AUTOGRAM MULTIMATION SYSTEM

TRS-80 LEVEL 3 COMPUTER

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

COMM & LOG

MICROGRAM CONSOLE

4 INPUT FLAGS
DEAD AIR SENSOR FOR EACH BUS
10 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

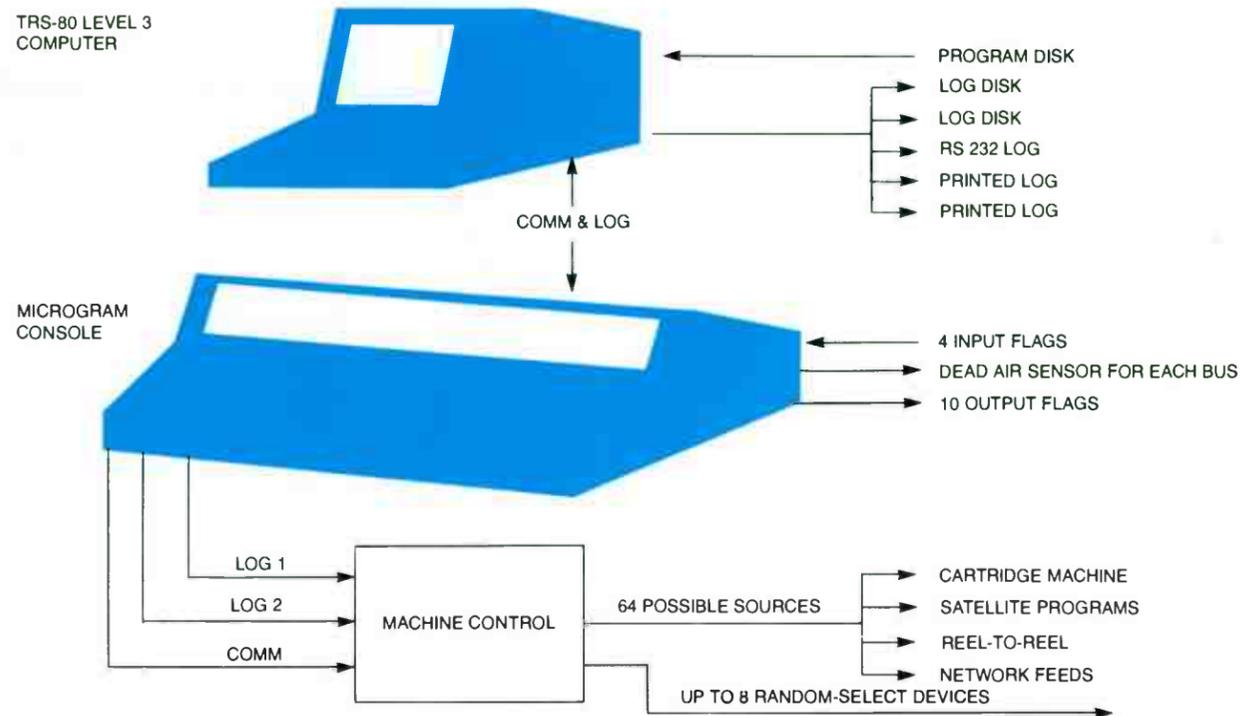## PRELIMINARY SPECIFICATIONS MICROGRAM AUDIO CONSOLE

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 (279.4 mm)
 33 in. deep (838.2 mm)
 43 in. wide (1092.2 mm)

All specifications are subject to change without notice.

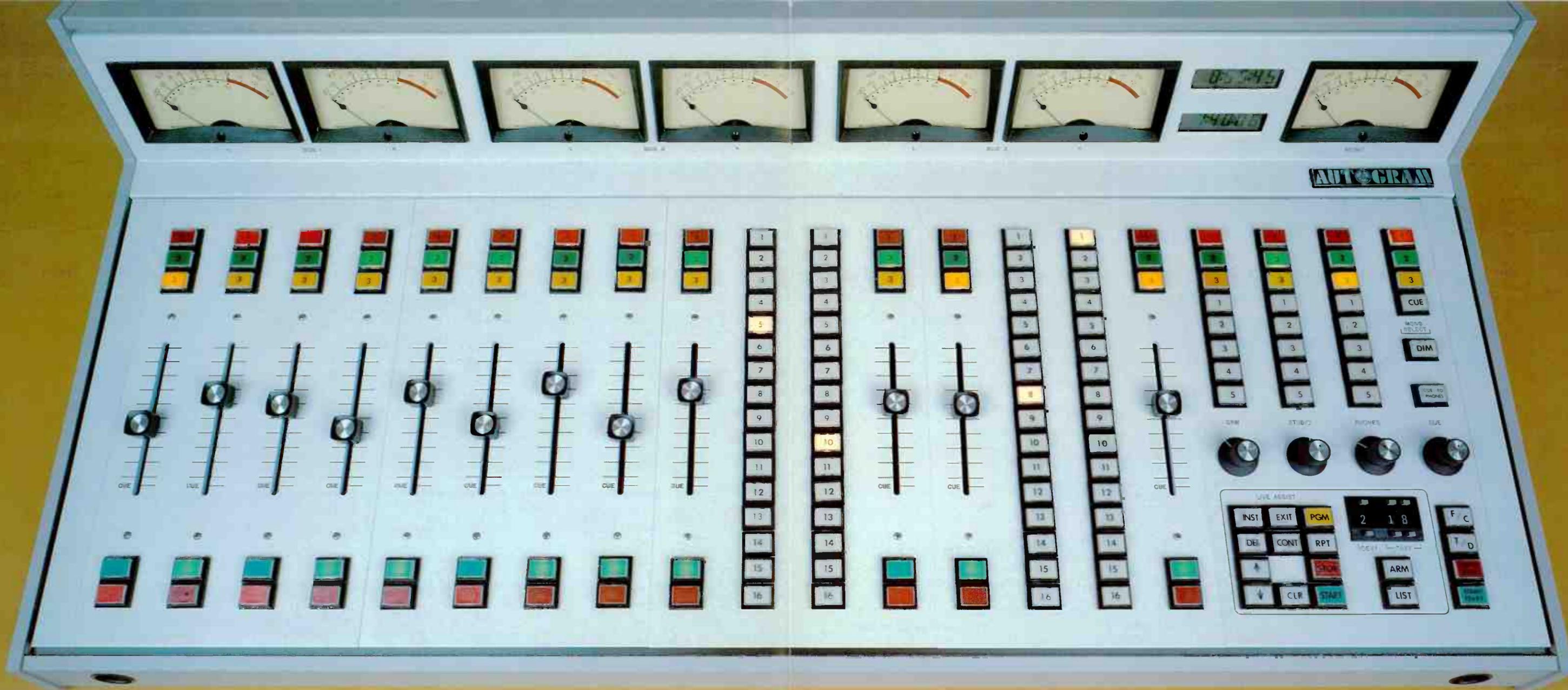## AUTOGRAM

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 2000 steps of internal memory that can be pre-programmed in eight blocks. Each block consists of 256 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 99 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 TRS-80 Level 3 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
- Closed loop options on remote starts

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)