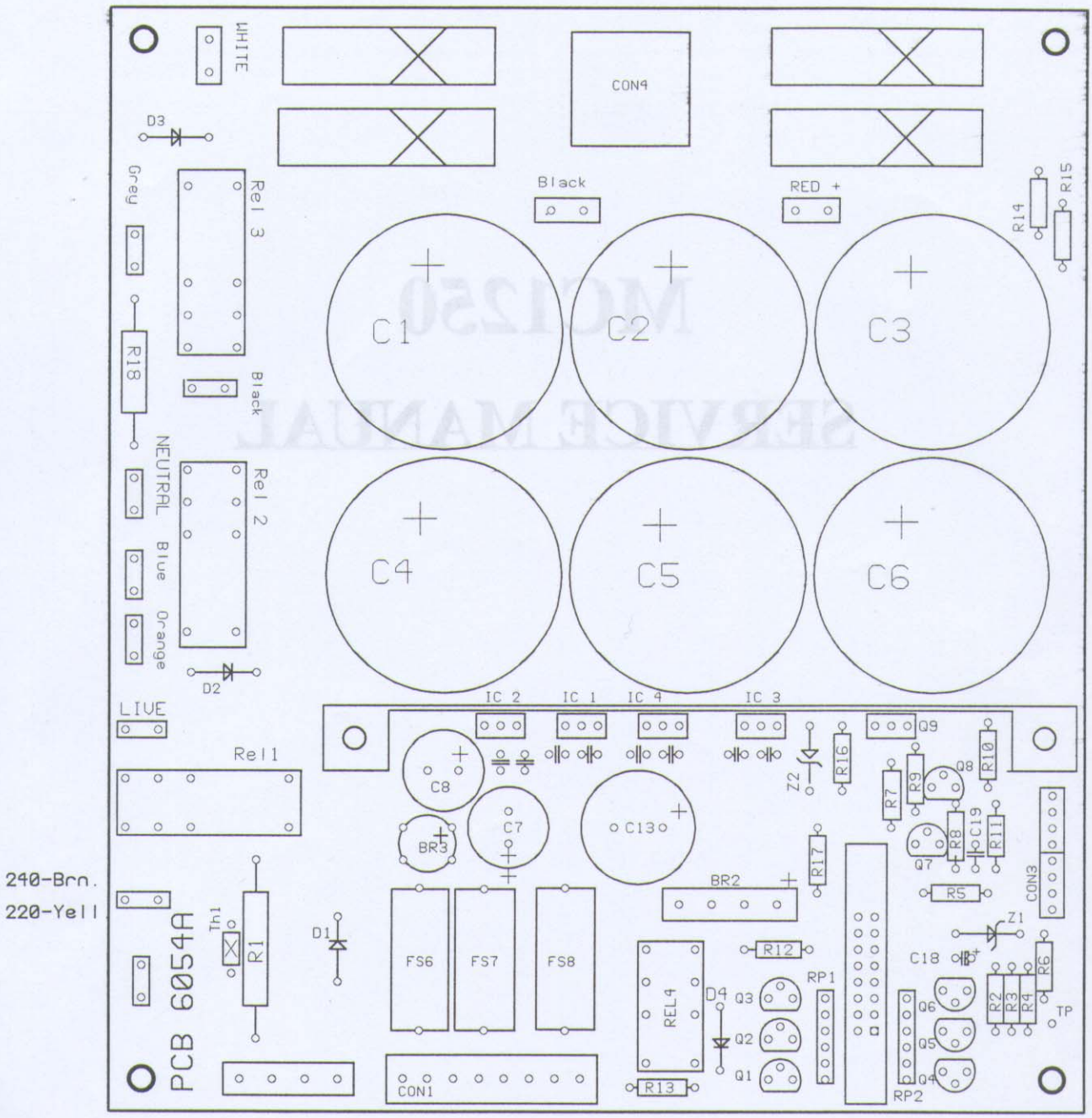
MC1250

SERVICE MANUAL

MC² AUDIO Ltd.,
Units 6 & 7, Kingsgate,
Heathpark Industrial Estate,
HONITON,
Devon EX14 8YD
England


WHITE
CON4
D3
Grey
Rel 3
Black
RED +
R14
R15
C1
C2
C3
R18
Black
NEUTRAL
Blue
Orange
Rel 2
C4
C5
C6
D2
IC 2
IC 1
IC 4
IC 3
LIVE
Rel1
C8
C7
C13
BR3
BR2
Z2
R16
Q9
R10
R7
R9
Q8
R8
C19
R11
Q7
R17
R5
CON3
Z1
C18
R12
RP1
R6
R2
R3
R4
TP
Th1
R1
D1
FS6
FS7
FS8
REL4
D4
Q3
Q2
Q1
Q6
Q5
Q4
RP2
R13
CON1
PCB 6054A
240-Brn.
220-Yell

Scale = x 0.8

MC1250 **Instruction Sheet** **Jan. 20th 1999**

To remove/replace the power module in an MC1250 amplifier

A full set of electronic engineers tools will be required which should include:-

M4 nut driver with a retaining clip (or fill the end with a silicone putty such as 'Blu Tac')

To re-align the module the following test equipment will be required as an absolute minimum:-

Oscilloscope (20mHz minimum)

Digital Volt Meter

Audio Test Set with sine wave oscillator and millivolt meter

DC Current probe with a resolution of 10mA

2 x 4 ohm resistive loads, capable of dissipating 1250 Watts

To remove the module:-

1. Disconnect all connectors from the front of the module.
2. Using the M4 nut driver, remove the 3 nuts which hold down the module base plate to the chassis.
3. Lift out the module - this is best done by lifting the rear of the module clear of the rear chassis bar first, using a tilting action.
4. Lift the module forward and remove the output cable from the centre of the module.
5. Lift the module clear of the chassis.

Replace the new module by following the above steps in reverse order.

NOTE: You may find the above operations easier if you first remove the plastic finger guard from the rear panel.

