



**200 SERIES
ON-AIR BROADCAST CONTROL CONSOLES**



auditronics, inc.

Description

The 200 Series On-Air Broadcast Control Console represents the culmination of latest technology applied for broadcast use. The design is based on information gathered during an extensive two-year research program conducted throughout the broadcast industry and the expertise of Auditroneics 15-year history in this business.

The 200 Series offers a high degree of reliability together with simplicity of use in a compact, operator oriented package. It satisfies the requirements of both engineering and on-air personnel, while offering the station owner a very cost effective investment.

Consoles are available in four mainframe sizes to cover a range of applications from newsrooms to the largest multi-studio installations. The totally modular construction allows initial purchase of only the functions and accessories needed at the time, while allowing for simple future expansion.

Signal level for all inputs, both mono and stereo, is controlled by tested and proven VCA (Voltage Controlled Amplifier) technology. This means that the fader is outside of the audio signal path, acting only to vary a DC control voltage input to the VCA, thus eliminating typical noise problems caused by contaminated or worn fader elements. The use of VCA's also ensures precise stereo tracking of the left and right channels within 1/4 dB over a 90 dB range.

Penny and Giles conductive plastic linear motion faders are used on all inputs. These faders are internationally recognized for their high quality and reliability. Each fader is equipped with an off position switch which may, depending on user preference, be used to turn the module on and off, to control external devices, or for automatic cueing.

Microphone inputs use high quality Jensen transformers, featuring wide bandwidth and low distortion characteristics. Stereo Line inputs feature a unique, actively balanced input stage with separate internal gain trims for both "A" and "B" inputs on each channel, permitting perfect channel balance. Both microphone and line inputs exhibit an excellent common mode rejection ratio (the ability to reject extraneous external noise).

Input module off/on control is accomplished by CMOS logic controlled by Hall-effect switches, ensuring high reliability, noiseless switching, and an extremely long life (five million cycles typically).

The comprehensive, flexible, and easy-to-use logic system provides a number of benefits for both

technical and on-air personnel. The stereo line input modules may be configured to start an external device or to turn on via control of an external device. Microphone input modules may be disabled via an external cough button, or commanded on by the intercom function of the studio monitor module, completing an integral two-way communications system capable of interface with two studios. Logic for tally lamps is also provided. All logic circuitry is DC voltage controlled.

The stereo headphone amplifier provides ample power for use even with low impedance headphones. It also includes a two band equalizer, with in/out switch, which may be used for local equalization without affecting the program output. Source selection follows the control room monitor source or the cue bus, and both may be selected simultaneously, split between the left and right outputs.

Program, audition, and mono line outputs are transformer isolated and capable of +30 dBm, providing the user with extensive operational headroom, excellent phase response, low distortion, and short circuit protection. Control room and studio monitor outputs are balanced and transformerless and capable of +24 dBm.

Each module in the 200 Series includes on-board voltage regulation with current limiting, providing excellent signal isolation, the elimination of power sensing lines and simplification of powering requirements, and protection from mass failure due to individual module problems.

Careful system design has virtually eliminated hand wiring, enhancing the reliability of the console. Installation is simplified by the use of solderless, locking, strain relieved interface connectors which mount directly to the console's motherboard. Both the meter panel and console module/motherboard assembly flip up inside of the outer shell to facilitate easy installation and maintenance; all access may be obtained while seated in the operator's position.

Standard wood trim provided is solid mahogany; however, walnut, oak or cherry are optionally available at no additional charge if specified at time of order. Each console includes all mating connectors, installation tools, basic spare parts kit, and service manual at no extra charge.

Available with both mono and stereo outputs, and a wide choice of functions and accessories, the 200 Series is the logical choice for those progressive facilities needing to install equipment with provisions for future adaptability and growth.

Standard Features

- VCA controlling faders, eliminating noise due to contamination or wear
- Noiseless Hall-effect controlled CMOS muting
- Comprehensive user-oriented logic system
- On-board power regulation on each module
- + 30 dBm output capability
- Control Room Monitor with 8 input selections
- Headphone Amplifier with local EQ
- One year warranty

Accessories

MODEL 200-CSM

Communications/Studio Monitor—Provides monitoring selection and control, as well as a complete two-way communications system, for two studios.

MODEL 201-PEQ

Personality Equalizer—Allows each on-air personality to have their own customized plug-in equalization card preset for their individual voice.

MODEL 200-SEQ

Sweep Equalizer—Provides three bands of continuously variable, fixed Q equalization.

MODEL 201-LS8

Stereo Line Selector—Permits any of 8 stereo line sources to be assigned to a single stereo line input module.

MODEL 200-VC

Voice Controller—A mono or stereo compressor/limiter/noise gate utilizing the VCA circuitry of the input modules.

MODEL 200-TEL

Telephone Interface—Enables complete handling, processing and recording of telephone calls without compromising other console functions.

*MODEL 202-DC

Digital Clock—Provides an accurate digital readout of hours, minutes and seconds.

*MODEL 202-DT

Digital Timer—Provides accurate spot timing with controls for manual or automatic start/stop/reset.

MODEL 200-PPS

Phantom Power Supply—Supplies 48V for use with condenser microphones.

Tape Machine Remote Controls

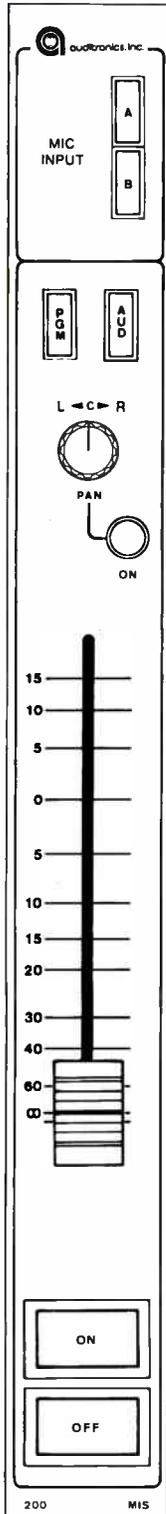
Redundant Powering

Patch Bay

Peak Program Meters

*Not Available on Model 206

Microphone Input Module



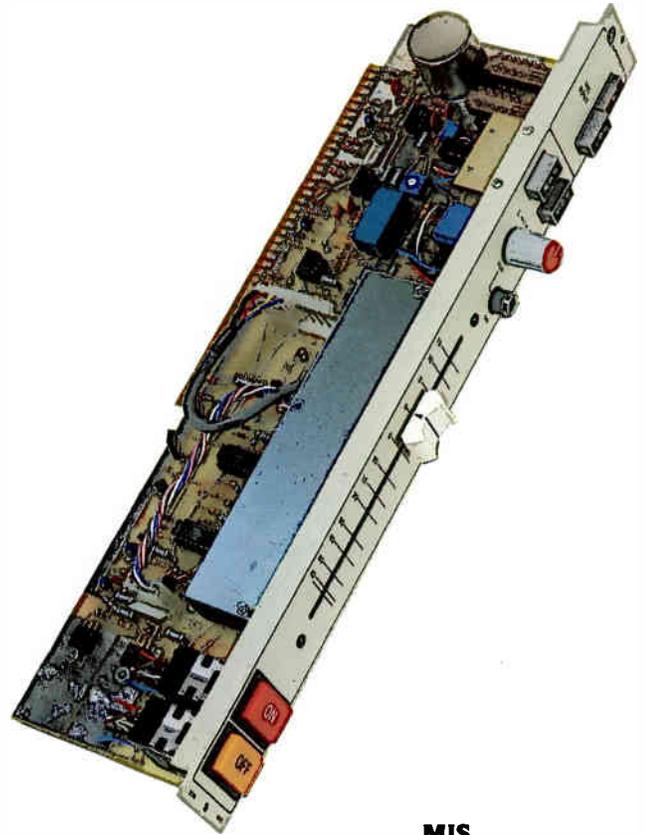
MODEL 200-MIS Microphone Input

Provides input selection, level control, routing and logic for either of two microphone inputs.

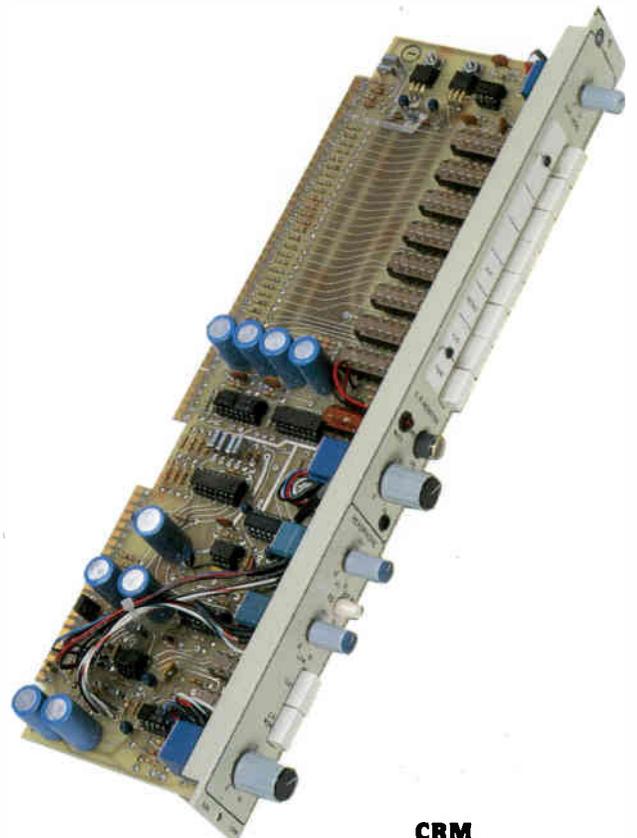
The input is transformer balanced and includes an internal level preset. It may be phantom powered for use with condenser microphones by ordering the 200-PPS accessory. An insert point is provided post-preamplifier/pre-fader to allow installation of signal processing equipment if desired.

Level control is provided by a Penny and Giles conductive plastic linear motion VCA controlling fader. On/Off Switching is performed by illuminated Hall-effect switches controlling CMOS circuitry, and the built-in logic system allows external on/off or cough control, logic to control external indicators and to mute the control room or studio monitors (following the A/B input selection) if desired. Fader down logic may be programmed to activate cue or the on/off switching.

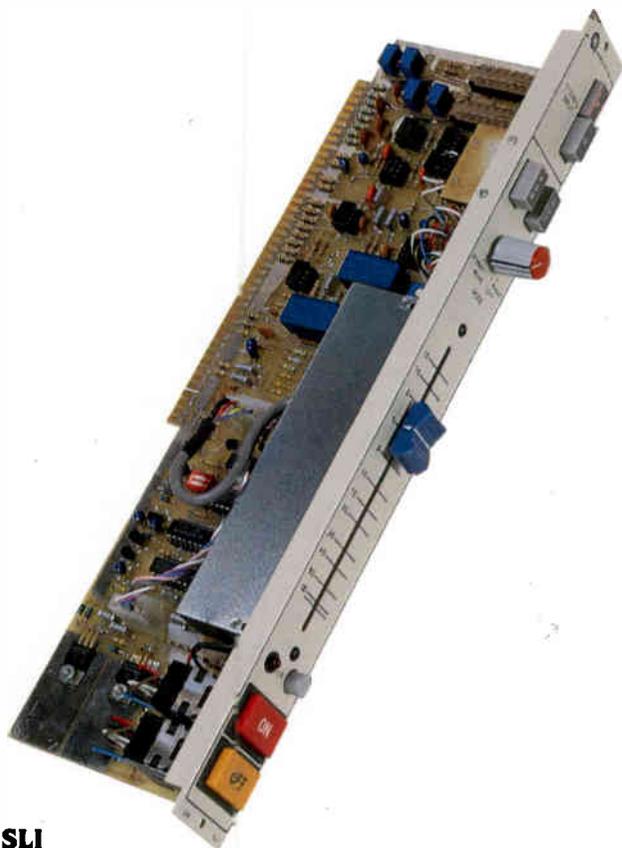
Stereo output panning is provided, but is defeatable. Output assignment may be made to the stereo Program and/or Audition busses. A direct output is included for special applications.



