AUTOGRAM MULTIMATION SYSTEM

TANDY MODEL 4 or 4P COMPUTER

PROGRAM DISK
LOG DISK
LOG DISK
RS 232 LOG
PRINTED LOG
PRINTED LOG

COMM & LOG

MICROGRAM CONSOLE

8 INPUT FLAGS
DEAD AIR SENSOR FOR EACH BUS
8 OUTPUT FLAGS

LOG 1
LOG 2
COMM

MACHINE CONTROL

64 POSSIBLE SOURCES

CARTRIDGE MACHINE
SATELLITE PROGRAMS
REEL-TO-REEL
NETWORK FEEDS

UP TO 8 RANDOM-SELECT DEVICES

PRELIMINARY SPECIFICATIONS MICROGRAM AUDIO CONSOLE

INPUT:
Sources:
 64 stereo inputs max
Impedances:
 Microphone: 200 ohm
 High level: 10k or 600 ohm terminate
 External Monitor: 10k
Levels:
 Microphone: −65 to −50 dbm (single input chassis only)
 High level: −10 dbm to +10 dbm
 External monitor: −10 dbm to +10 dbm
Noise:
 −80 db at +18 dbm outputs
Power Source:
 117 or 230 VAC 50-60 Hz single phase power supply (external)

OUTPUT:
3 stereo buses
1 mono program
2 cue amplifiers
2 headphone amplifier
4 line output (feed external monitor amplifiers)
Impedances:
 Program and Monitor: 600 ohm balanced or unbalanced
 Headphone: 8 ohm unbalanced
Levels:
 Program and Monitor: +8 dbm nominal, +24 dbm max
 Cue and Headphone: 1 watt into 8 ohm load
Frequency Response:
 Program and Monitor: ± 0.5 db 30 to 15kHz.
 Cue and Headphone: ± 1.5 db 30 to 15kHz.
Distortion
 Program and Monitor: Less than 0.5% THD
 Cue and Headphones: Less than 1.5% THD

PROGRAMMING OPTIONS:
5 front panels: 5 control sections max, including 1 monitor
Any combination of 4 single line or multiline sections
Single line: 4 microphone or hi level inputs
Multiline: 16 hi level inputs
Machine control for remote starts
RS 422 computer interface
Add external computer to automate up to two stereo audio buses
Add external printers and accessories for complete program logging
12-hour clock display
Stop watch display

DIMENSIONS:
11 in. above table (279.5mm)
33 in. deep (838.2mm)
43 in. wide (1092.2mm)
Requires 42.5 in. x 30¹/₁₆ in. (1079.5 x 763.5mm) cutout in table
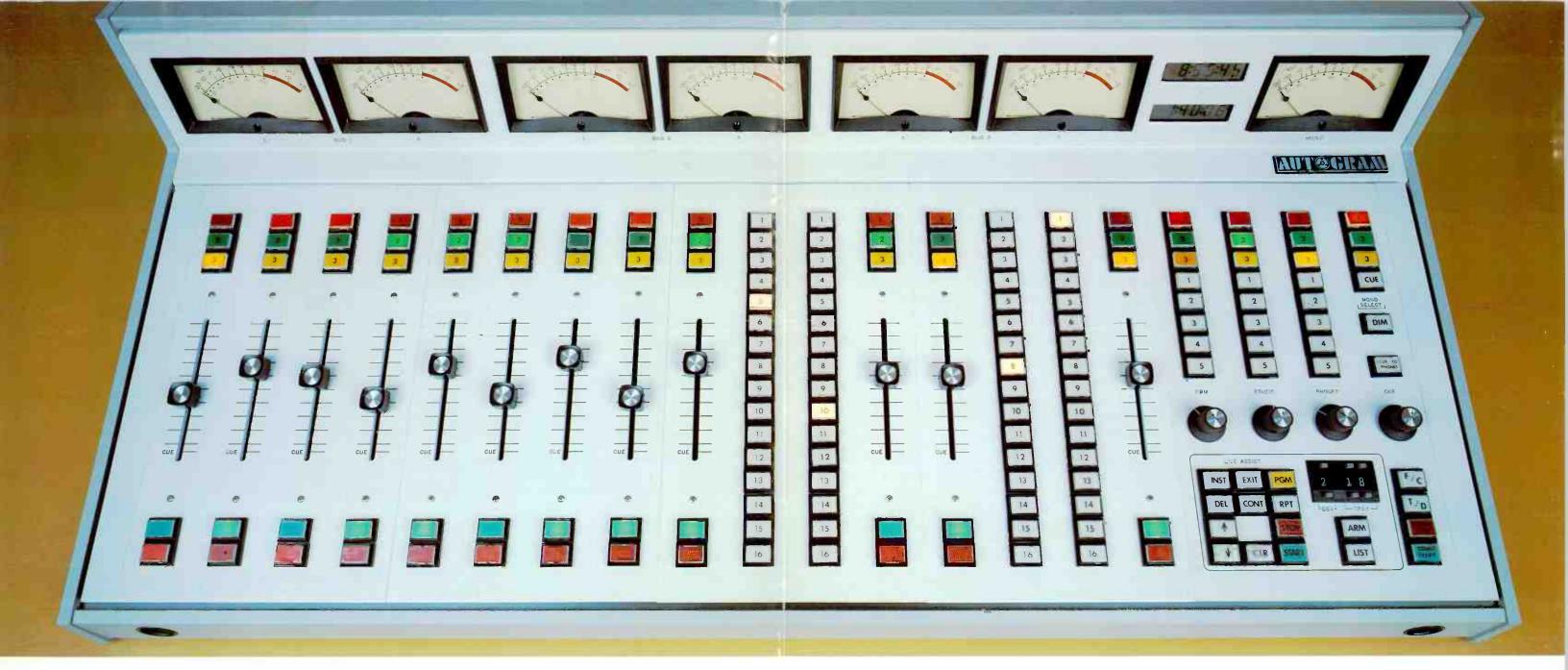
AUTOGRAM

Autogram Corporation 631 J Place   PO Box 456 Plano, Texas 75074   (214) 424-8585

Autogram's advanced Microgram® audio console puts control of all on-air operations at your fingertips or in a computer.

