

SERVICE MANUAL

ALBA

CTV 10RC

**SOLID STATE 10" COLOUR TELEVISION
RECEIVER AC/DC OPERATING**



ALBA

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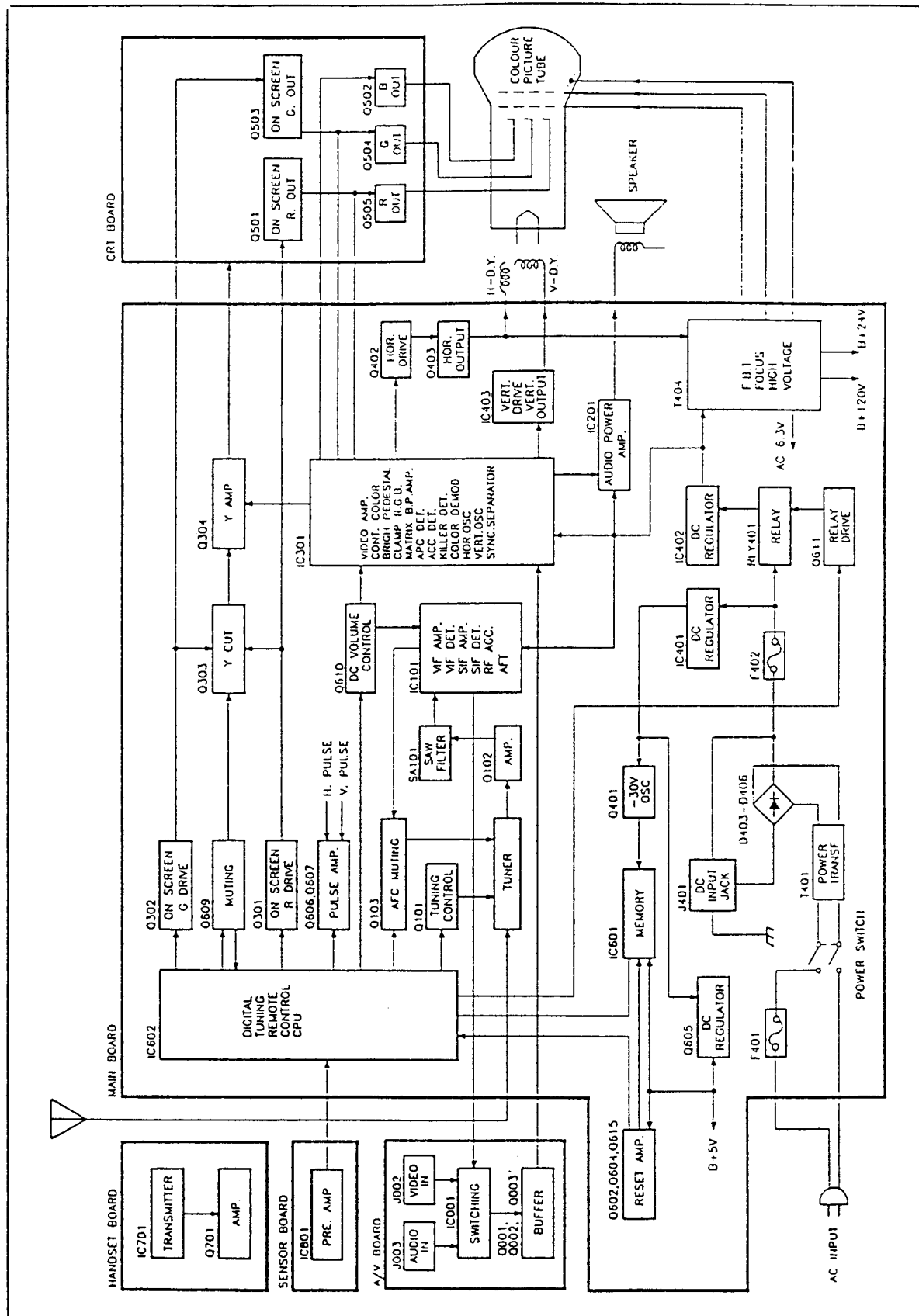
This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product.

SPECIFICATIONS

SYSTEM	:	PAL-1
DESTINATION	:	U.K
CHANNEL COVERAGE VHF	:	21 - 69 CH.
FREQUENCY RANGE UHF	:	474 - 858 MHz
SCANNING LINES	:	625 LINES
HORIZONTAL	:	15625 Hz
VERTICAL	:	50 Hz
IF FREQUENCY VIDEO	:	39.5 MHz
SOUND	:	33.5 MHz
VISION/SOUND SEPARATION	:	6.0 MHz
SENSITIVITY UHF	:	80 uV
OUTPUT POWER MAXIMUM	:	800 mW
10 % THD	:	600 mW
C.R.T.	:	10" (25.4cm) Diagonal 22.5mm Neck diameter 76° Deflection Angle
SPEAKER	:	3" (7.62 cm) (16 ohm 1W)
ANTENNA IMPEDANCE	:	75 Ohm
POWER SUPPLY	:	AC 240V 50HZ DC 12V – 15V
POWER CONSUMPTION	:	60 WATTS
VIDEO INPUT	:	1Vp-p (POSITIVE VIDEO) 75 ohm IMPEDANCE
AUDIO INPUT	:	0.5V r.m.s (1 KHz) 47K Ohm IMPEDANCE

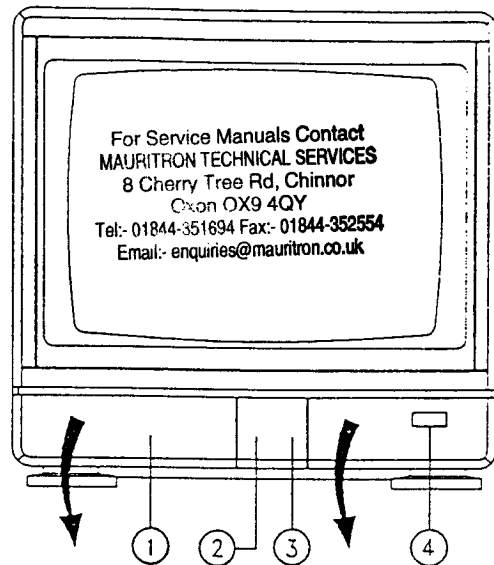
BLOCK DIAGRAM

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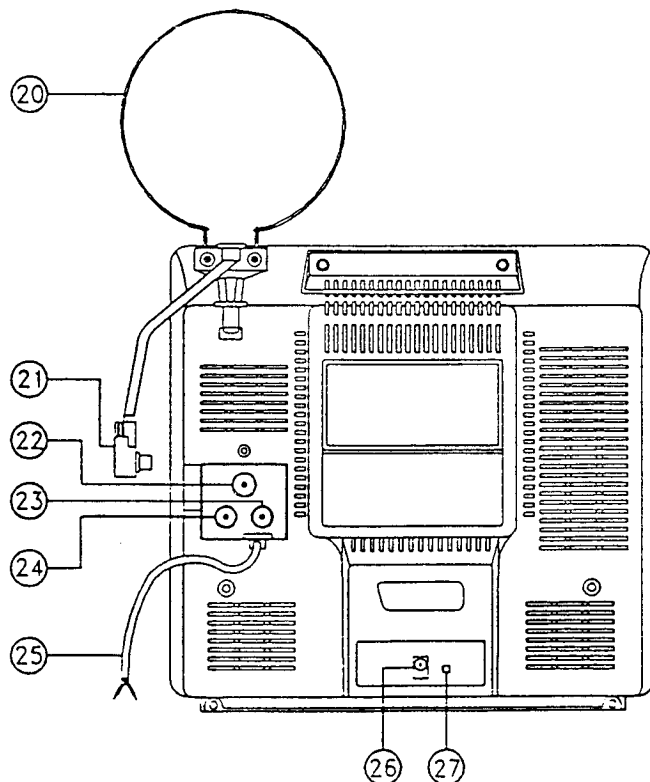
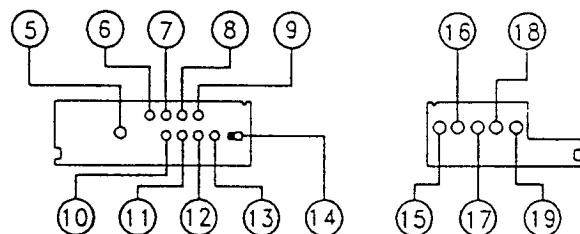
CONTROL LOCATION

- 1 PANEL DOOR
- 2 POWER INDICATOR
- 3 REMOTE SENSOR
- 4 AC POWER SWITCH (ON/OFF)
- 5 V-HOLD CONTROL
- 6 TV/AV SELECTOR BUTTON
- 7 PICTURE SELECTOR BUTTON
- 8 PICTURE FUNCTION BUTTON (-)
- 9 PICTURE FUNCTION BUTTON (+)
- 10 FAST BUTTON
- 11 TUNE BUTTON (-)
- 12 TUNE BUTTON (+)
- 13 STORAGE BUTTON
- 14 PRESET SWITCH (ON/OFF)
- 15 PROGRAM DOWN CONTROL
- 16 PROGRAM UP CONTROL
- 17 VOLUME DOWN CONTROL
- 18 VOLUME UP CONTROL
- 19 STAND BY CONTROL
- 20 LOOP ANTENNA
- 21 LOOP ANTENNA CONNECTOR
- 22 ANTENNA INPUT SOCKET (75 OHM)
- 23 AUDIO IN JACK
- 24 VIDEO IN JACK
- 25 AC MAIN LEAD
- 26 DC JACK
- 27 DEGAUSS SWITCH



PULL TO OPEN
THE PANEL

PULL TO OPEN
THE PANEL



ALIGNMENT INSTRUCTION

I. PLEASE READ BEFORE ATTEMPTING SERVICE

1. Never disconnect any leads while receiver is in operation.
2. Disconnect all power before attempting any repairs.
3. Do not short any portion of the circuit while power is on.
4. For reason of safety, all parts replaced should be identical, (for parts and part number see PARTS LIST).
5. Before alignment the set must be pre-heated for 30 minutes or more and erase magnetism thoroughly from CRT front chassis frame by erase coil.

II. TEST EQUIPMENT

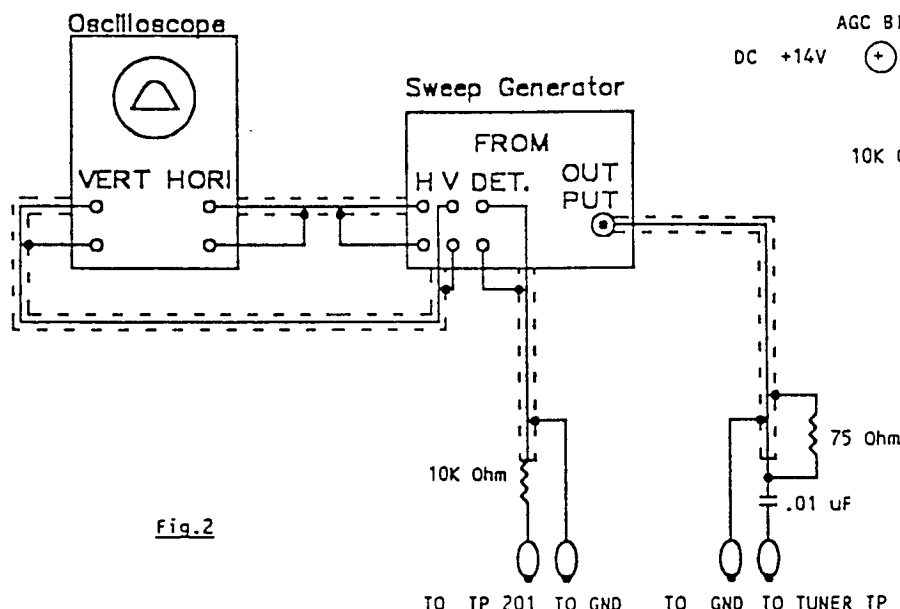
1. VIF Sweep Generator
2. SIF Sweep Generator
3. Colour Bar/Dot/Cross Hatch Generator
4. DC Power Supply (14V)
5. Oscilloscope
6. Vacuum Tube Volt Meter
7. Volt Ohm Meter
8. High Voltage Meter
9. Ampere Meter (0.5 Class, DC 3mA Max)
10. Demagnetizing Coil
11. Philips Pattern Generator
12. Frequency Counter
13. Continuous Waveform Generator

NOTE: Unsolder the solder link (A) and solder link (B) on the foil side of main board before alignment steps. (See bottom view of component diagram on main board).

III. TANK COIL ALIGNMENT

A. PREPARATION STEP (SEE Fig. 2)

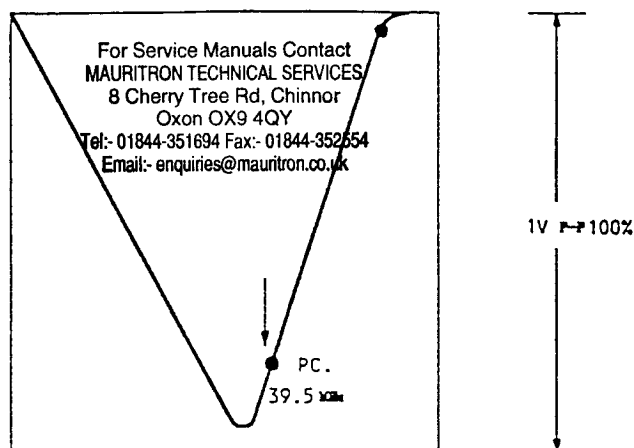
1. Connect OUTPUT lead of VIF Sweep Generator between tuner test point TP and tuner case.
2. Connect lead of FROM DET between TP 201 and GND.
3. Supply DC +14V to + lead of C414.
4. Supply RF AGC bias voltage to TP 101 (See Fig.1).



B. ALIGNMENT STEP (See Fig. 3)

1. Adjust AGC bias voltage for maximum amplitude of waveform.
2. ~~Adjust the level of Sweep Generator to achieve 1Vp-p output.~~
3. Adjust T102 to obtain maximum amplitude of response cause at PC. (39.5 MHz).

Fig.3



IV. VIF ALIGNMENT

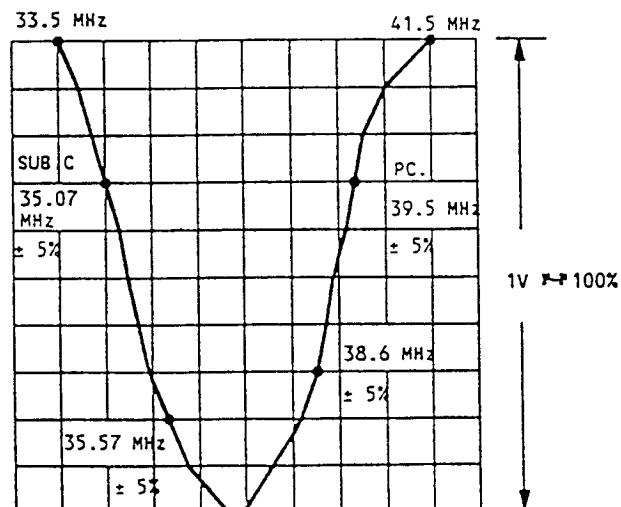
A. PREPARATION STEP (See Fig. 2)

1. Connect output lead of VIF Sweep Generator between tuner test point TP and tuner case.
2. Connect resistor (100 Ohm) between TP 105 and TP 106.
3. Connect lead of FROM DET between TP 201 and GND.
4. Supply DC +14V to + lead of C414.
5. Supply RF AGC bias voltage to TP 101 (See fig. 1).

B. ALIGNMENT STEP

1. Adjust AGC bias voltage for maximum amplitude of waveform.
2. Adjust the level of Sweep Generator to achieve 1Vp-p output.
3. Increase the output level of Sweep Generator in 20dB.
4. Adjust AGC bias voltage to achieve 1Vp-p output (on Oscilloscope).
5. Adjust tuner converter coil to obtain the waveform as in Fig. 4.

Fig.4



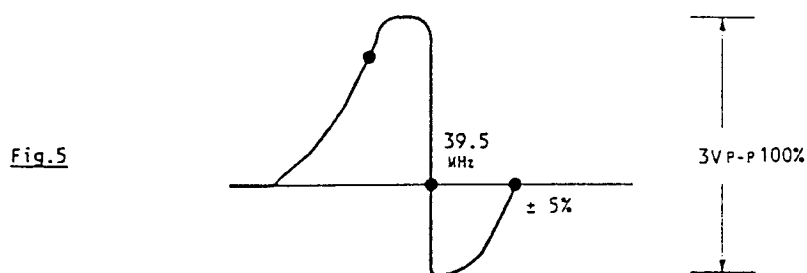
V. AFC ALIGNMENT

A. PREPARATION STEP

1. Connect RF AGC bias voltage at TP 101.
2. Remove the damping resistor (100 Ohm) at TP 105, TP 106.
3. Connect output lead of Sweep Generator to tuner test point TP & tuner case.
4. Increase the output level of Sweep Generator in 10 dB.
5. Connect lead of FROM DET between TP 104 and GND.
6. Supply DC + 14V to + lead of C414.

B. ALIGNMENT STEP

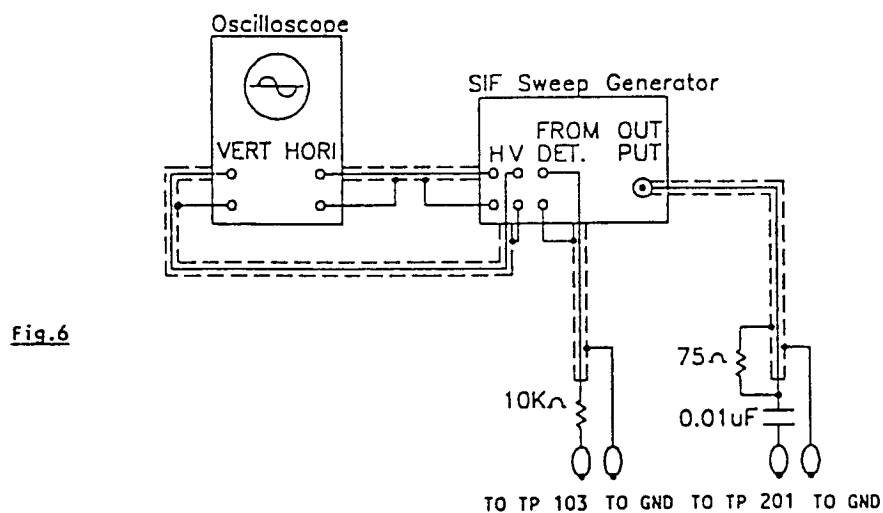
1. Adjust the AGC bias to achieve 3VP-P output.
2. Adjust T 104 so that picture carrier 39.5 MHz is centred as in Fig. 5.



