VIGILANT

Panel-Link
IP Bridge

Network VIGILANT Systems Over IP

Features

· Use existing LAN or dedicated IP network

· Provision for remote access

· Ethernet port for connection to 10BaseT hubs/switches

· Variety of media – fibre optic, UTP/CAT5/6, wireless, etc.

Panel-Link IP Bridge

VIGILANT Fire and EWIS systems have long used the Panel-Link network protocol as a means for interconnecting Fire and/or EWIS systems together.

The VIGILANT Panel-Link IP Bridge (PIB) provides network communications and remote access to system diagnostics and programming at the same time using the Internet Protocol (IP).

The PIB recognises the VIGILANT Panel-Link networking protocol and automatically encapsulates it into IP. This allows the use of a variety of transmission media – UTP, fibre, wireless, LAN, WAN etc., and topologies to provide networking over long distances, and to locations where conventional copper wiring would be impractical.
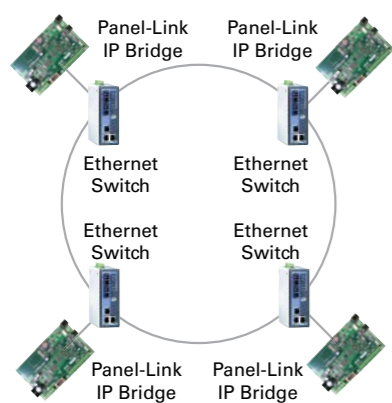
Figure 1 A fully redundant ring network.

By using appropriate Industrial Ethernet switches and routers, a variety of IP net-work configurations can be achieved. For example, a fully redundant ring network using a mixture of fibre, UTP, or 2-wire copper cable (limited length) can be achieved as shown in Figure 1.
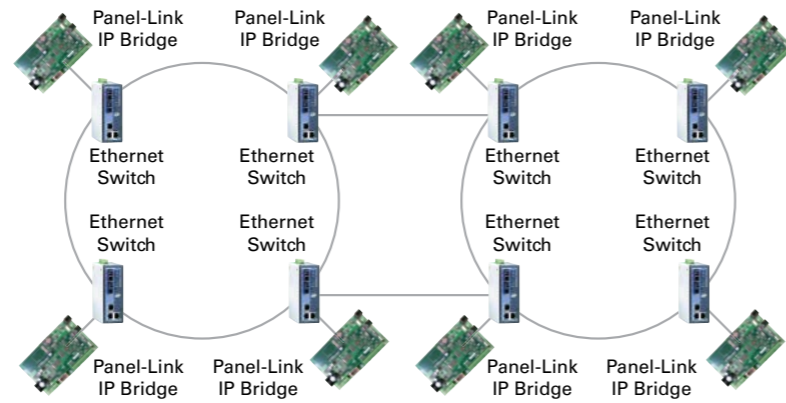

Figure 2 Two fully redundant rings, interconnected using dual paths.

If a network segment is broken or the panel powers down, the switches redirect data as required to the remaining connected nodes. A fault is generated and LEDs on the switches indicate the broken segment. In fact, this strategy could be extended to two rings inter-connected by dual paths, as shown in Figure 2.

Configure

The PIB is configured and its operation monitored via a standard web browser. This allows all the PIBs on a network to be configured (if necessary) and monitored from any point on the network.

Figure 3 at right shows an example of a PIB status screen as shown by a web browser running on a PC connected to the network.

This screen shows the PIB's status plus detailed information about the other PIBs, and network traffic. Hyperlinks allow easy connection to each of the other PIBs to view their status or configuration.

The PIB has additional web pages for configuration, internal diagnostics, and for viewing the panel diagnostics.

With suitable security precautions, and appropriate Network Address Translation, PIB web pages can be accessed from virtually anywhere over the internet.
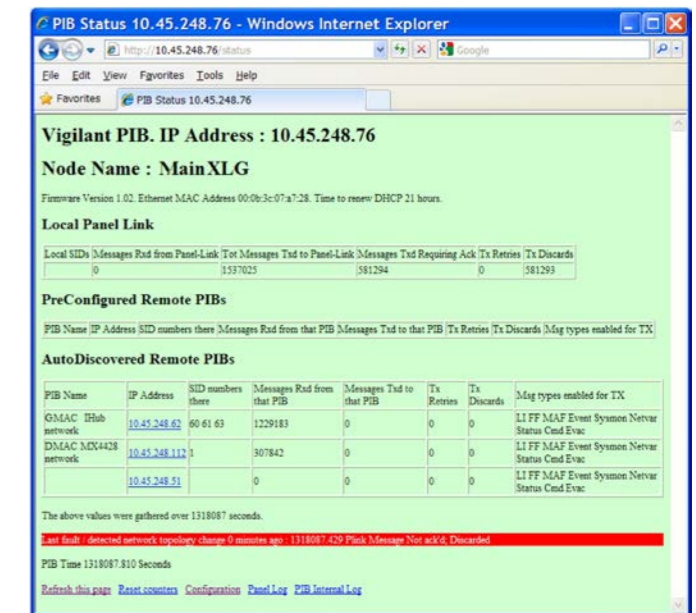

Figure 3 PIB Status Screen

Connect

Consisting of a compact circuit board module, the VIGILANT PIB provides IP connectivity to Panel-Link compatible VIGILANT Fire and EWIS systems. It is installed at each panel that requires IP connection and can be used for networking panels over IP, to provide remote access to the Fire and EWIS system diagnostics over IP, and connection to an XLG-C/S Colour Graphics system over an IP network. This provides networking over long distances (or to locations) where it would be inconvenient or uneconomical to provide conventional Panel-Link copper wiring.

The PIB recognises the Panel-Link protocol and encapsulates the Panel-Link packets within the IP packets to ensure that the fire alarm network data is not fragmented or corrupted.