AUTOGRAM

FLEXIBLE, SINGLE POINT CONTROL FOR ALL ON-AIR OPERATIONS

Autogram's Microgram microprocessor controlled audio console is a powerful addition for any broadcast control room.

It's built to handle board functions with ease while signaling and mixing numerous prescheduled events simultaneously.

The Microgram console can handle three stereo audio buses simultaneously; or run two completely separated automation systems on AM and FM, and still leave a bus open for production; or allow one bus to call another bus for simulcasting and other special situations.

In fact, the Microgram console can perform just about any control room function you want it to: from handling your daily schedules; to joining and leaving local or network programming; to turning on or off a coffee pot and station lights.

CONSOLE CONTROL PANEL

The Microgram has five front panel sections. The fifth section makes up the monitor panel. While the first four sections can consist of four single line or multi-line sections in any combination. the multi-line section consists of two faders. One is on the left. the other on the right. with two rows of buttons down the center. It works on the same principle as a television switcher; it always allows you to fade into the next source. All single line sections have loop thru connections, providing for external processing.

All inputs can be switched to one or all three stereo output buses in any combination; and in the Autogram tradition, a mono mix comes as a standard feature, to allow a mono mix down from any one of the three stereo buses. All bus lines are monitored on individual V.U. meters.

The Microgram monitor panel can select any one of three stereo buses plus five external sources, that are user assignable. for independent monitoring in the control room and the studio. Other standard features include: 12 hour clock, stop watch and thermometer.

The Microgram console comes with more than 790 steps of internal memory that can be pre-programmed in eight blocks. Each block consists of 99 steps; thus you can pre-program repetitive blocks that are used hourly or daily.

With the addition of a printer you can keep a clear language log as you proceed thru the broadcast day. Eight of the inputs may be multi-tray sources. Each multi tray source can be pre-armed with up to 79 trays per source.

COMPUTER INTERFACE

With the addition of a computer, you can run any two of the three stereo buses fully automated and independent of each other, allowing the remaining pots to be used for production.

Autogram's Multimation Division can supply custom software for broadcasters using satellite programming or other custom applications.

Multimation software from Autogram consists in part of fade up, fade down or crossfade functions; all user addressable as to the ratio desired for your particular sound.

Back fill logistics can be assigned to any channel allowing for real-time correction with fill.

Real-time corrects allow the program to be set to any step location in program memory desired.

External real-time flags are provided for starting network delay machines, turning on news room machines for network conference calls, or other operations.

Logging information can be routed to printers, disk storage or computer for future reference or billing purposes.

Current software is prepared for use with the Tandy Model 4 or 4P computer. For information on Microgram consoles or Multimation software, contact Autogram Corporation.

MICROGRAM AUTOMATION SYSTEM FEATURES

- Independent Automation of two Audio Buses from a single computer
- Edits can be done on either automation channel or a third program
- Split-screen display of automation programs and edit area
- Flexible diskette storage of programs and log data
- Log to one of two printers or to disk
- 16 English character identifier on each source for logger
- 4500 steps total for both automation channels and edit program
- Powerful steps eliminate need for large numbers of steps
- Dynamic memory allocation — no reserved fixed block sizes
- Reroute audio sources without changing programs
- Audio channels under automation control "inactive" to DJ
- Live assist and emergency break-in features

AUTOGRAM
CORPORATION
P.O. BOX 456
PLANO, TEXAS 75074

P R I C E   L I S T

CONSOLES*

AC-6   6 Pot

Typical Stereo:
Two stereo programs out; 1 microphone preamp and
balance hi-level transformer inputs $5,014.00

Typical Mono:
Two mono programs out; 1 microphone preamp and
balance hi-level transformer inputs $4,399.00

AC-8   8 Pot

Typical Stereo:
Two stereo programs out, 1 mono program out; 2
microphone preamp, and balance hi-level transformer inputs $6,279.00

Typical Mono:
Two mono program out; 2 microphone preamp and
balance hi-level transformer inputs $5,564.00

IC-10   10 Pot

Typical Stereo:
Two stereo programs out, 1 mono program out; 2
microphone preamps, and balance hi-level transformer
inputs $8,445.00

Typical Mono:
Two mono programs out, 2 microphone preamps, and
balance hi-level transformer inputs $7,650.00

*All consoles are wired as stereo. Mono consoles may be
upgraded to stereo by adding appropriate plug-in modules.
Front panels are engraved.

CONSOLE ACCESSORIES

Auto Clock--Time, Stop Watch, Date & Temperature $ 349.00
Auto Code --Tape Cartridge Verification
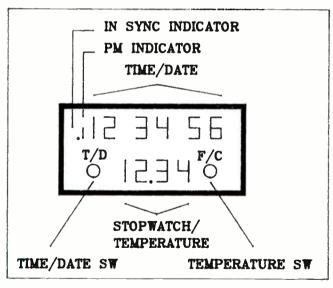   Encode/Decode System $ 995.00

AUTOCLOCK

FEATURES

REAL–TIME (HH: MM: SS)
  BATTERY BACKED

REAL–DATE (MM: DD: YY)

STOPWATCH (MM: SS)
  00:00 TO 99:59
  CONTROLS: (EXT. SWITCHES)
    RESTART
    STOP–RESET
    START–CONTINUE

TEMPERATURE
  DEGREES F/C
  HIGH OF DAY
  LOW OF DAY
  EXTERNAL PROBE

AUTOCLOCK SYNC
  Allows up to 10
  AUTOCLOCKS to sync
  on same TIME/DATE/TEMP.

