

1972

GOTHAM PROFESSIONAL EQUIPMENT



G O T H A M 

AUDIO CORPORATION

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Since 1928
leader in
condenser
microphones
disk recording
equipment
studio consoles



studio monitor
systems
solid state
power amplifiers

Lyrec

tape timer

BEYER

dynamic
earphones
miniature
transformers



reverb units
test equipment
control room
equipment

STUDER

professional
tape recorders
studio consoles



GOTHAM

STELLAVOX

portable
film
synchronous
stereo
tape recorders

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Founded in 1957 for the importation of high quality professional audio equipment, GOTHAM tries to be "all things to some people." In a highly profit-motivated world, filled with manufacturers attempting to attract a mass market by watering down their good engineering with inferior materials and workmanship, it is good to know that there are still companies of the Old World tradition, privately owned by men of devotion to their craft, who find personal satisfaction in the excellence of equipment made in limited quantity for a discriminating world-wide clientele aware of the *true* cost of inexpensive merchandise.

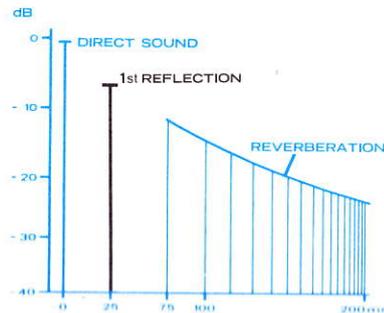
The trade marks shown here are those of just such companies

owned by the famous names of our industry. Names such as *Beyer, Franz, Neumann, Quillet, Studer*. All private owners of distinguished companies many of which bear their name. Without the economic pressures of a host of stockholders clamoring for higher profits, these men devote their lives to the fulfillment of their dreams. GOTHAM AUDIO, also a one-man ownership company, devotes itself to engineering advice and the dignified distribution and service of their products. Not price but excellence, craftsmanship and serviceability are the criteria on which GOTHAM bases its choice of companies to represent.

Stephen F. Temmer, *President*

DELTA-T 101

A COMPLETELY ELECTRONIC
DIGITAL AUDIO SIGNAL DELAY SYSTEM



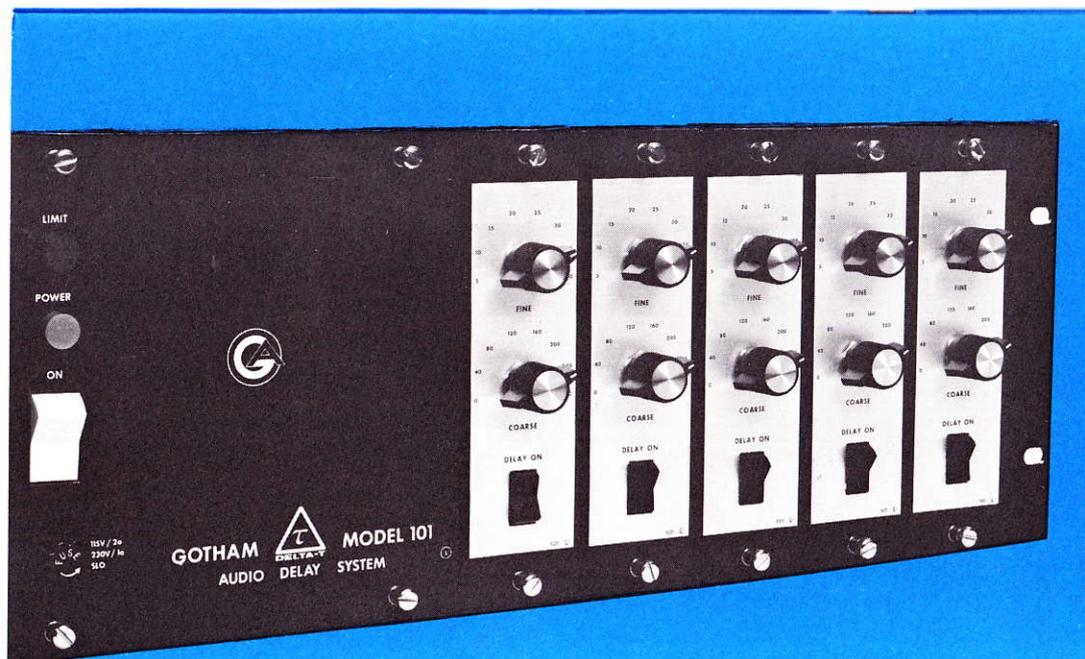
The control of the parameter TIME in the field of high quality audio until now has been restricted to the use of magnetic storage media such as tape loops and magnetic disks. The shortcomings of such systems are numerous: the fragility of the magnetic carrier leading to breakage and failure, the excessive flutter content of the delayed signals, the inherent distortion of the medium and the service problems which come from all mechanical, moving systems. The GOTHAM *DELTA-T 101* Digital Audio Delay System is the very first all-electronic audio time delay device ever marketed. Designed and built for GOTHAM by a team of M.I.T. computer specialists, the *DELTA-T 101* achieves the utmost in operating reliability through the elimination of all moving mechanical components.

The device, in essence, converts the analog audio information into digital form, stores it in this state and retrieves it at some later time controlled by switches on the front panel. Since there is no degradation of the digital data while in storage, the delayed outputs maintain identical signal quality for all settings of the delay selector switches.

The *DELTA-T 101* is available in its minimum configuration as a single channel device, with the amount of time delay selectable in 5 ms steps up to a maximum of 40 ms. Additional plug-in output taps, up to a maximum of five, may be added at any time. Each of these will have its independent delay selection switches as well as a by-pass switch. Seven additional delay cards of 40 ms each may also be plugged into the 101's frame to bring the unit up to its maximum 320 ms delay capability. The delay selector switches on each output unit are always provided with the full 320 ms range, and therefore prepared for a full delay complement.

Because the overall timing is controlled by a high precision crystal oscillator, there is absolutely no flutter.

Due to the absence of moving mechanical components, no routine maintenance is ever required. Any defective components would be replaced by supplying a repair/exchange plug-in card of the group involved.



