TASCAM

388 STUDIO 8
Pure Performance

STUDIO 8

## *Tascam Imagination puts Integrated Recording on Reels.*

Tascam's Studio 8 is the easiest-to-operate 8-track production system you can buy. Its full function mixer combines with its 1/4″ open reel transport to provide a complete, integrated signal processing and recording machine for musicians, composers, commercial producers, and video/film professionals.

The Studio 8 starts with a remarkably sophisticated mixing console whose internal network of submix systems lets you set it up for almost any job without patching. The elimination of time consuming and confusing patching was the first design criterion for Tascam engineers, who achieved the Studio 8 by marrying the mixer section with a solid tape drive system. Now sophisticated mixing and 8-track recording can be done on a single unit, complete with a single connector SMPTE/EBU/computer interface for control by external devices.

The most obvious benefits of the Studio 8's integrated design are speed and ease of operation.

Some 8-track recording setups seem to stress complexity as an unavoidable evil in the creative process of getting sounds on tape. At Tascam, we believe that simplicity is the key to unlocking creativity and letting it flow. The Studio 8 is a device whose whole reason for being is efficient simplicity, and the elegance of its design is apparent to a first time or veteran recordist.
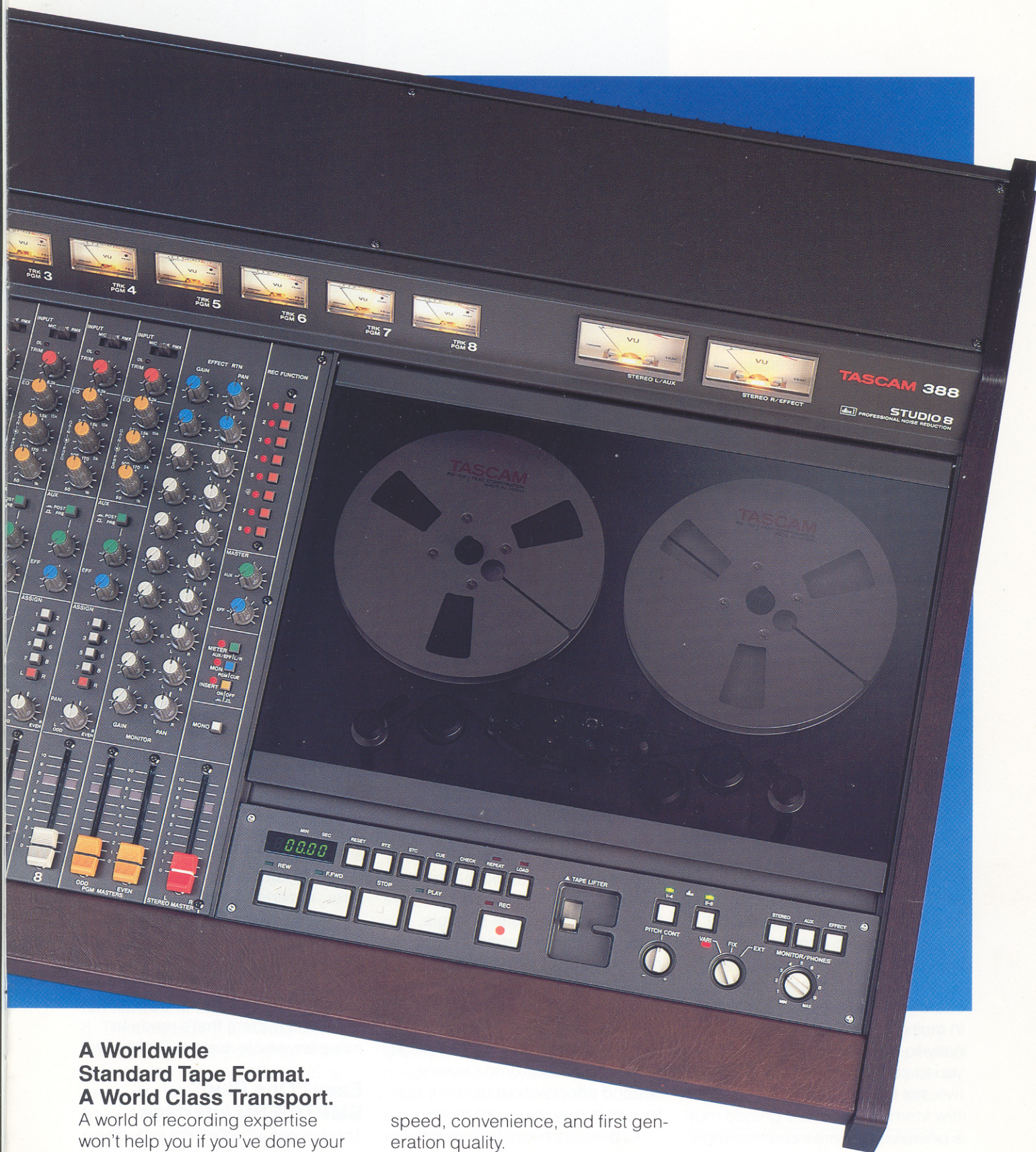
A Worldwide Standard Tape Format. A World Class Transport.

