MIDAS
TR Console

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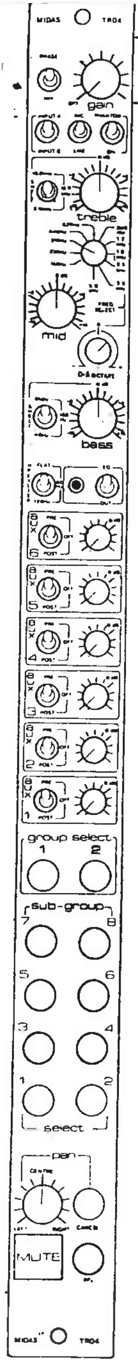
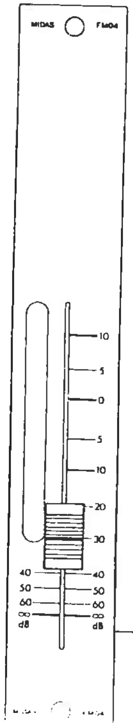




MIDAS

Midas Audio Systems Ltd., 54-56 Stanhope Street, London NW1 3EX Tel: 01-388-7060/01-387-7679

<u>MIDAS TR SYSTEM</u>

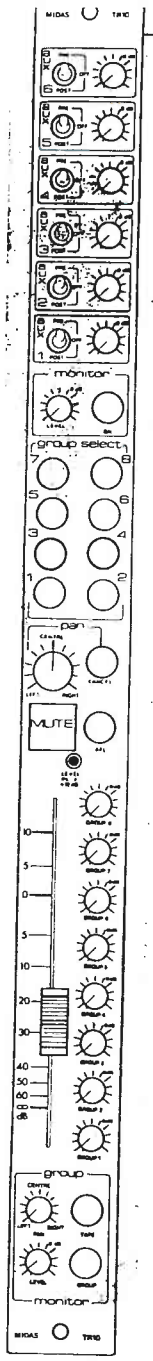
Specification Sheet Re:

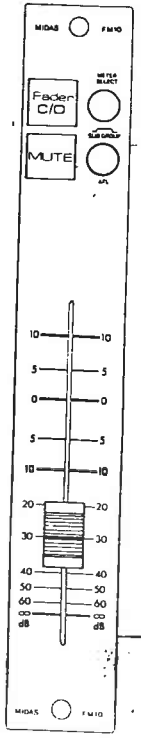
<u>INPUT MODULE TYPE TR 04</u>

Date

Our Ref: TR 04 Your Ref:

Input:	transformer balanced (600 Ohm mic, 10kOhm line) via 2 rear mounted XLR connectors, A & B. A/B select switch; mic/line select switch; phase invert switch; continuously variable log law sensitivity control provides input level acceptance of -60 to +30dBv. Individual phantom power on/off switch.
Equaliser:	3 bands each providing +/-16dB of continuously variable level adjustment at specified frequencies, 0dB setting at centre. EQ cancel switch with yellow LED indicator, gain shift less than 0.25dB with EQ set flat.
Treble:	shelving characteristic, frequency of turnover point switchable 6, 10 and 15kHz.
Mid:	bell curve characteristic, centre frequencies switchable 150, 220, 310, 440, 620, 880 Hz, 1.2, 1.8, 2.5, 3.5 and 5kHz with separate vernier control providing ½ octave sweep either side of selected centre frequency.
Bass:	shelving characteristic, frequency of turnover point switchable 40, 80 and 160Hz.
H.P. Filer (bass cut):	18dB/octave slope below specified frequencies switchable 60 and 120Hz (at -3dB point).
Auxiliaries (FX or F/B)	6 continuously variable rotary level controls with semi-log law characteristic each independently switchable pre/off/post fader.
Outputs:	facilities include PFL illuminated latching action push button switch; pan control with constant power law compensation of -3.0dB at centre; mute (on/off) touch button switch with integral illumination; independent left/right pan assignment to 8 sub-group busses and group busses 1 & 2 by 2 banks of illuminated latching action push button switches, odd numbers being left, even numbers being right; pan cancel illuminated latching action push button switch.
Fader:	Penny & Giles conductive plastic track fader, accurately calibrated scale length 103mm. Infinity cut-off provided. Optional single LED +15dBv peak indicator or six LED -15 to +20dBv column can be fitted to provide pre-fader level indication.





Midas Audio Systems Ltd., 54-56 Stanhope Street, London NW1.3EX Tel: 01-388-7060/01-387-7679

MIDAS TR SYSTEM

Specification Sheet Re:

OUTPUT MODULE TYPE TR 10

Date TR 10

Our Ref: Your Ref:

Sub-Group Section

Fader: Penny & Giles conductive plastic track fader, accurately calibrated scale length 103mm. Infinity cut-off provided.

Auxiliaries: (FX or F/B) 6 continuously variable rotary level controls with semi-log law characteristic each independently switchable pre/off/post fader.

Monitor: rotary level control; on/off illuminated latching action push button switch. Monitor send is post sub-group pan pot and pan cancel.

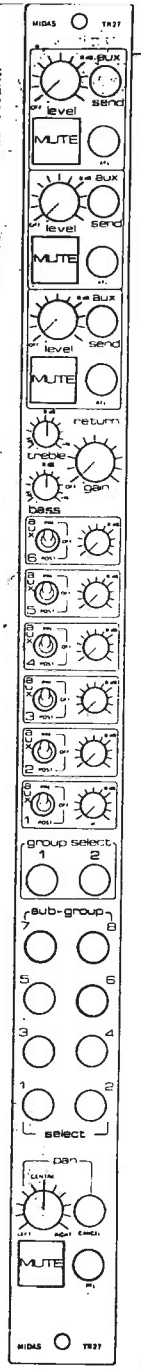
Outputs: facilities include A.F.L. illuminated latching action push button switch; mute (on/off) touch button switch with integral illumination; pan control with constant power law compensation of -3.0dB at centre; independent left/right pan assignment via 8 continuously variable (MIX) rotary level controls with semi-log law characteristic to group busses by 2 banks of illuminated latching action push button switches, odd numbers being left, even numbers right; pan cancel illuminated latching action push button switch. Dual LED indicator providing post-fader level indication, lights green when signal over -20dBv is present, red when signal over +8dBv is present; peak characteristic. Maximum output level before clip greater than +20dBv 600 Ohm transformer balanced independently available of mute switch via rear mounted XLR connector.

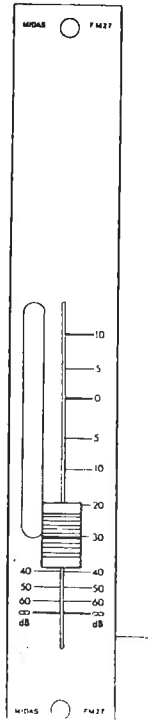
Group Section

Fader: Penny & Giles conductive plastic track fader, accurately calibrated scale length 103mm. Infinity cut-off provided.

Monitor: rotary level control; pan control; 2 on/off illuminated latching action push button switches select group or tape input. Tape input is 10 kOhm electronically balanced via rear mounted XLR connector.

Output: facilities include A.F.L. illuminated latching action push button switch; mute (on/off) touch button switch with integral illumination; meter select (group/sub) illuminated latching action push button switch. A swit located on the PCB of FADER MODULE FM10 is provided to change over the group and sub-group faders. The FADER C/O indicator illuminates when the fader functions are reversed.





Midas Audio Systems Ltd., 54-56 Stanhope Street, London NW1.3EX Tel: 01-388-7060/01-387-7679

MIDAS TR SYSTEM

Specification Sheet Re: Date

AUXILIARY MODULE TR 27 Our Ref TR 27

Auxiliary Send Section (1 of 3)

Output: continuously variable log law level control; AFL illuminated latching action push button switch; mute (on/off) touch button switch with integral illumination. Maximum output level before clip greater than +20dBv 600 Ohms transformer balanced via rear mounted XLR connector.

Auxiliary Return Section

Input: 10 kOhm electronically balanced via rear mounted XLR connector; maximum input level acceptance of +20dBv controlled by continuously variable log law gain control.

Equaliser: 2 bands, each providing +/-16dB of continuously variable level adjustment at specified frequencies, 0dB at centre.

Treble: shelving characteristic, frequency of turnover point 10kHz

Bass: shelving characteristic, frequency of turnover point 50Hz

Auxiliary (FX or F/B): 6 continuously variable rotary level controls with semi-log law characteristic each independently switchable pre/off/post fader.

Outputs: facilities include PFL illuminated latching action push button switch; pan control with constant power law compensation of -3.0dB at centre; mute (on/off) touch button switch with integral illumination; independent left/right pan assignment to 8 sub-group busses and group busses 1 & 2 by 2 banks of illuminated latching action push button switches, odd numbers being left, even numbers being right; pan cancel illuminated latching action push button switch.

Fader: Penny & Giles conductive plastic track fader, accurately calibrated scale length 103mm. Infinity cut-off provided. Optional single LED +15dBv peak indicator or six LED -15 to +20dBv column can be fitted to provide pre-fader level indication.

INPUT MODULE TR04

Circuit Description

Microphone Amplifier

A balanced, floating input is transformer coupled to a non-inverting, low noise, variable gain amplifier (IC1) for optimum noise performance.

R141, 2, 3 form a passive line-to-microphone pad with L1, 2, C93, 4, 5 providing attenuation of radio frequency interference etc.

The nominal 600R Microphone input impedance may be increased (up to 5Kohms max.) by changing R147.

IC2 forms a +20dB nominal gain, high pass third order filter with switchable turnover frequencies.

Equaliser System

The Baxandall network around IC3 provides unity gain Treble and Bass controls with switchable shelf frequencies.

A half octave switched Wien network around IC5 forms a fine tuneable mid-range control with IC4 controlling feedback phase and gain.

Insert Send Driver

IC6 forms a non-inverting Equaliser-to-Insert Send buffer.

Insert Return Buffer

IC7 forms a (10Kohms) non-inverting Insert Return Buffer/Fader Driver.

"Pre" to "Post" Auxiliary Routing level ratio may be adjusted using R127, 8 pad.

Fader Buffer

A non-inverting level normalising driver is formed around IC8 with TR1, 2 providing a bootstrapped medium current Direct Output/Low impedance Routing Section Drive.

Pan Control

A dual potentiometer is padded by R97, 139 to provide a constant level (-3dB centre) pan law. This system is buffered by IC9, 10 stages.

Routing Section

Pan-to-Odd/Even sub-group routing comprises level normalising resistors R108, 9 and virtual earth summing resistors R110 to R119, with an overall signal breakpoint for Muting and individual breakpoints for sub-group selection.

Auxiliary Routing is selectable ("Pre", "Post", "Off") with the level control law formed by virtual earth summing resistors R121, 2, 3, 4, 5, 6.

R81 is the Pre-Fader-Listen virtual earth summing resistor. R83 injects current into the P.F.L. gating bus for Monitor Solo functions.

TR10 OUTPUT MODULE

This Module contains both sub-group and output group systems. The output group system is similar to the sub-group system minus its routing section.

Summing Amplifier

A virtual earth, inverting summing amplifier is formed around IC1, providing -10dB gain for input to sub-group headroom.

Fader Buffer/Insert Send Driver

IC2 forms a non-inverting fader buffer amplifier to allow phase normalising/gain stage (IC3) to operate at low input impedance for optimum noise performance. R13 allows adjustment of Insert send/output level at nominal control settings.

Insert Return Buffer/Output Driver

A non-inverting hybrid driver stage is formed around IC4, TR1, 2. This provides medium current output drive via a balancing transformer. R32 is the After-Fader-Listen virtual earth summing resistor. R33 injects current into the P.F.L. gating bus for Monitor Solo functions.

Routing Section

A dual potentiometer is padded by R41, 42 to provide a constant level (-3dB centre) pan law to virtual earth summing resistors R108 to R115, with an overall signal breakpoint for Muting and individual breakpoints for group selection. IC5, 6 form level normalising pan buffers to allow for level setting "headroom" on the sub-group to group routing level controls.

Post-pan control Monitor signals route via virtual earth summing resistors R51, 52.

"Pre" to "Post" Auxiliary Routing level ratio may be adjusted by changing R53. Auxiliary Routing is selectable ("Pre", "Post", "Off") with the level control law formed by virtual earth summing resistors R116, 117, 118, 119, 120, 121.

COMMUNICATIONS MODULE TR22

P.F.L. Section

IC1 forms a -10dB virtual earth summing amplifier. This feeds an adjustable gain meter drive stage (IC3). P.F.L. signal from this summing stage, via the P.F.L. level control, is routed via the "Intercom" switch to headphones and via Solo/Mix switches and Relays 1 and 2 to the Monitor system.

The P.F.L. Gating System (IC2, TR1 etc)., enables the P.F.L. signal to displace normal Monitor signals when Solo is selected. IC2 inverts any P.F.L. gating signal and drives TR1 V-MOS gate position. This turns on TR1 causing Relays 1 and 2 to switch the Monitor signal sources from Left and Right monitor summed signals to the P.F.L. summed signal, if the Solo switch is selected.

In the MIX mode the P.F.L. signal is mixed onto the Left and Right Monitor Busses via IC6 gain/phase normalising buffer and summing resistors R14, 18.

Monitor Section

Summing Amplifiers

IC4, 5 form -10dB virtual earth summing amplifiers. Signals from these two amplifiers route, via Relays 1 and 2, to the monitor DIM section.

Dim Section

Resistors R104, 105 are Mono mixing resistors. TR2, 3 V-MOS Transistors perform a simple, low level voltage controlled attenuator function . These transistors are biased on when the DIM button is pushed or when a LINE or MIC talkback function is selected. R26, 27 and R38, 39 then become 40dB pads. Different DIM levels may be obtained by changing R27, 39. DIM timing is governed by C24.

Dim Buffers/Fader Drivers

IC7, 8 form level normalising non-inverting buffers to drive the stereo monitor fader system.

Output Section

Non-inverting amplifiers IC9, 10 provide post fader level normalising to drive left and right monitor outputs via balancing transformers and the monitor mute switch.

Talkback Section

IC21 forms a balanced microphone amplifier. Peak compression is provided by V-MOS devices TR4, 5 gated from level detector stage TR6.

A unity gain, balanced line section is provided by IC24. C55, 56 and 57 attenuate radio frequency interference etc.

Talkback signals are routed to the sub-group, Auxiliary, Group and External level controls via MIC and LINE selection switches.

R49, 51 are Oscillator and Mic/Line mixing resistors.

Talkback level control gain normalising buffers (IC11, 12, 13, 14) are all identical to the previously described Monitor output section.

Talkback routing is via AUX and GROUP switches at line level, summing resistors being present at the post-fader stage of Auxiliary and Group Modules.

AUXILIARY MODULE TR27

Send Sections

Summing Amplifiers

A virtual earth, inverting summing amplifier is formed around IC1, providing -10dB gain for input to auxiliary send headroom.

Level Control Buffer/Insert Send Driver

IC2 forms a low impedance phase normalising/gain stage. R9 allows adjustment of Insert Send/Output level at nominal control settings.

Insert Return Buffer/Output Driver

A non-inverting hybrid driver stage is formed around IC3, TR1, 2. This provides medium current output drive via a balancing transformer. R29 is the After-Fader-Listen virtual earth summing resistor. R30 injects current into the P.F.L. gating bus for Monitor Solo function.

Return Section

IC4 forms a balanced line input, unity gain stage. C217, 218, 219 provide attenuation of radio frequency interference etc.

A non-inverting variable gain amplifier is formed around IC5.

Equaliser Section/Insert Send Driver

This is a fixed frequency Baxandall Treble and Bass Control System (IC6) with IC7 providing a unity gain, phase normalising insert send driver.

Insert Return Buffer

IC8 forms a (10Kohms) non-inverting Insert Return Buffer.

"Pre" to "Post" Auxiliary Routing level ratio may be adjusted using R304/5 pad.

Fader Buffer

A non-inverting level normalising driver is formed around IC9 with TR203/4 providing a bootstrapped medium current Direct Output/Low impedance Routing Section Drive.

Pan Control

A dual potentiometer is padded by R289, 290 to provide a constant level (-3dB centre) pan law. This system is buffered by IC10, 11 stages.

Routing Section

Pan-to-Odd/Even sub-group routing comprises level normalising resistors R302, 325 and virtual earth summing resistors R309 to R318, with an overall signal breakpoint for Muting and individual breakpoints for sub-group selection.

Auxiliary Routing is selectable ("Pre", "Post", "Off") with the level control law formed by virtual earth summing resistors R319, 320, 321, 322, 323, 324.

R286 is the Pre-Fader-Listen virtual earth summing resistor. R287 injects current into the P.F.L. gating bus for Monitor Solo functions.

RECOMMENDED P.F.L. LEVELS

To obtain optimum console dynamic range, fader range and crosstalk performance the following P.F.L. starting levels are recommended.

P.F.L. is Post-Equaliser, on Midas consoles, and should be re-checked after any equaliser adjustments.

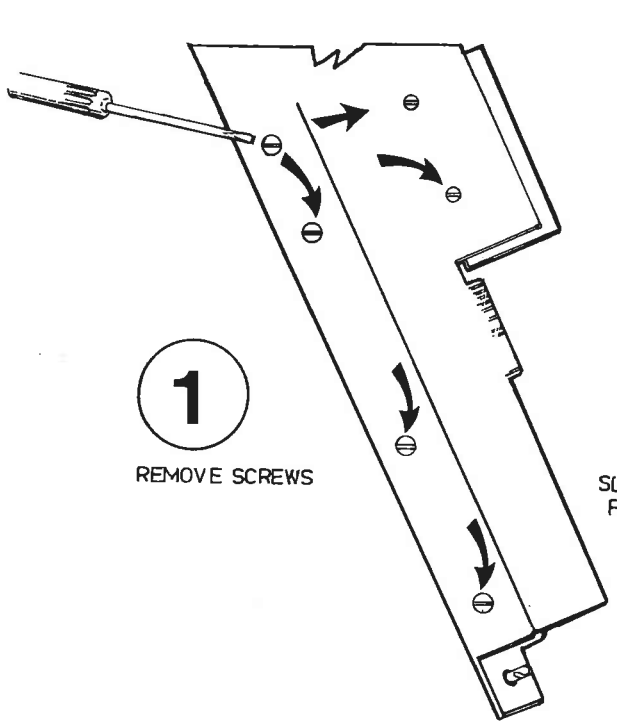
FULLY PANNED

Number of Inputs routed to one subgroup or group	RECOMMENDED P.F.L. METER LEVEL
1	-6 to 0
2	-6 to 0
4	-6 to 0
8	-12 to -6
16	-18 to -12
32	OFF-SCALE to -18

Although some allowance has been made for V.U. Meter dynamic inadequacies, percussion and synthesizer sources should be treated with caution. If in doubt, allow an extra 6dB of headroom.

