# StudioComm

from **STUDIO TECHNOLOGIES INC.**

Model 68A & Model 69A

StudioComm for Surround Sound

As the production of multi-channel "surround" audio material becomes prevalent, the need for monitoring these sources becomes imperative for more and more facilities. Studio Technologies has addressed this need with the StudioComm for Surround Model 68A Central Controller and Model 69A Control Console. The system is perfect for a variety of applications, including adding "5.1" monitoring capability to disk-based recording systems. It's also ideal for upgrading a post-production or broadcast facility to support multi-channel monitoring. For the first time, multi-channel monitoring features such as source selection, level control, and downmix are available in an easy-to-use, cost-effective system.

The Model 68A/Model 69A combination is expressly designed to support 6-channel (5.1) monitoring, with the channels designated as left, center, right, left surround, right surround, and LFE. While it is anticipated that this channel arrangement will be most common, the channels can obviously used in alternative arrangements.

A StudioComm for Surround system starts with the Model 69A Control Console, a compact but comfortable "command center," that is designed to reside at the operator's location. Using a single 9-pin cable, the Model 69A connects to the Model 68A Central Controller. The Model 68A occupies just one rack space but allows connection of two multi-channel inputs, two stereo inputs, along with separate 6-channel and stereo monitor outputs. With the StudioComm for Surround Sound system any audio console, disk-based recording system, or broadcast facility can have a complete multi-channel monitor system.
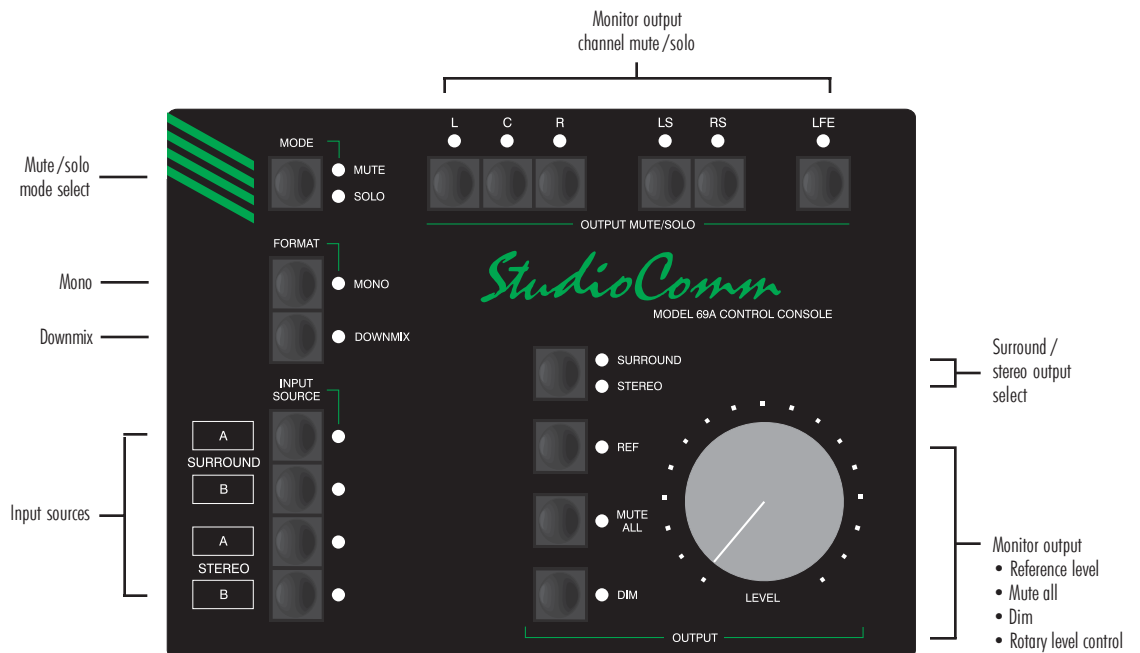
Model 69A Control Console Front Panel

Model 68A
Central Controller

The Model 68A Central Controller is a single rack-space unit that contains analog, digital, and power supply electronics. Four analog sources can be connected: two surround (5.1) and two stereo. In many applications the first surround input, Surround A, will be connected to a multi-channel output on an audio console or digital audio workstation. The second surround input, Surround B, will be connected to a playback device, such as a multitrack tape recorder or disk storage system. For film or video post applications Surround A would be considered the direct source, while Surround B would be considered the playback source.

The two stereo inputs, Stereo A and Stereo B, are provided for general-purpose use and can be connected to a variety of 2-channel direct and playback sources. For flexibility, the surround and stereo inputs are compatible with balanced or unbalanced signals having a nominal level range of –12dBV to +6dBu. Fifteen-turn trim potentiometers are used to precisely calibrate the input signals.

The Model 68A provides separate monitor outputs to support both surround (5.1) and stereo loudspeaker systems. The outputs are electronically balanced and designed for connection to audio power amplifiers or amplified loudspeakers. Protection circuitry provides power-up and power-down protection.