To re-align the module - See drawing - MC1250 Top view 16/6/1997.

1. Attach the DC current clamp around the +VE (RED) power cable to the new module at the VCC buss bar on the capacitor bank as shown on the diagram.
2. Turn the Bias preset on the module DOWN (clockwise). **See note below.
3. Turn on the amplifier. Set the bias to 200mA.
4. Turn the level controls to both channels up to maximum. Insert a signal #(+3dBu at 1kHz) into each input, monitor the outputs of both channels on the oscilloscope and measure the output level of the new module. Do not attach the loads to the outputs at this stage.

5. Measure the output levels, they should be at +36dBu. Adjust the gain controls on the rear of the input PCB accordingly.

6. Attach the 4 ohm loads to both outputs. Ensure that the LINK switch on the front panel is OFF. Turn the input signal up until the outputs clip or the limit LEDs come on.

   Adjust the limit controls on the rear of the input PCB so that the outputs limit just below the clipping point. This should be at +39dBu.

7. Reduce the output level to +36dBu. Allow the modules to heat up so that the fans are running fast. Switch off the input signal or mute both outputs and re-adjust the bias on the new module to about 280mA (anywhere between 250mA and 300mA is OK).

NOTE: If you do not have the equipment necessary to measure/adjust the bias level, then ensure that the **bias preset is left in its factory-set position.

CAUTION

The heatsinks are live +115V and -115V off load. Use extreme caution when setting up amplifier.

Level/Limiter adjustment

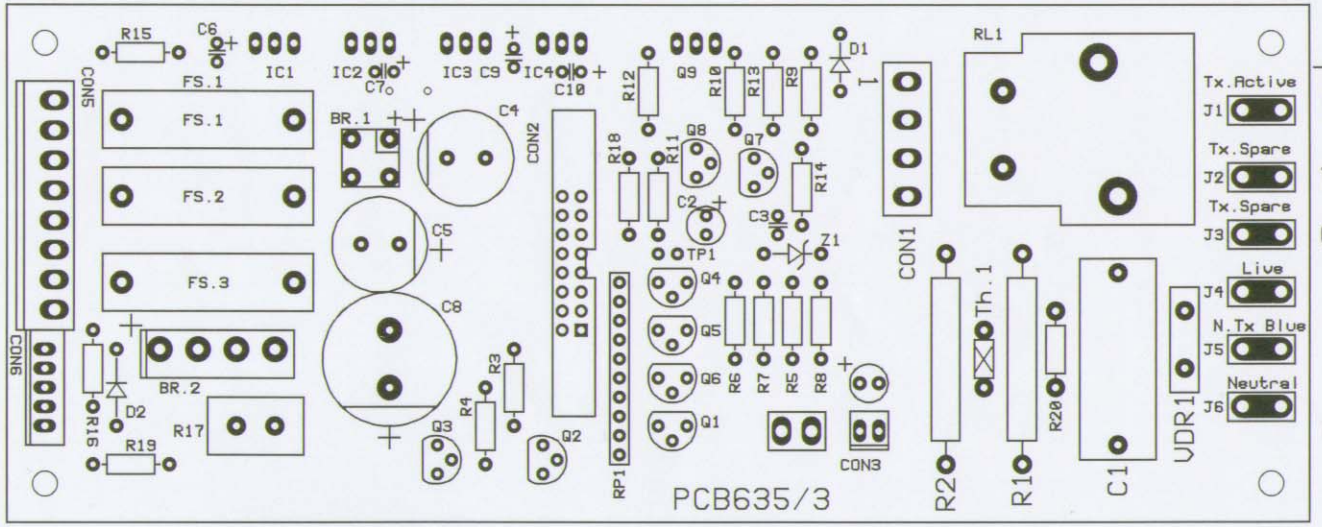
The amplifier gain is set by a preset potentiometer for each channel - VR2 and VR22. These are located on the audio input circuit board PCB631, which is located on the rear panel. The limiter levels are set by VR3 and VR23 on the same PCB.

Adjustment Procedure

1. Input a signal 1kHz @ 0dBu into both inputs. This can be done without using a load.
2. Turn the level controls to maximum. Adjust VR2 (Ch. A) and VR22 (Ch. B) to give an output at the speaker connectors of +33dBu.
3. Couple a 4Ω resistive load capable of handling 1250 watts to each output. Monitor the outputs on an oscilloscope. Ensure that the link LED is **OFF**.
4. Turn the input up to +7 dBu and adjust VR3 (Ch. A) and VR23 (Ch. B) so that the limit LEDs turn on just below the clipping point. This should be at about 1200 watts (+39.2dBu) with both channels at maximum.