NEUMANN MICROPHONES

After 40 years of leadership in the field of condenser microphones, NEUMANN again leads the industry with its FET-80 Series of solid state units featuring the unique "Phantom Powering®" System which eliminates the "box-on-the-floor" days of condenser microphone powering forever. A single miniature supply, simply installed in your console, will power up to 40 FET-80 units simultaneously without interfering with the operation of any other type of microphone plugged into the same mike inputs. The use of standard 3-pin Cannon/Switchcraft connectors and ordinary microphone extension cables makes the FET-80 series the world's most versatile. The following models are offered:

U-87 close-up studio microphone; cardioid/figure-8/omni switched; low-end roll-off switch; 10 dB overload protection switch. May be powered from internal batteries.

KM-86 3-pattern switchable; over-all best seller; flawless patterns; optimum isolation; miniature size; 10 dB overload protection switch.

KM-84 Miniature cardioid with 10 dB overload protection switch.

KM-85 Same as 84 but with low-end roll-off for P.A. use.

KM-83 Miniature omni-directional with 10 dB overload protection switch. "Pop"-free; recommended for right up close vocal use without "pop" danger. KM-83 and KM-84 capsules interchangeable on same amplifier!

SM-69FET Dual remote controlled pattern M-S microphone; two complete microphones in a single housing for XY/MS compatible recording; remote pattern controller.

KMA special subminiature lavalier for direct use with wireless microphone transmitters or Phantom



Powering®; Response specially shaped for lavalier use; no clothing noise.

KM-88 3-pattern switchable; successor to the KM-56 tube model; only FET-80 unit using nickel membrane capsules, requiring no increased head cage over amplifier diameter.

Coming in 1972: U-47FET! Bringing back the all-time best seller of the '50s in the latest solid state technology; cardioid only.

KMS-85 a KM-85 in a special hand-held version for vocalists; cannot be popped; double mike case provides finger noise protection.

Complete accessories such as wind screens, elastic suspensions, stands, goosenecks, booms, cables, Phantom Powering Supplies; portable supplies, capsule extenders.

BETWEEN TWO ASHTRAYS 24/16/8/4/2 CUSTOM CONSOLE

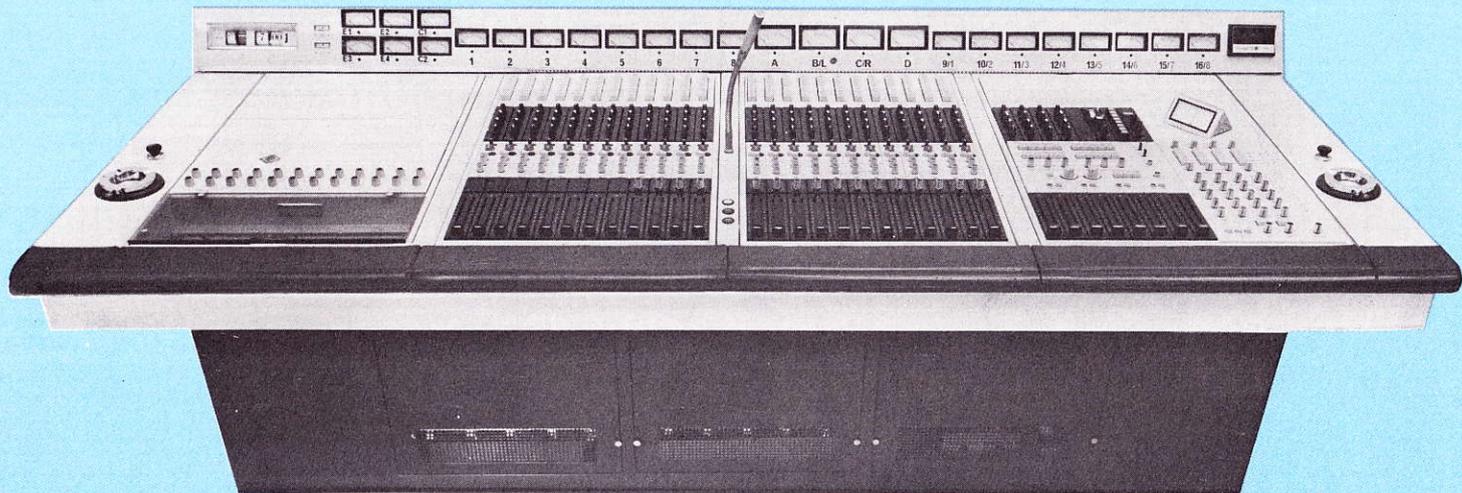
GOTHAM designed and NEUMANN built many major studio consoles. Each was sold to a recording studio, making it possible for them to become operative within weeks or even days as compared to the usual design and construction time of almost a year. These consoles are at *Empire Recording*, New York; *Ter-Mar Recording*, Chicago; *Sunset Sound Recorders*, Hollywood; *John Philips*, Bel Air; *Americana Recording*, Ruston, Louisiana; *A & R Recording*, New York; *WRS Motion Pictures*, Pittsburgh; *Village Recorders*, Los Angeles; and *Jay Miller Recording*, Crowley, Louisiana.

Now, vastly upgraded GOTHAM-NEUMANN Custom Consoles are in stock. Twenty-four inputs, 16 outputs (all metered) mix down to 8-track; 16 pan pots to mix