A world of recording expertise won't help you if you've done your recording on a non-standard tape format. The Studio 8's 7-inch reels of 1/4-inch tape can be found almost anywhere anytime. And for the pro and his splicing block, nothing beats hands-on editing for speed, convenience, and first generation quality.

The all new microprocessor-controlled three motor transport design assures precise control and the tape motion stability so critical to low wow and flutter. Tascam designed, Tascam made Hard Per-

malloy heads wrap it up with excellent sound, long life and "stay put" alignment. The higher 7½ ips tape speed helps to provide flat response and enhanced signal-to-noise and dynamic range.

The Studio 8's unique "LOAD" function ensures that once threaded, your tape will never run off the reels. Thus the speed and convenience of the cassette is achieved while the flexibility and fidelity of open reel is retained.

By eliminating unwanted tape noise and adding head room, the Studio 8's dbx® system will give you playback that's virtually indistinguishable from the source. Use it on all tracks, or switch it off selectively to tracks 1–4 and/or 5–8 to work with non-dbx-encoded tapes. If you are using a controller with your Studio 8, and need to record SMPTE/EBU time code or FSK synchronizing pulses on track 8, just engage the separate track 8 dbx defeat. Your controller will read square, accurate signals while your music, dialogue, and effects retain their original quality.

A Versatile 8X8X2 Mixer with 8 Track Monitor. No Patching. No Fooling.

The Studio 8 is a complete prewired system which virtually eliminates the hassle of patching and cable juggling previously inherent in multichannel recording. It is an easy-to-use design which allows you to concentrate on your objective, not on your hardware.

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The fully assignable 8-channel mixer includes 8 program busses and a separate 8-channel automatic monitor section. Talk about on-board flexibility! Eight assign buttons on each channel act as a routing matrix to instantly route (patch) any mixer channel or combination of channels to any or all tracks at the touch of a button.

The versatility of the Studio 8's signal routing is due to its balanced network of submix systems. The monitor mix signals (from the program busses or the recorder's playback) are automatically routed through separate and individual Level and Pan controls. No patching to let your talent hear the tape while laying down tracks or rehearsing overdubs.

The Effect and Auxiliary submixer design lets your Studio 8 send the signals from any combination of input channels to the EFFect and AUXiliary outputs on its back panel. These outputs can be connected to your signal processor(s) and brought back through the Effect Return, Program Buss Inputs, or the Stereo Buss Input. Two independent effects returns can be fed to the stereo buss through gain and pan controls, meaning that the processed signals can be separately placed in the stereo perspective with appropriate levels—immediately. You have full flexibility to apply signal processing to multiple channels in varying amounts, or to create a second effects chain or talent cue mix whenever you need them.

All 8 input channels have balanced mic inputs (XLR) and unbalanced line inputs (1/4"), and each channel has a 3-band sweep-type parametric equalizer to give you precise control of center frequencies from 50 Hz to 15 kHz. Eight
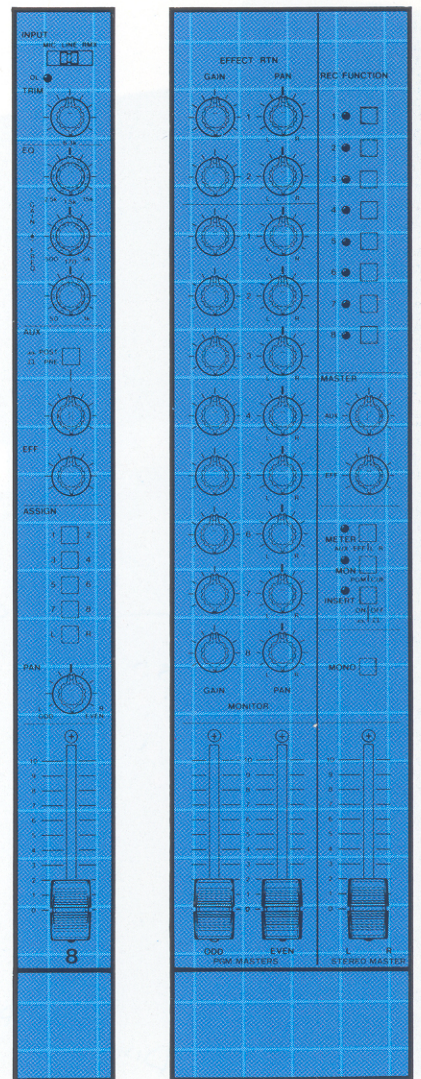
separate tape outputs means you can dub any or all channels to another machine easily.

The Studio 8's sophisticated mixer is perfectly capable of standing on its own for sound reinforcement or submixing work, or as a mixing board for a separate recorder. But combined with its recorder, the Studio 8 is a powerful pre-wired system that's ready to move anywhere and go. Right now!

