



Aural Warning Generator (AWG)

Features

- High integrity design to DO-178b at DAL C
- Dual ARINC 429 and MIL-STD-1553 bus
- Manages alert priority and repetition
- Application specific audio messages
- Aluminium construction
- D38999 connector
- Qualified to DEF STAN 00-35
- EMC to DEF STAN 59-41

The Ultra Electronics, Electrics, Aural Warning Generator (AWG) manages and provides audible warning messages to the pilot's headset. The AWG acts as a secondary notification to the visual warnings generated in the cockpit system, greatly improving the pilot's ability to absorb and act upon priority information.

The AWG interfaces with flight systems and the aircraft's tactical processor via dual ARINC 429 and MIL-STD-1553 data bus. Commands are translated by the AWG into audio messages played into the cockpit audio system. Messages alert pilots to critical conditions, external threats and necessary evasive action. The AWG manages aural alert priorities, repetition and cancellation.

High integrity design

Ultra has applied design processes in accordance with DO-178b to provide a Design Assurance Level (DAL) C for the AWG; this approach recognises the high integrity nature of the alerts processed.

AWG uses a two PCB solution with EMC filtering and protection located on a connector carrier PCB, affording protection to the power supply, processor, memory and audio stages on the main PCB. Particular attention has been paid to lightning effects, allowing the unit to be successfully tested beyond the DEF STAN 59-41 limits.

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The AWG embedded software responds to messages on the data bus by generating a list of alerts to be played. The list is subject to dynamic prioritisation to ensure that high priority alerts are played immediately without losing lower priority information.

Audio messages are formed from segments of high quality pre-recorded audio which are passed through an amplification stage for input to the cockpit intercom unit. Software is expandable and reconfigurable for the message set, priority rules and audio.

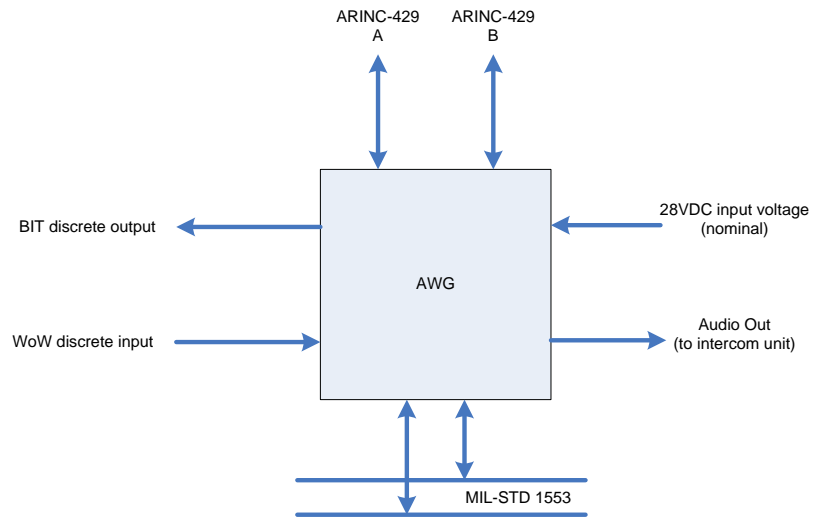
AWG incorporates a rugged but lightweight aluminium enclosure protecting the electronics during vibration and from corrosive atmospheres



AWG is qualified and has seen first use on a rotary wing platform. The design is suitable for application on many future airframes and platform upgrades.



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AWG Interfaces

- Dual ARINC-429
- MIL-STD-1553b to tactical processor
- Audio to cockpit system
- Discrete I/O (WoW and BIT output)
- Single connector D38999/20ZD35PN
- Mounting via four M5 fixings
- Dimensions ~ 215 x 145 x 40mm

Environmental qualification

Ultra's AWG has been specifically designed for the rotary air environment:

- Vibration and shock to DEF STAN 00-35 part 3
- Corrosive atmosphere (Salt mist at 28 days duration)
- Magnetic influence to RTCA/DO-160D
- Sand and dust to DEF STAN 00-35 part 3
- Temperature, humidity and temperature shock to DEF STAN 00-35 part 3
- EMC and lightning to DEF STAN 59-41, with enhanced test parameters

Ultra Electronics reserves the right to vary these specifications without notice.

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