optimized for broadcast

5.1 SURROUND MONITORING SYSTEM

broadcast master control | broadcast post-production

Model 76B and Model 76DB Central Controllers
Model 77B and Model 71 Control Consoles

STUDIO TECHNOLOGIES INC.

76B 76DB 77B 71

The StudioComm Model 77B Control Console and Model 76B Central Controller with analog outputs or Model 76DB Central Controller with digital outputs enable simple and effective monitoring of 5.1 surround and stereo audio material. Especially well suited for broadcast master control and post-production applications. System features include:

- **Digital audio inputs**
- **Analog outputs (Model 76B)**
- **Digital outputs (Model 76DB)**
- **Flexible input source selection**
- **Downmix**
- **Dolby® E dialnorm support**
- **Level adjustment, reference level, and dim**
- **Auxiliary monitor output (2-channel)**

Model 77B and Model 71 Control Consoles

The Model 77B Control Console is the "command center." Designed to reside at an operator's location, it allows fingertip selection of all monitoring functions. Numerous LED indicators provide complete status information. Up to six unique input choices are available. Each of the choices can be configured from the system's two surround (5.1) and three stereo (2-channel) inputs. The configuration mode also allows stereo inputs A and B to be used as either stereo or dual monaural sources. This can be especially useful in broadcast applications where a 2-channel AES3id source may carry two independent monaural signals.

A large, easy-to-use rotary digital encoder provides control of the surround monitor output level in precise 0.5-dB steps. A 4-digit numeric display indicates the monitor output or dialnorm level in real time. The monitor output level can be adjusted via the rotary level control, the reference level function, or by way of the dialnorm information included in Dolby E metadata (refer to "Dialnorm Support").
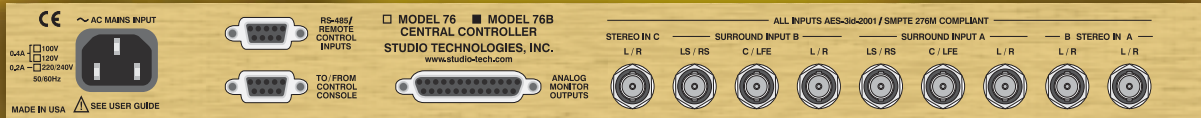
The Model 71 Control Console works with the Model 77B to provide additional user locations with the most frequently desired functions: level adjustment, reference level, and dim.

StudioComm

DIALNORM SUPPORT

The dialog normalization "dialnorm" value is an integral part of many broadcast distribution systems and represents the average dialog level of an associated audio program, ending up as part of consumer audio playback systems. The dialnorm level value is a component of the Dolby E metadata, and when de-embedded, can be "read" by the Model 76B or Model 76DB Central Controller and displayed on the 77B Control Console. By automatically adjusting the surround monitor output level in response to the dialnorm value, a professional broadcast or post-production environment can more accurately simulate the end user's experience.

Model 76B and Model 76DB Central Controllers

The Model 76B and Model 76DB Central Controllers are rack mountable and offer two surround (5.1) and three stereo (2-channel) digital inputs that are compatible with AES3id sources. Sample rates of up to 192 kHz and bit depth of up to 24 are directly supported. Exceptional dynamic range and extremely low distortion ensure that the audio quality of each source is maintained.

The model 76B Central Controller has eight analog balanced line-level outputs organized as:

- **Surround (5.1)**
- **Auxiliary stereo (2-channel)**

The Model 76DB Central Controller offers 16 digital output channels with transformer-coupled outputs and selectable impedance (75 or 110 ohms):

- **Pre-fade surround (5.1)**
- **Post-fade surround (5.1)**
- **Auxiliary pre-on/off stereo (2-channel)**
- **Auxiliary stereo (2-channel)**

The Model 76DB's sync input allows support for video (bi-level and tri-level), word clock, DARS, and AES3id. Sample rate conversion is available on one input. In addition, up to 340 milliseconds of digital delay can be selected to compensate for processing delays in an associated video path.

One Model 76B or Model 76DB Central Controller can support a combination of up to four Model 77B or Model 71 Control Consoles.