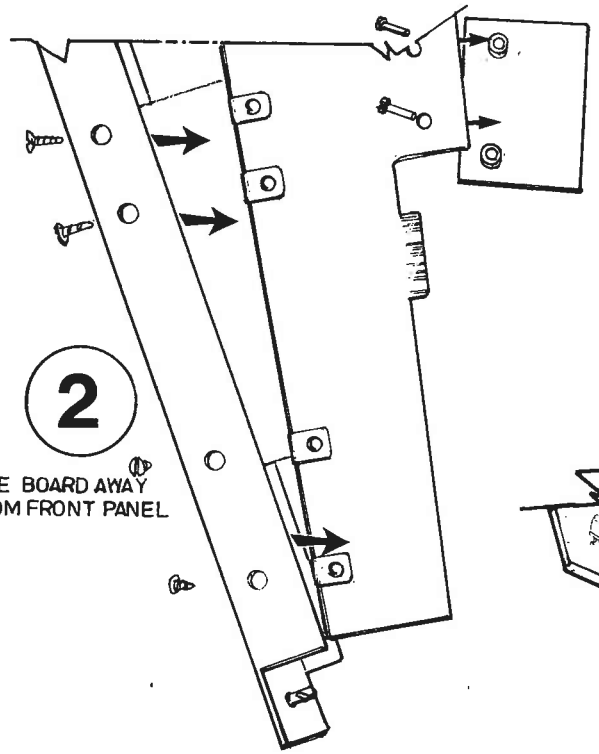
DRAWING NUMBER
MAS 287

ANGLE PROJECTION



1

REMOVE SCREWS

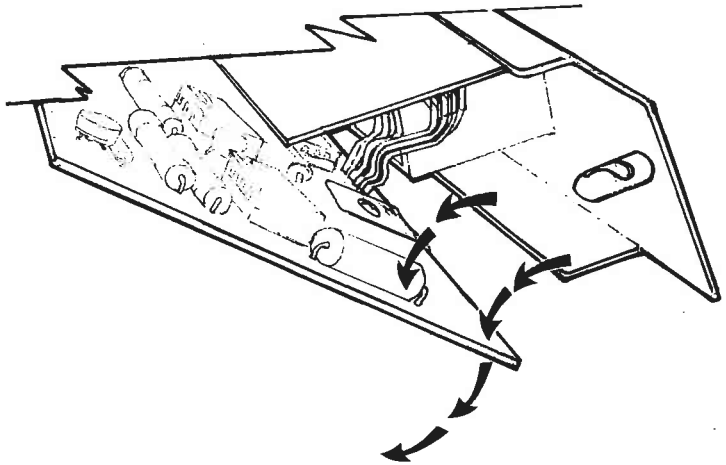


2

SLIDE BOARD AWAY FROM FRONT PANEL

3

PULL OUT & DOWN FOR COMPONENT ACCESS



ISSUE	DATE	MOD. No.
1	3 Aug 84	Eddie

MATERIAL

FINISH

TOLERANCES – UNLESS STATED
UNIT ± 0·
·0 ± 0·
·00 ± 0·
·000 ± 0·

DIMENSIONS IN

NOTES

SCALE:

DRAWN BY Robbie

DATE 3 August 84

MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060

TITLE
DISMANTLING OF TR MODULES FOR SERVICING

DRAWING NUMBER
MAS 287

ISS.
1

297 · 420mm A3

ITEM Nº	COMPONENT IDENT.	STOCK Nº	DESCRIPTION	EQUIVALENT	Q.PER
28	SWITCH	SW4001	[illegible]7103 (C&K)		6
29	"	SW4002	[illegible]7203 (C&K)		2
30	"	SWT002	[illegible]7201 (C&K)		2
31	"		2pole 12WAY (ELMA)		2
32	"	SWR004	3 Block (RAFI)		2
33	"	SWR003	2 Block (RAFI)		4
34	BULB	IND001	12 VOLTS (RAFI)		4
35	"	IND002	24 VOLTS (RAFI)		4
36	LED	LED001	YELLOW LST 4353		2
37	"	LED004	H.P. RED		4
38	"	LED005	DUAL RED/GREEN		1
39		MET001	V.U. METER		1
40		MET003	" " LAMP		4
41		SWE002	12WAY 2POLE (ELMA) SW.TRH		2
42		ICT003	LED COLUMN IC SN16880N		2
43		ICT008	CMOS 4007 IC		2
44		TRN005	2N5686 TRANSISTR		1
45		TRP005	2N5684 "		1
46		TRN007	TIP 141 "		1
47		TRP007	TIP 146 "		1

		KIT Q.	TOTAL REQD.	ISSUE Q:	SHORTAGE	COMMENTS

MIDAS 54-56 Stanhope Street, London, NW1 3EX, Tel: 01-388-7060

PARTS LIST	ASSEMBLY DISCRIPTION	ASSEMBLY NUMBER	ISS
	TR SERIES KIT	MAS 450	3

SHEET 2 OF 2

issue	date	checked
2	2/10/80	SC.
3	15/12/81	JM

DATE KIT RAISED	
DATE TO LINE-TO SUBCON:	

ITEM Nº	COMPONENT IDENT.	STOCK Nº	DESCRIPTION	EQUIVALENT	Q.PER
1	RESISTOR	PCE 222	2K2 Dual Lin Small 20%		2
2	"	PDG 222	" " Log TALL 20%		2
3	"	PDT 222	" Single Log Small 20%		2
4	"	PCF 472	4K7 Dual Lin TALL 20%		2
5	"	PDG 472	" " Log TALL 20%		2
6	"	PCT 472	" Single Lin Small 20%		2
7	"	PCM 472	" " " TALL 20%		2
8	"	PCE 103	10K Dual Lin Small 20%		
9	"	PCF 103	" " " TALL 20%		2
10	"	PCT 103	" Single Lin Small 20%		6
11	"	PCT 223	22K Single Lin Small 20%		2
12	"	PCM 223	" " " TALL 20%		2
13	CAPACITOR	CMF 686	100mF 16V TANTALUM		10
14	"	CPB 476	47mF 6V AL. ELECT.		2
15	"	CPF 476	47mF 25V " "		2
16	"	CPI 476	47mF 63V " "		2
17	"	CPF 107	100mF 25V " "		2
18	DIODE	DIO 005	OA202		6
19	"	DIO 002	IN4001		6
20	TRANSISTOR	TRP 003	2N1132		4
21	"	TRN 003	2N3053		4
22	INTEGRATED CKT	ICT 001	TDA1034N	NE5534	10
23	" "	ICT 002	TL071		5
23(alt)	TRANSISTOR		MPSA13		2
24	FADER	FAD 001	D20, 77a/2		1
25	"	FAD 002	1120/A/m		1
26	SWITCH ASSY	SWL 002	TR4BR/27BR		1
			SWITCH ASSEMBLY (L x I)		
27	" "	SWL 001	TR4BL/27BL		1
			" "		

		KIT Q.	TOTAL REQD.	ISSUE Q:	SHORTAGE	COMMENTS

MIDAS 54-56 Stanhope Street, London, NW1 3EX, Tel: 01-388-7060

PARTS LIST	ASSEMBLY DISCRIPTION	ASSEMBLY NUMBER	ISS
	TR STAGES KIT	MAS 450	3

SHEET 1 OF 2

issue	date	checked
2	24/10/78	JC
3	15/11/78	JM

DATE KIT RAISED	
DATE TO LINE-TO SUBCON›	

CONTROL SETTING

MODULE TYPE TR10

MODULE CONTROL SETTING LIST B for Ac LEVEL CHECKS

Control	Position	Control	Position
AUX 6	OFF CCW		
AUX 5	OFF CCW		
AUX 4	OFF CCW		
AUX 3	OFF CCW		
AUX 2	OFF CCW		
AUX 1	OFF CCW		
MONITOR	CCW OUT		
GROUP SELECT 8	OUT		
" " 7	OUT		
" " 6	OUT		
" " 5	OUT		
" " 4	OUT		
" " 3	OUT		
" " 2	OUT		
" " 1	OUT		
PAN	FULLY RIGHT or FULLY LEFT		
CANCEL	OUT		
MUTE	OUT		
AFL	OUT		
SUB GROUP FADER	0		
ROUTING LEVEL 8	CCW		
" " 7	CCW		
" " 6	CCW		
" " 5	CCW		
" " 4	CCW		
" " 3	CCW		
" " 2	CCW		
" " 1	CCW		
GROUP MONITOR TAPE	OUT		
" " GROUP	IN		
" " LEVEL	FULL		
METER SELECT	OUT		
AFL	OUT		
MUTE	OUT		
FADER CHANGEOVER	OFF		
FADER	0		

AC. LEVEL CHECKS

MODULE TYPE TR10

MODULE SETTINGS LIST B for Ac. LEVEL CHECKS

Test Point	Nominal Level
EDGE PIN 25 (3K6 IN SERIES)	FEED IN 0dB @ 1kHz
" " 26	-10.4 dB ± 1dB
CCT POINT A	-19.7dB ± 1dB + SUB FADER
EDGE PIN 33	+ 1.7 dBv (± 3dB PRESET R13)
" " 3	+ 2.4 dBv " " " "
EDGE PINS 40 to 41	BALANCED + 4dBv (PRESET R13)
CCT POINT B	+ 3.2 dBv ± 1dB
" " C	+ 10 dBv ± 2dB + SUB FADER (PAN L)
" " D	" " " " " (PAN R.)
" " E	+ 2.4 dBv ± 2dB + SUB FADER
" " F	+ 10 dBv " " "
" " G	" " " "
EDGE PIN 34 (3K6 IN SERIES)	FEED IN 0dB @ 1KHz
" " 35	-10.4 dBv ± 1dB
CCT POINT H	-19.7 dBV ± 1dB + GROUP FADER
EDGE PIN 38	+ 1.7 dBv (± 3dB PRESET R83)
" " 4	+ 2.4 dBv " " "
EDGE PINS 42 to 43	BALANCED + 4dBv (PRESET R83)
CCT POINT K	+ 10 dB ± 2dB + GROUP FADER

CONTROL SETTING

MODULE TYPE TR 27

MODULE CONTROL SETTING LIST B for AC LEVEL CHECKS

Control	Position	Control	Position
Aux 5-6 LEVEL	0dB		
" MUTE	OUT		
" AFL	OUT		
Aux 3-4 LEVEL	0dB		
" MUTE	OUT		
" AFL	OUT		
AUX 1-2 LEVEL	0dB		
" MUTE	OUT		
" AFL	OUT		
TREBLE	0dB		
BASS	0dB		
GAIN	FULL		
Aux 6	OFF CCW		
Aux 5	OFF CCW		
Aux 4	OFF CCW		
Aux 3	OFF CCW		
Aux 2	OFF CCW		
Aux 1	OFF CCW		
GROUP SELECT 1	OUT		
" " 2	OUT		
SUB GROUP SELECT 8	OUT		
" " " 7	OUT		
" " " 6	OUT		
" " " 5	OUT		
" " " 4	OUT		
" " " 3	OUT		
" " " 2	OUT		
" " " 1	OUT		
PAN	FULLY RIGHT or FULLY LEFT		
CANCEL	OUT		
PFL	OUT		
MUTE	OUT		
FADER	0		

AC LEVEL CHECKS

MODULE TYPE TR27

MODULE SETTINGS LIST B for AC LEVEL CHECK

Test Point	Nominal Level
EDGE PIN 14-13 (3KG IN SERIES)	FEED IN 0dB @ 1k Hz
CCT POINT A1	-9.5 dBv ± 1dB
EDGE PIN 41	-3 dBv (± PRESET R9)
CCT POINT B1	+2.4 dBv ± 2dB + SEND LEVEL 1-2
EDGE PIN 1 & 2	BALANCED +4dBv (PRESET R9)
EDGE PIN 12-11 (3KG IN SERIES)	FEED IN 0dB @ 1K Hz
CCT POINT A2	-9.5 dBv ± 1dB
EDGE PIN 42	-3 dBv (± PRESET R109)
CCT POINT B2	+2.4 dBv ± 2dB + SEND LEVEL 3-4
EDGE PIN 3 & 4	BALANCED +4dBv (PRESET R109)
EDGE PIN 10-9 (3KG IN SERIES)	FEED IN 0dB @ 1k Hz
CCT POINT A3	-9.5 dBv ± 1dB
EDGE PIN 43	-3dBv (± PRESET R209)
EDGE PIN 44	+2.4 dBv ± 2dB + SEND LEVEL 5-6
EDGE PIN 25-26	FEED IN BALANCED -11.5dBv @ 1kHz
CCT POINT C	-11.5 dBv ± 1dB
CCT POINT D	+8 dBv ± 1dB
EDGE PIN 27	+8 dBv ± 2dB
EDGE PIN 36	+8.6 dBv ± 2dB
EDGE PIN 40	+9 dBv ± 2dB + FADER
CCT POINT F	+9.7 dBv ± 2dB + FADER (PAN L)
CCT POINT G	+9.7 dBv ± 2dB + FADER (PAN R)
CCT POINT H	+9.3 dBv ± 2dB
CCT POINT J	+9.0 dBv ± 2dB + FADER
CCT POINT K	0 dBv ± 2dB + FADER
CCT POINT L	0 dBv ± 2dB + FADER

CONTROL SETTING

MODULE TYPE TR04A

MODULE CONTROL SETTING LIST B FOR A.C. LEVEL CHECKS

Control	Position	Control	Position
PHASE INVERT	PHASE		
GAIN	FULL		
INPUT A/B	A		
MIC / LINE	MIC		
PHANTOM / ON	PHANTOM		
SHELF 10K/15K/6K	15K		
TREBLE	0dB		
FREQUENCY	5KHz		
MID	0dB		
0·5 OCTAVE	O		
SHELF 80Hz/160Hz/40Hz	40Hz		
BASS	0dB		
H P FILTER	FLAT		
EQ / OUT	EQ		
AUX 6	OFF CCW		
" 5	" "		
" 4	" "		
" 3	" "		
" 2	" "		
" 1	" "		
GROUP SELECT 1	OUT		
" " 2	"		
SUBGROUP SELECT 1	"		
" " 2	"		
" " 3	"		
" " 4	"		
" " 5	"		
" " 6	"		
" " 7	"		
" " 8	"		
PAN	FULLY RIGHT OR FULLY LEFT		
CANCEL	OUT		
PFL	OUT		
MUTE	OUT		
FADER	O		

A.C. LEVEL CHECKS

MODULE TYPE TR04A

MODULE SETTINGS LIST B FOR AC. LEVEL CHECKS

Test Point	Nominal Level
INPUT CANNON A PIN 2&3	FEED IN - 52·5dBv @ 1KHz
CCT POINT A	−32·5 dBv ± 1dB
CCT POINT B	−12·5 dBv ± 1dB
CCT POINT D	+8·5 dBv ± 2dB
CCT POINT E	+8·5 dBv ± 2dB
INSERT RTN EDGE PIN 29	+9·1 dBv ± 2dB
FADER TOP EDGE PIN 38	+8·8 dBv ± 2dB
FADER BUFFER O/P EDGE PIN 40	+9·0 dBv ± 2dB + FADER
CCT POINT F	+9·7 dBv ± 2dB + FADER (PAN. R)
CCT POINT G	+9·7 dBv ± 2dB + FADER (PAN. L)
CCT POINT H	+9·5 dBv ± 2dB
CCT POINT J	+9·0 dBv ± 2dB + FADER
CCT POINT K	+0·1 dBv ± 2dB + FADER (PAN. L)
CCT POINT L	+0·1 dBv ± 2dB + FADER (PAN. R)

	INPUT MODULE TR 04	AUX MODULE TR 27	COMMS MODULE TR 22	OUTPUT MODULE TR 10	
1	MIC/LINE INPUT A HOT	AUX 1(2) OUTPUT HOT	MIC INPUT HOT	SUB GP. INSERT RTN.	1
2	MIC/LINE INPUT A COLD	AUX 1(2) OUTPUT COLD	MIC INPUT COLD	GROUP INSERT RETURN	2
3	MIC/LINE INPUT B HOT	AUX 3(4) OUTPUT HOT	LINE INPUT HOT	SUB GP. METER OUTPUT	3
4	MIC/LINE INPUT B COLD	AUX 3(4) OUTPUT COLD	LINE INPUT COLD	GROUP METER OUTPUT	4
5	+ 16v	+ 16v	+ 16v	+ 16v	5
6	- 16v	- 16v	- 16v	- 16v	6
7	0v	0v	0v	0v	7
8	0v	0v	0v	0v	8
9	AUX 6 BUS	AUX 6 BUS	TALK OUTPUT AUX 6	AUX 6 BUS	9
10	AUX 5 BUS	AUX 5 BUS	TALK OUTPUT AUX 5	AUX 5 BUS	10
11	AUX 4 BUS	AUX 4 BUS	TALK OUTPUT AUX 4	AUX 4 BUS	11
12	AUX 3 BUS	AUX 3 BUS	TALK OUTPUT AUX 3	AUX 3 BUS	12
13	AUX 2 BUS	AUX 2 BUS	TALK OUTPUT AUX 2	AUX 2 BUS	13
14	AUX 1 BUS	AUX 1 BUS	TALK OUTPUT AUX 1	AUX 1 BUS	14
15	PFL SIGNAL BUS	PFL SIGNAL BUS	PFL SIGNAL BUS	PFL SIGNAL BUS	15
16	PFL GATE BUS	PFL GATE BUS	PFL GATE BUS	PFL GATE BUS	16
17	SUB GROUP 8 BUS	SUB GROUP 8 BUS	GROUP TALK OUTPUT 8	GROUP 8 BUS	17
18	SUB GROUP 7 BUS	SUB GROUP 7 BUS	GROUP TALK OUTPUT 7	GROUP 7 BUS	18
19	SUB GROUP 6 BUS	SUB GROUP 6 BUS	GROUP TALK OUTPUT 6	GROUP 6 BUS	19
20	SUB GROUP 5 BUS	SUB GROUP 5 BUS	GROUP TALK OUTPUT 5	GROUP 5 BUS	20
21	SUB GROUP 4 BUS	SUB GROUP 4 BUS	GROUP TALK OUTPUT 4	GROUP 4 BUS	21
22	SUB GROUP 3 BUS	SUB GROUP 3 BUS	GROUP TALK OUTPUT 3	GROUP 3 BUS	22
23	SUB GROUP 2 BUS	SUB GROUP 2 BUS	GROUP TALK OUTPUT 2	GROUP 2 BUS	23
24	SUB GROUP 1 BUS	SUB GROUP 1 BUS	GROUP TALK OUTPUT 1	GROUP 1 BUS	24
25		AUX RETURN INPUT HOT	MON. FADERS BOTTOM	SUB GROUP BUS INPUT	25
26		AUX RETURN INPUT COLD	INTERCOM HOT	SUB GRP. FADER DRIVE-f	26
27		AUX RTN. INSERT SEND	INTERCOM COLD	S.GP.FDR.BUFFER i/p-e	27
28	0v	0v	0v	TAPE REPLAY i/p COLD	28
29		AUX RTN. INSERT RTN.	HEADPHONE 0v	GP.METER o/p (MUTED)	29
30	PHANTOM +48v		HEADPHONE LEFT o/p	S.GRP. FADER TOP -a	30
31			HEADPHONE RIGHT o/p	S.GRP.FADER WIPER -b	31
32			SUB GROUP TALK o/p	SUB GROUP TALK i/p	32
33	INSERT SEND	AUX. 1(2) TALK INPUT	MON. LEFT o/p HOT	S.GRP. INSERT SEND	33
34	INSERT RETURN	AUX 3(4) TALK INPUT	MON. LEFT o/p COLD	GROUP BUS INPUT	34
35		AUX 5(6) TALK INPUT	MON.LEFT FADER TOP	GROUP FADER DRIVE -m	35
36	FADER TOP	FDR.TOP DRIVE+LED i/p	MON.LEFT FDR. WIPER	GRP.FDR.BUFFER i/p-i	36
37		AUX 1(2) INSERT RTN.	MON. RIGHT o/p HOT	GROUP TALK INPUT	37
38		AUX 3(4) INSERT RTN.	MON. RIGHT o/p COLD	GROUP INSERT SEND	38
39		AUX 5(6) INSERT RTN.	T/BACK o/p EXT. HOT	TAPE REPLAY i/p HOT	39
40	FADER BUFFER o/p	FDR.WIPER BUFFER o/p	T/BACK o/p EXT.COLD	SUB GRP. OUTPUT HOT	40
41		AUX 1(2) INSERT SEND	MON.RIGHT FADER TOP	SUB GRP. OUTPUT COLD	41
42	LED INDICATOR i/p	AUX 3(4) INSERT SEND	MON.RIGHT FDR.WIPER	GROUP OUTPUT HOT	42
43		AUX 5(6) INSERT SEND	OSC. OUTPUT HOT	GROUP OUTPUT COLD	43
44		AUX 5(6) UNBAL. o/p	OSC. OUTPUT COLD	METER SELECT INPUT	44
45	METER OUTPUT	AUX RTN. METER o/p	PFL METER OUTPUT	METER OUTPUT	45
46	GROUP 1 BUS	GROUP 1 BUS	MON. BUS INPUT RIGHT	MONITOR RIGHT BUS	46
47	GROUP 2 BUS	GROUP 2 BUS	MON. BUS INPUT LEFT	MONITOR LEFT BUS	47