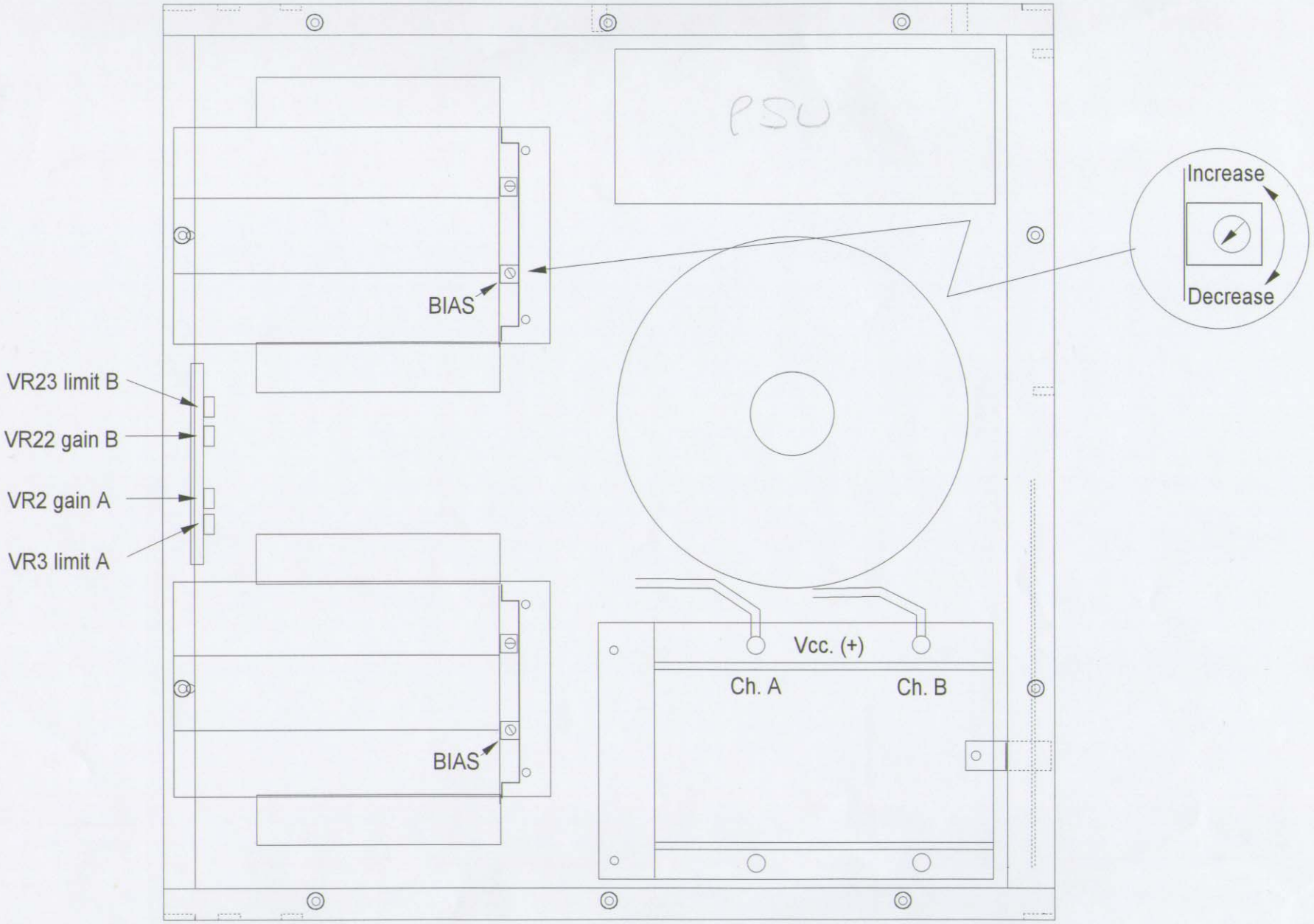
#NOTE:**TURBOSOUND** amps. have 4dB lower sensitivity, therefore the signal input (re-alignment 4) should be +7dBu for maximum output.

MC1250 Power supply 220/230/240 VAC.



240V.	230V.	220V.
Brown	Yellow	Orange
Yellow	Brown	Yellow
Orange	Orange	Brown

To change the mains voltage settings, change over the transformer leads as shown above.



MC² AUDIO | MC1250 CHASSIS TOP VIEW | Dwng. TopView | 16th June 1997

MC1250 CIRCUIT DIAGRAMS

	TITLE	DESCRIPTION	
	LAY1250	CIRCUIT LAYOUT	
	PCB631/2	INPUT PCB	
	PCB632/2	OUTPUT DRIVE STAGE	}POWER
	PCB633/2	OUTPUT POWER PCB	}MODULE
	PCB634/2	OUTPUT POWER PCB	}
	PCB635/2	POWER SUPPLY	
	PCB636	OUTPUT CONNECTOR AND RELAY PCB	
	PCB639	MAIN RECTIFIER ASSEMBLY	
*	PCB6034/1250	CONTROL PCB	
#	PCB604/2	DISPLAY PCB	

* PCB6034 is the same as the one used on the MC650 and MC450 WITH THE EXCEPTION OF:-

Software

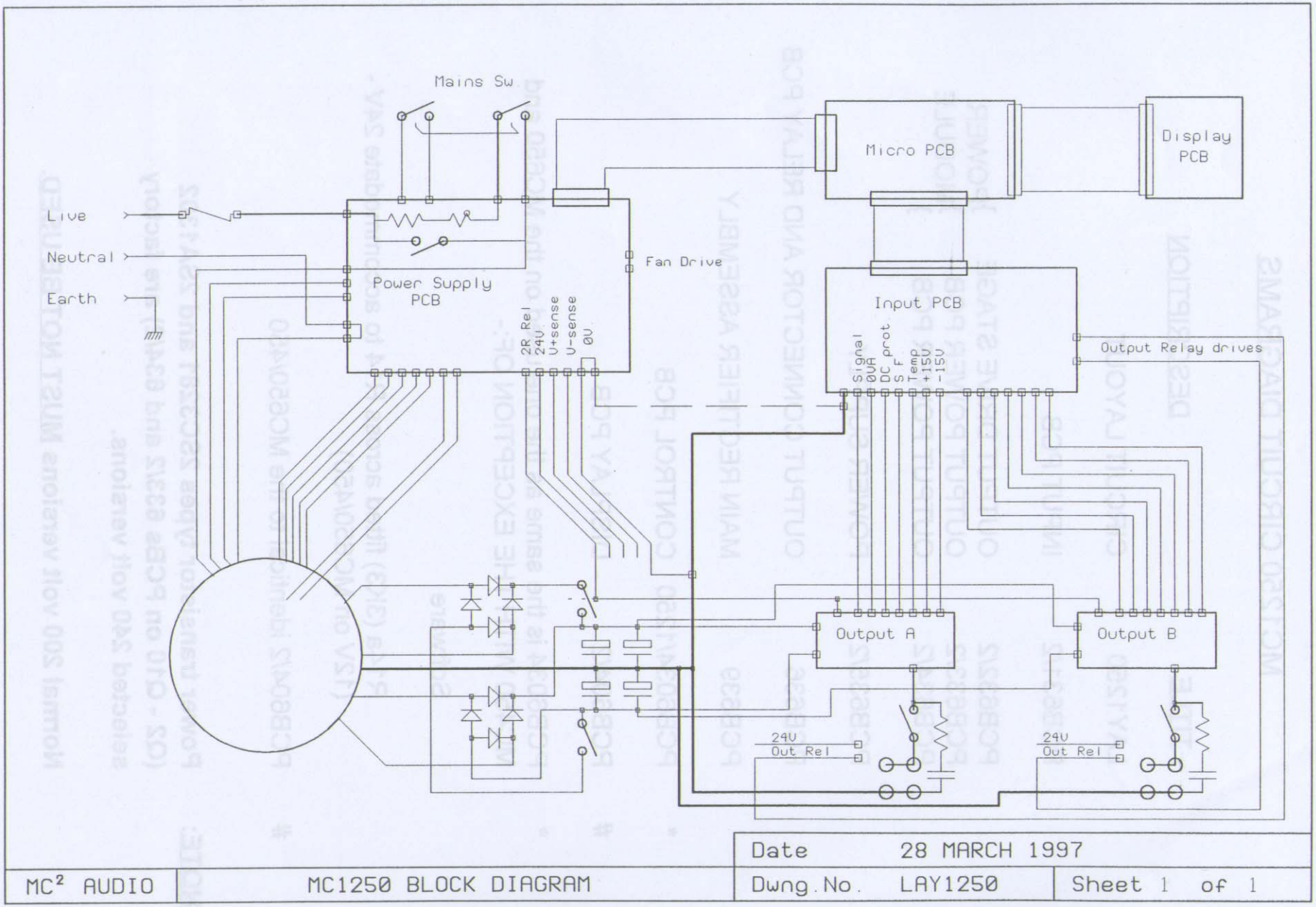
R14a (3K3) fitted across R14 to accommodate 24V - (12V on MC650/450)