Audio input and output connections are made using three 25-pin D-subminiature connectors. The Model 68A's audio path features analog switches for input source selection and laser-trimmed voltage-controlled-amplifiers (VCA) for monitor level control. One 9-pin D-subminiature connector is used to connect the Model 68A to the Model 69A Control Console. A second 9-pin "D-sub" connector is used to interface remote control signals with the Model 68A.

An 8-bit micro-controller provides the logic "horsepower" for the Model 68A. AC mains power is connected directly to the Model 68A, which is factory selected for 100, 120, or 220/240V operation. The internal power supply utilizes a toroidal mains transformer for quiet audio operation.
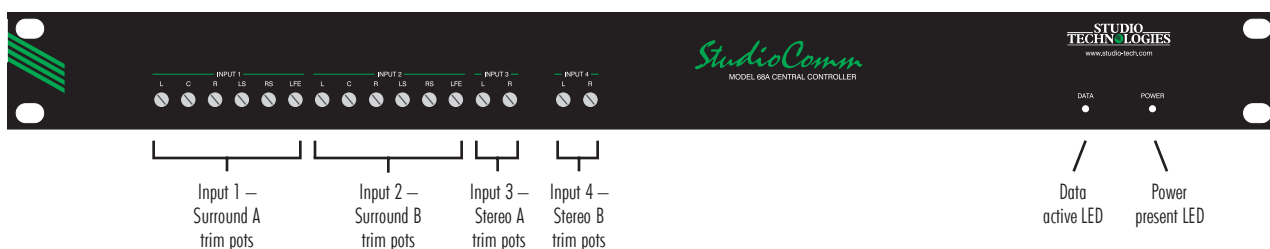
Model 69A
Control Console

The Model 69A Control Console is a compact, self-contained unit designed to be located at the operator's position. It allows fingertip control of all monitoring parameters. Numerous LED indicators provide complete status information. A major strength of the Model 69A is its ability to configure, under software control, a number of operating parameters. All configuration parameters are stored in non-volatile memory.

The Model 69A provides four buttons and associated LEDs for selection of the surround and stereo sources to be monitored. While in most cases only one input source will be monitored at a time, multiple inputs can be selected for simultaneous monitoring. This allows two, three, or all four of the inputs to be combined ("summed"). While there is no independent control of the input levels, this feature can be useful for creating rough mixes from the source signals. It is also a fast, effective means of making a "seat-of-the-pants" check on the phase relationship between synchronized signals.

The surround and stereo monitor output levels can be controlled by way of a large, easy-to-use rotary control. The "curve" or "taper" of the level control can be configured to match an operator's preference. The choices available are true logarithmic and modified logarithmic.

Model 68A Central Controller Front Panel

Input 1 — Surround A trim pots
Input 2 — Surround B trim pots
Input 3 — Stereo A trim pots
Input 4 — Stereo B trim pots

Data active LED
Power present LED

The level control auto mute-all function allow the monitor output channels to automatically mute whenever the rotary level control is in its fully counterclockwise (minimum) position. This is useful in applications such as broadcast. By using the reference level function, the monitor output level can set to a pre-configured value. This is provided for audio-with-picture applications that require a specific monitor level. The reference level is easily configured by taking an electronic "snapshot" of the position of the rotary level control.

For operator convenience, the dim function allows the monitor output level to be reduced by a fixed dB amount. The dim level is selected from four available levels. A mute all function allows all of the monitor output channels to be simultaneously muted. The mute/solo section provides individual output channel control. One push-button switch sets the operating mode for either mute or solo. In the mute mode, individual channels can be muted as required. In the solo mode, one channel can be monitored while the others are automatically muted. Depending on the configuration, multiple channels can be simultaneously selected for "soloing." The flexibility of having both mute and solo available allows an operator to quickly select the most comfortable and productive operating mode.
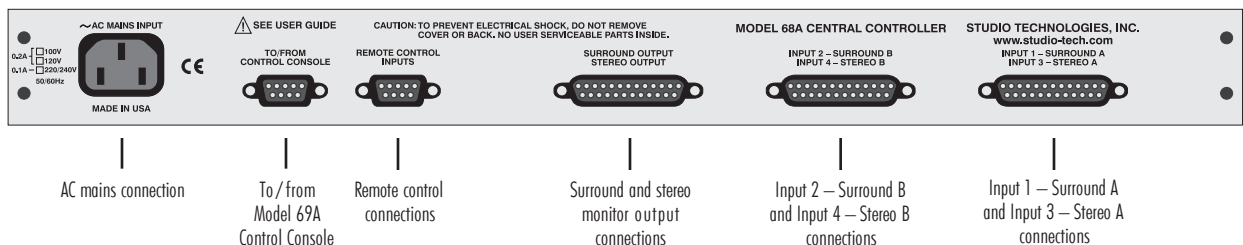
Two functions allow the format of the monitored sources to be checked for level or phase inconsistencies. The downmix function is used to create a stereo signal from a surround (5.1) source. The mono function allows a stereo signal to be added (summed) and monitored. The downmix and mono functions can be simultaneously enabled, allowing a surround signal to be checked for mono compatibility. The mono operating mode can be selected from two choices: mono-to-left-and-right or mono-to-center. This allows support for both music and audio-with-picture applications. A bandpass filter feature is associated with the mono function. It is included to assist an operator in determining compatibility with "real world" playback environments. A bandpass filter can be inserted into the path of the mono signal, allowing the response of a monaural loudspeaker associated with an inexpensive television or portable radio to be simulated.

