## AudioBox AB64 Show Controller Specifications

- NUMBER OF SHOWS: 128 Show Files

- NUMBER OF LISTS: 128 Cue Lists per Show

- NUMBER OF PATHS: 2048 x 32KB size limit per Show

- NUMBER OF CUES: Unlimited within 32KB Path size limit

- NUMBER OF MESSAGES: Unlimited within 32KB Path size limit

- NUMBER OF OPEN LISTS: Eight simultaneous randomly chosen

- CUE SEQUENCE TIMING: Follows List/Stopwatch/MIDI Time Code

- LIST CLOCK TIMING: Stopwatch, MIDI Time Code or Real Time Clock

- ADDITIONAL FEATURES:
  Auto Clock Start On/Off
  MIDI Echo On/Off
  MIDI Loopback On/Off
  Clock Running Flag for each list
  Clock type flag for each list
  Auto Cue Path Sequencing flag for each list
  Open List when Show opens flag
  Default Show opens automatically
  Clock Zeros/Does not Zero with each cue
  Note Off mask for each list
  Every Cue is a synchronously timed MIDI sequence just like a song

- RESPONDS TO MSC: LOAD/GO/STOP/RESET/all SOUND COMMANDS

- GPIO INPUTS RESPOND TO CONTACT CLOSURES: cue address/trigger  up to 255 cues

- CONTROL NETWORK CONNECTION: 10/100Mb/Sec RJ45 ethernet port for transfer of  randomly accessible show files and high speed control and monitoring using up to  four host computers on a single LAN

- HARD DRIVE(S): Standard UDMA/ATA100 for storage of shows, cues, presets  and digital audio

- CONTROL PORTS: MIDI IN 1, MIDI OUT 1, MIDI IN 2, MIDI OUT 2, RJ45, GPIO

- POWER INPUT: 100-240VAC (external AC power supply included) or 13.8VDC +/-5% at  10A maximum

- GPIO: 25 pin female 'D' connector for address/trigger of up to 255 specific  cues and/or playback of 255 selections. Two optoisolated open collector output  relays can be controlled from internal or external MIDI commands.

- COOLING: Extremely quiet internal fan. Internal fan in external AC power  supply.

- RIDE ATTRACTION VEHICLE VERSION OPTIONS:  Ruggedized chassis/solid state hard disk drive for up to 15G  shock and vibration. Please contact RSD for quote.

- CHASSIS HWD: 3.5x19x11.6 inches/9x48x30cm Weight: 10lbs/4kg

**North American Sales Office**
**727 Lansdowne Street West, Peterborough, ON CAN  K9J 1Z2**
**Toll Free: 1 888-782-5507    Phone: 705 741.0577    Fax: 705 741.0677**

**Richmond Sound Design Ltd.**

**PERFORMANCE FOR THE LONG RUN**

*It's A Show Controller --*
*-- It's A Sound Controller*

*Modular Design - 16, 32, 48 or 64 I/O Channels*
*Cobranet I/O Optional*
*Digital Recording - up to 64 Channels*
*16, 32, 48 or 64 Track Random-Access Playback*
*Up to 64x64 Live Matrix - 24 Bit Converters*
*Up to 900 Hours Onboard Digital Audio*
*448 Bands of Assignable Parametric EQ*
*4096 Dynamically Controllable Crosspoints*
*29000mS Total Live Delay Available*
*Millions of Moves Storable Onboard*
*Unlimited Capabilities with Software*
*for all Computer Platforms and*
*Standard MIDI Controllers*

**It Just Doesn't Get**
**Any Better Than This.**

*Hundreds of Shows*
*Thousands of Cue Lists*
*Hundreds of Thousands*
*of Paths*
*Millions of Cues*
*Many Millions of MIDI Messages*
*... using the AudioBox AB64*
*It's A Show Controller --*
*-- It's A Sound Controller*

