

ZIZTEL PAGA SYSTEM

ZEST – ZIZTEL ENERGY SAVING TECHNOLOGY



DS-091 Issue 04

BECAUSE SAFETY ALWAYS MATTERS

Zitel are a UK based manufacturer of PAGA and Intercom products. Our systems are mainly designed for use in the Hazardous Oil, Gas and Petrochemical industries.

The Zitel range of products are modern in design and highly efficient. ZEST features Class G amplification allowing very high power density in much less space than conventional technologies without resorting to Class D technology.

At Zitel we eliminate software execution from the PAGA system kernel, a static core is employed instead which removes risk of latent software bugs, requirement for re-boots and provides greater resilience to brown outs and other severe electrical disturbance.



ADVANTAGES OF ZIZTEL ZEST PAGA

Highly secure – designed specifically for life safety

Compact, energy efficient ZEST design– smaller UPS, reduced weight and floor area requirements

Fully configurable by file down load – no one-time programmable device exchanges

Remote management worldwide ZMIS core ZMIS

Global – including all field devices ZADS

Zitel PAGA system is designed specifically for life safety applications and to provide reliable operation in severe operational conditions. To ensure availability under fault conditions ZEST supports a range of secure system architectures which include A+B, N+1 or for critical applications a combination of full redundancy with hot standby sub systems i.e. A+B/N+2.

The ZEST PAGA system can interface to external site packages enabling integrated communications including the following external systems:

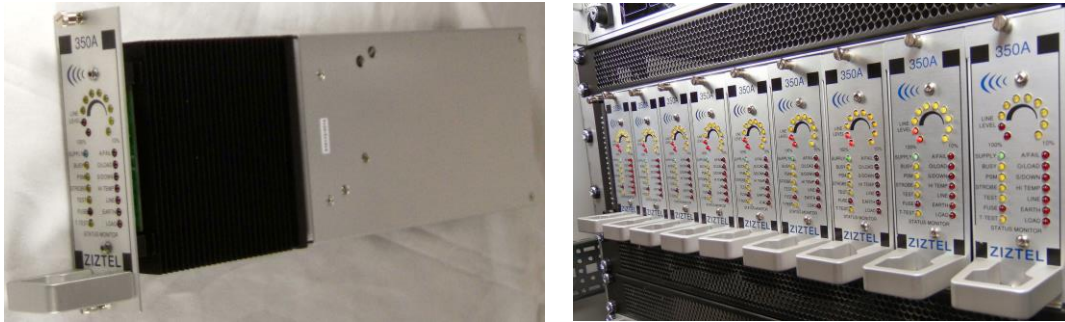
- Fire & gas interface – automatic alarm initiation.
- Entertainment system – over riding low priority source programs with possible emergency voice injection.
- PABX – allows announcements from specified telephone system users.
- UHF radio – allows announcements to/from handset users.
- Supervisory system – provide minor/major alarms 3rd party Network Management Systems, DCS or ICSS.
- Despatcher systems

ZIZTEL LIMITED

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Central to the Zitel ZEST PAGA system is our Class G 350 Watt power amplifier.



- ZEST 350A amplifier is only 3U high with capability to fit up to nine 350A amplifiers in a single 3U standard 19inch rack space – total power assignment is in excess of 3000Watts.
- High power density enables many more amplifiers within a single 19inch rack cubicle than possible using alternative offerings.
- For large projects this can mean a reduction of over 50% of the number of racks required – a major cost saving in both floor space and equipment costs.



- Cutting-edge technology drives high efficiency, reduced power consumption/heat emission and dramatic saving in physical size and weight.
- Smaller UPS, HVAC, much smaller floor area/rack real estate requirement.
- 350A amplifier achieves high efficiency without the potential detrimental effects of Class D amplifier technology.
- No possible radiated RF energy, no network matching required, consistent predictable performance from 350A ZEST amplification.
- 350A amplifier is fully hot-swappable, no power down or system ‘reboot’ required enabling rapid service and maintenance.
- 350A amplifier utilizes unique “diversity” monitoring to supervise associated loudspeaker networks; a reliable check of not only network continuity but also loudspeaker load integrity implemented by testing at both high **and** low frequencies. No ‘ghost’ fault reports, no latent line defects, and reliable detection of critical path deterioration.