TR SYSTEM MODULE EDGE CONNECTORS

		FM 04	FM 27	CM 22	FM 22	FM 10	
1							1
2							2
3							3
4							4
5							5
6							6
7							7
8							8
9						SUB GROUP METER INPUT	9
10						GROUP METER INPUT	10
11						METER SELECT OUTPUT	11
12						PFL GATE BUS	12
13						PFL SIGNAL BUS	13
14		0v	0v	0v	0v	0v	14
15		LED INDICATOR i/p	LED INDICATOR i/p	HEADPHONE RIGHT		GROUP FADER DRIVE (m)	15
16				HEADPHONE LEFT		GRP.FDR.BUFFER i/p(l)	16
17				HEADPHONE COMMON		GROUP FADER 0v (k)	17
18				OSCILLATOR COLD	FADER LEFT BOTTOM 0v	GRP.FDR.BOTTOM (j)	18
19				OSCILLATOR HOT	FDR. LEFT BUFFER o/p	GRP.FDR. WIPER (h)	19
20					FADER LEFT TOP	GROUP FADER TOP (g)	20
21				MIC COLD		S.GRP.FDR. DRIVE (f)	21
22				MIC HOT		S.GRP.FDR.BUFF.i/p(e)	22
23				MIC SCREEN		SUB GROUP FADER 0v(d)	23
24		FADER TOP	FADER TOP		FADER RIGHT BOTTOM 0v	S.GRP.FDR.BOTTOM (c)	24
25					FDR. RIGHT BUFFER o/p	S.GRP.FDR. WIPER (b)	25
26					FADER RIGHT TOP	S.GRP.FADER TOP (a)	26
27		+16v	+16v		+16v	+16v	27
28		-16v	-16v		-16v	-16v	28
29		FADER BUFFER OUTPUT	FADER BUFFER OUTPUT			GRP. o/p UNBALANCED	29

ISSUED 10-5-82

TR SYSTEM MODULE EDGE CONNECTORS

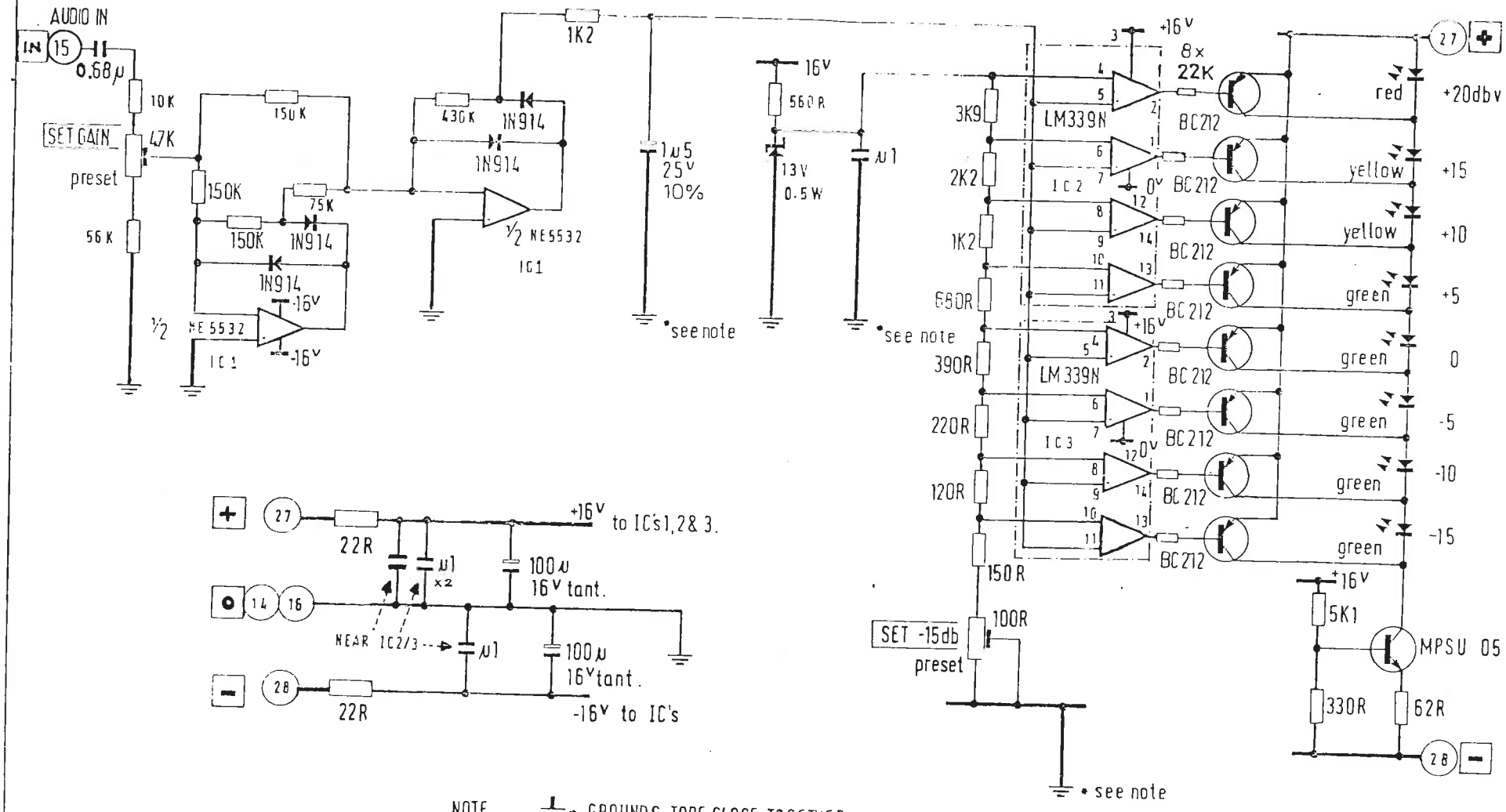
		FM 04	FM 27	CM 22	FM 22	FM 10	
1							1
2							2
3							3
4							4
5							5
6							6
7							7
8							8
9						SUB GROUP METER INPUT	9
10						GROUP METER INPUT	10
11						METER SELECT OUTPUT	11
12						PFL GATE BUS	12
13						PFL SIGNAL BUS	13
14		0v	0v	0v	0v	0v	14
15		LED INDICATOR I/P	LED INDICATOR I/P	HEADPHONE RIGHT		GROUP FADER DRIVE (m)	15
16				HEADPHONE LEFT		GRP. FDR. BUFFER i/p(l)	16
17				HEADPHONE COMMON		GROUP FADER 0v (k)	17
18				OSCILLATOR COLD	FADER LEFT BOTTOM 0v	GRP. FDR. BOTTOM (j)	18
19				OSCILLATOR HOT	FDR. LEFT BUFFER o/p	GRP. FDR. WIPER (h)	19
20					FADER LEFT TOP	GROUP FADER TOP (g)	20
21				MIC COLD		S. GRP. FDR. DRIVE (f)	21
22				MIC HOT		S. GRP. FDR. BUFF. i/p(e)	22
23				MIC SCREEN		SUB GROUP FADER 0v(d)	23
24		FADER TOP	FADER TOP		FADER RIGHT BOTTOM 0v	S. GRP. FDR. BOTTOM (c)	24
25					FDR. RIGHT BUFFER o/p	S. GRP. FDR. WIPER (b)	25
26					FADER RIGHT TOP	S. GRP. FADER TOP (a)	26
27		+16v	+16v		+16v	+16v	27
28		-16v	-16v		-16v	-16v	28
29		FADER BUFFER OUTPUT	FADER BUFFER OUTPUT			GRP. o/p UNBALANCED	29

ISSUED 10-5-82

DRAWING NUMBER

MAS 609

ANGLE PROJECTION



NOTE ⏚* GROUNDS TOBE CLOSE TOGETHER

ISSUE	DATE	MOD No.
1	18 Jan 82	Robbie
2	18 JAN 82	Ed w/Checked
3	26 JAN 82	IC1 was TL072
4	5 FEB 82	To Drw Spec.

MATERIAL

FINISH

TOLERANCES - UNLESS STATED
UNIT ± 0
0 ± 0
00 ± 0
000 ± 0

DIMENSIONS IN

NOTES
USE ON
○ FMG 4 / 27 AND
□ LED DB PCB

SCALE

DRAWN BY Robbie
DATE 18 Jan 82

MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-2060

TITLE: 8 Way LED Column CCT.

DRAWING NUMBER: MAS 609

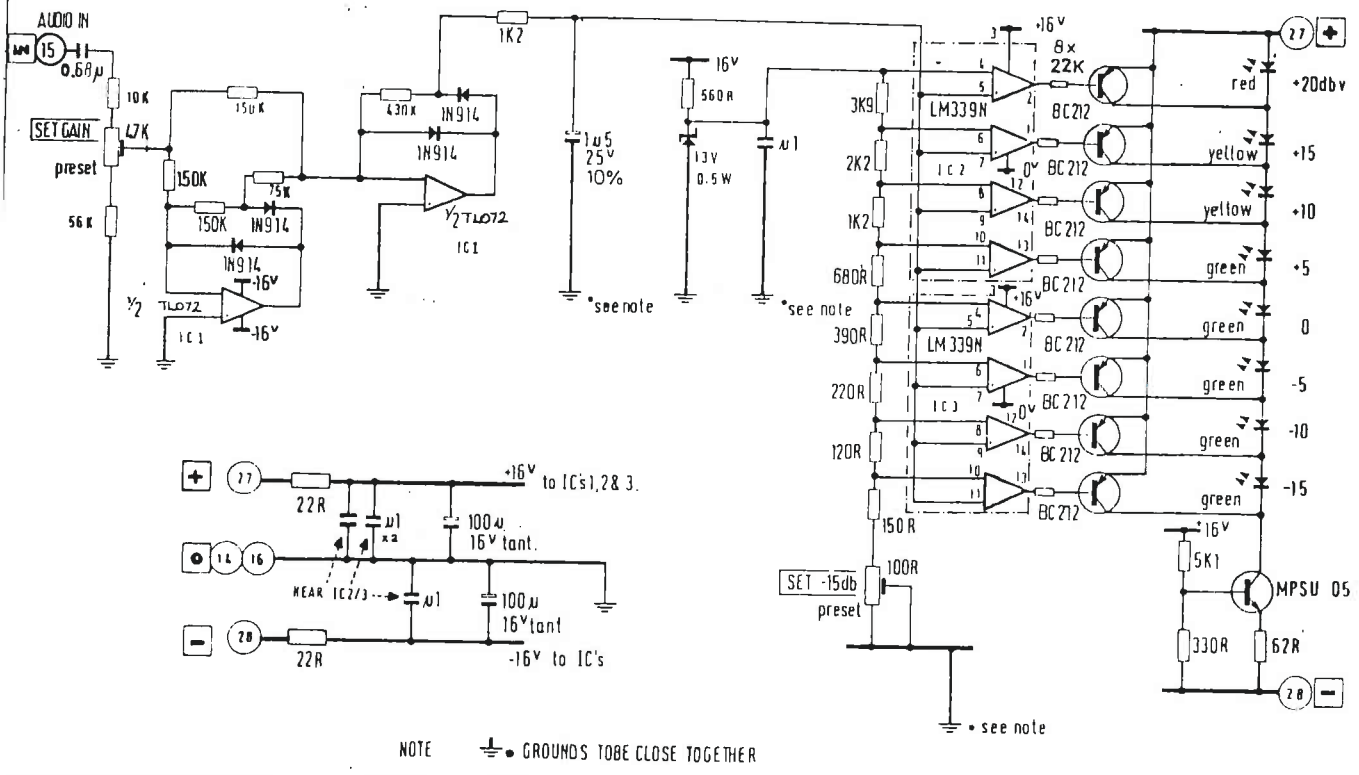
ISS: 4

A3

DRAWING NUMBER

MAS 609

ANGLE PROJECTION



NOTE ⏚ • GROUNDS TOBE CLOSE TOGETHER

ISSUE	DATE	MOD No
1	8 Jun 82	Robbie
2	19 Jan 82	CH w/Chyrka
3	2 Mar 82	CI w/ TL072
4	5 Mar 82	To p.c. spec.
5	Mar 83	IC1 now TL072

MATERIAL

FINISH

TOLERANCES - UNLESS STATED
UNIT ± 0
0 ± 0
00 ± 0
000 ± 0

DIMENSIONS IN

NOTES
USE ON
○ FMOL / 27
AND
☐ LED 08 PCB

SCALE

DRAWN BY Robbie 8 Jun 82

MIDAS 54-56 Stannope Street London NW1 3EX. Tel: 01-388-7060

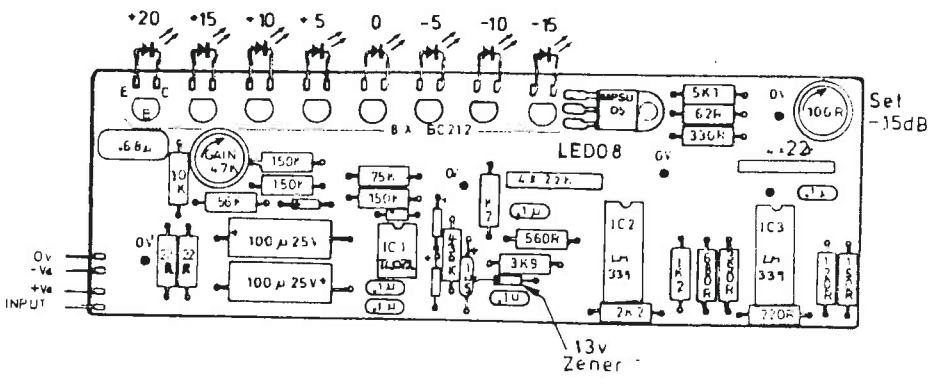
TITLE: 8 Way LED Column CCT.

DRAWING NUMBER: MAS 609

ISS: 5

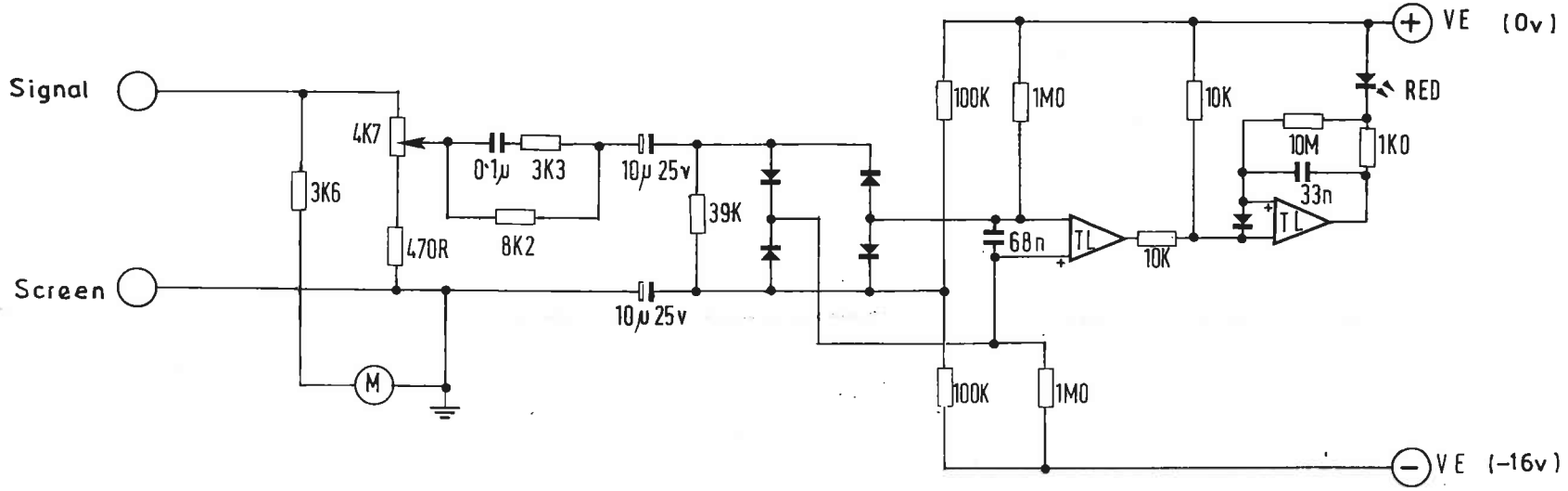
A3

8 LED PPM METER



DRAWING NUMBER

MAS 553



CAL : PA mixers + 10dBv
STUDIO " + 8dBv
THEATRE " + 8dBv

ATTACK + 1dB overdrive @ 2 m.s.
+ 3dB " @ 1 m s

HOLD 330 ms

ISSUE	DATE	MOD. No
1	7/7/81	
2	22/4/82	

MATERIAL

FINISH

TOLERANCES - UNLESS STATED
UNIT ± 0·
0 ± 0·
00 ± 0·
000 ± 0

DIMENSIONS IN

NOTES
MOUNTED BEHIND METERS, ON IDENT. PANEL.

SCALE

DRAWN BY Robbie

DATE 7 July 81

MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060

TITLE
PEAK METER LED
LM02.

