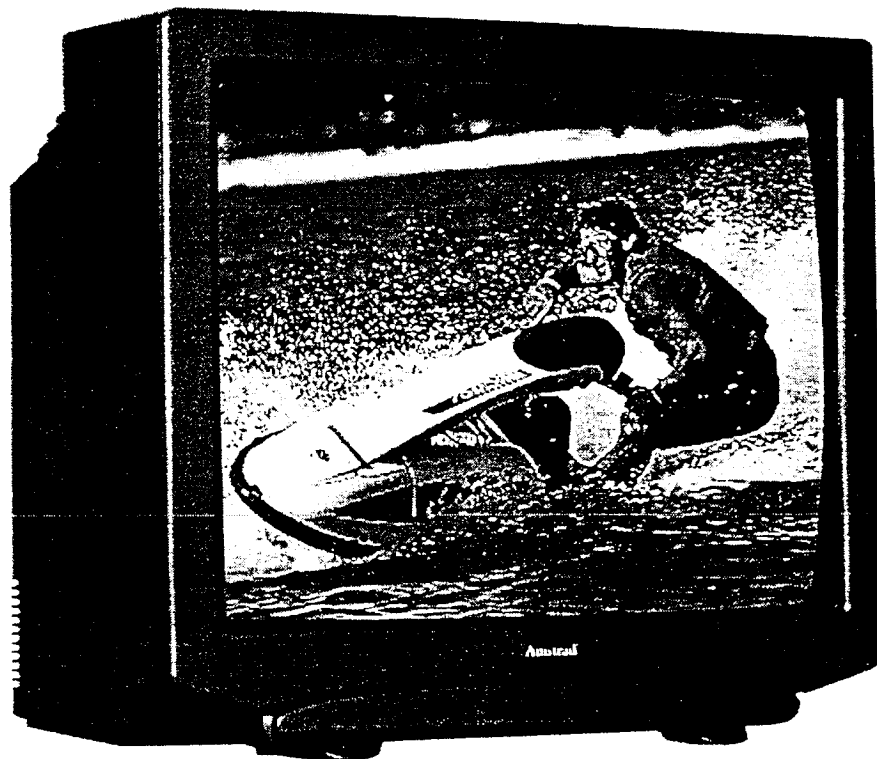


# Amstrad

For Service Manuals Contact  
MAURITRON TECHNICAL SERVICES  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
Tel:- 01844-351694 Fax:- 01844-352554  
Email:- enquiries@mauritron.co.uk



## **CTV3021N**

### **Nicam Digital Stereo TV**

### **With Teletext**

### **Service Manual**

| Contents                                      | Page No. | Technical Specifications           |
|-----------------------------------------------|----------|------------------------------------|
| Contents, Safety and Technical Specifications | 2        | Receiver System: PAL I             |
| Chassis Adjustment Procedure                  | 3        | Channels: 21-69                    |
| Trouble Shooting Guide for PSU                | 4        | Frequency range: 470-862MHz UHF    |
| Troubleshooting Guide for Main Chassis        | 5        | Scanning : 625 Lines               |
| Block Diagram                                 | 6        | IF Frequency Video: 39.5MHz        |
| PSU and Line Output Schematic Diagram         | 7        | Audio: 6.0MHz                      |
| NICAM Schematic Diagram                       | 8        | Preset Channels: 70                |
| CRT Driver Schematic Diagram                  | 9        | Audio Output: 4W rms X 2 @ 10% THD |
| Nicam and CRT PCB Component Layout            | 10       | Power Consumption: 70W Max.        |
| Notes                                         | 11       | Power Source: 230VAC @ 50Hz        |
| Main Schematic Diagram with Oscillographs     | 12-13    | Weight: 21.5kg                     |
| Main PCB Component Layout                     | 14       | Antenna Socket: 75 Ohm Co-axial    |
| Cabinet Exploded View and Parts List          | 15       | CRT: 21" / 55cm 90°                |
| Electrical Parts List                         | 16-19    |                                    |
| Scart Connector Diagram and Connections       | 19       |                                    |
| Voltage Charts                                | 20-23    |                                    |

Date of first publication April, 98  
 Manufacturer reserves the right to supply selective components.  
 Information published was latest at the time of print.

For Service Manuals Contact  
**MAURITRON TECHNICAL SERVICES**  
 8 Cherry Tree Rd, Chinnor  
 Oxon OX9 4QY  
 Tel:- 01844-351694 Fax:- 01844-352554  
 Email:- enquiries@mauritron.co.uk

## SAFETY TESTS

**Please Note:** When any work is carried out on this product, the following safety tests must be carried out to ensure continued safety.

- 1) Flash test from the mains lead with live and neutral together to all accessible metal points at 3kV.
- 2) Megger test at 500V dc from the mains lead with live and neutral joined together to all accessible external metal points, reading must not fall below 4M  $\Omega$ .

In keeping with our policy of continually improving our Service and Technical quality of our products, we reserve the right to change type manufacturer, source of supply or technical specifications at any time.

**Amstrad plc**  
**Brentwood House, 169 Kings Road, Essex CM14 4EF**

# Chassis Adjustment Procedure

## 1- System Voltage (+B) Adjustment :

- Before switching on TV, all potentiometers should be adjusted at medium level. Then TV is switched on;
- Adjust all of the analog parameters to minimum with RC
- Adjust P1 trimpot until find +115 V on the cathode of D2 diode

## 2- AFT Adjustment:

- Place a balloon coil (300 Ohm dc resistance ) parallel to L104
- Apply 80 dB uV 38.9 MHz (39.5 MHz for I ) signal via balloon coil
- Connect a voltmeter to aft pin (pin 9) of IC301
- Adjust T101 coil until the voltage of this pin being 2.5 V dc

## 3- Adjustment of G2:

- Apply Philips Test pattern
- Adjust all of the analog parameters to minimum with RC
- Adjust G2 trimpot until seeing two bars on gray scale

## 4- Horizontal and Vertical Adjustment:

- Apply Philips Test pattern signal
- Center the picture horizontally while picture shifting to right and left with P101,
- Make vertical amplitude adjustment with P602 until seeing top and lower lines of picture will be seen
- Center the picture with P601

## 5- AGC Adjustment:

- Apply Philips Test Pattern whose amplitude is 60 dB uV to the rf input
- Adjust P102 until find a picture without snowy

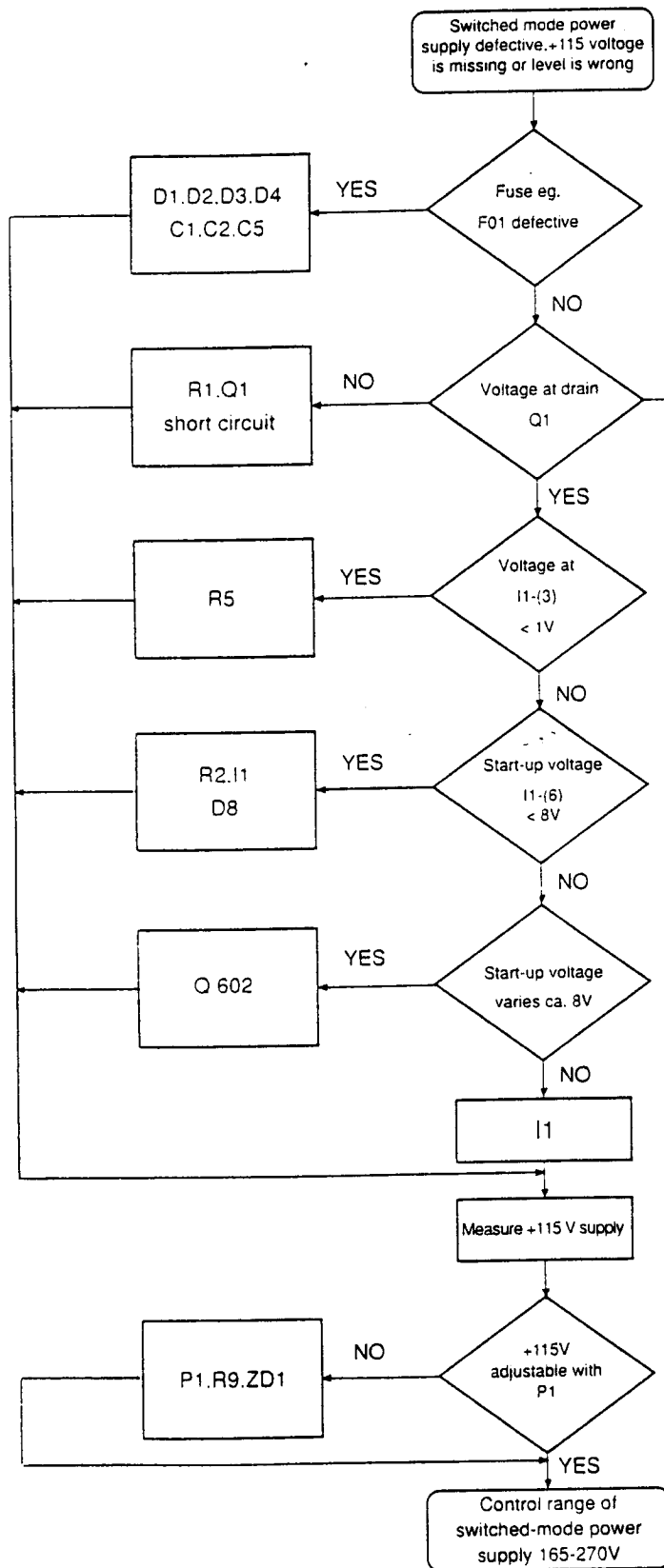
## 6- Focus Adjustment:

- Apply Cross-Hatch Pattern signal
- Find the optimum concentration point between H and V intersection in the middle of screen.

## 7- White Balance Adjustment :

- Apply Philips Test Pattern signal
- Adjust all of the trimpots on CRT board to medium level
- Adjust color, contrast, brightness to minimum by RC
- Adjust G2
- Apply white pattern, settle in the probe of color analyzer to screen
- Increase brightness until getting Y=10 nits
- Adjust x=270 - 276 nits y=270 - 276 nits via "VR201, VR203, VR205"
- Increase brightness and contrast until Y=90 - 100 nits
- Adjust x, y to same values via "VR202 and VR204"
- Check white balance at high and low contrast level. Again make adjustment if it's necessary.

## Trouble Shooting Guide for Power Supply



### Important Service Note :

Before changing a component in the Primary Mains Stage it is imperative, that C5 is discharged by a resistor of approx. 100 Ohm.