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Zitel ZEST PAGA system is a life safety package

The Zitel PAGA is designed specifically for mission critical applications, targeted at Petro chemical/power generation industries the system philosophy is to provide a simple cost effective reliable solution which eliminates unnecessary gimmicks. Zitel are experts in the development of robust hardware and software for high security applications and have used a carefully structured combination of both to realise a modern fit for purpose PAGA system.

- Central PAGA control core is non-software dependent - no sequentially executed code.
- No latent software bugs, no boot-up reboots required.
- Fully configurable by PC no dependency on one-time programmable devices. Can be reconfigured by e-mail file.
- Future proof, simple commissioning, no chip/hardware exchanges/modifications required.

Zitel ZEST is purpose designed to serve the specific requirements of a life safety voice and alarm system, this cannot be achieved by use of (i) general purpose voice alarm equipment (ii) intercom systems. Major considerations are (a) single fault tolerance and removal of common mode failure risk, this is almost impossible to implement in to a design retrospectively, (b) synchronisation between sectors of either a networked PAGA system or a dual centralised A + B system.

All critical paths are duplicated – this extends to the entire system ‘end-to-end’ including microphone transducers, fire and gas auto alarm initiate inputs and flashing beacon/loudspeaker networks.

No common hardware or software.



System designs that employ IP as the primary network transportation media are unable to match the security and synchronisation required of a high integrity PAGA. Where required, Zitel employ IP on non-critical routing requests and more critical connections are backed by other non-IP media to ensure safety.

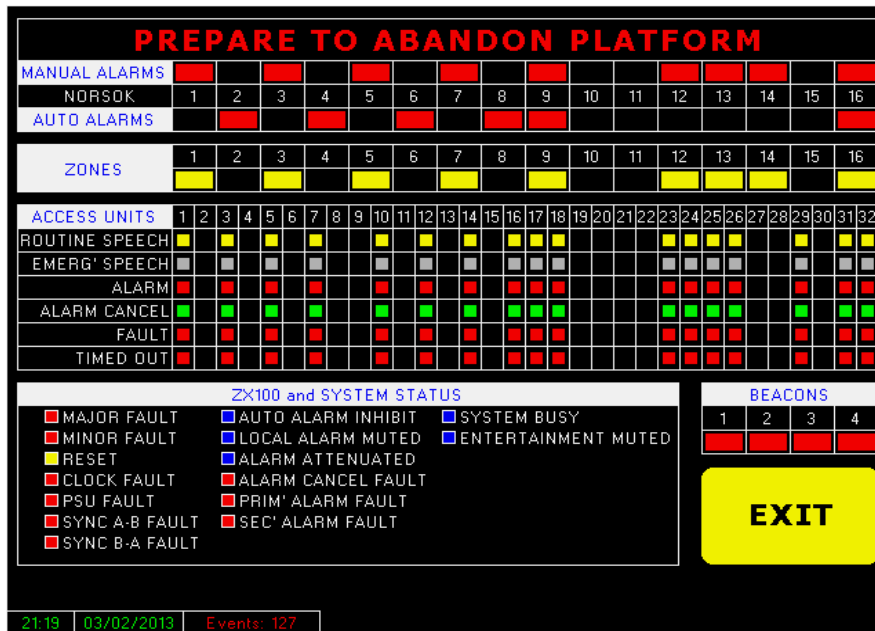
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Zitel ZMIS / ZMIS GLOBAL

The Zitel ZMIS management system displays, logs and stores system events allowing simple and effective service and maintenance of the host PAGA package. By including ZMIS Global the operator can manage PAGA assets remotely from any position worldwide. The application is designed in-house and does not depend on third party 'unknown pedigree' software, the application is embedded resulting in high efficiency and consequent real-time operation. Access to ZMIS is via a core touchscreen GUI which is delivered with each sector PAGA rack.