\# PCB604/2 identical to the MC650/450

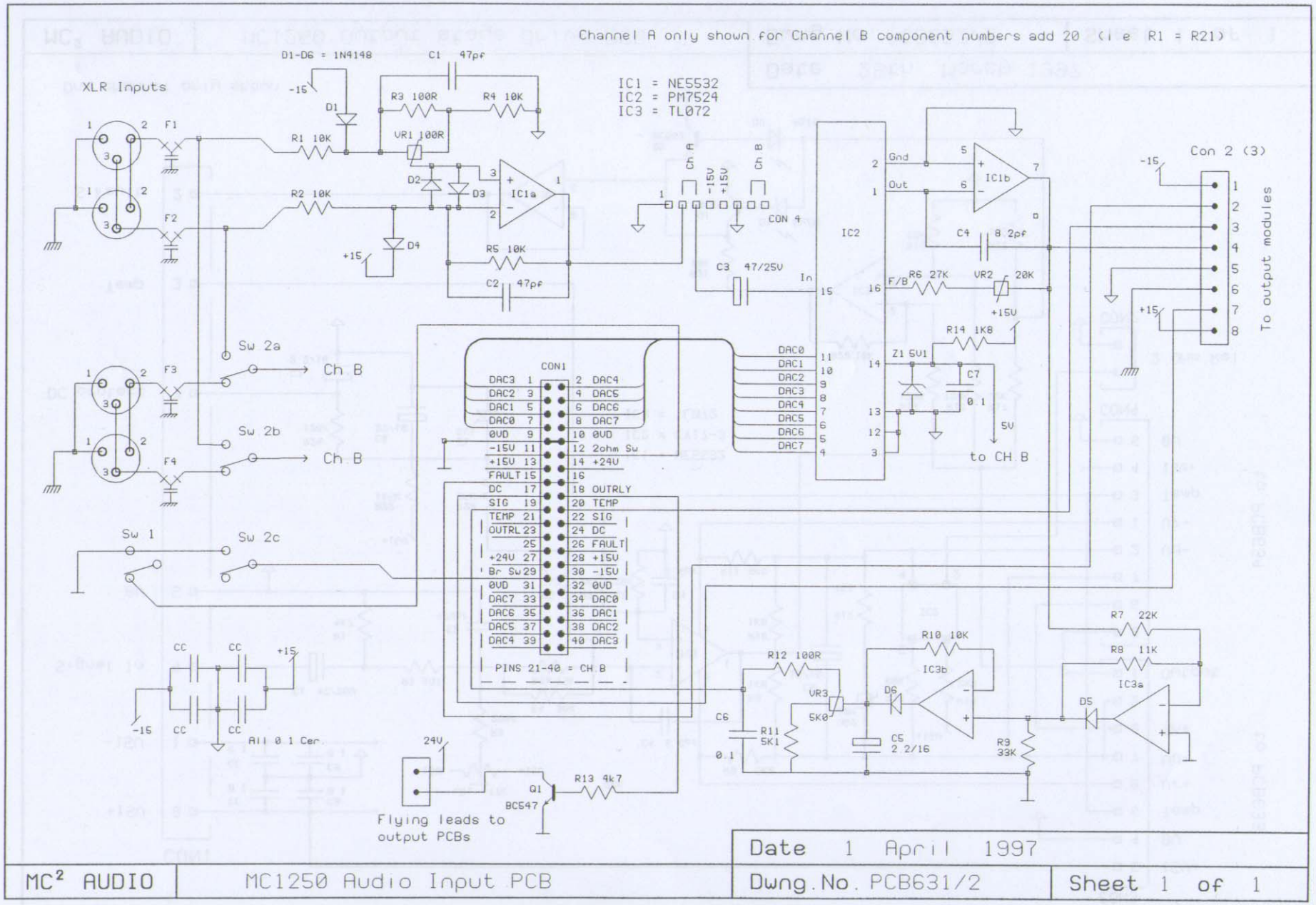
NOTE: **Power transistor types 2SC3281 and 2SA1302 (Q2 - Q10 on PCBs 633/2 and 634/2) are factory selected 240 volt versions.**

Normal 200 volt versions MUST NOT BE USED.