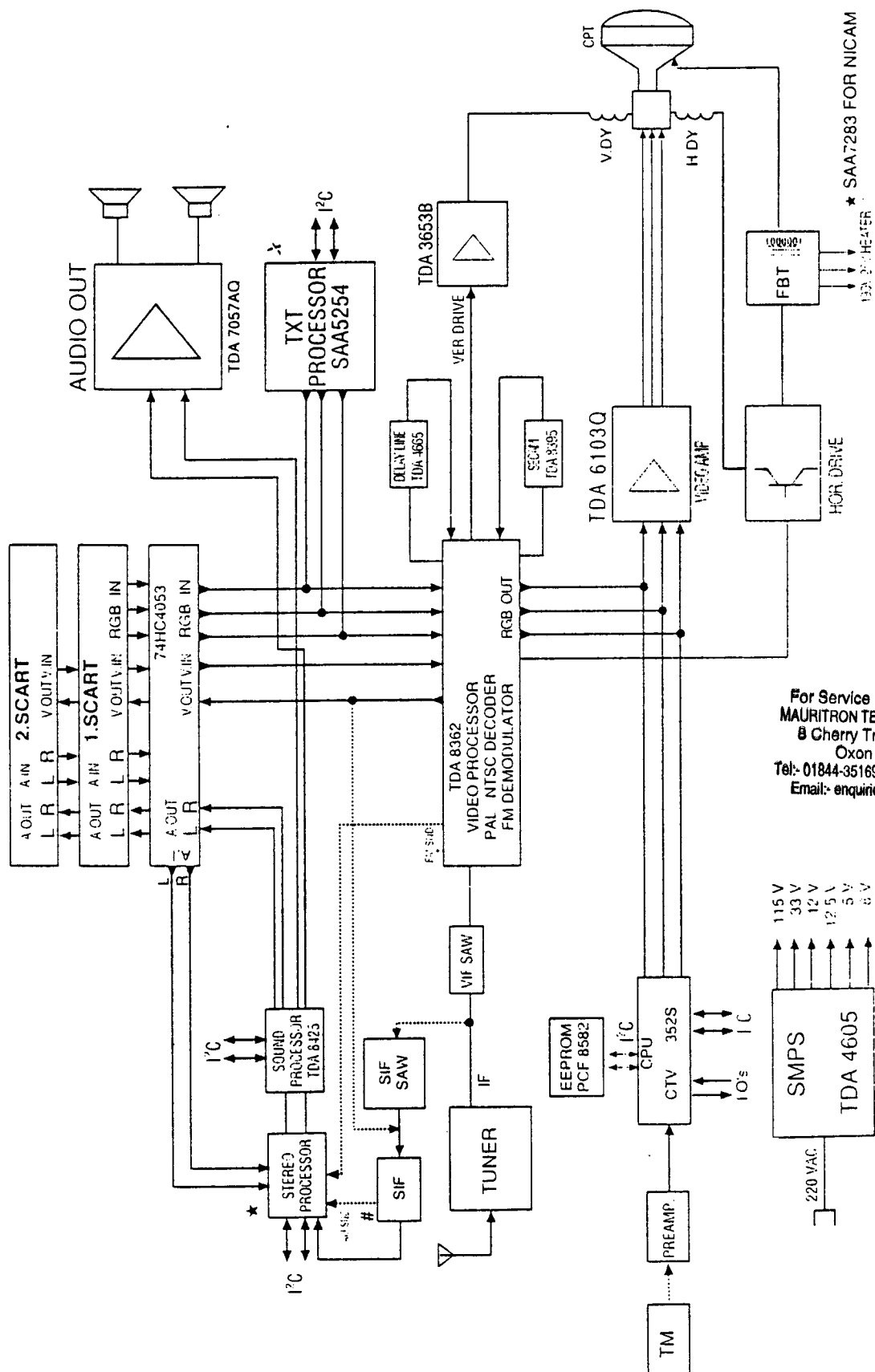
Attention! A short circuit transistor T1 can be a result of a defective D20, R20, or the cut-off components D5, R3

For Service Manuals Contact  
**MAURITRON TECHNICAL SERVICES**  
 8 Cherry Tree Rd, Chinnor  
 Oxon OX9 4QY  
 Tel:- 01844-351694 Fax:- 01844-352554  
 Email:- [enquiries@mauritron.co.uk](mailto:enquiries@mauritron.co.uk)

## Troubleshooting Guide for Main PCB

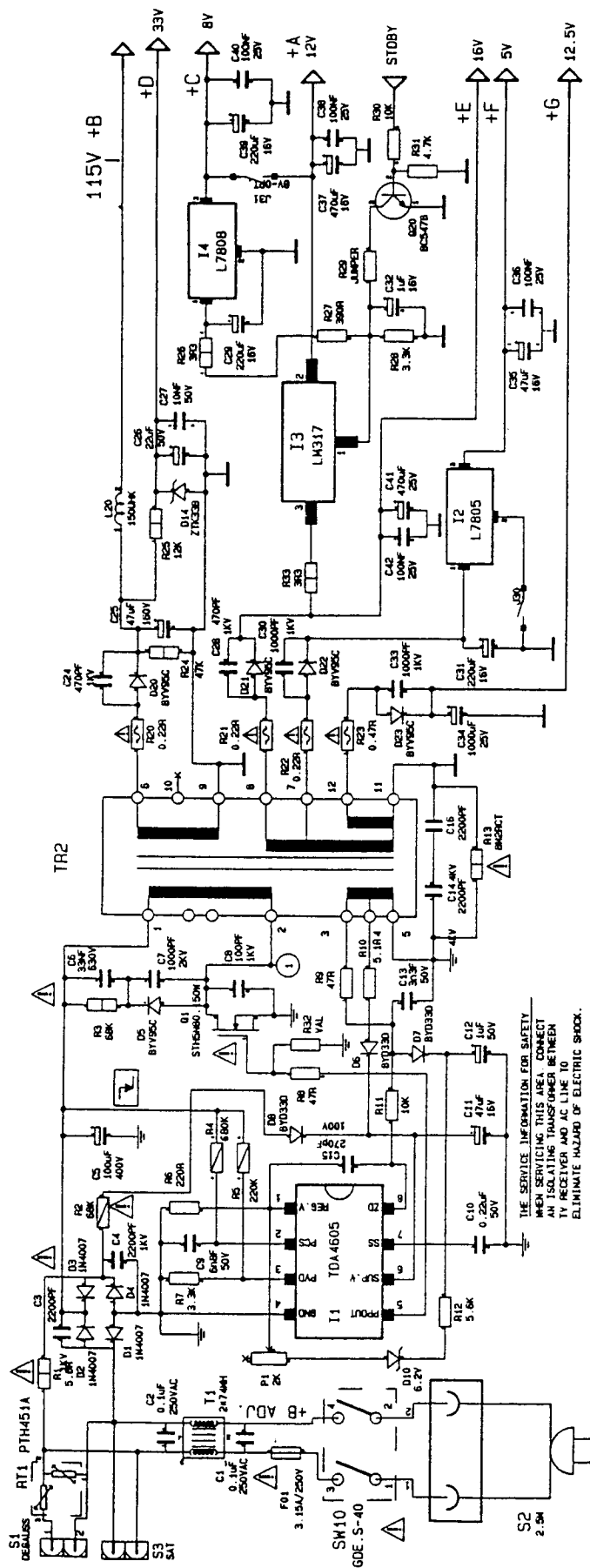
| TROUBLE                     | CHECK POINTS                                                                                               |
|-----------------------------|------------------------------------------------------------------------------------------------------------|
| No color                    | I101, T102, C127, I102, check pin 38-SSC                                                                   |
| No vertical deflection      | Check +K, I601, pin 42 I401, pin 43 I401                                                                   |
| Vertical linearity          | C 625, R 623                                                                                               |
| Vertical size               | C 625, R 624                                                                                               |
| Vertical shift              | R 626, P 601                                                                                               |
| Horizontal linearity        | L 601, C 608                                                                                               |
| Horizontal size             | +B, C 607, L 602                                                                                           |
| Flue picture                | I101 pin 25, ABL, FOCUS, HEATER, EHT                                                                       |
| Dark picture                | I101 pin 17, SCREEN, EHT, +M                                                                               |
| Noise picture               | TU01, AGC, IF, FI101                                                                                       |
| Vert./horizontal synchrony  | I401                                                                                                       |
| Interference                | TU01, IF, FI101                                                                                            |
| No sound                    | Check I101 pin 5 and pin 50, I401 pin 3, pin 5, +G                                                         |
| Low sound                   | I101 pin 5, pin 50, I401 pin 5, +G, R 403                                                                  |
| Sound distortion            | I401, +G, R 403                                                                                            |
| Contrast                    | I301 pin 5, I101 pin 25, ABL                                                                               |
| Brightness                  | I301 pin 3, I101 pin 17                                                                                    |
| Color saturation            | I301 pin 4, I101 pin 26                                                                                    |
| Tuning                      | I301 pin 1, Q 301, +D, TU01                                                                                |
| Memory                      | I 302, I 301, SDA, SCL                                                                                     |
| Band select                 | I 301 pin 7/8, I 303, +K, TU01                                                                             |
| No video-out on the SCART   | Check TV-VID signals, Q 651                                                                                |
| No video-in on the SCART    | Check I301 pin 12, I101 pin 16 on AV mode, check the video signals on AV mode SCART pin 20 and I101 pin 15 |
| No sound out on the SCART   | I101 pin 1, Q 653, Q654                                                                                    |
| No sound in on the SCART    | Check the audio signals on SCART pin 2/6 and I101 pin 6                                                    |
| No remote control reception | Check signals on pin 3 IR01 and I301 pin 35                                                                |