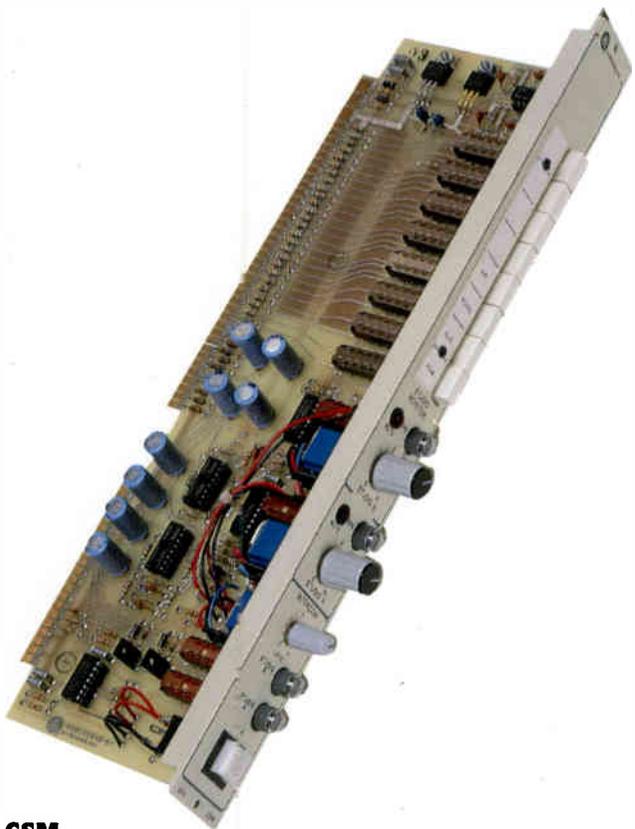
**MIS
Microphone
Input Module**



**CRM
Control Room
Monitor Module**



**SLI
Stereo Line
Input Module**



**CSM
Communications/
Studio Monitor
Module**

Stereo Line Input Module

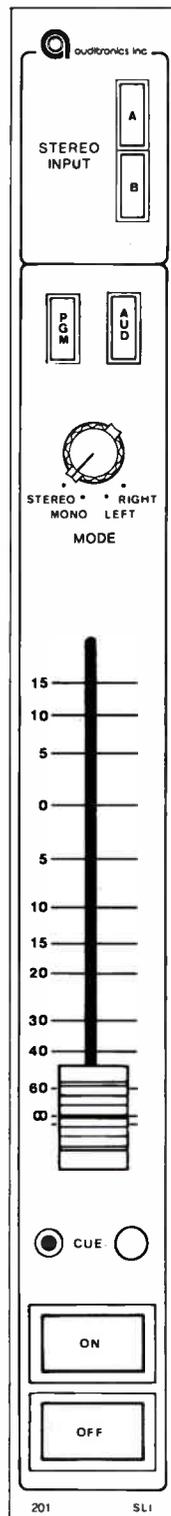
MODEL 201-SLI Stereo Line Input

Provides input selection, level control, routing, and logic for either of two stereo line sources.

The inputs are active, transformerless, and balanced, and include internal presets on each leg of each input for precise level and balance adjustment. Insert points are provided pre-fader to allow installation of signal processing equipment if desired.

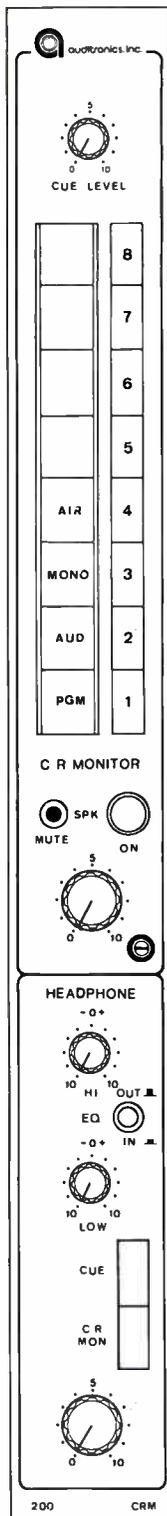
Level control is provided by a Penny and Giles conductive plastic linear motion VCA controlling fader. On/Off switching is performed by illuminated Hall-effect switches controlling CMOS circuitry, and the built-in logic system allows on/off control of an external device or remote activation of the module by an external device, as well as selectable Start/Stop/Reset of the 202-DT Digital Timer accessory, when installed. Fader down logic may be programmed to activate cue or the on/off switching. A Cue button is also provided.

A Mode selector switch enables selection of input source as stereo, summed mono, right only or left only being sent to the stereo outputs. Output assignment may be made to the stereo Program and/or Audition busses. Direct stereo outputs are included for special applications.



201 SLI

Monitor Modules



MODEL 200-CRM Control Room Monitor

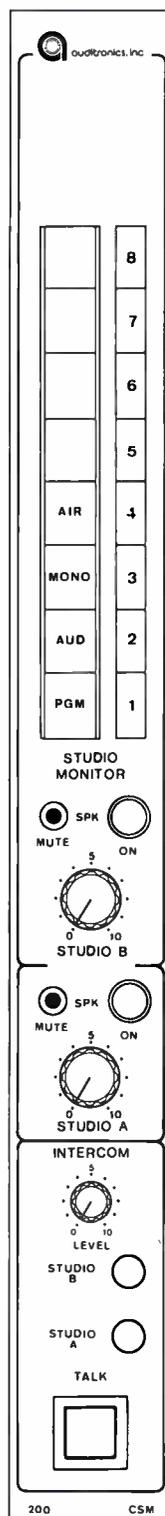
Provides monitor source selection, level control, and mute, as well as cue speaker level control and a stereo headphone amplifier.

Monitor inputs are balanced, bridging, and transformerless, and sources are selectable from pre-wired mono, program, and audition outputs, as well as 5 user-designated stereo sources. A level control and mute button with associated LED, indicating remote mute via the built-in logic system, are provided. The monitors are automatically muted when user-designated microphone inputs are turned on, and logic for control of an external tally lamp is included.

A Dim function is also included with a recessed level control. Dim is activated during cue or when the intercom system is in use, and causes the stereo monitor source to be combined and sent to the left speaker at a reduced pre-set level. User-designated studio microphone inputs are routed to the cue circuitry during intercom operation.

A Cue level control is provided to set the volume of the built-in cue speaker.

The Stereo Headphone Amplifier includes a source selector, level control, and equalizer, and provides adequate level to drive even low impedance headphones. The input selector may choose control room monitor selection, cue, or both. When both are selected simultaneously, the stereo monitor source is combined and sent to the left, while cue is sent to the right. A two-band equalizer with in/out switch is provided for local equalization without affecting other console outputs.



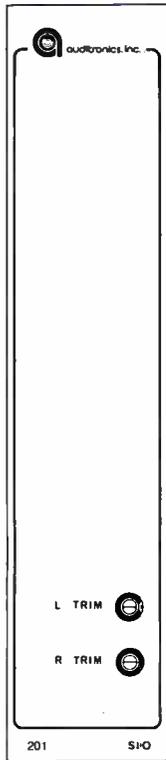
MODEL 200-CSM Communications/Studio Monitor Accessory

Provides monitor source selection, level control and mute, as well as intercom facilities for each of two studios.

Monitor inputs are balanced, bridging, and transformerless, and sources are selectable from pre-wired mono, program, and audition outputs, as well as 5 user-designated stereo sources. Level controls and mute buttons with associated LED's, indicating remote mute via the built-in logic system, are provided for both studios. Each monitor output is automatically muted when user-designated microphone inputs are turned on, and logic for control of external tally lamps is included.

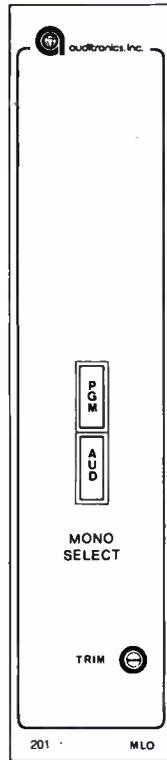
An Intercom facility with level control is provided with logic to allow a user-designated control room microphone to talk to either studio, and for a user-designated studio microphone to talk into the console cue system.

Output and Accessory Modules



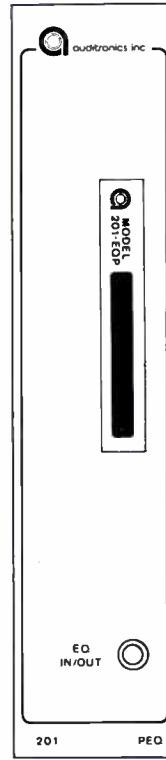
MODEL 201-SLO Stereo Line Output

Two stereo line outputs are provided, one for Program and one for Audition outputs. Each are stereo line amplifiers with recessed front panel gain trims for precise balance and level adjustment, and are capable of +30 dBm output level.



MODEL 201-MLO Mono Line Output

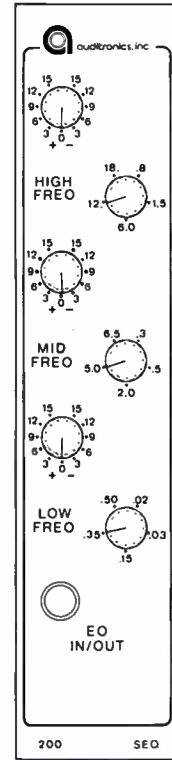
A mono line output amplifier with input sources selectable from Program or Audition outputs combined to mono, and capable of +30 dBm output level. A recessed front panel gain trim is provided for precise level adjustment.



MODEL 201-PEQ Personality Equalizer Accessory

A five band graphic equalizer whose equalization settings are made and stored on a removable 201-EQP Personal Equalizer Card, a small, inexpensive, plug-in card which can be purchased in quantities to be distributed to each on-air personality, allowing them to insert their own equalization whenever required. An equalizer In/Out switch is provided for bypassing the equalizer when desired.

The 201-PEQ is wired to the channel insert of a user-designated microphone input module and may be used in conjunction with other accessories. Adjustment of equalization settings is easily made with a screwdriver and extender board which is provided.

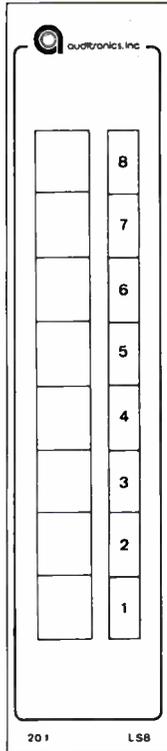


MODEL 200-SEQ Sweep Equalizer Accessory

A continuously variable equalizer with three overlapping bands of peak equalization. Each band is capable of ± 15 dB boost/cut, and an In/Out switch is provided to bypass the equalizer when desired.