VI. SIF ALIGNMENT

A. PREPARATION STEP (SEE Fig. 6)

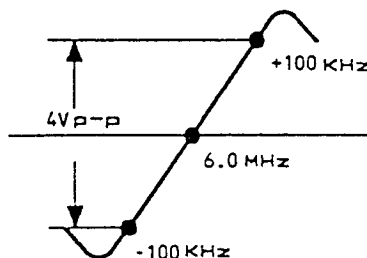
1. Connect output lead of SIF Sweep Generator between TP 201 and GND.
2. Connect lead of FROM DET between TP 103 and GND.
3. Supply DC +14V to + lead of C414.



B. ALIGNMENT STEP

1. Adjust output of Sweep Generator to achieve 4Vp-p between markers of 100KHz.
2. Adjust T103 that sound carrier is centred as in Fig.7.

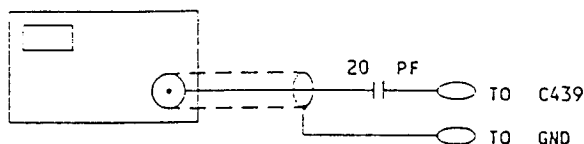
Fig.7



VII. -30 VOLTAGE OSCILLATOR CIRCUIT ADJUSTMENT

1. Supply DC +14V to + lead of C403.
2. Connect the DIGITAL COUNTER + lead to C439 and - lead to GND.
3. Adjust the T402 to 85 KHz (± 1 KHz) of the DIGITAL COUNTER (See Fig. 8).

Fig.8



VII. HORIZONTAL CIRCUIT ADJUSTMENT

1. Receive Monoscope pattern input signal 80 dBuV.
2. Connect terminal TP 302 and the earth with the short Jumper wire.
3. Adjust VR 301 to obtain the picture running at centre.
4. Adjust VR305 to obtain the picture at centre.

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IX. VERTICAL CIRCUIT ADJUSTMENT

1. Receive the monoscope pattern.
2. Adjust V-size (VR 302) to obtain a normal picture.

X. WHITE BALANCE ADJUSTMENT

1. Set the Screen Control (ON THE FBT) to minimum position.
2. Turn the red LOW LIGHT Control (VR505) and turn the green, blue Driver controls (VR502, VR504) to middle position, and turn the green, blue Low Light controls (VR503, VR501) to minimum position.
3. Receive the Monoscope pattern.
4. Set the Service switch (S 301) to "SERVICE" position.
5. Slowly turn the screen control clockwise to the point where a horizontal line just illuminates.
6. Adjust VR 505 to get a red horizontal line on CRT.
7. Adjust VR 503 to get a yellow horizontal line on CRT.

8. Adjust VR 501 to get a white horizontal line on CRT.
9. Reset the Service switch (S 301) to normal position.
10. Set Brightness control (VR 402) to middle position.
11. Adjust Drive control (VR 502, VR 504) to obtain a uniform white picture.

XI. FOCUS ADJUSTMENT

1. Set Contrast control to maximum position and Brightness control to middle position.
2. Adjust Focus control (ON THE FBT) to obtain a sharpest picture on the CRT.

XII RF AGC

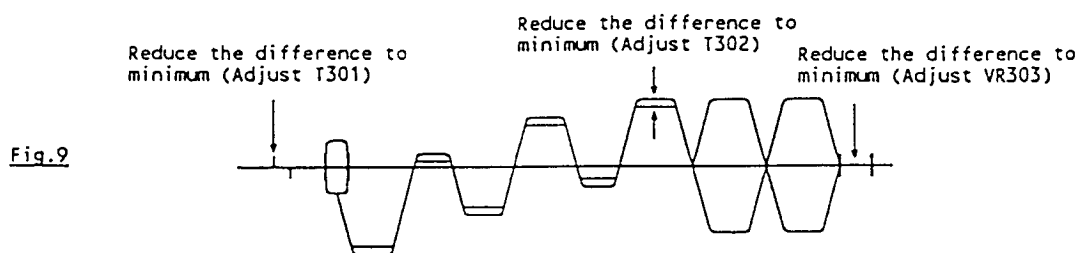
1. Receive the signal of (UHF channel) and set the AFC on. (PRESET SWITCH TO OFF POSITION).
2. Set the input field strength in $62 \pm 3\text{dB}$.
3. Adjust RF AGC control (VR 101) to the point where noise has disappeared.

XIII COLOUR SYNC. ADJUSTMENT

1. Receive PHILIPS pattern and warm up for five minutes.
2. Connect terminal TP 304 and the earth with the short jumper wire.
3. Connect the TP 305 and TP 303 with 10K Ohm resistor so that the colour killer turns off
4. Then the colour stripes appear on the screen when the adjustment is incorrect. Adjust the colour sync. (CT 301) so that the PHILIPS pattern stands still or drifts slowly across the picture screen.
5. Remove the 10K Ohm resistor and jumper wire.

XIV. COLOUR DEMODULATOR ALIGNMENT, DELAY LINE ALIGNMENT

1. Receive PHILIPS pattern and set the AFC switch to 'ON' position. (PRESET SWITCH TO OFF POSITION).
2. Set the Service switch (S 301) to service position.
3. Set Colour control (VR 401) to maximum position.
4. Connect oscilloscope to TP 309 (B out).
5. Adjust (VR 303, T 301, T 302) to obtain the waveform as in Fig. 9.



XV. SUB-BRIGHTNESS ALIGNMENT

1. Connect the negative side to TP 402 and positive side to TP 401 of DC ampere meter (3mA full scale range).
2. Receive PHILIPS pattern and set AFC switch set 'ON' position (PRESET SWITCH TO OFF POSITION).
3. Set controls as follows:

BRIGHTNESS CONTROLMAX. POSITION
 CONTRAST CONTROLMAX. POSITION
 COLOUR CONTROLMAX. POSITION

4. Adjust SUB-BRIGHTNESS control (VR 405) the reading of 280uA

XVI COLOUR PURITY ADJUSTMENT (SEE FIG.10)

BEFORE ALL ADJUSTMENT DESCRIBED BELOW ARE ATTEMPTED, V-HOLD, H-HOLD, V-HIGH, B + VOLTAGE AND FOCUSING ADJUSTMENT MUST BE COMPLETED

1. Place the TV receiver facing NORTH or SOUTH.
2. Plug in TV receiver and turn it on.
3. Operate the TV receiver over 30 Minutes.
4. Fully degauss the TV receiver by using an external degaussing coil.
5. Receive a crosshatch pattern and adjust the static convergence control roughly.
6. Loosen the clamp screw of the deflection yoke and pull the deflection yoke towards you.
7. Fully turn the red and blue Low Light controls (VR 505, VR 503, VR 501) counterclockwise.
8. Adjust the purity magnets so that green field is obtained at the centre of the screen.
9. Slowly push the deflection yoke toward bell of CRT and set it where a uniform green field is obtained.
10. Tighten the clamp screw of the deflection yoke.

XVII ON SCREEN DISPLAY CENTRE ADJUST

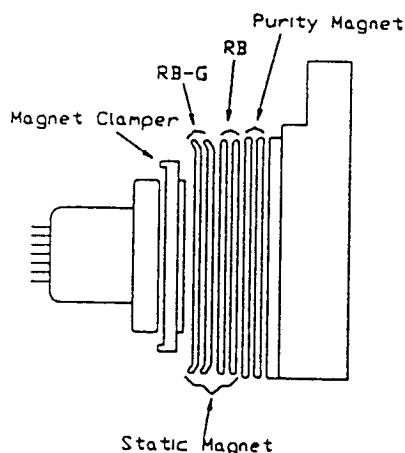
1. Receive the Monoscope Pattern.
2. Adjust the centre V.R (VR601) to make the on screen lettering at the centre of picture tube, when the preset switch to "OFF" position from "ON" position.

XVIII CONVERGENCE ADJUSTMENT (SEE FIG.10)

1. Receive a dotted pattern.
2. Unfix the convergence magnet clumper and align red with blue dots at the centre of the screen by rotating (R,B) static convergence magnets.
3. Align Red / Blue with green dots at the centre of the screen by rotating (RB-G) static convergence magnet.
4. Fix the convergence magnets by turning the clumper.
5. Remove the DY wedges and slightly tilt the deflection yoke horizontally and vertically to obtain the good overall convergence.
6. Fix the deflection yoke by wedges.
7. If purity error is found, follow "PURITY ADJUSTMENT" instructions.

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Fig.10



VOLTAGE TABLE FOR TRANSISTOR			
SYMBOL	B (V)	C (V)	E (V)
Q001	3.00	10.30	2.37
Q002	0.03	9.00	GND
Q003	0.06	10.00	GND
Q101	0.47	7.14	GND
Q102	1.00	7.47	0.27
Q301	0.02	3.27	GND
Q302	0.02	3.17	GND
Q303	0.70	0.11	GND
Q304	5.90	0.95	6.06
Q401	-1.47	9.77	0.47
Q402	0.47	5.84	GND
Q403	-0.19	21.60	GND
Q501	2.00	83.30	2.85
Q502	6.42	83.70	6.08
Q503	2.00	82.50	2.85
Q504	6.43	82.50	6.80
Q505	6.42	83.70	6.09
Q602	4.66	0	4.66
Q604	0.75	0	GND
Q605	6.07	11.90	5.38
Q606	-0.09	4.21	GND
Q607	-0.04	4.49	GND
Q609	0.02	0.70	GND
Q610	0.37	2.87	GND
Q611	0.62	0.15	GND
Q615	0	4.63	GND
	S (V)	G (V)	D (V)
Q103	5.47	0	6.15

NOTE: VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH
 CONTRAST : Maximum Position
 BRIGHTNESS : Centre Position
 COLOUR : Centre Position
 SIGNAL INPUT : 80 dBuV
 CHANNEL SETTING : The Last Channel of UHF High

IC OPERATION DESCRIPTION

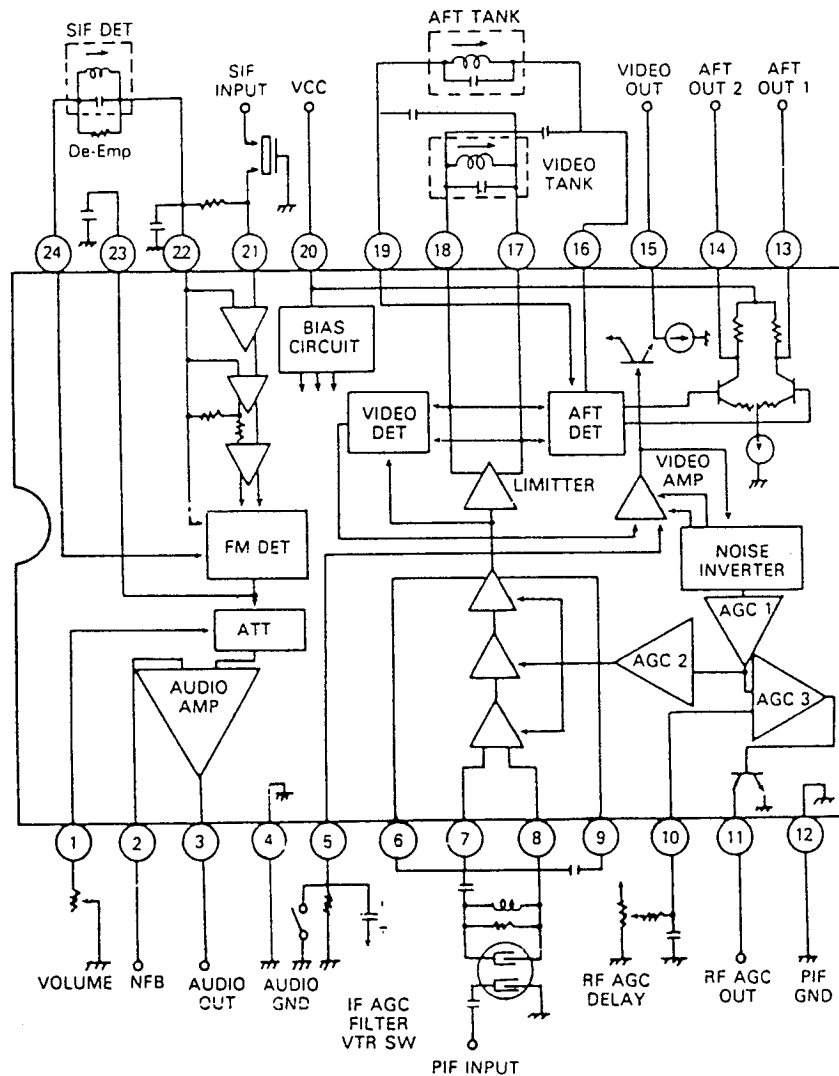
1.TA7680AP/81AP

(1) Functions of the TA7680AP/81AP

The TA7680AP/81AP combines a PIF system and an SIF system in a 24 leads dual-in-line plastic package. The PIF system is equal to the system of the TA7607AP/11AP and the SIF system consists of a 3-stage limiter amplifier, a synchronous FM detector, an electronic volume control and an AF pre-amplifier. This device is designed to have wide application capability with minimal external parts and adjustments.

The TA7680AP/81AP realises a PAL CTV system in conjunction with the TA7698AP video-chroma-deflection, or an NTSC CTV system with the TA7644BP video-chroma deflection.

BLOCK DIAGRAM



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(2) Operation of the PIF Section

The PIF section provides all the function which a PIF stage requires. The difference between the TA7680AP and the TA7681AP is only the output plarity of the RF AGC. The TA7680AP has a reverse RF AGC output for a FET top tuner, and the TA7681AP has a forward RF AGC output for a NPN top tuner. These are identical to the TA7607AP and the TA7611AP.

The TA7680AP/81AP realizes a high performance PIF subsystem in conjunction with a suitable SAW (Surface Acoustic Wave) filter, with minimal external components and adjustments. Followings are the operation description based on the block diagram.

(a) PIF Amplifier Stage

The PIF amplifier is a 3-stage AGC amplifier. The sensitivity of this stage is 110uVrmsTyp. @58MHz, or 52uVrmsTyp. @ 45MHz.
Terminal #7 and #8 are the input terminals. A single-ended or a differential input configuration is capable. Terminal #6 and #9 are the decoupling terminals for the internal bias circuit.
The gain of this stage is controlled by the internal peak value AGC circuit. The output of this stage is connected to the video detector stage internally.

(b) Video Detector

The amplified PIF signal is applied to the video detector.
The picture carrier component is derived from the PIF signal, limited and phase shifted by a tank circuit connected to #17 and #18 terminal to produce a switching carrier for the synchronous video detector.
The SIF signal is detected at the same time (Inter carrier Detection).
Detected composite video signal is applied to video output stage, AGC circuit and the noise inverter circuit through a part of the video amplifier.

(c) Video Amplifier

The video amplifier consists of a buffer amplifier and an output amplifier which has 6mA output current capability. Terminal #15 is the output terminal for the composite video signal and the SIF signal.
The composite output signal has 2.5V sync-tip level (Sync negative) and 2Vp-p amplitude. This output is applied to the video inverter amplifier of the video-chroma-deflection IC and the DC component of the output signal can be a bias source of the sequential amplifier. The composite video signal is also applied to the AGC circuit and the noise inverter circuit internally.

(d) Noise Inverter

Operation level of the internal IF AGC of the TA7680AP/81AP is determined by the sync-tip level mentioned above. If the composite video signal includes black pulse noises which exceeds 2.5V to the minus side, they may cause mis-operation of the AGC, unstability of the synchronization or degradation of the S/N ratio.
Also, white pulse noises cause degradation of the S/N Ratio.
The TA7680AP/81AP provides noise inverter circuits for both noises to keep a stable operation. A noise which exceeds the threshold level is inverted to a grey level (clamp level).
The relation of the threshold levels and clamp levels are shown below. This inverter circuit performs excellent capability of noises without any external components or control signals.

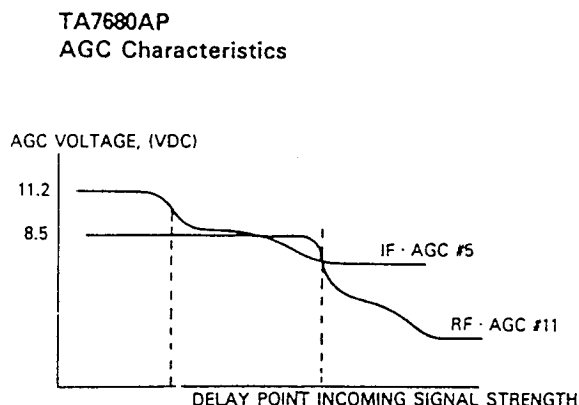
(e) AGC Circuit

The composite video signal is also applied to the AGC circuit.
The AGC circuit consists of the internal IF AGC circuit and the RF AGC circuit with the delay point adjustment circuit. At the input of the AGC circuit, an 12dB/Oct. L.P.F is equipped to prevent abnormal AGC operation such as AGC latch up caused by excessive SIF signal component or high frequency noise components. The internal IF AGC controls the 3-stage PIF amplifier gain.
The total gain control range (or the gain reduction range) is 64dB typ.
The AGC response speed is determined by an external CR value connected to the #5 terminal. If the time constant is too small, it will cause the 'zag' during vertical sync period. And if too big, the system will not be able to track rapid input signal level changes such as fluttering caused by an airplane and so on.

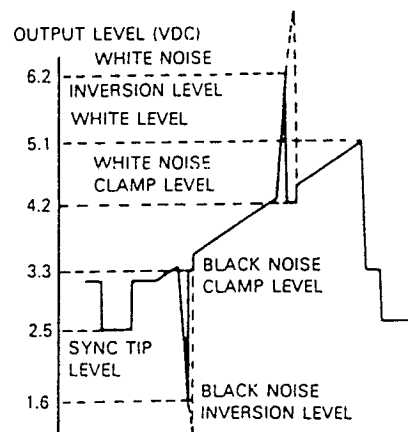
The #11 terminal is an open-collector RF AGC output terminal.

The starting point of the RF AGC (Delay point) is determined by a D.C voltage of the #10 terminal. The output polarity of the RF AGC and the IF AGC control voltage change by the input signal level are shown below. The TA7680AP is the reverse RF AGC type for an FET top tuner and the TA7681AP is the forward RF AGC type for an NPN top tuner.

Video output level and Noise Inversion levels



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(f) AFT Circuit

A multiplier type phase detector is applied to the AFT detector.

The reference signal is the input PIF signal (limited picture carrier) and the input signal of the AFT detector is derived from the PIF tank and phase shifted by an AFT tank circuit which is connected between the #16 terminal and the #19 terminal.

To keep stable AFT operation, a cross-coupling connection between the PIF tank and the AFT tank is recommendable. This connection is able to cancel or compensate stray capacitances between PIF tank circuit and AFT tank circuit.

Terminal #13 and #14 are the differential AFT output terminals, which enable wide application capability.