Easy "One Plug" SMPTE/EBU Interface

The Accessory interface jack on the back panel of the Studio 8 is your gateway to the world of synchronization and computer transport control. For post-production professionals, the Studio 8 will interlock via a synchronizer to SMPTE/
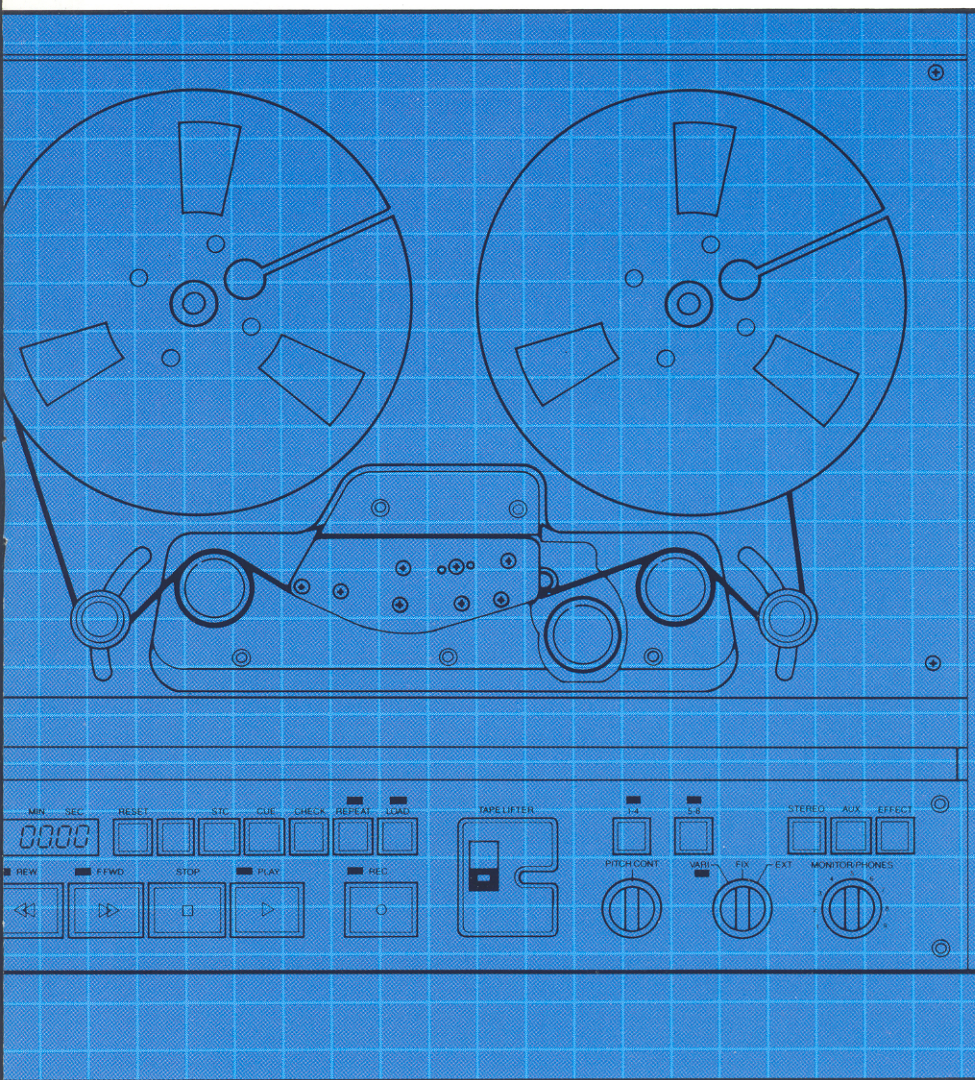
Standard 1/4" tape runs at 7-1/2 ips over Hard Permalloy heads for superior dynamic range and response. Microprocessor-controlled, 3-motor transport offers stable operation. TASCAM auto LOAD function provides the convenience of a cassette.

EBU code, and maintain perfect synchronization with video while you lay down tracks of music, vocals, voiceovers and effects.

The accessory port is also used to accept commands from Tascam's AQ-65 multifunction Auto Locator/Tape Transport Controller. Use the AQ-65 to program up to ten tape locations into your Studio 8. Then engage the AQ-65 to quickly "go to" any programmed point on the tape with repeatable precision. Why worry about hardware? You are an audio pro—not a mechanic. With your Studio 8 as the centerpiece of your system, you are free to concentrate on the task at hand, not on the intricacies of unfriendly electronics.

Electronic music is a natural for Studio 8 owners. With time code on

Track 8, a SMPTE/MIDI device producing a MIDI Clock output, along with a MIDI sequencer, will drive a wide variety of musical instruments including synthesizers. Now you can record multiple passes with absolute confidence that you will never lose a beat.

Full Microprocessor Control

Studio 8's specially designed 3 motor transport system is fully servo-controlled, under the guidance of a microprocessor. It can remember your decisions and almost anticipate your commands...or those of an external editor/controller. Press search-to-cue and play and watch the tape rapidly find its mark and go right into play. In the heat of the creative

moment, every second and movement wasted is a distraction—sometimes a fatal one to the creative process.