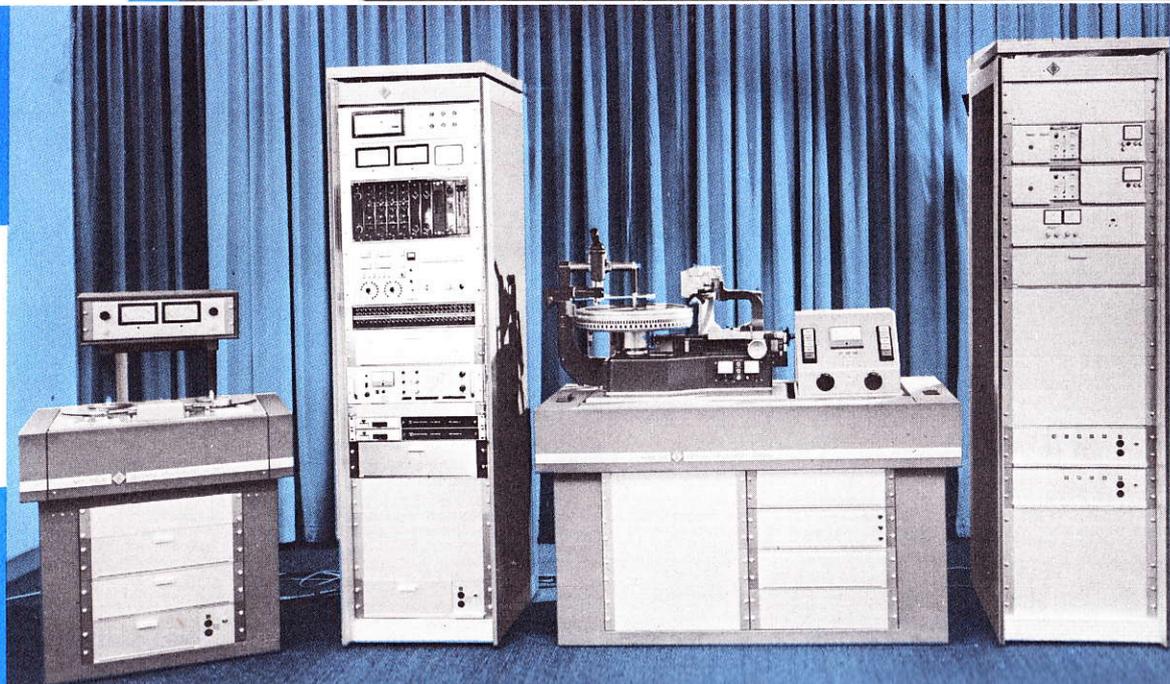
down to 4-track (all metered), and mix down to stereo. The result: a console that meets every requirement imaginable. And some you'd hardly imagine. Consider these: 2 cue and 4 echo channels, 4 remote echo controls, 4 remote tape controls, talk back limiter, digital day-date-time clock, new digital stop timer, U-79 Correlation Meter (Compatibility Guide), full 312 jack patch bay and Phantom Powering® for your Neumann FET-80 microphones.

And, oh yes! Built-in ashtrays and Rolls Royce electric cigarette lighters at either end.

If speed is essential you may telephone (212) 265-4111 for quick answers and minimal delivery time.



NEUMANN STEREO DISK TRANSFER EQUIPMENT



NEURMANN has become the unchallenged leader in the disk recording field. Far from a dying industry, disk recording has flourished during the past ten years as never before in its 75 year history. NEUMANN offers the most advanced and sophisticated system for transferring tape to disk using computer technology for depth and pitch control which allows as much as 35 minutes of time on a 12" LP side.

VMS-70 COMPUTER CONTROLLED DISK LATHE: Full solid state technology for variable pitch and depth without advance ball. Synchronous turntable for any of the prime turntable speeds or half speeds. Completely relay-less logic circuitry avoids click-pollution! Self-contained vacuum pump. Plug-in 90-pin programmers provide for all possible combinations of rpm, start diameter, end diameter, cutter lift delay, etc., etc.

SP-71S and MT-70S TRANSFER SYSTEM: Complete rack mounted mixing desk with full equalization, filtering, peak indicating and VU meters, Compatibility meter; phase monitor oscilloscope; automatic banding unit; patch bay; lathe remote controls; etc. The MT-70S is a separate, console mounted Telefunken M-10A preview stereo tape deck with all playback amplifiers for NAB/CCIR equalization, VU meters and precision ganged gain controls. Dolby units and limiter/compressor provided in the SP-71S control rack system. (optional)

TS-66 TRACING SIMULATOR: In what is undoubtedly the most sophisticated equipment yet made for the audio field, the TS-66 is an analog computer designed to counteract the distortion inherent in stereo playback by computing this distortion in advance and recording along with the signal the "negative" distortion components. Playback tracing distortion is reduced as a result by as much as 90%. (See "Development and Application of a new 'Tracing Simulator'" D. Braschoss, Journal A.E.S., Vol. 19; No. 2; Feb. 1971.)

SX-68 STEREO CUTTERHEAD: Never before has such a cutterhead appeared in the field. More than 35 dB channel separation from 30-16,000 Hz. Response within 1 dB within that range. Level capability far beyond the ability of any playback cartridge made. 15° vertical tracking angle. Integral chip tube for instant chip pickup. Weighs only 17 ozs. and is therefore readily depth controlled. Built-in stylus heat terminals.

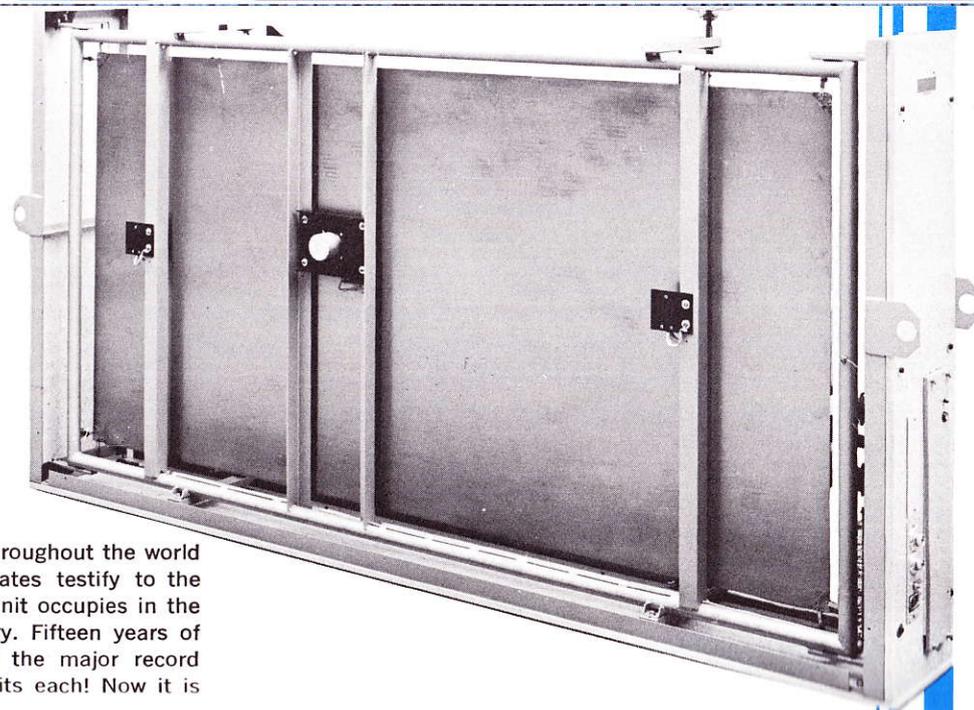
VG-66S SOLID STATE DRIVE SYSTEM: 31½" of rack space is occupied by this advanced, all solid state driving package intended for any NEUMANN cutterhead ever built, but particularly for the SX-68. Modular construction for instant plug-in replacement. Full monitor system from pickup cartridge to loudspeaker. 100-W per channel drive (transformerless); positive temperature-sensitive cutter protection panel (not a fuse); accommodates automatic high frequency compressors, compatibility circuit cards and full stereo monitor system.

