Ambient System
No Single Point of Failure
PA/VA System Concept

(NOSPOF)

ambient SYSTEM

We make everyday life safer

Foreword

As voice alarm systems have evolved over the last decades, the requirements for reliability in these lifesaving systems has changed radically. Originally voice alarm systems were ordinary public address equipment with an element of monitoring and backup. This evolved into having custom built product for voice alarm with complete signal path monitoring. This was codified through BS5839-8 and then into a European norm of EN54 which is widely adopted beyond the EU territories.

The main requirement for the central processor was that there should be a fail-safe option, bypassing the active electronics and allowing a user to make an all areas broadcast in the event of system failure. However, this still doesn't cater for projects in mass transport, where a hub station might be without emergency or public information broadcasts for many hours, while equipment is repaired and brought back into service. Therefore, there are increasing numbers of specifications that call on the system designers to provide a system with No Single Point of Failure (NOSPOF).

Until now these systems have been achieved by doubling the number of system controllers and often using quite crude relay systems to switch between the controllers in the event of the active unit reporting a fault. This could lead to a break in service and in addition to the expense of doubling controllers actually led to a lowering in the calculated reliability of the system - when looking at overall system RAMS calculations.

Ambient System has taken a hard look at this situation and has now released a new kind of dual controller to overcome these issues and creating a truly NOSPOF system that meets and exceeds the requirements of EN54 and NFPA standards.
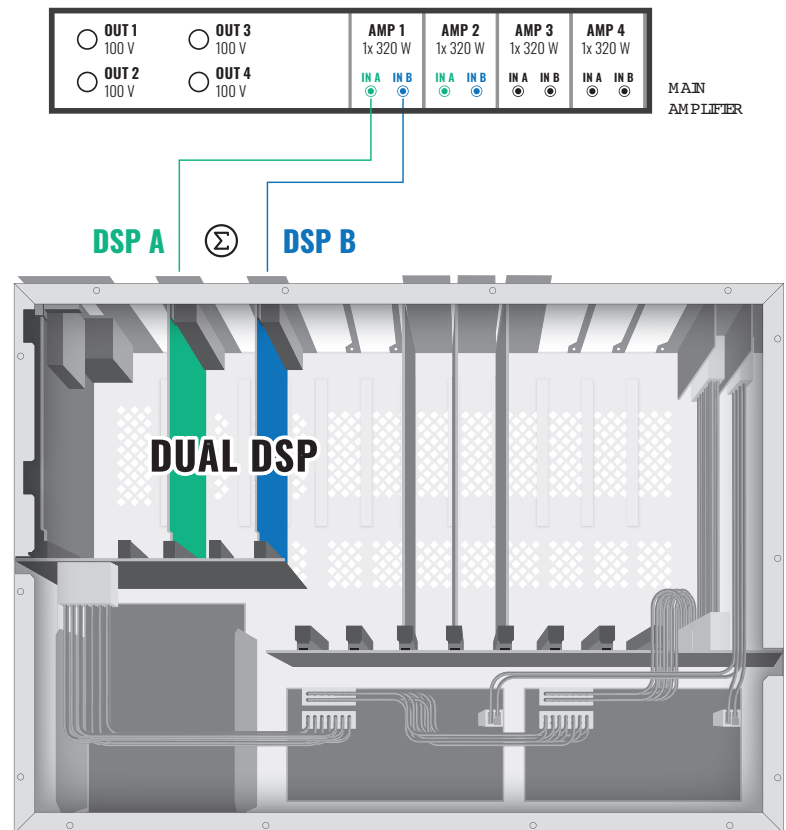
The ABT CU8 controller was designed in a card frame format, to provide a flexible base to exactly meet project requirements and this card frame flexibility is now the key to creating this unique configuration.

If we consider the key elements of the controller, we have two aspects that could fail and prevent the system from broadcasting, being the main processor/DSP unit and the power supply. Therefore, in each case we have doubled up on these. Internally, there are now two PSU units converting the incoming 48VDC to integrated circuit supplies. The incoming voltage to them is bi-wired and redundant and they are fully independent of each other.

For the main processors, we now have two running in parallel and we have two duplicated sets of audio outputs feeding the amplification.

Dual DSP architecture /

NOSPOF system

Single Amplifier channel is always connected to **2 independent audio processors** and **audio outputs**.

| OUT 1 100 V | OUT 3 100 V | AMP 1 1x 320 W | AMP 2 1x 320 W | AMP 3 1x 320 W | AMP 4 1x 320 W |
| OUT 2 100 V | OUT 4 100 V | IN A IN B | IN A IN B | IN A IN B | IN A IN B |

MAIN AMPLIFIER

DSP A   Σ   **DSP B**

DUAL DSP

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