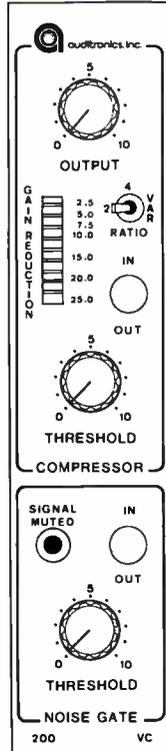
The 200-SEQ is wired to the channel insert of a user-designated microphone input module and may be used in conjunction with other accessories.

Accessory Modules



MODEL 201-LS8 Stereo Line Selector Accessory

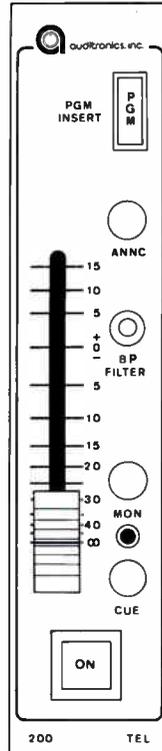
Allows up to 8 stereo sources to be pre-selected to an input of a stereo line input module.



MODULE 200-VC Voice Controller Accessory

Permits high quality mono or stereo signal processing utilizing the VCA circuitry within any input module to perform independently controlled noise gate and compressor/limiter functions. Top panel controls are provided for Threshold, Ratio, and Output Level control as well as In/Out switches for each section and a gain reduction indicator. Attack and release times for each section are internally adjustable.

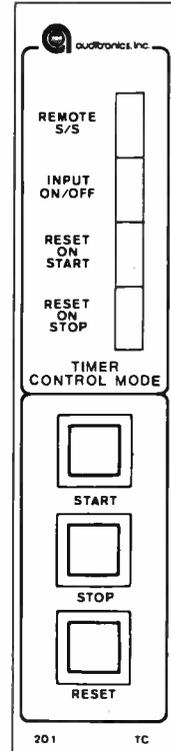
The 200-VC is wired to the channel insert point(s) of a user-designated microphone or stereo line input module and may be used in conjunction with other accessories.



MODEL 200-TEL Telephone Interface Accessory

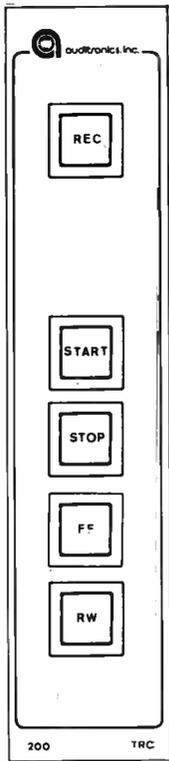
Interfaces to telephone lines via any of the commercially available hybrids and enables complete handling, processing, and recording of incoming telephone calls without compromising other console functions. The announcer input is derived from the channel insert point of a user-designated microphone input module and a bandpass filter is switchable into the incoming telephone line to minimize extraneous noise. Independent outputs are provided for cue or monitoring, direct feed to a stereo tape recorder, and mix-minus to the telephone and/or program or audition outputs.

The 200-TEL may be used in conjunction with other accessories.



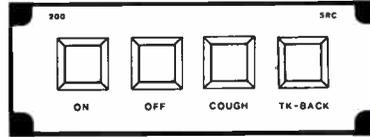
MODEL 201-TC Timer Control Accessory

The 201-TC is supplied with the 201-DT Digital Timer Accessory and is used to manually or automatically control the timer. Remote S/S allows control from a user-installed remote location. Input On/Off allows control by any stereo line input module wired for this function and the operator may choose from either Reset On Start or Reset On Stop in this mode.



**MODEL 200-TRC
Tape Remote Control
Accessory**

Available in 5 or 6 button versions, the 200-TRC features illuminated momentary switches terminated in connectors at the rear of the module for user installation as tape machine remote controls.



**MODEL 200-SRC
Studio Remote Control
Accessory**

Designed to be user-installed in the studio, the 200-SRC features 4 momentary switches for remote control of the built-in logic functions of a microphone input module and console intercom system.



**SLO
Stereo Line
Output Module**

Models 212 and 218

(MODEL 206 NOT SHOWN)