DRAWING NUMBER
MAS 553

ISS.
2

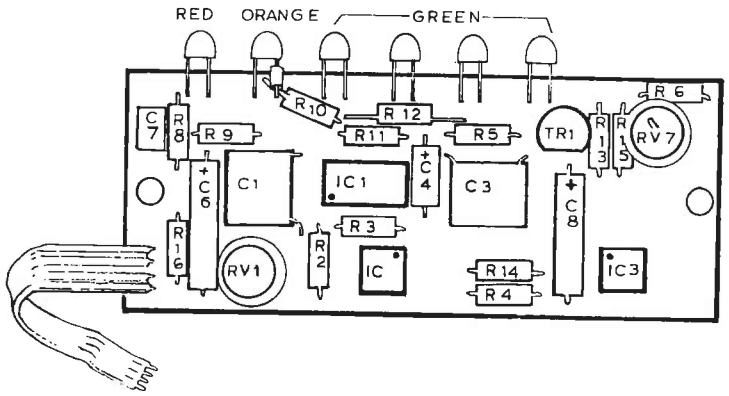
P1528/9

A3

DRAWING NUMBER

MAS518

ANGLE PROJECTION



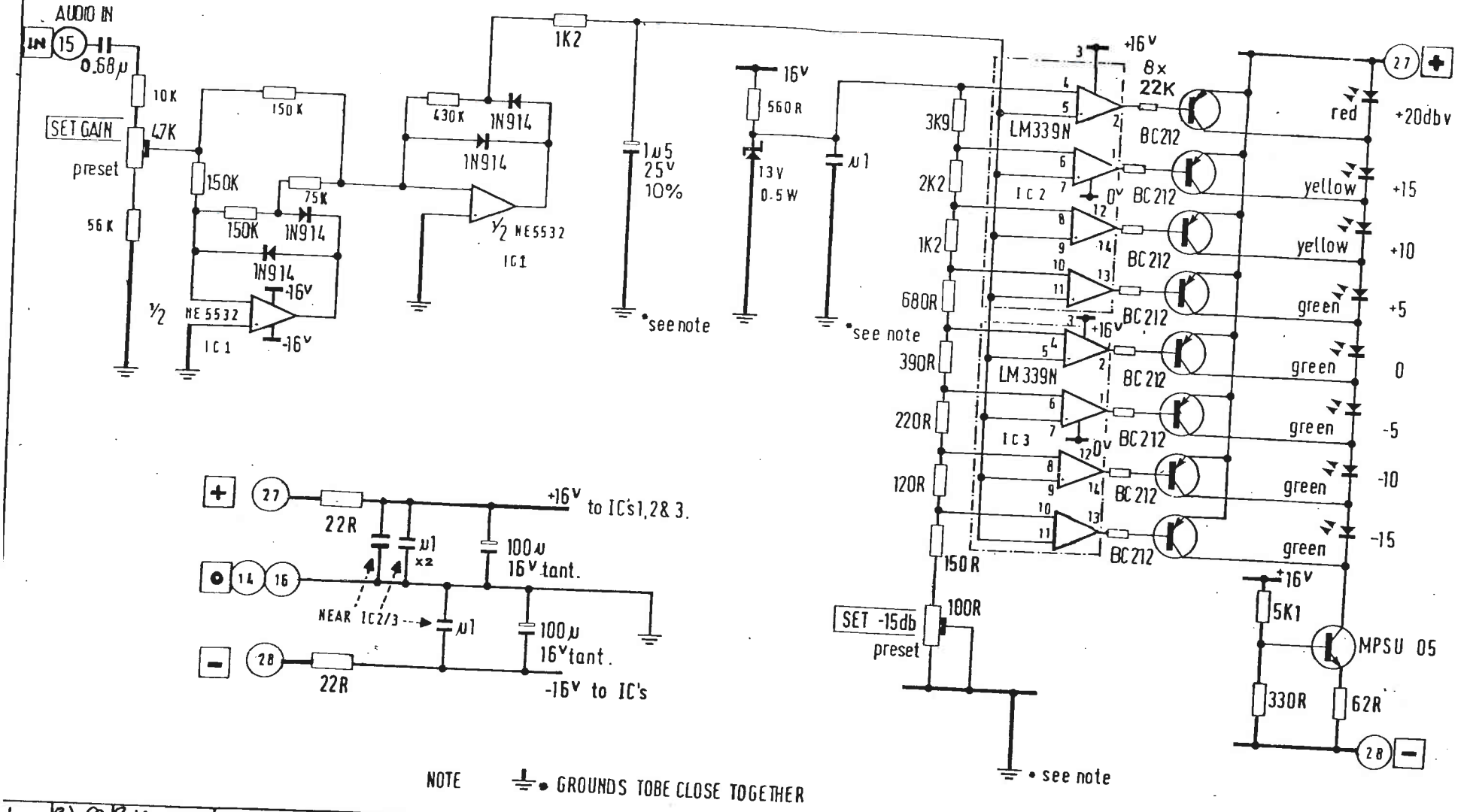
one	12,12,80	Robbie	MATERIAL	TOLERANCES – UNLESS STATED UNIT ± 0 ·0 ± 0 ·00 ± 0 ·000 ± 0	NOTES	SCALE	COPYRIGHT MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060			
			FINISH	DIMENSIONS IN		DRAWN BY Robbie	TITLE OVERLAY & ASSEMBLY LED OG	DRAWING NUMBER MAS518	ISS 1	
ISSUE	DATE	MOD. No.				DATE 12,12,80				

A B C D E F G

DRAWING NUMBER

MAS 609

ANGLE PROJECTION



NOTE ⏚• GROUNDS TOBE CLOSE TOGETHER

ISSUE	DATE	MOD. No.
1	8 Jan 82	Robbie
2	18 JAN 82	Ethan Checked
3	26 JAN 82	IC1 was TL072
4	5 FEB 82	To DIN spec.

MATERIAL

FINISH

TOLERANCES - UNLESS STATED
UNIT ± 0
·0 ± 0
00 ± 0
000 ± 0

DIMENSIONS IN

NOTES
USE ON
○ FM04/27 AND
□ LED 08 PCB

SCALE

DRAWN BY Robbie
DATE 8 Jan 82

MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060

TITLE

8 Way LED Column CCT.

DRAWING NUMBER
MAS 609

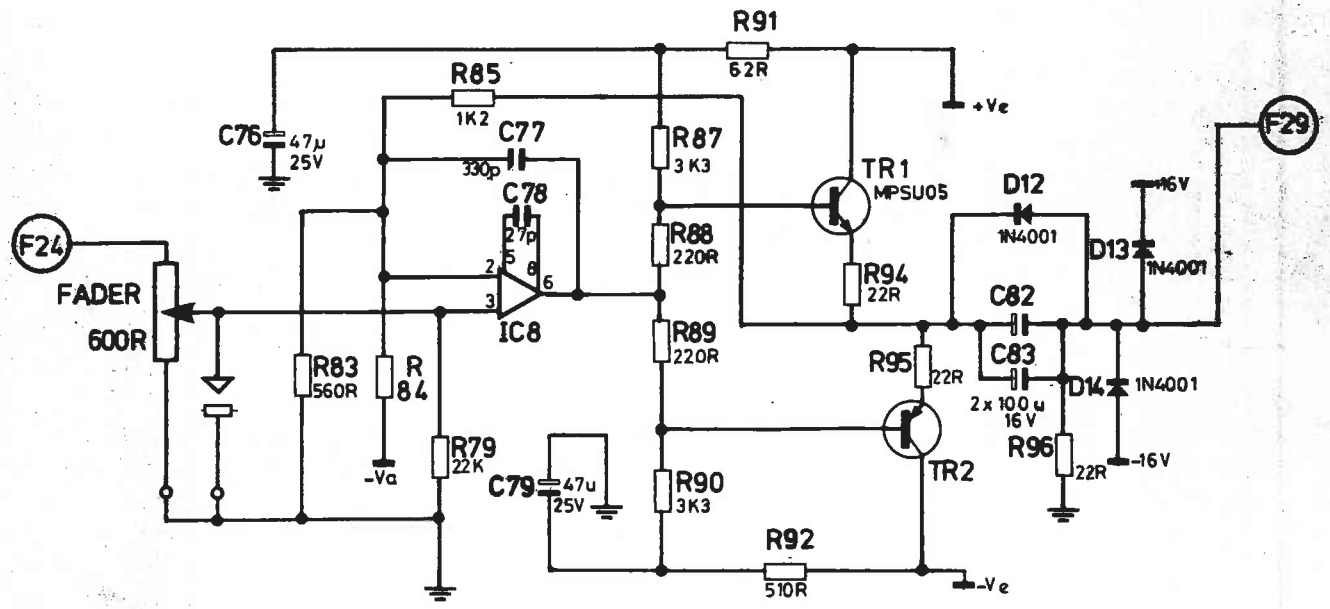
ISS.
4

King Dyeline P1528/9

DRAWING NUMBER

MAS 706

ANGLE PROJECTION



ISSUE	DATE	MOD. No.
D	16 Jan 82	Ebbw

MATERIAL

FINISH

TOLERANCES – UNLESS STATED
UNIT ± 0
·0 ± 0
·00 ± 0
·000 ± 0

DIMENSIONS IN

NOTES

SCALE:

DRAWN BY Ebbw

DATE 15 Jan 82

MAS 54-56 Stanhope Street, London NW1 3EX. Tel 01-[illegible]-7060

TITLE

FM04 / FM27 FADER BUFFER
CIRCUIT DIAGRAM

DRAWING NUMBER

MAS 706

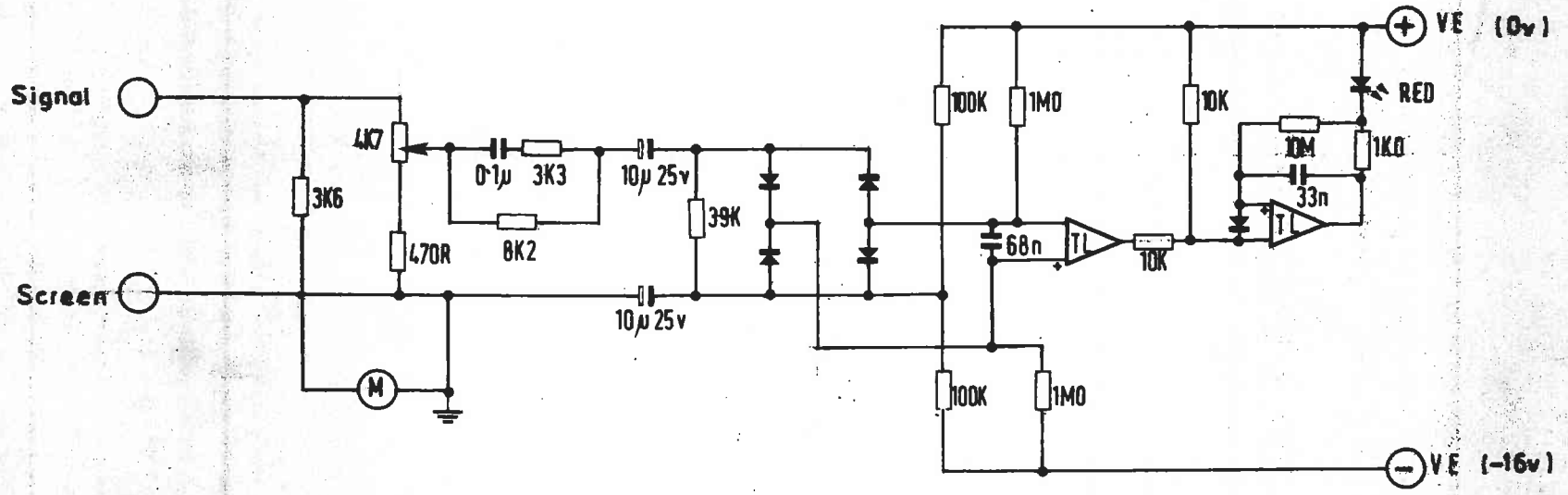
ISS. H

Woking Dyeline P1528/9

297 x 420mm A3

DRAWING NUMBER

MAS 553



CAL : PA mixers + 10dBv
STUDIO - + 8dBv
THEATRE - + 8dBv

ATTACK + 1dB overdrive @ 2 m.s.
+ 3dB " @ 1 m s

HOLD 330 ms

ISSUE	DATE	MOD. No.
1	7/78	
2	9/4/80	

MATERIAL

FINISH

TOLERANCES - UNLESS STATED
UNIT ± 0·
·0 ± 0·
·00 ± 0·
·000 ± 0·

DIMENSIONS IN

NOTES
MOUNTED BEHIND METERS, ON IDENT., PANEL.

SCALE:

DRAWN BY Robbie

DATE 3.81

MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060

TITLE

PEAK METER LED
LM02.

DRAWING NUMBER MAS553

ISS. 2

Woking Dyeline P1528/9

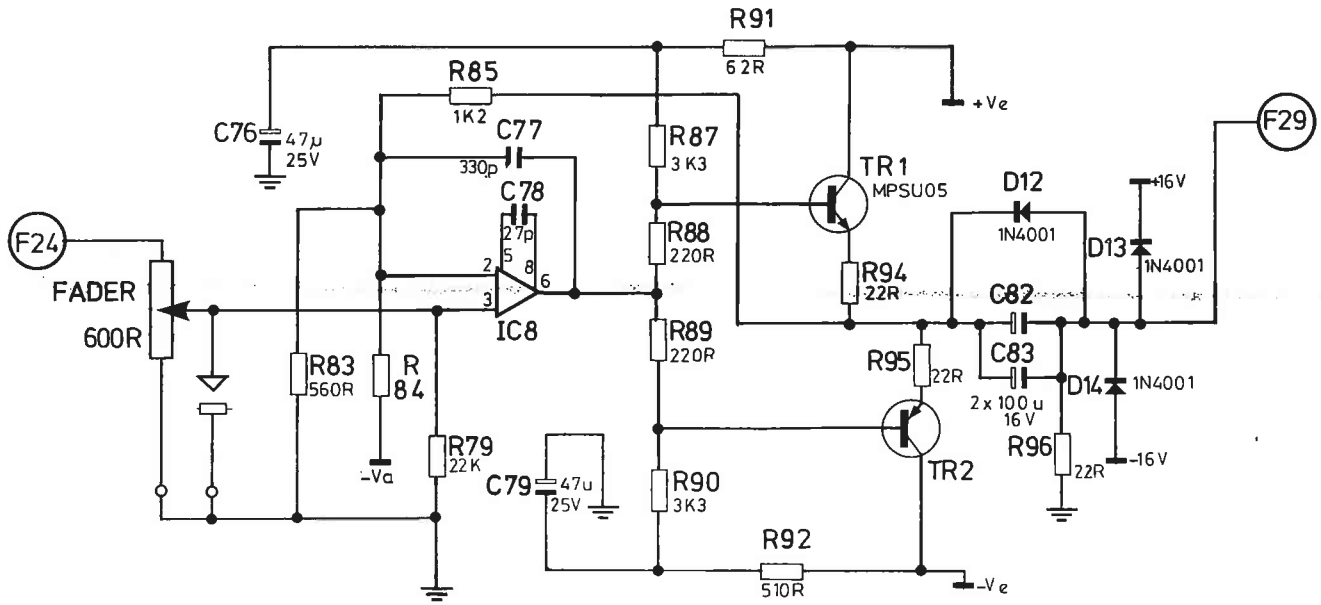
297 x 420mm A3

1	2	3	4	5	6	7	8	9	10	11

DRAWING NUMBER

MAS 106

ANGLE PROJECTION



4	18.10.82	Robbie	MATERIAL	TOLERANCES – UNLESS STATED UNIT ± 0· 0 ± 0· 00 ± 0· 000 ± 0	NOTES	SCALE:	© COPYRIGHT MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060		
			FINISH			DRAWN BY Robbie	TITLE FM04 / FM27 FADER BUFFER CIRCUIT DIAGRAM	DRAWING NUMBER	ISS. 4
ISSUE	DATE	MOD. No.		DIMENSIONS IN		DATE 18th October 82			

P1528/9

297 x 420mm A3

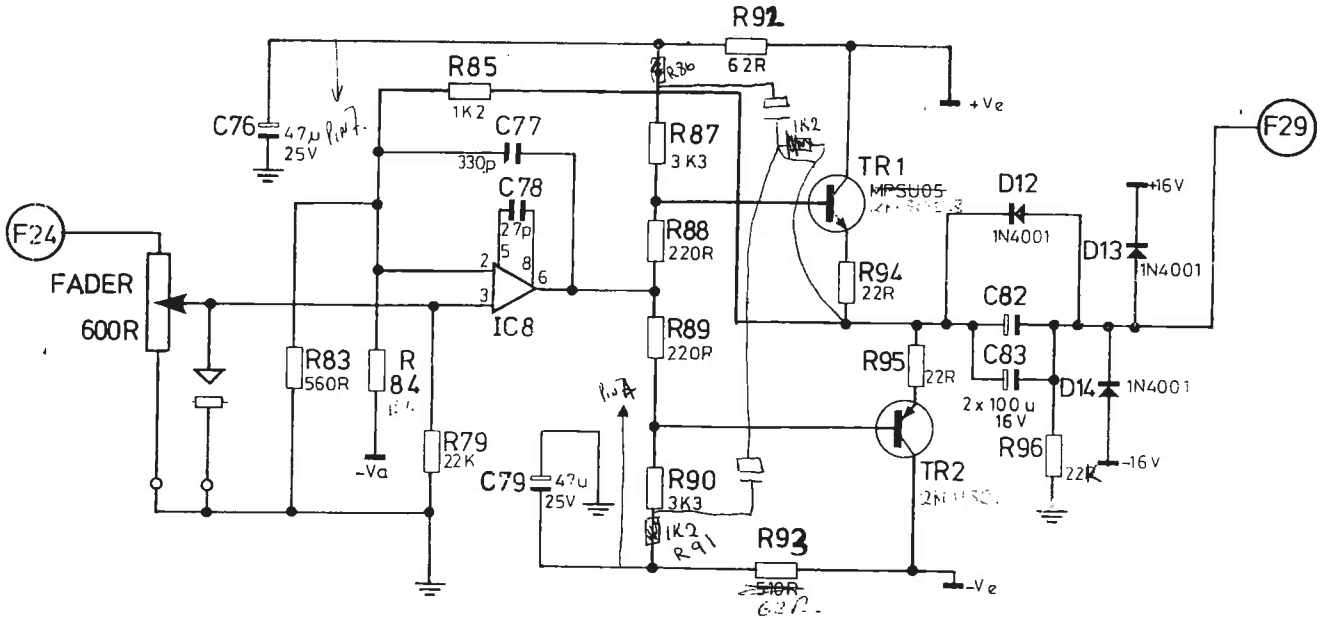
DRAWING NUMBER	
MAS 106	

ANGLE PROJECTION

+16 (27) ——>

0V (14) ——>

-16 (28) ——>



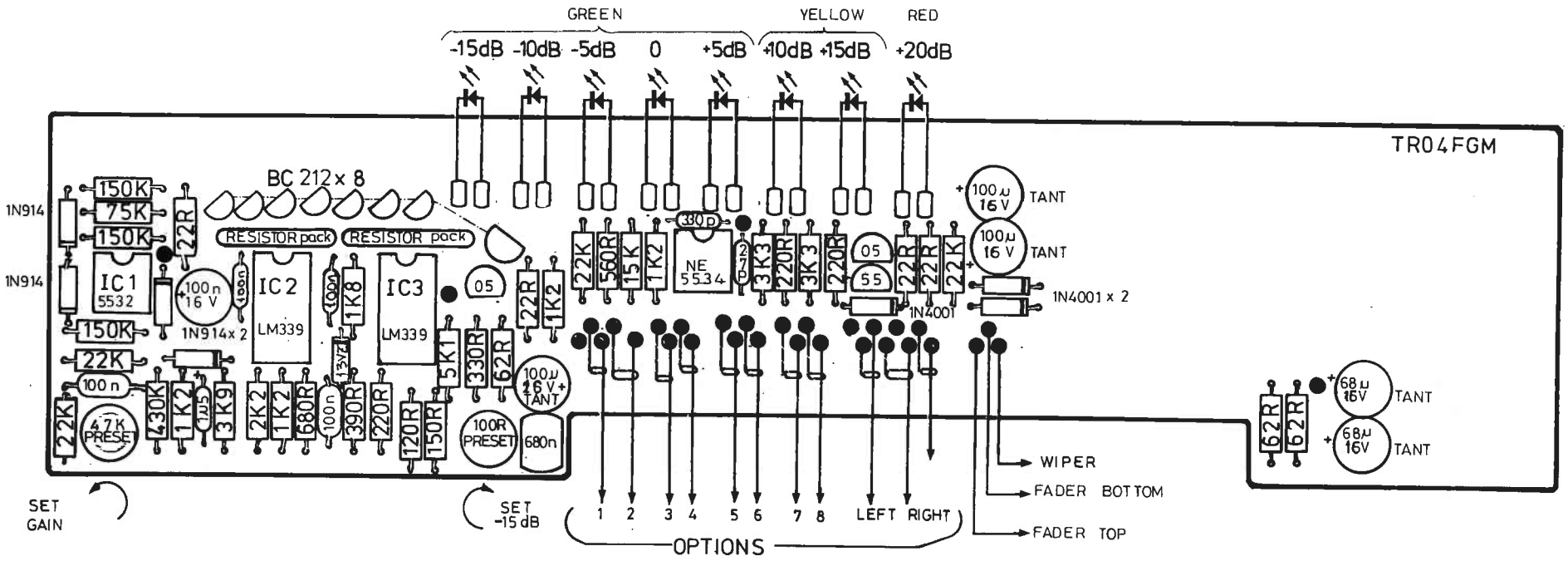
ISSUE	DATE	MOD. No.	MATERIAL	TOLERANCES - UNLESS STATED	NOTES	SCALE	© COPYRIGHT MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060		
H	18,10,82	Robbie		UNIT ± 0					
			FINISH	.0 ± 0		DRAWN BY Robbie	TITLE FM04 / FM27 FADER BUFFER CIRCUIT DIAGRAM	DRAWING NUMBER MAS 106	ISS. H
				.00 ± 0					
				.000 ± 0					
				DIMENSIONS IN		DATE 19-10-82			

