

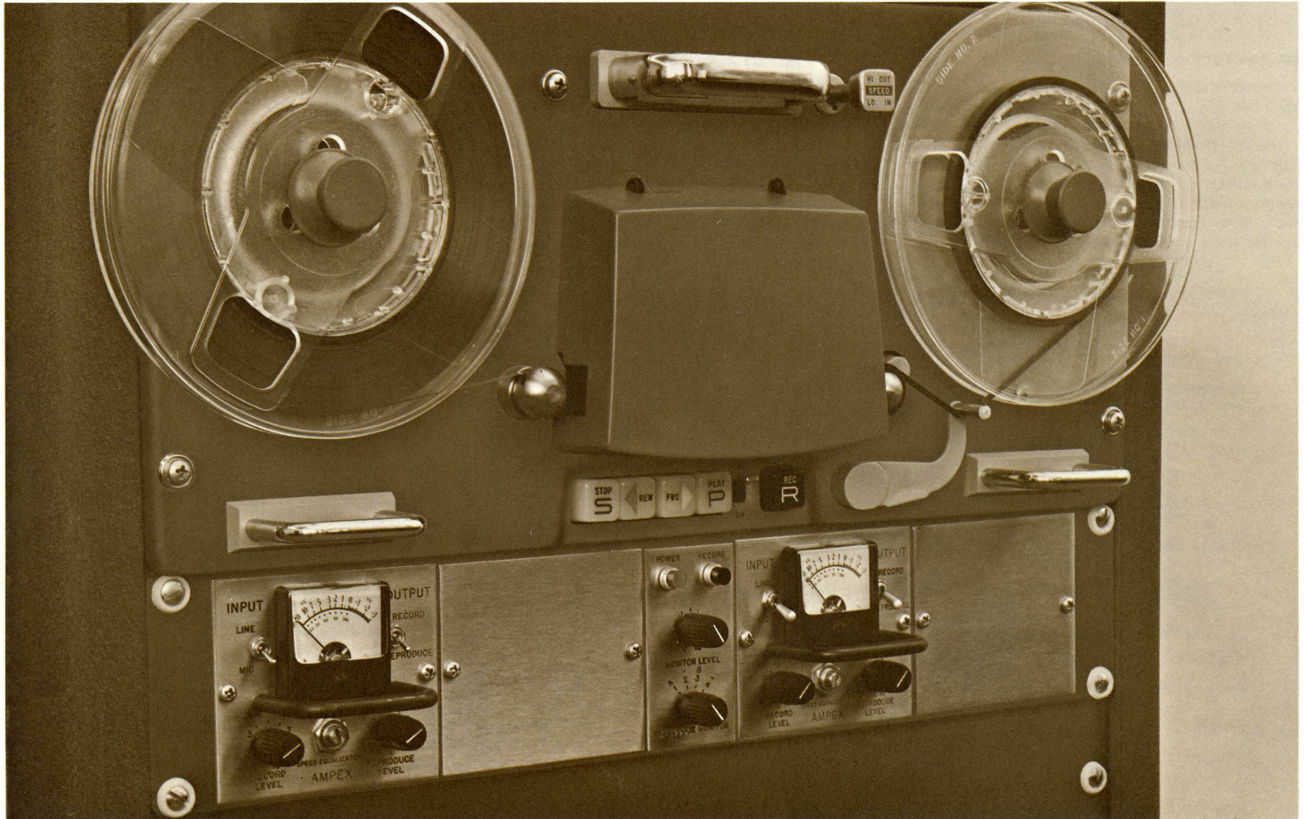
AMPEX

SOLID-STATE

GS-80B

RECORDER

RUGGED, LOW-COST, VERSATILE AUDIO OR DIGITAL RECORDER ...FOR DATA RECORDING



- solid-state electronics
- field proven die-cast top plate
- completely modular design
- plug-in components

The new GS-80B audio or digital recorder is designed for those critical applications which demand ruggedness, reliability, small size. It couples a field-proven tape transport with all solid-state electronics in a modular package.

Completely modular design provides capabilities for a large variety of applications. By simple change of plug-in components, the GS-80B can be used for automatic process control, facsimile recording and machine control as well as many other audio and digital applications.