(3) Operation of the SIF Section

The SIF section provides all the function for an SIF sub-system, which consist of a 3-stage limiter amplifier, synchronous FM detector, electronic volume control and audio pre-amplifier with NFB terminal. To complete the whole SIF sub-system, only a power output stage (two small power transistors for the SRPP construction) is required.

Followings are the operation description based on the block diagram.

(a) SIF Limiter Stage

The SIF limiter amplifier consists of 3-stage differential amplifier.

The #21 terminal is the input terminal of the SIF signal, the #22 is by passing and bias terminal for the SIF limiter and FM detector. The output of the limiter amplifier is applied to the FM detector through balanced emitter followers.

(b) FM Detector

The FM detector is a double balanced type synchronous detector using the limiter output and phase shifted signal by an SIF DET tank circuit connected between the #24 and #22 terminals. As the operation bias of the detector circuit is derived from the limiter stage (#22), the external phase shifter is required DC conduction #22 to #24. A simple Q-damped LC tank circuit is recommendable for the phase shifter. This common bias construction realises "One terminal FM detector circuit". Operating characteristics of the detector is determined or designed by the external LC tank circuit. The characteristics example is shown below.

Detected AF signal is directly connected to the electronic, volume control circuit through a level shift circuit.

The #23 terminal is for de-emphasis by connecting a suitable external capacitor (provided internal resistor for the de-emphasis is 15 kohm typ..). This terminal can be used as a fixed level detected output terminal for a MPX stereo application.

(c) Electronic Volume Control

The electronic volume control is the dual-balance type. The simplified circuit construction is shown below. The #1 terminal is control terminal. The output level (volume control level) is determined applied voltage of the #1. The control characteristics is also shown below. The effective control range is 3V to 6V and the maximum volume control range is 72dB typ.

(d) Pre-amplifier

The output of the volume control is applied to the inverting input of the NF pre-amplifier. The #2 terminal is non-inverting input and the #3 is the output terminal of the NF amplifier. The typical open loop gain of this stage is 24dB typ. The #2 terminal can be used as a direct output terminal of the volume control.

2.TA7698AP

(1) Function of theTA7698AP

The TA7698AP combines a PAL/NTSC Video-Chroma sub system and a Deflection combination on a single chip to provide a L or a PAL/NTSC colour television.

This device includes a Video amplifier, PAL and NTSC colour Demodulators designed to provide colour differential outputs, an improved Sync-separator, a Horizontal oscillator with saw tooth type AFC, a Horizontal pre-driver with a X-ray protection circuit, a Vertical oscillator and a Vertical pre-driver in a 42-leads dual-in-line plastic package.

The TA7698AP realises a very simple PAL CTV or a PAL/NTSC dual system CTV in conjunction with the TA7680AP/81AP PIF/SIF combination IC. And also to realise a PAL/SECAM/NTSC multi standard system CTV, a SECAM demodulator and a system switch are required in addition to the above two chips.

Followings are the operation descriptions based on the block diagram.

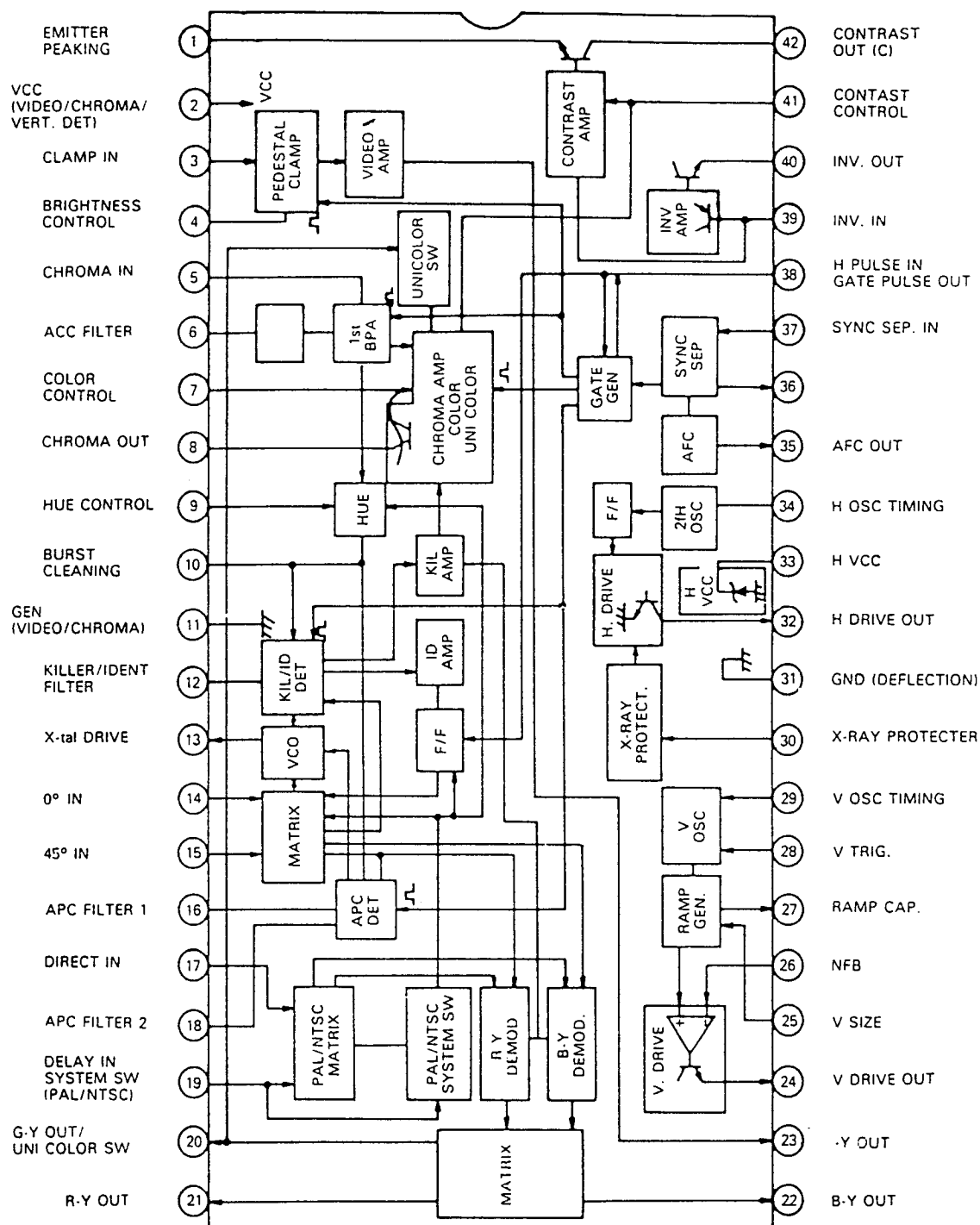
(2) Separation of the Vcc lines and the GND lines

The TA7698AP equips with Vcc lines. One of them are the #2 terminal 12V line for the video-chroma subsystem, the sync separator and the vertical deflection system. The other is #33 8V vcc line providing an internal zener regulator for the AFC and the horizontal section. This 8V line is driven by the high +B line (+110V to +130V) through a series resistor to start up the system. After setting up the system operation, current from the 12V Vcc line maintains this 8V line power requirement.

And, also the TA7698AP equips separated GND lines. To prevent inter-section interferences each section has its one GND line. The lines are tied together at the IC GND pad to reduce common impedances. The #11 terminal is a GND line for the video section and the chroma demodulator, and the #31 terminal is another GND line for the sync separator and the deflection system. These GND lines are pulled out to each side of the IC package to be minimize the common impedance. Special attentions should be payed to a pattern layout of the external GND line.

TA7698AP BLOCK DIAGRAM

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(3) Video Section

(a) Inverter Amplifier

The composite video signal from the output of the PIF stage is applied to the inverter amplifier through a sound carrier trap.

The #39 is the input terminal, and the operating bias is derived from the DC component of the PIF output. The input dynamic range is 2.0V to 6.5V typ., and a sync-negative composite video signal input is required.

The #39 is also the input terminal of the contrast amplifier.

The output terminal of the inverter amplifier is the #40 and the output circuit is emitter follower construction to increase the driving capability. The inverted video output signal is applied to the sync separator and the chroma bandpass amplifier through a chroma signal taking out circuit.

The typical gain of the inverter amplifier is 3.5dB.

(b) Contrast Amplifier

The input terminal of the contrast amplifier is also the #39, and a collector output is the #42 and an emitter output is the #1. A frequency dependent circuit is connected to the #1 to obtain the picture control (Peaking Control) function.

The #42 collector output is applied to the pedestal amplifier through a video delay line with subcarrier trap to compensate the group delay difference between the chroma signal and the video signal. The required delay time will be 0.4 μ S to 0.7 μ S, and should be adjusted to be optimize the compensation.

The #41 is the control terminal of the contrast control. The minimum 40dB contrast control range is obtained by the #41 DC voltage change 2V to 10V.

When a 2.7k ohm resistor is connected between the #20 (G-Y Out) and GND, the contrast control also controls the colour saturation (Uni-Colour Control) And when the #20 is opened, the contrast control is independent. In other words, when the three colour differential outputs are used (PAL or PAL/NTSC application) the contrast control operate as the "Uni-colour control". And when two of them, R-Y and B-Y are used (PAL/SECAM/NTSC APPLICATION) only the contrast is controlled. In the later case, PAL-SECAM system switch IC will control the uni-colour function.

(c) Pedestal Clamp Amplifier and the Video Output Amplifier

The output video signal from the contrast amplifier is applied to the pedestal amplifier. The brightness control and the DC restoration (Pedestal Clamp) functions are in this stage.

The process video signal is fed to the #23 (-Y output)

The #4 is the brightness control terminal. The ABL (Automatic Brightness Limiting) functions is realised also by this terminal. The DC restoration ratio is variable by superposing the video signal of the #3 to the #4 brightness control terminal.

A PNP transistor is connected between the #23 (-Y output) and the chroma output stage to minize a switch-on drifting that may be caused by the thermal capacity difference between the IC and the chroma output transistors.

The maximum output amplitude of the #23 (-Y output) is 7.5Vp-p typ. (10% to 90%) and the DC restoration ratio is 70% typ. by external component values given in the block diagram.

(4) Chroma Section

As the TA7698AP provides a CCIR axis PAL chroma demodulator and a NTSC axis NTSC chroma demodulator controlled by an internal PAL/NTSC system switch, it realizes wide capability of applications.

(a) The 1st Chroma Bandpass Amplifier

The inverter amplifier output from the #40 is applied to a chroma bandpass filter to take out the

chroma information. The chroma signal is applied to the #5 the 1st chroma bandpass amplifier input. The #5 terminal is biased internally. The 1st chroma amplifier detects amplitude of the burst signal gated from the chroma signal by the burst gate pulse, and controls it's gain to obtain constant burst signal level chroma output (ACC: Automatic Chrominance Control).

The recommendable input level of the #5 (Burst level) is 120mVp-p

A typical ACC characteristics is shown below.

The #6 is the ACC time constant terminal to detect the burst level.

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(b) Chroma Amplifier

The #8 is an emitter follower output terminal of a chroma signal, of which burst component is drawn out by the burst gate and the saturation level is controlled by the colour control and the uni-colour control.

The #7 is a control terminal of the colour saturation (chroma amplitude). The control characteristics is shown below.

The chroma output of the #8 is applied to the #17 direct signal input, and to the #19 delayed signal input. The amplitude and the phase relation of these two chroma signal should be adjusted by the external circuits.

(c) Tint (Hue) Control

In case of the NTSC mode, the #9 is a control terminal of the color tint (or hue) by shifting the burst phase applied to the APC circuit. In the PAL mode, this terminal should be grounded by a capacitor to prevent interferences.

(d) Killer/Ident Detector, Flip-Flop

Detecting the burst signal level, the killer detector switches off the operation of the APC and the chroma demodulator (forced B/W mode) when the level is lower than the designed value. And also the ident detector normalizes the phase of the flip-flop driven by the horizontal flyback pulse when in PAL mode.

The #12 is the terminal of a time constant of the killer and ident detector, and the DC level V#12 to the detectors.

When the B/W signal reception, the V#12 is 8V typ.. and when the colour signal is received V#12 increases and killer operation is released.

When there is a disagreement between the PAL burst phase alternation and the flip-flop phase the V#12 decreases and the ident detector normalizes the flip-flop to correct the chroma demodulation.

The #10 the burst cleaner (a tank circuit tuned to the sub-carrier frequency) is connected to the inputs of the detectors to feed a clean burst signal to the detectors. And it is possible to introduce a constant phase shift between the chroma signal and the burst signal by the tank alignment.

(e) APC Detector, VCO, Matric Circuit

The APC detector and the VCO (or VCXO voltage Controlled X'tal Oscillator) generate a sub-carrier frequency coincident to the burst phase. The phase difference between the output of the VCO and the burst is detected by the APC (Automatic Phase Control) detector and the output controls the frequency and the phase of the VCO. The #16 and the #18 are the APC filter terminals.

The free running frequency of the VCO is adjusted by a trimmer capacitor connected a X'tal in series or a potentiometer in the APC filter.

The matrix composes the R-Y/B-Y demodulator reference signals having the required phase difference between the burst signal.

(f) PAL/NTSC Matrix, PAL/NTSC System Switch

In PAL mode, the direct signal is applied to the #17 and the NTSC matrix adjust the R-Y and the B-Y colour level to the PAL mode's to keep the same demodulated colour outputs.

Above mode change is controlled by the DC voltage of the #19.

When the V#19 is lower than 2V, the PAL/NTSC system switch turns the system to the NTSC mode. (Actually, only the #19 may be grounded to change the switch).

The differences between these two modes are listed below.

	Relative Amplitude		Relative Phase	TINT	F/F
	B-Y/R-Y	G-Y/B-Y			
PAL	1.78	0.58	$\pm 90^\circ$	OFF	ON
NTSC	0.95	0.31	$105^\circ, 235^\circ$	ON	Stop

(g) R-Y, B-Y Demodulator,, G-Y Matrix

The R-Y, B-Y colour signals from the PAL/NTSC matrix are fed to the R-Y and B-Y chroma demodulator, and demodulated.

The G-Y matrix composes the G-Y colour differential signal from the demodulated R-Y and B-Y colour differential signals.

These three colour differential signals are fed to the chroma output circuit through the CR carrier filters from the #20, #21 and #22 output terminals.

In the chroma output circuit, these colour differential signals are matrixed with the -Y luminance signal from the #23 to obtain the R, G and B colour primarily signal driving a C-CRT.

For the SECAM mode of the multi-system, the #20 G-Y terminal is opened to stop the uni-colour function.

5) Deflection Section

The deflection section of the TA7698AP includes a sync separator, a saw tooth type horizontal AFC a horizontal oscillator a horizontal pre-driver with an X-ray protector, a vertical oscillator and a vertical pre-driver.

The GND line of this section is separated to the other, but the Vcc line except the AFC and the horizontal section is common to the other sections.

(a) Sync Separator

The #37 is an input terminal of the base-time constant type sync separator. The composite video signal from the #10 (Inverter output) is applied through a sync separator time constant circuit.

The slice levels of the horizontal sync and the vertical sync can be set independently.

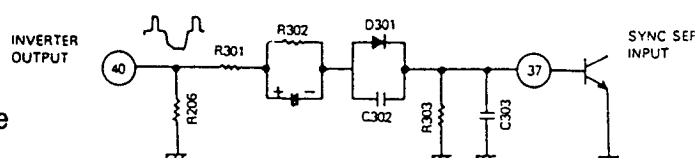
R206	#40 Load resistor
R301, R303, C302	Determines horizontal sync slice level
R301, R302, R301	Determines vertical sync slice level
D301	Time constant separation
C303	Noise filter/Gate pulse rising edge timing

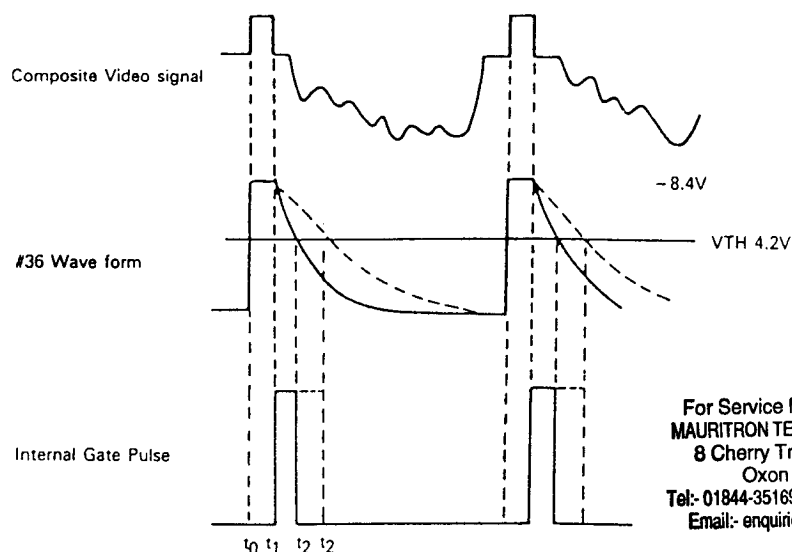
To deepen the slice level;

Horizontal : R301 increase or R303 decrease

Vertical : R301 increase or R302 decrease

The #36 is the output terminal of the sync separator, and also this terminal is used as a time constant of the internal gate pulse generation.





The rising edge of the gate pulse is determined internally but little adjustment is possible by the change of C303 connected between the #37 sync separator input and the GND.

The falling edge of the gate pulse is determined by an external integration time constant connected to the #36 terminal (This time constant is also for integration circuit of the composite sync output to obtain the certical sync signal). The gate pulse generated here is masked by the flyback pulse from the #38, and is applied to the pedestal clamp circuit and the burst gate circuit.