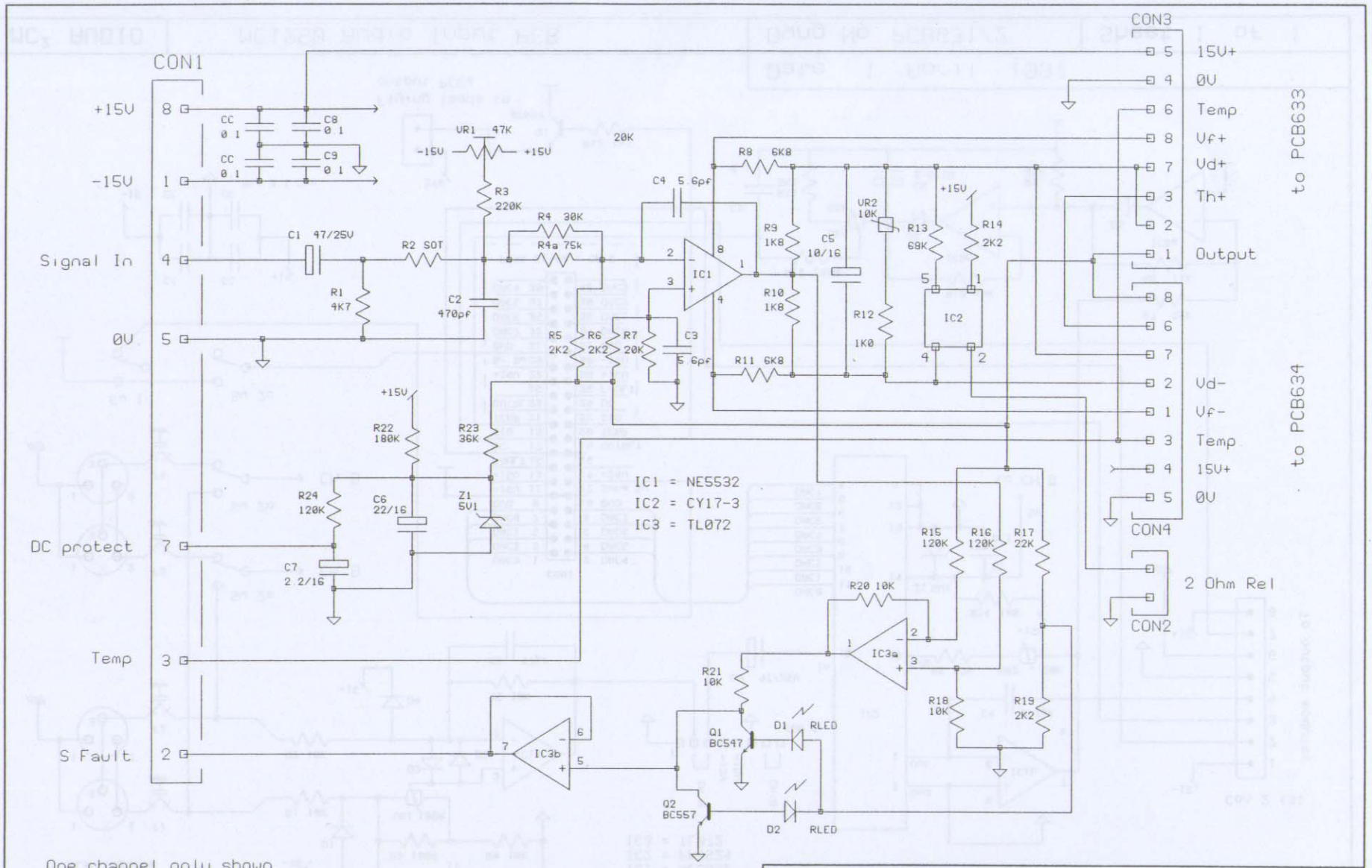
This applies to the MC1250 only.



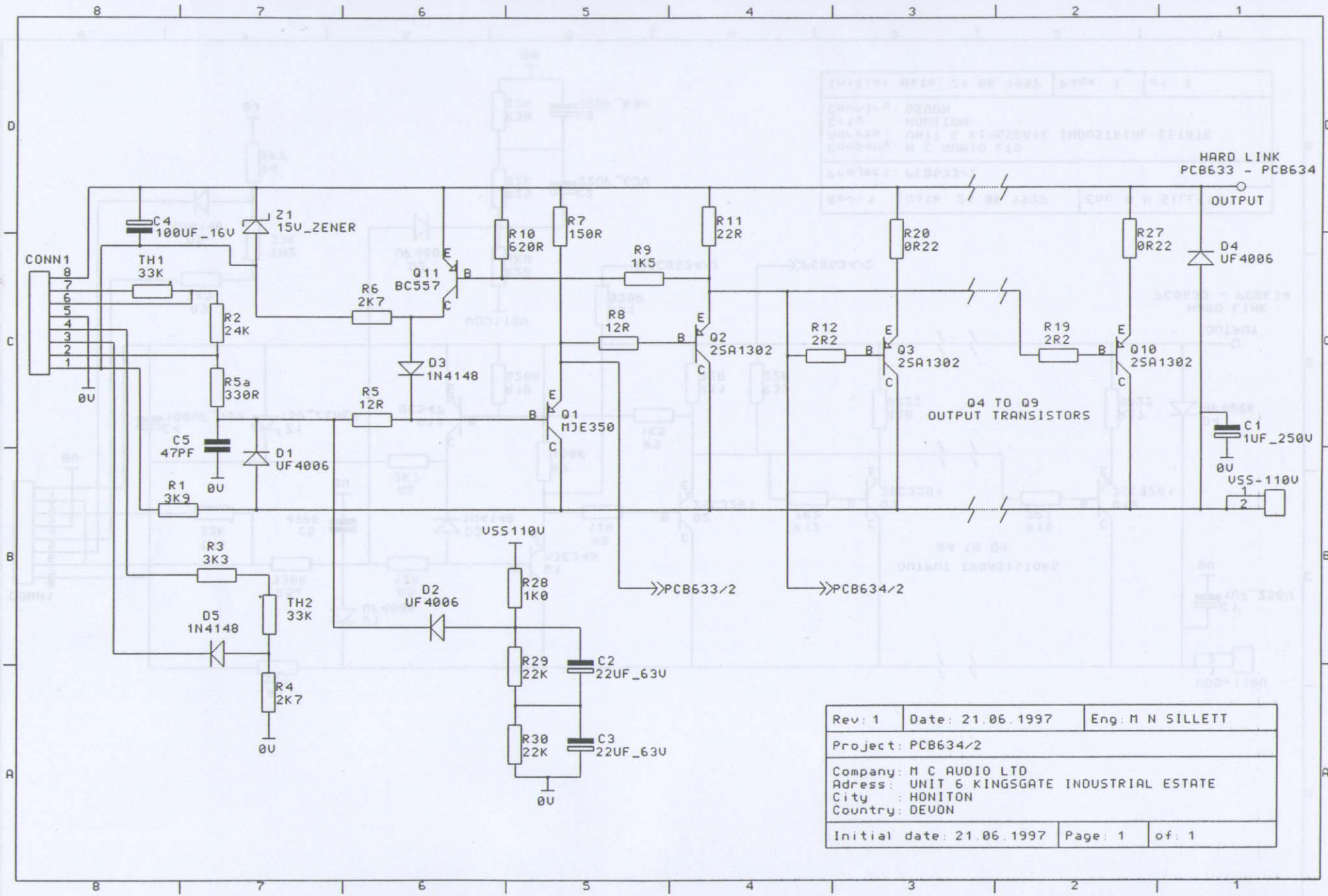
MC² AUDIO	MC1250 BLOCK DIAGRAM	Date 28 MARCH 1997 Dwng.No. LAY1250	Sheet 1 of 1