DESIGNED FOR
AUTOGRAM CONSOLES:
  AC–6, AC–8, IC–10

AUTOGRAM CORPORATION
PO BOX 456, 631 J PLACE
PLANO, TEXAS 75074

(214) 424–8585

AUT⊗GRAM
Mono/Stereo Audio Consoles
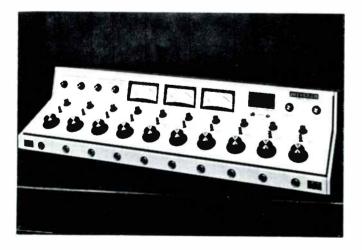

AC-6

Sources:
> 23 stereo inputs — customer's option as to use by
>> plug-in modules
> 1 high level cassette

Outputs (depends on modules used)
> 1 Stereo program
> 1 Stereo audition

AC-8

Sources:
> 26 stereo inputs — customer's option as to use by
>> plug-in modules
> 1 high level cassette

Outputs (depends on modules used)
> 1 Stereo program
> 1 Stereo audition
> 1 Monophonic program

IC-10

Sources:
> 28 stereo inputs — customer's option as to use by
>> plug-in modules
> 1 high level cassette

Outputs (depends on modules used)
> 1 Stereo program
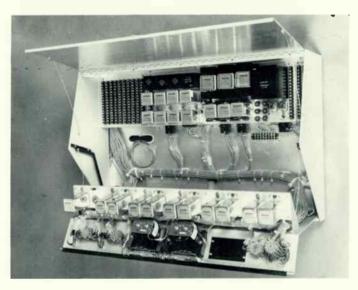> 1 Stereo audition
> 1 Monophonic program

AUTOGRAM CORPORATION
P.O. Box 456, 631 J Place
Plano, Texas 75074

214/424-8585

AUTOGRAM

AC—6 Mono/Stereo Audio Console

MOUNTING & DIMENSIONS:
Table top with bottom or back cable entry
Height: 10 in.; 25.4 cm.
Depth: 20 in.; 50.8 cm.
Width: 32-3/8 in.; 82.2 cm.

AUTOGRAM CORPORATION
PO Box 456, 631 J. Place
Plano, Texas 75074

214—424-8585

SPECIFICATIONS

INPUT CHARACTERISTICS:

Sources:
23 stereo inputs — customer's option as to use by plug-in modules
1 high level cassette

Impedances:
Microphone, 200 or 50 ohms
High level 10K ohm bridge or 600 ohm terminate
External monitor 10K ohm

Levels:
Microphone -65 to -50 dBm
High level -10 dBm to +10 dBm
External monitor - 10 dBm to +10 dBm

Noise:
Program/audition -120 dBm
Monitor -110 dBm

Power Source:
117 or 230 Vac 50-60 Hz single phase

OUTPUT CHARACTERISTICS:

Outputs (Depends on modules used)
1 Stereo program
1 Stereo audition
2 Monitor amplifiers
2 Headphone amplifiers
1 Cue amplifier

Impedances:
Program/audition 600 ohm balanced or unbalanced —
Monitor 4-16 ohm unbalanced
Cue 4-16 ohm unbalanced

Levels:
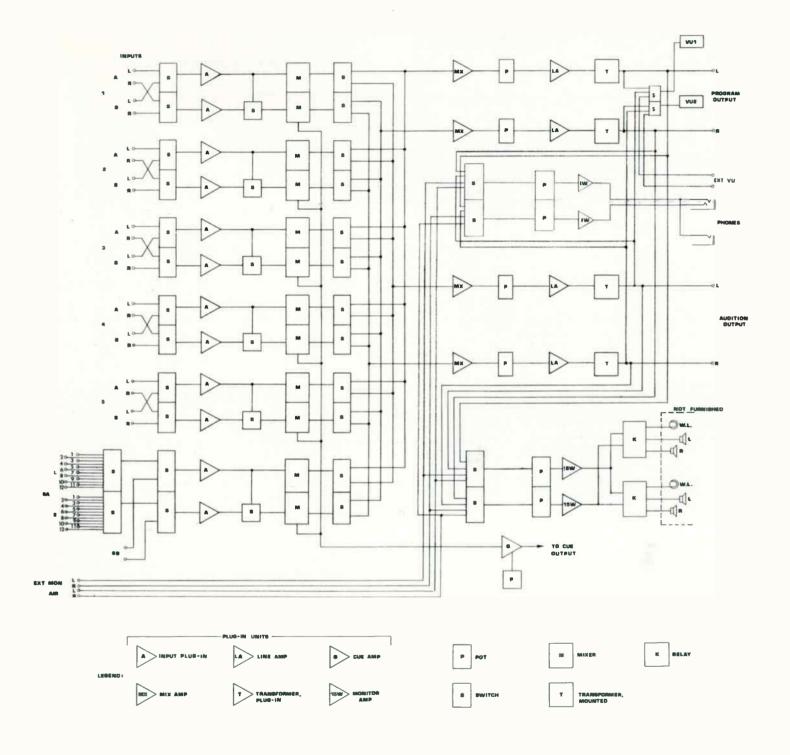Program/audition or mono: +8 dBm nominal — +24 dBm mazimum
Monitor — 15 watts RMS into 8 ohm load
Cue and headset — 1 watt into 8 ohm load