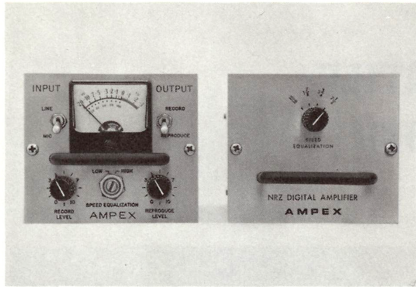
AUDIO Up to four channels of audio or analog information may be recorded at frequencies from 100Hz to 15kHz, in

- up to four channels
- two speeds (selectable in adjacent pairs from 5 available)
- hysteresis synchronous motor
- four-position head assembly

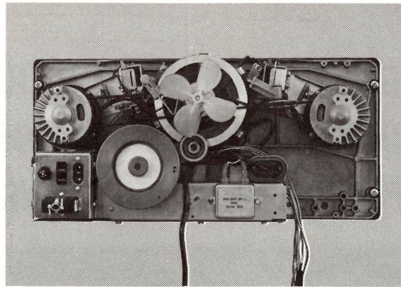
two speed ranges (1 $\frac{1}{8}$ and 3 $\frac{3}{4}$ or 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips). Crosstalk is held to a minimum. Both line and mike inputs are available.

NRZ DIGITAL Up to four tracks of NRZ digital information at bit rates of 5000 bps maximum can be recorded at 7.5 ips.

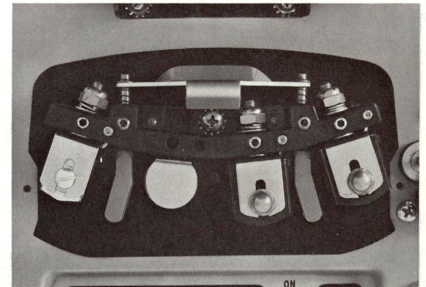
Five speeds available (1 $\frac{1}{16}$; 1 $\frac{1}{8}$; 3 $\frac{3}{4}$; 5 $\frac{5}{8}$ and 7 $\frac{1}{2}$). A seven inch reel with four data channels will hold up to 76.8 million bits, or the contents of 80,000 IBM cards. 667 bpi packing density is also available, or digital data may be recorded on one channel while simultaneous time signals are recorded on the other(s).

AMPEX**SOLID-STATE GS-80B RECORDER****SOLID-STATE ELECTRONICS**

Solid-state plug-in modules fit a standard rack. Each tray holds four NRZ or audio record and reproduce modules and the power supply module. Front panel access to amplifiers is provided. Modules are completely interchangeable between recorders. Audio modules contain provision for plug-in two-speed equalizers, with front panel switch. Amplifier circuitry design provides long equipment life and ease of maintenance. Signal input/output connections are located on screw terminal strips on the rear panel of the electronics tray.

**TIME PROVEN RUGGED TRANSPORT**

The rugged, reliable, field proven transport delivers exceptionally smooth tape handling, simplified threading and convenient control arrangement. Proper tape tension and guidance are assured through integrated design of the precision milled transport assembly. A hysteresis synchronous capstan drive moves the tape past the heads at a constant speed, regardless of voltage fluctuations. Remote control is available. Long life drive motor allows long running time between lubrication. Open style motor flywheel provides exceptional motor cooling.

**PRECISION LONG LIFE HEADS**

All units can accommodate up to four head stacks for added flexibility such as extra play or sync head. GS-80B heads are optimized to give highest performance with solid-state electronics. Ampex design provides long, efficient service.

SPECIFICATIONS**TAPE TRANSPORT**

Tape Speeds: 2 speeds selectable on the transport front panel: 7½ and 3¾; 7½ and 5¾; 3¾ and 1½; 1½ and 1¼ ips.

Reproduce Timing Accuracy: ±0.25% at 7½ ips; ±0.33% at 5¾ ips; ±0.4% at 3¾ ips; ±0.6% at 1½ ips; ±1.0% at 1¼ ips.

Reels: 7-inch or 5-inch reels, EIA standard.

Tape Specifications: ¼-inch wide, 1.5 mil Mylar*, Ampex 631 tape or equivalent. Specifications guaranteed only when using Ampex recommended tape.

Controls: Push-button control of Record, Play, Fast Forward, Rewind, and Stop. Toggle type power switch. Speed control.

Fast Wind Time: 110 seconds for 60-cps version or 128 seconds for 50-cps version; 1200 feet of tape.

Start Time: ½ second or less.

Stop Time: ½ second or less.

Flutter and Wow: 7½ ips: less than 0.13% rms.
5¾ ips: less than 0.16% rms.
3¾ ips: less than 0.18% rms.
1½ ips: less than 0.30% rms.
Measured from 0.2 to 250 cps when reproducing an Ampex standard flutter tape.