The microprocessor monitors and controls mechanical tape handling. There is nothing you can do to cause the Studio 8's microprocessor to "forget" to protect your tape. In editing, the toughest test of tape manipulation, the Studio 8's servo-controlled reel motors will go from highest speed in one direction to highest speed in the other direction or anything in between, never stretching or breaking tape, while you feverishly heat up the buttons of the master controller or synchronizer.

The Studio 8's unique LOAD function works this way: simply thread the tape [must be 1 mil, 1800 feet (549 meters) in length] and press the LOAD button on the top panel. The tape will run to a point past the leader and stop. The Studio 8 "knows" where the ends of the tape are. Now press RESET to zero the counter and you may proceed without concern for running tape off of either reel—cassette convenience with open reel performance.

The microprocessor also controls such memory functions as repeat, cue, and return to zero, to create playback loops, etc., with speed and repeatability.

Pitch control allows you to vary the speed, and thereby the pitch, of your program by up to 15% plus or minus. This has a variety of uses from coping with an instrument with slightly different tuning, to cutting a few seconds from narration without losing content.

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Need remote control? Just plug in the optional RC-71 to duplicate transport controls from 16 feet away. Add the AQ-65 Auto Locator for an additional 10-point memory, programmable pre-roll and two-point repeat. Or select the RC-30P foot pedal for hands free punch-ins or punch-outs.

The Electronic Music Studio

Lay down tracks of live music, vocals, and electronic music, then add voice-overs and effects, over-dub and mix...with speed and convenience that will delight the talent and enhance your reputation.

Each of eight channels has both mic and line inputs, plus Effects Insert for applying signal process-ing on an individual-channel basis. Or use Effects Submix to distribute effects to any or all channels.

Monitor Mix lets you set up the cue mix that's just right to guide the next track, but with no effect on the actual recording. The auxiliary sub-mix system's controls make it easy to build a second cue mix or sec-ond effects chain.

With a MIDI sequencer and a SMPTE/MIDI Synchronizer, you can work with synthesizers, drum machines and other automated electronic music systems, all in per-fect sync. Working to picture, the Studio 8 will interlock to the video master if a controller (from a simple chase-lock device to a full com-puter editor) is plugged into the Accessory jack.
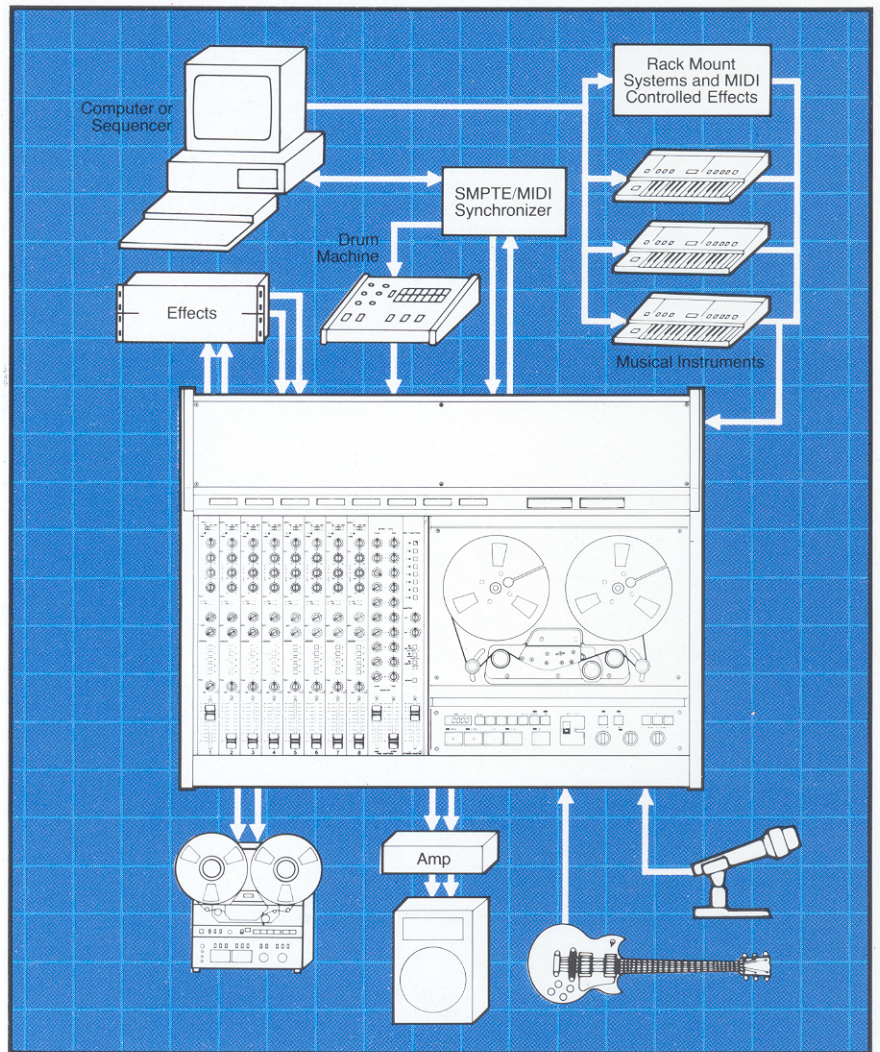
The Studio 8 accepts the AQ-65 Auto Locator/Transport Controller and offers easy, one-plug interfacing for full SMPTE/EBU compatibility and control. Individual program input/output and AUX and EFFECTS busses provide maximum convenience and versatility.
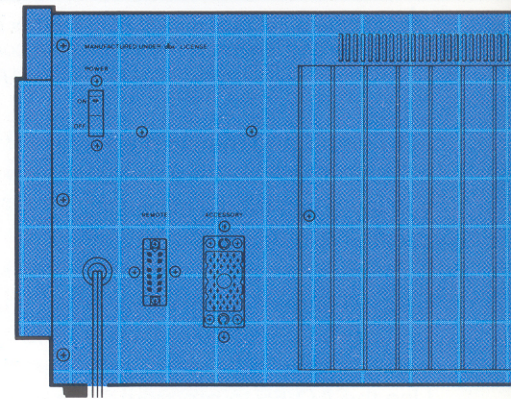