Model 76B Central Controller

General Audio

Frequency Response	20 Hz to 40 kHz ±0.05 dB (192 kHz sample rate)
Distortion (THD+N)	0.004%, ref 1 kHz, +4 dBu output
S/N Ratio	86 dB, ref +4 dBu output
Dynamic Range	greater than 106 dB
Crosstalk	104 dB @ 1 kHz; 90 dB @ 20 kHz, ref −1 dBFS input

Digital Audio Inputs

	five (18 audio channels)
Configuration	two surround (5.1) and three stereo (2-channel)
Type	AES3id/SMPTE 276M (75 ohms, unbalanced)
Connectors	BNC
Supported Sample Rates	32, 44.1, 48, 88.2, 96, 176.4, and 192 kHz
Word Length	24 bits maximum
Sync Source	all inputs independently self-clocking

Analog Monitor Outputs

	eight
Configuration	organized as one surround (5.1) and one auxiliary stereo (2-channel)
Type	electronically balanced
Maximum Level	+26 dBu into 600 ohms or greater
Connector	25-pin D-subminiature female

Downmix

	5.1 to stereo, stereo to mono

Dolby E Metadata Input

Type	RS-485/RS-422
Connector	9-pin D-subminiature female
Data Rate/Format	115.2 kbit/s, 8-N-1

Control Console Interface

Type	RS-485, 115.2 kbit/s, 8-N-1
Connector	9-pin D-subminiature female
Power	12 volts DC, 200 milliamperes maximum

Remote Control Inputs

	three
Functions	remote mute all, remote dim, auxiliary output on/off

AC Mains

Requirement	100, 120, or 220/240 V, ±10%, factory configured, 50/60 Hz, 30 watts maximum
Connector	3-blade, IEC 320 C14-compatible (mates with IEC 320 C13)
Mounting	one space in a standard 19-inch rack
Dimensions	19.00 in. wide (48.3 cm) x 1.72 in. high (4.4 cm) x 8.75 in. deep (22.2 cm)
Weight	8.8 pounds (4.0 kg)

Model 76DB Central Controller

General Audio

Supported Sample Rates	32, 44.1, 48, 88.2, 96, 176.4, and 192 kHz
Word Length	24 bits maximum
Internal Processing	32 bits
Dynamic Range	134 dB

Digital Audio Inputs

	five (18 audio channels)
Configuration	two surround (5.1) and three stereo (2-channel)
Type	AES3id/SMPTE 276M (75 ohms, unbalanced)
Connectors	BNC
Sample Rate Conversion	available on Stereo Input C

Sync Input

Sources	video (bi-level, tri-level), word clock, DARS (AES11), AES3id
Jitter	4 ns (p-p) maximum
Connector	BNC
Termination	75 ohms, selectable on/off

Digital Monitor Outputs

	four (16 audio channels)
Configuration	organized as two surround (5.1) and two auxiliary stereo (2-channel)
Type	AES3id/SMPTE 276M (75 ohms) or AES3 (110 ohms), selectable
Connector	25-pin D-subminiature female

Configurable Delay

	0 to 340 milliseconds @ 48 kHz sample rate

Downmix

	5.1 to stereo, stereo to mono

Dolby E Metadata Input

Type	RS-485/RS-422
Connector	9-pin D-subminiature female
Data Rate/Format	115.2 kbit/s, 8-N-1

Control Console Interface

Type	RS-485, 115.2 kbit/s, 8-N-1
Connector	9-pin D-subminiature female
Power	12 volts DC, 500 milliamperes maximum

Remote Control Inputs

	three
Functions	remote mute all, remote dim, auxiliary output on/off

AC Mains

Requirement	100 to 230 V, 50/60 Hz, 15 watts maximum
Connector	3-blade, IEC 320 C14-compatible (mates with IEC 320 C13)
Mounting	one space in a standard 19-inch rack
Dimensions	19.00 in. wide (48.3 cm) x 1.72 in. high (4.4 cm) x 7.00 in. deep (17.8 cm)
Weight	6.2 pounds (2.8 kg)

Model 77B and Model 71 Control Consoles

Application	up to a total of four Control Consoles can be connected to a Central Controller

Power Requirement (typically provided by Central Controller)

Model 77B	12 volts DC, 100 milliamperes maximum
Model 71	12 volts DC, 35 milliamperes maximum

Central Controller Interface

Type	RS-485, 115.2 kbit/s, 8-N-1
Connector	9-pin D-subminiature female

Dimensions

Model 77B	7.20 in. wide (18.3 cm) x 2.20 in. high (5.6 cm) x 5.40 in. deep (13.7 cm)
Model 71	3.20 in. wide (8.1 cm) x 2.20 in. high (5.6 cm) x 4.1 in. deep (10.4 cm)

Weight

Model 77B	1.7 pounds (0.8 kg)
Model 71	0.8 pounds (0.4 kg)

At Studio Technologies we design and manufacture dependable, high-performance audio products for demanding professionals. For over 30 years we have never wavered in our commitment to building rock-solid products and offering outstanding customer service. Our products are used worldwide in broadcast, studio, stadium, and corporate environments.

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