Frequency Response:
Program/audition ±1 dB 30 to 15K Hz
Monitor ±1.5 dB 30 to 15K Hz

Distortion:
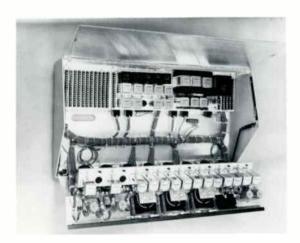Program/audition less than 0.5% THB
Monitors less than 1.5% THD

BLOCK DIAGRAM
AC-6 AUDIO CONSOLE

4-24-78

AUTOGRAM

AC—8 Mono/Stereo Audio Console

MOUNTING & DIMENSIONS:
Table top with bottom or back cable entry
Height: 10 in.; 25.4 cm.
Depth: 20 in.; 50.8 cm.
Width: 37¼ in.; 94.6 cm.

AUTOGRAM CORPORATION
PO Box 456, 631 J. Place
Plano, Texas 75074
214—424-8585

SPECIFICATIONS

INPUT CHARACTERISTICS:

Sources:
26 stereo inputs — customer's option as to use by plug-in modules
1 high level cassette

Impedances:
Microphone, 200 or 50 ohms
High level 10K ohm bridge or 600 ohm terminate
External monitor 10K ohm

Levels:
Microphone -65 to -50 dBm
High level -10 dBm to +10 dBm
External monitor - 10 dBm to +10 dBm

Noise:
Program/audition -120 dBm
Monitor -110 dBm

Power Source:
117 or 230 Vac 50-60 Hz single phase

OUTPUT CHARACTERISTICS:

Outputs (Depends on modules used)
1 Stereo program
1 Stereo audition
1 Monophonic program
2 Monitor amplifiers
2 Headphone amplifiers
1 Cue amplifier

Impedances:
Program/audition 600 ohm balanced or unbalanced — 10K ohm balanced or unbalanced
Monitor 4-16 ohm unbalanced
Cue 4-16 ohm unbalanced

Levels:
Program/audition or mono: +8 dBm nominal — +24 dBm mazimum
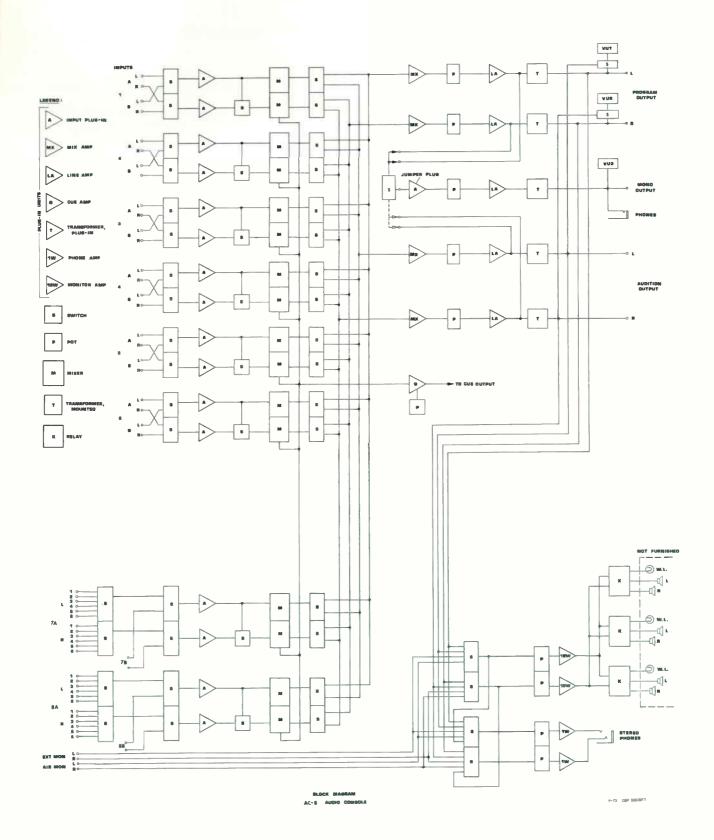Monitor — 15 watts RMS into 8 ohm load
Cue and headset — 1 watt into 8 ohm load

Frequency Response:
Program/audition ±1 dB 30 to 15K Hz
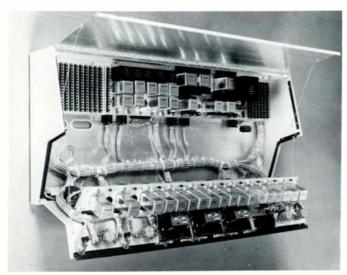Monitor ±1.5 dB 30 to 15K Hz

Distortion:
Program/audition less than 0.5% THB
Monitors less than 1.5% THD

BLOCK DIAGRAM
AC-8 AUDIO CONSOLE

AUT⊙GRAM

IC–10 Mono/Stereo Audio Console

MOUNTING & DIMENSIONS:
Table top with bottom or back cable entry
Height: 10 in.; 25.4 cm.
Depth: 20 in.; 50.8 cm.
Width: 44 in.; 118 cm.