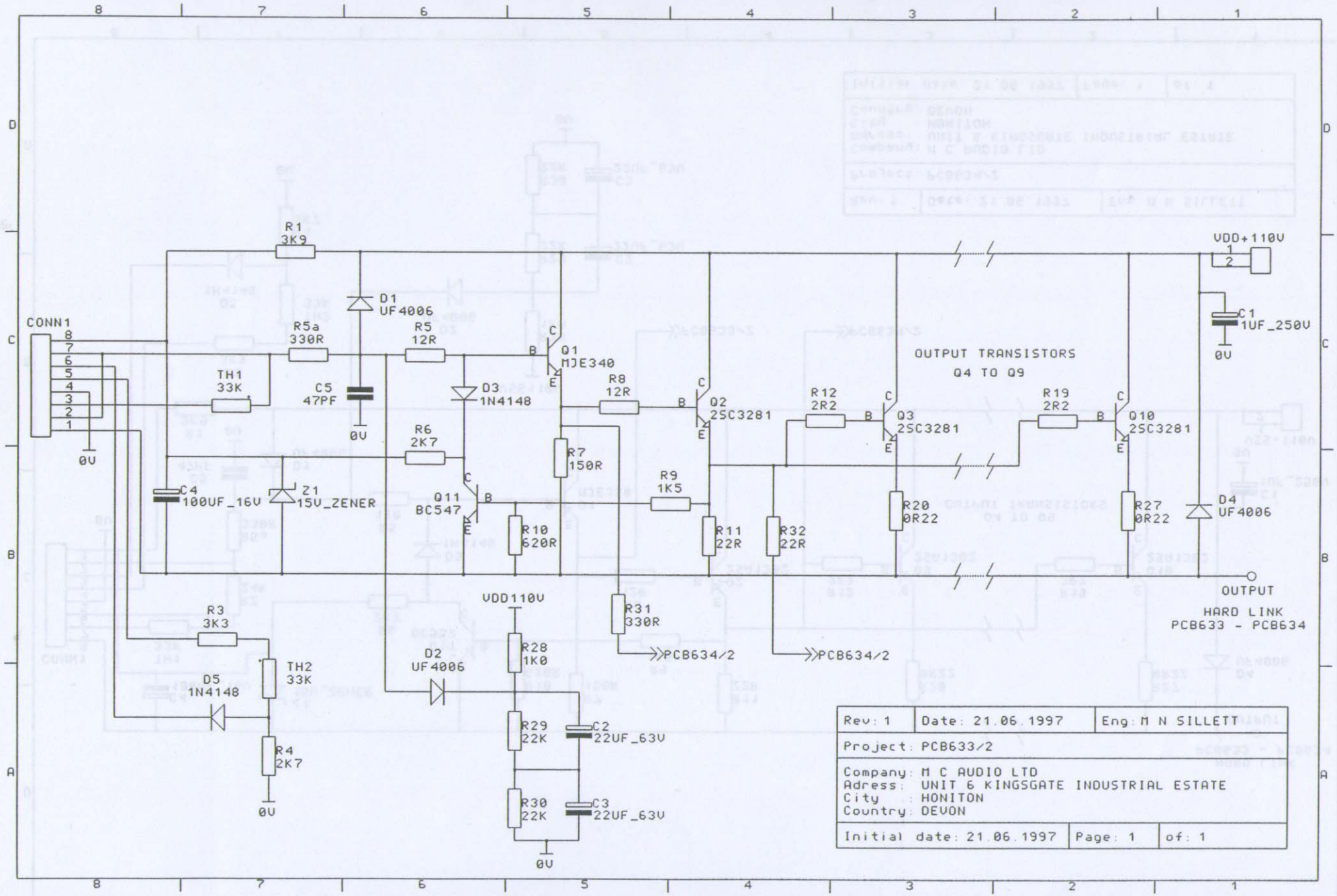
MC² AUDIO	MC1250 Audio Input PCB	Dwng.No. PCB631/2	Sheet 1 of 1
		Date 1 April 1997	

