Modern broadcasting, film and recording studios have very exacting standards which can only be met by an uncompromising approach to higher quality (1), better operation and safety, and of course reliability - and this for many years to come.

The new STUDER A80/RC has been designed to fulfill all these requirements by successfully combining all the experience gained from the well-known A80-concept. The new model, a further development of the types A80 and A85, is thanks to far-sighted planning not only economic in manufacture but also easy to service.
A high quality aluminium die-cast chassis (3) provides a rigid base upon which the tape transport sub-assemblies are mounted, i.e. spooling motors, head block, idlers and guides, etc., most of which can be removed from above. The head block which can be easily exchanged, holds the high durable heads that guarantee a long life-time.

The complete machine can be pulled forward (2). In this way, access to the tape transport electronics, consisting of plug-in PC boards and the mechanical sub-assemblies is made easy and down-time is minimized. The standard A80/RC model contains the following new features:

- Modern "PROM" technique
- Fully electronic tape timer, including a negative display
- ZERO LOCATOR

The new Tape Recorder has been designed to the latest technical concepts. It will not only fulfill all of today's studio requirements to its optimum, but can also be controlled by the micro-process control technology of tomorrow.

The servo-controlled AC capstan motor provides tape speed stability, independent of mains frequency or voltage fluctuations. Vari-speed is provided as a standard feature, allowing variations of ± 7 semi-tones (the external control components are available as an accessory and should be ordered separately). Electronically controlled tape tension before and after the capstan motor, coupled with precision tape guides, result in negligible slippage and low wow and flutter.
Tape tension is separately adjustable (4) for the three modes: Play/Record, Fast Forward/Rewind, Edit.

Electronic sensors guarantee gentle handling of the tape, ensuring a safe and accurate tape path, whereby the following criteria are recognised:
- Tape Threaded
- Tape in Motion
- Tape Direction
- Tape Tension
- Coloured Leader Tape Recognition
- Capstan Motor Speed

Electronically controlled spooling motors ensure constant tape tension.

Plug-in adaptors allow quick change of the NAB and DIN spooling centres.
Increased flexibility of the transport logic has been achieved by utilizing "PROMS." These programmable read-only memories contain the programs of all the processes performed in the various phases of operation and can be addressed as required. To make servicing easier, the tape transport logic boards contain 11 LEDs which indicate the exact status of the machine throughout all its operating modes.

This modern programmable logic has a further advantage, it can be adapted for special requirements and applications. Furthermore, automatic control by means of a computer is possible. The manual functions of tape start or tape dump (bin operation) remain unchanged.

Indicators in the push-button controls, confirm to the operator, the tape transport commands addressed.

In this model, the entire tape transport electronics (4) which are concentrated on 7 PC boards are accessible from the front, so that adjustments and servicing can be carried out easily.
A precisely machined stainless steel casting forms the reference on which the heads are mounted, guaranteeing a tape path of highest accuracy. Between record head and replay head, a scrape flutter roller is fitted. This is replaced by a pilot tone head in pilot tone machines. The head height is precisely adjusted during manufacture. The Azimuth of both record and replay heads can be adjusted from above without removing the head block.

A splicing block, scissors (5), and a tape marker are included as a standard feature.

The optical electronic end of tape sensor disenables, via the control logic, tape motion and timer action at the end of tape or when the leader tape is reached. The sensitivity is adjustable for most leader tapes.

Editing facilities are provided. Variable spooling control and solenoid blocking of the tape tension sensor to hold the tape still when marking or cutting, permits accurate positioning of the editing point. The built-in tape scissors (5) and splicing block on the head cover enables accurate and fast splicing.
The audio electronic is housed in the amplifier bay which can accommodate up to 11 modules, such as:
- Record and Playback Amplifiers
- Oscillator
- Stabiliser

By lowering the front cover, ready access to all the controls and test points is achieved without removing the machine from the console.

The versatile audio electronic may be fitted with NAB and CCIR plug-in equaliser prints, according to customer requirements.