AUTOGRAM CORPORATION
PO Box 456, 631 J. Place
Plano, Texas 75074

214–424-8585

SPECIFICATIONS

INPUT CHARACTERISTICS:

Sources:
28 stereo inputs — customer's option as to use by plug-in modules
1 high level cassette

Impedances:
Microphone, 200 or 50 ohms
High level 10K ohm bridge or 600 ohm terminate
External monitor 10K ohm

Levels:
Microphone -65 to -50 dBm
High level -10 dBm to +10 dBm
External monitor - 10 dBm to +10 dBm

Noise:
Program/audition -120 dBm
Monitor -110 dBm

Power Source:
117 or 230 Vac 50-60 Hz single phase

OUTPUT CHARACTERISTICS:

Outputs (Depends on modules used)
1 Stereo program
1 Stereo audition
1 Monophonic program
2 Monitor amplifiers
2 Headphone amplifiers
1 Cue amplifier

Impedances:
Program/audition 600 ohm balanced or unbalanced — 10K ohm balanced or unbalanced
Monitor 4-16 ohm unbalanced
Cue 4-16 ohm unbalanced

Levels:
Program/audition or mono: +8 dBm nominal — +24 dBm mazimum
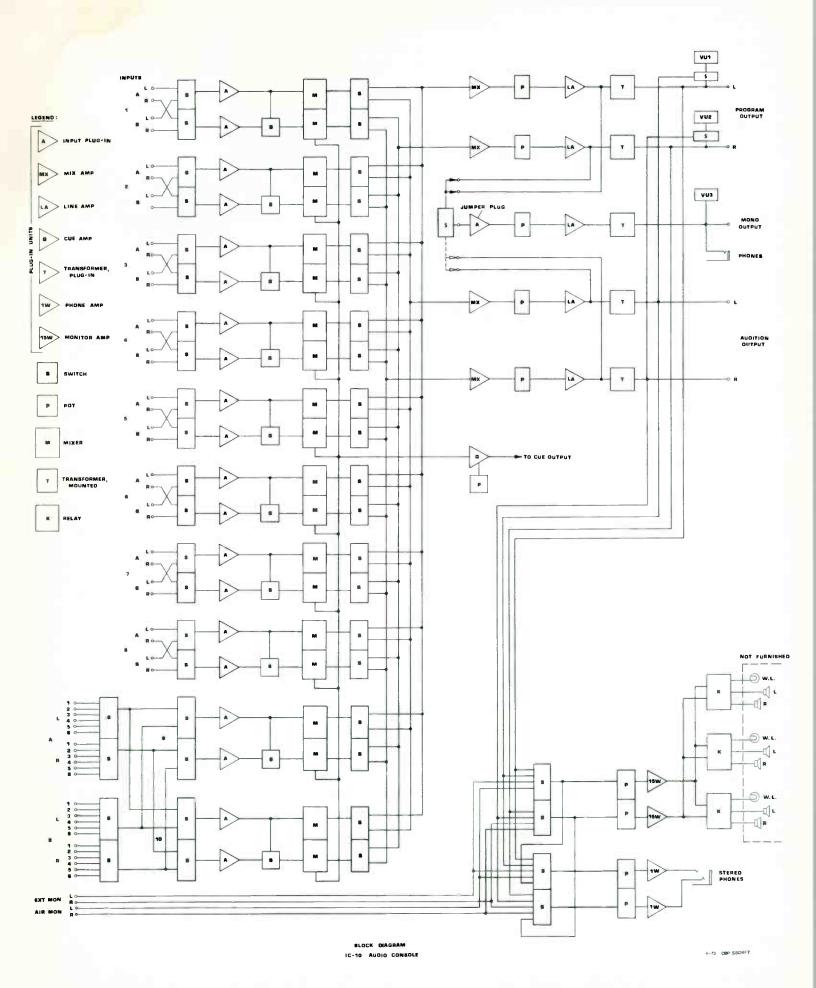Monitor — 15 watts RMS into 8 ohm load
Cue and headset — 1 watt into 8 ohm load

Frequency Response:
Program/audition ±1 dB 30 to 15K Hz
Monitor ±1.5 dB 30 to 15K Hz

Distortion:
Program/audition less than 0.5% THB
Monitors less than 1.5% THD

INPUTS

LEGEND:

PLUG-IN UNITS

A — INPUT PLUG-IN
MX — MIX AMP
LA — LINE AMP
Q — CUE AMP
T — TRANSFORMER, PLUG-IN
1W — PHONE AMP
15W — MONITOR AMP

S — SWITCH
P — POT
M — MIXER
T — TRANSFORMER, MOUNTED
K — RELAY

VU1
VU2
VU3

PROGRAM OUTPUT
L
R

MONO OUTPUT
PHONES

JUMPER PLUG

AUDITION OUTPUT
L
R

TO CUE OUTPUT

NOT FURNISHED
W.L.
L
R

STEREO PHONES

EXT MON   L / R
AIR MON   L / R

BLOCK DIAGRAM
IC-10 AUDIO CONSOLE

4-73 DBP SSO8FT

MICROGRAM HIGHLIGHTS

FLEXIBILITY

Up to 64 inputs. Can be single line type (High Level or Microphone input) or Multi-line type.

Multiline approach is unique in that it operates like a T.V. switcher. 16 stereo channels can go to either of the two faders.

3 stereo output buses +1 selectable mono bus. Each input channel can feed any or all output buses simultaneously.

OTHER CONSOLE FEATURES

Intellegent muting system.

Cue to phones.

State of the art digitally controlled attenuators.

Z-80 Microprocessor for maximum reliability.

Full Battery backup of console parameters.

Multifunction display with intellegent timer.

Provides sync signal for Autoclock.

LIVE ASSIST FEATURES

8 programs with 99 steps in each program.

Programs can be linked to give more steps.

Full control of random access tape machines. Up to 8 devices (carousel, go-cart, instacart, etc.) 99 tray capacity

Tray devices can be armed in live operation or pre-programmed

Simple programming. Just push (program) then hit the buttons you would use for live operation. NO complex codes.

Printer connections for complete records with AUTOCODE.

MULTIMATION FEATURES

Interfaces to TANDY Model 4 or 4P personal computers.