## Block Diagram

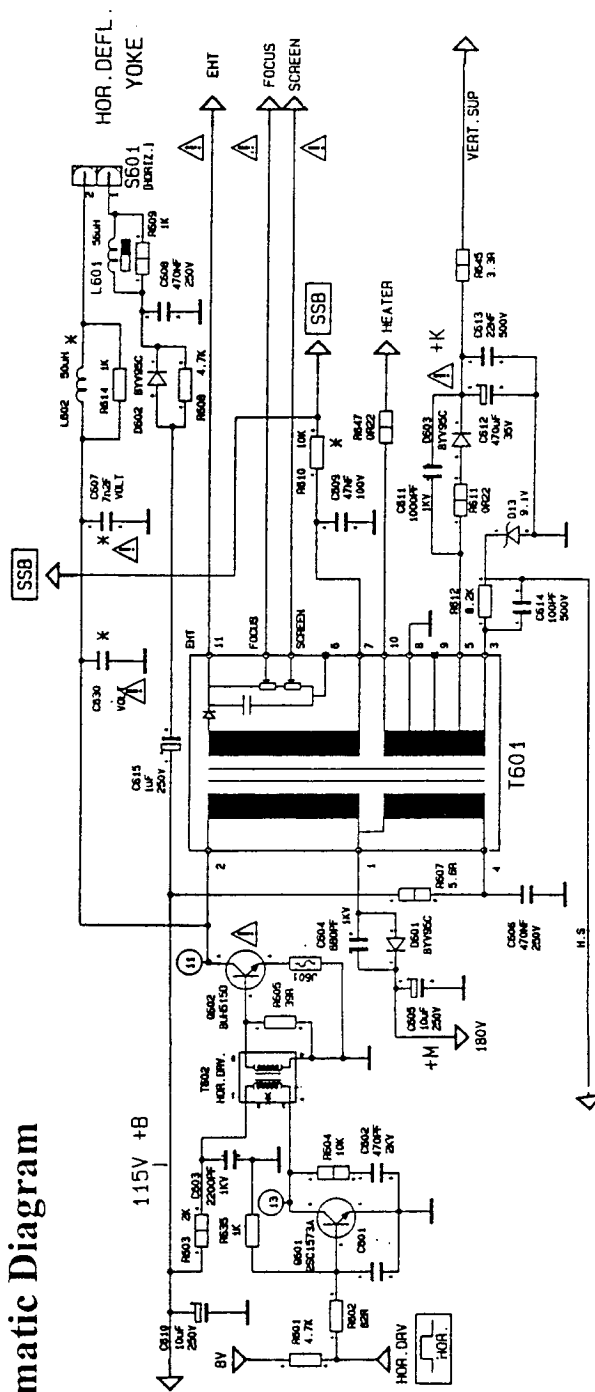


**For Service Manuals Contact**  
**MAURITRON TECHNICAL SERVICES**  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
Tel: 01844-351694 Fax: 01844-352554  
Email: [enquiries@mauritron.co.uk](mailto:enquiries@mauritron.co.uk)

## PSU Schematic Diagram



## Line Output Schematic Diagram



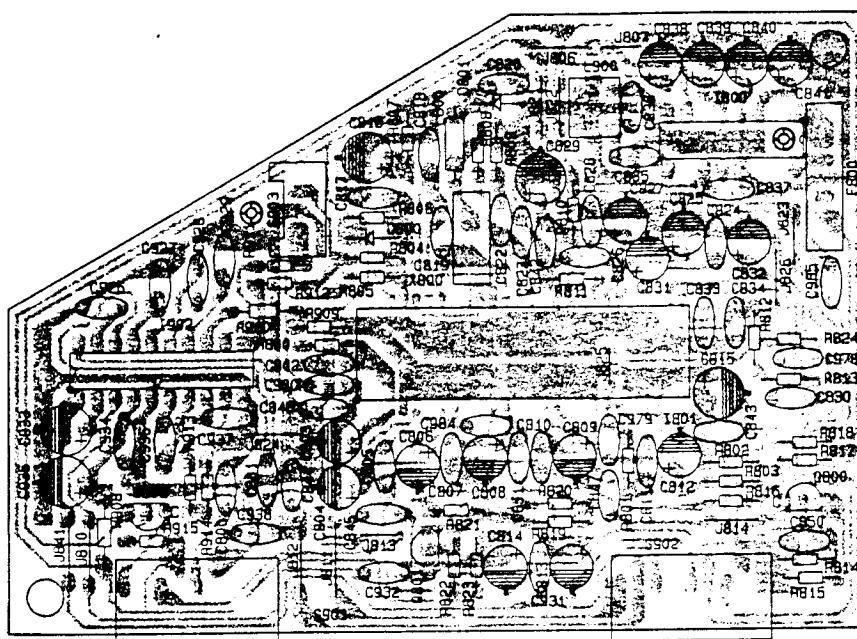
## 8





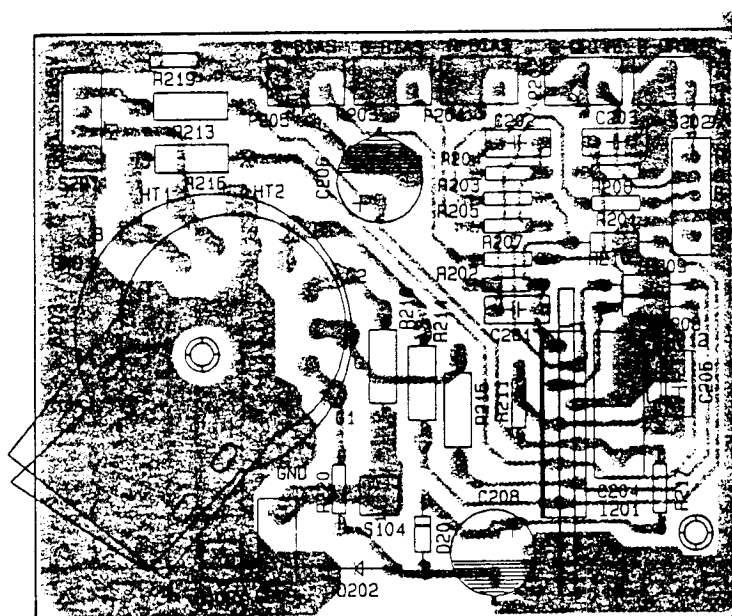


## Nicam PCB Component Layout



**For Service Manuals Contact**  
**MAURITRON TECHNICAL SERVICES**  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
**Tel: 01844-351694 Fax: 01844-352554**  
**Email: [enquiries@mauritron.co.uk](mailto:enquiries@mauritron.co.uk)**

## CRT PCB Component Layout



## Notes:

For Service Manuals Contact  
**MAURITRON TECHNICAL SERVICES**  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
Tel:- 01844-351694 Fax:- 01844-352554  
Email:- [enquiries@mauritron.co.uk](mailto:enquiries@mauritron.co.uk)

1

2

3

4

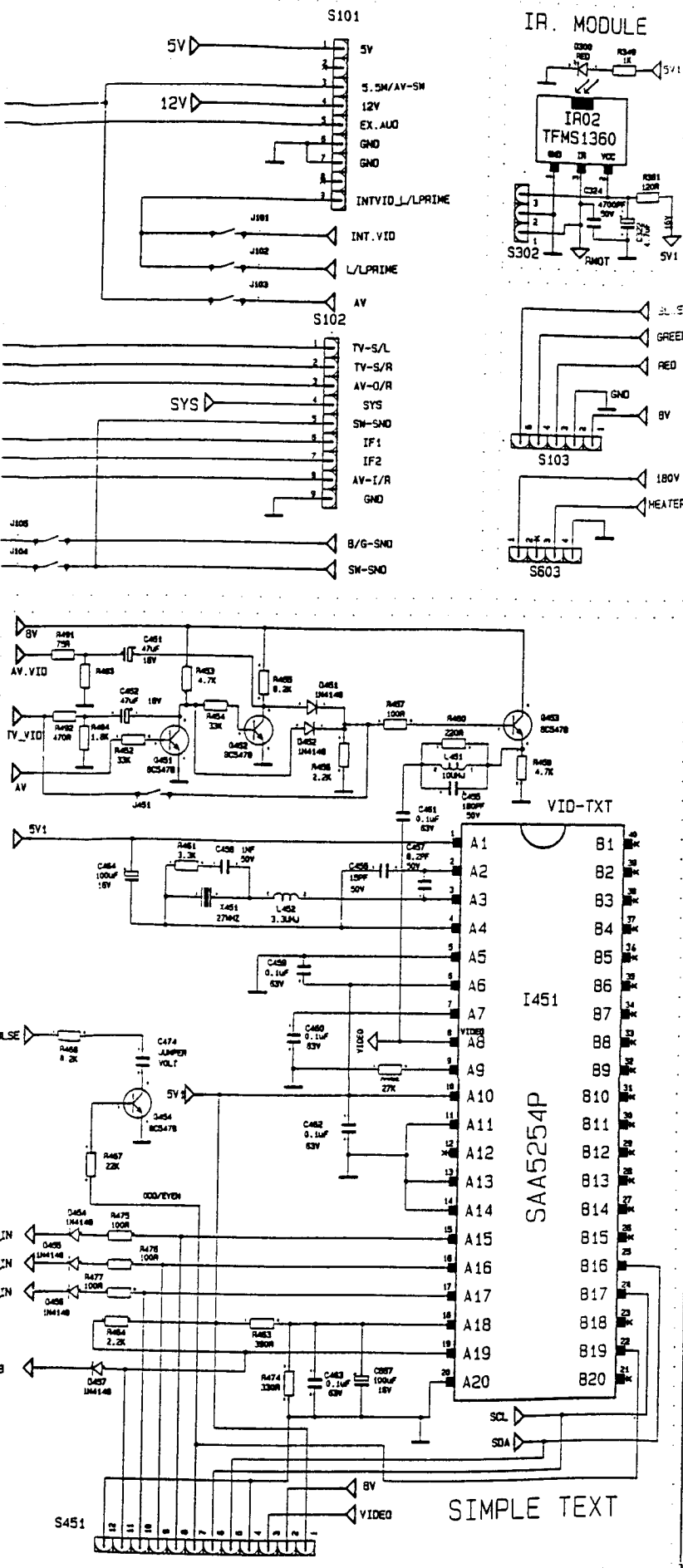
5



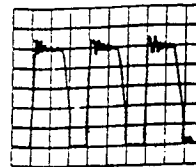
**Tel:- 01844-351694 Fax:- 01844-352554**  
**Email:- [enquiries@mauritron.co.uk](mailto:enquiries@mauritron.co.uk)**





