

DASDEC™ Digital Audio Insertion with BDI AES-302

Introduction

The DASDEC EAS Encoder/Decoder is controlled via a web browser over a LAN or by using a connected keyboard/monitor/mouse and the built-in desktop browser interface. The unit has 3 built-in radios for FM/AM/NOAA reception. It also has a fourth analog audio decoder input that can be connected to an external receiver. The DASDEC offers both traditional analog Emergency Alert System (EAS) and digital EAS via serial and LAN control protocols, with MPEG streaming, AES audio output and using third party equipment. The DASDEC can be interfaced to the Broadcast Devices, Inc AES-302 Digital Audio System to reliably insert EAS audio into an AES program stream.

Digital Audio Insertion

The DASDEC with AES option provides a single balanced AES digital audio output for Emergency Alert System audio. The DASDEC does NOT offer a built-in pass-through feature for digital audio. Rather, the DASDEC can be easily interfaced to other platforms built especially for robust digital audio switching and insertion. The Broadcast Devices, Inc AES-302 Digital Audio System is a Digital Alert Systems recommended 1RU platform for achieving EAS audio insertion into an existing AES program stream. This unit offers fail-safe pass-through of the main input AES program stream even when power is removed from the platform. The unit also is a 4-channel digital distribution amplifier providing 4 AES outputs from the selected input. It also has a digital to balanced analog converter, providing a fifth output channel.

Interfacing a DASDEC to the AES-302 is simple. Your station provides the main on-air AES audio to channel A of the AES-302. The DASDEC provides other digital audio input to channel B of the AES-302. During an EAS alert event, the DASDEC provides EAS audio out of its AES and analog audio output ports. Through the use of two GPI output relays from the DASDEC, the AES-302 unit is switched between program audio to alert audio during an EAS origination or forwarding event. It is then switched back to program audio at the end of the alert notification. See Diagram 1. The AES-302 also features manual override switches to easily switch from the DASDEC audio channel B back to the program channel A.

System Integration

Audio Connection:

Connect the DASDEC AES card digital breakout XLR cable for AES output to input channel B on the back of the AES-302. Connect your program audio via XLR to channel A of the AES-302. Connect the XLR connector for your main AES program output to the Output 1 on the back of the AES-302. Connect duplicate outputs to the any of AES output 2 through 4.

GPI Connection option 1:

The two built-in DASDEC relays can be used to trigger switching during alert activation. Connect one line of the DASDEC relay 1 to the AES-302 DB9 control port input pin 9 and the other line to pin 3. Connect one line from the DASDEC relay 2 to the AES-302 DB9 control port input pin 9 and the other to pin 4. See Table 1 for AES-302 pinout. DASDEC GPI output relay one will provide the switch at the start of EAS audio to AES channel B. Login to the DASDEC Web browser and go to Setup->GPIO. Set the second GPI Output relay to the setting to close "**Momentarily at end of EAS Audio Playout**". This will provide the switch back to the program audio on channel A.

GPI Connection option 2:

The DASDEC NET-GPIO option relays can be also used to trigger switching during alert activation. Use this option if the back panel relays are already used or if the AES-302 cannot be rack mounted close to the DASDEC. This option requires a valid network connection from the DASDEC, the Titus Technologies WebREM-300 hardware or the Monroe Electronics R190 rack unit hardware, and programming of a DASDEC NET GPIO client interface. The NET GPIO client interface (in DASDEC Web browser under

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Setup->Net Alerts->Net GPIO) provides a variety of trigger options for each of the four relays provided per unit. You simply program one of the relays to momentarily close at the start of EAS Audio and another to momentarily close at the end of EAS audio. Wire the relay outputs to the appropriate pins on the AES-302. See Table 2 for WebREM-300/Monroe R190 pinout. Do not forget to program the IP address of the WebREM-300 and set the address under the NET GPIO client interface.

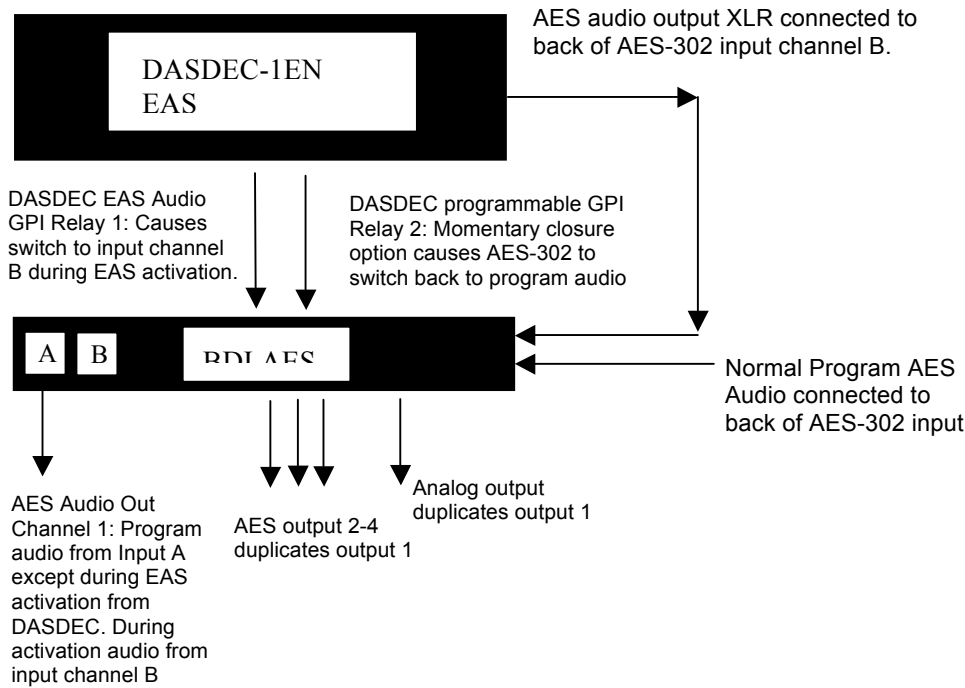


Figure 1 Basic connection diagram for digital audio insertion in to a TV or radio broadcast using DASDEC and BDI-302.

PIN #	FUNCTION
1	+15 VDC @ 100mA.
2	No connection
3	Select channel B input
4	Select channel A input
5	Error Reset
6	Status relay common
7	Status - "B" selected
8	Status - "A" selected
9	Ground

Table 1 DB-9 Pinout on AES-302

Command input pins 3, 4, and 5 requires a momentary closure to ground. However, constant closure to ground will also switch from channel A to B. This allows DASDEC Relay 1 to be used to switch from program audio on channel A to EAS audio on channel B. The status connections are to dry contacts. Use no more than 24VDC on these contacts or damage to the relay can occur. The DASDEC does not provide any interfaces to the status connections.

Status input lines are not supported on the DASDEC as of 1.6-1 software.

PIN #	FUNCTION	
1	Relay 2 contact	Programmable on DASDEC under Setup->Net Alerts->Net GPIO
2	Relay 1 contact	
3	Relay 4 contact	
4	Relay 3 contact	
5	Relay common and status input common	Wire to ground connection.
6	Status 2 input	Unused by DASDEC.
7	Status 1 input	
8	Status 4 input	
9	Status 3 input	

Relay output is normally open and is rated at 1 Amp @ 5 VDC. The status inputs are TTL level (5 VDC true). Care should be taken to not exceed these ratings.

Status input lines on pin 6-9 are not supported on the DASDEC as of 1.6-1 software.

Table 2 DB-9 Pinout on Monroe R190 or Titus Technologies WebREM-300