Independent automation of two buses with one computer.

Flexible diskette storage of programs and log data.

Interactive "live assist" with automation for talkovers and news bulletins etc.

Audio channels under automation control "inactive" to D.J.

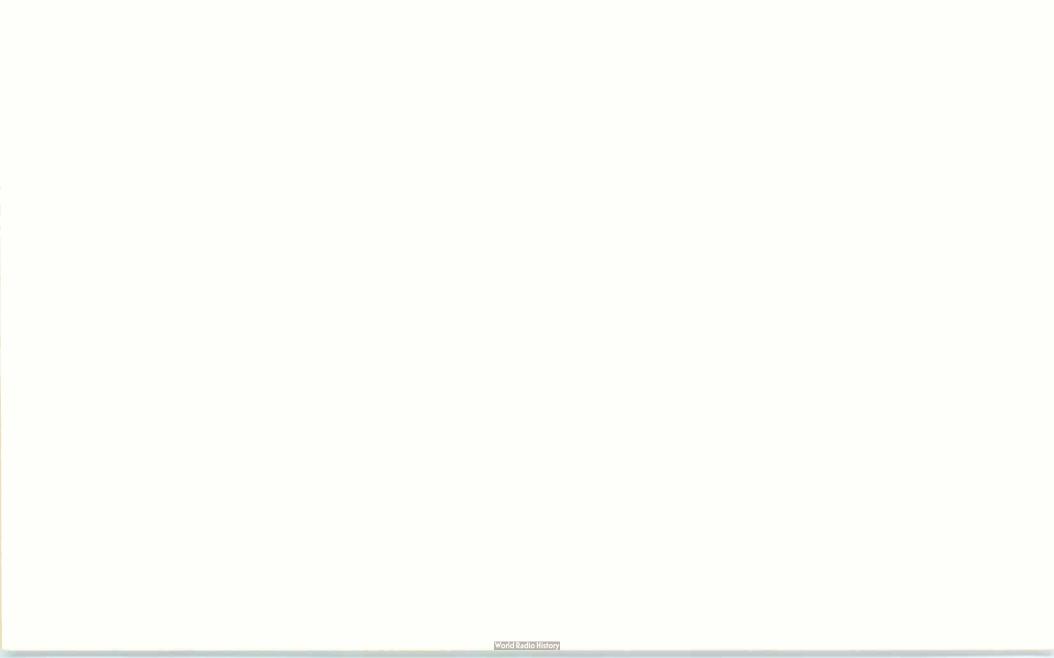Special built in programming for satellite music services.

Start small then grow by simply adding sources.

Set the level of any automation source if desired for voice overs, ducking, etc.

External controls to operate transmitter, etc.

Full printed program records with Autocode.

The Microgram Audio console and Multimation provides a cost effective means of providing your station with the tools to meet whatever the future demands of your programming.

ASSEMBLY DESCRIPTIONS (A DESIGNATIONS)

A1 Single Line Assembly

All single-line channels can be adapted for use with low-level balanced microphone input, high-level balanced or bridging inputs by selecting the appropriate input accessory module--MPA-1, microphone amplified, MT-1, matching transformer, or BT-1, bridging transformer. Price is based on 2 each MPA-1 and 4 each MT-1. This includes front control panel section and chassis with 4 each DCA, digital control attenuator cards (located in A4), 1 each C1 audio control card, 1 each A-1 logging card (C1 and A1 cards located in A9). Patch points are available for external processing.

A2 Multiline Assembly

All 16 line channels may be high-level, terminating or bridging. This includes front control panel section and chassis with 8 each 4 x 2 switch cards and 2 each buffer mix amplifier cards. Also supplied are 2 each DCA, digital control attenuator cards (located in A4), 2 each A1 logging cards, 4 each C1 audio control cards (C1 and A1 cards located in A9).

A3 Monitor Switch Assembly

This chassis contains 8 each 4 x 2 switching cards that respond to monitor select switching functions

A4 Monitor/Program Output Assembly

Program amplifiers include 3 each dual mix-amp cards, 7 each LA-1 plug-in line amplifiers and required DCA cards (supplied as part of A1 and A2 assembly). Monitor amplifiers include 1 each dual mix-amp card, 4 each stereo-balanced DCA cards, 1 each buffer mix-amp card, 1 each mono-select card, and 1 each silence sensor board. 4 each CA-1, headphone/cue amplifier plug-in modules are used to drive headphones and external stereo cue speakers. 4 each LA-1, line amplifiers, drive line level external amplifiers for control room speakers and studio speakers. The monitor front control panel section is included.