The Model 69A Control Console connects to, and is powered by, the Model 68A Central Controller using a standard 9-pin D-subminiature cable. The Model 69A generates MIDI system-exclusive messages to control the Model 68A. Remote-control signals connected to the Model 68A Central Controller are routed to the Model 69A via pins in the 9-pin interconnecting cable.

Remote Control Capability

For flexibility, the StudioComm for Surround system is designed to easily integrate with recording consoles, studio communications systems, and film motion-control electronics. Three remote-control input functions are provided: mute all, dim, and input source override. By providing access to the StudioComm's mute all and dim functions, talkback or slate activity from an audio console or other communications system can control the monitor output level. The input source override function is provided expressly for film post applications, allowing automatic switching of the StudioComm's input source whenever the mode of a recording system changes between playback and record. This function, often referred to as PEC/direct switching, allows accurate monitoring during dialog replacement or other overdub sessions.

Model 68A Central Controller Back Panel

AC mains connection | To/from Model 69A Control Console | Remote control connections | Surround and stereo monitor output connections | Input 2 — Surround B and Input 4 — Stereo B connections | Input 1 — Surround A and Input 3 — Stereo A connections

Limitations on Signal Routing

While the StudioComm for Surround system for multi-channel monitoring will do many wonderful things, it is not designed to selectively route input signals to the different output channels. The input-channel-to-output-channel relationship is maintained. A signal that arrives on the center channel of input 2 will, when selected, output only on the center channel of the monitor output. Any rerouting of the input signals must be done prior to their connection to the StudioComm for Surround system. This should not be a drawback in most facilities, but it's important to highlight this fact.

Other StudioComm for Surround Systems

The Model 68A/Model 69A combination is perfect for applications that require a limited number of surround sources and a maximum of six output channels. For other applications the Model 58/Model 59 combination from Studio Technologies, Inc. is worth considering. A Model 59 Control Console connects to up four Model 58 Central Controllers. Each Model 58 supports four 2-channel inputs, two insert sections, and two output channels in a single rack space. By selecting two, three, or four Model 58s, 4-, 6-, or 8-channel systems can easily be created.

Specifications

Model 68A Central Controller

General Audio:
Frequency Response: 20Hz-20kHz ±0.1dB (down 0.5dB @60kHz), monitor outputs
Distortion (THD+N): 0.03%, measured at 1kHz, +4dBu, monitor outputs
S/N Ratio: 92dB, ref +4dBu out
Crosstalk: 78dB, ref +4dBu in

Audio Inputs: 16, organized as two surround (5.1) and two stereo (2-channel) inputs
Type: electronically balanced, compatible with balanced or unbalanced sources
Impedance: 24k ohms
Nominal Level: –12dBV to +6dBu, adjustable
Level Calibration: 15-turn trim potentiometers

Monitor Outputs: 2, one surround (5.1), one stereo (2-channel)
Type: electronically balanced, compatible with balanced or unbalanced loads
Maximum Level: +27dBu into 10k ohms, +26dBu into 600 ohms

Bandpass Filter:
Response: –3dB@100Hz and 5KHz, nominal, 12dB/octave

Connectors:
Audio: 3, 25-pin D-subminiature female
Control: 2, 9-pin D-subminiature female
AC Mains: 3-blade IEC-type

Remote Control Inputs: 3
Type: +5V logic, activates on closure to system common

AC Mains Requirement:
100, 120, or 220/240V, ±10%, factory configured, 50/60Hz

Dimensions (Overall):
19.00 inches wide (48.3cm)
1.72 inches high (4.4cm)
8.75 inches deep (22.2cm)
(1 standard rack space)

Weight: 8.2 pounds (3.7kg)

Model 69A Control Console

Application: supports Model 68A Central Controller

Power: provided by Model 68A Central Controller

Output Data: generates MIDI system-exclusive messages

Connector: 1, 9-pin D-subminiature female

Dimensions (Overall):
7.2 inches wide (18.3cm)
2.2 inches high (5.6cm)
5.4 inches deep (13.7cm)

Weight: 1.9 pounds (0.9kg)

Specifications subject to change without notice.

Contact Us

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