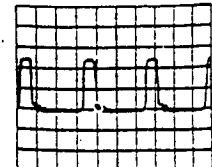


1) 5 usn/div 100 volt/div



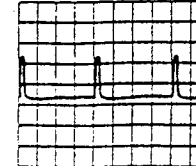
Drain of Q1

2) 20 usn/div 2vott/div



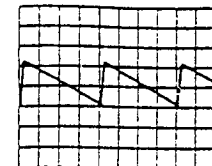
IC 301 pin 26

3) 5m sn/div 2vott/div



IC 301 pin 27

4) 5 msn/div 0,5 volt/div



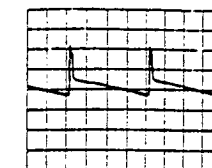
IC 101 pin 41

5) 5 msn/div 1 volt/div



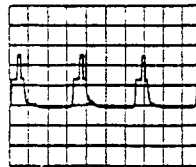
IC 601 pin 3

6) 5 msn/div 20 volt/div



IC 601 pin 5

7) 20 usn/div 2 volt/div



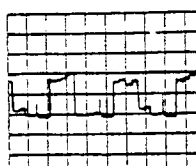
IC 101 pin 38

8) 20 usn/div 2 volt/div



IC 101 pin 20

9) 20 usn/div 2 volt/div



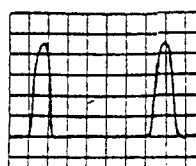
IC 101 pin 19

10) 10 usn/div 2 volt/div



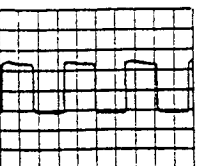
IC 101 pin 18

11) 10 usn/div 250 volt/div



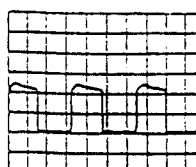
Collector of Q602

12) 20 usn/div 0.2 volt/div



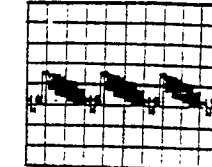
IC 101 pin 37

13) 20 usn/div 50 volt/div



Collector of Q601

14) 20 usn/div 1 volt/div

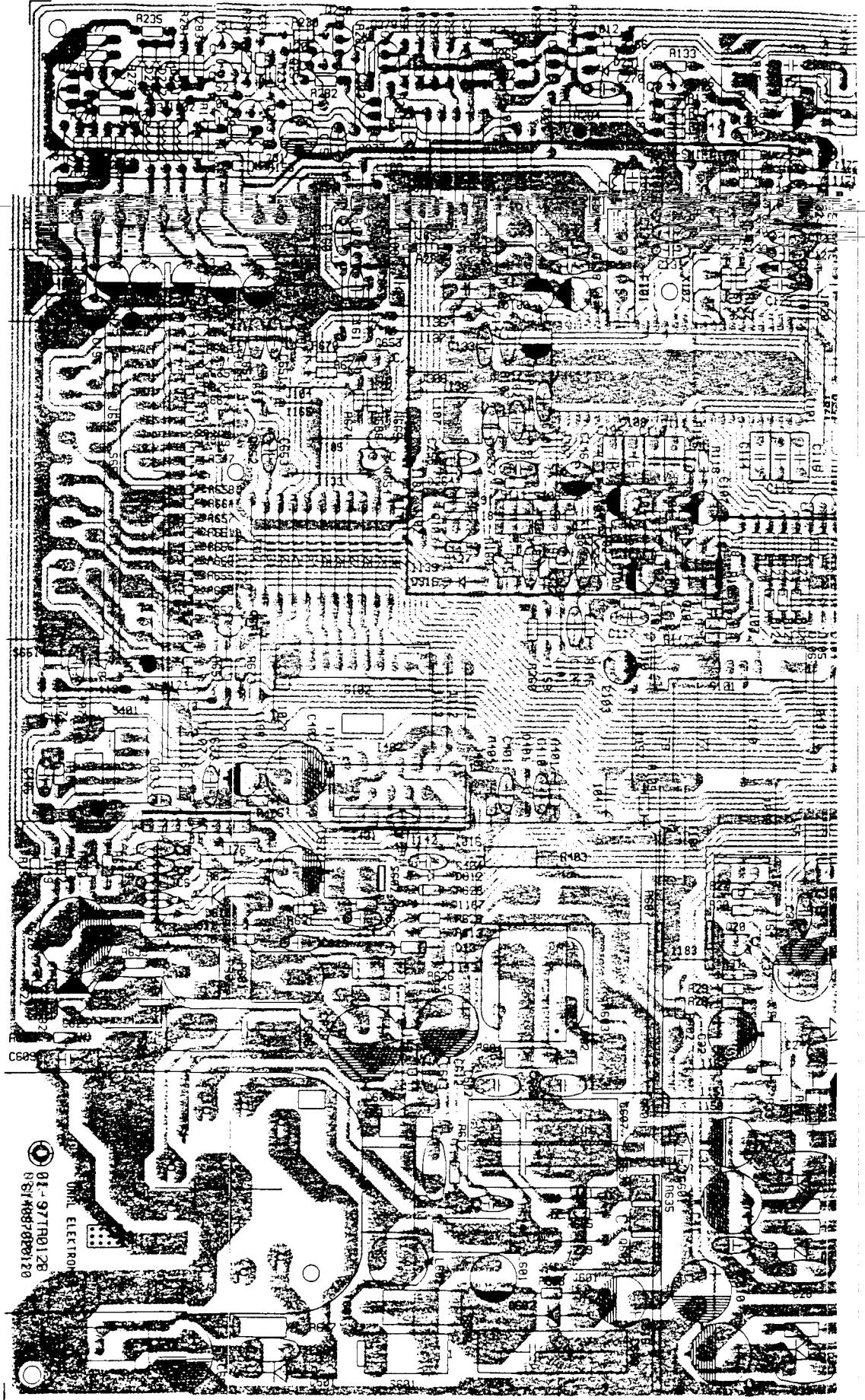


IC 101 pin 13

# MAIN SCHEMATIC DIAGRAM AND OSCILLOGRAPHS

**For Service Manuals Contact**  
**MAURITRON TECHNICAL SERVICES**  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
Tel: 01844-351694 Fax: 01844-352554  
Email: [enquiries@mauritron.co.uk](mailto:enquiries@mauritron.co.uk)

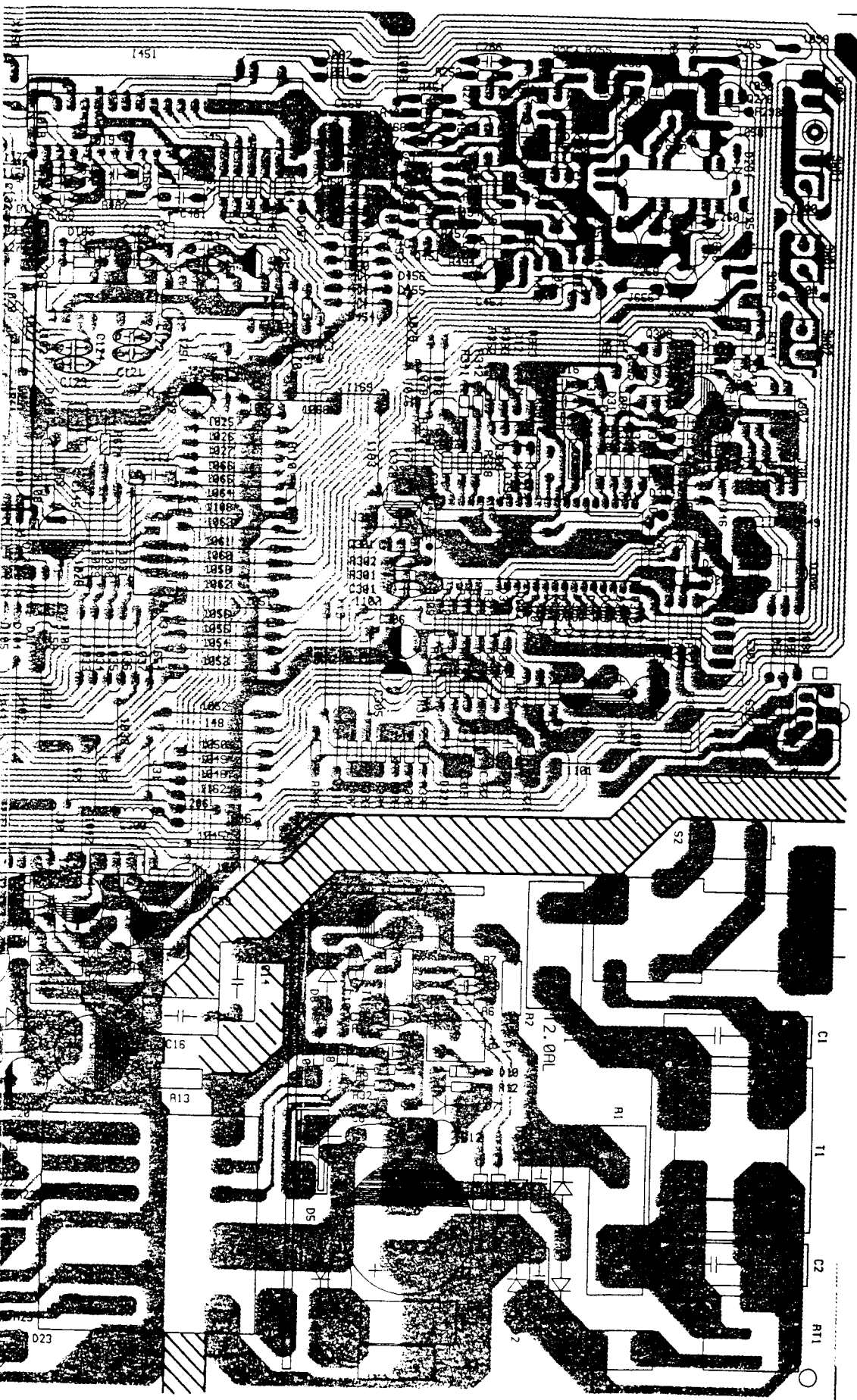
THE QUALITY OF  
THIS PAGE IS  
THE BEST THAT  
IS AVAILABLE





## This image shows a highly detailed and complex printed circuit board (PCB) layout. The board is densely packed with intricate circuitry, including numerous resistors, capacitors, integrated circuits, and other electronic components. The layout is characterized by a dense network of lines and pads, with various component values and designations visible throughout the board. The image is a high-contrast, black and white scan, emphasizing the geometric patterns and fine details of the PCB design.