A5 CPU Card Cage

This enclosure includes 1 each microprocessor card, 1 each serial I/O card, 1 each miscellaneous I/O card, 1 each data buffer card, and 1 each A/D card.
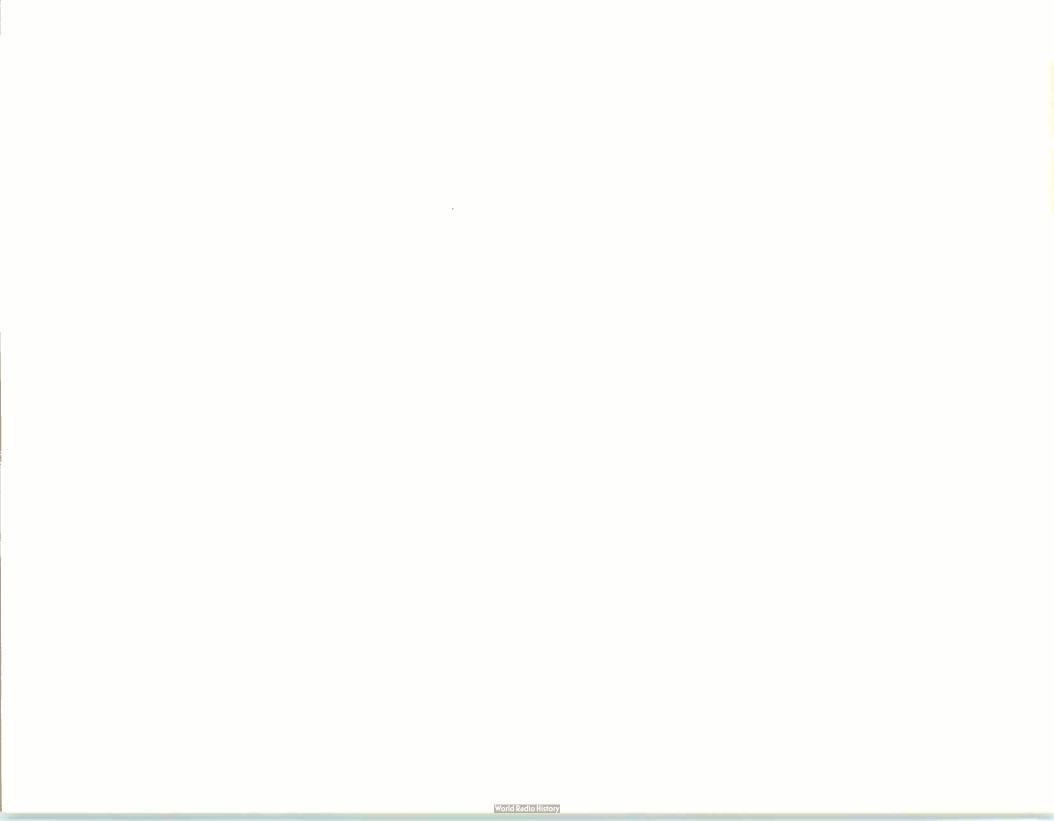
A6 Power Supply Distribution Chassis

This distributes various power supply voltages to each chassis. Most chassis have on-board voltage regulators.

A7 Cabinet/Front Panel

This contains 1 each digital display with 2 readouts, 7 each true VU meters, and all cabinetry.

A8 Power Supply

The external 7" rack-space chassis contains all required power supplies with LED indicating fuse status.

A9 SCU Cabinet

The external 10½" rack-space chassis houses 1 each SCU microprocessor card, up to 17 each C1 control cards, up to 8 each A1 log cards (C1 and A1 cards are supplied as part of A1 and A2). An eight-wire cable is required for communication between the console microprocessor card (CPU cage) and the SCU card microprocessors. C1 cards provide open-collector circuits for remote starting of cart machines, reel-to-reel decks, or driving relay control panel A12.

A10 Exp III Interface

This external interface box is required to interface TRS-IV computer to console.

A11 Tray Select Cards and Housing

This selects trays for up to 3 multiple cart machines. The box mounts near multiple cart machine.

A12 Relay Control Panel

A 3½" rack-space panel containing 16 relays is used for control of 16 external functions. C1 cards (in SCU cabinet) may drive these relays for external isolated control circuits, such as, on-air lights, remote isolated starts.

A13 Program/Cue Monitor Amplifier Panel

Panel contains audio tie-point terminals 'A 24-position audio switch selects the input to the stereo MA-1 monitor amplifiers and VU meters. A L + R and L - R meter switch is included. This panel is used primarily with fully-automated systems that are placed in different locations from the console.

A14 Cable Harness

This internal cable assembly consists of power, audio, and digital signal distribution.

A15 Power Cable

Power cable connects external power supply to console.

A16 Basic Console Software Package

This package is required software for all operations of console.

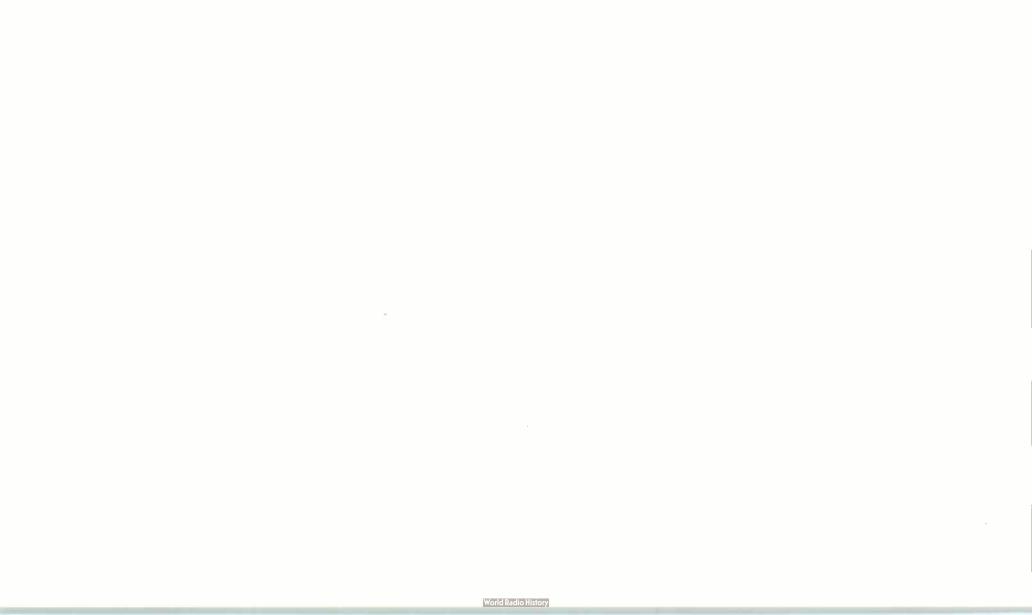**A17 Multimation Software Package**

This package is required software to fully automate two of the three stereo audio buses.

