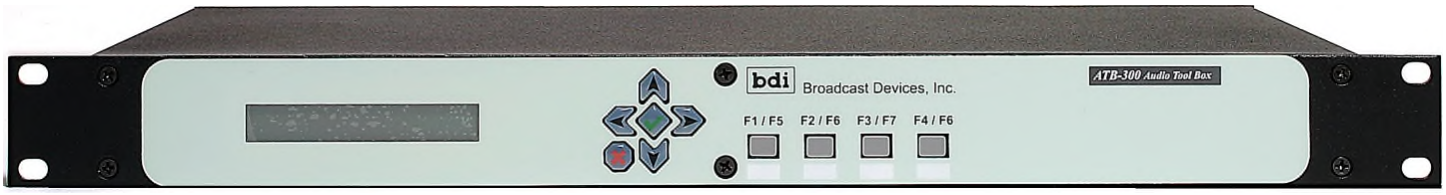
DAB-300 Analog/HD Audio Switcher

Digital/Analog Dual Path Audio Switcher



DAB-300 Analog/HD Audio Switcher with silence sensors, front panel.

DAB-300 Analog/HD Audio Switcher with silence sensors, rear panel.

Features

- A **multi-format audio switcher with integrated signal conversion**, capable of routing and translating between **analog, AES3 digital, and composite baseband** formats.
- Supports bidirectional conversion including **analog to AES3, AES3 to analog, composite baseband to AES3** - while providing reliable, seamless source selection and broadcast-grade source switching.
- Sample Rate Conversion on every AES3 input with 24-bit resolution throughout.
- Synchronous AES3 switching for silent, glitch-free audio transitions.
- Audio inputs and outputs via TASCAM Standard DSUB25F connectors. Breakout interface panels to XLR and BNC connections are optionally available from BDI.
- Up to 8 I/O Analog, AES3 or 4 of Each, or Composite FM Stereo I/O module - 4 Composite Output DA.
- Programmable Silence detection, including threshold, time delay, auto revert time. Custom programmable sequence of channels and channel priority.
- Customizable channel naming and setup configuration performed with the free downloaded companion Audio Toolbox Series Windows application software.
- Remote control interfaces for GPIO, RS-232/485, and Ethernet SNMPv2.
- Includes pre-programmed RS-232 command set support for interface to Sage Digital ENDEC and Digital Alert Systems DASDEC™ EAS Encoder/Decoders.

Product Description

The DAB-300 is a dual 4-channel audio switch designed to simultaneously switch parallel program audio to analog and digital broadcast transmitters, where synchronous timing, such as in HD Radio™ operations, is critical. It functions similarly to a 4-position dual-pole switch in that when audio to the analog transmitter is switched, the output feeding the digital transmitter is switched to the corresponding program source for the analog transmitter. Automatic silence detection may be enabled to switch both analog and digital program feeds if either becomes silent for a period that exceeds the user-defined interval. Note that the inputs will be selected in pairs. If Input 1 is selected to feed the analog transmitter, Input 5 will be directed to the digital transmitter. The other inputs (2/6, 3/7, and 4/8) are paired similarly. The DAB-300 is available with four (4) or eight (8) inputs. The inputs can be AES3 digital and/or analog L/R and composite baseband, depending on the model.

The DAB-300 can be used to manually switch inputs or will automatically switch when a programmable silence interval of between 10 and 600 seconds is detected. Auto switching is programmed using a “priority list” of 4 memories, depending on configuration, which are programmed with input channels to search for audio in order of programmed preference. The DAB-300's intelligent search algorithm constantly monitors all inputs to allow immediate switching to the first active channel in the priority list without the need to sequence through inactive channels when silence is detected. The switcher has models that accept AES3 I/O, analog L/R I/O, composite baseband I/O, and hybrid versions. It also provides format conversion in addition to switching functions. The ATB-300 series audio switchers include web access and SNMP v2 support. SNMPv2 support is provided via an MIB for use with compatible remote control systems and third-party software.

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DAB-300 Manual Mode

Manual mode enables audio switching via the front panel, the free Windows Audio Toolbox App, the GPIO interface, or via Ethernet SNMPv2 interface. GPIO allows selection of each of the 4 or 8 inputs for each output, while the front panel Audio Toolbox App and GPMRC remote control panel. Serial control is also available for integration with Sage ENDEC and DASDEC™ EAS encoders.