Output is on 8 discrete channel busses and a stereo pair, which can be switched to monaural if desired. Mix your source material from the Studio 8 to a 2-track recorder, or transfer the source material to a 16- or 24-track machine to complete your produc-tion. Once again the Studio 8's eight-buss design means utmost flexibility for the largest job or the smallest.

Video/Film Production

Interlocked to a SMPTE/EBU con-troller or a control track editor/synchronizer, Studio 8 becomes an obliging servant, speeding directly to any cue point the controller names, and staying precisely syn-chronized with the VCR. A tacho-meter signal from the Accessory jack lets the controller monitor the tape position, even in fast-wind mode, to reduce search time and
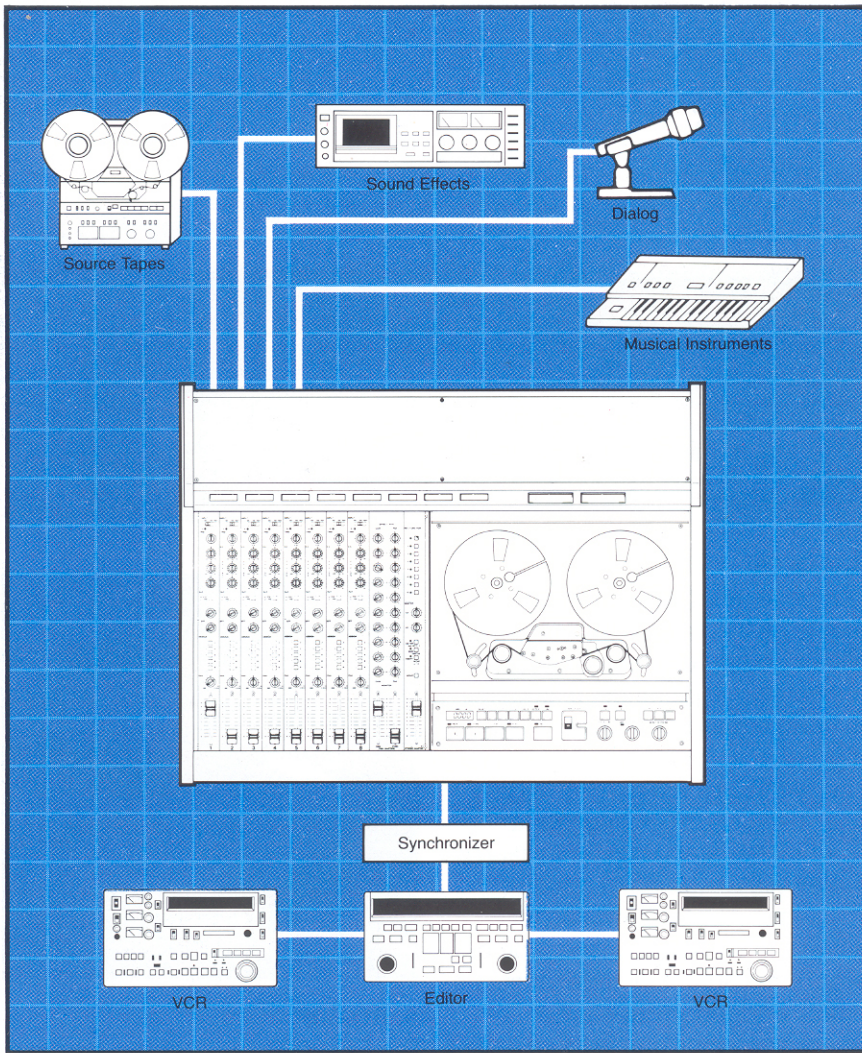
Mixer Section

- 8 input channels, each with 3 band EQ and Mic, Line and Tape (remix) inputs help eliminate patching.