Woking Dyeline P1528/9

A3

DRAWING NUMBER	MAS 631

ANGLE PROJECTION



RESISTOR NETWORKS = 4x22K PER PACK

= POLARITY OF DIODE

● = P.C.B. PIN

ISSUE	DATE	MOD. No.
A	19 10 82	Robbie

MATERIAL

FINISH

TOLERANCES – UNLESS STATED
UNIT ± 0
·0 ± 0
·00 ± 0
·000 ± 0

DIMENSIONS IN

NOTES

SCALE

DRAWN BY Robbie

DATE 19 Oct 82

MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060

TITLE FM04/27 OVERLAY

DRAWING NUMBER MAS 631

ISS. A

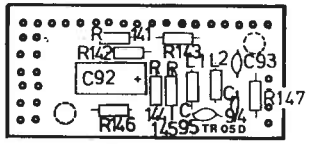
Woking Dyeline P1528/9

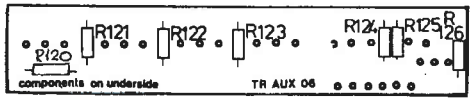
297 x 420mm A3

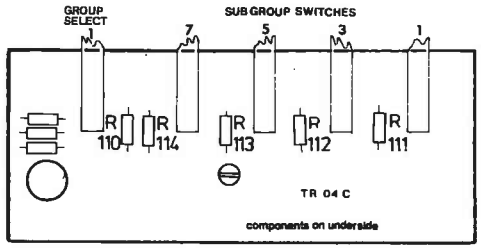
DRAWING NUMBER

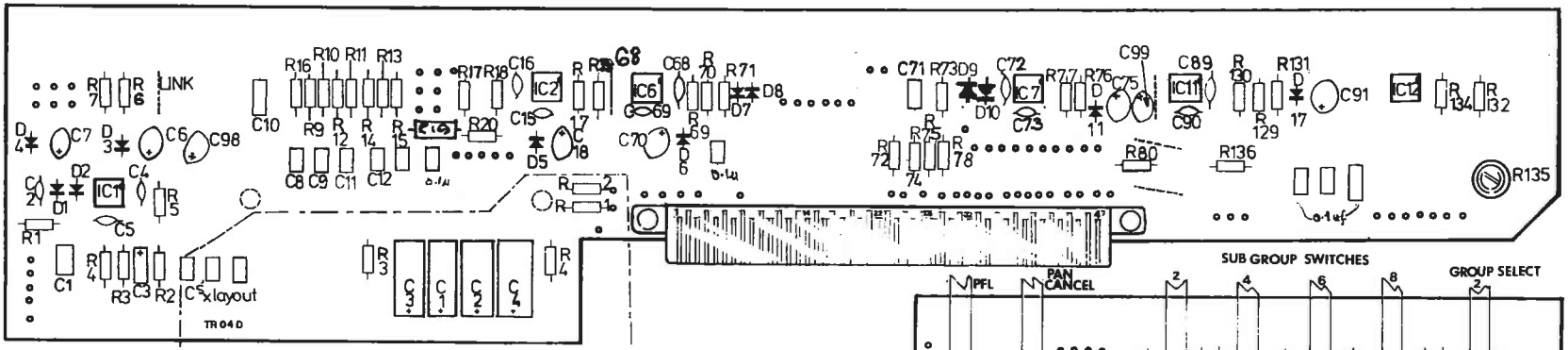
MAS 279

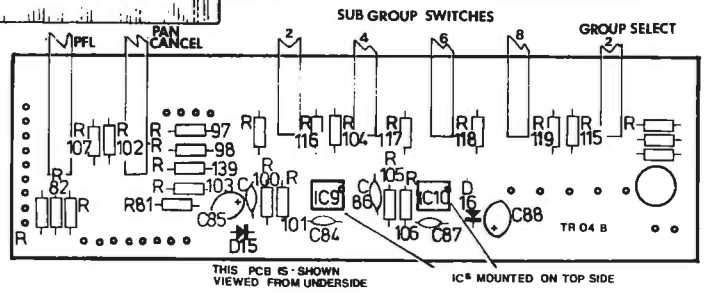
ANGLE PROJECTION

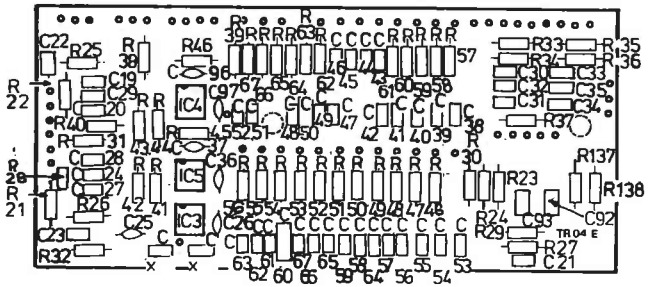












ISSUE	DATE	MOD. No.	ISSUE	DATE	MOD. No.
one	17 May	Rebbie			
two	23 Dec	RC Rebbie			
three	19 Oct 82	JH			

MATERIAL

FINISH

TOLERANCES – UNLESS STATED
UNIT ± 0·
·0 ± 0·
·00 ± 0·
·000 ± 0·

DIMENSIONS IN

NOTES

SCALE:

DRAWN BY Rebbie

DATE 7 July 82

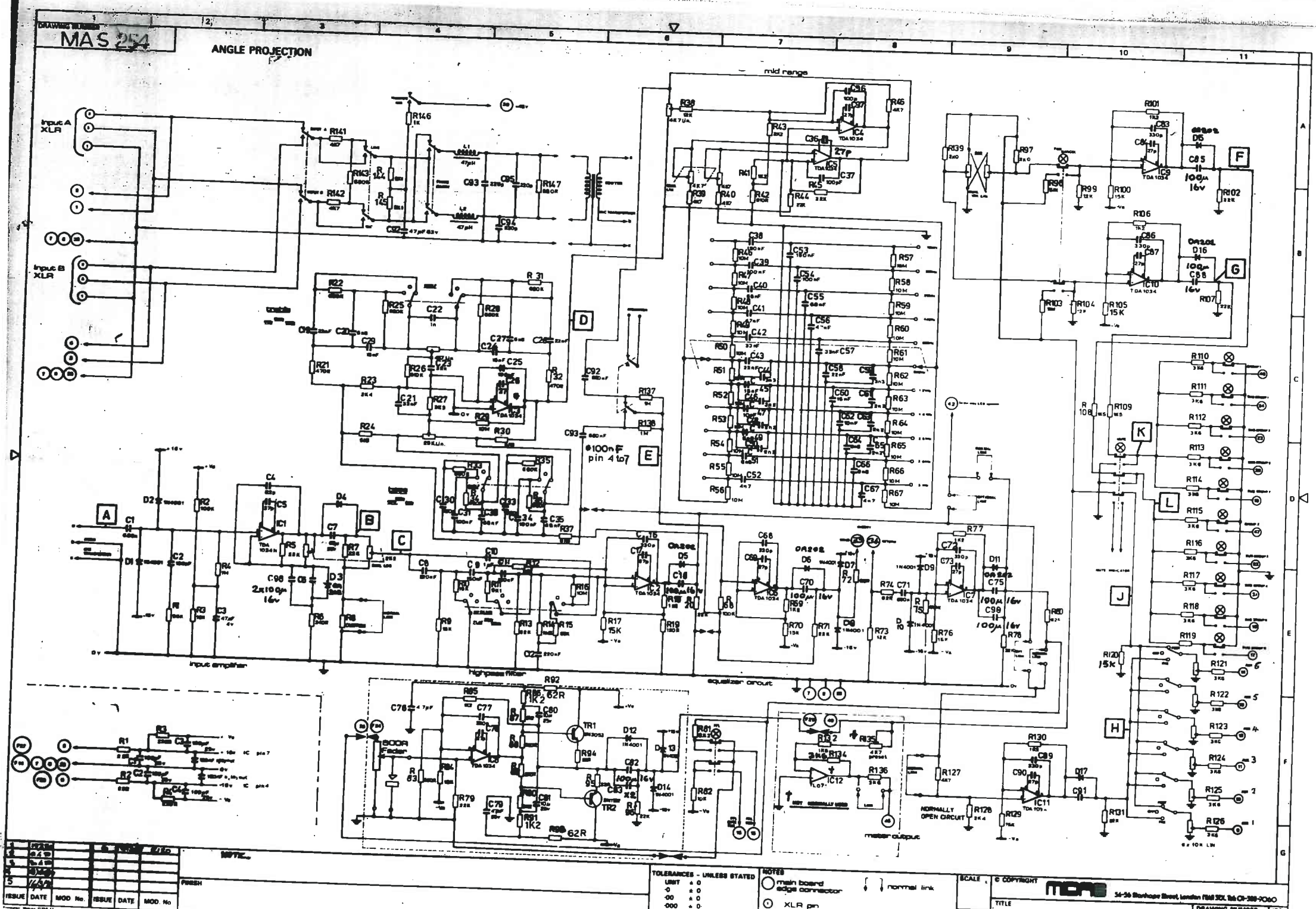
MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060

TITLE TRO4 OVERLAY.

DRAWING NUMBER MAS 279

ISS. 3

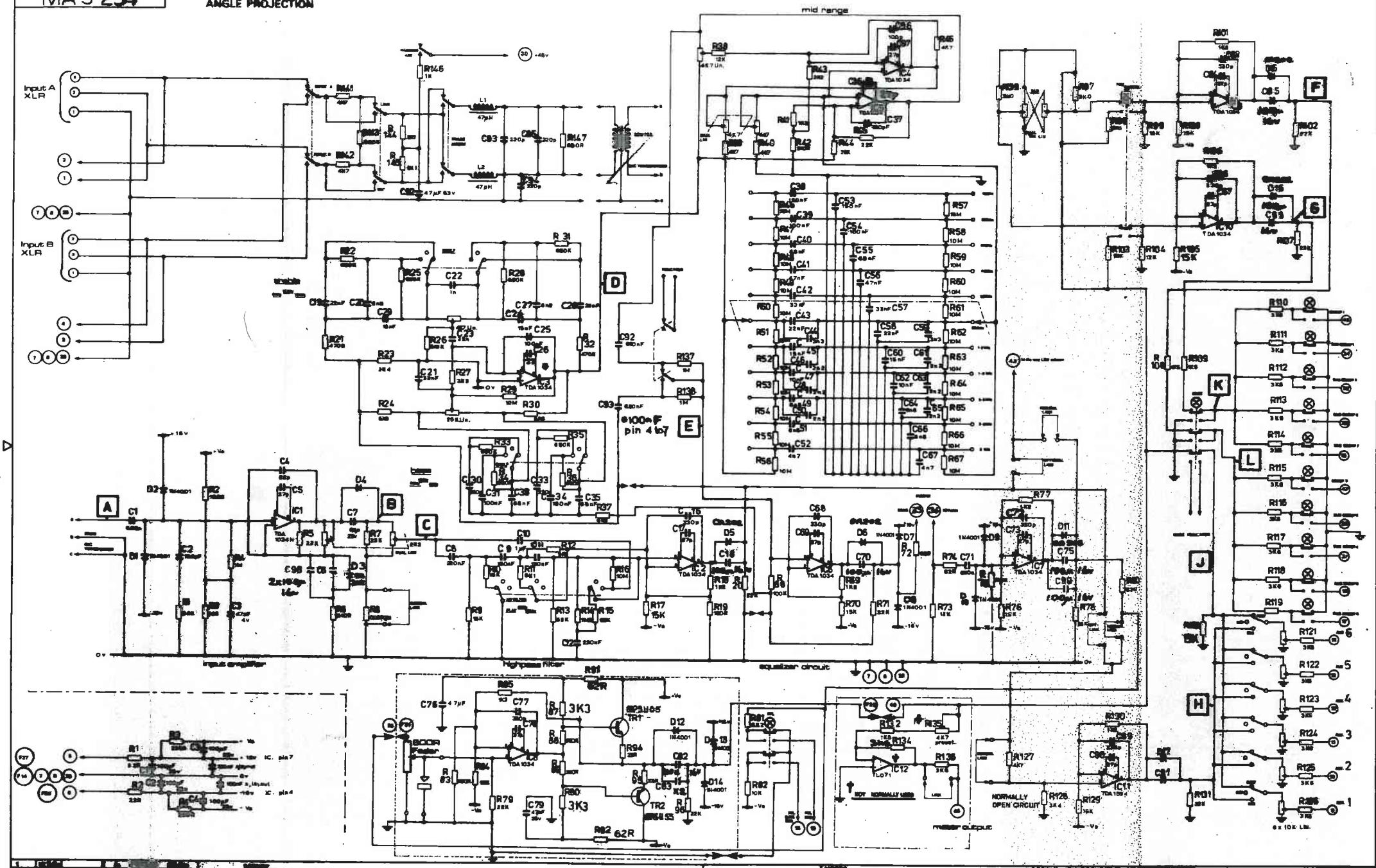
420 · 594mm A2


DRAWING NUMBER
MAS 254
ANGLE PROJECTION
mid range
Input A XLR
Input B XLR
input amplifier
high pass filter
equaliser circuit
master output
BOOST Factor
NORMALLY OPEN CIRCUIT
2x100µ 16v
100nF pin 4 to 7
TOLERANCES - UNLESS STATED
NOTES
main board edge connector
XLR pin
inter board
normal link
SCALE
© COPYRIGHT
TITLE
TR04 CCT
DRAWING NUMBER
MAS254
ISS
DRAWN
FINISH
ISSUE
DATE
MOD No.

DRAWING NUMBER

MAS 254

ANGLE PROJECTION



ISSUE	DATE	MOD. No.	ISSUE	DATE	MOD. No.
1					
2					
3					
4					
5					

TOLERANCES – UNLESS STATED

UNIT ± 0·

·0 ± 0·

·00 ± 0·

·000 ± 0·

DIMENSIONS IN

NOTES

main board edge connector

XLR pin

inter-board link

normal link

SCALE:

© COPYRIGHT

TITLE

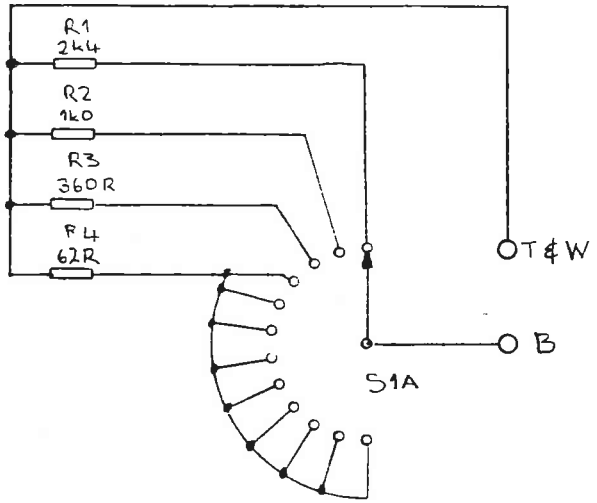
TR04 C.C.T.

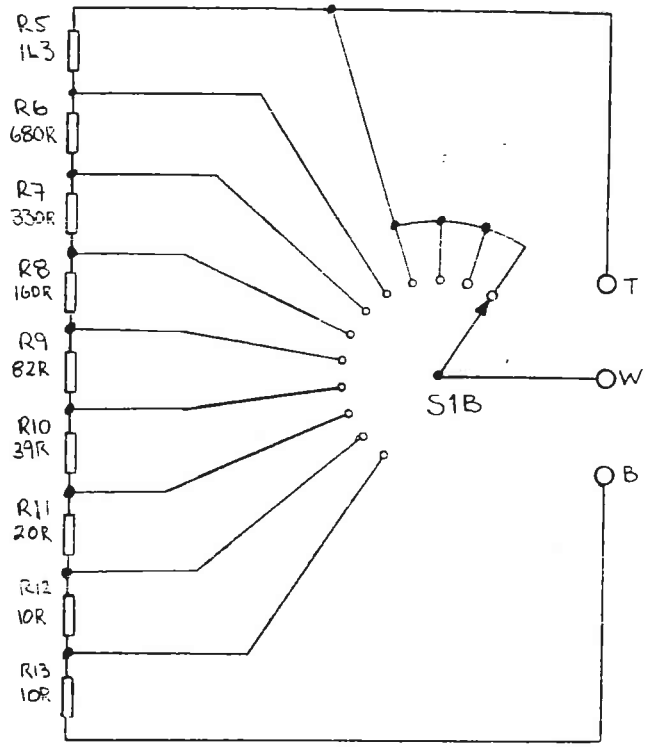
MAS254

ISS.