The audio electronics offer flexibility for different formats and are pre-wired for the following:
- Pilot tone amplifier
- Pilot tone resolver
- Modulation control

Connections are provided at the rear for:
- Remote control
- Capstan Speed control
- Extended Mode control
The electronic tape timer (7) has the following features:
The counting of real time at both speeds is by means of a six-digit register, in hours – minutes – seconds.

Five digits are displayed by 7-segment readout. The display can be altered as follows, by moving the jumper:
- Mathematical display sequence: 0.000/0/000.0/-0.001
  With negative times the hour digit changes to a minus sign.
- Complementary display sequence: 0.00.01/0/00.00/9999
  Negative times are displayed by the complement.

A maximum of 3 timers can be connected to one machine, i.e. 1 local, 2 remote.

The ZERO LOCATOR which is a standard feature, permits a quick and precise return to zero from any position on tape.
Versions of the STUDER A80/RC

A80/RC-1
full track (mono)

A80/RC-1 VU
full track (mono) but with VU-meter panel above tape deck

A80/RC-0.75
stereo, 0.75 mm track separation, full track erase head

A80/RC-0.75 VU
stereo, 0.75 mm track separation, full track erase head but with VU-meter panel above tape deck

A80/RC-0.75 S
stereo, 0.75 mm track separation, switchable to mono operation

A80/RC-0.75 S VU
stereo, 0.75 mm track separation, switchable to mono operation but with VU-meter panel above tape deck

A80/RC-2/2
two-track, 2 mm track separation, separate erase facility of track 1 or 2, with track selection switch (overlapping track erasure)

A80/RC-2/2 VU
two-track, 2 mm track separation, separate erase facility of track 1 or 2, with track selection switch (overlapping track erasure) but with VU-meter panel above tape deck

Monitor Loudspeaker Module
Comprising track selector (track 1, track 2, tracks 1 + 2). Volume control and headphone jack. Mounted into VU-meter housing, reel shelf above tape deck or rear cover of tape transport

Vari-Speed Control Panel
Control panel for variable capstan speed with counter. Mounted into VU-meter housing or reel shelf above tape deck

Rapel speed:
Reels:
Tape slip:
Flutter and wow: (measured with EMT 420)
Starting time:
Tape timer:
Tape transfer time:
Stopping time from fast Tape tension:
Max. tape tension:
Line inputs:
Input level:
Line outputs:
Output level:
Equalization:
Frequency response:
CCIR EQUALIZATION Signal-to-noise ratio rec (measured with AGFA PER full track 320 mW/m)
stereo, track width 2.75 mm
two track, track width 2 mm
Distortion at 1 kHz
NAB EQUALIZATION Signal-to-noise ratio rec (measured with 3M 20K u referring to 6 dB above full track)
stereo, track width 2.75 mm
two track, track width 2 mm
Distortion at 3 kHz (opera)
Signal-to-noise ratio rec (measured with high-influx 3040 nW/m, distortion in full track)
stereo, track width 2.75 mm
two track, track width 2 mm
Crosstalk rejection:
Erasure efficiency:
Bias frequency:
Erase frequency:
Power supply:

Counting range of elect:
* Adjustable with potentiometer
* Operating level tape f
**SUNDER A80/RC PROFESSIONAL TAPE RECORDER**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tape speed:</td>
<td>38.1 cm/s (15 ips) and 19.05 cm/s (7.5 ips) ±0.2% (adjustable)</td>
</tr>
<tr>
<td>Rotors:</td>
<td>DIN, NAB and one, max. 30 cm dia</td>
</tr>
<tr>
<td>Tape drop:</td>
<td>max. deviation 0.1%</td>
</tr>
<tr>
<td>Filter and mow:</td>
<td>30 lps, 15 lps, 7.5 lps, 30 lps/6 max. 0.04%, (38.1 cm/s) max. 0.04%, (19.05 cm/s) max. 0.06%</td>
</tr>
<tr>
<td>String time:</td>
<td>max. 0.5 sec for (0.1% flutter, weighted)</td>
</tr>
<tr>
<td>Tape tension:</td>
<td>Accuracy ±0.2%. Real time indicated in hours, minutes and seconds for 30, 15 and 7.5 lps</td>
</tr>
<tr>
<td>Tape transfer time:</td>
<td>approx. 120 sec for 1000 m tape</td>
</tr>
<tr>
<td>Stringing time from fastwind mode:*</td>
<td>max. 3 sec</td>
</tr>
<tr>
<td>Tape tension: *</td>
<td>70...100 p on reproduce and fastwind</td>
</tr>
<tr>
<td>Mute tape tension: *</td>
<td>500 p on start, stop and reversal</td>
</tr>
<tr>
<td>Line inputs:</td>
<td>balanced and floating, impedance &amp; filters min. 0 dBm, max. ±22 dBm</td>
</tr>
<tr>
<td>Line outputs:</td>
<td>balanced and floating, impedance 30 ohms max. (maximum load impedance 200 ohms) max. ±24 dBm</td>
</tr>
<tr>
<td>Equalization:</td>
<td>CDR or NAB, plugged as required</td>
</tr>
<tr>
<td>Frequency response</td>
<td>30 lps, 15 lps, 7.5 lps</td>
</tr>
<tr>
<td>CDR EQUALIZATION</td>
<td>Record reproduce (RMS)</td>
</tr>
<tr>
<td>Signal to noise ratio</td>
<td>full track 30 lps, 15 lps, 7.5 lps</td>
</tr>
<tr>
<td>weighted:</td>
<td>61 dB, 58 dB, 54 dB</td>
</tr>
<tr>
<td>unweighted:</td>
<td>61 dB, 58 dB, 54 dB</td>
</tr>
<tr>
<td>stand. track width 2.75 mm (50 mW/m):</td>
<td>61 dB, 58 dB, 54 dB</td>
</tr>
<tr>
<td>weighted:</td>
<td>56 dB, 54 dB, 50 dB</td>
</tr>
<tr>
<td>unweighted:</td>
<td>56 dB, 54 dB, 50 dB</td>
</tr>
<tr>
<td>bias:</td>
<td>max. 1%</td>
</tr>
<tr>
<td>Distortion at 1 kHz</td>
<td>max. 1%</td>
</tr>
<tr>
<td>Tape flux 20 mW/m:</td>
<td>max. 1%</td>
</tr>
<tr>
<td>Tape flux 10 mW/m:</td>
<td>max. 1%</td>
</tr>
<tr>
<td>NAB EQUALIZATION</td>
<td>Record reproduce (RMS)</td>
</tr>
<tr>
<td>Signal to noise ratio</td>
<td>full track 30 lps, 15 lps, 7.5 lps</td>
</tr>
<tr>
<td>6 dB above operating level:</td>
<td>67 dB, 65 dB, 61 dB</td>
</tr>
<tr>
<td>stand. track width 2.75 mm:</td>
<td>64 dB, 62 dB, 60 dB</td>
</tr>
<tr>
<td>bias:</td>
<td>63 dB, 61 dB, 59 dB</td>
</tr>
<tr>
<td>Distortion at 1 kHz:</td>
<td>max. 1%</td>
</tr>
<tr>
<td>Tape flux 20 mW/m:</td>
<td>max. 1%</td>
</tr>
<tr>
<td>Tape flux 10 mW/m:</td>
<td>max. 1%</td>
</tr>
<tr>
<td>Crosstalk rejection, stereo:</td>
<td>min. 40 dB, 60 Hz...12 kHz</td>
</tr>
<tr>
<td>Erasure efficiency:</td>
<td>min. 75 dB at 1 kHz</td>
</tr>
<tr>
<td>Bias frequency:</td>
<td>150 Hz</td>
</tr>
<tr>
<td>Erasure frequency:</td>
<td>150 kHz</td>
</tr>
<tr>
<td>Power supply:</td>
<td>100 V...120 V or 200 V...240 V ±10%</td>
</tr>
<tr>
<td>50 Hz, 60 Hz, 300 VA</td>
<td></td>
</tr>
<tr>
<td>Counting range of electronic timer:</td>
<td>We reserve the right to make alterations as technical progress may warrant.</td>
</tr>
</tbody>
</table>

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