectors do not require routine sensitivity testing\*.
- Comprehensive internal and external monitoring quickly identifies most problems to a component level, including ground faults that can be identified down to the module.
- Parts are easy to replace. Modules plug in and use automatic addressing and plug-in field wiring. No DIP switches are used.
- Firmware in system modules and Signature series devices is easily upgraded as new advances in detection and control technology are made available.
- Advanced system diagnostics are provided in the EST3 System Definition Utility.

\* Australian Standards require detectors to be routinely tested.

## User Friendly

A comprehensive survey of users resulted in system features and controls that are easy to use.

The main display interface shows the operator the first and most recent system events – without ever touching a single control! All system events are sent to one of four message queues. Alarm messages are never intermixed with fault or supervisory signals, eliminating confusion. Need more information? The “Details” switch provides additional information about the highlighted device. The operator can easily review supervisory, fault, and monitor messages by simply selecting the appropriate message queue. After a few minutes of inactivity, the system automatically returns to displaying the first and most recent events.

Optional manual control switches and display modules can be arranged on the system operator layer to suit the application. These modules can be used to provide additional fan controls, manual isolation of zones, or other required manual control functions.

## System Configuration

The powerful EST3 System Definition Utility (SDU) helps define flexible system operations in a fraction of the time required by other systems. Based on an object-oriented system of rules, virtually all EST3 operating features are software-controlled. This gives the designer great flexibility in integrating fire, security, and access control functions.

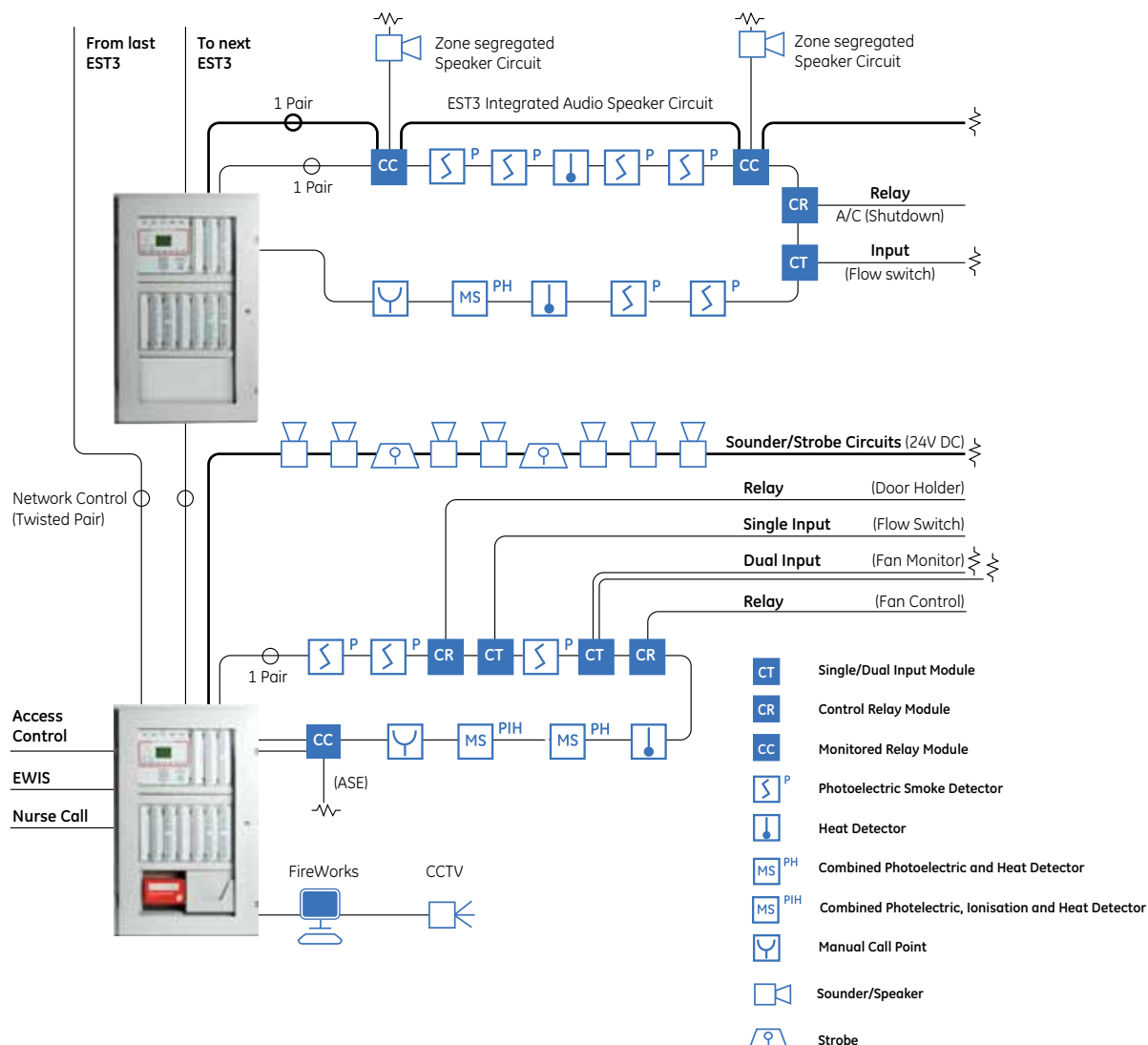
A report generator provides a complete library of system reports that are invaluable for troubleshooting, including a printout of Signature series device connections as the devices are actually wired.

Use of software-based components permits the SDU to add new features to the system. Even the Signature Series devices are capable of upgrading firmware as new detection algorithms become available.

## Feature Synopsis

- Agency Listing/Approval – Various components are approved by ULI, ULC, C-tick, FM, CE, LPCB and Australian standards AS4428. Please refer to individual component catalogue sheets for details.
- System Components
- Industry standard 19” rack mount cabinets
- Power/Booster Supplies
- Central Processor Module
- Signature Controller
- Alphanumeric Display
- Control Display Modules
- Network Communication Cards
- Initiating Device Circuit Module (Conventional circuits)
- Remote Annunciators
- FireWorks PC based graphic display and control with CCTV interface

*Please refer to component catalogue sheets for additional details.*



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