**www.RichmondSoundDesign.com**

## AudioBox AB64 Audio Specifications

- PLAY/STOP/RESUME RANDOM PLAYBACK ACCESSIBILITY: Synchronous or asynchronous, 48000 samples per second. Plays any number of tracks at any time, triggered simultaneously or in sequence, overlapping or not. For example, at one moment the AB64 can play up to 32 stereo tracks, triggered independently or in multi channel combinations such as 16 mono tracks, 8 stereo tracks, 4 - four

- AUDIO RECORDING CAPABILITY: Records any number of tracks, up to 64, at 48000 samples per second. Audio can be recorded at the inputs or at the outputs of the matrix, generating a multi-channel audio file on the internal disk drive. These multi-channel files may be played back at the full channel count immediately after the recording is ended. They can also be split into a set of single-channel files for playback in any combination with other audio selections on the disk drive, or transfered at high speed to a computer for editing and archiving.

- HARD DRIVE(S): One or two standard ATA100 (UDMA) for storage of system cues/presets and up to 64 channels of synchronous and randomly accessible (to mS specific time values) simultaneous digital audio playback. When two hard drives are installed, the secondary drive acts like a RAID backup unit and perfectly mirrors the primary drive but is not used during normal operation unless the primary one fails. If the primary drive is totally dead, the AB64 automatically switches over to the secondary drive during bootup. If the primary drive is bad but not totally dead, the secondary drive can be selected manually from the front panel.

- MAXIMUM NUMBER OF AUDIO SELECTIONS ON THE HARD DRIVE: 8063

- TRACK-HOURS OF AUDIO STORAGE: Approximately 3 per GB of hard drive size

- MAXIMUM HARD DRIVE SIZE: 3 teraBytes

- CONVERTERS: 24 bit linear 4th-order delta-sigma at 48kHz sampling frequency

- FREQUENCY RESPONSE: +/-0.3dB from 20Hz to 20kHz

- THD+N: better than -102dB, unity gain, 1kHz, unweighted, 22Hz - 22kHz

- EQUALIZATION: Assignable up to 7 band true parametric on any input and output

- CROSSPOINT DELAY SETTINGS: 0 to 683mS in 1 sample increments available at each crosspoint - total delay budget per each group of 16x8 is 683mS

- INPUT DELAY SETTINGS: 0 to 300mS in 1 sample increments available at each input - total delay budget per each group of 8 inputs is 300mS

- OUTPUT DELAY SETTINGS: 0 to 597mS in 1 sample increments available at each output - total delay budget per each group of 8 outputs is 597mS

- TOTAL DELAY AVAILABLE PER DSP CARD: 7.255 Seconds, allocated to groups of inputs, outputs and crosspoints

- TOTAL DELAY AVAILABLE IN A 64 CHANNEL SYSTEM: 29.020 Seconds on all inputs, outputs and crosspoints

- SYSTEM DELAY: 1.4mS

- CROSSTALK: -95dB between inputs (terminated) 10kHz +18dBu

- ANALOG INPUTS: One 25 pin 'D' connector per eight channels, 15k ohm, +20dBu max, CMR 60dB typical, electronically impedance balanced

- ANALOG OUTPUTS: One 25 pin 'D' connector per eight channels, 600 ohm, +20dBu max, electronically impedance balanced

- DIGITAL AUDIO NETWORK CONNECTIONS: One 100Mb/Sec RJ45 CobraNet port per 32 input and output channels for transmission of digital audio over CobraNet networks

- CONTROL NETWORK CONNECTION: 10/100Mb/Sec RJ45 ethernet port for transfer of digital audio and show files and high speed control and monitoring using up to four host computers on a single LAN

- CONTROL PORTS: MIDI IN 1, MIDI OUT 1, MIDI IN 2, MIDI OUT 2, RJ45, GPIO

- POWER INPUT: 100-240VAC (external AC power supply included) or 13.8VDC +/-5% at 10A maximum

- GPIO: 25 pin female 'D' connector for address/trigger of up to 255 specific cues (which can, in turn, play back an unlimited number of audio selections, depending on the programming of the cues) and/or playback of 255 selections. Two optoisolated open collector outputs can be controlled from internal or external midi commands.

- COOLING: Extremely quiet internal fan. External AC power supply can be remotely located to completely isolate the sound from its cooling fan.