# Component Layout



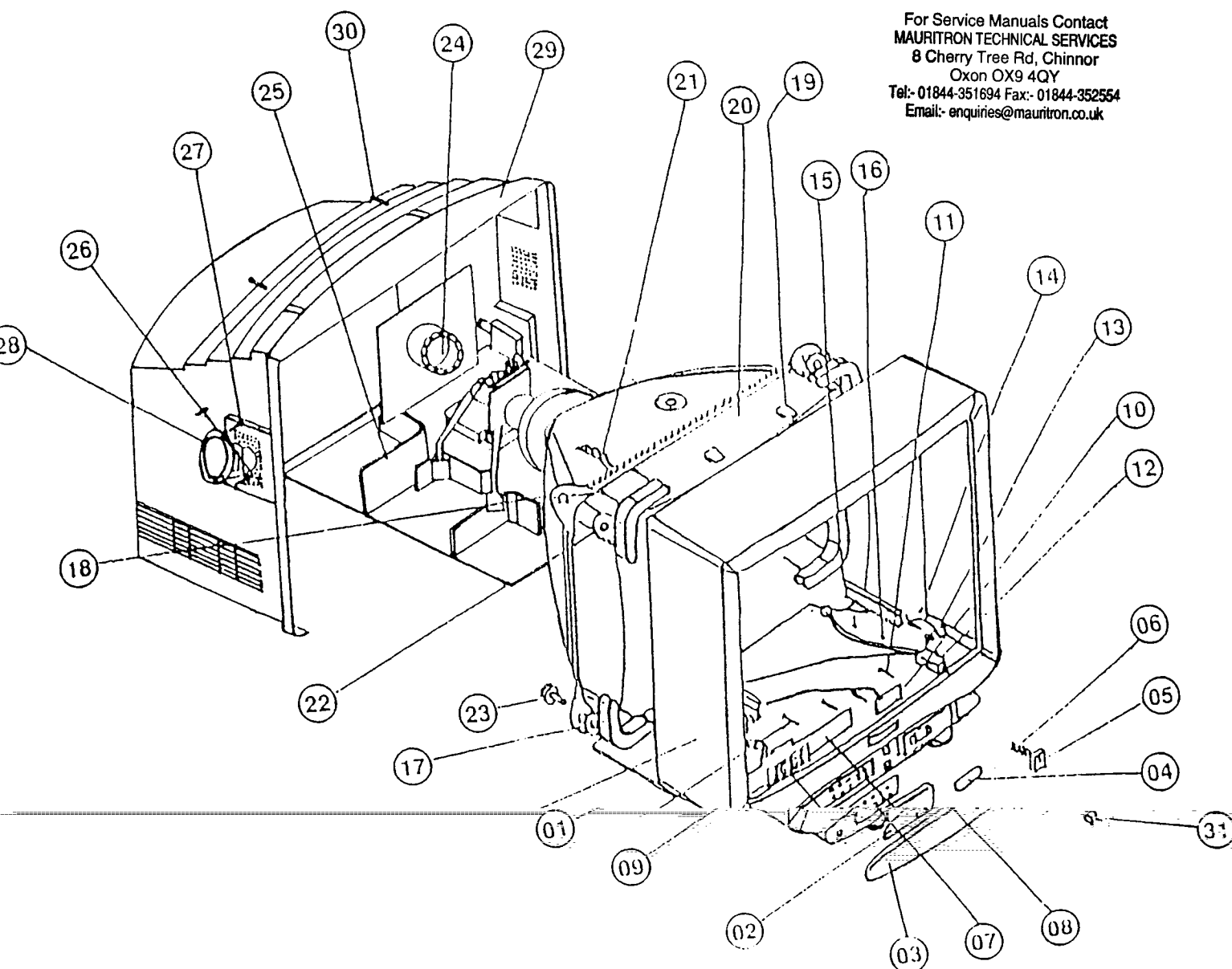
For Service Manuals Contact  
**MAURITRON TECHNICAL SERVICES**  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
Tel:- 01844-351694 Fax:- 01844-352554  
Email:- [enquiries@mauritron.co.uk](mailto:enquiries@mauritron.co.uk)

# CTV3021N

| Ref. No. | Description           | Pt. No. |
|----------|-----------------------|---------|
|          | Cabinet Parts List    |         |
| 01       | Front Cabinet         | 244471  |
| 02       | Control Panel Label   | 244482  |
| 03       | Front Door            | 244479  |
| 04       | Display Window        | 244503  |
| 05       | On Off Button         | 244476  |
| 06       | Spring On/Off Knob    | 244515  |
| 07       | Silicon Rubber        |         |
| 08       | Control PCB Assy      |         |
| 10       | Remote Sensor PCB     |         |
| 12       | On Off Switch S-40    | 244206  |
| 13       | Bracket On Off Switch |         |
| 15       | Holder Main PCB       |         |
| 17       | CRT Bracket           |         |
| 19       | Holder Rear Cabinet   |         |
| 20       | CRT 21"               | *       |

| Ref. No. | Description                           | Pt. No. |
|----------|---------------------------------------|---------|
|          | Cabinet Parts List                    |         |
| 21       | Angle Cable Mount                     |         |
| 22       | Rubber Donut                          |         |
| 24       | CRT PCB Assy                          | 244475  |
| 25       | Main PCB Assy                         | *       |
| 26       | Speaker Assy.                         | 244477  |
| 29       | Rear Cabinet                          | 244472  |
| 31       | Door Lock                             | 244481  |
| P603     | Power Cord LTBS 0.75 SQM<br>3M W Plug | 244205  |
|          | Speaker Holder                        | 244504  |
|          | Nicam PCB Assy                        | *       |
|          | Remote Control Handset                | 244179  |
|          | Battery Door Remote Control           | 244506  |
|          | User Instructions                     | 244485  |

*Note: Parts \* need authorisation from Amstrad, if to be issued*



## Electrical Parts List

| Ref. No.                                                                                                   | Description                   | Pt. No. |
|------------------------------------------------------------------------------------------------------------|-------------------------------|---------|
| <b>ICs</b>                                                                                                 |                               |         |
| I001                                                                                                       | IC TDA4605 SMP Regulator      | 244100  |
| I002                                                                                                       | IC L7805 5V 1A Reg.           | 271002  |
| I003                                                                                                       | IC LM317 12V Reg.             | 244101  |
| I004                                                                                                       | IC L7808 8V 1A Reg.           | 175075  |
| I101                                                                                                       | IC TDA8362-4X Video Pro       | 244492  |
| I201                                                                                                       | IC TDA6103Q CRT Col Driver    | 244449  |
| I301                                                                                                       | IC CTV352S V1.4 PCA84C841 Mic | 244262  |
| I302                                                                                                       | IC ST24C02B1 Memory           | 244302  |
| I402                                                                                                       | IC TDA7057Q Audio Out St      | 244450  |
| I451                                                                                                       | IC SAA5254P T/H/E Opt. Text   | 244306  |
| IC800                                                                                                      | IC TDA3845                    | 244184  |
| IC801                                                                                                      | IC SAA7283ZP Nicam Decoder    | 244185  |
| I902                                                                                                       | IC TDA8425                    | 244260  |
| <b>Transistors</b>                                                                                         |                               |         |
| Q1                                                                                                         | Tr. BUZ90A                    | 244235  |
| Q20,101,103<br>240,250,254<br>271,304-306<br>451-454,356<br>651-653,800<br>801                             | Tr. BC547B                    | 244151  |
| Q301                                                                                                       | Tr. PH2369                    | 242618  |
| Q251-253<br>308                                                                                            | Tr. BC558                     | 244238  |
| Q601                                                                                                       | Tr. 2SC1573 A                 | 244106  |
| Q602                                                                                                       | Tr.BHU515D 6A 1.5kV           | 244107  |
| <b>Diodes</b>                                                                                              |                               |         |
| D1-4                                                                                                       | D 1N4007                      | 170457  |
| D6,7,610                                                                                                   | D BYD33D                      | 242874  |
| D5,20-22<br>601-603                                                                                        | D BYV95C                      | 241078  |
| D010                                                                                                       | DZ 6.2V                       |         |
| D014                                                                                                       | D ZTK33B Temp. Comp.          | 244186  |
| D23                                                                                                        | D BYW72                       | 244108  |
| D801                                                                                                       | D BB405 Varicap               | 242642  |
| D012                                                                                                       | DZ 3.6V                       |         |
| D107,230-<br>232,306,310<br>311,313,315<br>316,319-321<br>325,391,393<br>401,451,452<br>454-457,612<br>800 | D 1N4148                      | 270754  |
| D300                                                                                                       | LED Front Panel               | 244520  |

| Ref. No.                   | Description                      | Pt. No. |
|----------------------------|----------------------------------|---------|
| <b>Coils &amp; Filters</b> |                                  |         |
| L20                        | Coil Choke 150uH                 | 244187  |
| L101,102,<br>105,451       | Coil 10uH Fixed Axial            | 244247  |
| L104,230,<br>231,321,302   | Coil 1uH Fixed Axial             | 244249  |
| L106,232-<br>234,452       | Coil 3.3uH Fixed Axial           | 244507  |
| L651,652                   | Coil 8.2uH Fixed Axial           | 244251  |
| L106,108                   | Coil Toko 31.9MHz TWS2098        | 244452  |
| L107,T900                  | Coil Toko 38.9MHz T-SW-2099      | 244190  |
| L301                       | Coil 12uH Fixed Axial            | 244250  |
| L601                       | Coil 50uH Linearity              | 244188  |
| TR001                      | Tx Switch Mode 3380              | 244191  |
| T601                       | Tx FBT Samsung 221               | 244192  |
| T602                       | Tx Horizontal Drive 33051        | 244193  |
| F102                       | Ceramic Filter 6MHz TPS6MB       | 244199  |
| F103                       | Ceramic Filter 6.5MHz TPS6.5MB   | 244456  |
| F104                       | Ceramic Filter 6MHz SFE6MB       | 244200  |
| FI01                       | Filter SAW OFWJ1951              | 244455  |
| FI800                      | Filter SAW OFWJ9250M             | 244457  |
| <b>Miscellaneous</b>       |                                  |         |
| RT01                       | Posistor PTH451A102BG180N29      | 244117  |
|                            | Coil Degauss 21"                 | 244474  |
| EM1                        | Line Filter 2*74mH               | 244454  |
| EM302                      | Pre-amp Remote Sensor            | 244496  |
|                            | TFMS1360                         |         |
| EM800                      | Crystal 8.192MHz                 | 244258  |
| F01                        | Fuse (T) 2A 250V AC              | 240082  |
| P1                         | VRSF 2k Ohm ½W V Type            | 244201  |
| P101,102                   | VRSF 10k Ohm ½W V Type           | 244202  |
| P201,203<br>205            | VRSF 470 Ohm ½W H Type           |         |
| P202,204                   | VRSF 1k Ohm ½W H Type            |         |
| P601                       | VRSF 5k Ohm ½W V Type            | 244203  |
| P602                       | VRSF 500 Ohm ½W V Type           | 244204  |
| S651                       | Socket Scart 21 Pin Black        | 153030  |
| S203                       | Socket CRT S811/K-HPS0359-01-040 | 244194  |
| SW001                      | Sw Power S-40                    | 244206  |
| SW301-304                  | Sw Tact SKHHLN 6x6               | 244119  |
| TU01 *                     | Tuner Samsung 20071 Note         | 244196  |
| TU01 *                     | Tuner TECC2949VG28C Note         | 244516  |
| X102                       | Crystal 4.433619MHz              | 241127  |
| X301                       | Crystal 10.00MHz System          | 242631  |
| X451                       | Crystal 27MHz Text               | 242659  |
| *                          | Note: Please check Tuner type    |         |