EMT-140TS REVERBERATION UNIT



Over 2500 such steel plate units throughout the world and over 1000 in the United States testify to the position which this unique reverb unit occupies in the recording and broadcasting industry. Fifteen years of unbeatable performance. Some of the major record companies own more than 100 units each! Now it is

available with a remote controller to adjust reverb decay time, something you cannot do with an echo chamber! Its newly designed solid state amplifying system provides two input and two output channels for stereo use, a limiter in the drive section and low frequency cut-off filter with 12 dB/octave slope.



Reverb decay time:	0.5 to 5 seconds
Input/output:	up to +22 dBm, balanced; bridging input & very low output impedances.
Size:	92" l. x 51" h. x 13" w.
Weight:	approx. 380 lbs.
140R Remote controller:	Fits any EMT-140 ever made; 1½" x 4¾" console control panel mounts lighted reverb time meter control buttons.

(ILLUSTRATION
BELOW LEFT)

The EMT-140 is not an "artificial" reverb unit any more than an echo chamber is. They both use *acoustical* means to simulate a room or hall many times their size. That is not true of tape echo or spring devices in which discrete echos may be heard and serious coloration takes place. Two separate pick-offs from the steel plate produce a most amazing three-dimensional effect even from a mono drive signal which is obtained internally from the left and right channels connected to the unit's input.



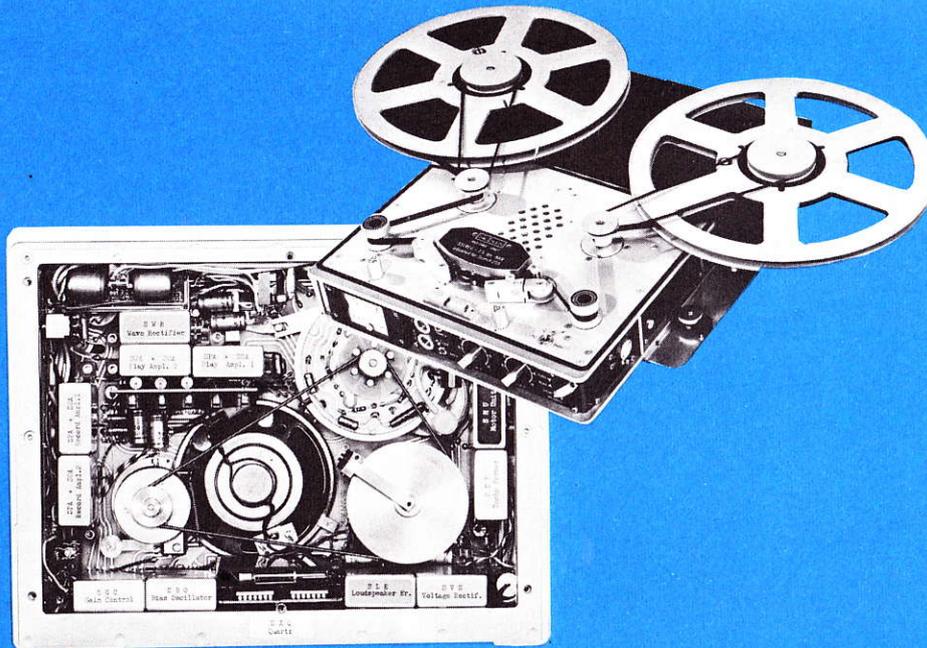
STELLAVOX Sp 7 PORTABLE TAPE RECORDER



The STELLAVOX Portable Synchronous Tape Recorder Model Sp 7 is a relative newcomer to the field of portable master recorders. This little giant weighs but 8 lbs. including full complement of batteries, making it the lightest such instrument in its class.

The STELLAVOX Sp 7 measures 10½" x 8½" x 3¼" and provides four tape speeds (3¾, 7½, 15 & 30 ips), plug-in head assemblies for any track configuration, tape oxide and equalization, STEREO recording, dual peak indicating meters, automatic level control, full SYNC capability with either Neo-pilot for mono or new SYNCHRO-TONE for stereo sync recording. Adapter for reels up to 10½" diameter (!). internal powering for two FET condenser microphones, remote controlled START/STOP, internal quartz synchronizer, electronic clap stick and many other features.

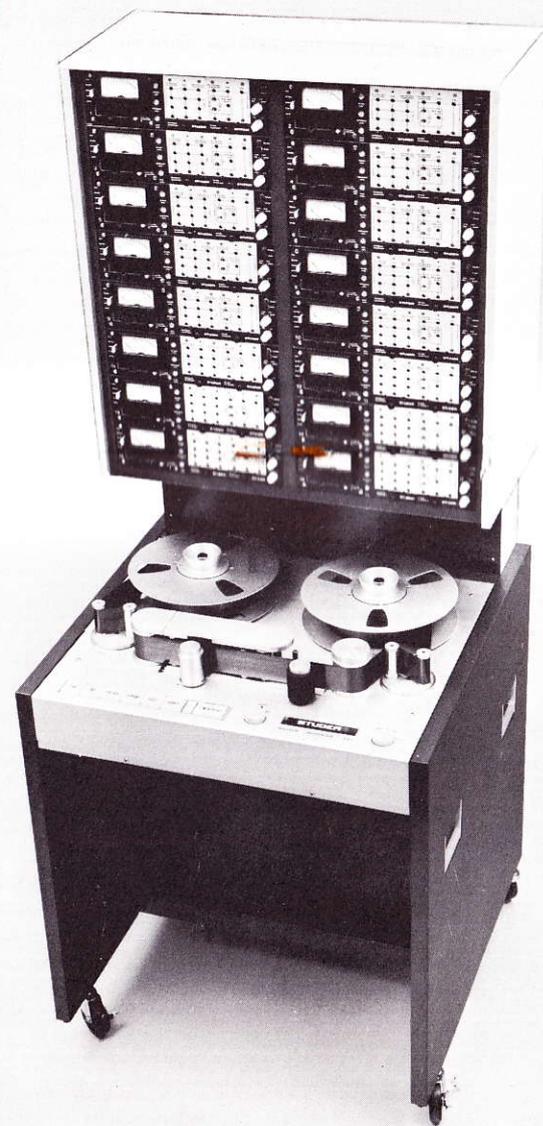
This extremely rugged Swiss made instrument is the easiest machine to service since all electronic sub-assemblies are potted plug-in units, while all mechanical subassemblies require but three screws to be removed for replacement. Its unique capstan motor (pat. pend.) is only 2 inches high and also serves to open and close the capstan pressure rollers electrically without the need to open the recorder's cover. Many accessories are offered. Performance data equals or betters that found in any professional studio recorder!



