

MM-1200

MULTICHANNEL RECORDER



AMPEX

MM-1200

THE 24-CHANNEL BUSINESS MACHINE

The MM-1200 is the answer to the whole range of your recording needs. It's perfect for mastering, live sound reinforcement, double system sound, video sweetening or film and TV production and post-production. Whatever the application, the MM-1200 provides high recording quality with cost-effective reliability.

Easy to operate, this proven 8, 16 or 24-channel recorder is compact enough to be easily moved to any desired location, in or out of the studio. It's also rugged enough to withstand the abuses of transportation as well as handle 16-inch reels of two-inch tape with precision.

All three MM-1200 models are built around a common transport and chassis having identical trim components. You can start with an 8-track and upgrade to 16 or 24-channels—adding accessories when needed for every kind of recording operation.

Whatever part of the music business you're in, the MM-1200's versatility can make it easier and more profitable.

Important MM-1200 Benefits:

- Broad application versatility provided by a full range of accessories enhancing creativity.
- Ruggedness and consistent day-in, day-out performance supporting profitable recording operations.
- Easy to operate in 8, 16 or 24-channel versions.
- A cost-effective blend of recording quality and reliability.



The MM-1200
audio recorder in
24-channel configuration.

SYSTEM SOLUTIONS FOR EVERY SESSION

BECAUSE OF ITS VERSATILITY, the MM-1200 is being used for a wide variety of recording applications by creative users. You'll find the MM-1200 at work in:

- Recording studios
- Video production centers
- Film production centers
- Live performance sound reinforcement
- Television stations
- Radio stations
- Industrial communication production centers



Audio Tonstudios of Berlin offers the versatility of a 46-channel automated mix using synchronized MM-1200s and ATR-100s.



Synchronized together and to the film chain, MM-1200s bring new musical benefits to motion picture production. Ampex MM-1200s shown being used in the 1978 production of "HAIR". Photo courtesy of Canyon Recorders.



The Nashville sound is captured by Fanta Professional Services' mobile recording facility with an MM-1200. The MM-1200 delivers quality sound in the most demanding environments.

Rotary tape guides virtually eliminate friction.

Quick change, single screw-mount head stack assemblies (1" or 2").

Powerful reel motors providing 16-inch reel capacity at all speeds.

Direct-drive dc phase lock servo stabilizes tape motion with $\pm 0.05\%$ tape speed accuracy.

Electronic tape timer with easy-to-read bright LED readout.



Tilttable, non-glare VU-meter monitoring with easy access for bulb replacement.

Removable recorder and monitor control panel includes individual selection for Sel-Sync*, input and repro for each channel.

Multi-layer, mu-metal shielding in head cover protects against prevalent hum fields.

Automatic search-to-cue, accurate to ± 0.5 sec at 15 in/s; registers up to one hour, 59 minutes, 59 seconds. (Remote display/controller optional.)

Push-button function controls with international symbols.

A PROVEN RECORDER

The MM-1200 combines proven signal electronics and an extremely rugged mechanical design. It's a machine offering consistent performance and a long working life.

Positive pressure cooling ensures a longer, trouble-free life for all components. A heavy, reinforced alloy top deck plate holds alignment and withstands the hazards of remote operations.

CONSIDER SOME OF THE FEATURES which combine to offer you a sound investment in the music business:

ELECTRONIC

- Standard, electronic single-point search-to cue
- Full capability remote connector panel including:
 - Remote single and multiple cueing accessories
 - Interface for time code synchronizing and transport control accessories
 - Auditec II accessory
- A universal power supply

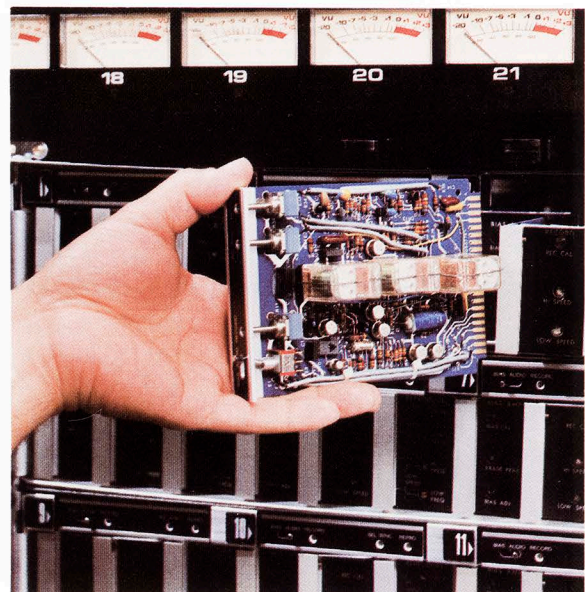
- Control panel versatility offering:
 - Individual monitor selection of input, reproduce or Sel-Sync*
 - Master control of reproduce and sync
 - Machine can automatically revert to input monitoring when in standby
 - Reliable LED indicators
 - Universal function symbols
- Easily accessible electronics bay including:
 - Rugged motherboard design using gold plated contacts throughout
 - Relays and active audio switcher components are front accessible

MECHANICAL

- Rotary tape guides
- Convenient cast head cover accepting a 2" tape splicer
- Automatically selected, servo controlled hold-back tension providing constant tape tension at the heads
- Main frame provides for field expansion from 8, to 16 to 24-channel versions
- Tape lifters are individually field adjustable
- Protected main power switch
- Optional overbridge for simplified accessory mounting



Quick change, single screw-mount head assembly.