| Description                  | Ref. No.                                                           | Pt. No. |
|------------------------------|--------------------------------------------------------------------|---------|
| <b>Resistors</b>             |                                                                    |         |
| <b>Carbon 1/4W</b>           |                                                                    |         |
| 100 $\Omega$                 | R57,63,70                                                          |         |
| 390 $\Omega$                 | R51,58,65,352                                                      |         |
| 470 $\Omega$                 | R56,62,69                                                          |         |
| 680 $\Omega$                 | R64,71                                                             |         |
| 820 $\Omega$                 | R54                                                                |         |
| 1K $\Omega$                  | R203,207                                                           |         |
| 1.5K $\Omega$                | R74,220                                                            |         |
| 2.2K $\Omega$                | R212                                                               |         |
| 3.3K $\Omega$                | R55,61,68,72                                                       |         |
| 4.7K $\Omega$                | R608                                                               |         |
| 10K $\Omega$                 | R75-77                                                             |         |
| 15K $\Omega$                 | R217                                                               |         |
| 220K $\Omega$                | R211                                                               |         |
| 2.2M $\Omega$                | R73,D201                                                           |         |
| 4.7M $\Omega$                | R392                                                               |         |
| <b>Carbon Resistors 1/2W</b> |                                                                    |         |
| 39 $\Omega$                  | R605                                                               |         |
| 220 $\Omega$                 | R625                                                               |         |
| 1.5K $\Omega$                | R214-216                                                           |         |
| 82k $\Omega$                 | R208-210                                                           |         |
| 330k $\Omega$                | R4                                                                 |         |
| 820k $\Omega$                | R5                                                                 |         |
| <b>Resistors 1/6W</b>        |                                                                    |         |
| 5.1 $\Omega$                 | R10                                                                |         |
| 10 $\Omega$                  | R856                                                               |         |
| 47 $\Omega$                  | R8,9                                                               |         |
| 56 $\Omega$                  | R653                                                               |         |
| 75 $\Omega$                  | R110,491,655,656,658,674                                           |         |
| 82 $\Omega$                  | R107                                                               |         |
| 100 $\Omega$                 | R104,121-126,303,338-340,343<br>344,457,475-477,804,805,812        |         |
| 120 $\Omega$                 | R361                                                               |         |
| 180 $\Omega$                 | R105,815,820                                                       |         |
| 220 $\Omega$                 | R6,460,651                                                         |         |
| 270 $\Omega$                 | R101                                                               |         |
| 330 $\Omega$                 | R349,474                                                           |         |
| 390 $\Omega$                 | R27,201,463                                                        |         |
| 470 $\Omega$                 | R27,492,818,823                                                    |         |
| 1k $\Omega$                  | R103,120,131,145,205,301,312<br>323,333,336,635,659,813,854<br>859 |         |
| 1.5k $\Omega$                | R335                                                               |         |
| 1.8k $\Omega$                | R494,604,801                                                       |         |
| 2.2k $\Omega$                | R108,117,337,456,464,629,816,<br>821,910,913                       |         |

| Description                       | Ref. No.                                                                             | Pt. No. |
|-----------------------------------|--------------------------------------------------------------------------------------|---------|
| <b>Resistors Continued</b>        |                                                                                      |         |
| 3.3k $\Omega$                     | R28,302,341,342,461                                                                  |         |
| 3.9k $\Omega$                     | R620                                                                                 |         |
| 4.7k $\Omega$                     | R116,147,252,316,348,353,453<br>458,493,601,673,909,914                              |         |
| 5.1k $\Omega$                     | R7                                                                                   |         |
| 5.6k $\Omega$                     | R102,144,304,665,666,675                                                             |         |
| 6.8k $\Omega$                     | R115                                                                                 |         |
| 7.5k $\Omega$                     | R12                                                                                  |         |
| 8.2k $\Omega$                     | R31,455,468,612,630                                                                  |         |
| 10k $\Omega$                      | R11,30,127,130,132,147,152<br>310,315,318,321,322,326,360<br>604,610,621,663,808,811 |         |
| 12k $\Omega$                      | R139,307,390,391,632,662                                                             |         |
| 15k $\Omega$                      | R153,305,306,633                                                                     |         |
| 22k $\Omega$                      | R146,230,232,235,346,476,809<br>814,819                                              |         |
| 27k $\Omega$                      | R231,233,234,317,345,462                                                             |         |
| 33k $\Omega$                      | R803                                                                                 |         |
| 39k $\Omega$                      | R311,613                                                                             |         |
| 47k $\Omega$                      | R118,136,138,151,321,322,631<br>817,822                                              |         |
| 56k $\Omega$                      | R150                                                                                 |         |
| 68k $\Omega$                      | R2,3                                                                                 |         |
| 150k $\Omega$                     | R869                                                                                 |         |
| 220k $\Omega$                     | R325                                                                                 |         |
| 330k $\Omega$                     | R143                                                                                 |         |
| 680k $\Omega$                     | R806                                                                                 |         |
| 2.2M $\Omega$                     | R308                                                                                 |         |
| 3.3M $\Omega$                     | R140                                                                                 |         |
| <b>Metal Oxide</b>                |                                                                                      |         |
| 1 $\Omega$ 3W                     | R403                                                                                 | 244465  |
| 1.5 $\Omega$ 1/2W                 | R624                                                                                 | 244466  |
| 3.3 $\Omega$ 1W                   | R645                                                                                 | 255168  |
| 5.6 $\Omega$ 5W                   | R607                                                                                 | 244208  |
| 220 $\Omega$ 1/2W                 | R627                                                                                 | 244508  |
| 470 $\Omega$ 1/2W                 | R626                                                                                 | 176382  |
| 1k $\Omega$ 3W                    | R609                                                                                 | 244216  |
| 12k $\Omega$ 1W                   | R25                                                                                  | 244217  |
| 47k $\Omega$ 1W                   | R24                                                                                  | 194709  |
| <b>Resistor Ceramic Coated</b>    |                                                                                      |         |
| 5.6 $\Omega$ 5W                   | R1                                                                                   | 244208  |
| 2k $\Omega$ 5W                    | R603                                                                                 | 244209  |
| <b>Resistor Metal Film Fusing</b> |                                                                                      |         |
| 0.22 $\Omega$ 1/2W                | R21,22,611                                                                           | 244467  |

For Service Manuals Contact  
**MAURITRON TECHNICAL SERVICES**  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
Tel:- 01844-351694 Fax:- 01844-352554  
Email:- enquiries@mauritron.co.uk

| Description                       | Ref. No.                                                                                              | Pt. No. |
|-----------------------------------|-------------------------------------------------------------------------------------------------------|---------|
| <b>Resistors Continued</b>        |                                                                                                       |         |
| <b>Resistor Metal Fusing</b>      |                                                                                                       |         |
| 0.22 $\Omega$ ½W                  | R20,23,26,647                                                                                         | 244220  |
| <b>Resistor Coat Insulated</b>    |                                                                                                       |         |
| 4.4M $\Omega$ ½W                  | R13                                                                                                   | 244210  |
| <b>Resistor Non-flammable C F</b> |                                                                                                       |         |
| 1 $\Omega$ 1/6W                   | R908                                                                                                  | 244509  |
| 1 $\Omega$ ¼W                     | R802,810                                                                                              | 244212  |
| 2.2 $\Omega$ 1/6W                 | R154                                                                                                  | 244213  |
| 4.7 $\Omega$ 1/6W                 | R137                                                                                                  | 244214  |
| 10 $\Omega$ 1/6W                  | R800                                                                                                  | 244215  |
| 2.7k $\Omega$ ½W                  | R52,59,66                                                                                             | 244510  |
| <b>Ceramic Capacitors</b>         |                                                                                                       |         |
| 8.2pF                             | C457                                                                                                  | 176344  |
| 10pF                              | C201-203,834                                                                                          |         |
| 15pF                              | C456                                                                                                  |         |
| 18pF                              | C127,301,315,316                                                                                      |         |
| 22pF                              | C102,310-313                                                                                          |         |
| 33pF                              | C160,161                                                                                              |         |
| 39pF                              | C835                                                                                                  |         |
| 100pF                             | C614,818,819,978,979                                                                                  |         |
| 100pF 1kV                         | C8 !                                                                                                  |         |
| 220pF                             | C319,824                                                                                              |         |
| 330pF                             | C652                                                                                                  | 193757  |
| 390pF                             | C830                                                                                                  |         |
| 470pF 1kV                         | C15,24,28                                                                                             |         |
| 470pF 2kV                         | C602 !                                                                                                |         |
| 680pF 1kV                         | C604 !                                                                                                |         |
| 1000pF                            | C620                                                                                                  |         |
| 1000pF 1kV                        | C30,33,611 !                                                                                          |         |
| 1000pF 2kV                        | C7 !                                                                                                  |         |
| 2200pF 1kV                        | C3,4,603 !                                                                                            |         |
| 2200pF 4kV                        | C14 !                                                                                                 |         |
| 4700pF                            | C621,622,653                                                                                          | 244223  |
| 0.001 $\mu$ F                     | C121,122,199,407,458,623,844,845-847,944,945                                                          |         |
| 0.0047 $\mu$ F                    | CARKA                                                                                                 |         |
| 0.0068 $\mu$ F                    | C209 1kV !                                                                                            |         |
| 0.01 $\mu$ F                      | C27,129,130,850,851,947,948                                                                           |         |
| 0.022 $\mu$ F                     | C135,137,142,613                                                                                      |         |
| 0.047 $\mu$ F                     | C633                                                                                                  |         |
| 0.1 $\mu$ F                       | C36,38,40,42,120,123,124,126134,153,157,252,318,321,325401,802,805,807,810,826,828833,842,843,934,984 |         |
|                                   |                                                                                                       |         |
|                                   |                                                                                                       |         |
|                                   |                                                                                                       |         |