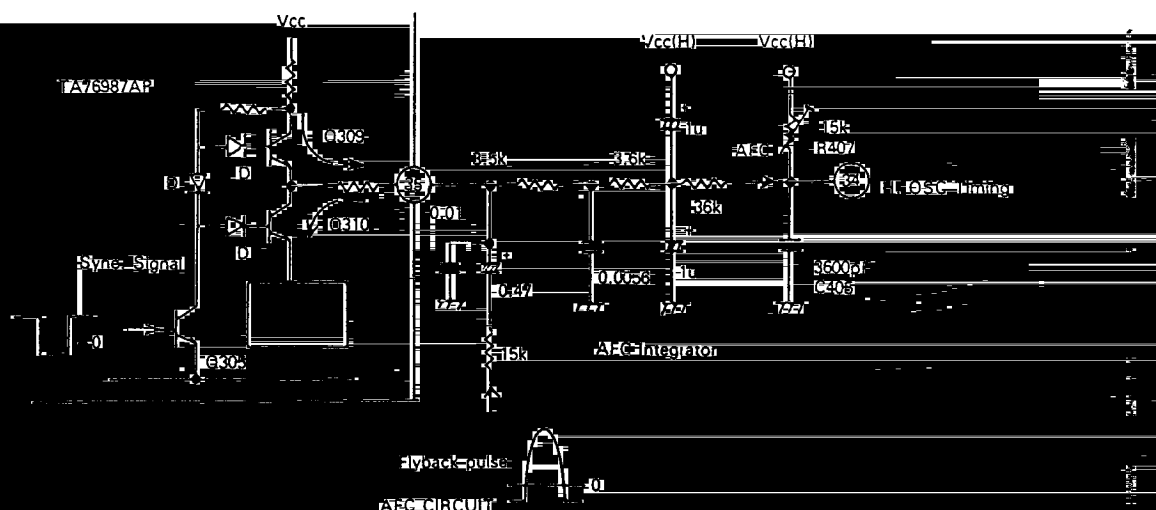
(b) Horizontal AFC Circuit

The TA7698AP adopts a saw tooth wave type horizontal AFC. A form shaped horizontal flyback pulse is compared to the horizontal sync signal, and the phase difference (Frequency difference) is fed back to the horizontal oscillator so that the fly back pulse will have the same thing as the sync pulse.

Ripple wave of the #35 AFC phase detector output is integrated by an external CR circuit and the smoothened error voltage is fed to the h. oscillator.

**(c) Horizontal Frequency Oscillator and Flip-Flop
Horizontal Pre-driver, X-Ray Protector**

The horizontal oscillator generates 2 times of horizontal frequency. The oscillator is a CR charge/discharge type, and is controlled by the AFC circuit. The #34 is a terminal for the oscillator time constant. The free running frequency is adjusted by changing the charge resistor RC or applying certain DC current to the #34. (The output of the AFC circuit is also applied to this terminal.)



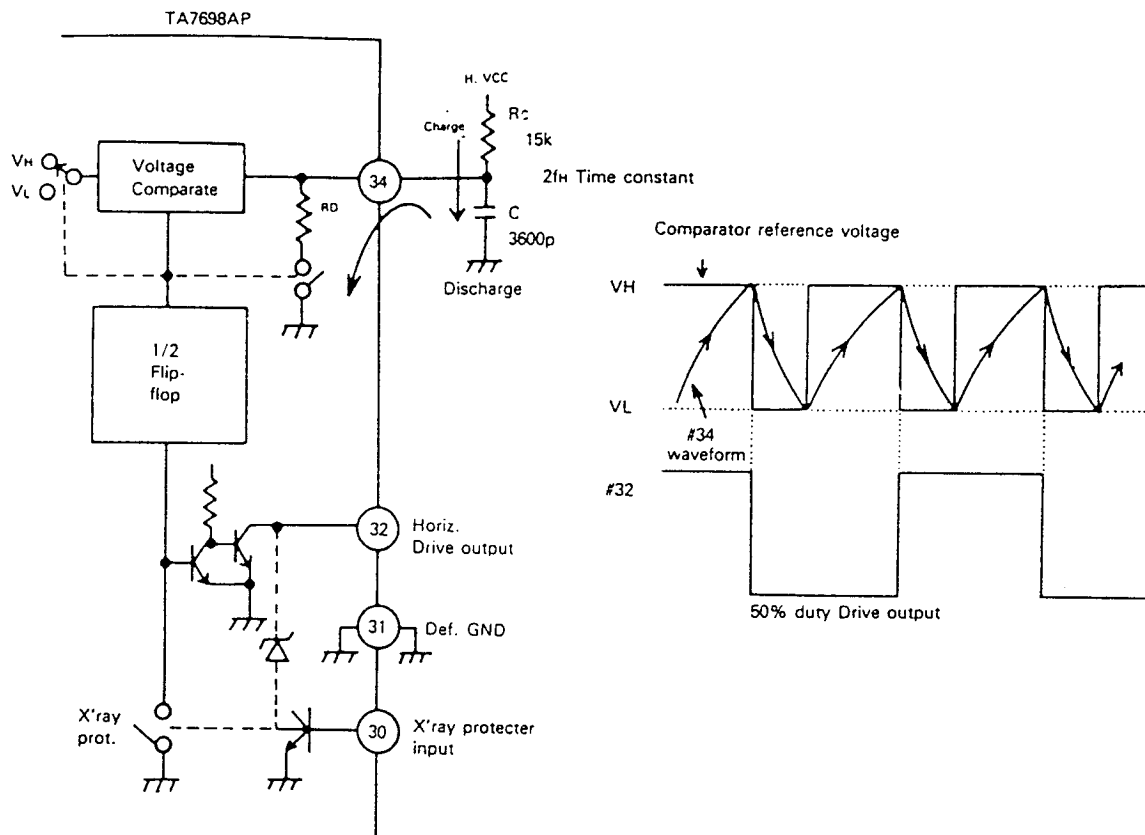
As the $2f_H$ frequency is divided into 2 by a flip-flop circuit the #32 horizontal drive output has exact 50% duty cycle.

This system realises excellent inter-lace performance.

The rated sink current of the open collector output #32 is 30mA peak.

Special attention should be paid to the pattern layouting and wiring of the #32 horizontal drive circuit and the #31 Deflection GND line because these are large f_H component current paths.

The horizontal drive circuit provides an SCR type X-ray protector to prevent X-ray radiation from the CRT. The X-ray protector will operate when the EHV (Extremely High Voltage for CRT operation) exceeds certain value, and that is determined by external components. Also the X-ray protector will operate when the #32 output is shut down to the GND level, and it will not recover before re-switching the power supply.



(d) Horizontal Vcc

As described previously, the supply voltage of the horizontal section is applied from a zener type voltage regulator as shown below. When a CTV set is switched on, some supply current is required to starting up the horizontal section is supplied from the high +B line (+110 to +130V) and then an internal flyback pulse power supply (low +B line 16.5V or 12V) is activated and supports the supply current of the horizontal section.

The internal zener voltage is 8.2V typ. A diode inserted low +B line is for separation between these two power supplies.

(e) Vertical Sync. Vertical Oscillator

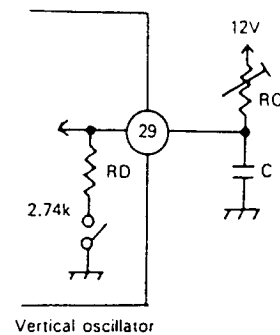
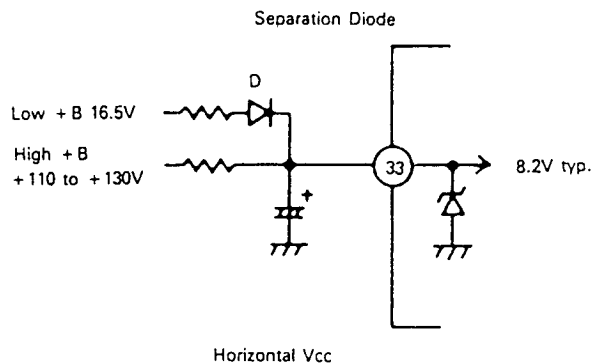
The composite sync output from the #36 is integrated by the external time constant to obtain the vertical sync. signal and the sync signal is applied to the #28 vertical sync. terminal.

The vertical oscillator is also an CR charge-discharge type as same as the horizontal oscillator.

The vertical sync pulse re-triggers the oscillation and pull in the frequency to vertical frequency f_v .

The #29 is for the oscillator time constant. The discharging resistor RD is included in the IC.

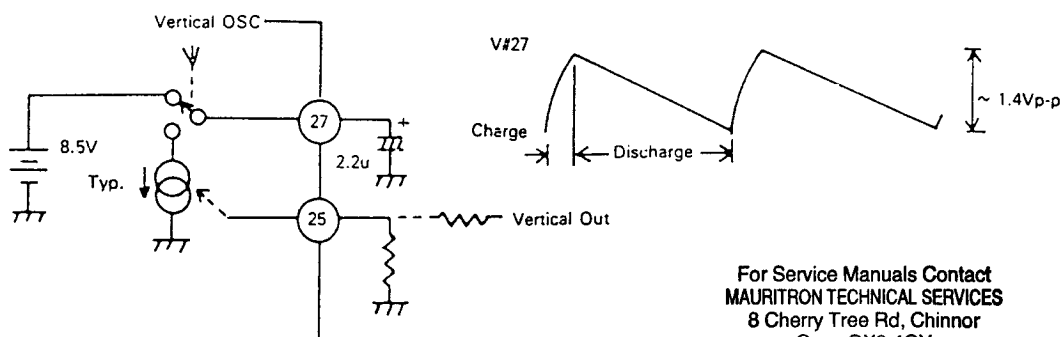
The vertical retrace time is determined by the time constant C (RC/RD)=C RD.



(f) Ramp Generator

A linear ramp wave is generated by constant voltage charging and constant current discharging a capacitor connected to the #27 terminal. The charge-discharge timing is controlled by the vertical oscillator output. The discharging current is determined by a resistor connected to the #25 terminal.

As the vertical output amplitude is proportioned to the #27 voltage amplitude, it is possible to compensate the vertical linearity by feeding back the output to the #25 terminal.



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(g) Vertical Driver Amplifier and the Vertical Output Circuit

The vertical output section which consists of the vertical drive NFB amplifier of the TA7698AP and an SEPP or an SRPP output stage drives a vertical deflection coil DY so that the current wave form to a similar voltage wave form. As the voltage wave form and the output DC component are applied to the #26 NFB terminal through a B circuit. The B Circuit determines the output current amplitude and the centre voltage.

VOLTAGE TABLE FOR IC					
SYMBOL PIN NO	IC101 (V)	IC201 (V)	IC301 (V)	IC401 (V)	IC402 (V)
1	5.13	0.66	3.66	12.9	13.2
2	2.67	0.52	10.30	11.2	GND
3	5.97	0.00	3.75	GND	10.9
4	GND	GND	3.68		
5	7.20	5.05	1.02		
6	4.21	10.50	7.92		
7	4.21	10.40	4.95		
8	4.21	NC	8.46		
9	4.21		5.26		
10	7.22		6.44		
11	2.00		GND		
12	GND		8.00		
13	5.50		8.03		
14	6.60		3.07		
15	3.29		3.07		
16	3.73		7.20		
17	7.14		3.49		
18	7.14		7.19		
19	3.74		3.49		
20	10.40		6.43		
21	4.50		6.43		
22	4.51		6.42		
23	5.50		5.62		
24	4.51		0.72		
25			NC		
26			8.06		
27			7.98		
28			0		
29			2.41		
30			GND		
31			GND		
32			0.38		
33			8.36		
34			4.67		
35			4.58		
36			2.37		
37			0		
38			0.47		
39			3.28		
40			5.96		
41			6.26		
42			7.60		

NOTE: VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH

CONTRAST : MAXIMUM POSITION
 BRIGHTNESS : CENTRE POSITION
 COLOUR : CENTRE POSITION
 SIGNAL INPUT : 80 dBuV
 CHANNEL SETTING : THE LAST CHANNEL OF UHF

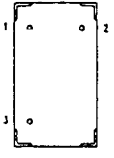
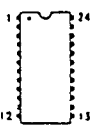
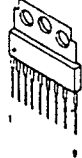
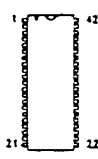
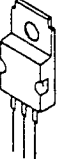
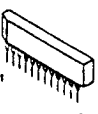
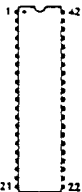
VOLTAGE TABLE FOR IC					
SYMBOL PIN NO	IC001 (V)	IC403 (V)	IC601 (V)	IC602 (V)	IC802 (V)
1	NC	GND	0	GND	1.77
2	10.30	10.70	GND	2.32	0.86
3	3.80	NC	0	0	4.52
4	9.00	21.70	NC	4.43	NC
5	3.68	NC	NC	4.62	GND
6	9.00	0.70	NC	4.60	GND
7	GND	-0.03	NC	3.80	2.22
8	3.00	1.04	4.73	4.64	4.53
9	3.80	21.50	-32.7	4.50	1.20
10	3.70		NC	4.61	
11	4.50		0	4.61	
12	3.00		NC	4.61	
13	9.00		NC	4.61	
14	NC		NC	4.58	
15	NC			4.57	
16	NC			4.58	
17				0.10	
18				0.02	
19				0.02	
20				0.02	
21				0.02	
22				NC	
23				0	
24				0	
25				2.97	
26				NC	
27				NC	
28				NC	
29				NC	
30				0.02	
31				NC	
32				NC	
33				NC	
34				1.17	
35				2.56	
36				2.88	
37				NC	
38				NC	
39				11.00	
40				2.25	
41				2.17	
42				4.64	

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NOTE: VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH

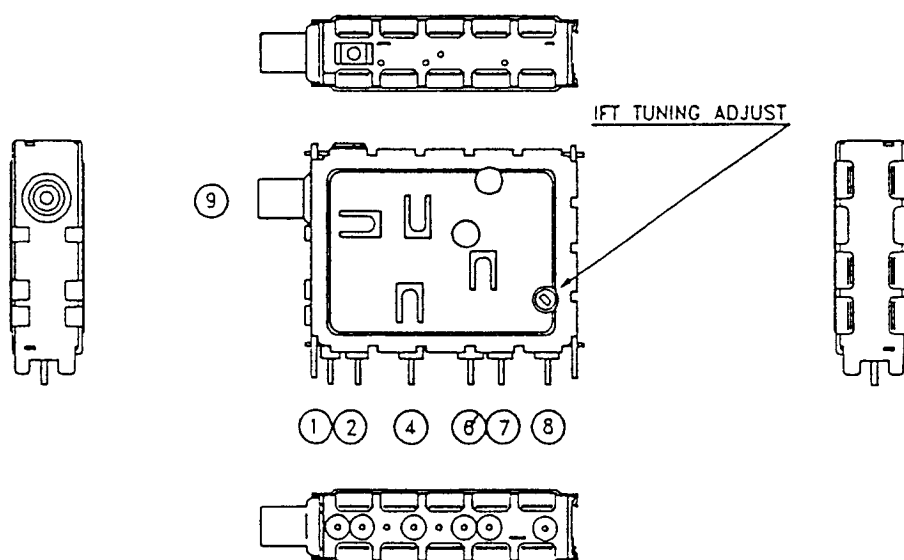
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COLOUR : CENTRE POSITION
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CHANNEL SETTING : THE LAST CHANNEL OF UHF HIGH

TRANSISTOR AND IC IDENTITY

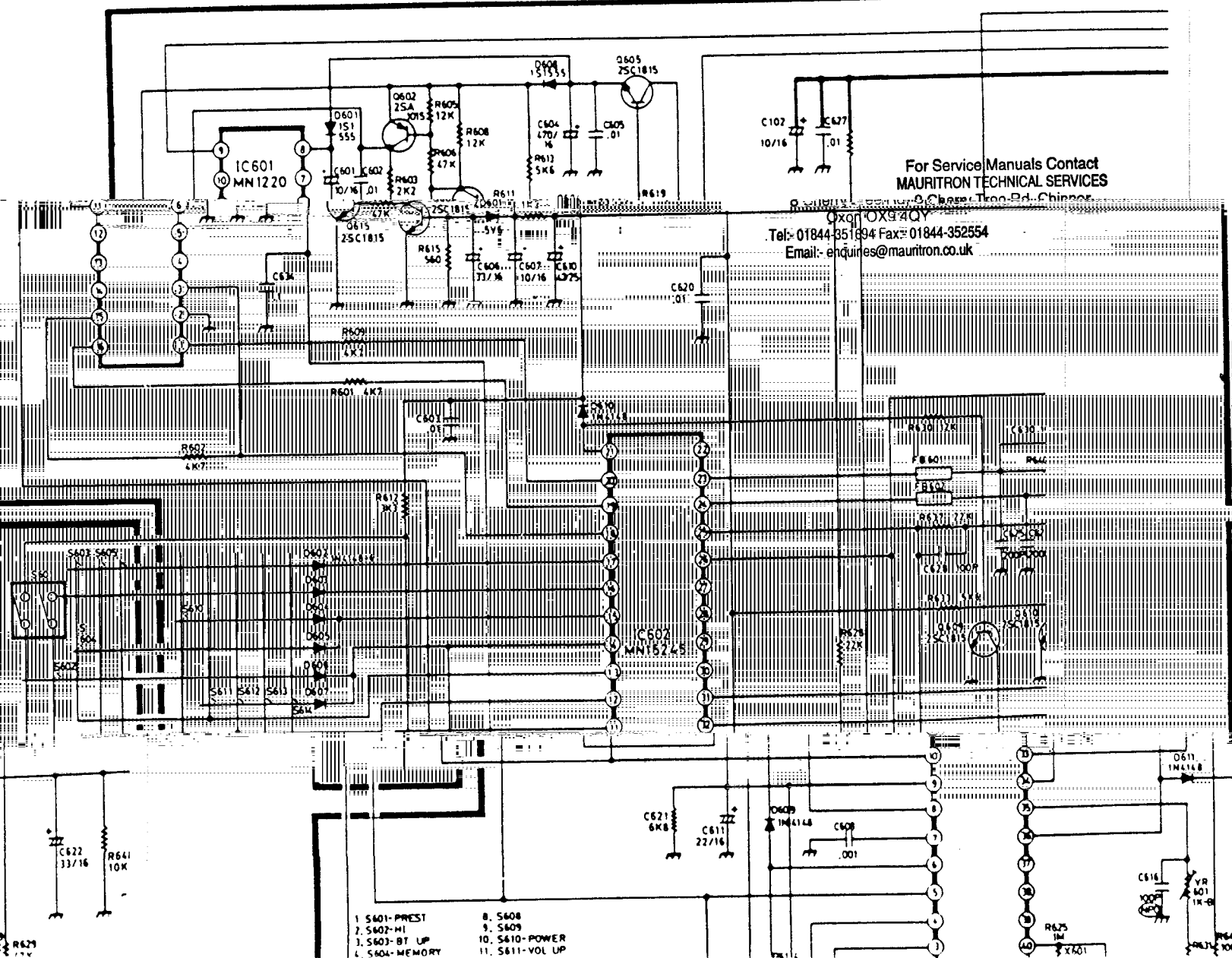
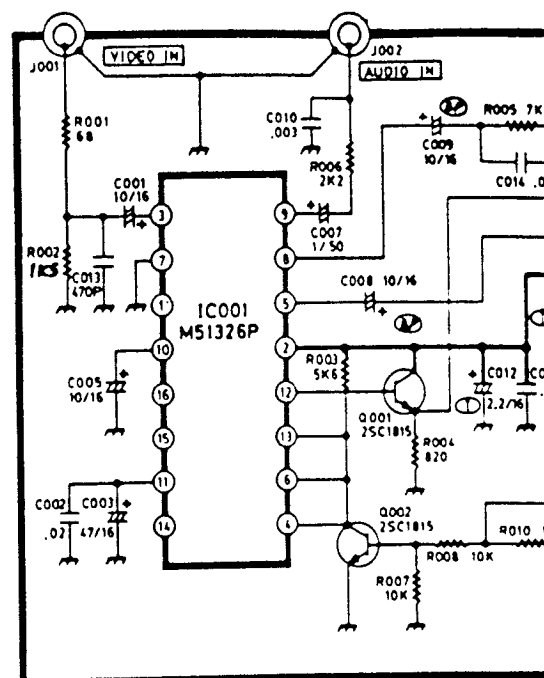
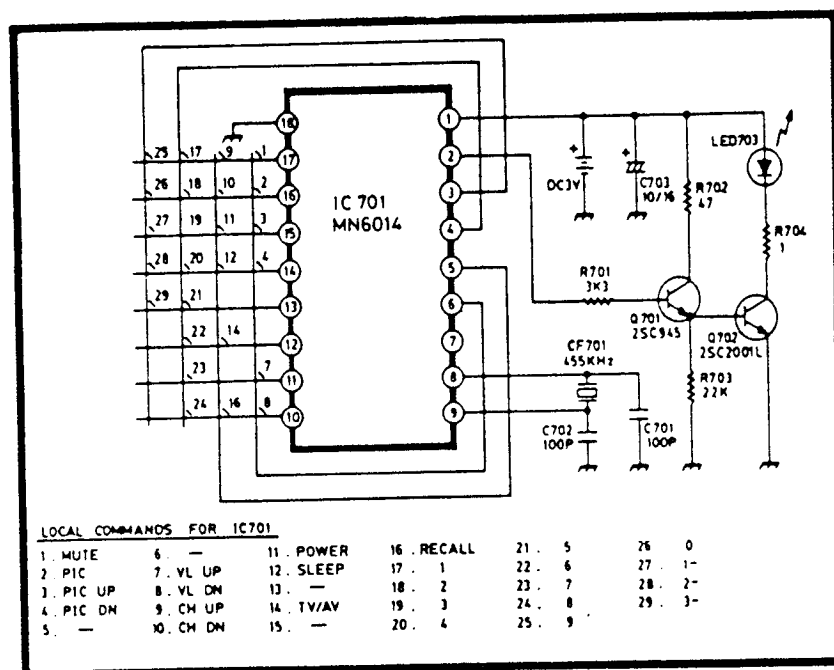
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 TOP VIEW	TA7680AP	 TOP VIEW	MN1220 M51326	 TOP VIEW	AN5512		2SD400F 2SC1573		
 TOP VIEW	MN15245	 TOP VIEW	L7812	 TOP VIEW	AN5026K		2SC2209	 TOP VIEW	TA7698AP