DAB-300 Auto Mode with Auto Return Option

In auto mode, the display indicates the selected input and its activity status. The ATB-300's silence sensors automatically switch to the lowest-priority number input, which has audio, during audio loss and, in Auto Return mode, restore the primary channel once audio returns for a user-defined interval. Silence sense is user-adjustable for length from 10 to 600 seconds and thresholds from -30 to -55 dBFS. If Auto Return is not desirable or required, it may be disabled.

The DAB-300 has an **audible alarm** feature that can be programmed from the front panel. The Audible alarm will sound after a silence-detection sequence. A sonalert within the unit will sound until the unit is reset either remotely or from the front panel. This feature can be turned on or off.

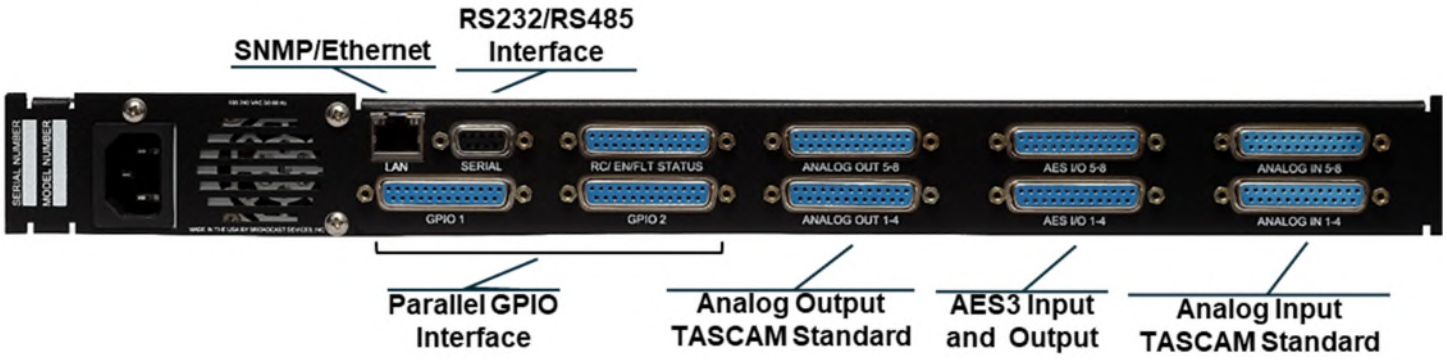
DAB-300 **Auxiliary Alarm Relay Function and Remote Enable** consists of two sets of form C contact relays available on the remote control. One relay (K1) is a maintained-closure relay, and the second (K2) can be programmed to be maintained or momentary. Both relays are activated by a silent alarm detection sequence. K1 is normally connected to a status input on a remote-control system to indicate a fault has occurred. K2 can be used for this function in the maintained mode, can also be used as a remote start for an auxiliary audio source in case of failure of the remote link audio. For example, a CD/DVD player or remote server can act as an auxiliary audio source, and a K2 programmed for momentary closure can be used to start such a source connected to an ATB-300 input.

Adjustable Input and Output Gain Controls are provided and allow the user to adjust gain in 1 dB increments from -10 dB to +10 dB, with a factory default of 0 dB. When factory default gains are used, AES3 I/O is unity. When AES3 inputs are routed to an analog channel, the analog output will correspond to -20 dB nominal below the full scale of the AES3 input, or +4 dBm for the balanced analog output. Analog L/R inputs are designed to accept a +4 dBm nominal input, producing +4 dBm at the analog output and -20 dBfs at the AES3 output.

The DAB-300 supports **active frame rate conversion** on all AES3 digital inputs. The unit can accept sample rates from 8 KHz to 96 KHz. The frame rate converter then up- or down-converts the sample rate to the selected sample rate. The DAB-300 can output 32, 44.1 or 48 KHz sample rates. The factory-default sample rate is 44.1 kHz.