STUDER A-80 Multi-Track Master Recorder

What a delightful position for STUDER to be in: to have enough orders on hand so you have to keep people waiting for tape recorders and don't have to make a big splash by always being first with a new product. European technology has always been last but best. The A-80 is the latest in a long line of prestigious professional recorders built by STUDER of Switzer-

land for over 20 years. The A-80 is designed, manufactured, and even checked out with the aid of an IBM 360 computer. Its solid state relay-less motion logic is the latest word in tape handling. Regardless of the tape width, whether 1/4" or 2" tension is sensed and feedback controlled on *both* sides of the head assembly for all conditions of motion, even stopping. The electronics are engineered following U.S. recording needs and feature a sync system separate from playback, relay-less equalization switching, absolutely pop-free record function, VU meter on each channel, variable speed capstan, real time, remote indicating precision tape timer, and much much more. Nearly a hundred are already in use around the world in London, Rome, Buenos Aires, Japan and now, with this experience behind us, we are confident enough to face the challenge of the U.S.A.



STUDER 089 and 189 CONSOLES

From STUDER of Switzerland, the manufacturer of the A-62 and A-80 Studio Tape Recorders comes an amazing series of mass produced, sophisticated consoles. First designed and produced for the Swiss Broadcasting System, it is now available world wide.

Two basic models are offered: the 089 and the 189.

Model 089 (not shown): Up to 12 all-level inputs in plug-in modular construction with each input equipped with: 1) vernier gain control, 2) phase reversing key, 3) program equalizer, 4) mid-range presence equalization, 5) low/high cut-off filter, 6) linear motion attenuator, 7) two separate echo send pots, 8) pan-pot, and 9) preview/cue button. Up to three output channels. Peak indicating program meters. VU meters for echo send. 20-W speaker amplifiers. Complete talk-back system with 3-W speaker amp and relay controls. Built-in: CUE speaker and 3-W amplifier; 20-20,000 Hz tunable oscillator; remote signaling and tape and turntable controls; ash tray.

Model 189 (shown here): This console is exactly twice the width of the 089 and may be ordered with either 20 input x 4 output, or 16 input x 8 output.

Both consoles will operate from power lines of any voltage or frequency and from external DC supply. It is collapsible and comes in a fitted shipping case for damage-free transportation.

Many are already in operation: Etilia Enterprises, MGM Records, University of Illinois, Atlantic Records.

Brief Data:

Frequency response: 30-15,000 Hz \pm 1 dB

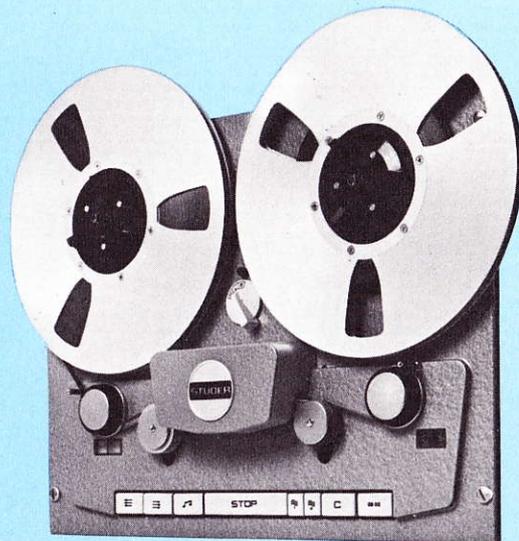
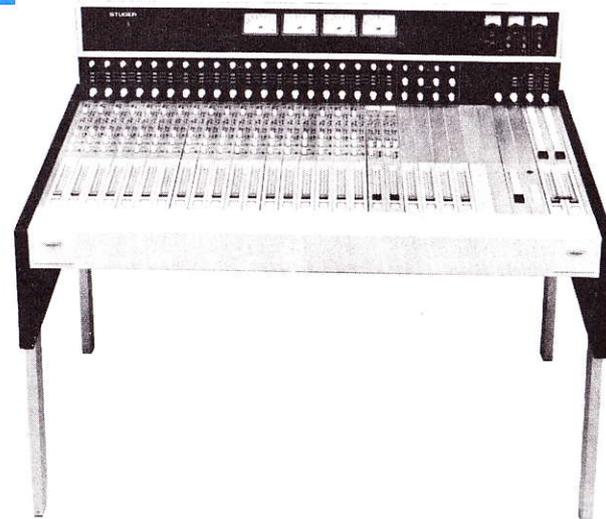
Input levels: -80 to +21 dBm

Output levels: (channels) up to +21 dBm

Distortion: <.8%

Noise level (ref. input): -126 dBm

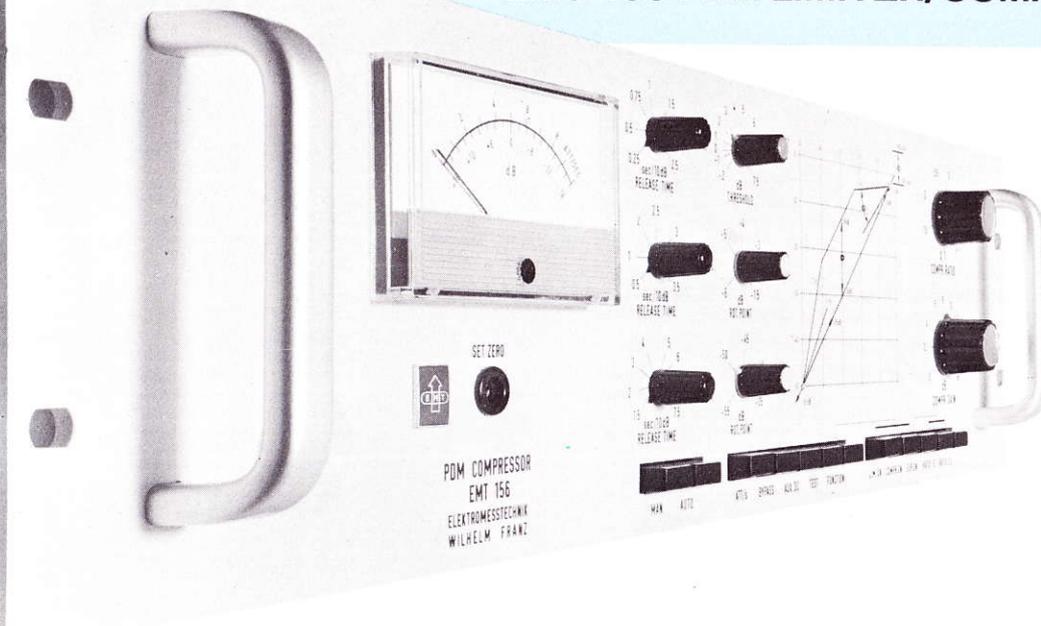
Size/weight: 27½" w. x 40" h. x 25½" d. 144 lbs.