HEADS**TWO-TRACK (for single and dual channel)**

Track Dimensions: Track width is 0.075 inch. Track spacing is 0.159 inch on center.

Number of Tracks: Two on ¼-inch tape.

Interstack Spacing: 1½ inches nominal.

Stacks: 2-track record, 2-track reproduce, and full-track erase.

FOUR-TRACK (for three and four channel)

Track Dimensions: Track width is 0.043 inch. Track spacing is 0.068 inch on center.

Number of Tracks: four on ¼-inch tape.

Interstack Spacing: 1½ inches nominal.

Stacks: Two record stacks, one for tracks No. 1 and No. 3, one for tracks No. 2 and No. 4. Two reproduce stacks, one for tracks No. 1 and No. 3, other for tracks No. 2 and No. 4. No erase.

Digital Record/Reproduce System (One to Four Channels)

NRZ Transfer Rate: 7½ ips: 5000 BPS maximum.
5¾ ips: 3750 BPS maximum.
3¾ ips: 2500 BPS maximum.
1½ ips: 1250 BPS maximum.
1¼ ips: 625 BPS maximum.

Input: Line input, barrier strip on rear of electronic tray. Trigger level is +6 volts (±1 volt). Digital "zero" from +3 volts to -34 volts. Digital "one" from +9 to +46 volts. Will not trigger on less than 0.5 volt peak-to-peak signal change. Rise time of

input signal less than 200 microseconds. Input impedance 100K ohms nominal resistive, single ended.

Output: Line output, barrier strip on rear of electronic tray. Digital "zero" is +4 volts (±1 volt). Digital "one" is +20 volts (±1 volt). These levels measured with 33,000 ohms; any other load impedance may be used but output will vary accordingly. Output rise time, 20 microseconds with load capacity less than 0.001 mfd. Output impedance 2200 ohms, nominal, single ended.

Controls: Rotary Speed Selector.

Audio Record/Reproduce System (One to Four Channels)**Frequency Response:**

7½ ips: ±2 db, 100 cps to 12 kc; ±4 db, 100 cps to 15 kc.
3¾ ips: ±2 db, 100 cps to 6 kc; ±4 db, 100 cps to 8 kc.
1½ ips: ±2 db, 100 cps to 3 kc; ±4 db, 100 cps to 4 kc.

Measured 20 db below normal operating level which is defined as the point of 1% third harmonic distortion at 400 cps or +4 dbm.

Signal to Noise Ratio:

7½ ips: 55 db, 100 cps to 12 kc; 50 db, wideband.
3¾ ips: 50 db, 100 cps to 6 kc; 45 db, wideband.
1½ ips: 45 db, 100 cps to 3 kc; 40 db, wideband.

Measured from peak record level which is defined as the point of 3% third harmonic distortion at 400 cps or +10 dbm.

Crosstalk: No greater than 50 db at 400 cps on any track while reproducing a signal recorded on any other individual track.

Inputs: Two for each channel, barrier strip on rear of electronic tray.

Line input for 6 VU or 0.6 volts; balanced input impedance is 164,000 ohms, unbalanced 82,000 ohms.

High quality dynamic microphone input; microphone impedance from 150 to 500 ohms; minus 76 dbm level.

Outputs: One for each channel, barrier strip on rear of electronic tray. Matches balanced or unbalanced 600-ohm line. Load impedance 600 ohms or greater. Output level +4 dbm or 1.25 volts.

Controls: Speed Equalization (screwdriver selector switch), Input/Output toggle switch (connects reproduce amplifier and VU meter for line output for electronics to electronics record monitoring or reproducing), Record Level, Reproduce Level, VU Meter. All above controls on each module.

Monitor: Electronic tray provides separate isolator monitor amplifier with rotary selector switch for monitoring.

ENVIRONMENTAL

Temperature: Operating: 0° to 50°C.

Non-operating: -10° to 65°C.

Humidity: Up to 90% relative humidity without condensation.

Pressure: Operating 20-6 to 31 inches of Hg.

Non-operating: 13.75 to 31 inches of Hg.

POWER

Voltage: 105 to 135 volts, 60 cps or 50 cps. (Tape speed accuracy is proportional to the line frequency).

Consumption: 2-channel, 150 watts; 4-channel, 200 watts maximum.

Ampex Corporation reserves the right to change specifications without notice and without obligation. These specifications supersede all previous specifications, stated or implied.

AMPEX

Ampex Corporation, Professional Audio Products Division
401 Broadway
Redwood City, California 94063

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