TR045 12 POSITION SWITCHED GAIN CONTROL

THIS NETWORK TO REPLACE USUAL DUAL GAIN CONTROL



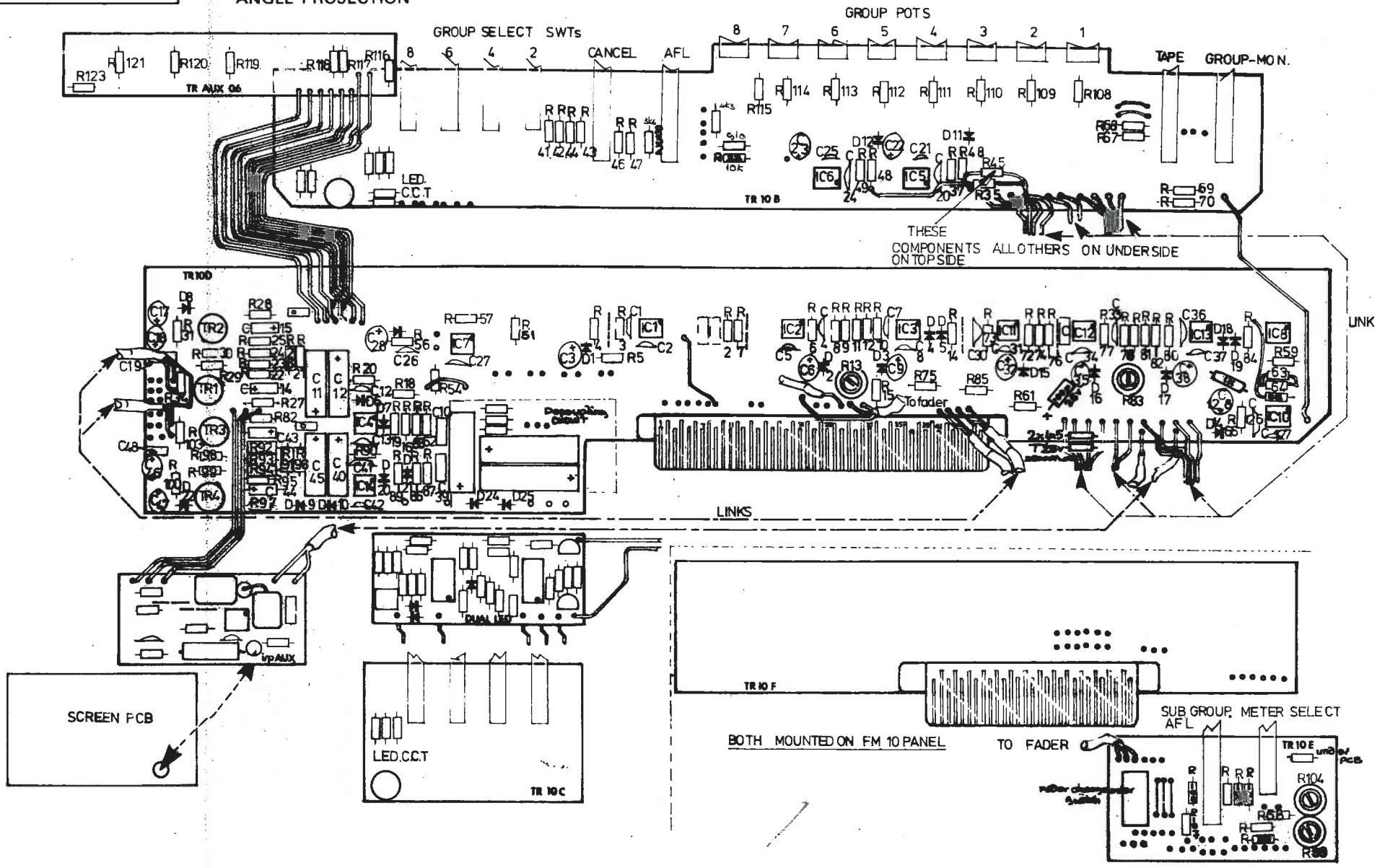


S1 IS 12W 2P ELMA

ALL RESISTORS ARE ¼W METAL FILM 2%

DRAWING NUMBER MAS 280

ANGLE PROJECTION



ISSUE	DATE	MOD. No.	ISSUE	DATE	MOD. No.
3		2x1µF			

MATERIAL

FINISH

TOLERANCES – UNLESS STATED
UNIT ± 0·
·0 ± 0·
·00 ± 0·
·000 ± 0·

DIMENSIONS IN

NOTES

SCALE:

DRAWN BY

DATE

54-56 Shaftesbury Street, London N1 3BX. Tel: 01-388-7060

TITLE: TR 10 & FM 10 OVER LAY

DRAWING NUMBER: MAS 280

ISS. 3

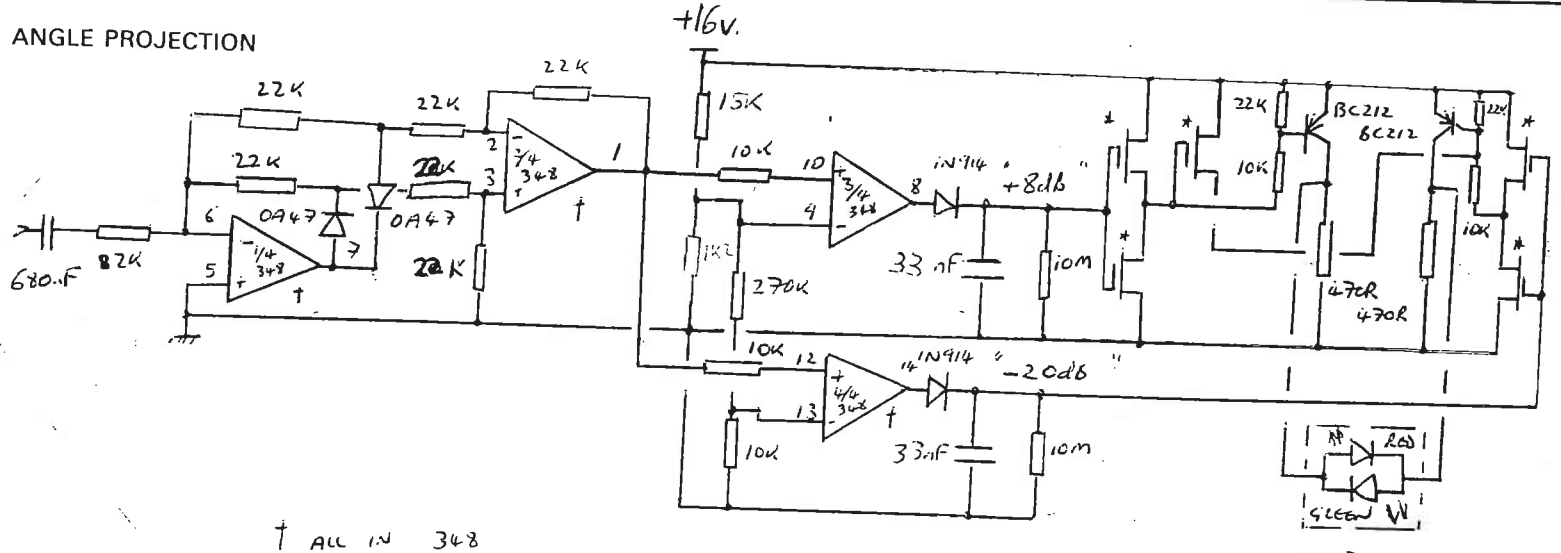
Printed in Woking 21259-77

420 × 594mm A2

DRAWING NUMBER

MAS449

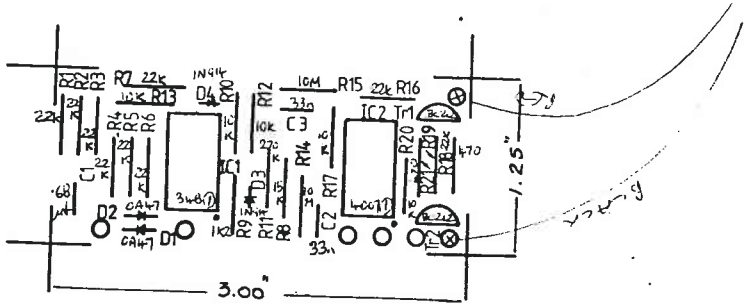
ANGLE PROJECTION



† ALL IN 348
POWERED ±16V.

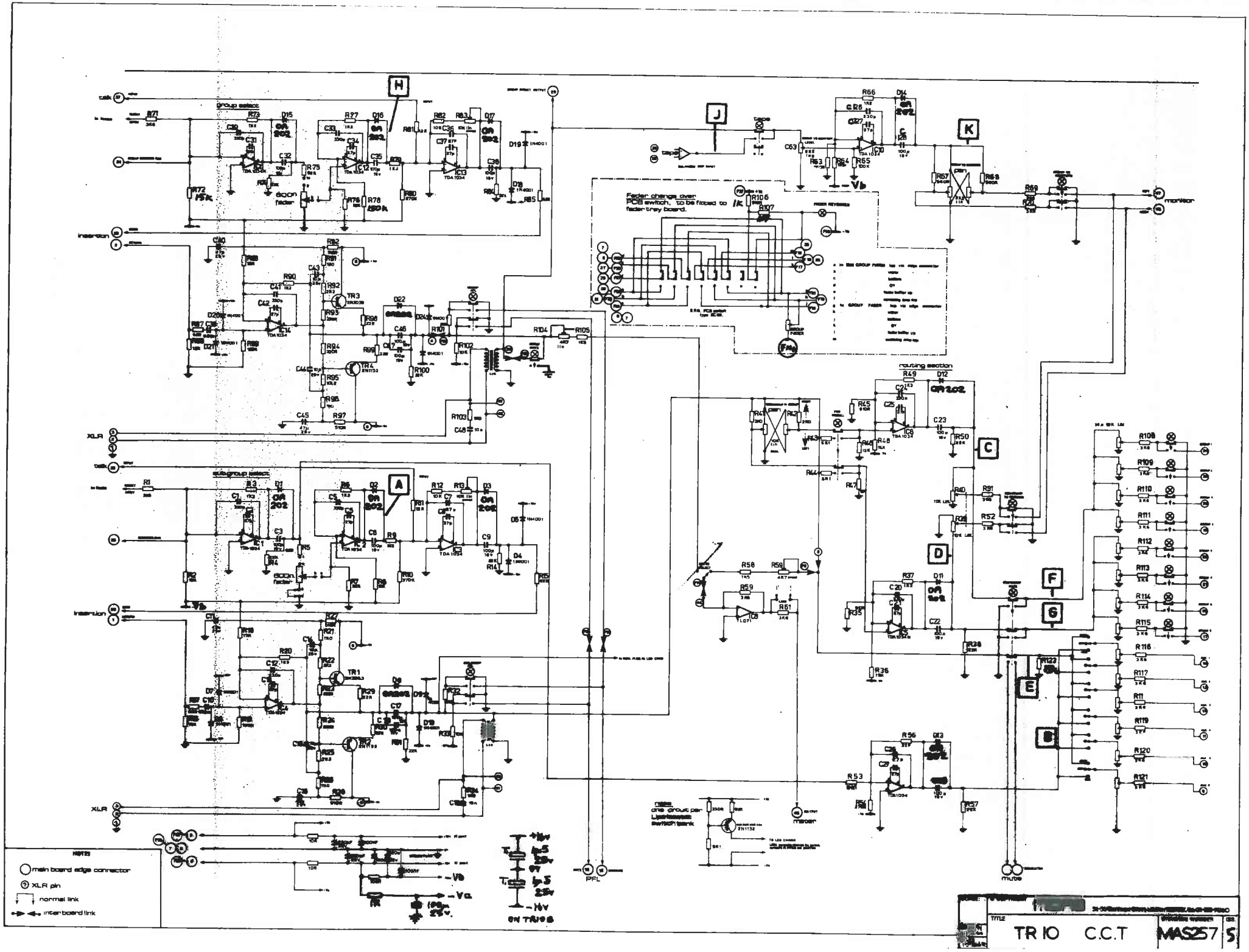
* ALL IN 4007.
POWERED +16V AND 0V.

GREEN ON AT -20db
RED ON AT +8db



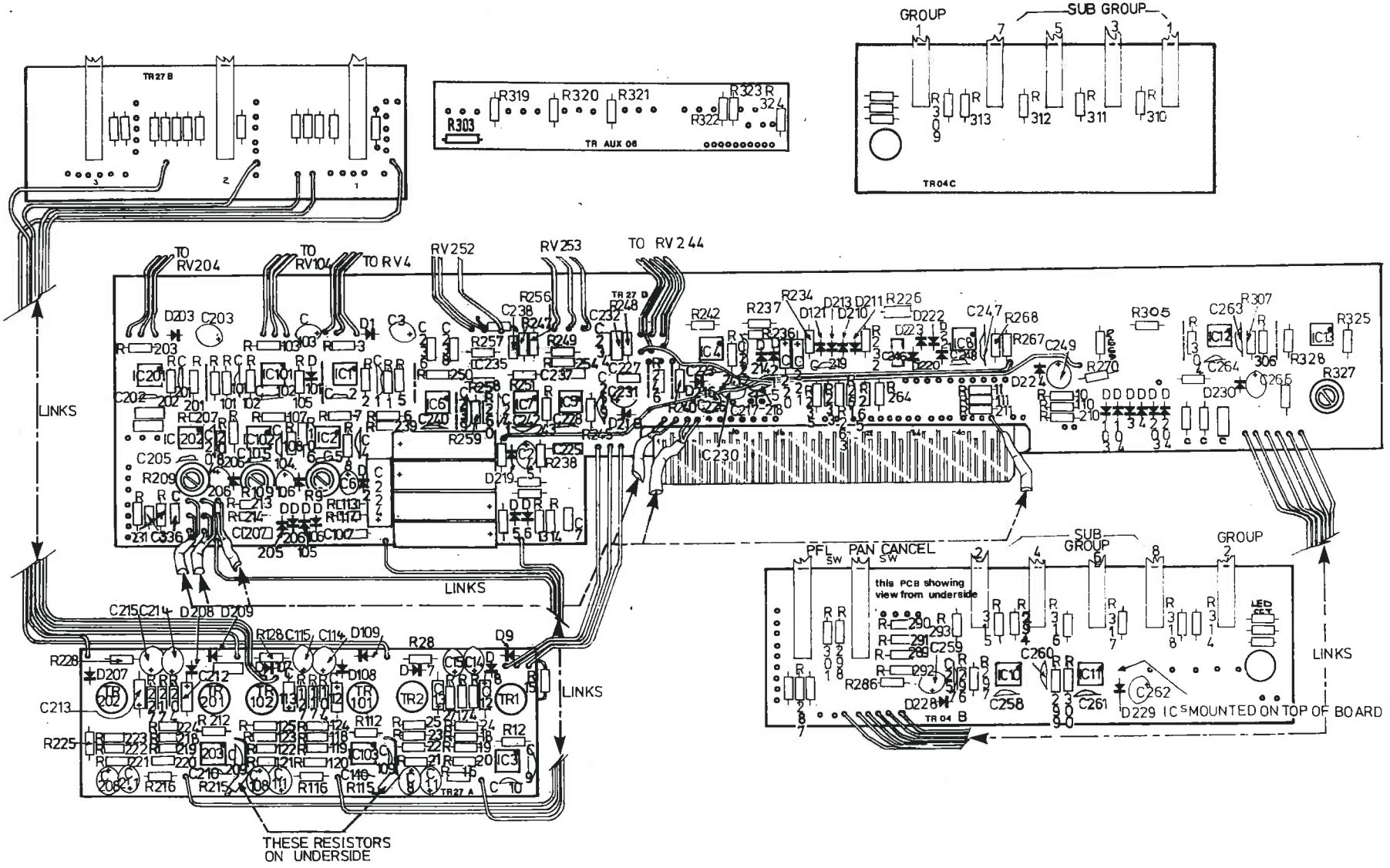
Midas
Dual L.E.D
indicator p.c.
Component Notation

			MATERIAL	TOLERANCES – UNLESS STATED	NOTES	SCALE:	© COPYRIGHT MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060	
				UNIT ± 0·			TITLE	DRAWING NUMBER / ISS.
			FINISH	·0 ± 0·		DRAWN BY	DUAL LED INDICATOR FOR TRIO MODULE.	MAS449 / 1
ISSUE	DATE	MOD. No.		·00 ± 0·		DATE		
				·000 ± 0·				
				DIMENSIONS IN				


H
J
K
A
C
D
E
F
G
B
group section
subgroup section
routing section
Fader change over PCB switch, to be fitted to fader tray board.
XLR
XLR
PFL
NOTES
main board edge connector
XLR pin
normal link
inter board link
TRIO C.C.T
MAS257
5

DRAWING NUMBER
MAS 281.

ANGLE PROJECTION



ISSUE	DATE	MOD. No.	ISSUE	DATE	MOD No.
1	29 JULY 80				
2	10/2/81	R303			
4	19 OCT 82	JR			

MATERIAL

FINISH

TOLERANCES – UNLESS STATED
UNIT ± 0·
·0 ± 0·
·00 ± 0·
·000 ± 0·

DIMENSIONS IN

NOTES
SCREEN CARD USED ON L.H.S. TR27 MODULE.

SCALE:

DRAWN BY Robbie

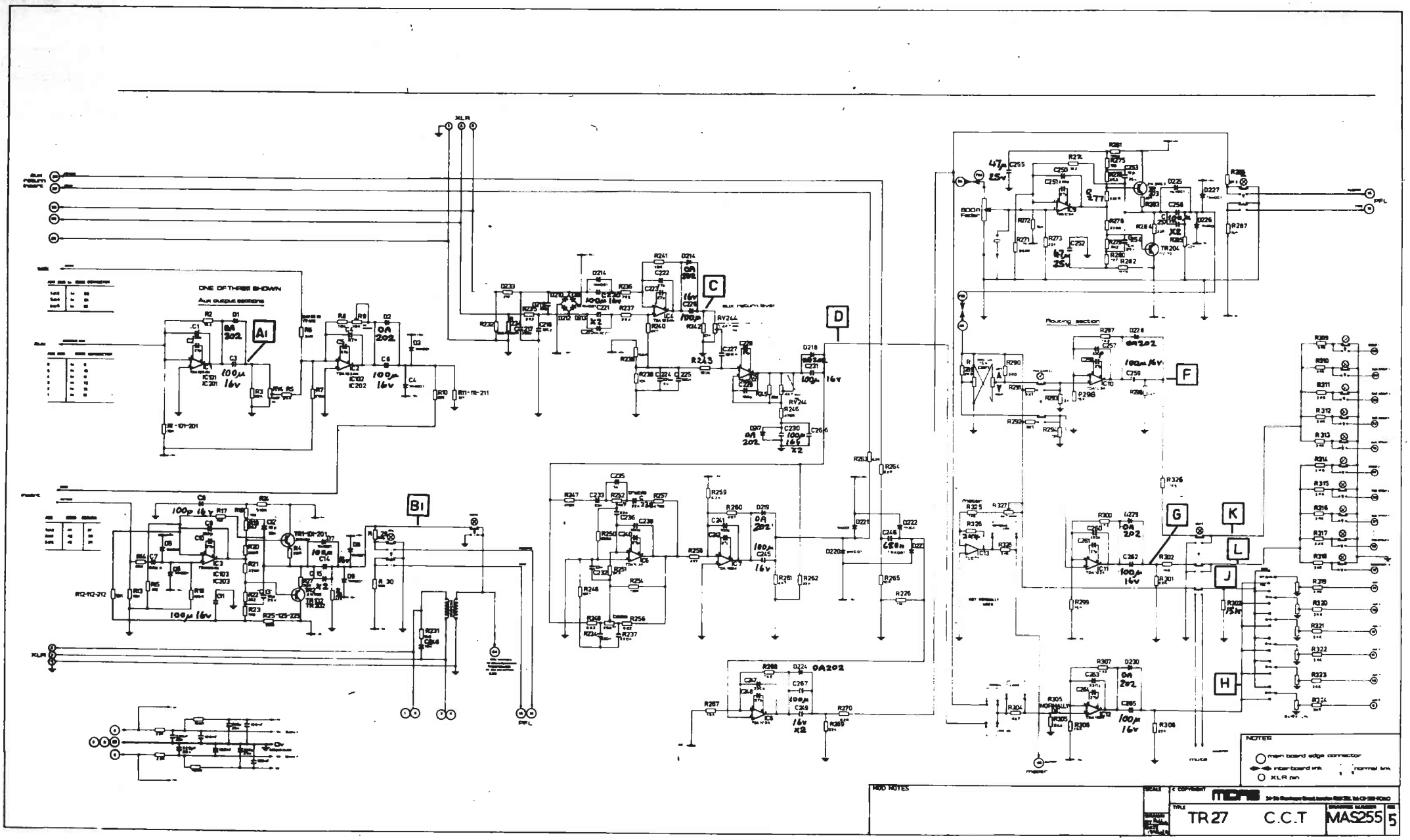
DATE

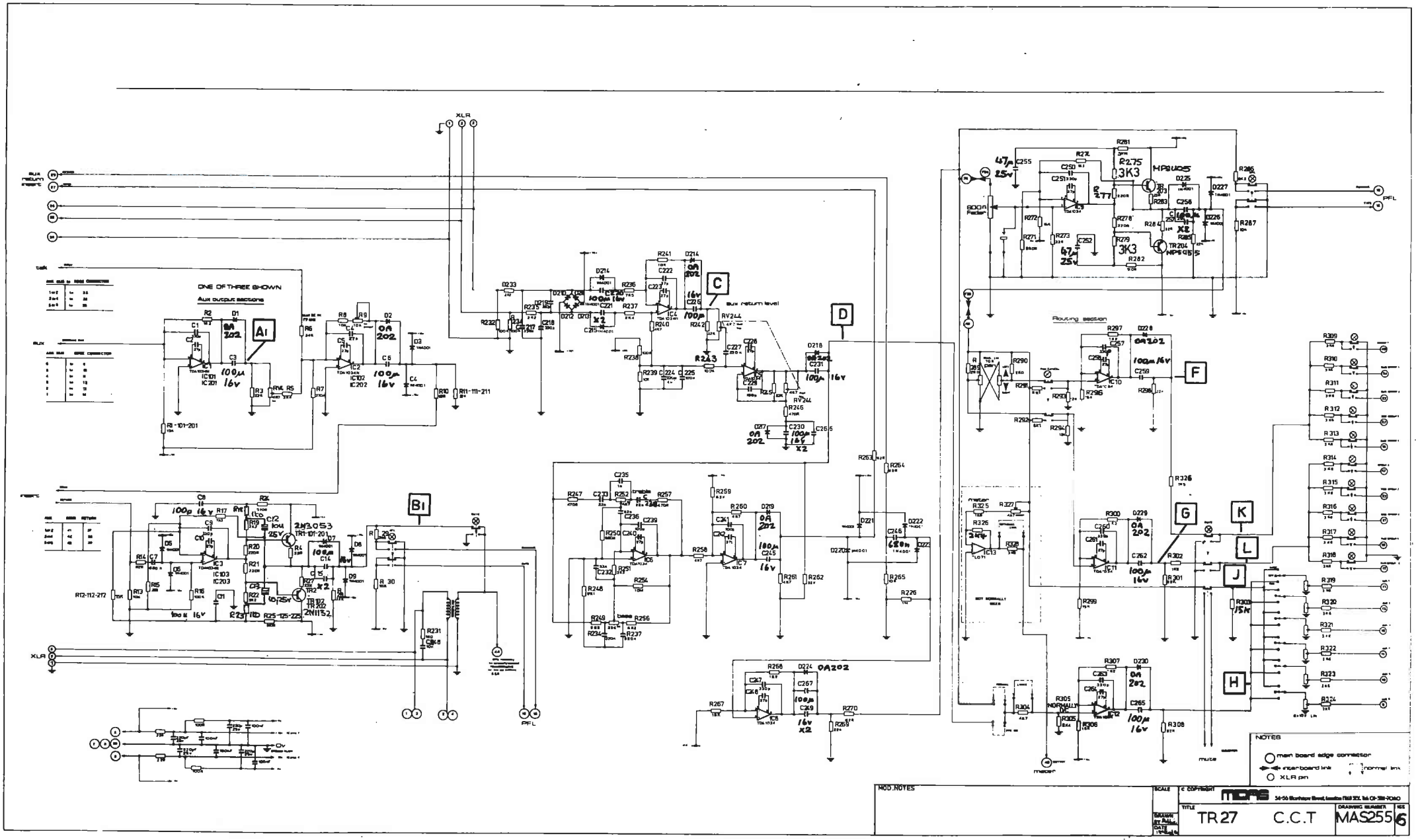
MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060

TITLE
TR 27 OVERLAY

DRAWING NUMBER
MAS 281

ISS.
4


ONE OF THREE SHOWN
Aux output sections
A1
B1
C
D
F
G
H
J
K
L
XLR
PFL
NOTES
main board edge connector
main board link
normal link
XLR pin
MOD NOTES
TR27 C.C.T
MAS255
5


XLR
ONE OF THREE SHOWN
AUX OUTPUT SECTIONS
AUX return level
Routing section
A1
B1
C
D
F
G
H
J
K
L
PFL
mute
meter
NOTES
main board edge connector
interboard link
normal link
XLR pin
MOD.NOTES
SCALE
DRAWN
CHECKED
DATE
TITLE
TR27 C.C.T
DRAWING NUMBER
MAS255/6

TR27
C.C.T
MAS255
5
NOTES
A1
B1
C
D
F
G
H
J
K
L

Midas Audio Systems Ltd., 54-56 Stanhope Street, London NW1 3EX Tel: 01-388-7060/01-387-7679

Telex. 8952498 MAS UKG

USE OF MIDAS INTERCOM SYSTEM

Date 22nd January, 1982

Our Ref: JC/CJG Your Ref:

COMPATIBILITY

All MIDAS Live Sound Consoles contain an intercom system to enable 2 wire speech and call lamp communication between any front-of-house console and stage monitor console.

The front-of-house consoles are normally wired to be master stations. PR 22A contains R36 = 2K2, R77 = 220R, C51 =47uF TR22 contains R89 = 2K2, R90 = 220R, C54 = 68uF.

Stage Monitor Consoles are normally wired to be outstations. PR22M contains R36 = 15K, R77 = O/C, C51 = O/C.

For a console to function as an outstation to another (master) console or a 'Clearcom' system it must be wired as an outstation. ie: R36 (PR22A) or R89 (TR22) must = 15Kohms. R77, C51 (PR22A)or R90, C54 (TR22) must = O/C.

In addition Pin 2 of any Cannon interface between the MIDAS system and a 'Clearcom' System must be left unconnected as the 'Clearcom' supply is incompatible with standard Audio OP.Amp supplies.

HUM CONSIDERATIONS

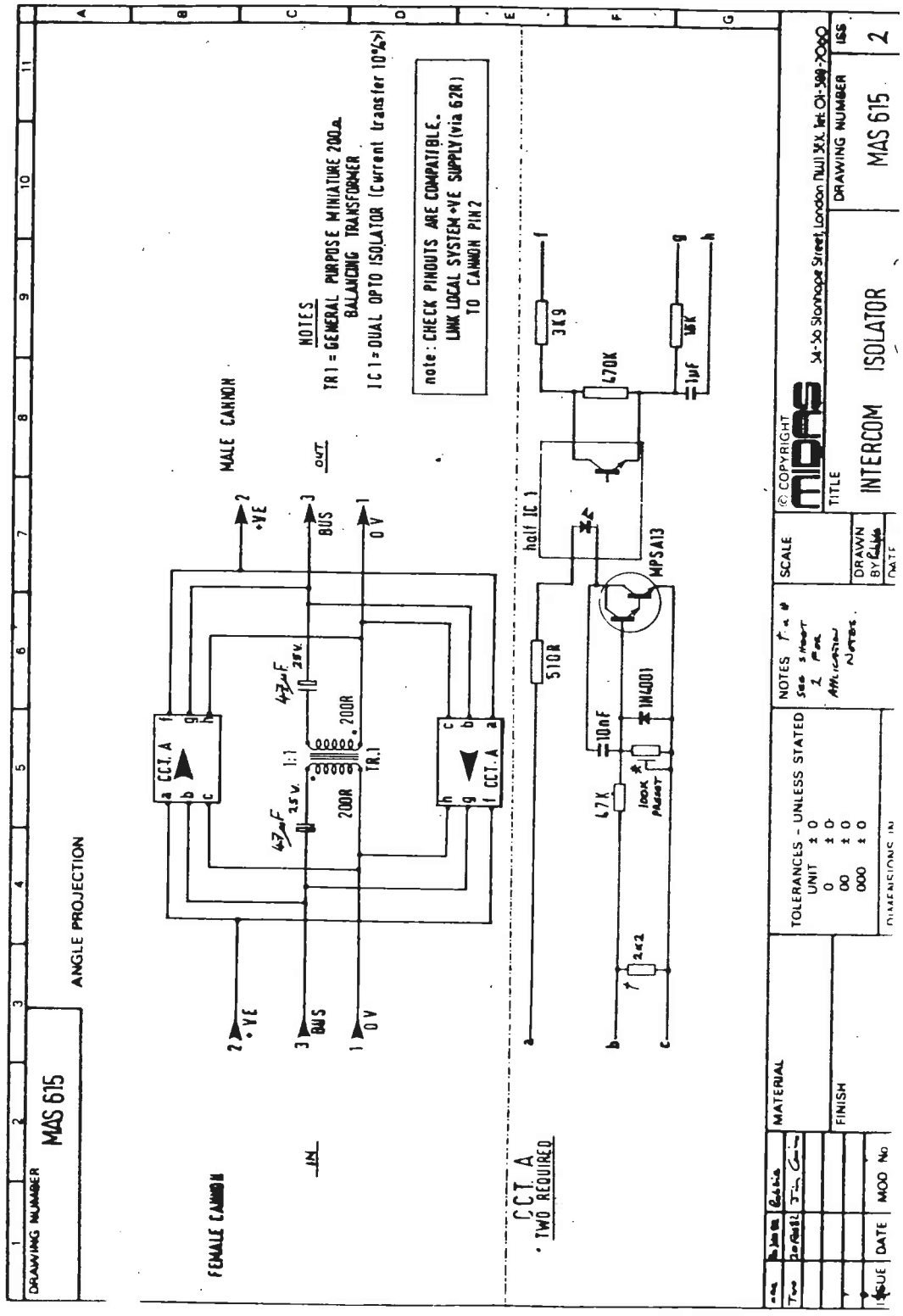
Most unbalanced systems will hum if two individually grounded commons are linked (particularly if the sound quality needs to be excellent and set-up time is short !)

The simple answer would be to ground only one common but with carbon-based lifeforms being sensitive to your friendly lighting supply this can be lethal and - even worse - illegal.

The following cheap and chearful little isolation circuit should therefore, be used when ground loops are a problem.....

Company registered in England No 786 9527.
Directors: J.W.Byers J.M.Chapman

Registered Office: 9 Mansfield Street, London W1M 9FH
VAT 235-2609-75



MIDAS

Midas Audio Systems Ltd., 54-56 Stanhope Street, London NW1 3EX Tel: 01-388-7060/01-387-7679

Telex. 8952498 MAS UKG

USE OF MIDAS INTERCOM SYSTEM

Date 22nd January, 1982

Our Ref: JC/CJC Your Ref:

COMPATIBILITY

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The front-of-house consoles are normally wired to be master stations. PR 22A contains R36 = 2K2, R77 = 220R, C51 = 47µF TR22 contains R89 = 2K2, R90 = 220R, C54 = 68uF.

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HUM CONSIDERATIONS

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The simple answer would be to ground only one common but with carbon-based lifeforms being sensitive to your friendly lighting supply this can be lethal and - even worse - illegal.

The following cheap and chearful little isolation circuit should therefore, be used when ground loops are a problem.....

The INTERCOM ISOLATOR is a floating audio line and call lamp link for use in installations where hum loops are a problem.

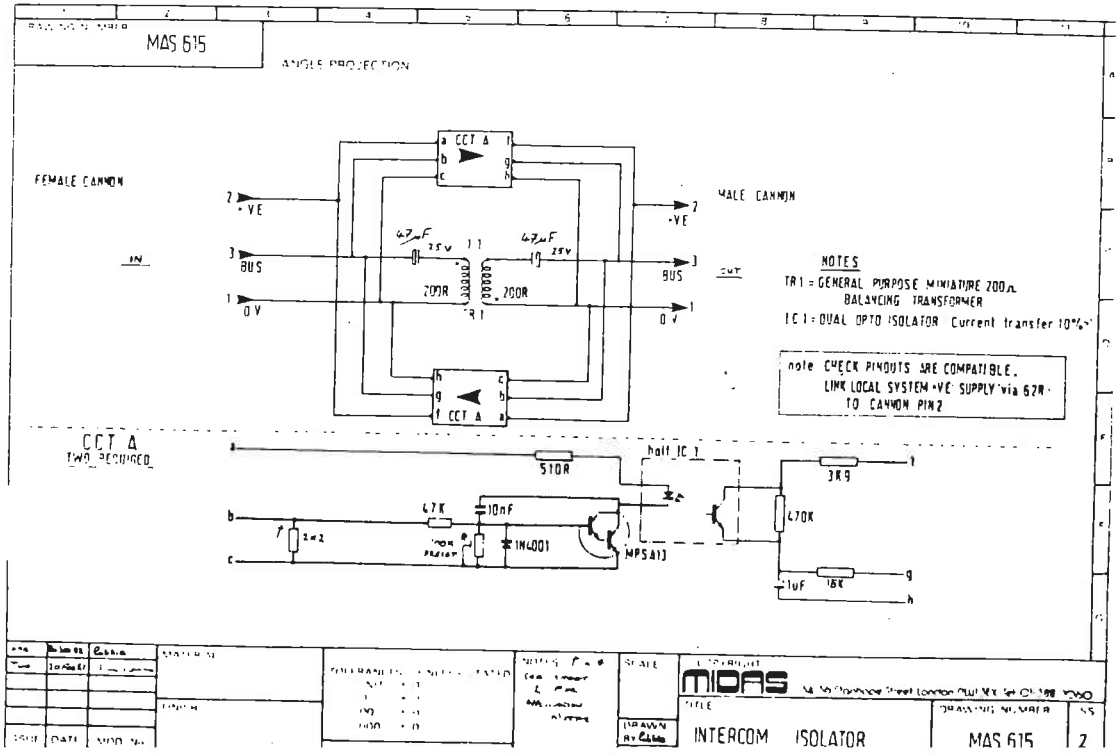
The System should be built into either existing equipment or a robust box with access to the (two) preset* sensitivity controls.

† Some investigation of an existing system will be necessary to check for the existence of D.C. pull down resistors. (ie. the 2K2 resistor shown on "CCT. A" will not be required when that particular leg is interfacing with a master type station).

*The 100K presets (initially set half way) should be set in-situ so that each leg transmits consistently but does not latch (best to set half way between just on and latch positions - setting not very critical).

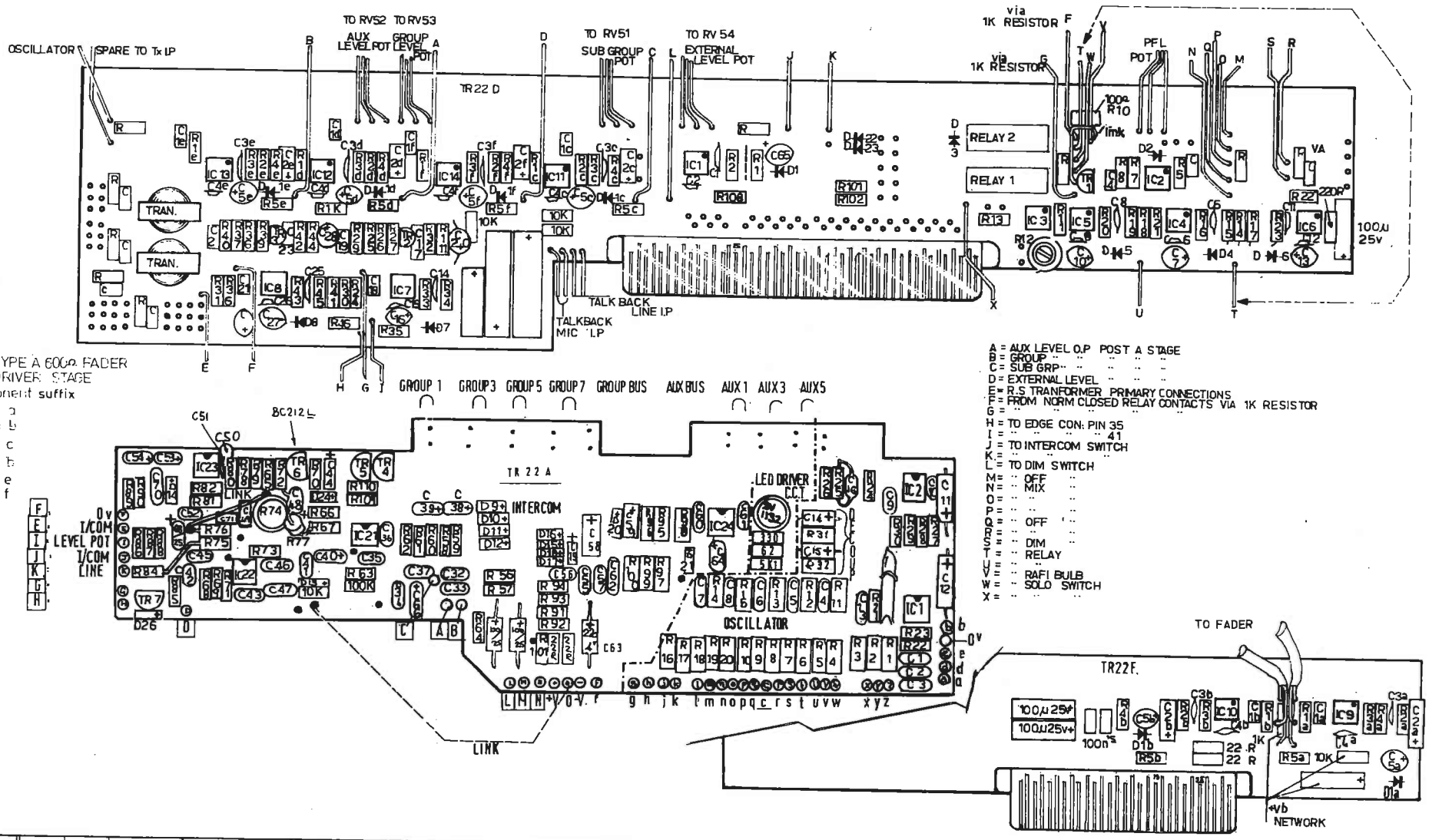
Ensure that the System includes one master station (but only one. If MIDAS used with 'CLEARCOM' let 'CLEARCOM' be the master and make all the MIDAS stations 'OUTSTATIONS'.

After installing the isolator it may be necessary to re-set station 'SIDETONE' presets as required.