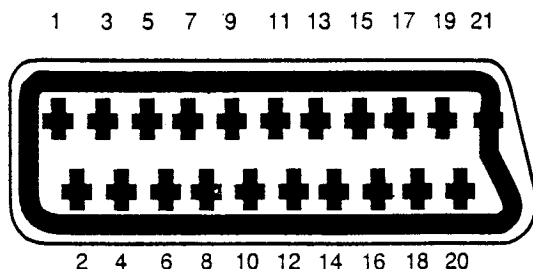
| Description | Ref. No.                                                    | Pt. No. |
|-------------|-------------------------------------------------------------|---------|
|             | Capacitors Continued                                        |         |
|             | Poly                                                        |         |
| 0.0033μF    | C13,101                                                     |         |
| 0.0047μF    | C125,131                                                    |         |
| 0.0068μF    | C9,929,937                                                  |         |
| 0.01μF      | C113                                                        |         |
| 0.015μF     | C926,927                                                    |         |
| 0.022uF     | C823                                                        |         |
| 0.047μF     | C811                                                        |         |
|             | Electrolytic                                                |         |
| 1μF 16V     | C32,128,305,309                                             | 193420  |
| 1μF 25V     | C103,132                                                    | 244512  |
| 1μF 50V     | C12,813,814,827                                             | 20062   |
| 1μF 250V    | C615                                                        | 157564  |
| 2.2μF 16V   | C141,308,806,809                                            | 242754  |
| 2.2μF 25V   | C136,839                                                    | 244513  |
| 2.2μF 50V   | C625                                                        | 201720  |
| 2.2μF 250V  | C208                                                        | 244279  |
| 4.7μF 16V   | C146,192,841                                                | 1409167 |
| 10μF 16V    | C104,107,109,140,150,154,158<br>306,307,812,825,831,832,840 | 157567  |
| 10μF 250V   | C206,605,610                                                | 241711  |
| 22μF 50V    | C26,838                                                     | 270239  |
| 33μF 16V    | C156                                                        | 270520  |
| 47μF 16V    | C11,35,41,118,322,451,452,803<br>804,808,829                | 193442  |
| 47μF 160V   | C25 !                                                       | 273721  |
| 100μF 16V   | C320,657,815,933,935                                        | 157568  |
| 100μF 63V   | C627                                                        | 244230  |
| 100μF 400V  | C5 !                                                        | 270614  |
| 220μF 16V   | C29,31,39                                                   | 204605  |
| 220μF 50V   | C628                                                        | 152629  |
| 470μF 35V   | C612                                                        | 150919  |
| 470μF 16V   | C37                                                         | 242428  |
| 1000μF 25V  | C34 3mm Type                                                | 244514  |
| 1000μF 25V  | C402                                                        | 152567  |
| 1000μF 35V  | C626                                                        | 244231  |
|             | Metal Ploy Propylene                                        |         |
| 0.0068μF    | C607 ! 1.6kV                                                | 244232  |
| 0.1μF       | C2,204 ! 250VAC                                             | 171609  |
| 0.33μF      | C302,304                                                    |         |
| 0.47μF      | C1,606,608 ! 250VAC                                         | 241384  |

| Description        | Ref. No.                                                | Pt. No. |
|--------------------|---------------------------------------------------------|---------|
|                    | <b>Capacitors Continued</b>                             |         |
|                    | <b>Metal Ployester</b>                                  |         |
| 0.01 $\mu$ F       | C133                                                    |         |
| 0.033 $\mu$ F      | C928,936                                                |         |
| 0.033 $\mu$ F      | C6 ! 630V                                               |         |
| 0.047 $\mu$ F 100V | C6009                                                   |         |
| 0.1 $\mu$ F        | C105,108,110-112,114-116,134<br>303,459,460,462-464,624 |         |
| 0.22 $\mu$ F       | C10,205,655,800,801,930-932<br>938                      |         |
| 0.33 $\mu$ F       | C822                                                    |         |
| 0.47 $\mu$ F       | C139,817                                                |         |

Amstrad reserves the rights to supply selective components.

## Specifications of the Connector (Euro Scart)

- 1- Audio output 1. right channel 0.5 VRMS/<1 k  $\Omega$
- 2- Audio input 1. right channel 0.5 VRMS (connected to No.6)
- 3- Audio output 2. left channel 0.5 VRMS (connected to No.1)
- 4- GND (audio)
- 5- GND
- 6- Audio input 2. left channel 0.5 VRMS/>10k  $\Omega$
- 7- RGB input, blue (B)
- 8- Switch signal video (status)
- 9- GND
- 10- Reserved for clock signals (not connected)
- 11- RGB input, green (G)
- 12- Reserved for remote control (not connected)
- 13- GND
- 14- GND switch signal RGB
- 15- RGB input, red (R)
- 16- Switch signal RGB
- 17- GND (video)
- 18- GND
- 19- Video output 1 Vpp/75 ohm
- 20- Video input 1 Vpp/75 ohm
- 21- Shield



**For Service Manuals Contact**  
**MAURITRON TECHNICAL SERVICES**  
 8 Cherry Tree Rd, Chinnor  
 Oxon OX9 4QY  
 Tel:- 01844-351694 Fax:- 01844-352554  
 Email:- enquiries@mauritron.co.uk

## Voltage Chart

| IC Type | TDA8362 Video Processing Unit     | I101             |
|---------|-----------------------------------|------------------|
| Pin No. | Description                       | Voltage          |
| 1       | Audio deemphasis & mod. sw        | 3V / 0.3Vrms     |
| 2       | IF-demod tuned circuit            | 6V               |
| 3       | IF-demod tuned circuit            | 6V               |
| 4       | Video identification o/p          | 5V               |
| 5       | SIF + Vol. control                | 0.5V- 4V         |
| 6       | External audio input              | 4V               |
| 7       | VIF output                        | 2.5V / 2.0Vpp    |
| 8       | Decoupling digital supply         | 8V               |
| 9,11    | Gnd.                              |                  |
| 10      | Vp                                | 8V               |
| 12      | Decoupling filter tuning          | 3.25V            |
| 13      | Internal CVBS input               | 4.25V            |
| 14      | Peaking Input                     | 4V               |
| 15      | External CVBS input               | 3.5V             |
| 16      | Chroma + A/V Switching input      | 0-8V             |
| 17      | Brightness control input          | 1-3.5V           |
| 18      | B output                          | 2.5-4Vpp         |
| 19      | G output                          | 2.5-4Vpp         |
| 20      | R output                          | 2.5-4Vpp         |
| 21      | RGB insertion and blanking        | 0V TV / 1.5V RGB |
| 22      | R input for insertion             | 3.3V / 0.7Vpp    |
| 23      | G input for insertion             | 3.3V / 0.7Vpp    |
| 24      | B input for insertion             | 3.3V / 0.7Vpp    |
| 25      | Contrast control input            | 0-3V             |
| 26      | Saturation control input          | 0-3V             |
| 27      | Hue control input / Chroma output | 6V               |
| 28      | B-Y input signal                  | 4V               |
| 29      | R-Y input signal                  | 4V               |
| 30      | R-Y output signal                 | 1.5V             |
| 31      | B-Y output signal                 | 1.5V             |
| 32      | 4.43MHz output to TDA8395         | 1.6V             |
| 33      | Loop filter burst phase detector  | 4.5V             |
| 34      | 3.58MHz Crystal connection        | 3V               |
| 35      | 4.43MHz Crystal connection        | 2V               |
| 36      | Start Horizontal oscillator       | 8V               |
| 37      | Horizontal output 15.6kHz         | 0.6Vpp           |
| 38      | Flyback input / sandcastle output | 6Vpp             |
| 39      | G2 loop filter                    | 3V               |
| 40      | G1 loop filter                    | 3.75V            |
| 41      | Vertical feedback input           | 2.5 & 1Vpp       |
| 42      | Vertical ramp generator           | 2.5 & 1.5Vpp     |
| 43      | Vertical output                   | 2.5V             |
| 44      | AFC output                        | na               |
| 45      | IF input                          | 4V               |
| 46      | IF input                          | 4V               |
| 47      | Tuner AGC Output                  |                  |

|    |                              |      |
|----|------------------------------|------|
| 48 | AGC decoupling capacitor     | 4V   |
| 49 | Tuner take over adjustment   |      |
| 50 | Audui output                 | 3.4V |
| 51 | Decoupling sound demodulator | 4.5V |
| 52 | Decoupling bandgap supply    | 6.5V |

| IC Type | TDA4665 Delay Line Circuit | I102    |
|---------|----------------------------|---------|
| Pin No. | Description                | Voltage |
| 1       | Digital Supply Voltage     | 5V      |
| 2       | NC                         |         |
| 3       | Digital Ground             | 0V      |
| 4       | Test Input                 | 0V      |
| 5       | Sandcastle Input           | -       |
| 6       | NC                         |         |
| 7       | Test Input                 |         |
| 8       | Test Input                 |         |
| 9       | Analogue Supply Voltage    | 5V      |
| 10      | Analogue Ground            | 0V      |
| 11      | R-Y output                 | 3.25V   |
| 12      | B-Y output                 | 3.25V   |
| 13      | Reference Current          | -       |
| 14      | B-Y input                  | 1.35V   |
| 15      | NC                         |         |
| 16      | R-Y input                  | 1.35V   |

| IC Type | CTV352S Microcontroller Unit        | I301    |
|---------|-------------------------------------|---------|
| Pin No. | Description                         | Voltage |
| 1       | Tuning voluage control output       | 0-5V    |
| 2       | Volume control output               | 0-5V    |
| 3       | Brightness control output           | 0-5V    |
| 4       | Colour control output               | 0-5V    |
| 5       | Contrast control-Hue control output | 0-5V    |
| 6       | Tone balance control output         | -       |
| 7       | Band sw output 0                    | -       |
| 8       | Band sw output 1                    | -       |
| 9       | Analogue AFC sens input             | 2-4V    |
| 10      | Dual language sound input           | -       |
| 11      | VTR time constant control output    | -       |
| 12      | Ext/Int A/V Source control          | 0-5V TV |
| 13      | Keyboard scan line I/O              | -       |
| 14      | Keyboard scan line I/O              | -       |
| 15      | Keyboard scan line I/O              | -       |
| 16      | Keyboard scan line I/O              | -       |
| 17      | Keyboard scan line I/O              | -       |
| 18      | Keyboard scan line I/O              | -       |
| 19      | Keyboard scan line I/O              | -       |
| 20      | System mode strobe output           | 5V      |
| 21      | Ground                              | 0V      |
| 22      | OSD Red output                      | 4.5Vpp  |



|    |                                  |           |
|----|----------------------------------|-----------|
| 23 | OSD Green output                 | 4.5Vpp    |
| 24 | OSD Blue output                  | 4.5Vpp    |
| 25 | OSD Fast blanking output         | 4.5Vpp    |
| 26 | Horizontal Synchronisation input | 5Vpp      |
| 27 | Vertical Synchronisation input   | 5Vpp      |
| 28 | LC Osc input for OSD             | 5V        |
| 29 | LC Oscoutput for OSD             | 5V        |
| 30 | Test input connected to ground   | –         |
| 31 | Oscillator input 10MHz Crystal   | –         |
| 32 | Osc Output                       | 2V        |
| 33 | Power On reset I/O               | 5V        |
| 34 | Horizontal coinsidence input     | 4.5V      |
| 35 | RC-5 remote control input        | 4V        |
| 36 | Mono/stereo or language input    | –         |
| 37 | Sound effect control output      | –         |
| 38 | System select output             | –         |
| 39 | IC Bus clock signal output       | 5V & 5Vpp |
| 40 | IC Bus data signal output        | 5V & 5Vpp |
| 41 | Standby/On signal I/O            | 0-5V      |
| 42 | (+) 5V Supply voltage input      | 5V        |

| IC Type | TDA4605-3 PSU Regulator           | I001             |
|---------|-----------------------------------|------------------|
| Pin No. | Description                       | Volts St-By/Norm |
| 1       | Info input secondary Voltage      | 0.4V/0.4V        |
| 2       | Info input reg. primary Current   | 1V/1.2V          |
| 3       | Input for primary Voltage Monitor | 2.1V/2V          |
| 4       | Ground                            | 0V               |
| 5       | Output                            | 0.8V/8Vpp        |
| 6       | Supply voltage input              | 12V/12.8V        |
| 7       | Input for soft start and IC       | 1.1V/1.9V        |
| 8       | Feedback input for Oscillator     | 0.3V/0.4V        |