- RIDE ATTRACTION VEHICLE VERSION OPTIONS: Ruggedized chassis/solid state hard disk drive for up to 15g shock and vibration. Please contact RSD for quote.

## AudioBox AB64 - A Modular System

- Start with the base model (AB64BSE-B): A 2U chassis with power supply, CPU board and show controller then add DSP cards (AB64DSP-B), analog audio cards (AB64ANA-B), CobraNet cards (CM1-FBP) and hard drives.

- Add one, two, three or four DSP cards and get 16, 32, 48 or 64 digital audio playback/record channels and a 16x16, 32x32, 48x48 or 64x64 matrix with 256, 1024, 2304 or 4096 crosspoints, respectively.

- Add one, two, three or four analog cards and get 16, 32, 48 or 64 analog audio inputs and 16, 32, 48 or 64 analog audio outputs, respectively.

- Add one or two CobraNet cards and get 32 or 64 digital audio inputs and 32 or 64 digital audio outputs, respectively.

- Each matrix input can mix together three possible signal sources: playback, analog and CobraNet. The output of this mix goes through overall EQ, delay and gain processing before going into the matrix itself.

- Each matrix crosspoint has polarity and dynamic level and delay controls.

- Each matrix output goes through overall EQ, delay and gain processing then gets sent to three possible places: analog, record and CobraNet module.

- The outputs of the matrix are always sent to the appropriate CobraNet module, but routing from there onto the actual CobraNet is configurable on the CobraNet itself. In other words, the audio on a given CobraNet channel is not transmitted out onto the CobraNet until that output is enabled and assigned to an input somewhere else on the CobraNet.

## AB64 CONFIGURATIONS using a single AB64BSE-B Base Model

| Playback Channels | Matrix | Analog Inputs | Analog Outputs | CobraNet Inputs | CobraNet Outputs | AB64DSP-B | AB64ANA-B | CM1-FBP |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 16x16 | 16 | 16 | 0 | 0 | 1 | 1 | 0 |
| 16 | 16x16 | 16 | 16 | 16 | 16 | 1 | 1 | 1 |
| 16 | 16x16 | 0 | 0 | 16 | 16 | 1 | 0 | 1 |
| 32 | 32x32 | 32 | 32 | 0 | 0 | 2 | 2 | 0 |
| 32 | 32x32 | 32 | 32 | 32 | 32 | 2 | 2 | 1 |
| 32 | 32x32 | 16 | 16 | 32 | 32 | 2 | 1 | 1 |
| 32 | 32x32 | 0 | 0 | 32 | 32 | 2 | 0 | 1 |
| 48 | 48x48 | 48 | 48 | 0 | 0 | 3 | 3 | 0 |
| 48 | 48x48 | 48 | 48 | 48 | 48 | 3 | 3 | 2 |
| 48 | 48x48 | 32 | 32 | 48 | 48 | 3 | 2 | 2 |
| 48 | 48x48 | 16 | 16 | 48 | 48 | 3 | 1 | 2 |
| 48 | 48x48 | 0 | 0 | 48 | 48 | 3 | 0 | 2 |
| 48 | 48x48 | 16 | 16 | 32 | 32 | 3 | 1 | 1 |
| 64 | 64x64 | 64 | 64 | 0 | 0 | 4 | 4 | 0 |
| 64 | 64x64 | 64 | 64 | 64 | 64 | 4 | 4 | 2 |
| 64 | 64x64 | 64 | 64 | 32 | 32 | 4 | 4 | 1 |
| 64 | 64x64 | 48 | 48 | 64 | 64 | 4 | 3 | 2 |
| 64 | 64x64 | 48 | 48 | 32 | 32 | 4 | 3 | 1 |
| 64 | 64x64 | 32 | 32 | 64 | 64 | 4 | 2 | 2 |
| 64 | 64x64 | 16 | 16 | 64 | 64 | 4 | 1 | 2 |
| 64 | 64x64 | 0 | 0 | 64 | 64 | 4 | 0 | 2 |
| 64 | 64x64 | 32 | 32 | 32 | 32 | 4 | 2 | 1 |