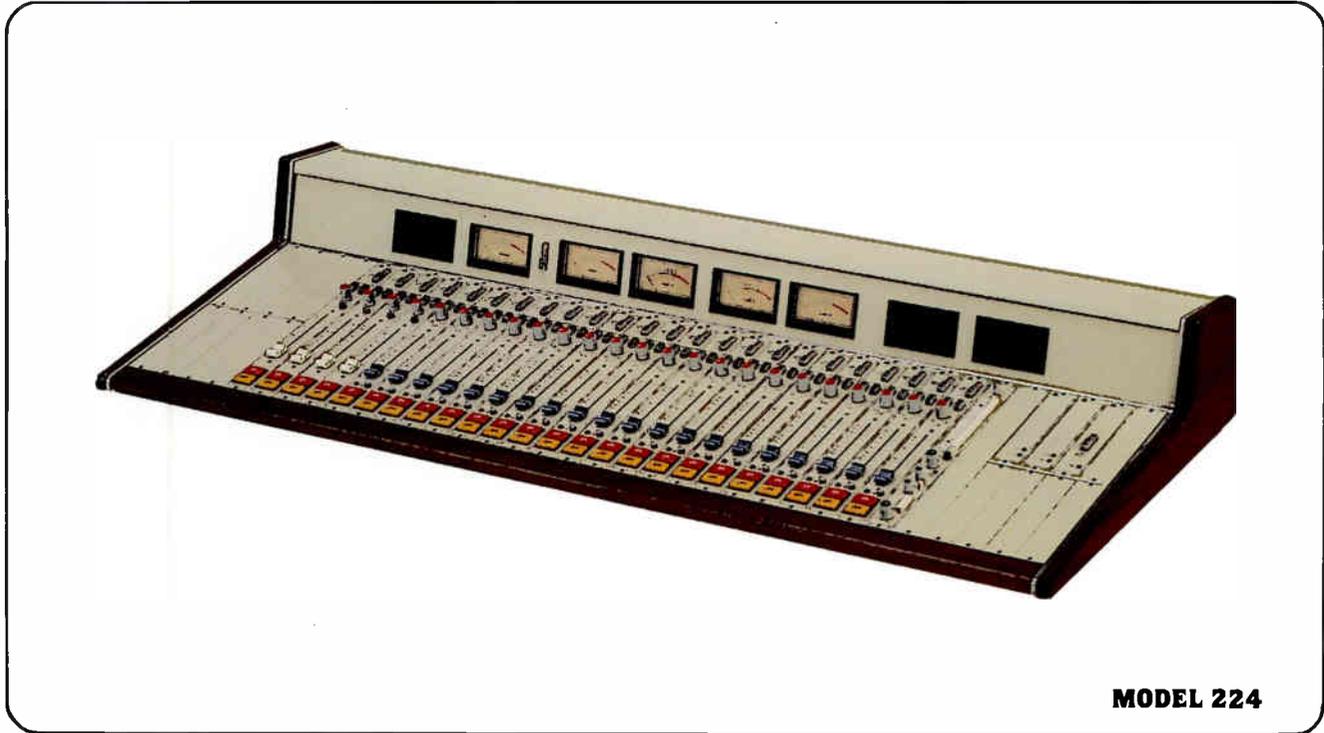


MODEL 212



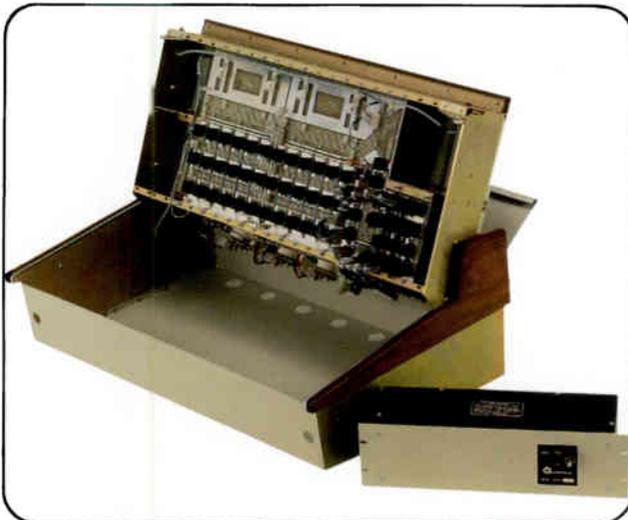
MODEL 218

Model 224



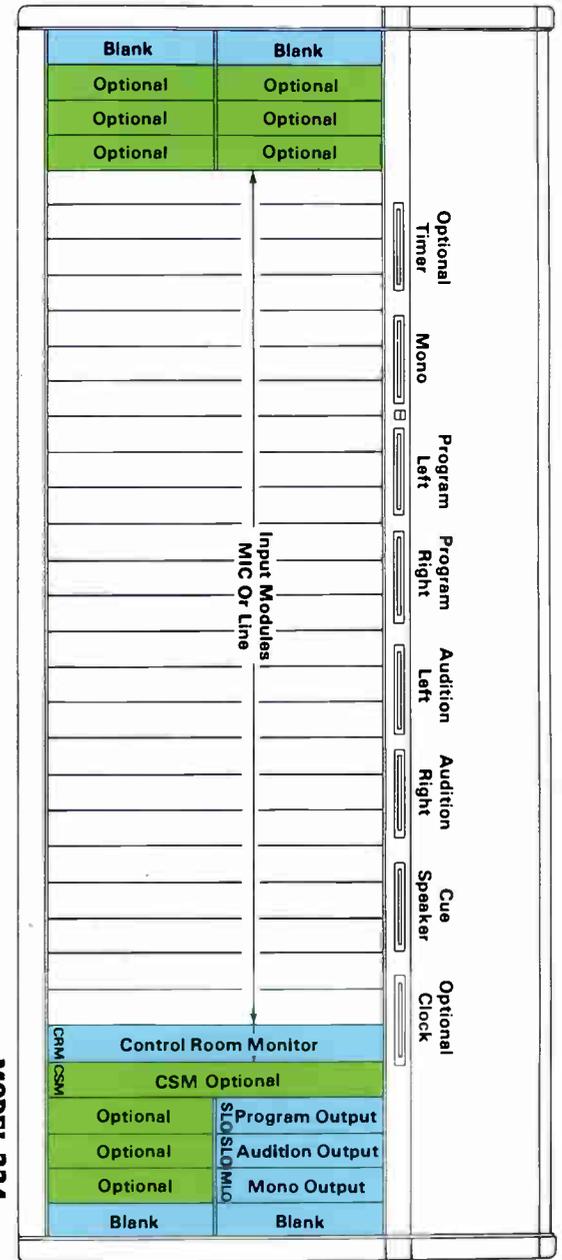
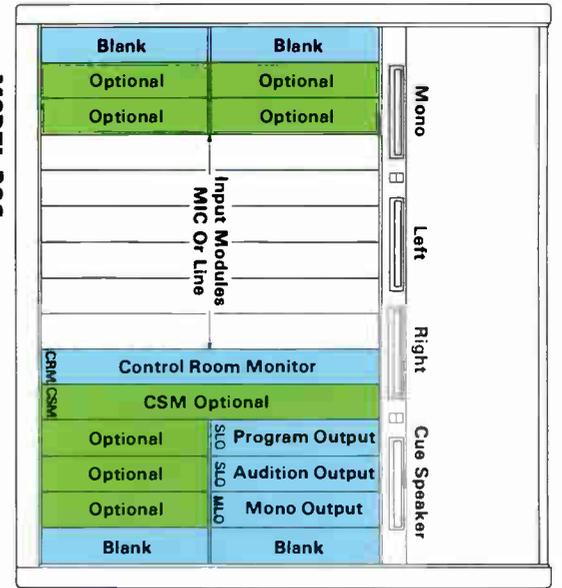
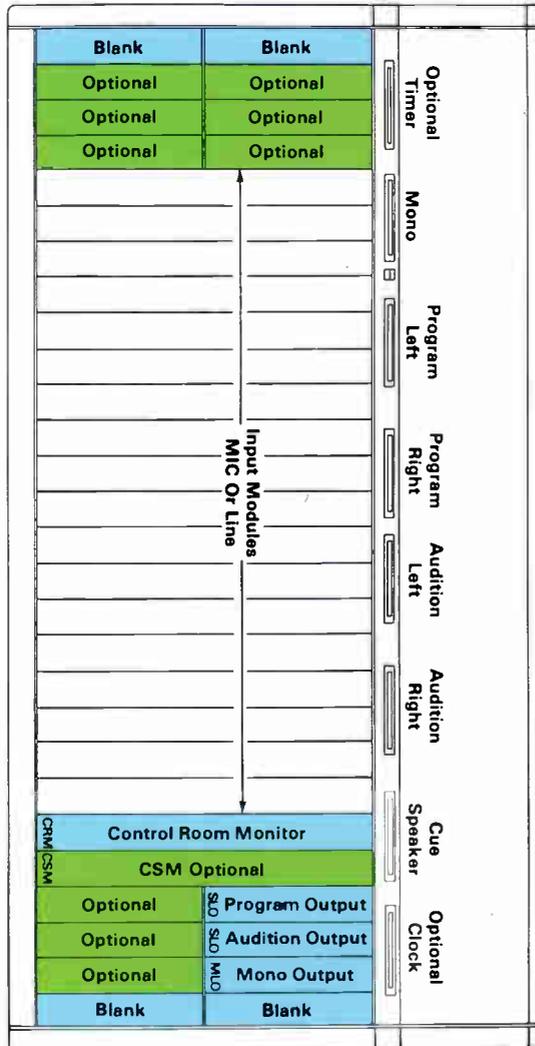
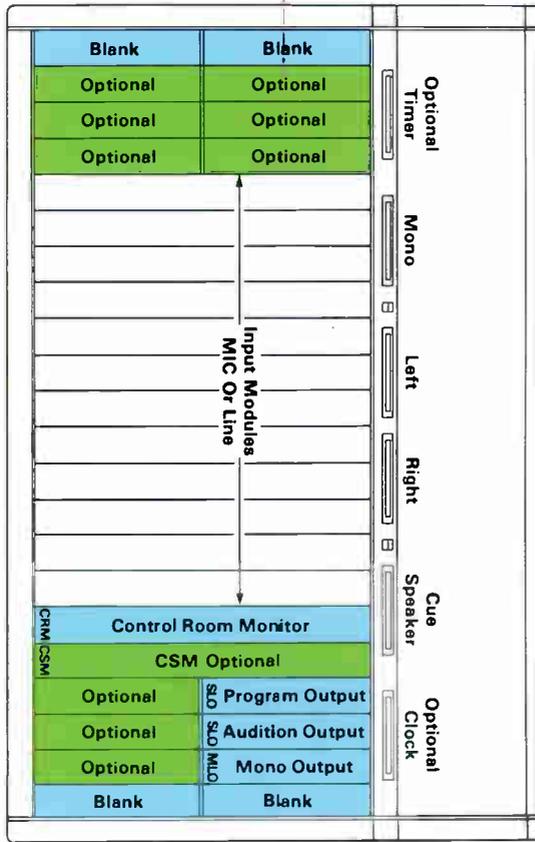
Ease of Installation and Maintenance

The meter housing lid and module/motherboard assembly of all 200 Series consoles, except the 224, flip up to allow convenient access for installation and maintenance.

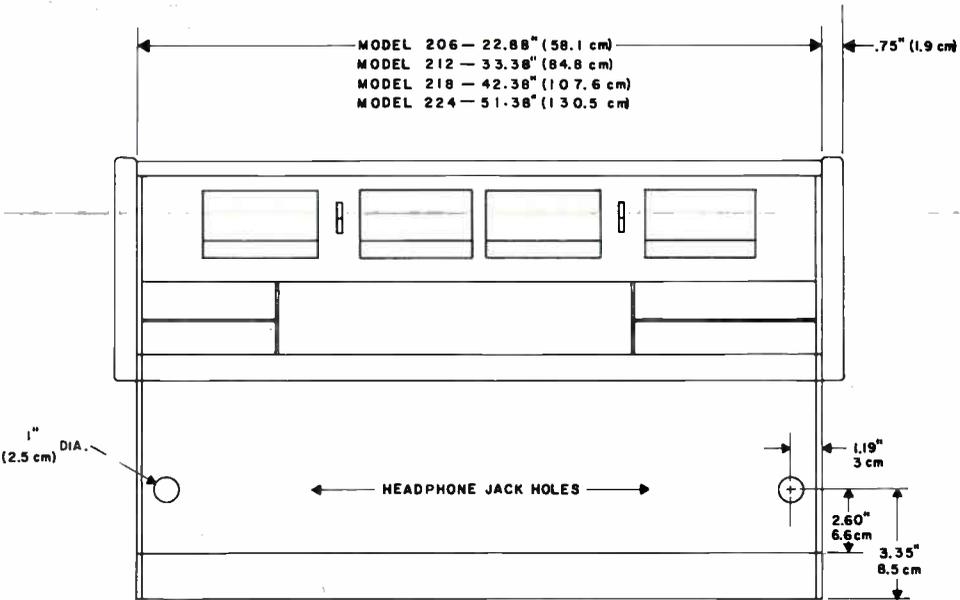


Standard Module Placement

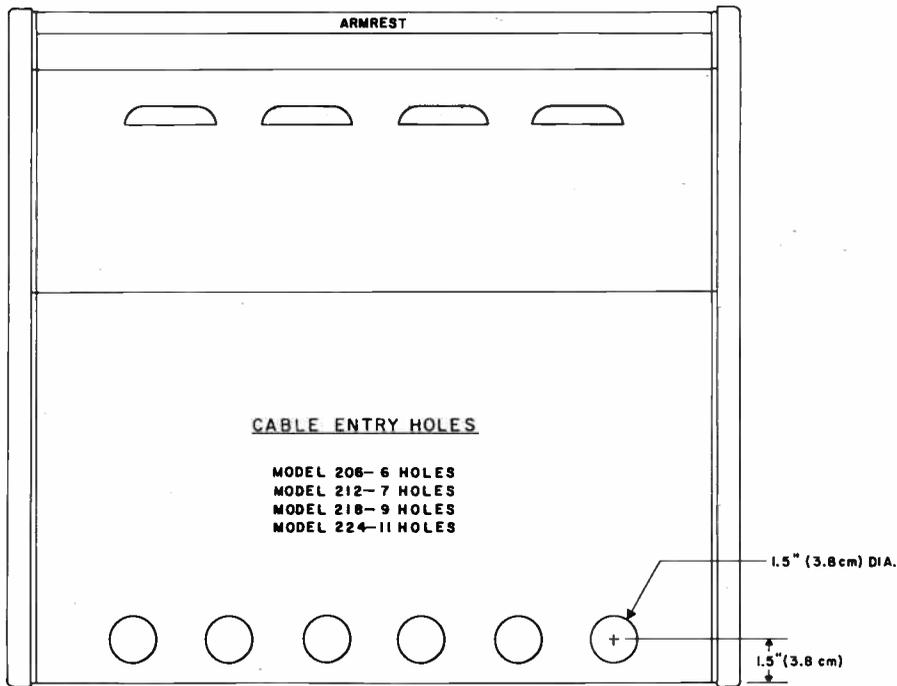
NOTE: Blue shaded areas are supplied as standard. Green shaded areas are reserved for accessories and are normally supplied with blanks.



Installation Dimensions

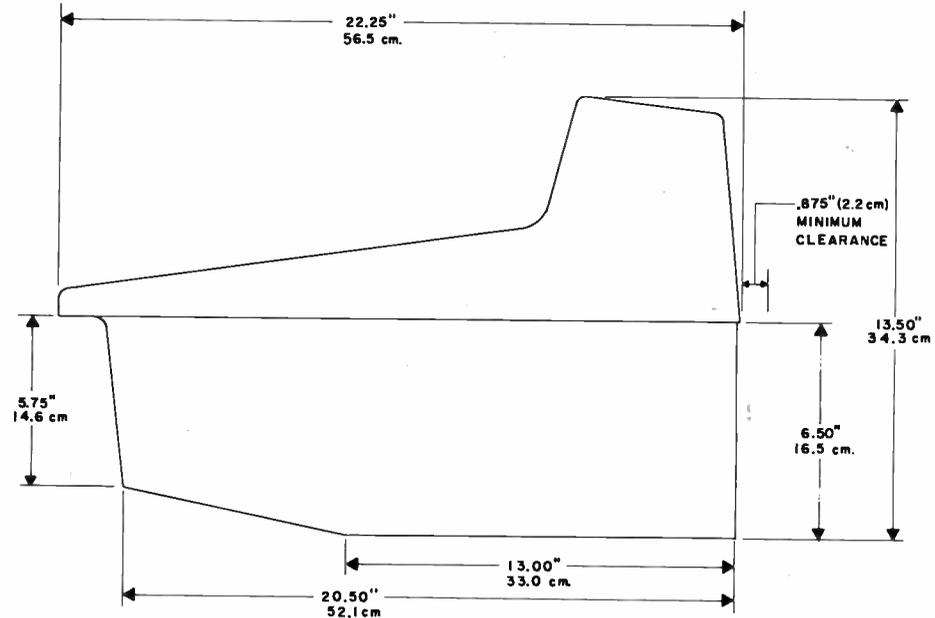


FRONT VIEW
MODEL 206



ALL HOLES EVENLY SPACED

BOTTOM VIEW
MODEL 206



SIDE VIEW
ALL MODELS

TABLETOP CUTOUT SIZE

| MODEL | WIDTH | DEPTH |
|-------|-----------------|-----------------|
| 206 | 23.5" (59.7 cm) | 21.5" (54.6 cm) |
| 212 | 34" (86.4 cm) | " " |
| 218 | 43" (109.2 cm) | " " |
| 224 | 52" (132.1 cm) | " " |

Performance Specifications

Mono Microphone Input

Source selectable from A or B input
Source Impedance: 150 ohms, nominal
Input Impedance: >1K ohms, 20 Hz-15KHz, balanced, transformer isolated
Input Level: -65 dBm to -41 dBm, adjustable (ref 0.775V rms)
Input Headroom: 22dB over nominal input level
CMRR: >60 dB 10Hz to 100 KHz

Stereo Line Input

Source selectable from A or B stereo input
Source Impedance: 600 ohms, nominal
Input Impedance: >10K ohms, balanced, active differential
Input Level: -12 dBm to +8 dBm, adjustable (ref 0.775V rms)
Input Headroom: 20 dB over nominal input level
CMRR: >60 dB 10 Hz to 100KHz

Stereo Program, Audition, and Mono Outputs

Load Impedance: 600 ohms, nominal
Output Impedance: <50 ohms, balanced, transformer isolated
Output Level: +8 dBm nominal, adjustable -10 dBm to +16 dBm (ref 0.775V rms)
Maximum Output Level: +30 dBm (ref 0.775V rms)

Stereo Control Room and Studio Monitor Outputs

Load Impedance: 600 ohms, nominal
Output Impedance: 600 ohms, balanced, active differential
Output Level: 0 dBm nominal (ref 0.775V rms)
Maximum Output Level: +24 dBm (ref 0.775V rms)