- Send and receive jacks on all 8 input channels for independent effects processing on each channel.

- 8 program buss selection for direct track assignments.

- Automatic Monitor Switching means no patching or switching to hear tape or source.

- 2 send and return systems for 2 independent or stereo effects.

- Stereo buss (L/R) with Mono switch.

- 8 switchable VU meters with peak-reading LED'S.

- 2 switchable VU meters (with LED'S) for stereo or aux/effect.

Recorder Section

- 8-track, 8-channel.

- Standard tape format means tape stock is always readily available; simplifies life in the studio.

- Switchable dbx noise reduction with track 8 defeat switch.

- Accessory terminal for SMPTE/EBU code synchronizer/editor/computer interface and/or optional AQ-65 Auto Locator.

- Full 3 motor servo controlled transport for gentle tape handling.

- LOAD mode to prevent accidental tape runoff in either direction.

- Tape Out jacks for each of 8 tracks.

- Memory functions: Return-to-Zero, Search-to-Cue.

- Precise PLL speed control with ±15% pitch control.

- Insert switches for convenient punch-in punch-out.

- Real time tape counter (minutes and seconds).

guard against loss of sync.

Adding tracks and audio sweetening, whether off-line or under computer control, Studio 8 is ready for multilingual dialog tracks, effects, electronic music, audience tracks and source tapes. Individual channel equalizers let you shape single tracks or groups of tracks for ear-pleasing audio.

In a commercial studio, in a location van or in your private sanc-tuary, Studio 8 is designed to meet virtually any application that you—as an audio or music specialist—might encounter. And it does it with style, with TASCAM full-pro appear-ance, and with the performance and reliability you'll come to love.

Accessories
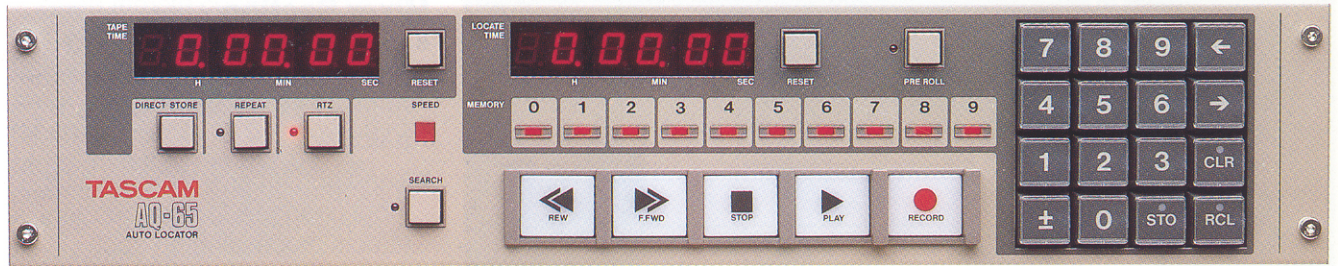
▲ **AQ-65**

The optional AQ-65 is a program-mable multipoint autolocator that allows computer-precise transport control from a distance. It features (among other capabilities) a ten-digit keypad for writing up to ten cue points in memory, pre-roll pro-gramming of up to 19 seconds, two-point repeat, and duplication of the Studio 8's transport controls.

   Use the AQ-65 to enable fast access to any point on the tape by programming actual tape locations before or during your session, or "mark" locations on the fly so that you can easily and quickly come back to them. The AQ-65 automat-ically loads these marks in order of input to a 0-9 register activated by Memory buttons (0-9) on its front panel.

   Essential for work involving repetition, the AQ-65 connects via the Studio 8's multipin accessory jack.

▲ **RC-30P**

The RC-30P is a durable electronic footswitch which connects to the Punch In/Out Remote jack on the Studio 8's front panel. The RC-30P provides "hands-free" entry to and exit from the Record mode, allow-ing you to play an instrument while overdubbing or recording separate tracks.