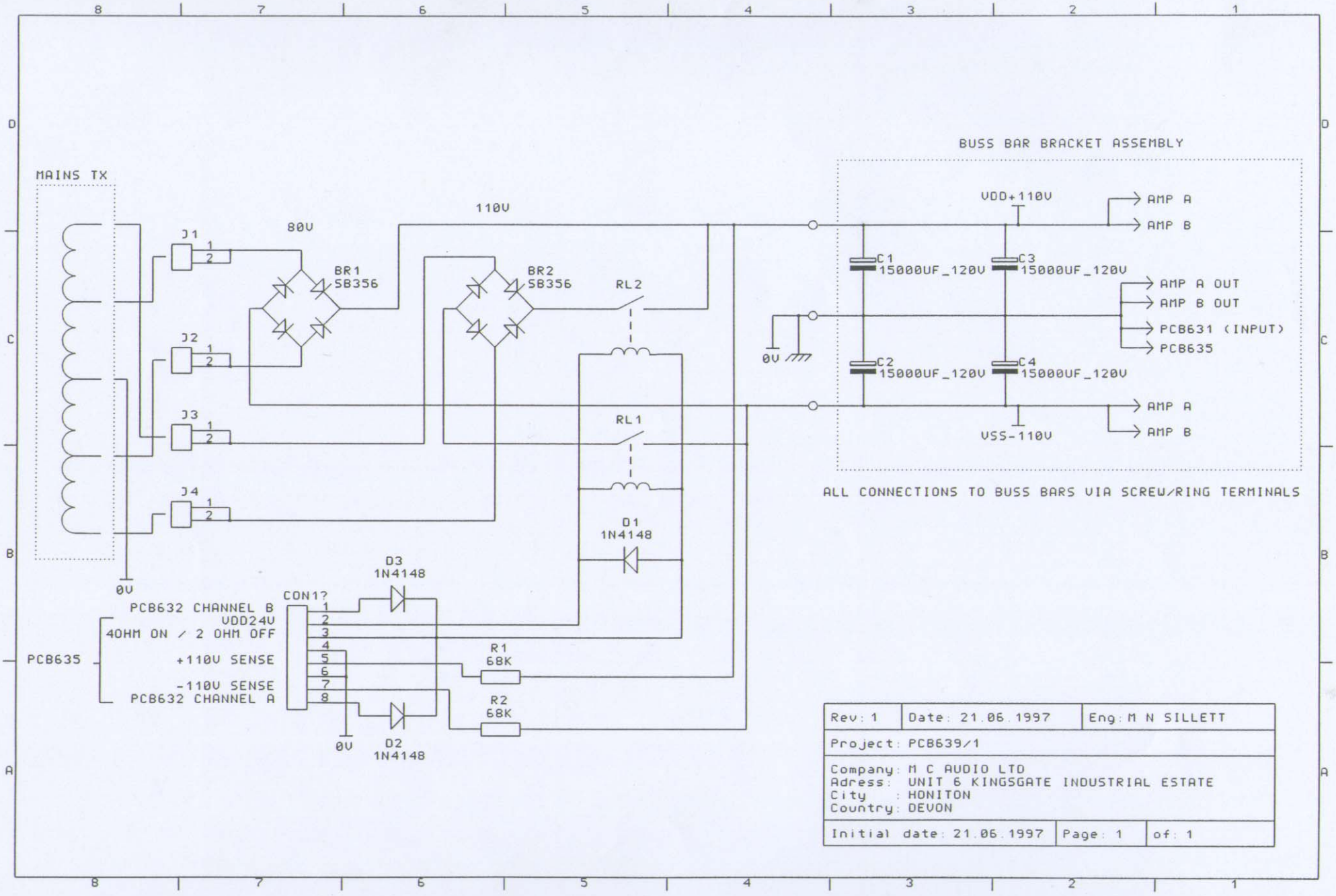


MC² AUDIO	MC1250 Output stage Drive PCB	Dwng.No. PCB632/2	Sheet 1 of 1
		Date 28th March 1997	