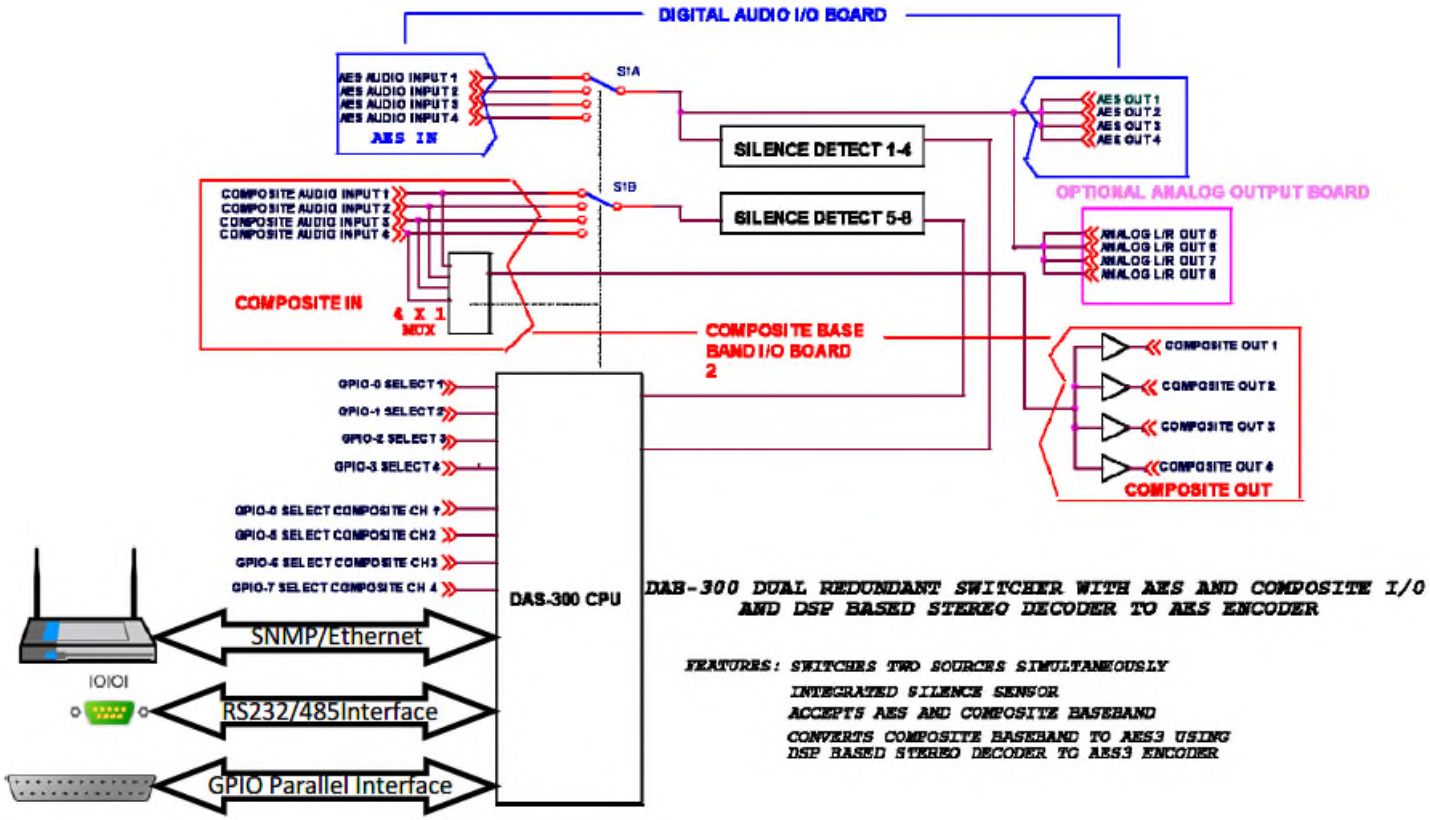
The DAB-300 **input pairs can be configured for mode of operation on an individual basis. Stereo, Mono Left, Mono Right, L+R, and Stereo Swap** can be configured from the front panel for both AES and analog inputs. Use mono left and mono right to fill in a missing channel. For example, choosing mono left will take the signal from the left channel and apply it to both channels at the unit's output. Use L+R to create a monaural input from a stereo source.

The DAB-300 allows the user to **invert the phase** (Tip/Ring Inversion) of any channel to correct for inadvertent phase inversion. Note: Phase inversion is left or right, but not both simultaneously. Input Invert Control modes are dynamically saved when selected.



DAB-300 Analog/HD Audio Switcher with silence sensors, rear panel.