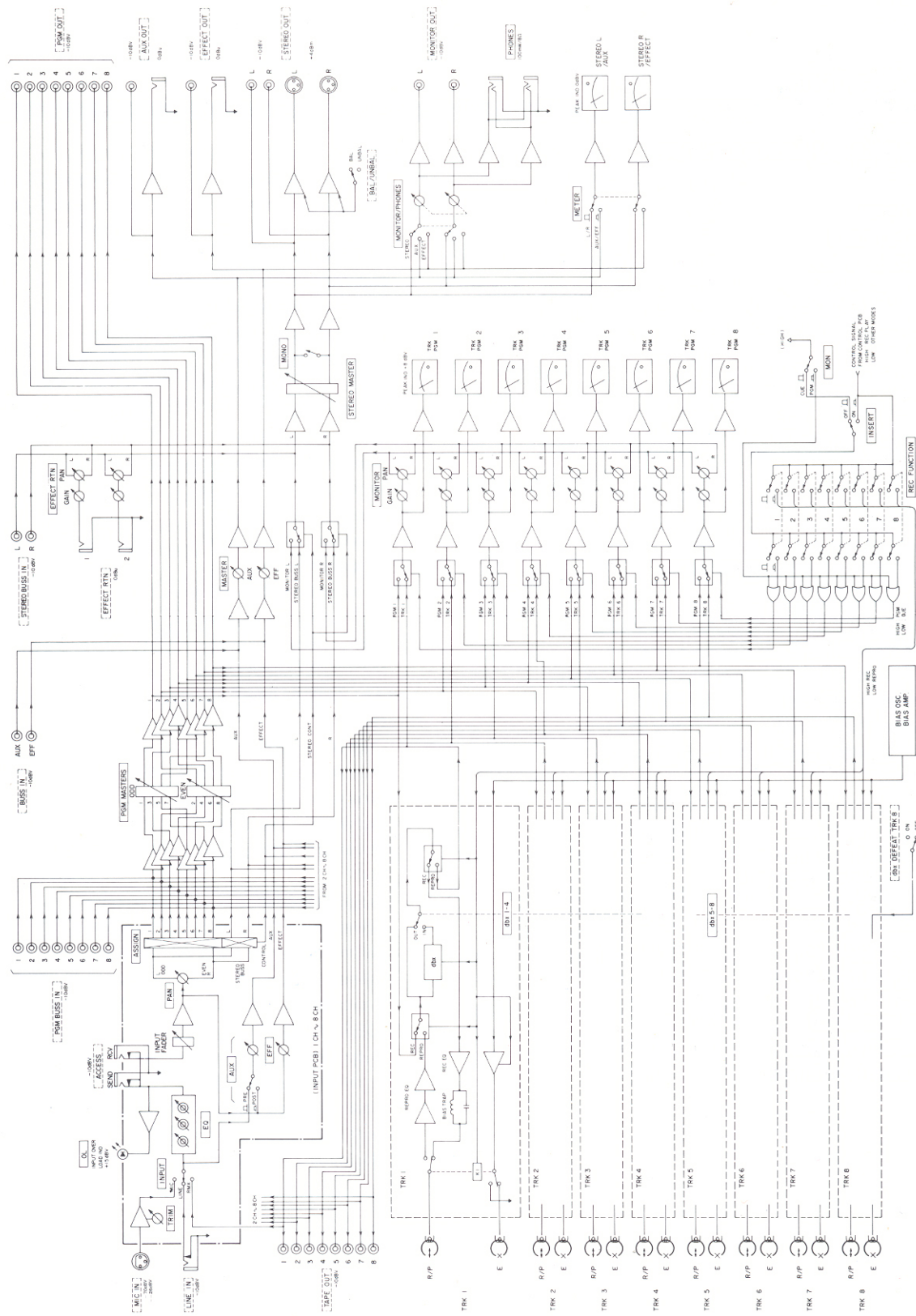◄ **RC-71**

The RC-71 is a remote control for the transport functions of the Studio 8. The basic commands Rewind, Fast Forward, Play, Stop, Pause, and Record are parallels of the Studio 8's top panel controls. The RC-71 connects to the remote jack on the Studio 8.

Block Diagram

Specifications

MECHANICAL CHARACTERISTICS

Tape	1/4 inch, 1 mil
Track Format	8-track, 8-channel
Reel Size (max.)	7"
Head Configuration	1 Erase, 1 Record/Reproduce
Motors	1 FG servo DC capstan motor 2 DC servo reel motors
Tape Speed[5]	7-1/2 ips (19 cm/s) ± 1% deviation
Pitch Control	±15%
Fast Wind Time	Less than 100 seconds for 7" reel, 1,800 feet
Dimensions (WxHxD)	837 x 220 x 641 mm (32-15/16" x 8-11/16" x 25-4/16")
Weight (net)	38 kg (83.6 lbs)

ELECTRICAL CHARACTERISTICS

MIXER SECTION

MIC Input	XLR, balanced
Input Impedance	2.4 k ohms
Mic Impedance	Less than 600 ohms
Nominal Input Level	-60 dBV (1mV)
Minimum Input Level	-70 dBV (0.3 mV)
Maximum Input Level	0 dBV (0.3 V)
LINE Input	1/4" phone, unbalanced
Input Impedance	50 k ohms
Nominal Input Level	-10 dBV (0.3 V)
Maximum Input Level	+14 dBV (5 V)
BUSS Input (PGM/STEREO/ AUX/EFFECT)	
Input Impedance	22 k ohms
Nominal Input Level	-10 dBV (0.3 V)
Maximum Input Level	+14 dBV (5 V)
EFFECT RETURN	1/4" phone,
Input Impedance	22 k ohms
Nominal Input Level	0 dBu (0.775 V)
Maximum Input Level	+16 dBu (5 V)