Stereo Headphone Output

Load Impedance: 8 ohms or greater
Output Level: 2 watts per channel, maximum

Cue Output

Output Level: 4 watts maximum, into built-in speaker

Overall:

Frequency Response: 20 Hz - 20KHz +0, -1dB at +8 dBm output level, Mic or Line Input to Program or Audition Output

Signal to Noise Ratio, Microphone In to Program or Audition Output: >78 dB or -128.5 dBv equivalent input noise, 20 Hz - 20 KHz with 150 ohms source impedance at nominal gain settings

Signal to Noise Ratio, Line In to Program or Audition Output: >82dB, 20 Hz - 20KHz with 600 ohms source impedance at nominal gain settings

Distortion (THD)

Microphone In to Program or Audition Output at +24 dBm (ref 0.775V rms)

<.01% at 1KHz

<.15% 30 Hz -20KHz

Line In to Program or Audition Output at +24 dBm (ref 0.775V rms)

<.01% at 1KHz

<.1% 20 Hz - 20KHz

Distortion (IM)

Microphone or Line In to Program or Audition Output at +24 dBm (ref 0.775V rms)

<.02% SMPTE

Crosstalk

Program Left Output to Program Right Output, Mic or Line Input

<-74 dB at 1KHz

<-63 dB at 20KHz

Program Outputs to Audition Outputs, Mic or Line Input

<-85dB at 1KHz

<-83dB at 20KHz

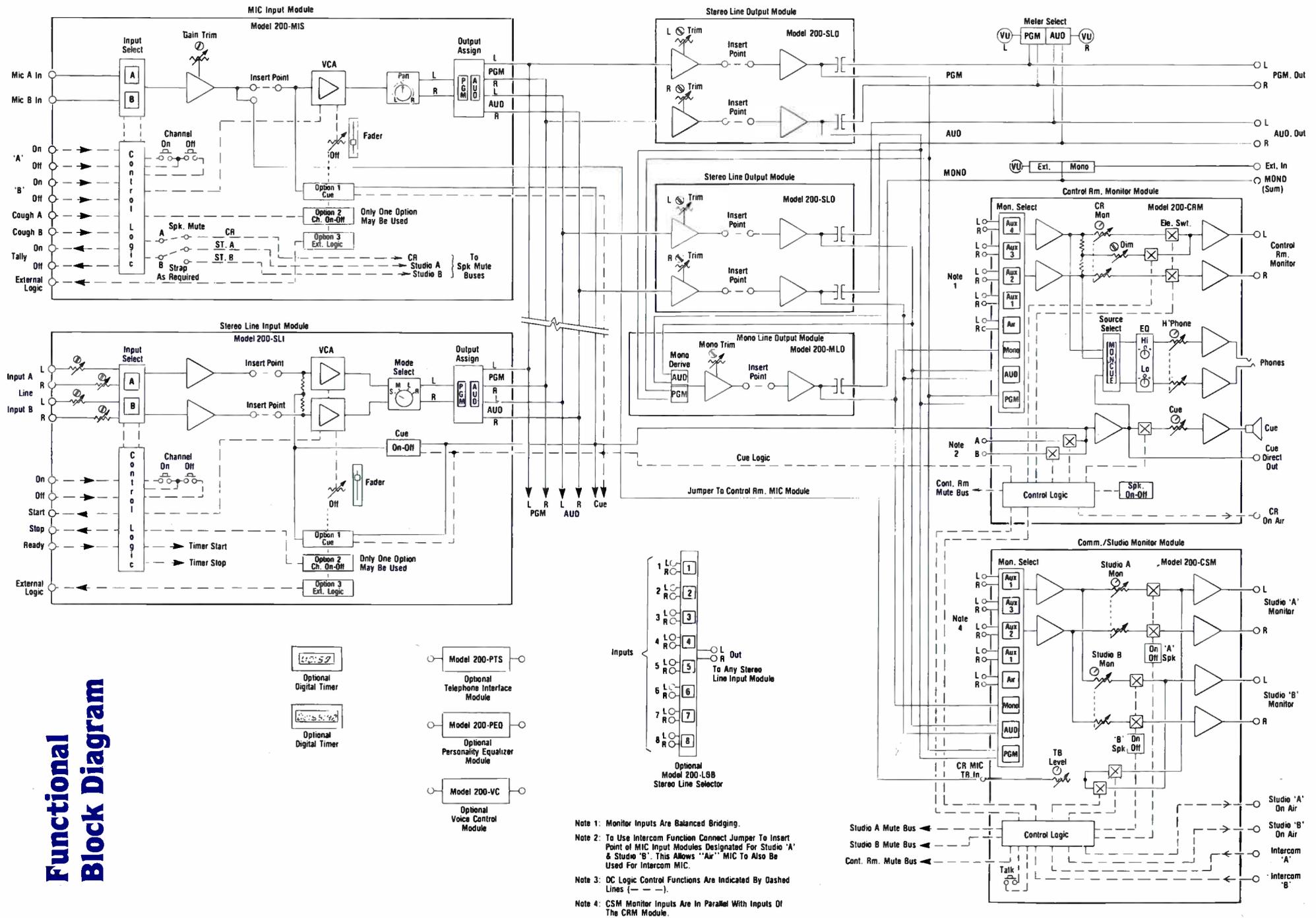
Mains Requirement

115/230 VAC \pm 10%, 50/60Hz

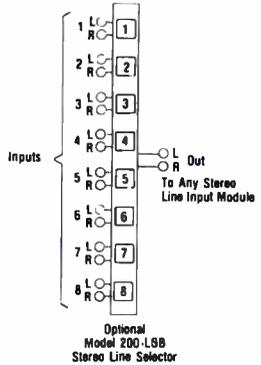
Approximate Shipping Weights

| | |
|-------------|-----------------|
| Model 206 | 80 lbs. (36Kg) |
| Model 212 | 100 lbs. (45Kg) |
| Model 218 | 120 lbs. (54Kg) |
| Model 224 | 140 lbs. (63Kg) |
| Model PS-60 | 35 lbs. (16Kg) |

Functional Block Diagram



- Model 200-PTS
Optional Telephone Interface Module
- Model 200-PEQ
Optional Personality Equalizer Module
- Model 200-VC
Optional Voice Control Module
- Model 200-DT1
Optional Digital Timer
- Model 200-DT2
Optional Digital Timer



- Note 1: Monitor Inputs Are Balanced Bridging.
- Note 2: To Use Intercom Function Connect Jumper To Insert Point of MIC Input Modules Designated For Studio 'A' & Studio 'B'. This Allows 'Ar' MIC To Also Be Used For Intercom MIC.
- Note 3: DC Logic Control Functions Are Indicated By Dashed Lines (---).
- Note 4: CSM Monitor Inputs Are In Parallel With Inputs Of The CRM Module.



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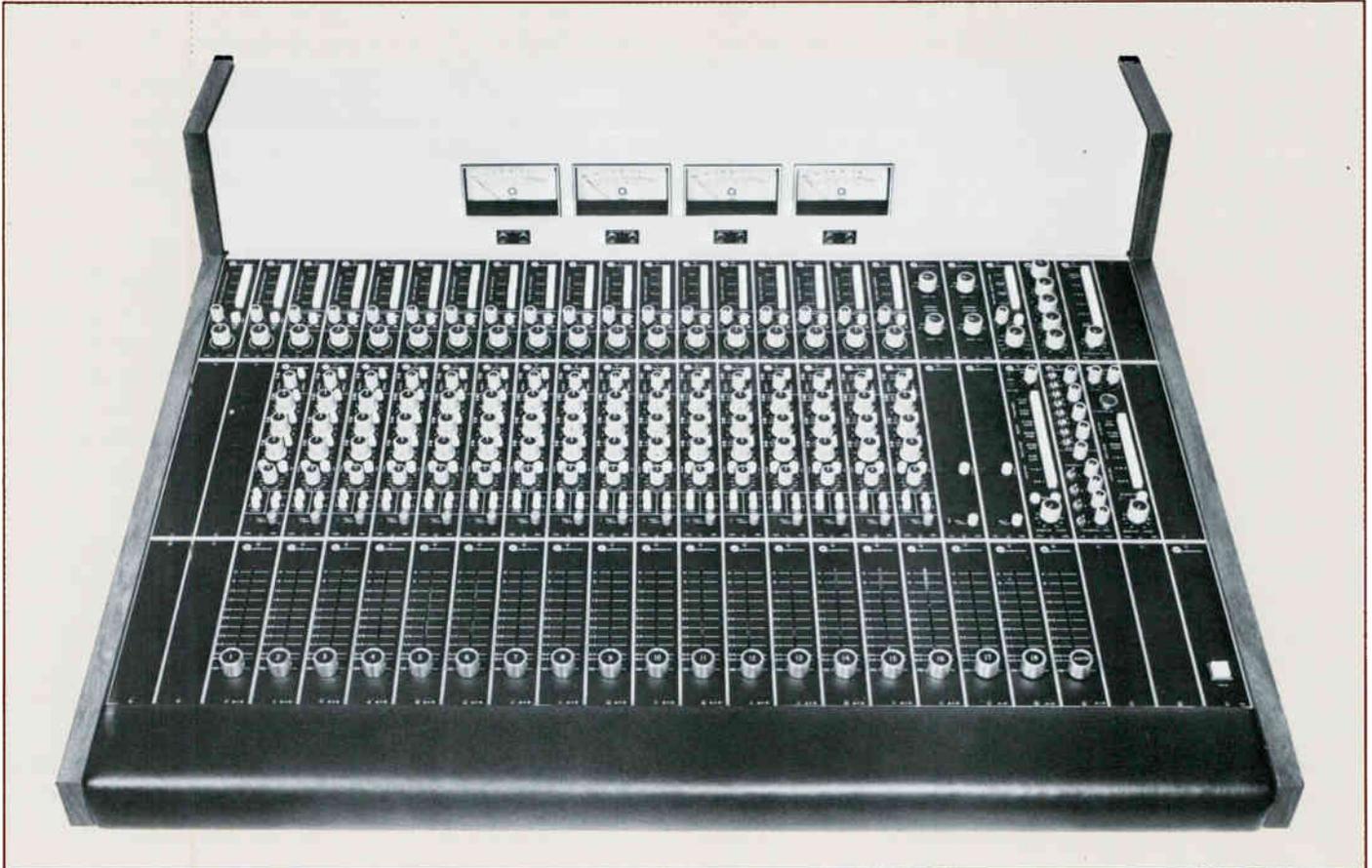
3750 Old Getwell Road, Memphis, Tennessee 38118, USA

Tel.: (901) 362-1350, Telex: 533356



"Grandson" MODEL 110A RECORDING/REMIXING PRODUCTION/ON-AIR AUDIO CONTROL CONSOLE

TECHNICAL DATA



APPLICATIONS

AUDIO RECORDING
SOUND REINFORCEMENT
RADIO BROADCASTING/PRODUCTION

TELEVISION BROADCASTING
MOTION PICTURE RECORDING
THEATRICAL EFFECTS SYSTEMS

GRANDSON, Model 110A, is an expandable, completely modular professional recording/remixing/on-air audio control console built by professionals experienced in sophisticated console design and manufacture. Designed to accommodate up to 16 track mixing and on-air applications, the free standing unit is expandable to 18 mixing positions—36 inputs—in only 38" width. The system provides complete metering, two echo send/receive channels, talkback communications, programmable control room and studio muting, optional EQ at each input, two foldback mix outputs

(one optional), test oscillator, optional stereo inputs, and a full line of matching accessories including a plug-in patch bay. A second generation, full capacity system at a moderate price, **GRANDSON**, fills the gap between conventional broadcast consoles and sophisticated recording consoles. The most recent integrated circuit designs as proven in the widely accepted Model 501, SON OF 36 GRAND, are utilized. Customization of each console is possible simply by selecting from a wide variety of plug-in modules those that exactly meet your requirements.