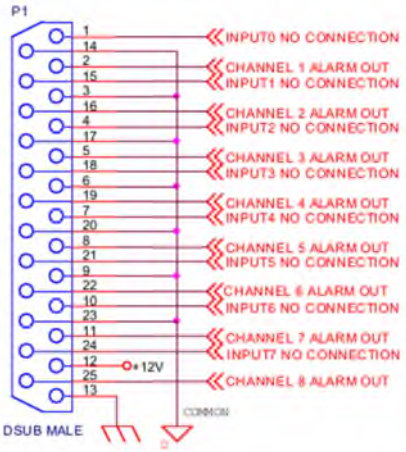
DAB-300 Analog/HD Audio Switcher



DAB-300 Analog/HD Radio Audio Switcher Block Diagram

DAB-300 Model Chart

Model	Inputs 1 through 4	Inputs 5 through 8	Outputs 1 through 4	Outputs 5 through 8
DAB-300-1	AES3	AES3	AES3	AES3
DAB-300-2	AES3	Analog	AES3	Analog
DAB-300-3	AES3	Analog	AES3	AES3
DAB-300-4	AES3	Composite	AES3	Composite
DAB-300-5	AES3	Composite	AES3	AES3
DAB-300-6	AES3	Composite	AES3	Analog



GPIO 2 Audio Loss Alarm Connector ATB/DAB Versions

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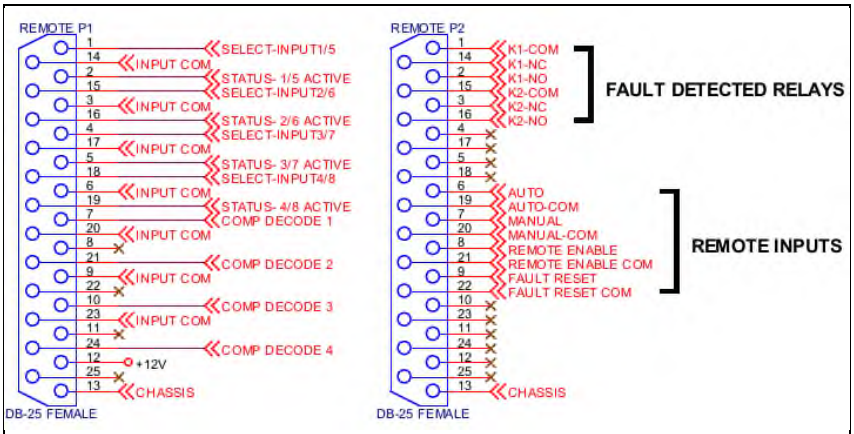

DAB-300 Remote Control Connections

Technical Specifications	DAB-300
Input and Output Types Available:	AES3 8 to 96 KHz, Analog balanced +4 dBm, Composite FM Stereo Baseband
Number of Inputs and Outputs:	Eight (8) by Configuration. See Model Chart on the previous page.
Input and Output Connectors:	DSUB25F - TASCAM Standard
AES3 Input Sample Rates:	8 to 96 KHz
AES3 Output Sample Rates:	32, 44.1, or 48 KHz—User Definable
Analog Inputs:	+4 dBm Balanced L/R +24 dBm Maximum input level
Analog Outputs:	+ 4 dBm Balanced L/R + 18 dBm Max output level
Frequency Response:	+/- 0.25 dB from 20 Hz to 20 KHz
Total Harmonic Distortion:	Less than 0.05% at headroom level
Dynamic Range:	90 dB or greater
Baseband FM Stereo Input and Output Level:	3.5 V Peak to Peak for 100% FM Modulation
Baseband FM Stereo Frequency Response:	+/- 0.05 dBm 10 Hz to 53 KHz
Remote Control:	Up to eight (8) Parallel GPIO, RS232/485 Serial, Ethernet, SNMPv2, and a free Windows-based BDI Graphical User Interface supplied. Optional GPMRC Remote Control Panel also available.
GPIO Remote Connectors:	DSUB25F
Remote Control Local Command:	Momentary to Common
Status Local:	Open Collector +5 VDC pull-up available on the connector
Serial Connector:	DSUB9F
Ethernet LAN Connector:	RJ45
Power Requirements:	100 to 240 VAC, 50/60 Hz, 0.5 amps
Operating Ambient Temperature:	32 to 122 degrees, F (0 to 50 degrees, C)
Humidity:	95%, Non-condensing
Mechanical Dimensions:	19 in W x 10 in D x 1.75 in H (483 mm W x 254 mm D x 44 mm H) Standard One EIA Rack Unit Enclosure
Shipping Dimensions:	22 in W x 14 in D x 7 in H (559 mm W x 356 mm D x 178 mm H)
Shipping Weight:	15 lbs. (7 kg)

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