ACCESS RCV	1/4" phone
Input Impedance	10 k ohms
Nominal Input Level	-10 dBV (0.3V)
Maximum Input Level	+14 dBV (5V)
PGM/MONITOR Output	RCA
Output Impedance	100 ohms
Nominal Load Impedance	10 k ohms
Minimum Load Impedance	2 k ohms
Nominal Output Level	-10 dBV (0.3 V)
Maximum Output Level	+14 dBV (5 V)
STEREO Output	XLR & RCA
Output Impedance	100 ohms
Nominal Load Impedance	10 k ohms
Minimum Load Impedance	2 k ohms
Nominal Output Level	+4 dBm (1.2 V)
Maximum Output Level	+24 dBm (12 V)
Output Impedance	100 ohms
Nominal Load Impedance	10 k ohms
Minimum Load Impedance	2 k ohms
Nominal Output Level	-10 dBV (0.3 V)
Maximum Output Level	+14 dBV (5 V)
EFFECT/AUX Output	RCA & 1/4" phone
RCA	
Output Impedance	100 ohms
Nominal Load Impedance	10 k ohms
Minimum Load Impedance	2 k ohms
Nominal Output Level	-10 dBV (0.3 V)
Maximum Output Level	+14 dBV (5 V)
1/4"	
Output Impedance	100 ohms
Nominal Load Impedance	10 k ohms
Minimum Load Impedance	2 k ohms
Nominal Output Level	0 dBu (0.775 V)
Maximum Output Level	+20 dBu (10 V)
ACCESS SEND	1/4" phone
Output Impedance	100 ohms
Nominal Load Impedance	10 k ohms
Minimum Load Impedance	2 k ohms
Nominal Output Level	-10 dBV (0.3 V)
Maximum Output Level	+14 dBV (5 V)

HEADPHONES Output	1/4″ stereophone
Nominal Load Impedance	8 ohms, stereophone
Maximum Output Power	100 mW + 100 mW, 8 ohms

Equalizer

Type	3-band, peak/dip, sweepable
Frequencies	Low/Mid; 50 Hz to 1 kHz
	Mid; 500 Hz to 5 kHz
	Mid/High; 2.5 kHz to 15 kHz
Boost/Cut Range	± 15 dB
Input Overload Indicator	Activates at 25 dB above nominal
Meter Peak Indicator	Activates at 18 dB above nominal

RECORDER SECTION

Tape Out

Output Impedance	100 ohms
Nominal Load Impedance	10 k ohms
Minimum Load Impedance	2 k ohms
Nominal Output Level	-10 dBV (0.3 V)
Maximum Output Level	+ 14 dBV (5 V)
Bias Frequency	100 kHz
Equalization	3,180 μs + 50 μs (NAB/DIN/IEC)
Record Level Calibration	250 nWb/m (0 VU reference)
Noise Reduction	8-Channel, dbx I, dual process
Power Consumption	120 W

Power Requirements

USA/CANADA	120 V AC, 60 Hz
EUROPE	229 V AC, 50 Hz
UK/AUSTRALIA	240 V AC, 50 Hz
GENERAL EXPORT	100/120/220/240 V AC, 50/60 Hz

TYPICAL PERFORMANCE CHARACTERISTICS

MIXER SECTION

Frequency Response

| Line to PGM Out | 20 Hz – 30 kHz $^{+1}_{-2}$ dB |
| Line to STEREO Out | 20 Hz – 30 kHz $^{+1}_{-2.5}$ dB |

Signal-to-Noise Ratio   IHF A WTD/UNWTD (20 – 20 kHz)

1 Mic to PGM Out	70 dB/68 dB
8 Mic to PGM Out	60 dB/58 dB
1 Line to PGM Out	80 dB/76 dB
8 Line to PGM Out	77 dB/73 dB

Total Harmonic Distortion

1 Mic to PGM Out[1]	0.03%
1 Line to PGM Out[2]	0.03%
Crosstalk[4]	-60 dB

RECORDER SECTION

Wow and Flutter[5]	0.05% (NAB weighted)
	± 0.10% peak (DIN/IEC/ANSI weighted)
Frequency Response (Record/Reproduce)[6]	30 Hz – 16 kHz, ± 3 dB
Signal-to Noise Ratio[3], [6]	IHF A WTD/UNWTD (20 – 20 kHz)
	95 dB/90 dB with dbx
	59 dB/56 dB without dbx
Total Harmonic Distortion[4], [6]	0.5 %, 0 VU, with dbx
	1.0 %, 0 VU, without dbx
	3.0 %, 15 dB above 0 VU, with dbx
Adjacent Channel Crosstalk[4], [6]	75 dB, 0 VU, with dbx
	55 dB, 0 VU, without dbx
Erasure[3], [6]	70 dB at 1 kHz

Test Conditions:
(1) 50 dB above nominal input level, 1 kHz, with 30 kHz LPF.
(2) Nominal input level, 1 kHz, with 30 kHz LPF.
(3) Referenced to 3% THD level.
(4) 1 kHz.
(5) TEAC Test Tape YTT-2003.
(6) TEAC Test Tape YTT-8013.

In these specifications, 0 dBV is referenced to 1.0 Volt rms; 0 dBu/0 dBm is referenced to 0.775 Volt. Actual voltage levels are also given in parentheses.
Changes in specifications and features may be made without notice or obligation.

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