THE PROFESSIONAL STUDIO TAPE RECORDER STUDER B-62 (Available 1972)

The Studer B-62 tape recorder is a superb example of precision Swiss engineering. Without the clumsiness of a closed loop tape path, Studer has solved the tape tension problem caused by the difference of tape diameters on each reel. Tape tension is kept constant from beginning to the end of the reel. Plug in electronic and head assemblies simplify maintenance and an elapsed time indicator keeps a record of the machine's use. Included on the tape deck is an extremely accurate tape timer which allows you to time your programs in fast wind. The specifications represent the state of the art—and all this in a standard 19" rack mount utilizing only 14" of rack space. All controls are remotable. Available in monophonic or 2-track (7½/15 ips).

EMT-156 PDM LIMITER/COMPRESSOR/EXPANDER (STEREO)

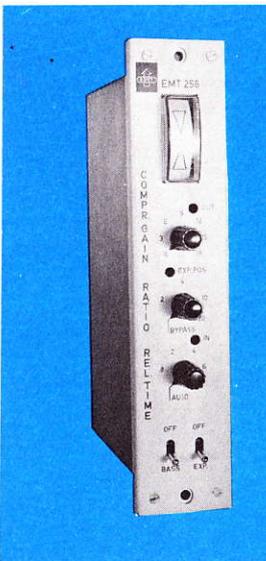


A state-of-the-art device in the field of limiting and compression, providing unique program dependent attack and release time controls. Separate circuits for rapid attack time limiting, as is often required in transmitting facilities or tape-to-disk transfer systems to prevent system overload, as well as compression which is a more subjective control aimed at producing greater program density. The compressor raises low level signals without affecting line level program material. Since previous compressors have produced noise amplification when signal ceases, the expander section insures that the compressor functions only in the presence of signal, releasing the compressor when signal stops, thus preventing noise amplification.

A unique front panel function schematic is color coded to match the control knobs for easy operation. Manual control of all release times are available but AUTOMATIC control is usually used. Meter reads either gain/loss in dB or number of limiting attacks per second, as selected. Automatic unit by-pass relay in case of power failure.

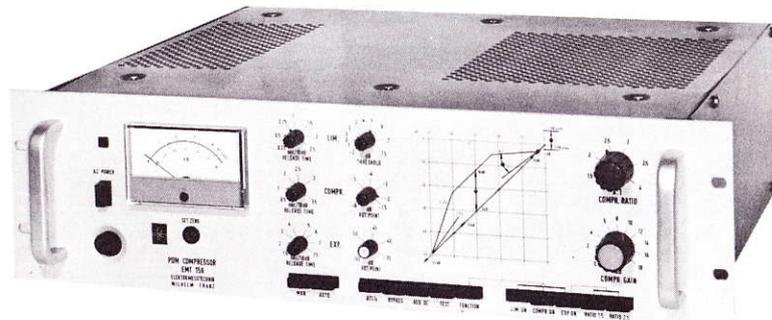
Plug in printed circuit card construction. 7 $\frac{1}{2}$ usec limiter preemphasis available for FM broadcast use. The EMT-156 combines in a single unit the features of numerous separate devices on the market costing considerably more money.

- | | |
|--|---|
| <p>Limiter attack time:
Compressor attack time:
Release times:
Input/output:</p> | <p>Max. 100 usec
1 . . . 4 msec
Program dependent
up to +22 dBm, balanced; bridging input
& low impedance output.</p> |
| <p>Frequency response:
Distortion (THD):
Size:
Weight:</p> | <p>30-15 kHz \pm1 dB
< 1%
19" rack width x 5$\frac{1}{4}$" x 14" behind panel.
29 lbs.</p> |



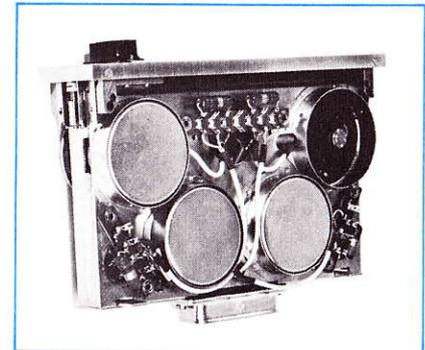
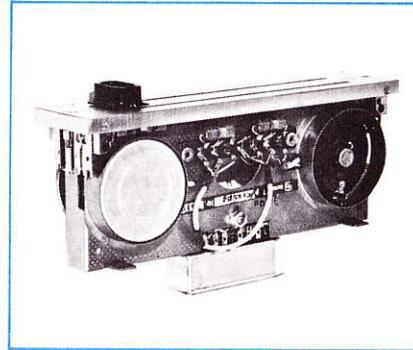
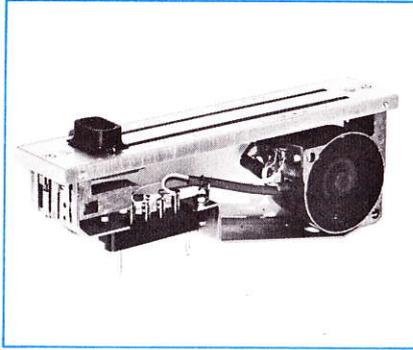
EMT-256 Console LIM/COM

1972 will see the introduction of a device similar to the PDM above but in console module format exactly the size of our linear attenuators. Both limiter and compressor are combined in this balanced in and out device together with a unique noise gating circuit. Undoubtedly the most circuitry ever fitted into this small size. The compressor/limiter has finally arrived at the place where it always should have been—on the console in line with the input module.