The PIB has two serial ports; one for networking and the other for remote access to a connected panel's diagnostic port. This allows simultaneous networking and connection to the diagnostics port of a panel, allowing remote access to diagnostics and configuration.

The PIB has the ability to self-configure for many applications. For more advanced situations configuration and monitoring can be performed anywhere on the IP network using a standard PC web browser.

PIB Fast Facts

· Utilises either an existing customer-supplied network, or a dedicated IP network
· Provides a 10BaseT Ethernet port for connection to a variety of third party 10/100BaseT Hubs / Switches
· External hubs/switches can be networked via a variety of media including UTP (Unshielded Twisted Pair) CAT 3/5/6, Fibre Optic cable, wireless, etc.
· Provision for remote access and diagnostics via Telnet and/or http (web pages)
· Supply voltage 10-14V or 15-28V @ 60mA
· Provides a clean contact fault output

Compatible

A network of correctly configured PIBs are essentially transparent to the Panel-Link network data, with each panel connected in "Point to Point" mode.All Panel-Link data are passed through to all the other PIBs, subject to any filtering that may be configured.

The communications between fire alarm panels takes place in much the same way as over a standard RS485 network, and the same system design constraints such as the number of remote nodes supported by specific panel types remains relevant.
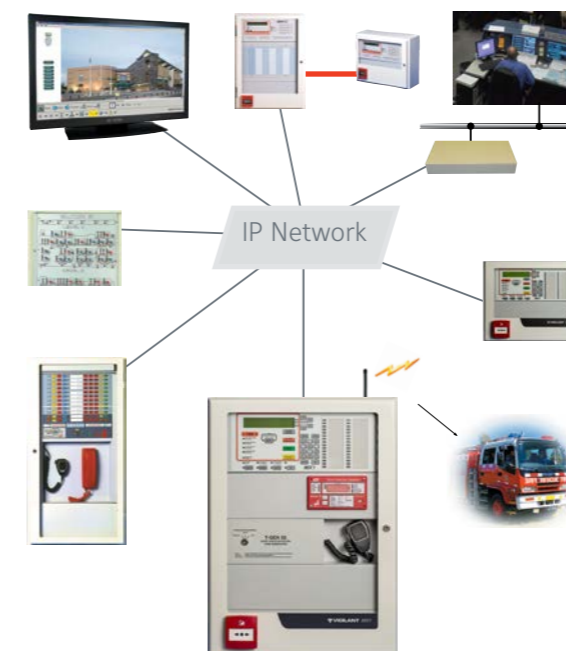
Control

An IP network such as the example shown at left can provide remote access to all the networked panels (except those that are on a copper Panel-Link segment). The following functions can be provided across such a network:
· Display of the panel's Event Log
· Access to panel diagnostics
· Panel configuration (using SmartConfig)
· Remote operation of the Keypad / LCD.

This can save a great deal of time, in that all panels can be accessed from a single point on-site, or even remotely from off-site. Remote programming of panels across the network is possible – however this may also require someone with a key to be physically present at the panel to enable the programming facility (and disable it again once programming is finished). Remote access can be provided from within the IP network, and/or potentially from anywhere (via the internet).

PIB Specification

Mechanical

Mounting	6 Holes - Ø3 mm diameter
Dimension	192 mm (L) x 120 mm (W) x 30 mm (H)

Electrical

Supply Voltage	15 to 28 Volts dc, or
	10 to 14 Volts dc
Operating Current	Typically 60mA

Inputs/Outputs/Indications

Power	Screw Terminals
Ethernet	RJ45, 10BaseT
Panel-Link	Screw Terminals (can be wired as RS485, RS232, or TTL)
RS232	DB9 Plug, DTE pinout
Outputs	OC1– Closes when a fault is detected
	OC2 –Opens when a fault is detected
	(or when the PIB is powered down)
	PSTN – not used
Inputs	FAS1 –Fault input from switch
	FAS2 – Currently not used
	TAMPER – fit a jumper to enable an on-board DHCP server
	DOOR – fit a jumper to enable the PIB's serial port for PIB diagnostics (rather than for connection to the diagnostic port of the connected panel for remote access to the panel)
LEDs	LD1 Flash Yellow - Ethernet communications
	LD2 Green - an Ethernet connection has been established
	LD3 Flash at 1 Hz - the software is running
	LD4 Green - this PIB is acting as a DHCP server
	LD5 Flash when data is received on Ethernet from another PIB
	LD6 Flash when data is received from the Panel-Link device
	LD7 Flash when data is transmitted to the Panel-Link device
	LD8 Not used
	LD9 Yellow - a fault has been detected in the last 3 minutes
	LD10 Yellow - PIB is renegotiating connection to hub/switch
	LD11 Green - on with power applied

Environmental

Operating Temperature	–5 °C to +45 °C
Relative Humidity	Up to 95% (non-condensing)

Part Numbers

FP0986	PIB Panel-Link IP Bridge
LT0519	PIB Manual *Included with FP0986*
LM0434	Loom, PIB to TTL Port *Included with FP0986*
LM0076	Loom, Null Modem *Not included with FP0986*
LM0460	Loom PIB RS485 Port to DB9F (Pseudo) RS232 *Not included with FP0986*
LM0065	Loom, RS485 Comms 10W FRC to DB9 *Not included with FP0986*

Compliance

AS 4428.1: ActivFire Listed as being compatible with MX4428 and F3200 on afp1446 and afp789.

AS 7240.2: ActivFire Listed as being compatible with *MX1* on afp2030

NZS 4512: FPANZ listing is pending.

EMC Radiation: Approved to AS/NZS CISPR-22 (Class A).

Note that in many applications, formal listing is not required for add-on functions repeated across a network.

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