Convenient front access to all signal system printed wiring assemblies.

CREATIVE CONTROL

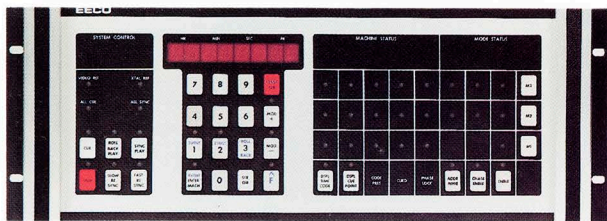
As a proven multi-channel audio recording system, the MM-1200 has a broad range of accessories which allow you to customize the machine to a variety of special tasks. These accessories, some unique to the MM-1200, are providing creative control to audio recording talent around the world.

Accessories adding creative control:

MQS-100 When you need more than 24 tracks and prefer to stay with a standard recording format, 2 or 3 MM-1200s may be synchronized with this SMPTE/EBU time code-accurate, microprocessor-based accessory.

Used with video recorders and the MM-1200, the MQS-100 allows you to sync and edit all your audio to the video picture for many exciting and creative pre and post-production benefits. Unheard of television sound quality results.

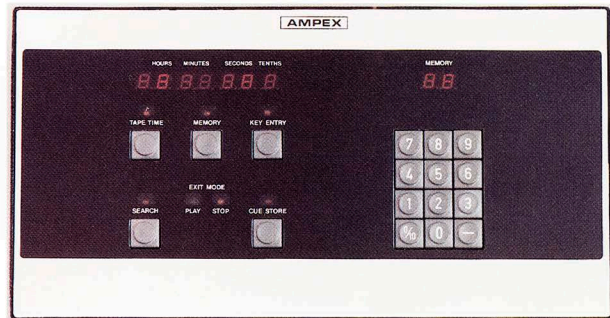
More and more films are being sound scored using the MM-1200 and the MQS-100. Bringing the flexibility and time savings of audio tape to the precise world of film sound production is one of the more unique applications.



EECO TIME CODE SYNCHRONIZATION SYSTEMS Versatile, modular time code synchronization can be combined for various system applications. SMPTE/EBU time code is used for precise synchronization of multi-channel audio recorders, quadruplex or helical video recorders and two or more audio recorders.

PICK UP & RECORD CAPABILITY (PURC)

An Ampex first in professional audio, PURC assures clean, precise insert edits by eliminating over recording on punch-in and the blank space on punch-out, caused by the distance between the erase and record heads. It automatically compensates for high/low speed operation. The accessory is a quickly installed plug-in printed circuit board.



MULTI-POINT SEARCH-TO-CUE allows 20 cue points storage using two entry modes. Trajectory-controlled search from either side of the tape zero point provides the following time saving, tape handling benefits:

- Real tape time readout
- Cue point readout
- On-the-fly cueing
- Cue-to-play
- Cue-to-stop
- 20 cue point storage



SEARCH-TO-CUE REMOTE CONTROL

Complete display/controller allows all cue functions to be remotod to mixing console or other location. Digital readout identical to the machine unit. A 25-foot captive cable is standard.

VIDEO LAYBACK HEAD Multi-generation losses are overcome by either mastering the original audio on the MM-1200 and editing to post-produced video or stripping the audio track from the rough video master for reapplication after you've edited the program. Another essential benefit of the layback head is that it frees your video recorder from time-consuming sound sweetening chores. It's the vital link which allows the creative multi-track capabilities of the MM-1200 to be used in television production.

SYNC LOCK Syncs the MM-1200 to quad or helical video recorders. It can generate control track from composite video sync, servo crystal oscillator, ac line or other external source. Variable speed range of $\pm 10\%$ of nominal can be employed for lip sync or special effects. Indicator lamp on front panel shows when control track signal is present (50 Hz or 60 Hz).

VS-10 VARIABLE SPEED OSCILLATOR

This accessory adds flexibility and creativity to your recording operation. Front panel pushbuttons permit selection of ± 1 tone in quarter-tone steps. The variable speed control allows speed changes ranging ± 50 -200% of nominal or approximately two octaves. This matched accessory for the MM-1200 lets you:

- Vary broadcast program running times
- Add phasing and delay effects
- Provide off-speed compensation
- Accomplish controlled double tracking

Both fine and coarse variable control are provided. The VS-10 is available with or without four digit readout.