For the past 13 years the leader in completely reliable, noise-free attenuators from the country which has used nothing but linear motion for over fifty years. Now the *Model KCW* features step-less conductive surface ladder elements which provide smooth control over an 85 dB range before infinity, and more than 110 dB isolation in its OFF position. New ball-bearing action. Contacts available for cue or remote control. Mounts on console surface with 1 5/8" on center spacing but also available for sub-panel mounting on 1 1/2" centers. Single width unit will control either 1, 2, or 4 channels. *Guaranteed against noise for 5 years!*

GOTHAM LINEAR MOTION ATTENUATORS (Made by DANNER, Berlin)

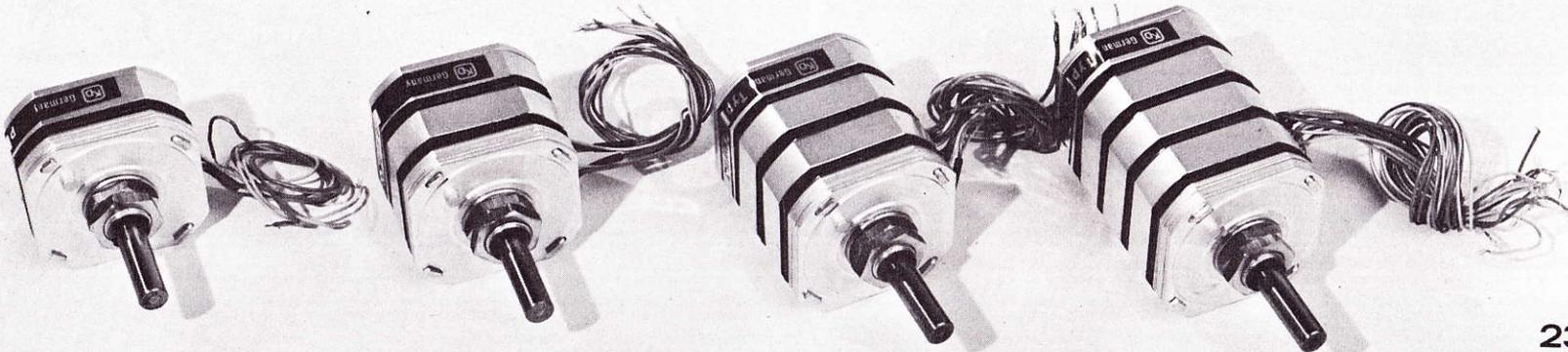


GOTHAM KSE ROTARY STEPLESS LADDER ATTENUATORS

(Made by DANNER, Berlin)

Based on many years of experience with the conductive surface elements described above, we have now made available miniature rotary controls with the same noise-free, step-less characteristics. Available in up to four channels with

detents if required. Available as *ladder* elements only at prices below other manufacturer's potentiometers. (NOTE: A ladder may always be used in place of a potentiometer, but rarely the other way around).



PROFESSIONAL TURNTABLE EMT - 930st



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The EMT-930st stereo studio turntables are in daily use in broadcasting systems throughout the world. The original units sold in the U.S. fifteen years ago are still in production. Only a modest number of these superb, precision-built machines are available each year.

The EMT-930st was designed for heavy broadcast use and comes with a special Ortofon arm, solid state stereo preamp with balanced low impedance line level outputs, selectable EQ, Mono/Stereo switch, continuous, frequency variable cutoff filter (20 kHz to 1 kHz) and the Stanton Broadcast Calibration Standard 681SE stereo cartridge. The elliptical stylus (.4 x .9 mil) for this cartridge was designed to track in the range of 2 to 5 grams because tracking forces of 1 gram and lower cause operational problems in most stations. This size is also ideal for mono LP's making an additional 1 mil stylus unnecessary.

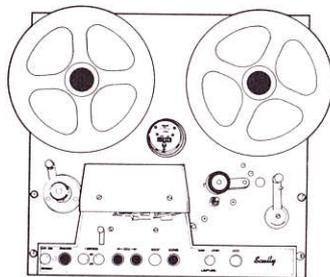
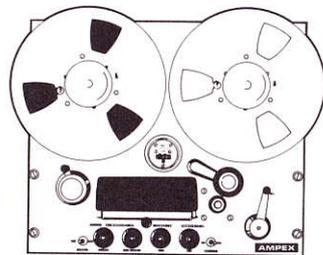
The EMT-930st's unique cueing system features an automatic audio delay which makes cueing as accurate as a tape cartridge system. A low voltage remote control, together with delay system, allows records to be put on the air, wow-free and on cue, at the push of a button.

MONITOR SPEAKER MODEL OY



The Model "OY" self-contained monitor system is a resounding success story. The "OY" is a bi-amplified system with an electronic crossover using two thirty-watt solid state amplifiers. Everyone who has bought it is simply amazed by its clarity, natural sound and even more importantly, lack of listening fatigue after many hours of monitoring. We do not claim any application for use in prime control room locations where "threshold of pain" is the operating level, but rather in editing rooms, mix-down, disk cutting, the boss' office, client's audition room etc. What a joy to require no more than a thin, line level feed and an AC cord. Gone are the racks of amplifiers. Gone are the input transformers added to Hi-Fi amps converted for balanced input configurations. It's all included in the model "OY" and it's only 19" x 12" x 9" in size. Also has a very clever wall mounting hanger arrangement (LSH-1).





This unique instrument will time any tape in only the time it takes to rewind it, and this with an accuracy of under three seconds out of 30 minutes. Manufactured by LYREC in Denmark, it comes in several models suitable for mounting on Ampex or Scully professional tape machines. The TIM-4 reads directly in minutes and seconds and is mounted on console type machines without drilling into the top plate. The timer adds absolutely no flutter or tape motion impedance to the recorder. Two widths are offered: 1/2" and 1", the 1/2" also covering 1/4" tape. You may order the timer to read directly at either 7 1/2 or 15 ips and for either Ampex or Scully mounting.

Hundreds have been sold to people who no longer use a stop watch even for timing one minute commercials. Imagine the time you can save by not running tapes in real time to obtain accurate timings.