**"Grandson"
MODEL 110A
AUDIO CONTROL CONSOLE**



auditronics, inc.
3750 OLD GETWELL RD. • MEMPHIS, TENN. 38118 • 901/362-1350

Console Main Frame Model 110AMF provides housing for all modules, terminations, and interconnections required in the console system. The all aluminum enclosure is furnished with walnut Formica sides and measures 38" wide by 32" deep by 29" high at the operators position (when mounted on optional legs as a free standing unit). The system concept is one using a motherboard with plug-in modules. Amplifiers and associated controls are contained within the plug-in modules. Behind the hinged meter panel are housed the plug-in line output amplifier cards used as program outputs, echo sends, monitor outputs, and foldback outputs.

The main frame is exceptionally rugged, and lightweight enough to be practical for remote or portable applications. Blank space on the meter panel can be used for installation of digital clocks or other accessories, and space is available on the console top panel for installation of tape remote controls, etc.

An illuminated VU meter appears for each program output in the console. While the number of input positions is expandable up to a maximum of 18 simply by plugging in additional modules, program output capability is determined at time of manufacture and must be either 2 or 4 channel.

The motherboard in the main frame is designed to accept any type of input position whether stereo or mono, with or without EQ, in any of the 18 input positions. Unused positions are covered with matching blank panels. At the extreme right end, six positions are allocated to monitor and master control modules. A fully protected power supply is provided which is designed to work from 230 or 115

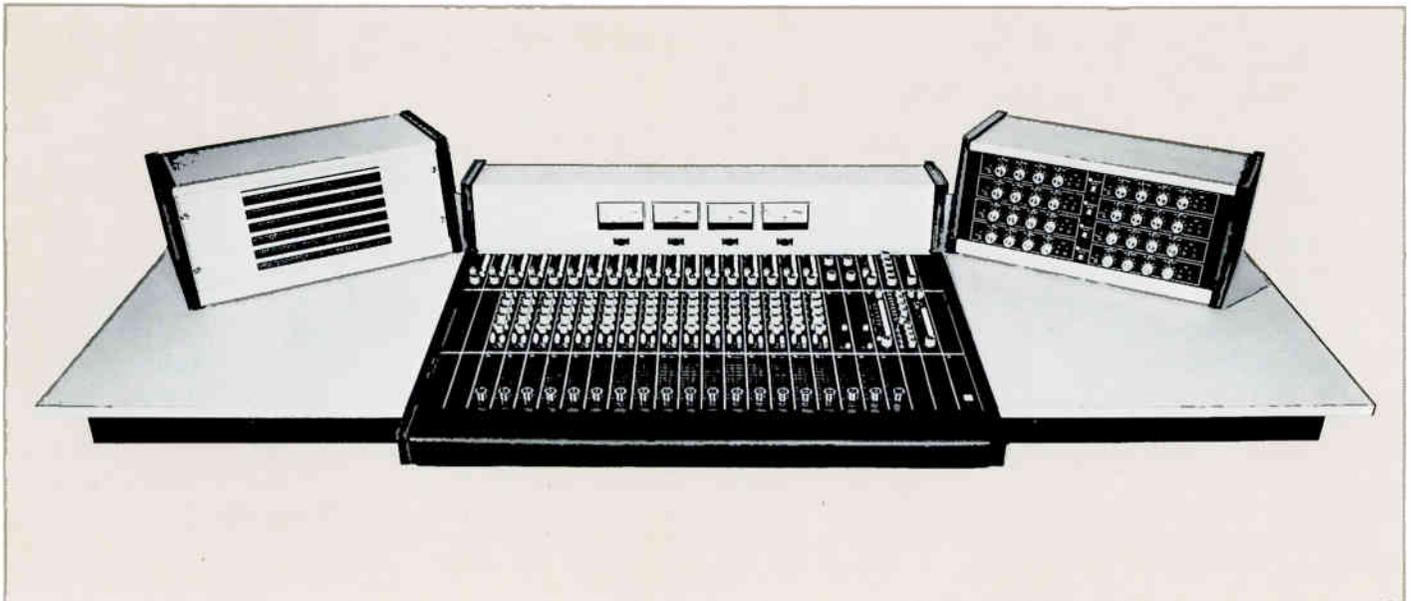
volts AC, 40-60 Hz line source. This unit is regulated and protected against over voltage, excessive current, and line voltage variations. Power drain is less than 100 watts.

A current limited, fully protected 48 volt phantom microphone power supply wired to all microphone inputs is included for central powering of condenser microphones while retaining dynamic microphone compatibility.

THREE CONSOLES IN ONE ARE PROVIDED IN THE FOUR OUTPUT CHANNEL VERSION OF GRANDSON.

First, it functions as either a mono, or stereo on-air broadcast console and may be used to provide simultaneous discrete mono and stereo feeds rather than an inferior mono feed derived from the stereo feeds. Monitor muting is interfaced to input module on/off and mic/line switches in typical on-air fashion except that reprogramming of muting is simplified by use of TTL logic circuitry.

Second, it functions as a four output recording console providing four discrete program outputs suitable for professional multi-track recording applications with multi-track tape machines. This mode provides complete monitoring for control room, studio, and headphone cue feeds through a dual, four channel foldback mixer. This monitor mixer permits combining sync playback of previously recorded tracks (from tape machine record head) with program output of console. These signals are combined through four individual program/tape selector switches and four individual level controls for control room monitoring and a second set of identical controls for foldback feed. All monitoring including headphone may be either mono or stereo.



Third, Grandson functions as a stereo and mono mix-down console for up to 16 track tape recordings. Since multi-track recording (building a master tape one or more tracks at a time) does not take place at the same time as final mix down to either stereo or mono, the unit operates on a time sharing basis to achieve economy of circuitry. When in the mix-down mode, function of the four program output channels is as follows:

Channel #1 remains a discrete (mono) output with signals assigned through the switching modules as in four channel operation.

Channels #2 and #3 become stereo outputs left and right (respectively) with signal assignment through a stereo pan-pot on each switching module which individually permits positioning each input signal to left, right, or any point between.

Channel #4 becomes a stereo sum (left plus right) output. This is useful in detecting poor phase relationships in program material appearing on the two stereo output channels.

FEATURES

The standard input module will accommodate input levels between -70 dBm and $+40$ dBm. Standard main frames and modules (shown on price list) are designed so that any standard frame will accommodate any standard module.

All console module top panel surfaces and markings are of chemically etched, anodized aluminum guaranteed not to fade or wear off. Control layout is human engineered for maximum ease of operation.

Silent FET switching controlled by TTL logic in monitoring circuits increases reliability and performance by eliminating relays in this function, however, circuitry is provided for operation of external relays used for warning lights, etc.

Talkback and speaker muting circuits are built-in and all outputs of console are at standard 0 VU ($+4$ dBm) with

$+24$ dBm capability—providing 20 dB headroom. Program inputs and all outputs of console are transformer isolated.

When properly installed, entire system is free of internal switching pops, clicks and RFI. The system is designed around standard American made components and garden variety integrated circuit Op amps readily available from many sources as shelf stock.

Quality and performance are assured by application of proven field tested designs and painstaking craftsmanship in building. Craftsmanship and experience that add lasting value.

The entire system is backed by Auditorics, Inc. one-year guarantee, and a network of stocking dealers across the nation offer spare parts and service.

More questions? Write or phone today and we'll provide answers.

PERFORMANCE

Frequency

response: ± 1 dB 20-20,000 Hz, measured any input to any output at any level up to $+18$ dBm out.

Noise: Measured from any microphone input to any output channel is not less than 75 dB below $+4$ dBm output, with a -50 dB input, normal gain settings, 20-20,000 Hz unweighted. Measured from any line input to any output channel is not less than 80 dB below $+4$ dBm output, with $+4$ dBm input, normal gain settings, 20-20,000 Hz unweighted.

Distortion: THD less than 1/10 of 1%, 30-20,000 Hz at any level up to $+18$ dBm output. Less than 5/10 of 1% 30-15,000 Hz at levels $+18$ to $+24$ dBm output. Measured any input to any output. IM distortion less than .1% at $+18$ dBm output.

Crosstalk: Not in excess of -80 dBm at 1,000 Hz and -65 dBm at 10,000 Hz. Measured worst case condition, any input to any output, adjacent busses.

Maximum Output

Level: $+24$ dBm, transformer isolated.



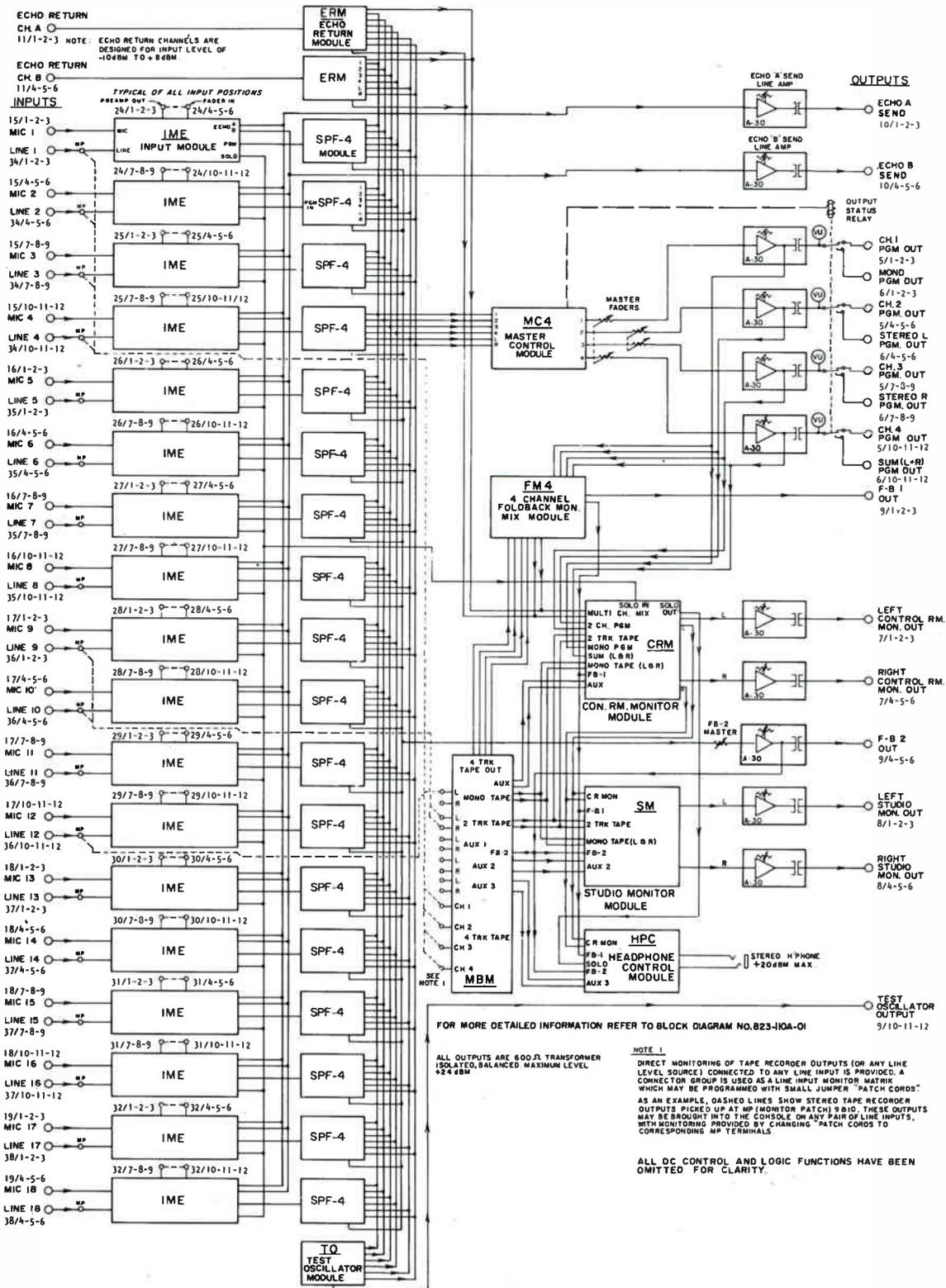
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Auditorics, Inc. reserves the right to modify specifications and equipment prior to delivery, to incorporate desirable or necessary electrical or mechanical changes. Auditorics, Inc. shall in no way be obligated to provide new improvements and modifications in design to any purchaser of equipment manufactured before design changes.



