

Plug-in module TIDR provides a direct modulation record/reproduce channel with a (\pm 1.5 dB) bandwidth from 100 Hz up to a maximum of 125 kHz when operating at a tape speed of 30 ips. For details of bandwidth at each tape speed, refer to Section 2.5.

The module is powered via POWER ON/OFF switch (47) which must be set to its upwards ON position for either RECORD or REPRODUCE. If the channel is not used, the switch should be set to its OFF position to save power. A separate RECORD ON/OFF switch (44) energizes the recording amplifier circuits, causing RECORD indicator (43) to glow. When not making a recording, switch (44) should be set to its OFF position to avoid accidental erasure of recorded data. In order to record an external signal the OPERATE/CALIBRATE switch (45) must be in its upwards OPERATE position. It may, in fact, be worth remembering that when recording an external signal, all the toggle switches (44) (45) (47) and (50) must all be pointing upwards.

5.1 <u>RECORD Channel</u>

The INPUT socket (40) has an input impedance of greater than 15 k Ω in parallel with 100 pF and, for full modulation, requires an input signal within the range 0.2 to 100 V peak. A parallel-connected INPUT socket is provided on the back panel of the module, accessible from the rear of the recorder. The input is a.c. coupled via an AC/GND switch (5) and an r.f. interference filter. The AC/GND switch enables the input signal to be switched off and the amplifier input grounded; under these conditions the INPUT socket is an open circuit, shunted by approximately 50 pF.

5.1.1 Input SENSITIVITY Control (42)

The input SENSITIVITY control provides a maximum sensitivity of 0.2 V peak for full modulation when set to its fully clockwise (CAL) position. The accuracy of the 0.2 V (CAL) setting may be checked at any of twelve sinewave frequencies obtainable from the Calibrator & Monitor Module, see Section 4.2.

The scale markings of the SENSITIVITY control from 0.3 to 100 V peak are approximate indications only, but the control may be accurately calibrated at the 0.5 1 2 and 5 V settings by means of 625 Hz sinewave signals obtained from the Calibrator and Monitor Module, see Section 4.2. Input overload protection is provided, and OVERLOAD indicator (41) glows whenever the input signal level exceeds the selected SENSITIVITY setting.

5.1.2 OPERATE/CALIBRATE Switch (45)

The OPERATE/CALIBRATE switch is connected in the recording channel preceding the SENSITIVITY control (42). When switch (45) is set to its CALIBRATE position, the external input signal is disconnected and the SENSITIVITY control is connected instead, to the output of the Calibrator and Monitor Module TICM. If the SENSITIVITY control (42) is set to its 0.2 V (CAL) position, a meter deflection to the 0 dB mark should be obtained when the CALIBRATOR MODE switch (74) is set to any of its $0.2 \text{ V} \sim$ AC positions, see Section 5.1.1 above, and Section 4. It should be remembered that the Direct Record/Reproduce Module is a.c. coupled only, so the d.c. CALIBRATOR signals are not applicable to this module.

5.2 <u>REPRODUCE Channel</u>

Signals from the reproduce head are first amplified, passed through a lowpass filter to remove the bias-frequency component, and then equalized and phase corrected to provide a flat replay characteristic at each of the seven tape speeds. Dependent upon the tape speed the signal is then passed through an appropriate low-pass filter to limit the high-frequency bandwidth before being routed to an analog switch. Following the analog switch the signal passes through preset output LEVEL control (49) and an output amplifier before appearing at OUTPUT socket (48).

5.2.1 <u>OUTPUT Socket</u> (48)

The signal at the OUTPUT socket has a source impedance of less than 50Ω , and is variable from 0 to 2 V peak into a maximum external load of 500Ω in parallel with 1 nF. The purpose of the analog switch, mentioned in the preceding paragraph, is to enable signals from the RECORD channel, as well as from the REPRODUCE channel, to appear at OUTPUT socket (48). In the RECORD, PLAY, SINGLE-CAPSTAN, PAUSE and EDIT modes the REPRODUCE signal is routed to the OUTPUT socket. In the STOP and PARK modes the RECORD signal appears at the OUTPUT socket.

5.3 Rear Panel Sockets

Three BNC sockets are provided at the rear of the Direct Record/Reproduce Module:-

INPUT is connected in parallel with INPUT socket (40).

OUTPUT is connected in parallel with OUTPUT socket (48).

MONITORING OUTPUT is permanently connected in the RECORD channel at a point following the input amplifier and SENSITIVITY control, and at the input to the main recording amplifier. The MONITORING OUTPUT signal is also routed, via internal wiring, to the Calibrator & Monitor Module where it is selected when the RECORD/REPRODUCE switch (65) is set to RECORD.