A18 Blank Front Panel Section

A blank front console panel is used to fill where a full complement of front panel is not used.
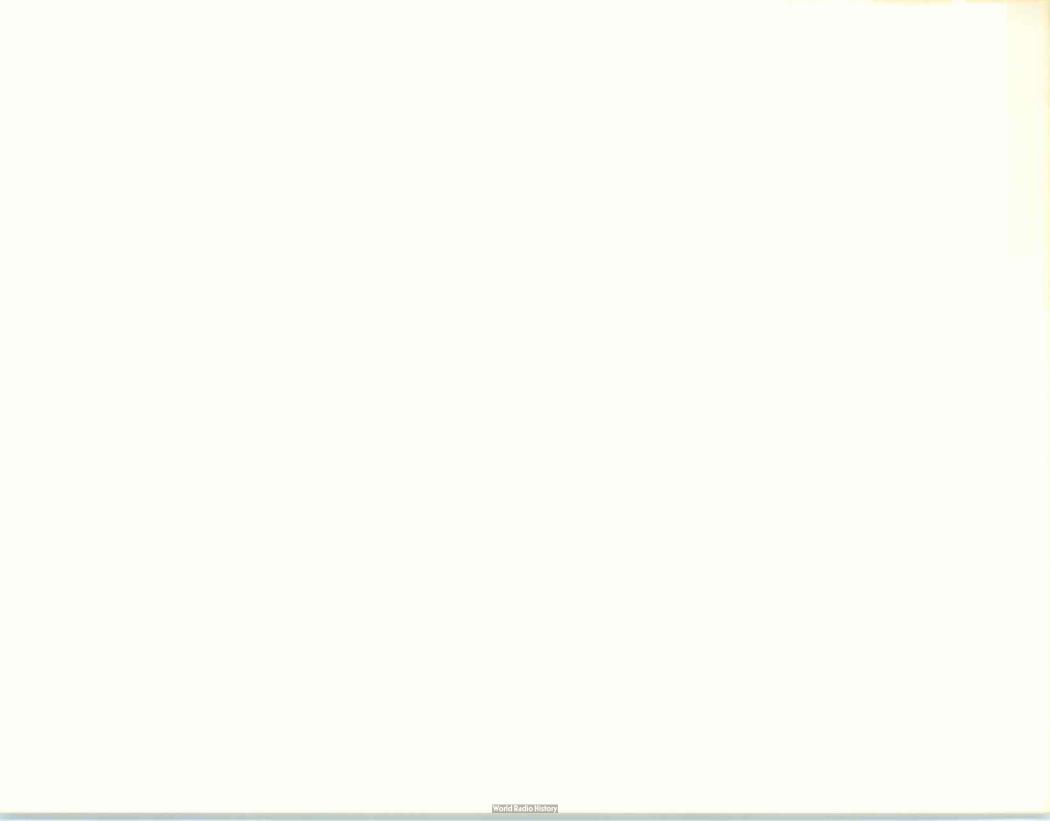
A19 Audicode Encode/Decode Card and Cable

These are used in conjunction with VIC-20 computer, TV receiver/ monitor and cart record machine. Places up to 80 characters encoded on cue track of cart. Card plugs into VIC-20 game card slot.

P R I C E   L I S T
AUTOGRAM MICROGRAM AUDIO CONSOLE

1-25-84

Basic Console $10,308
Consisting of:

- A3   Monitor Switch Assembly
- A4   Monitor/Program Output Assembly
- A5   CPU Card Cage
- A6   Power Supply Distribution
- A7   Cabinet/Front Panel
- A8   Power Supply
- A9   SCU Cabinet
- A14   Cable Harness
- A15   Power Cable
- A16   Basic Console Software

Required Options:
(Note: 1 to 4 combinations of A1 and A2 required)

A1	Single Line Assembly	$1,937
A2	Multiline Assembly	1,849

Other Options:

A10	Exp III Interface	$ 400
A11	Tray Select Control	517
A12	Relay Control Panel	454
A13	Program/Cue Monitor Panel	620
A17	Multimation Software Package	3,000
A18	Blank Front Panel Section	50
A19	Audicode Encode/Decode Card	450

AUTOGRAM MICROGRAM CONSOLE

Typical Configurations with Prices

	Live Assist 24 Inputs No Automation		Live Assist 24 Inputs 1-Channel Automation		Live Assist 40 Inputs 2-Channel Automation	
Basic Console		$10,308		$10,308		$10,308
A1 Single Line Assembly	(2)	3,874	(2)	3,874	(2)	3,874
A2 Multiline Assembly	(1)	1,849	(1)	1,849	(2)	3,698
A10 Exp III Interface			(1)	400	(1)	400
A11 Tray Select Enclosure[1]			(1)	517	(1)	517
A12 Relay Control Panel[2]	(1)	454	(2)	908	(2)	908
A13 Program/Cue Monitor Panel						
A17 Multimation Automation Software[3]			(1)	3,000	(1)	3,000
A18 Blank Front Panel	(1)	50	(1)	50		
A19 Audicode Encode/ Decode Card Assembly[4]			(1)	450	(1)	450
TOTALS		$16,535		$21,356		$23,155

NOTE: 1 Up to 3 multicart machines

2 Up to 16 source control

3 Requires TRS III or IV computer and printer

4 Requires VIC-20 computer, TV receiver/monitor, and cart
recorder/playback (Audi-Cord S Line or equivalent)