SIGNAL FLOW DIAGRAM
 Model 110A Console

This worksheet is provided to assist you in determining the price of a console when a standard system is not ordered.

2 CHANNEL MAIN FRAME AND 2 CHANNEL BUSS ASSIGN MODULES: 110-A SERIES

| MODEL | DESCRIPTION | QTY | UNIT PRICE | EXTENSION |
|-----------------------|--|-----|------------|-----------|
| 110A-2MF | 2 Channel Output Main Frame | | \$ | |
| 110-SPF2 | 2 Channel Buss Assign & Pan Module w/Foldback #2 | | | |
| 110-SSM2 | 2 Channel Stereo Switching/Buss Assign Module | | | |
| Two Channel Sub Total | | | | |

4 CHANNEL MAIN FRAME AND 4 CHANNEL BUSS ASSIGN MODULES: 110-A SERIES

| MODEL | DESCRIPTION | QTY | UNIT PRICE | EXTENSION |
|------------------------|--|-----|------------|-----------|
| 110A-4MF | 4 Channel Output Main Frame (18 input positions max) | | \$ | |
| 110A-4MFS | 4 Channel Output Main Frame (26 input positions max) | | | |
| 110-SPF4 | 4 Channel Buss Assign & Pan Module w/Foldback #2 | | | |
| 110-SSM4 | 4 Channel Stereo Switching/Buss Assign Module | | | |
| Four Channel Sub Total | | | | |

MODULES LISTED BELOW ARE FOR 2 CHANNEL AND 4 CHANNEL CONSOLES:

| MODEL | DESCRIPTION | QTY | UNIT PRICE | EXTENSION |
|------------------|---|-----|------------|-----------|
| 110-CRM | Control Room Monitor Module | | \$ | |
| 110-SM | Studio Monitor Module | | | |
| 110-ERM | Echo Return Assign Module, Pgm. & Monitor | | | |
| 110-IME | Input Module with 3 Section Equalizer | | | |
| 110-IM | Input Module - No Equalizer | | | |
| 110-SIM | Stereo Line Level Input Module - No Equalizer | | | |
| F-1 | Linear Motion Mono Fader | | | |
| F-2 | Linear Motion Stereo Fader | | | |
| 110-FM4 | 4 Channel Foldback #1 & Monitor Mix Module | | | |
| 110A-HPC | Stereo Headphone Control Module | | | |
| A30 | Plug-In Line Output Amplifier Card | | | |
| 110-T0 | Test Oscillator Module | | | |
| 110-BK | Blank Panel Kit | | | |
| 110-B | Blank Panel | | | |
| Module Sub Total | | | | |

ACCESSORIES:

| MODEL | DESCRIPTION | QTY | UNIT PRICE | EXTENSION |
|---------------------|--|-----|------------|-----------|
| 110-VU | Extra VU Meter including Buffer Amp | | \$ | |
| 110-TRC | Tape Transport Remote Control (Per Switch) | | | |
| 110-PB | Plug-In Patch Bay including Desk Top Cabinet | | | |
| 110-EX6 | Extender Module for Buss Assign Module | | | |
| 110-EX9 | Extender Module for Input Module | | | |
| PS 30/MS | Spare Power Supply - 110 Volt / 230 Volt | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Accessory Sub Total | | | | |

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Console Price
 Total Price

| | | | |
|---------------|--|-------|-----|
| 110-EX-9 | Extender Module for Input Module | US \$ | 55 |
| *110-PS/30/MS | Power Supply System | | 720 |
| 110-LM | Loading Module. Must be ordered for all consoles containing fewer than ten input mixing positions. | | 50 |
| 110-XLR | Optional XLR Rear Console Connector Panel for Inputs & Outputs: | | |
| | For Main Frame 110A-2MF | | 125 |
| | For Main Frame 110A-4MF | | 210 |
| | For Main Frame 110A-4MFS | | 460 |
| *110-M | Complete Operations and Service Manual for 110A-2 & -4 Systems | | 50 |

*These items are part of the Main Frame Systems and need not be ordered separately except as spares or replacements.

- NOTES:
1. If not ordered, a 110A-B must be ordered.
 2. For Stereo Monitoring, 2 A30's must be ordered with EACH module. For Mono Monitoring, 1 A30 must be ordered with EACH module.
 3. If ECHO SENDS A & B are to be used, order 2 A30's. For 1 Echo, Order 1 A30.
 4. A 110A-BK Blank Panel Kit (3 blanks) is required for each unused input position.
 5. See "MODULE PLACEMENT" drawing for optional modules. If a particular optional module is not ordered, a 110A-B Blank Panel MUST be ordered.

MODULE STRAPPING OPTIONS

Some of the console modules may have one or more functions altered by simple internal strapping changes. Details are shown on schematic diagrams and PC board layout drawings for each of these modules. These strapping changes require adding or changing jumpers on module PC boards. These changes can be made either at the factory AT TIME OF ORDER at no charge or can be made easily in the field at any time.

IM AND IME MODULES:

"A" inputs are wired for microphone (with phantom power) and "B" inputs are wired for line level. These may be reversed or set in any pattern desired. PC board has been drilled to permit applying pad resistors to "A" if it is to be a line level input.

SOLO has been set to derive its signal from the last amplifier stage in the Input Module. This may be changed to a pre-fader pick-off when broadcast type "cue" function is needed.

MICROPHONE MUTING of control room or studio monitor speakers can be connected for "on-the-air" broadcast applications.

MONITOR MODULES:

Control Room and Studio Monitor Module Outputs can be wired for either mono or stereo use.

Talkback normally overrides studio speaker muting. This may be altered, however, with a strapping change so that talkback is also muted.

A number of additional simple strapping options are available. Consult your local dealer or the factory for further details.

All prices are in US Dollars, FOB Auditronics' Factory, Memphis, Tennessee USA. Taxes, duties, tariffs and freight charges are NOT included. All prices and specifications are subject to change without notice.

PART 2 - CONSOLE COMPONENTS AND ACCESSORIES

In the event the consoles shown in Part 1 of this Price List are not suitable for a particular application, the user may custom design his own console, using the following components. When computing the parts required, particular attention should be given to the quantity of A30 Line Output Amplifier Cards and 110A-BK Blank Panel Kits required. Where input positions are not used, a blank panel kit must be ordered. Where optional modules are not used, a blank panel must be ordered. Several modules require that A30 Amplifiers be ordered with them. The NOTES after the pricing will help in figuring the quantity of these two items which will be required. Please refer to the "MODULE PLACEMENT" drawing for further details.

Two channel stereo Input Modules (110-SIM), Attenuators and Switching/Buss Assign Modules (110-SSM2 or 110-SSM4) are available on all consoles. Although stereo, these Input Modules use only one input position of the console. If stereo input positions are ordered, their location within the console (input position numbers) must be specified at time of order so that the mother board can be wired for stereo. Mono inputs will also operate in these stereo-wired input positions. Field conversion from mono to stereo is also possible.

THE MODULES LISTED BELOW ARE FOR 2 CHANNEL CONSOLES ONLY

| | | |
|-----------|---|-------------|
| 110A-2MF | 2 Channel Output Main Frame System. This system INCLUDES: | US \$ 6,185 |
| | 1 MF, 1 PS/30/MS, 3 A30, 1 MC2, 1 FBM, 1 F-2, 1 TBS, 1 MBM, housing, meters, logic circuits, mother boards & legs & crate | |
| 110A-SPF2 | 2 Channel Buss Assign, Pan & Foldback No. 2 Module | 110 |
| 110A-SSM2 | 2 Channel Stereo Switching & Buss Assign Module | 110 |

THE MODULES LISTED BELOW ARE FOR 4 CHANNEL CONSOLES ONLY

| | | |
|-----------|---|-------|
| 110A-4MF | 4 Channel Output Main Frame System, Wired for 18 Input Positions | 6,965 |
| 110A-4MFS | 4 Channel Output Main Frame System, Wired for 26 Input Positions | 7,560 |
| | These two Main Frame Systems each INCLUDE: | |
| | 1 MF, 1 PS, 5 A30, 1 MC4, 1 FBM, 2 F-2, 1 TBS, 1 MBM, housing, meters, logic circuits, mother boards & legs & crate | |
| 110A-SPF4 | 4 Channel Buss Assign, Pan & Foldback No. 2 Module | 165 |
| 110A-SSM4 | 4 Channel Stereo Switching & Buss Assign Module | 115 |

THE MODULES, OPTIONS AND ACCESSORIES LISTED BELOW ARE FOR 2 & 4 CHANNEL CONSOLES

| | | |
|----------|--|--------|
| 110-CRM | Control Room Monitor Module (See NOTES 1 & 2) | \$ 260 |
| 110-SM | Studio Monitor Module (See NOTES 1 & 2) | 270 |
| 110-ERM | Echo Return Assign to Program & Monitor Module (See NOTES 1 & 3) | 205 |
| 110-IME | Mono Input Module with 3-section Equalizer | 400 |
| 110-IM | Mono Input Module without an Equalizer | 320 |
| 110-SIM | Stereo Line Level Input Module without an Equalizer | 145 |
| 110-FM4 | Foldback No. 1 & Monitor Mix Module (See NOTE 1) | 670 |
| *110-MBM | Monitor Bridging Module | 175 |
| *110-FBM | Foldback No. 2 Master Module | 40 |
| F-1 | Mono Slide Attenuator Module | 165 |
| 110-HPC | Stereo Headphone Control Module (See NOTE 1) | 245 |
| A30 | Plug-in Line Output Amplifier Card | 100 |
| 110-TO | Test Oscillator Module (See NOTE 1) | 300 |
| *110-TBS | Talkback/Slate Module | 140 |
| 110-TB | Talkback Module | 95 |
| 110-BK | Blank Panel Kit (See NOTE 4) | 45 |
| 110-B | Blank Panel (See NOTE 5) | 17 |
| * F-2 | Stereo Slide Attenuator Module, for use with SIM Module or as Master | 180 |
| *110-MC2 | Master Control Module for 2-Channel Console Main Frame | 135 |
| *110-MC4 | Master Control Module for 4-Channel Console Main Frame | 335 |
| 110-VU | Extra VU Meter, including Buffer Amp, installed in Console | 120 |
| 110-TRC | Tape Transport Remote Control Switches, Panel Mounted (per switch) | 40 |
| 110-PB | Optional 156-jack Patch Bay System in Cabinet | 2,790 |
| 110-PC | 14 Inch Patchcord | 15 |
| 110-EX6 | Extender Module for Buss Assign Modules | 55 |

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110A-4 Series Consoles
 Domestic Price List
 Effective March 15, 1982

Auditronics 110A-4 Series, 4 output channel consoles, are available in two Main Frame sizes: Main Frame Model 110A-4MF is wired for up to 18 input positions. Main Frame Model 110A-4MFS is wired for up to 26 input positions. Both console frames are supplied wired for the maximum number of input positions (18 or 26), even though the console may be ordered with fewer than the maximum number of inputs. Unused positions are covered with blank panels. All consoles can be easily expanded to their maximum number of inputs at any time, in the field, simply by plugging in additional input modules, fader modules and switching/output modules. Both main frames use the same input and master modules. Pricing is shown for identical input configurations in the two different frame sizes. In addition, there are many optional modules available, some of which may not be required in a particular installation. To assist in the pricing of these consoles, the Price List is divided into two parts: Part 1 lists the prices for typical consoles with various quantities of input positions. The Input Modules used are Model IME Mono Modules with equalizers. Consoles listed in this section contain all possible options. A list of the exact contents is shown below the pricing.