SERVICE SUPPORT

In addition to a wide range of innovative audio products, Ampex offers another substantial benefit...worldwide sales and service support.

The people of Ampex are on call throughout the world to provide experienced and efficient service whenever needed. Two Ampex training centers, one in the U.S. and another in the U.K., offer operation and maintenance training on all Ampex products. Instructors frequently travel to various locations to provide in-depth training for customer employees unable to attend Ampex Training Centers.

In the U.S., customers can call toll-free 800-227-8402* for urgently needed parts. Technical support specialists located in Redwood City, California provide help with service data and maintenance information.

You can count on Ampex to provide a full range of support services to keep your equipment running long after your investment is made. For further information on the MM-1200 multi-channel recorder, contact your nearest Ampex sales representative. Ask about the full line of professional audio products from Ampex.

*(800) 982-5875 in California

SPECIFICATIONS

TAPE WIDTHS

1 inch for 8-track systems
2 inch for 16 or 24-track systems

TAPE SPEEDS

7.5-15 in/s (19.05-38.1 cm/s)
15-30 in/s (38.1-76.2 cm/s)

REEL SIZE

7-inch to 16-inch diameter non-intermixed—NAB hubs (specifications apply up to 14-inch only)

INPUTS

20-kilohms balanced input. Accepts line levels from -17 dBm to produce recommended operating level

OUTPUTS

600-ohm load balanced or unbalanced with nominal output level of +4 dBm and maximum output of +27 dBm. Clip level +28 dBm

OVERALL FREQUENCY RESPONSE, SEL-SYNC* AND REPRODUCE MODES

30 in/s: ± 2 dB, from 50 Hz to 18 kHz
15 in/s: ± 2 dB, from 30 Hz to 15 kHz
7.5 in/s: ± 2 dB, from 40 Hz to 15 kHz
*Sel Sync response of a 7½/15 IPS machine is reduced.

SIGNAL-TO-NOISE RATIO

Using Ampex 456 tape or equivalent at 7.5, 15 or 30 in/s:
8 or 16 channels, 64 dB; 24 channels, 59 dB; peak record level to unweighted (30 Hz to 18 kHz) noise; includes bias, erase, and reproduce amplifier noise. (peak record level corresponds to a tape flux of 520 nWb/m)
Using Ampex 406 tape or equivalent at 7.5, 15 or 30 in/s:
8 or 16 channels, 63 dB; 24 channels, 58 dB; peak record level to unweighted (30 Hz to 18 kHz) noise; includes bias, erase and reproduce amplifier noise. (Peak record level corresponds to a tape flux of 520 nWb/m)

THIRD HARMONIC DISTORTION

At 1000 Hz, using Ampex 456 tape or equivalent:
<1.0% at recorded flux level 3 dB above 260 nWb/m

THIRD HARMONIC DISTORTION

At 1000 Hz, using Ampex 406 tape or equivalent:
<1.0% at recorded flux level of 260 nWb/m

ERASE DEPTH

Using Ampex 406/456 tape or equivalent:
At 1000 Hz, peak record level signal erased to -75 dB minimum on channel(s) selected

FLUTTER

7.5, 15 or 30 in/s:
0.08% peak weighted per ANSI S4.3/DIN 45507, in band 0.5 to 20 Hz, while reproducing a 3150 Hz signal. (0.08% NAB unweighted; 0.1% peak unweighted)

CROSSTALK

-50 dB minimum for 8 or 16 channels at 500 Hz
-45 dB minimum for 24 channels at 500 Hz

TAPE SPEED ACCURACY

Within $\pm 0.05\%$ from beginning to end of reel (Per NAB Standard on Magnetic Recording and Reproduction, 1965, Section 2.02.01)

ELECTRONIC TAPE TIMER

Tape driven. Reads up to ± 1 hour, 59 minutes, 59 seconds at any play speed

SEARCH-TO-CUE

Bi-Directional. Searches in either direction to a preset cue point

HEADS

8, 16 and 24-track head stacks are non-adjustable, precision-mounted

START TIME

10.5-inch reels: Rated speed within 1 sec
14-inch reels: Rated speed within 1.5 sec

REWIND TIME

2.0 minutes for 10.5 inch reel of 1.5 mil tape

SIZE

8, 16, or 24-track versions w/o overbridge 29"W x 27"D x 45"H
(74 cm x 69 cm x 114 cm)

WEIGHT

8-track 415 lb. (188 kg.)
16-track 465 lb. (210 kg.)
24-track 530 lb. (240 kg.)

POWER REQUIREMENTS

105 to 250 Vac, $\pm 10\%$, 50/60 Hz.

POWER CONSUMPTION

8-track	0.8 kVa maximum	} without accessories
16-track	1.0 kVa maximum	
24-track	1.2 kVa maximum	

Ampex Corporation reserves the right to change specifications without notice and without obligation.

These specifications supersede all previous specifications, stated or implied.

AMPEX

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