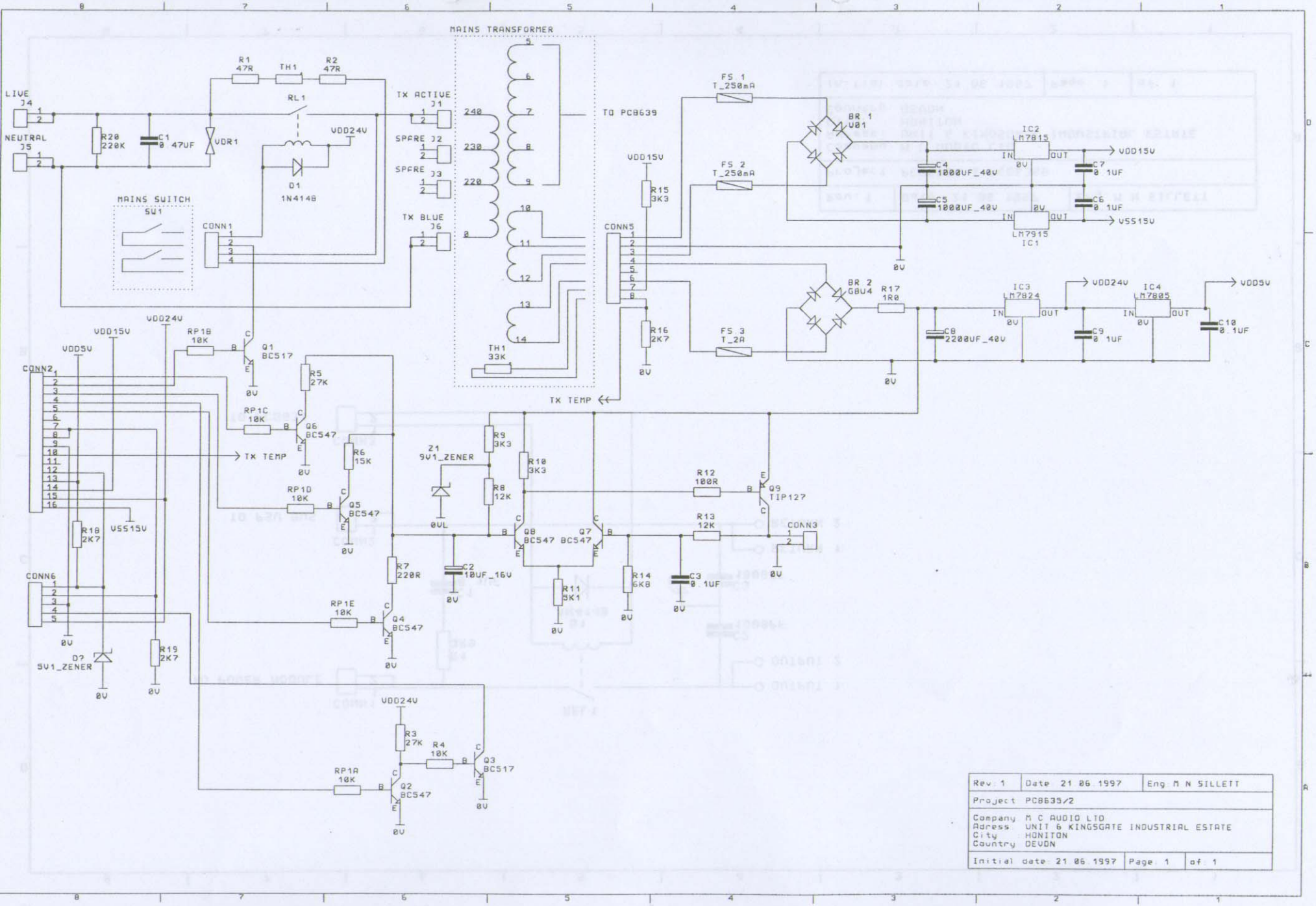


Rev: 1	Date: 21.06.1997	Eng: M N SILLETT
Project: PCB634/2		
Company: M C AUDIO LTD Adress: UNIT 6 KINGSGATE INDUSTRIAL ESTATE City : HONITON Country: DEVON		
Initial date: 21.06.1997	Page: 1	of: 1

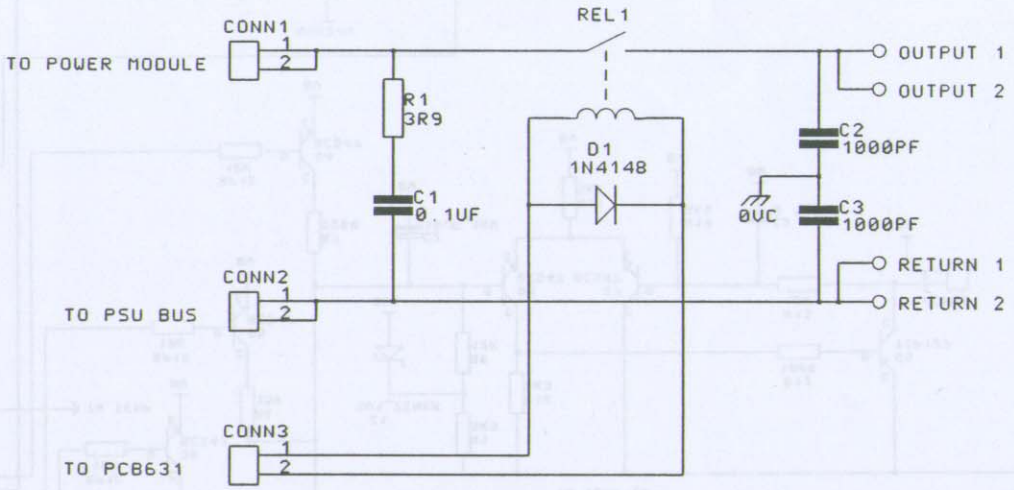

CONN1
R1
3K9
D1
UF4006
R5a
330R
R5
12R
TH1
33K
C5
47PF
0V
D3
1N4148
Q1
MJE340
R8
12R
Q2
2SC3281
R12
2R2
Q3
2SC3281
R19
2R2
Q10
2SC3281
OUTPUT TRANSISTORS
Q4 TO Q9
VDD+110V
C1
1UF_250V
R6
2K7
R7
150R
R9
1K5
C4
100UF_16V
Z1
15V_ZENER
Q11
BC547
R10
620R
R11
22R
R32
22R
R20
0R22
R27
0R22
D4
UF4006
OUTPUT
HARD LINK
PCB633 - PCB634
R3
3K3
TH2
33K
D5
1N4148
R4
2K7
D2
UF4006
VDD110V
R28
1K0
R31
330R
PCB634/2
PCB634/2
R29
22K
C2
22UF_63V
R30
22K
C3
22UF_63V
Rev: 1
Date: 21.06.1997
Eng: M N SILLETT
Project: PCB633/2
Company: M C AUDIO LTD
Adress: UNIT 6 KINGSGATE INDUSTRIAL ESTATE
City : HONITON
Country: DEVON
Initial date: 21.06.1997
Page: 1
of: 1



Rev: 1	Date: 21.06.1997	Eng: M N SILLETT
Project: PCB639/1		
Company: M C AUDIO LTD Adress: UNIT 6 KINGSGATE INDUSTRIAL ESTATE City : HONITON Country: DEVON		
Initial date: 21.06.1997	Page: 1	of: 1



Rev 1	Date 21 06 1997	Eng M N SILLETT
Project PCB635/2		
Company M C AUDIO LTD Adress UNIT 6 KINGSGATE INDUSTRIAL ESTATE City HONITON Country DEVON		
Initial date 21 06 1997	Page 1	of 1



Rev: 1	Date: 21.06.1997	Eng: M N SILLETT
Project: PCB636A & PCB636B		
Company: M C AUDIO LTD Adress: UNIT 6 KINGSGATE INDUSTRIAL ESTATE City : HONITON Country: DEVON		
Initial date: 21.06.1997	Page: 1	of: 1