PICTORIAL VIEW OF TUNER

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Terminal Name	BU	VT	-	AGC	-	AFT	BM	IF	U ANT

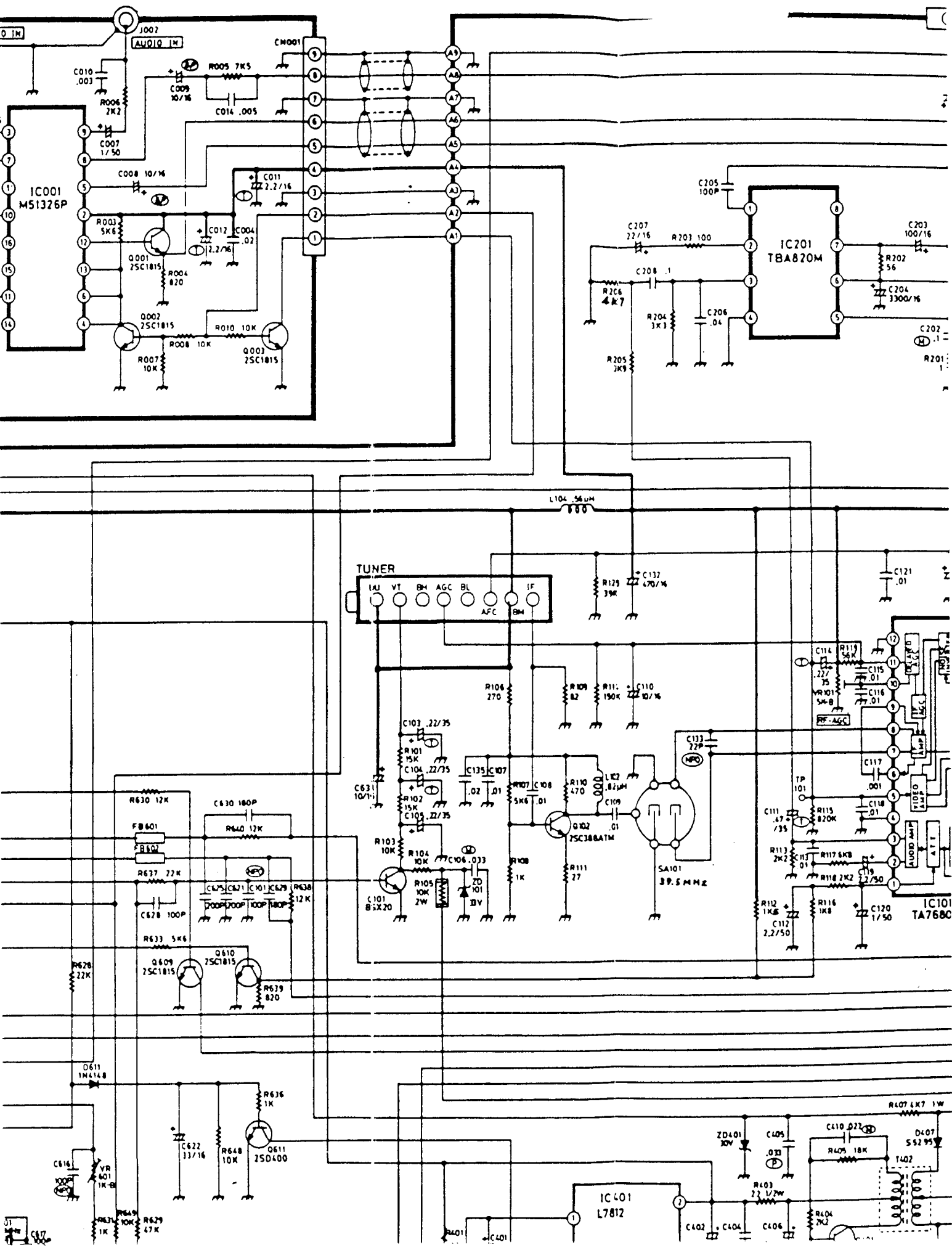


SCHEMATIC DIAGRAM FOR PAL-I SYSTEM



AL-1 SYSTEM

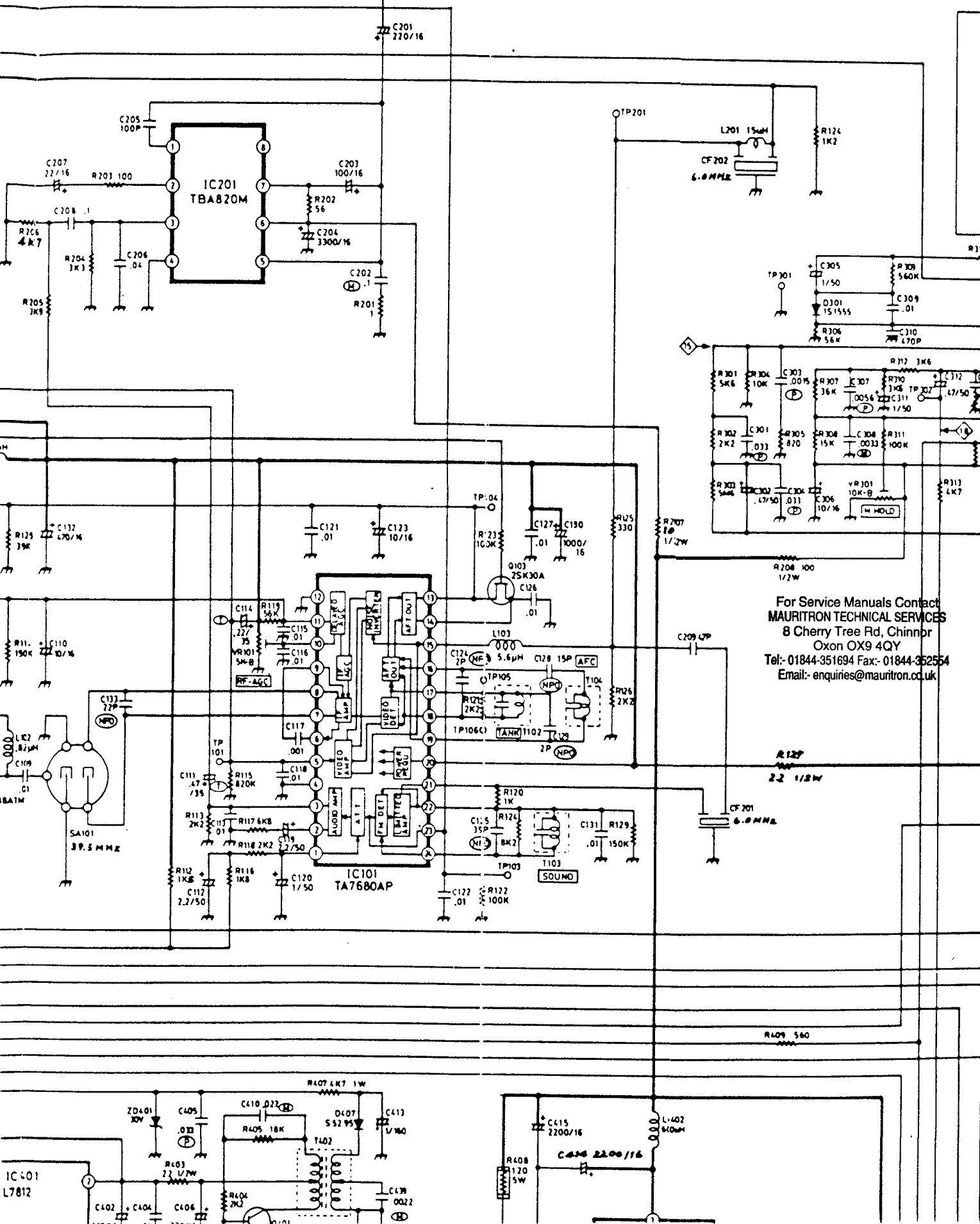
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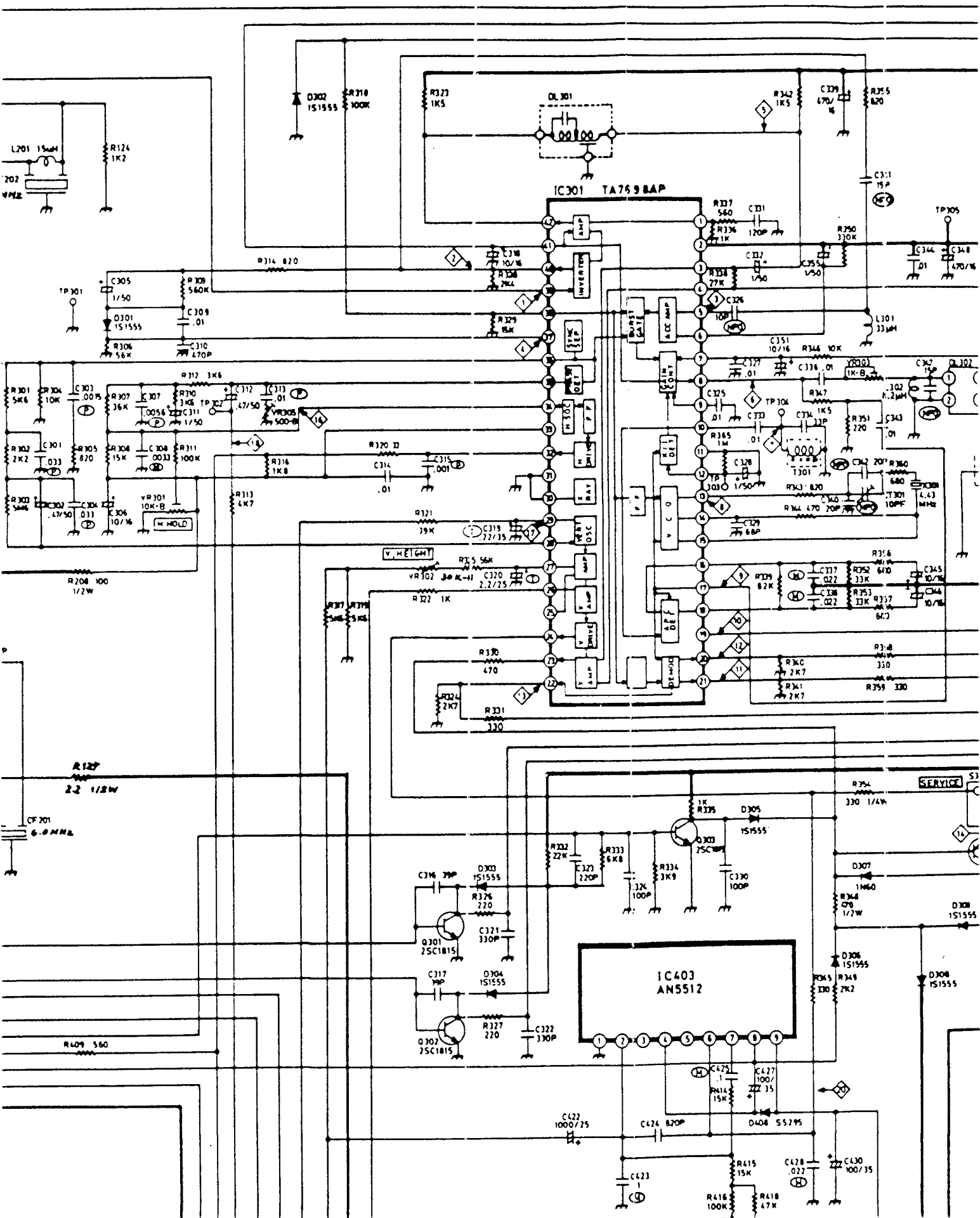


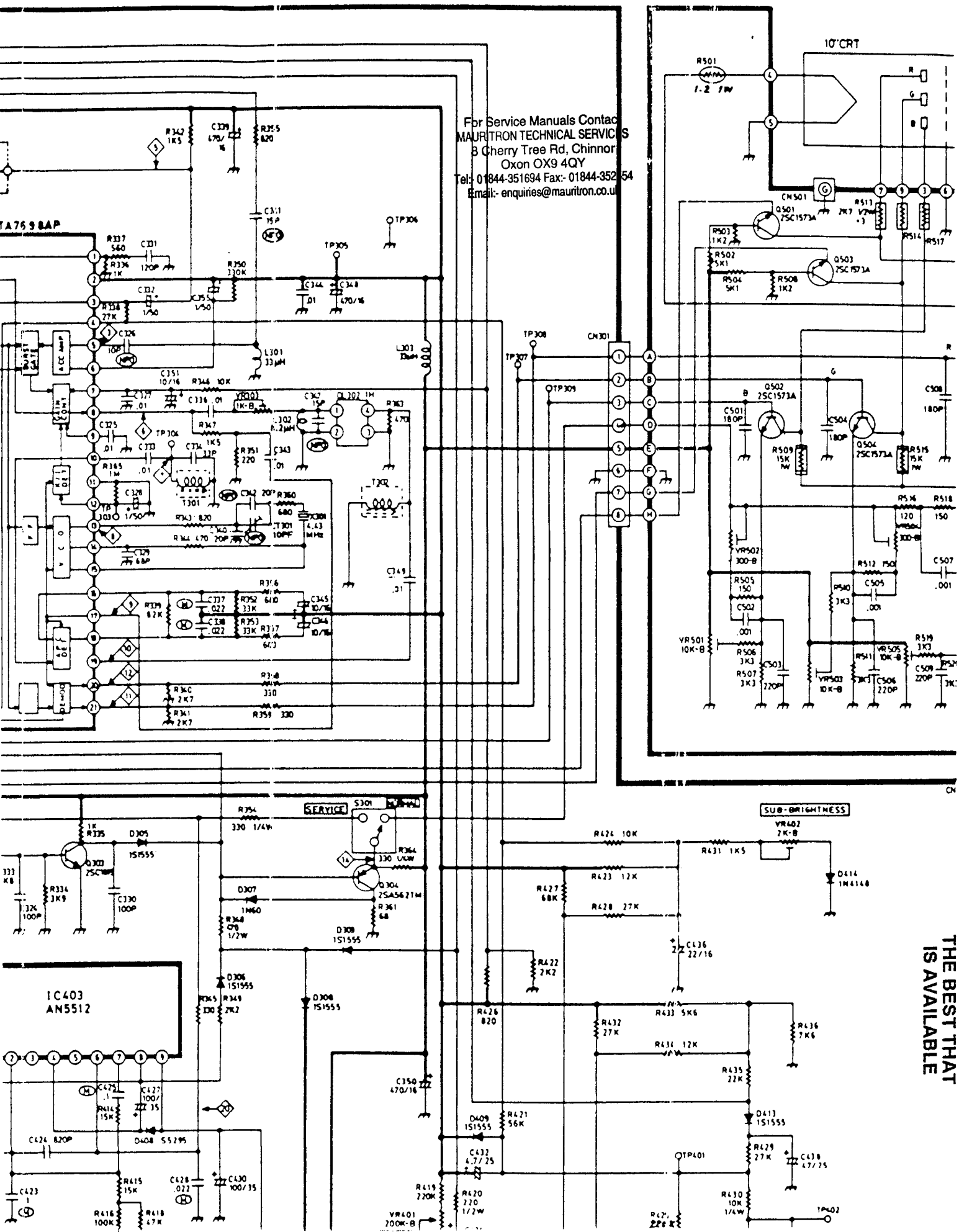
SPEAKER
16Ω 1W

CM201

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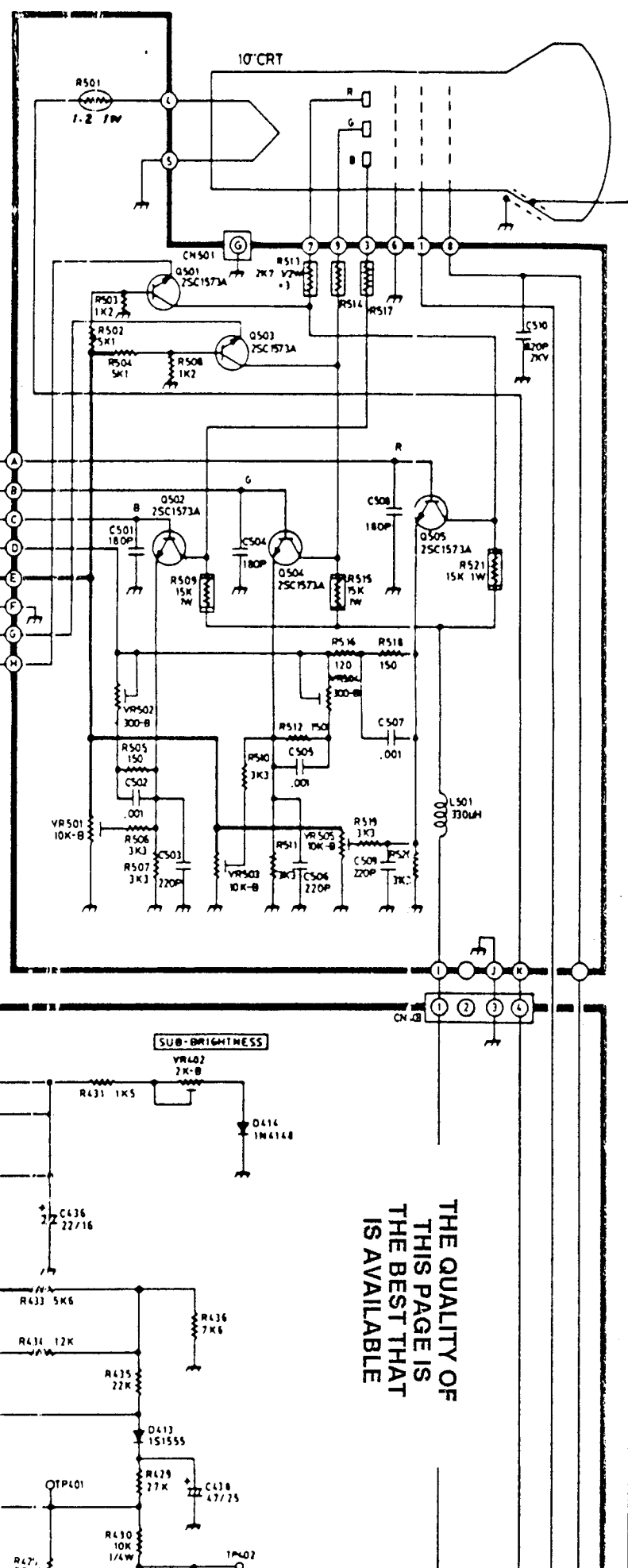