| IC Type | TDA7057AQ Audio Amplifier | I402    |
|---------|---------------------------|---------|
| Pin No. | Description               | Voltage |
| 1       | CD Volume control 1       | 1V      |
| 2       | NC                        |         |
| 3       | Voltage input 1           | 1.5Vpp  |
| 4       | Vcc                       | 12.5V   |
| 5       | Voltage input 2           | 1.5Vpp  |
| 6       | Signal ground             | –       |
| 7       | DC Volume control 2       | 1.0V    |
| 8       | Positive output 2         | –       |
| 9       | Ground 2                  | –       |
| 10      | (-)Ve output 1            | –       |
| 11      | (-)Ve output 2            | –       |
| 12      | Power Ground 1            | –       |
| 13      | Positive output 1         | –       |

| IC Type | TDA3845 Sound IF | I800    |
|---------|------------------|---------|
| Pin No. | Description      | Voltage |

|    |                                     |        |
|----|-------------------------------------|--------|
| 1  | IF Amplifier input 2                | –      |
| 2  | NC                                  | –      |
| 3  | AGC control capacitor               | –      |
| 4  | Output capacitor                    | –      |
| 5  | Peak / mean detector capacitor      | –      |
| 6  | AM output                           | 1.0Vpp |
| 7  | FM / AM switching                   | 0Vpp   |
| 8  | LC ref. circuit for picture carrier |        |
| 9  | LC ref. circuit for picture carrier |        |
| 10 | NC                                  |        |
| 11 | Vcc 12V note 1                      | 12V    |
| 12 | Intercarrier output                 |        |
| 13 | Ground                              | 0V     |
| 14 | (+) ve supply voltage 5V            |        |
| 15 | NC                                  |        |
| 16 | IF Amplifier input 1                |        |

| IC Type | SAA5254P Simple Teletext Decoder                                                                                                | I451    |
|---------|---------------------------------------------------------------------------------------------------------------------------------|---------|
| Pin No. | Description                                                                                                                     | Voltage |
| 1       | (+) 5V supply                                                                                                                   |         |
| 2       | 27MHz crystal oscillator output                                                                                                 |         |
| 3       | 27MHz crystal oscillator input                                                                                                  |         |
| 4       | Ground Crystal oscillator                                                                                                       |         |
| 5       | Ground                                                                                                                          |         |
| 6       | Positive ref.voltage for the ADC                                                                                                | 5V      |
| 7       | Video blk lvl storage pin via 100pF                                                                                             |         |
| 8       | Composite video input                                                                                                           | 1Vpp    |
| 9       | I ref input to ground via 27k ohm                                                                                               |         |
| 10      | Vcc                                                                                                                             | 5V      |
| 11      | STTV / FB / FFB polarity select                                                                                                 |         |
| 12      | Sync to TV o/p, FB i/p, Fn Cont                                                                                                 |         |
| 13      | PLL T const. sw, FFB l/p, Fn cont                                                                                               |         |
| 14      | Ground                                                                                                                          | 0V      |
| 15      | Dot ratr character o/p Red clr info                                                                                             |         |
| 16      | Dot ratr character o/p Grn clr info                                                                                             |         |
| 17      | Dot ratr character o/p Blue clr info                                                                                            |         |
| 18      | VDC l/p to define o/p high lvl on RGB                                                                                           | –       |
| 19      | Dot rate fast blanking output                                                                                                   |         |
| 20      | Ground                                                                                                                          |         |
| 21      | Prog o/p to provide constant reduction of pic formix text and pic disp or when viewing news flash/subtitle pages open drain o/p | –       |
| 22      | 25Hz o/p sync with the CVBS l/p field sync pulses to produce a non interlaced display by adj of the vertical deflection current | –       |

**For Service Manuals Contact**  
**MAURITRON TECHNICAL SERVICES**  
**8 Cherry Tree Rd, Chinnor**  
**Oxon OX9 4QY**  
**Tel: 01844-351694 Fax: 01844-352554**  
**Email: enquiries@mauritron.co.uk**

|    |                                                                                                         |   |
|----|---------------------------------------------------------------------------------------------------------|---|
| 23 | Dot rate character o/p of teletext foreground colour info, open drain o/p                               | — |
| 24 | Serial clock I/p for the I <sup>2</sup> C bus, it can still be driven during power down of the device   | — |
| 25 | SDA of the I <sup>2</sup> C bus, open drain o/p. It can still be driven during power down of the device | — |
| 26 | NC externally, internal                                                                                 |   |

| IC Type | SAA7283 Nicam Decoder       | 1801    |
|---------|-----------------------------|---------|
| Pin No. | Description                 | Voltage |
| 1       | Mute I/p                    | 5V      |
| 2       | Digital audio interface o/p | 2.54V   |

|    |                                      |      |
|----|--------------------------------------|------|
| 38 | NC                                   |      |
| 39 | Clock loop phase comparator o/p      | 2V   |
| 40 | 8.192MHz crystal I/p                 | 3.1V |
| 41 | 8.192MHz crystal o/p                 | 2.5V |
| 42 | VSS crystal osc                      | 0V   |
| 43 | Data input                           | 2.5V |
| 44 | Data output                          | 0V   |
| 45 | Clock output                         | 0.5V |
| 46 | Digital VSS                          | 5V   |
| 47 | Digital VDD                          | 5V   |
| 48 | Data output                          | 2.5V |
| 49 | Clock input                          | 5Vpp |
| 50 | Data input/output                    | 5Vpp |
| 51 | I <sup>2</sup> C address bit 0 input | 0V   |
| 52 | I <sup>2</sup> C bus hit             | 5V   |

| IC Type | I902        |
|---------|-------------|
| Pin No. | Description |
| 1       | 5.83V       |
| 2       | 11.66V      |
| 3       | 5.84V       |
| 4       | 11.76V      |
| 5       | 0V          |
| 6       | 5.84V       |
| 7       | 5.84V       |
| 8       | 5.85V       |
| 9       | 5.85V       |
| 10      | 0V          |
| 11      | 4.3V        |
| 12      | 4.3V        |
| 13      | 5.85V       |
| 14      | 5.85V       |
| 15      | 5.85V       |
| 16      | 5.85V       |
| 17      | 5.83V       |
| 18      | 5.83V       |

| IC Type | I601        |
|---------|-------------|
| Pin No. | Description |
| 1       | 1.2V / 2Vpp |
| 2       | 0V          |
| 3       | 1.2V / 2Vpp |
| 4       | 13V / 45Vpp |
| 5       | 26V         |
| 6       | 8V          |
| 7       | 26V         |

|    |                                        |      |
|----|----------------------------------------|------|
| 3  | Audio VDD                              | 5V   |
| 4  | Audio VSS                              | 0V   |
| 5  | Internal audio ref. voltage buffer     | 2.5V |
| 6  | Ext. analogue I/p R                    | 0.3V |
| 7  | FM sound I/p R                         | 2.5V |
| 8  | Analogue o/p                           | 2.5V |
| 9  | NC                                     |      |
| 10 | NC                                     |      |
| 11 | Internal audio ref. voltage buffer o/p | 2.5V |
| 12 | Quit VSS to DACs                       | 0V   |
| 13 | NC                                     |      |
| 14 | NC                                     |      |
| 15 | Analogue audio o/p L                   | 2.5V |
| 16 | FM sound I/p L                         | 2.5V |
| 17 | Ext. analogue I/p L                    | 0.4V |
| 18 | Power on reset mute                    | 5V   |
| 19 | Power on reset audio select            |      |
| 20 | Carrier loop filter connection         |      |
| 21 | Carrier loop filter o/p                |      |
| 22 | Sine channel eye pattern o/p           |      |
| 23 | Sine chnl offset compensator cap.      | 2.5V |
| 24 | Demodulator Vss                        | 0V   |
| 25 | VCO control voltage I/p                | 2.5V |
| 26 | Demodulator VDD                        | 5.8V |
| 27 | VCO control voltage I/p                | 5V   |
| 28 | Mixer voltage reference                | 2.4V |
| 29 | DQPSK I/p                              | 2.5V |
| 30 | Cosine ch offset compensator cap.      | 2.5V |
| 31 | Cosine ch eye pattern o/p              | 2.5V |
| 32 | AGC peak detector storage cap.         | 2.5V |
| 33 | Internal demod Vref before o/p         | 2.5V |
| 34 | Internal demod ref current o/p         | 2.5V |
| 35 | Internal demod Vref unbuffered o/p     | 2.5V |
| 36 | Demodulator VDD                        | 2.5V |
| 37 | Demodulator VSS                        | 5V   |

| IC Type | TDA8425 Nicam Decoder         |
|---------|-------------------------------|
| Pin No. | Description                   |
| 1       | Input 2 L                     |
| 2       | External decoupling capacitor |
| 3       | Input 2 R                     |
| 4       | VCC                           |
| 5       | Ground                        |
| 6       | Bass R                        |
| 7       | Bass L                        |
| 8       | Treble R                      |
| 9       | Output R                      |
| 10      | Ground                        |
| 11      | Voltage Range                 |
| 12      | Voltage Range                 |
| 13      | Output L                      |
| 14      | Treble L                      |
| 15      | Bass L                        |
| 16      | Base L                        |
| 17      | External decoupling capacitor |
| 18      | Input 1 L                     |
| 19      | External decoupling capacitor |
| 20      | Input R                       |

| IC Type | TDA3653B Frame Driver    |
|---------|--------------------------|
| Pin No. | Description              |
| 1       | Frame drive input        |
| 2       | Ground                   |
| 3       | Switching circuit input  |
| 4       | Frame out ground         |
| 5       | Output voltage           |
| 6       | Supply voltage           |
| 7       | Guard circuit output     |
| 8       | Flyback generator output |
| 9       | Supply voltage           |

| IC Type | TDA6103Q Colour Driver | I201    |
|---------|------------------------|---------|
| Pin No. | Description            | Voltage |
| 1       | Inverting input 1      | 1Vpp    |
| 2       | Inverting input 2      | 1Vpp    |
| 3       | Inverting input 3      | 1Vpp    |
| 4       | Ground                 |         |
| 5       | Non inverting input    | 1.8V    |
| 6       | Supply Voltage         | 180V    |
| 7       | Cathode output 3       | 90Vpp   |
| 8       | Cathode output 2       | 90Vpp   |
| 9       | Cathode output 1       | 90Vpp   |

For Service Manuals Contact  
**MAURITRON TECHNICAL SERVICES**  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
Tel:- 01844-351694 Fax:- 01844-352554  
Email:- enquiries@mauritron.co.uk