DRAWING NUMBER MAS 282

ANGLE PROJECTION



A = AUX LEVEL O.P POST A STAGE
B = GROUP " " " "
C = SUB GRP " " " "
D = EXTERNAL LEVEL " " " "
E = R.S TRANFORMER PRIMARY CONNECTIONS
F = FROM NORM CLOSED RELAY CONTACTS VIA 1K RESISTOR
G = " " " " " "
H = TO EDGE CON: PIN 35
I = " " " 41
J = TO INTERCOM SWITCH
K = " " "
L = TO DIM SWITCH
M = " OFF "
N = " MIX "
O = " " "
P = " " "
Q = " OFF "
R = " " "
S = " DIM "
T = " RELAY "
U = " " "
V = " RAFI BULB
W = " SOLO SWITCH
X = " " "

ISSUE	DATE	MOD. No.	ISSUE	DATE	MOD. No.
2	4/8/81	NEW TOP PCB			

MATERIAL

FINISH

TOLERANCES – UNLESS STATED
UNIT ± 0·
·0 ± 0·
·00 ± 0·
·000 ± 0·

DIMENSIONS IN

NOTES

SCALE:

DRAWN BY

DATE 27/4/81

MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060

TITLE TR 22 OVERLAY

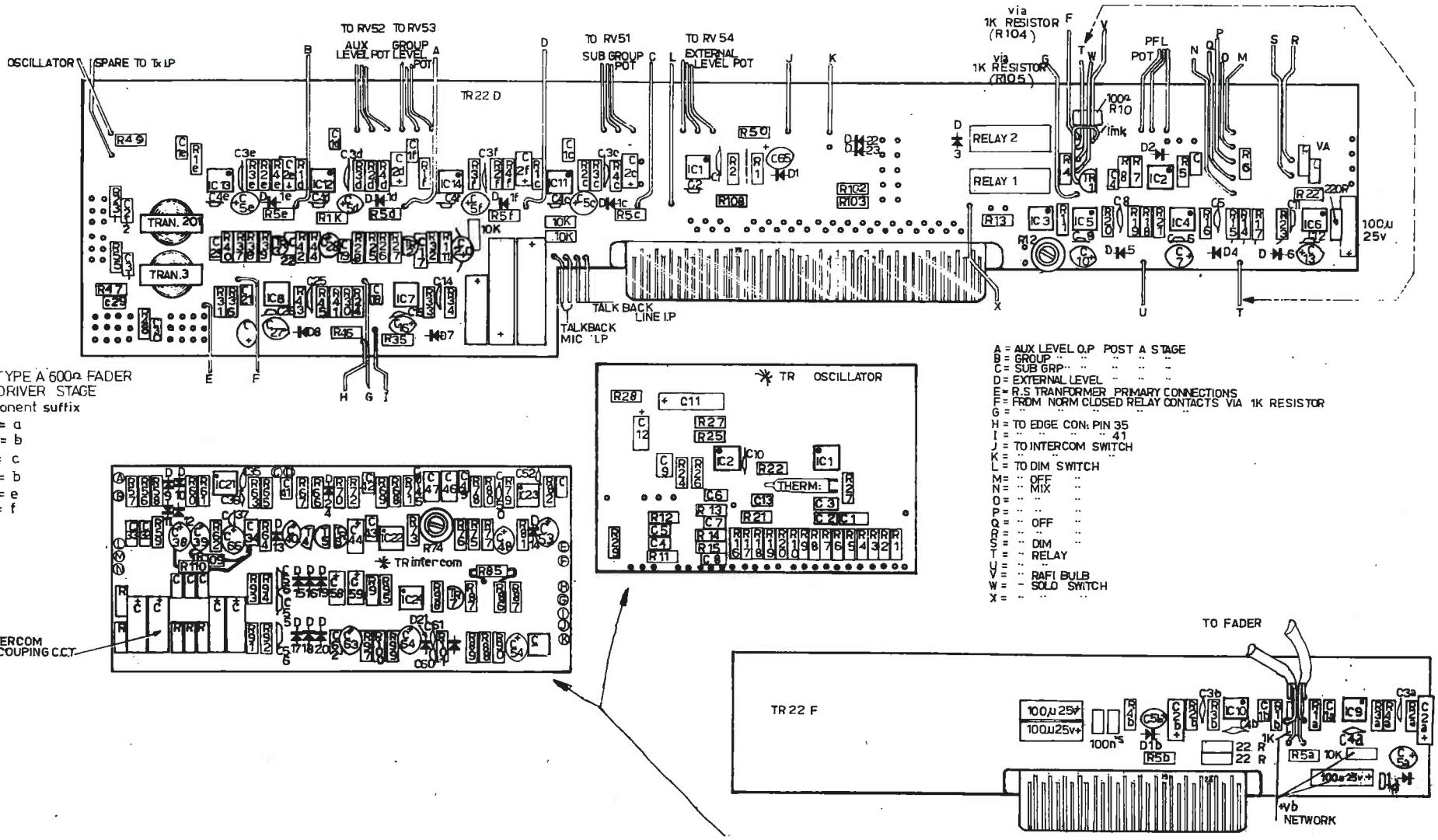
DRAWING NUMBER MAS 282

ISS. 2

A2

DRAWING NUMBER MAS 282

ANGLE PROJECTION



ISSUE	DATE	MOD. No.	ISSUE	DATE	MOD. No.
2	8/1/81	22R on TR22F			

MATERIAL

FINISH

TOLERANCES – UNLESS STATED
UNIT ± 0·
·0 ± 0·
·00 ± 0·
·000 ± 0·

DIMENSIONS IN

NOTES
*REPLACED BY TR22A PCB JULY 1981

SCALE:

DRAWN BY Tobbie

DATE 21st July 81

MIDAS 54-56 Stonhope Street, London N1 3EX Tel: 01-388-7060

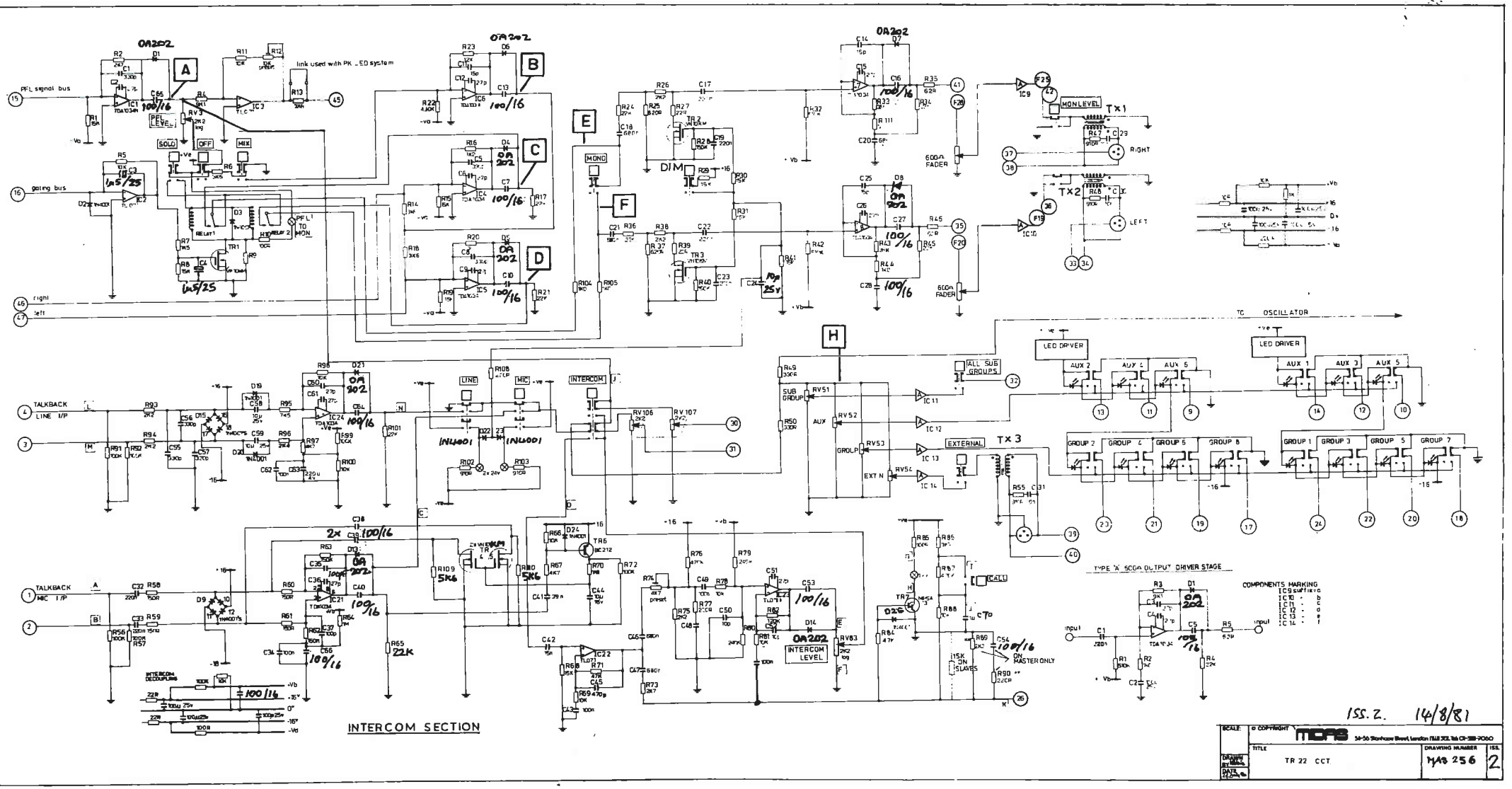
TITLE TR 22 OVERLAY

DRAWING NUMBER MAS 282

ISS. 2

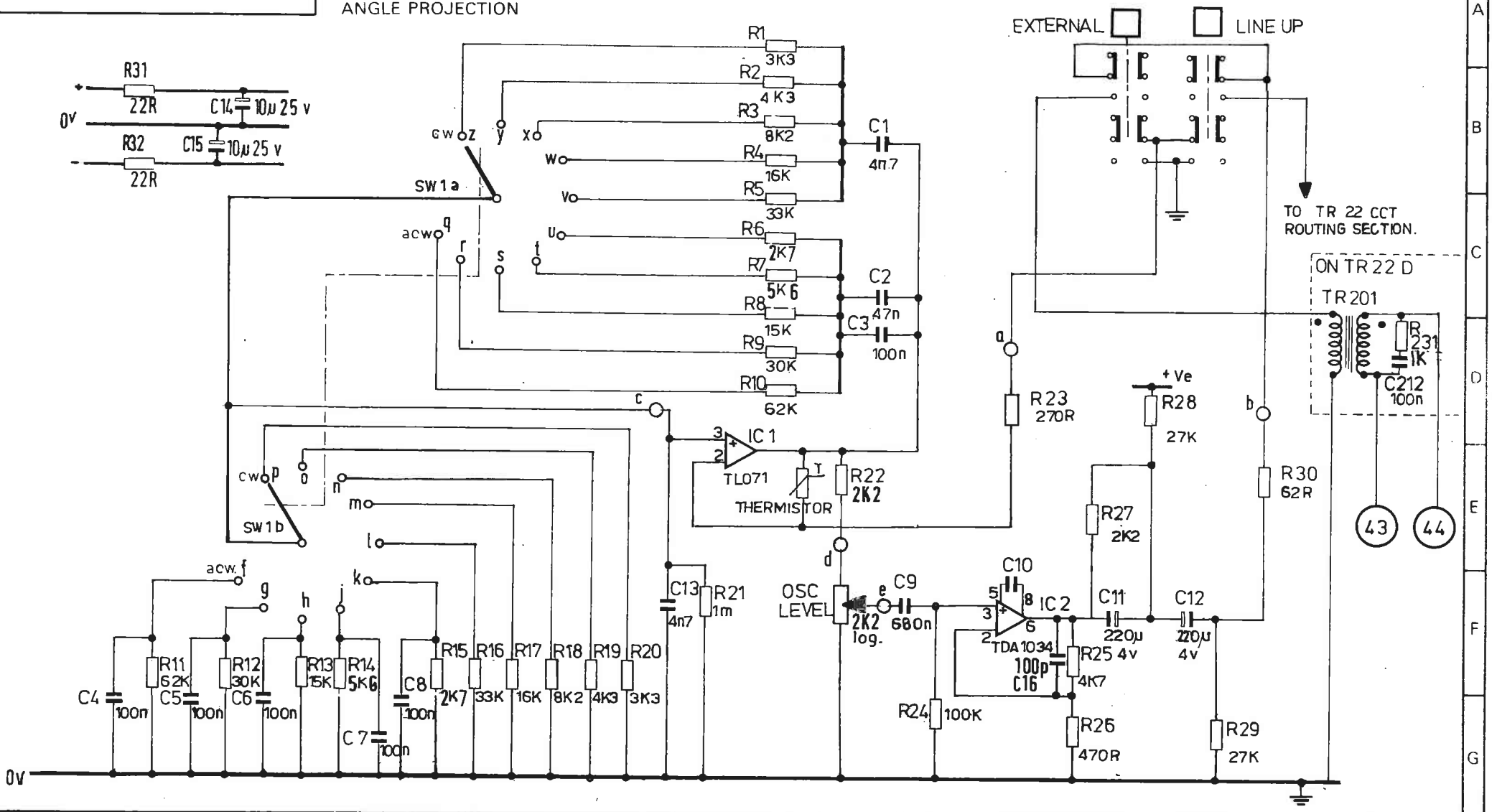
Printaplan - Wokingham 21281/77

420 × 594mm A2


PFL signal bus
gating bus
right
left
link used with PK - ED system
OA202
A
B
C
D
E
F
H
MONO
DIM
SOLO
OFF
MIX
PFL LEVEL
RELAY 1
RELAY 2
PFL
MON
MONLEVEL
Tx1
Tx2
Tx3
RIGHT
LEFT
600Ω FADER
TALKBACK
LINE I/P
MIC I/P
LINE
MIC
INTERCOM
IN4001
ALL SUB GROUPS
SUB GROUP
AUX
GROUP
EXT N
EXTERNAL
LED DRIVER
AUX 1
AUX 2
AUX 3
AUX 4
AUX 5
GROUP 1
GROUP 2
GROUP 3
GROUP 4
GROUP 5
GROUP 6
GROUP 7
GROUP 8
TO OSCILLATOR
INTERCOM LEVEL
15K ON SLAVES
ON MASTER ONLY
CALI
TYPE 'A' SCCA OUTPUT DRIVER STAGE
COMPONENTS MARKING
INTERCOM DECOUPLING
INTERCOM SECTION
TR 22 CCT.
DRAWING NUMBER
M/B 256
ISS.
2
155.2. 14/8/81

DRAWING NUMBER MAS 285

ANGLE PROJECTION



ISSUE	DATE	MOD. No.
1	27 July 88	Robbie
2	30.7.81	Robbie

MATERIAL

FINISH

TOLERANCES – UNLESS STATED
UNIT ± 0·
·0 ± 0·
·00 ± 0·
·000 ± 0·

DIMENSIONS IN

NOTES
use on TR22

SCALE:

DRAWN BY Robbie

DATE 27th July 88

MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060

TITLE
T.R OSCILLATOR C C T

DRAWING NUMBER
MAS285

ISS.
2

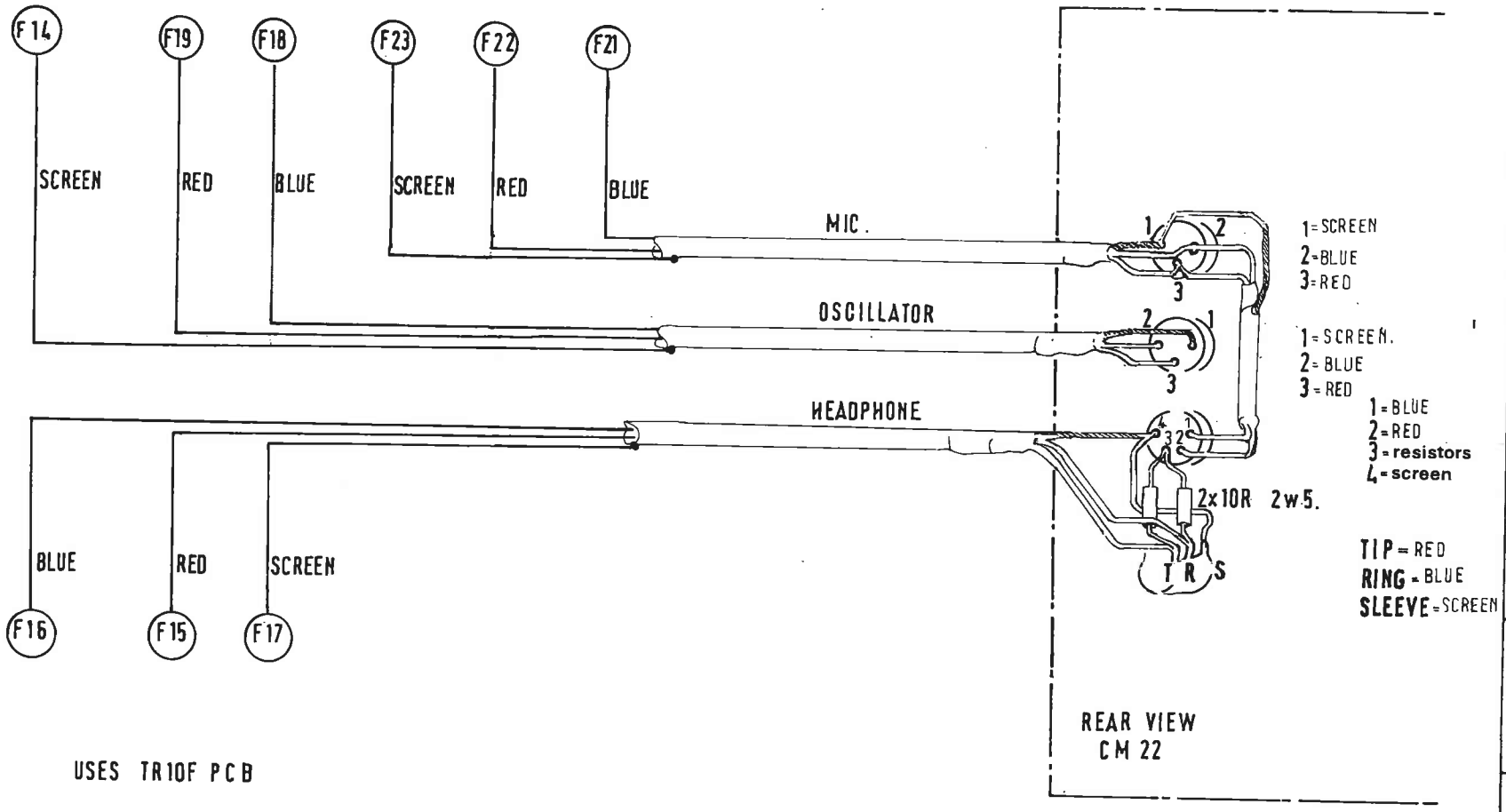
Printaplan-Woking 21260/77

297 × 420mm A3

DRAWING NUMBER

MAS554

ANGLE PROJECTION



USES TR10F PCB

ISSUE	DATE	MOD. No.
1	7/7/81	

MATERIAL

FINISH

TOLERANCES - UNLESS STATED
UNIT ± 0
·0 ± 0·
·00 ± 0·
·000 ± 0·

DIMENSIONS IN

NOTES

SCALE:

DRAWN BY Cobbe

DATE 7/5/81

MIDAS 54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-2060

TITLE

CM 22 MODULE

DRAWING NUMBER MAS554

ISS 1

Woking Dyeline P 1528/9

297 x 420mm A3

DRAWING NUMBER
MAS 258