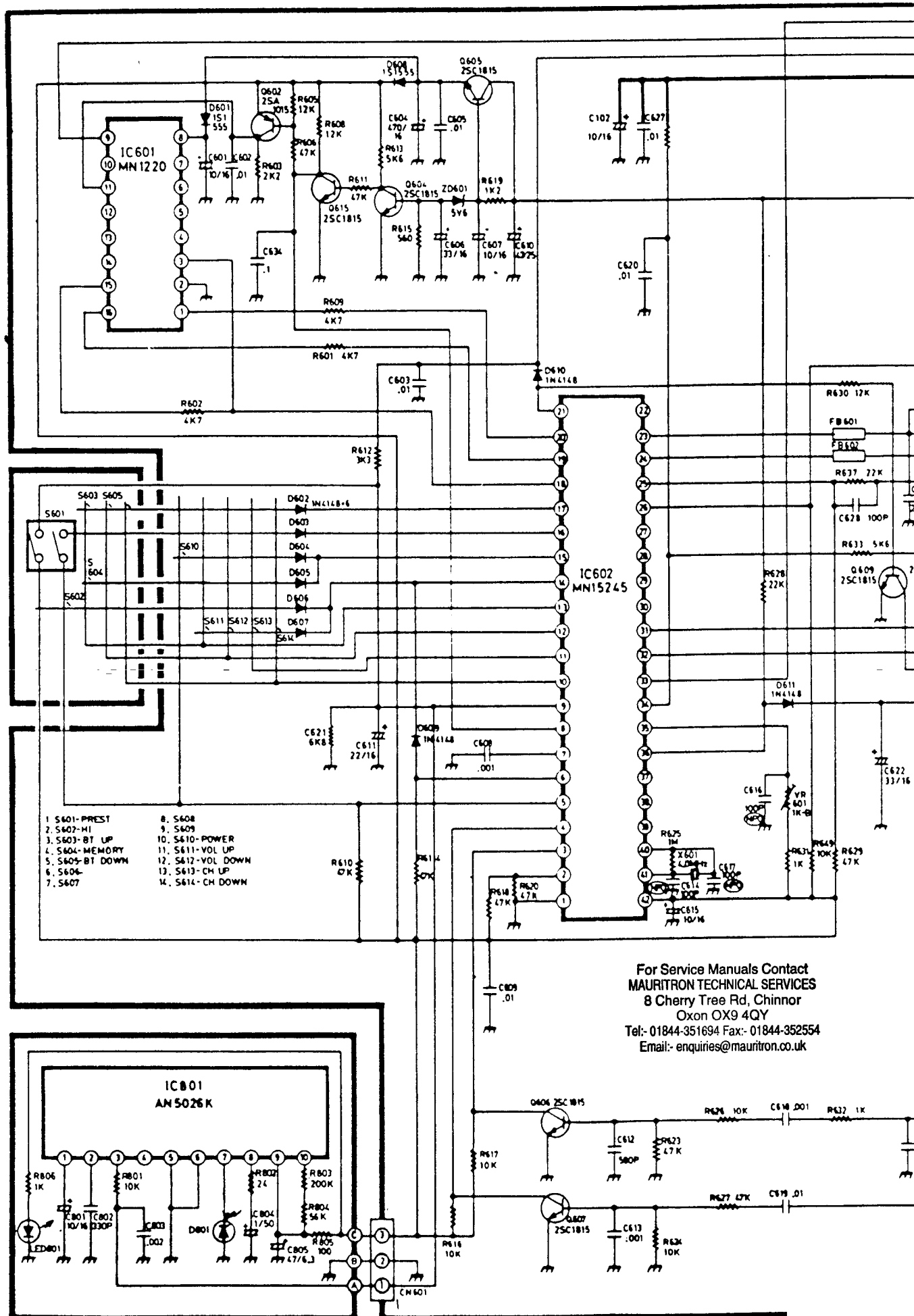




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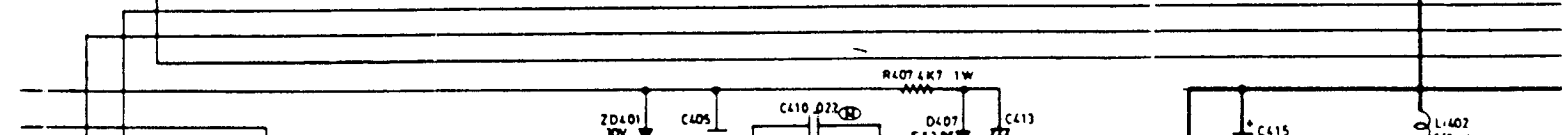
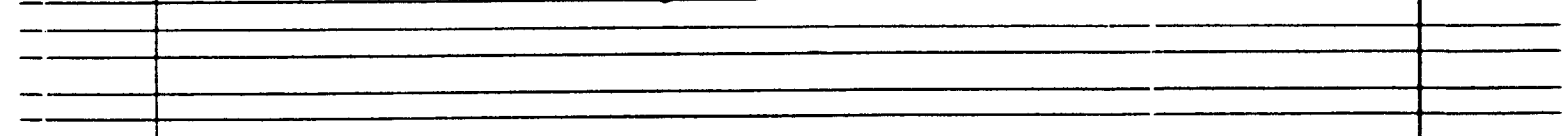
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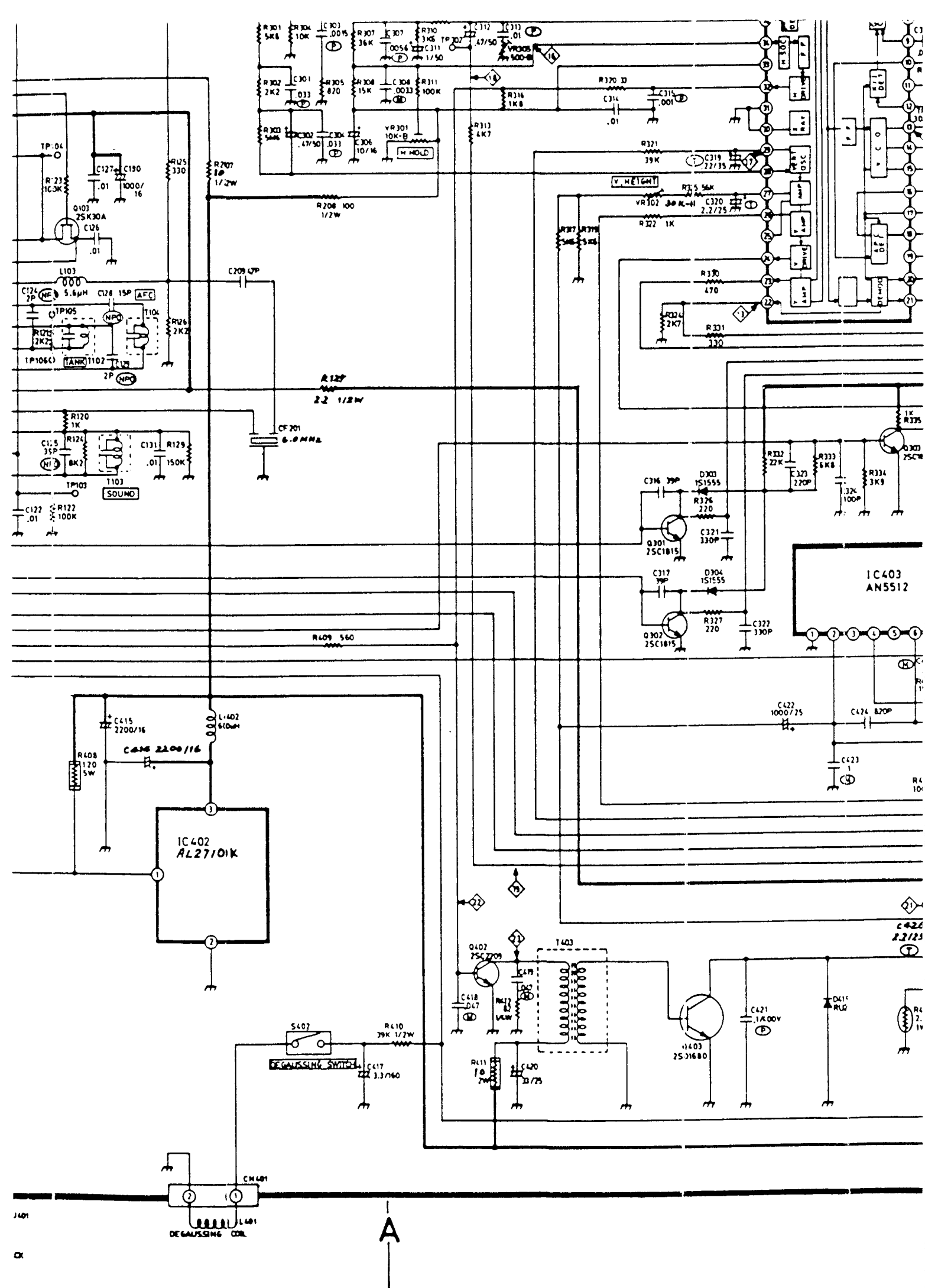