ZEST provides gateway to our fully addressable PAGA system, ZADS, which allows the operator to interrogate each field device (loudspeaker and flashing beacon) connected to the package. Loudspeakers are fully supervised, *including* the possibility to also alter sound pressure levels on an individual device basis. Communications to the field equipment is unobtrusive and requires no additional field cabling. By automatically monitoring loudspeakers and flashing beacons costly routine site maintenance patrols are eliminated and an early warning of system deterioration is possible enabling the PAGA system to be serviced and capable of delivering vital emergency voice/alarm broadcasts at all times.

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NO LOCAL ALARMS ACTIVE

LOOP 1	TST	[Progress bar]										MNR FLT <input checked="" type="checkbox"/> TIP <input checked="" type="checkbox"/> BUSY <input type="checkbox"/> LOOP 1 <input type="checkbox"/> LOOP 2 <input type="checkbox"/> LOOP 3 <input type="checkbox"/> LOOP 4 <input type="checkbox"/> LOOP 5 <input type="checkbox"/> LOOP 6 <input type="checkbox"/> LOOP 7 <input type="checkbox"/> LOOP 8 <input type="checkbox"/>
	CAL	[Progress bar]										
	FLT	[Progress bar]										

ZADS-C V0.3
MENU
EVENTS
CANCEL TEST
EXIT

WED 13:06:05
2014/01/08
EVENTS: 18719
ZMIS

NO LOCAL ALARMS ACTIVE

TEST SCHEDULE CONFIGURATION

Test Schedule Uploaded

MONDAY	00	00
TUESDAY	23	59
WEDNESDAY	08	38
THURSDAY	10	23
FRIDAY	12	46
SATURDAY	18	27
SUNDAY	19	01

UPLOAD
COMMIT
EXIT

13:06:05 [01/08/2014] EVENTS: 18719

NO LOCAL ALARMS ACTIVE

LOOP: 8, SPEAKERS: 8

TST	CAL	FLT
DIP	DIP	DIP
BUSY	BUSY	BUSY
MNR FLT	MNR FLT	MNR FLT

OVER CURRENT PSU INPUT: 45.70V
 OVER VOLTAGE LOOP (N): 1.80V
 EXHAUST FAULT LOOP (N): 0.000A

CONFIGURE LOOP
CALIBRATE SPEAKERS

TEST SPEAKERS
SPEAKER DATA
EXIT

13:06:05 [01/08/2014] EVENTS: 18832 [UCS]

NO LOCAL ALARMS ACTIVE

LOOP 8

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

TIP
 BUSY
 MNR FLT
 OVER CURRENT
 OVER VOLTAGE
 EXHAUST FAULT
 PSU INPUT: 45.70V
 LOOP (N): 1.80V
 LOOP (N): 0.000A

Test data for Speaker 2 on Loop 8

Fail ID: 1
 Calibrated Audio Level: 800
 Test Audio Level: 800
 Loop ID: 012 - CALIBRATED
 Speaker test FAILED
 No fault detected

SPEAKER TEST DATA
EXIT

13:06:05 [01/08/2014] EVENTS: 18833 [UCS]

NO LOCAL ALARMS ACTIVE

LOOP 3

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

TIP
 BUSY
 MNR FLT
 OVER CURRENT
 OVER VOLTAGE
 EXHAUST FAULT
 PSU INPUT: 45.50V
 LOOP (N): 1.60V
 LOOP (N): 0.000A

Status information for Speaker 2 on Loop 3

Software Version: 11
 Speaker Test: 1
 Tap Setting: DR (ROOM S403, Feedback Out)
 RVW (01 Stage): S405
 RLS: OK
 Over to next calibrated
 Speaker test FAILED
 All data update to use
 SWS: S405

SPEAKER STATUS
EXIT

13:06:05 [01/08/2014] EVENTS: 18833 [UCS]