BEYER DT-48S DYNAMIC CALIBRATION HEADPHONES

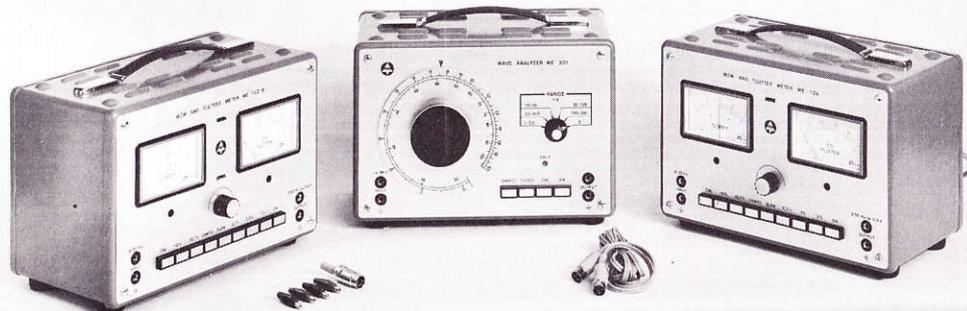
For over 20 years the measurement standard of standards bureaus and research laboratories throughout the world, the DT-48S is available for highest quality monitoring applications. A moving coil attached to an aluminum membrane is assembled into a solid aluminum case machined by hand from a solid block of metal. Linear response down to 20 Hz. 5 + 5 ohms for general use; 50 ohms for film industry use; Step-down transformers available for 600 ohm line level monitoring (TR-48); matching box for switch-over between speaker and phones (UG-8).



GOTHAM WOW & FLUTTER METERS

Every operation using tape or film recorders, turntables or any other type of record/reproduce transport should be equipped with a flutter meter. This parameter of equipment is far too critical to leave to aural detection and most often leads to serious program deterioration, especially in second and subsequent tape generations.

The Model ME-102b and ME-104 Flutter Meters measure both wow and flutter according to the IEC (International) Standard



which is soon to be confirmed by the ANSI, the American National Standards Institute (formerly ASA). A self-contained oscillator provides the test signal, while the measurement input will accept any signal level above 30 mV *without* the need for level adjustment. Of tremendous importance is the DRIFT METER which shows long-term deviation from true speed, such as is often found between the beginning and the end of a reel on tape recorders. Fully solid state, of course.

ME-301 FLUTTER WAVE ANALYZER

The ME-301 is the perfect companion to both the ME-102b and ME-104. It permits analysis of the flutter frequency by continuous tuning between 1 Hz and 330 Hz. It saves endless searching for the flutter cause in equipment by pointing up the flutter-producing idler, capstan, reel, etc. through its natural frequency.

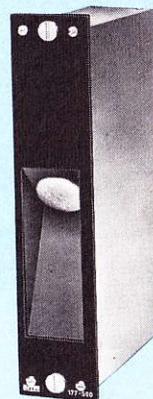
BEYER MINIATURE TRANSFORMERS

For over 10 years GOTHAM has been supplying original equipment manufacturers such as Ampex, Collins, Ampro, 3M, Langevin, H. H. Scott, Bauer, etc. etc. with many of their requirements for miniature input transformers. These units which are only $\frac{5}{8}$ " in diameter and about $\frac{3}{4}$ " tall have no equal anywhere for size, performance and price. BEYER makes *only* low-level input transformers in either threaded-stud, printed circuit, or 7-pin plug-in mounting. Although these transformers are usually made to manufacturers' specifications and sold in 1000 quantities, we do stock the more popular turns ratios for retail sale. All have 200 Ohm nominal primaries (usable between 30-600 Ohms). Ratios: 1:2 (200/800); 1:5 (200/5000); 1:10 (200/20,000) and 1:15 (200/45,000). Also available 1:1 (600/600) and 1:1 (50K/50K) which will tolerate an input level of up to +22 dB from a 600 Ohm or lower source. Max. input levels are usually -10 dB. Response: ± 1 dB or better 30 - 20,000 kHz.

NTP PHASESCOPE 177-500

The NTP Stereo Monitor Phasescope is used to determine the phase relationship of two channels in recording compatible stereo programs. It shows the phase, stereo width and balance during recording. This especially concerns the mixing of multi-channel recordings down to two-track.

The NTP Phasescope fits the space of a standard Gotham Linear Attenuator: (see page 22) and contains a 1" scope at a 30° angle to the front panel. It has two balanced inputs at line level followed by limiting circuits so that any level above 30 dBm will deflect the beam completely and give a full pattern independent of level differences between the channels. The beam disappears in the absence of signal to prevent burn-in. The scope tube may be rotated to produce any channel orientation desired. For disk cutting, for example, the sum signal would be displayed horizontally to imitate the motion of the cutting stylus tip.



EMT-160 Polarity TESTER



Receiver; a small box with input connector and a red and green indicating light. Pulse generator fits into a recessed well when not in use. Permits self-calibration.

Plug-in pre-amp unit; A 60 dB preamp unit with integral microphone which plugs into recessed well on receiver. (Optional)

The output of any device connected to the input plug of the Receiver will light either the red or green light whenever the Pulse Generator's acoustical or electrical pulse is fed to its input. Equipment showing like color indications is of like polarity. The pulse may be acoustically fed to a microphone or directly at any settable level between 60 mV and 9 V to any electrical input. The device under test may be fed at line level to the Receiver input, at any level down to -60 dB through the plug-in preamp unit, or acoustically to the plug-in unit's microphone.

This device is indispensable to any studio complex or P.A. installation.

At last, a portable battery operated unit which will instantly and positively determine whether one circuit is in or out of phase with any other. The EMT-160 consists of three parts:

Pulse Generator; a hand held pistol grip device with a loudspeaker which produces a sharp click at the push of a button. This click is also available as an electrical signal through a connector in the grip base.

NEUMANN RUMS-66 Rumble METER

Both the German standards organization and the international one, IEC, have recently issued standards for the measurement of turntable rumble, and the Electronic Industries Association is about to do the same in this country. For the first time this provides an objective measurement technique reflecting the subjective sensation of rumble and its annoyance. The RUMS-66 has a standard VU Meter as its indicating instrument and takes either low impedance dynamic, standard magnetic or ceramic cartridges at its input, equalizing them most accurately to the international standard recording characteristic (NAB, RIAA, DIN, IEC, CCIR). The signal is then weighted as provided in the standard and measured. A *must* for all laboratories servicing turntables, as well as for all turntable manufacturers.



FIRST CLASS

Permit No. 13832

New York, N. Y.

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