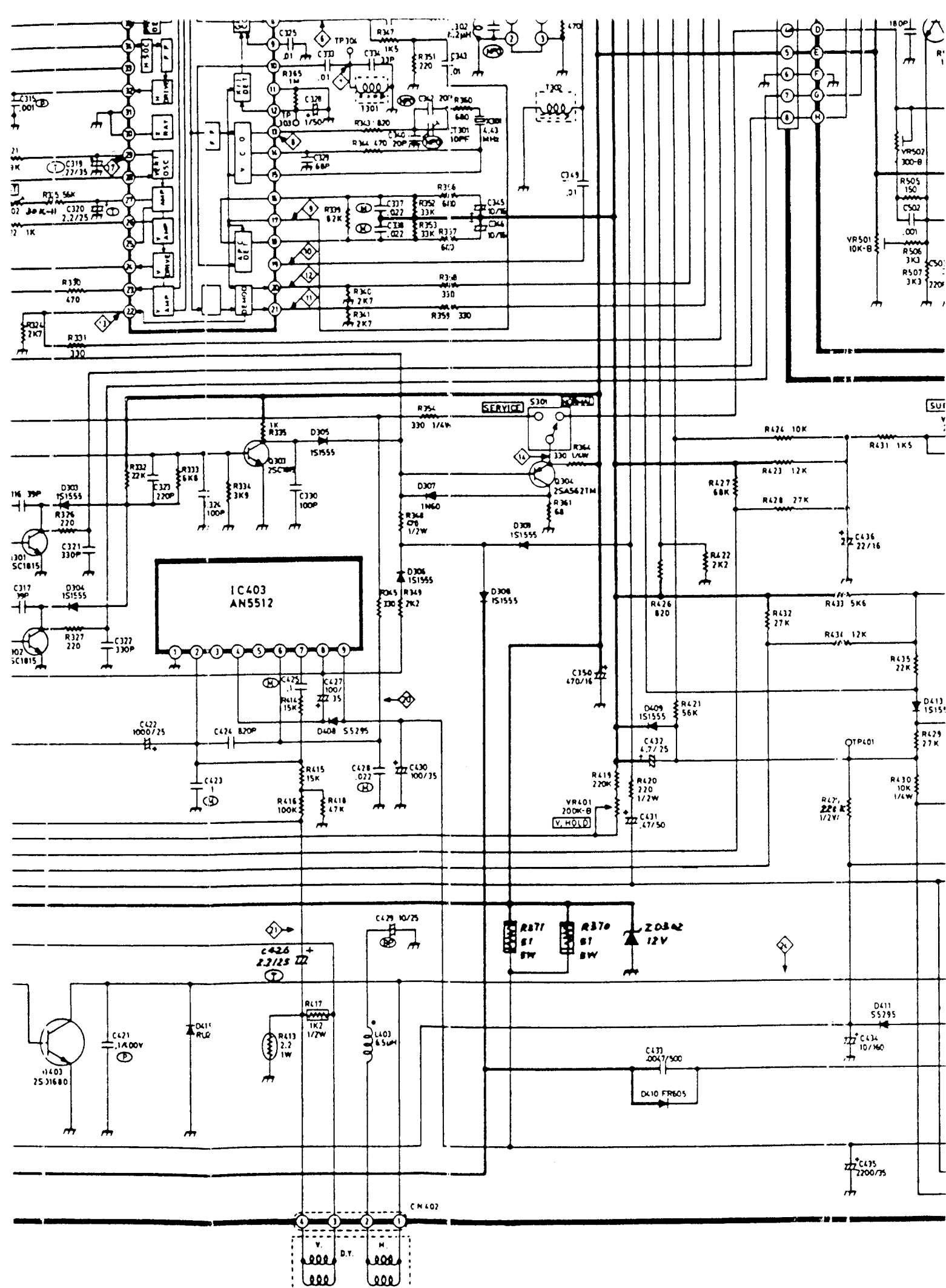


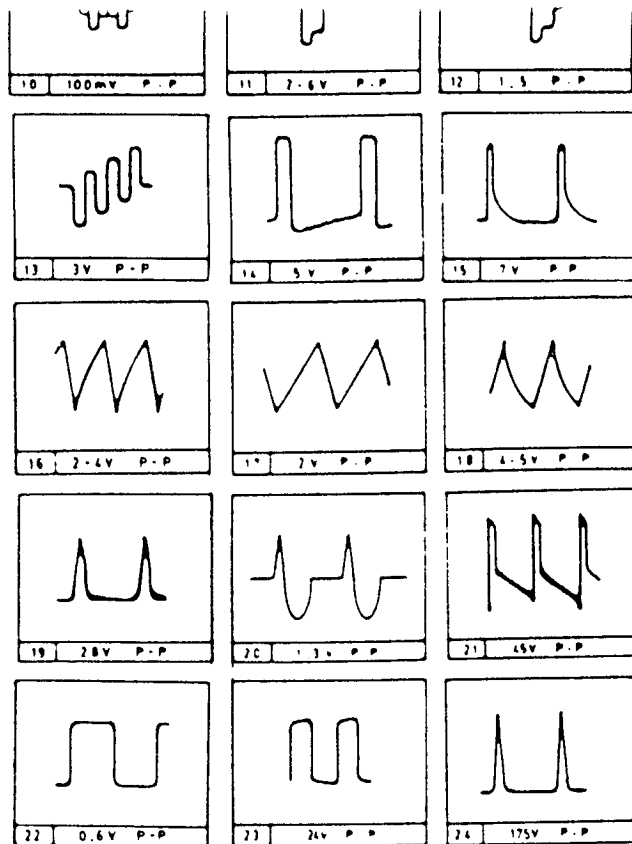
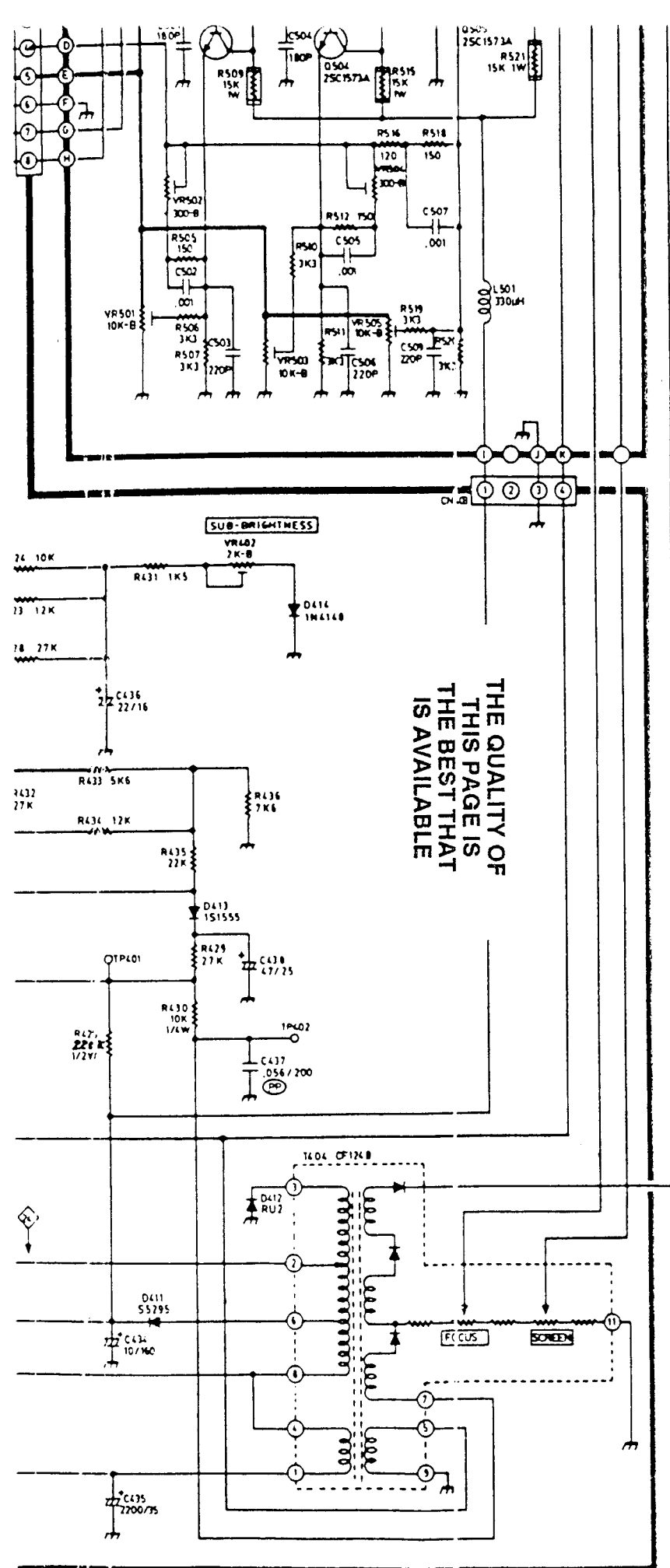
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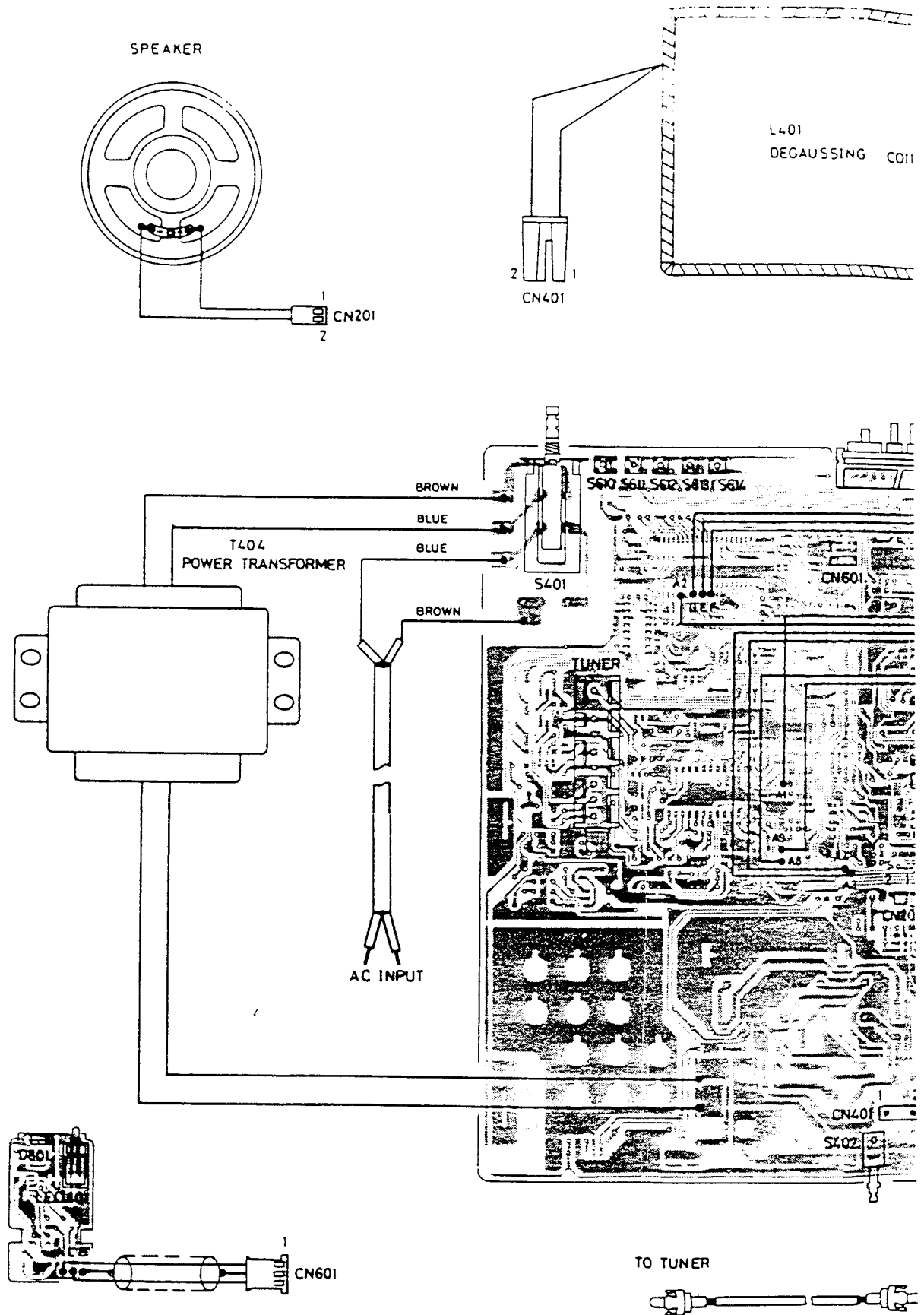
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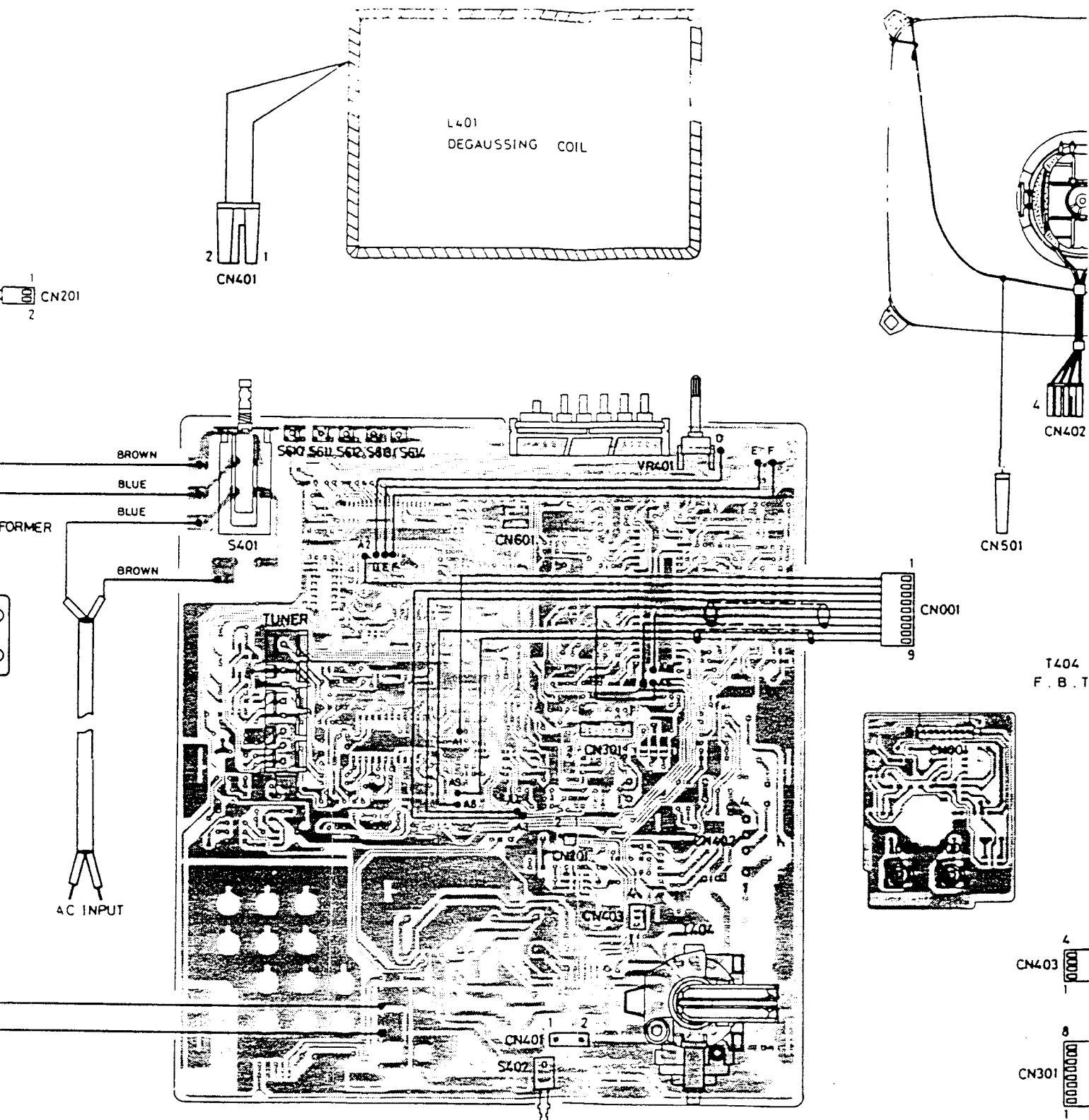
- (1) ALL CAPACITORS ARE IN μF UNLESS OTHERWISE NOTED
ALL CAPACITORS ARE 50V UNLESS OTHERWISE NOTED
- (2) CAPACITOR NOT SPECIFICALLY DESIGNATED ARE CERAMIC CAPACITORS.
 - a) ELECTROLYTIC CAPACITOR.
 - b) BI-POLAR ELECTROLYTIC CAPACITOR.
 - c) TANTALUM CAPACITOR.
 - d) METALLIZED POLYESTER.
 - e) POLYESTER FILM CAPACITOR.
 - f) POLYPROPYLENE CAPACITOR.
 - g) MYLAR CAPACITOR.
- (3) ALL RESISTORS ARE IN OHM 1/16 WATT UNLESS OTHERWISE NOTED.
- (4) RESISTOR NOT SPECIFICALLY DESIGNATED ARE CARBON FILM RESISTORS.
 - a) NONFLAMMABLE RESISTOR
 - b) FUSEABLE RESISTOR
 - c) CEMENT RESISTOR
 - d) METAL OXIDE RESISTOR
 - e) THERMISTOR
- (5) DC VOLTAGE ARE MEASURED FROM POINTS INDICATED TO THE CIRCUIT GROUND WITH A DIGITAL MULTIMETER TEST.
- (6) WAVEFORMS ARE TAKEN WITH SETTING CONTROLS TO A NORMAL CONDITIONS (COLOR PHILIPS PATTERN).
- (7) THIS CIRCUIT DIAGRAM IS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

KONG WAN VIDEO ENGINEERING LTD.		
TITLE SCHEMATIC DIAGRAM		
MODEL: K 3910/3911 SYSTEM: PAL-I		
DRAWING NO: 3910-04		COUNTRY
DATE: 9-5-88	REV: C(11-2-91)	
DRAWN:	CHECKED:	APPROD

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8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel: 01844-351694 Fax: 01844-352554
Email: enquiries@mauritron.co.uk