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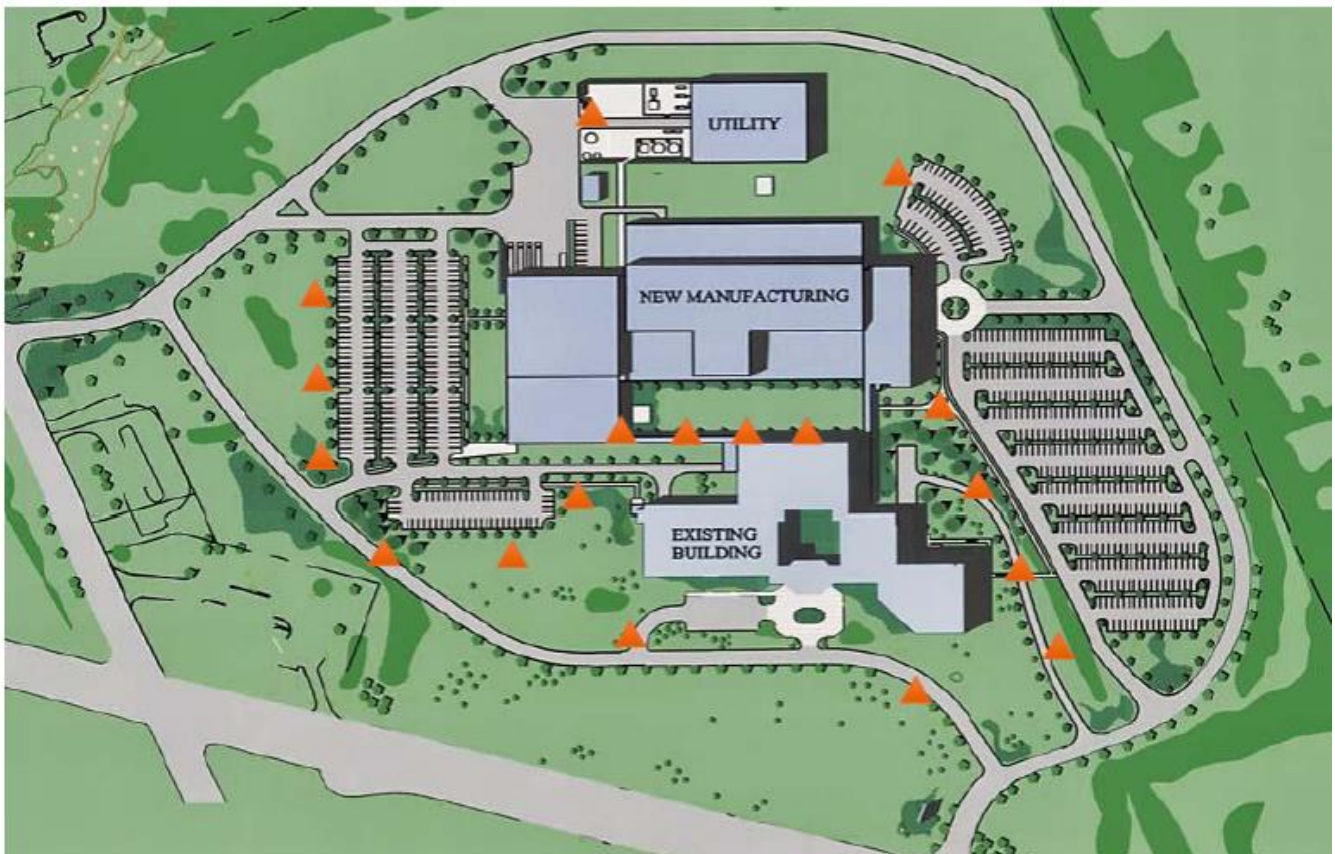
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Installation and Maintenance Costs

At Zitel we recognise that clients consider the full installation cost of a system when making vendor selections. The following product innovations greatly reduce the installation and commissioning costs of a Zitel system including:-

- Operator microphone access panels can be connected to host equipment rack by a single twisted-pair shielded copper cable - no multicore/special cables required.
- Operator access panels can also be connected to host equipment rack by a range of transportation media, including VOIP, fibre-optic (single or multi-mode) and radio.
- The Zitel PAGA is totally self-contained enabling multi-node applications to operate standalone without dependence on other sector racks. This not only greatly enhances integrity but also enables a phased approach to installation.
- The use of ZMIS/ZADS enables the PAGA to be maintained from a remote position, this drastically reduces costs associated with routine site visits and enables a centralized service center to care for a number of distant PAGA assets worldwide. Mapping of all field devices on to a GUI mimic of the site plot speeds service by enabling the engineer to immediately identify suspect loudspeakers/beacons to a definite location on the installation.



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