Part 2 of the Price List shows the prices for all of the component parts. This allows the user to plan the exact console which will best fit his needs. Also included in Part 2 is information pertaining to Model 110A-2, 2 output channel consoles, and information regarding stereo input modules.

PART 1 - COMPLETE CONSOLE SYSTEMS

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| 110A-4 Console Supplied With: | WITH 18-IN FRAME | WITH 26-IN FRAME |
|-------------------------------|------------------|------------------|
| 6 Inputs | US 14,640 | US \$ 15,235 |
| 8 Inputs | 16,010 | 16,605 |
| 10 Inputs | 17,380 | 17,975 |
| 12 Inputs | 18,750 | 19,345 |
| 14 Inputs | 20,120 | 20,715 |
| 16 Inputs | 21,490 | 22,085 |
| 18 Inputs | 22,860 | 23,455 |
| 20 Inputs | ---- | 25,185 |
| 22 Inputs | ---- | 26,555 |
| 24 Inputs | ---- | 27,925 |
| 26 Inputs | ---- | 29,295 |

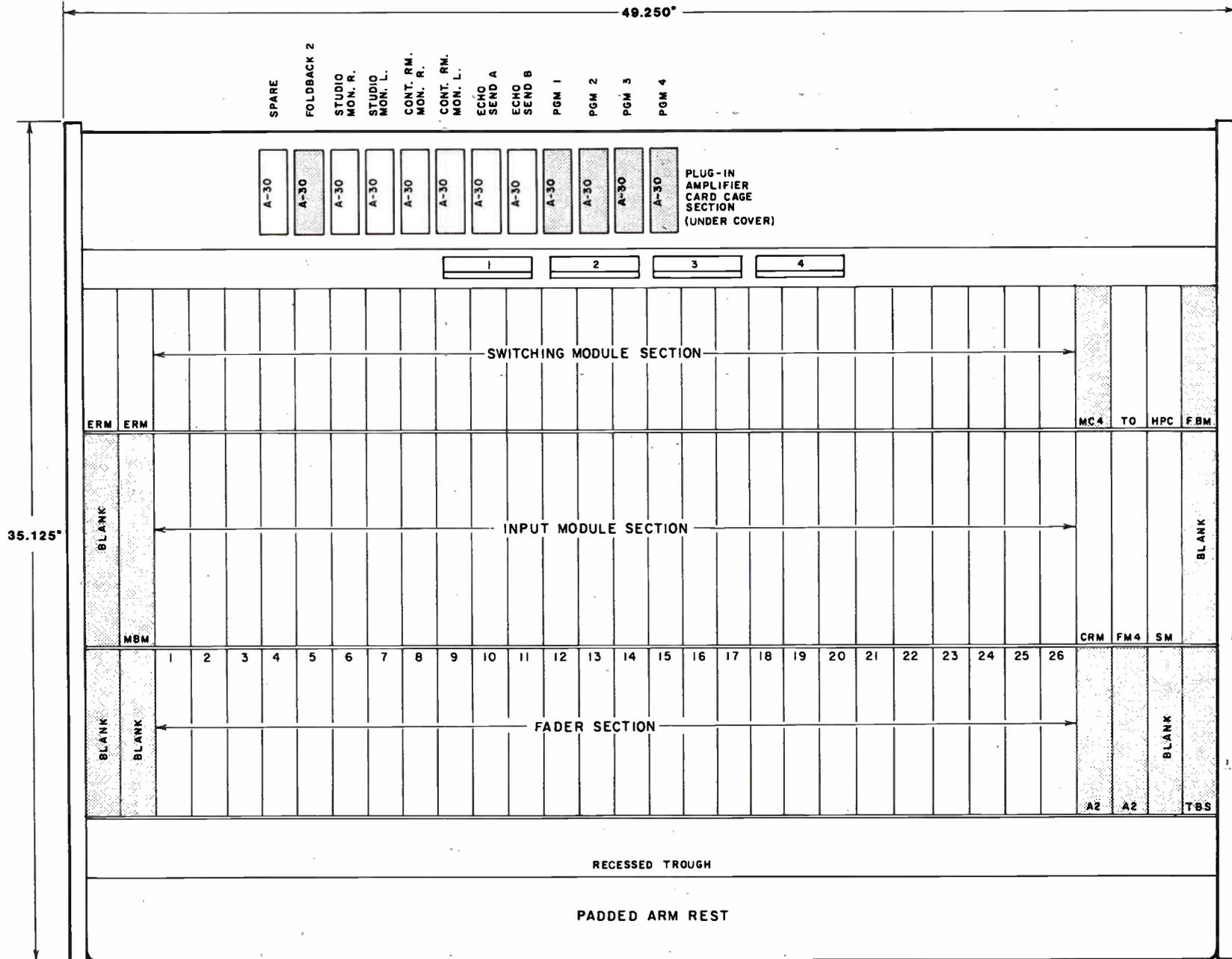
All of the complete console systems listed above contain the following components:

- | | |
|---|---|
| 1 110A-4MF or 110A-4MFS Main Frame System | 1 110-FM4 Foldback 1 & Monitor Mix Module |
| 1 110-CRM Control Room Monitor Module | 11 A30 Line Output Amplifiers |
| 1 110-SM Studio Monitor Module | 2 F-2 Stereo Slide Attenuator Modules |
| 2 110-ERM Echo Return Modules | * 110-IME Input Modules |
| 1 110-MC-4 Master Control Module | * F-1 Mono Slide Attenuator Modules |
| 1 110-HPC Stereo Headphone Module | * 110-SPF4 Assignment & Pan Modules |
| 1 110-FBM Foldback Master Module | ** 110-BK Blank Panel Kits |
| 1 110-TO Test Oscillator Module | 1 110-PS Power Supply System |
| 1 110-TBS Talkback/Slate Module | 1 110-M Operation/Service Manual |
| 1 110-MBM Monitor Bridging Module | 1 110-SPK Spare Parts Kit |
| | 1 110-IK Installation Kit |

* these make up the input positions. Quantity is specified by console description.

** one needed for each unused input position.

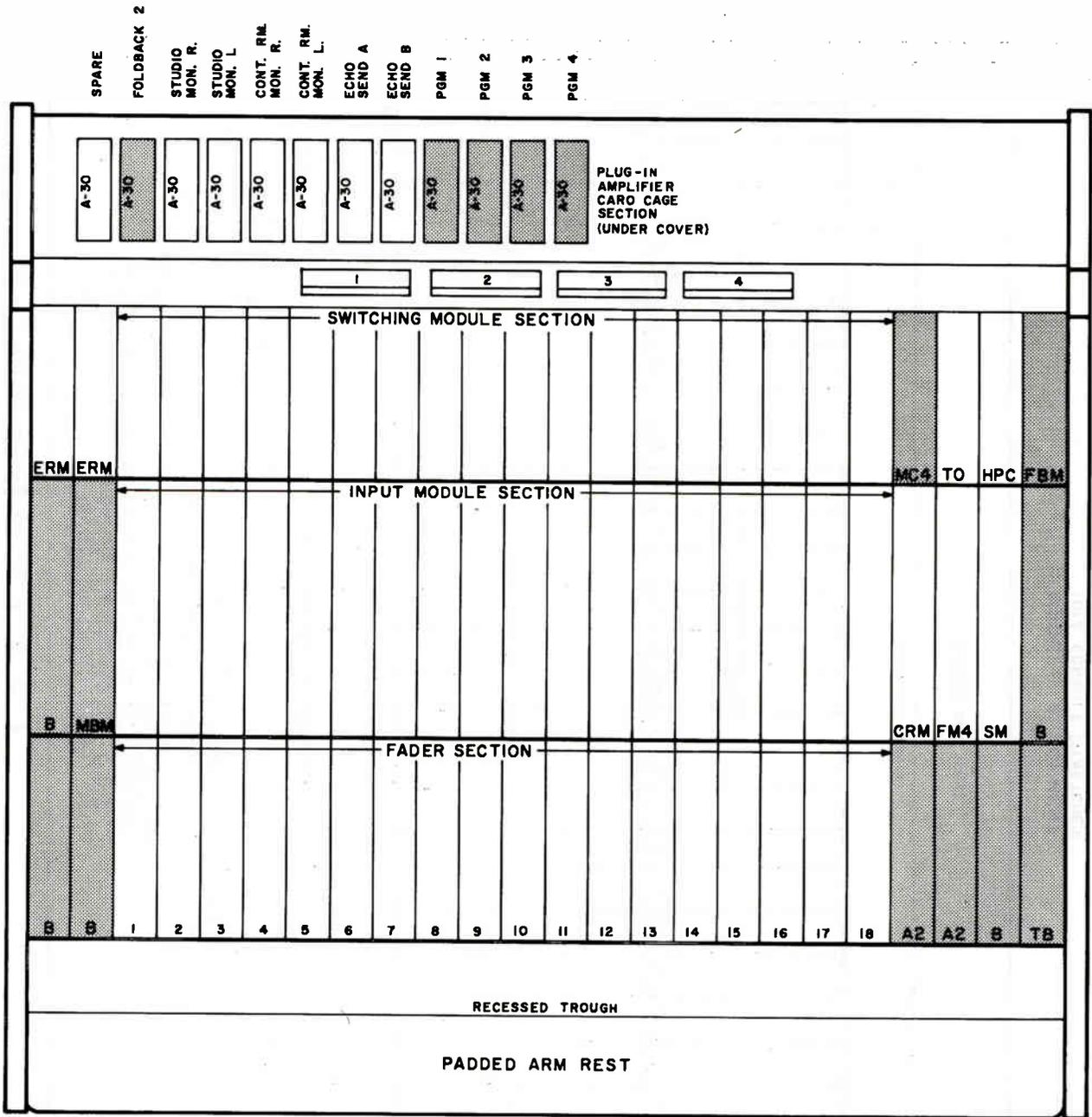
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**MODULE PLACEMENT
110A CONSOLE (STRETCHED)**

NOTE:
SHADED MODULES ARE SUPPLIED AND INCLUDED AS PART OF THE BASIC MAIN FRAME.

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**MODULE PLACEMENT
110A CONSOLE**

NOTE
SHADED MODULES ARE SUPPLIED AND INCLUDED AS PART OF THE BASIC MAIN FRAME.