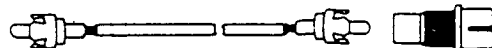
WIRING DIAGRAM





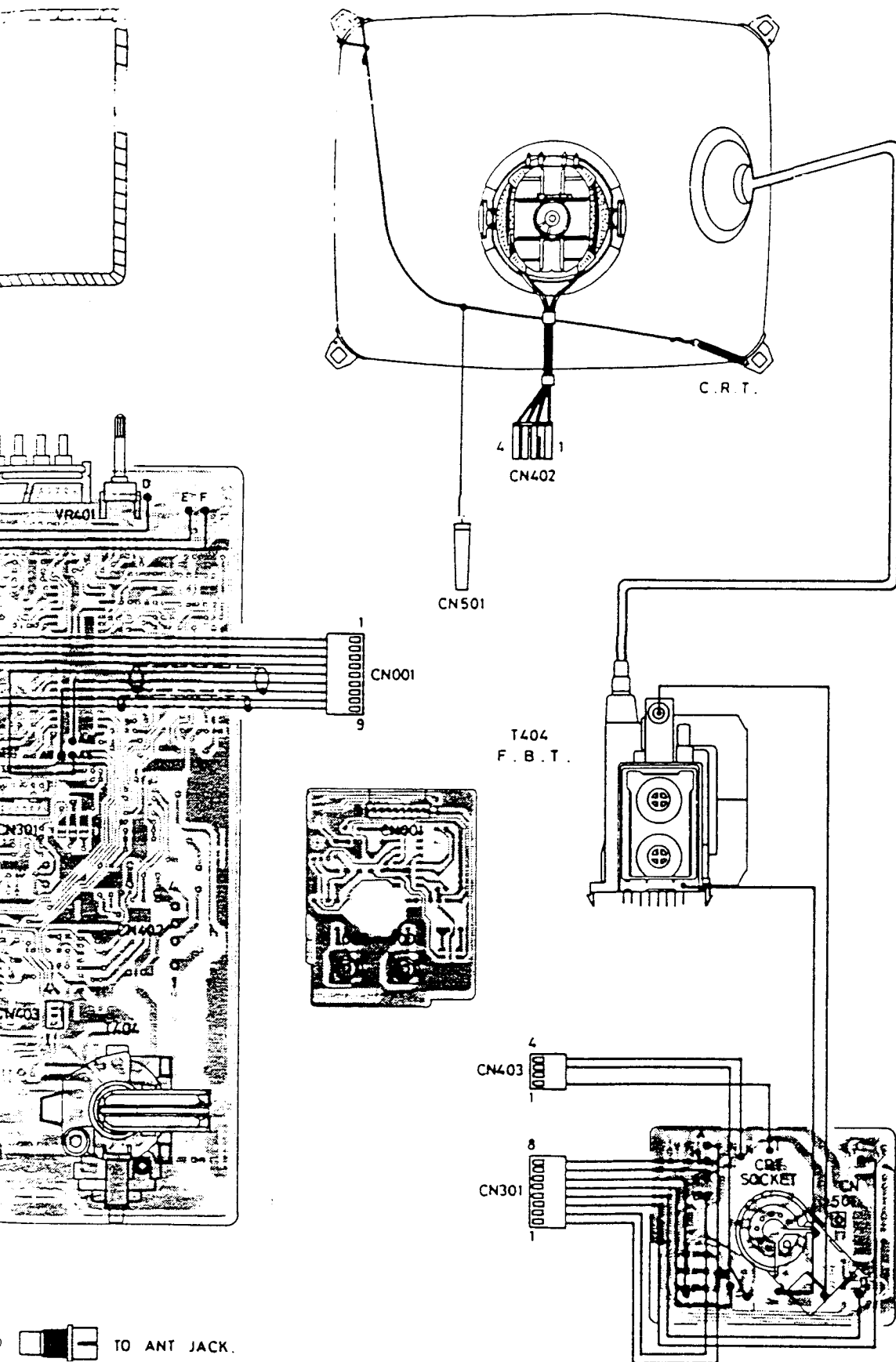
CN601

TO TUNER

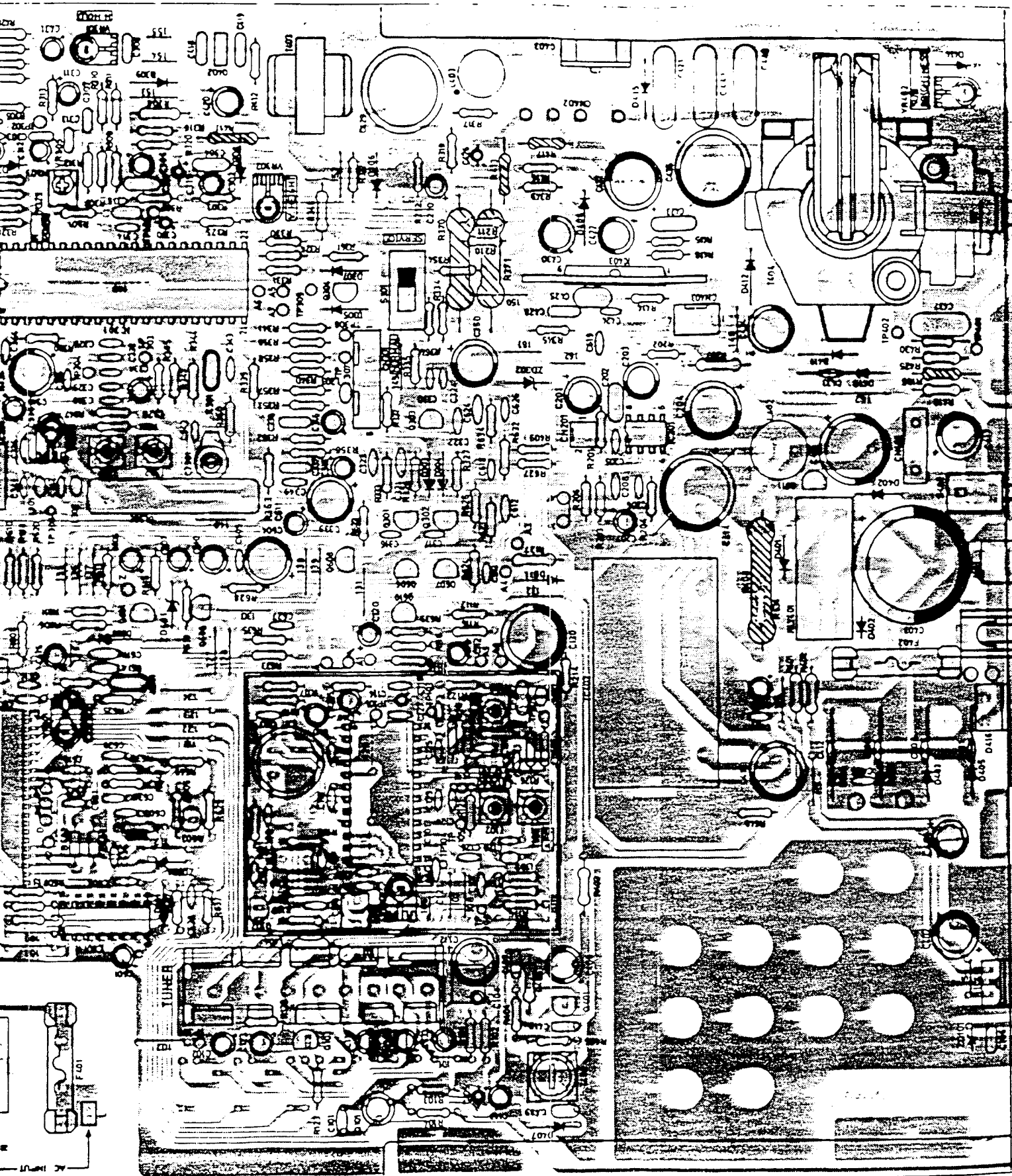


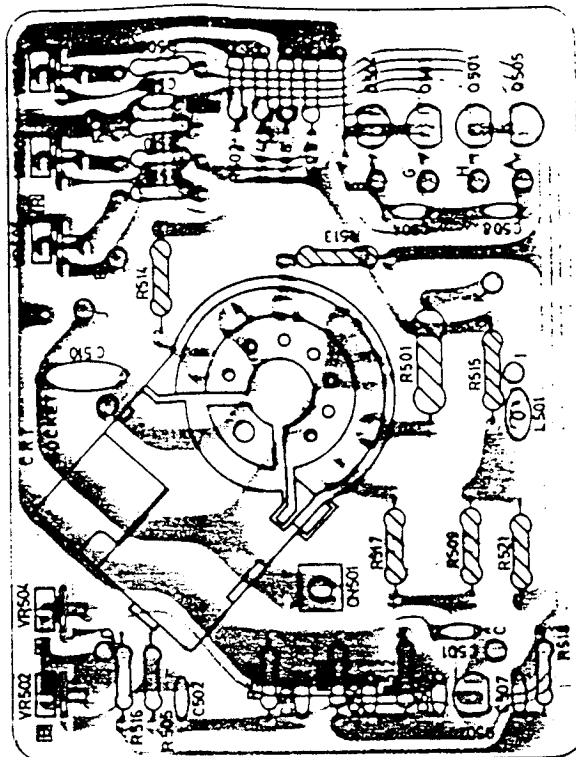
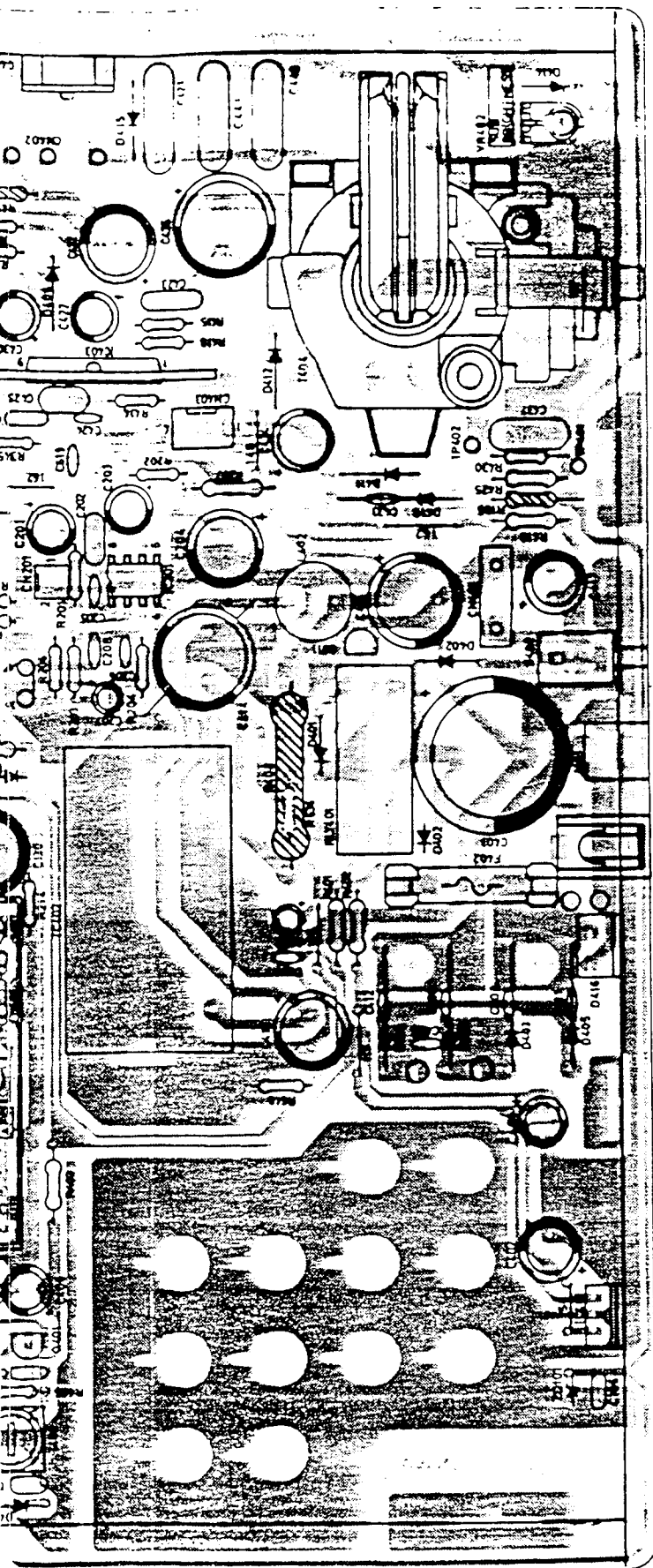
TO ANT JACK.

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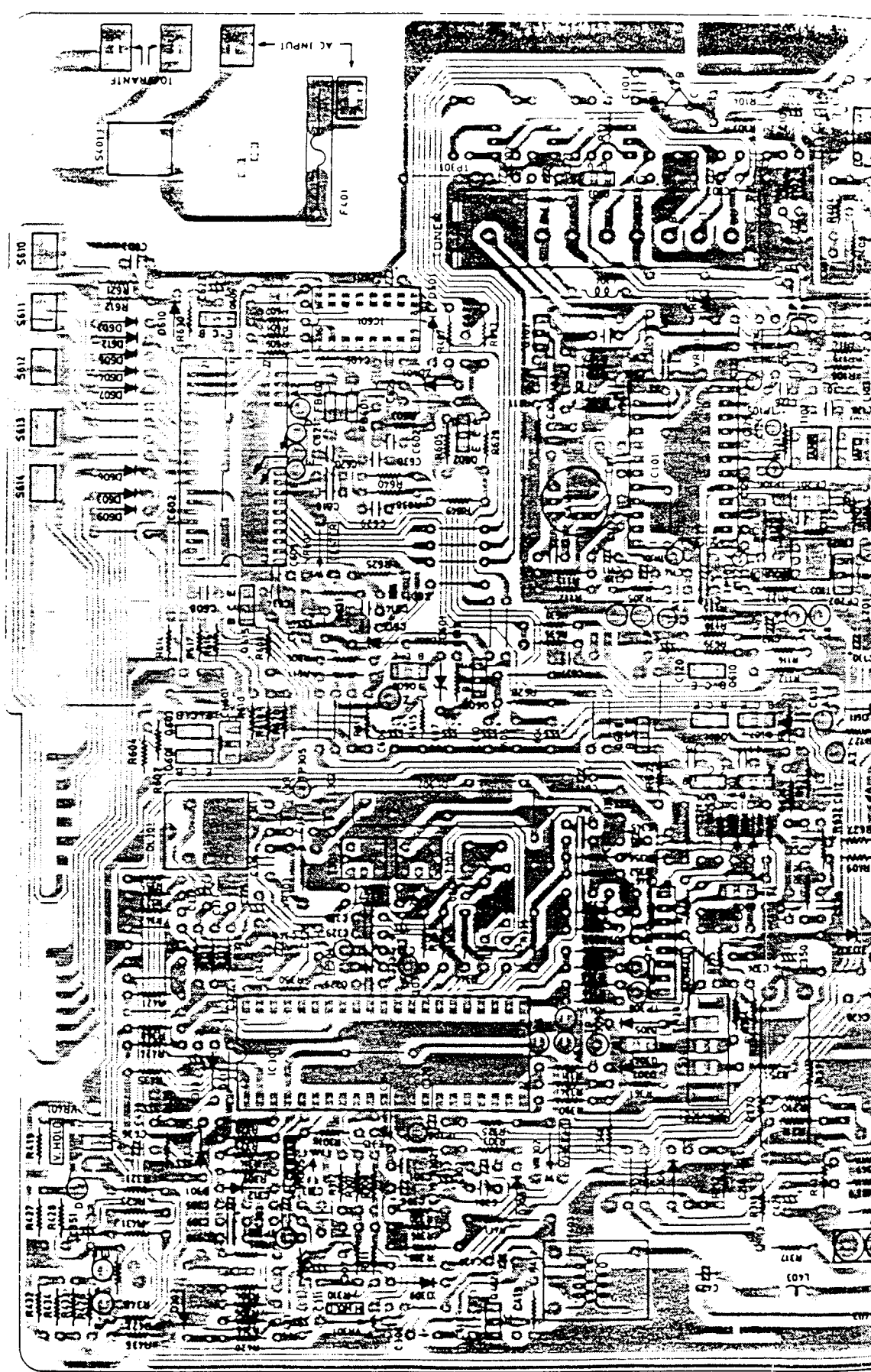


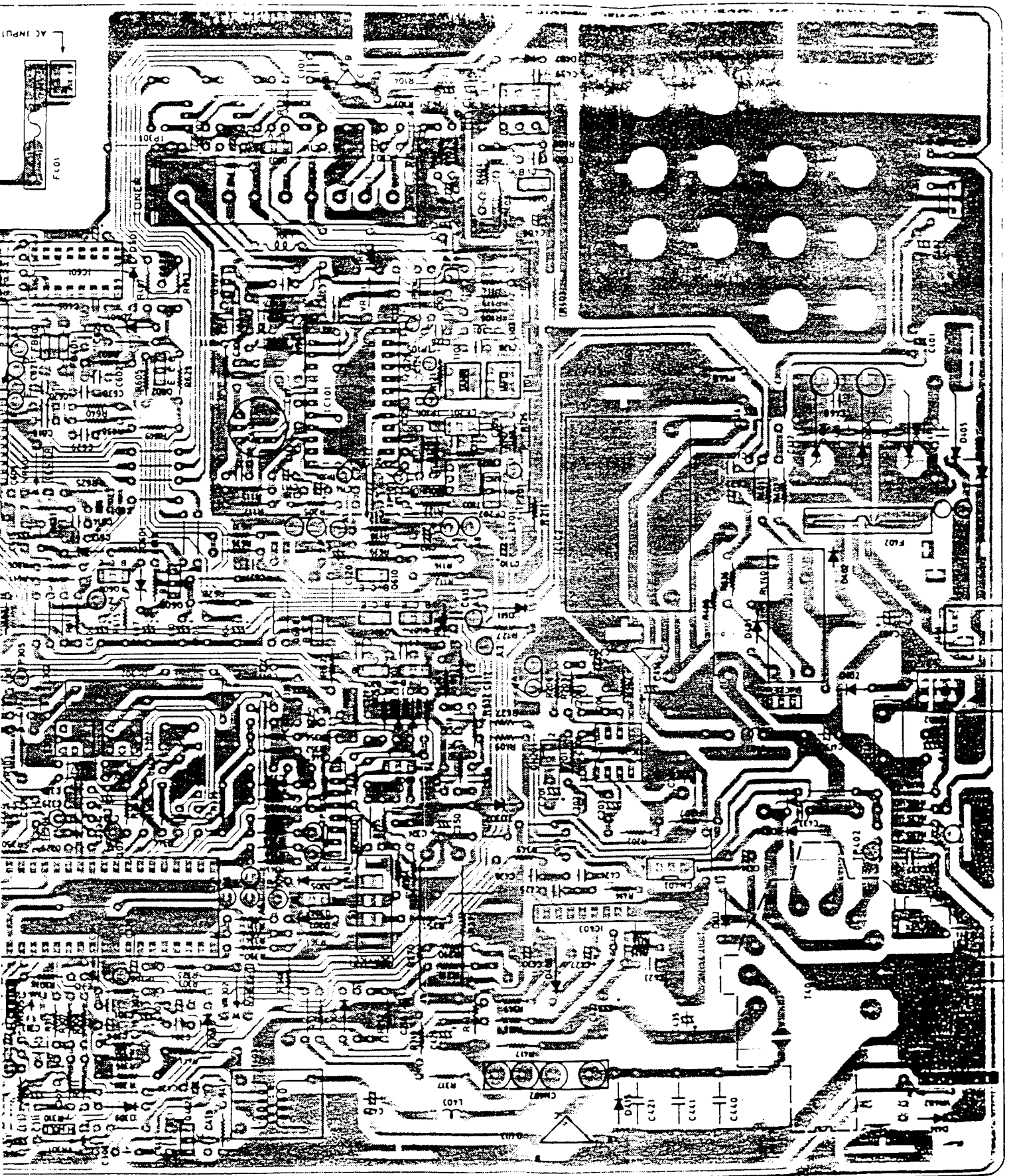


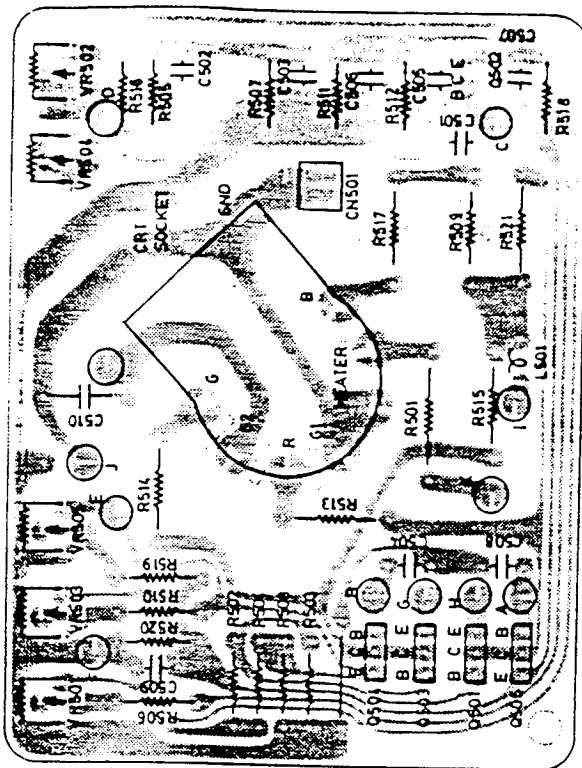
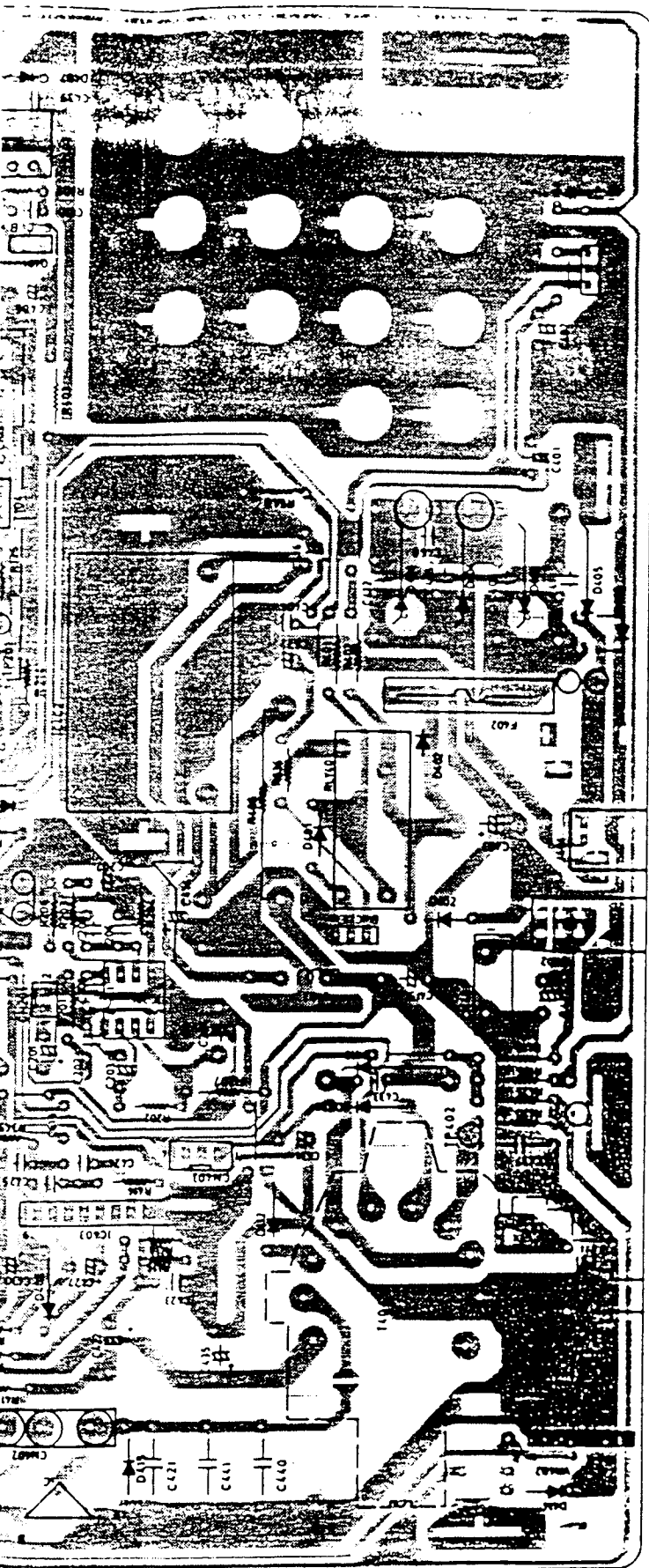
(CRT BOARD)

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A detailed black and white photograph of a complex printed circuit board (PCB) for a radio receiver. The board is populated with numerous electronic components, including integrated circuits, resistors, capacitors, and a transformer. A large, multi-pin connector is visible on the left side. The PCB is densely packed with components and intricate wiring patterns.





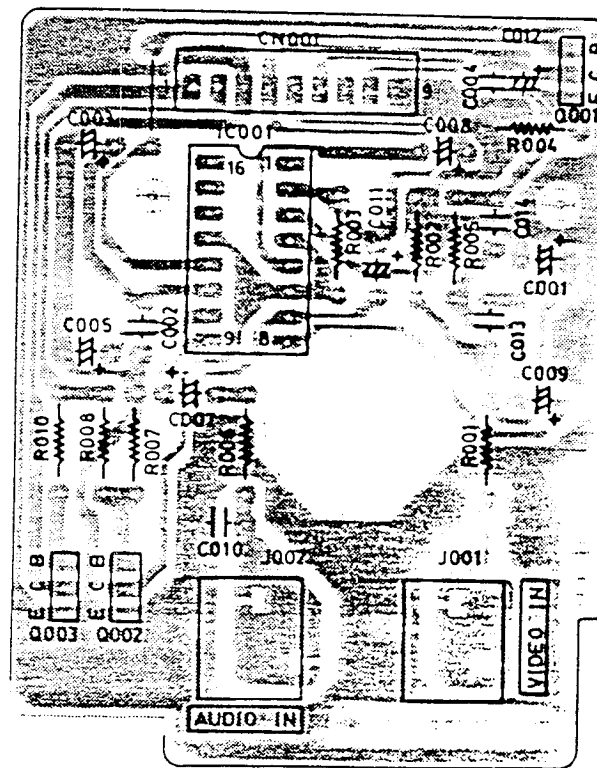


(CRT BOARD)

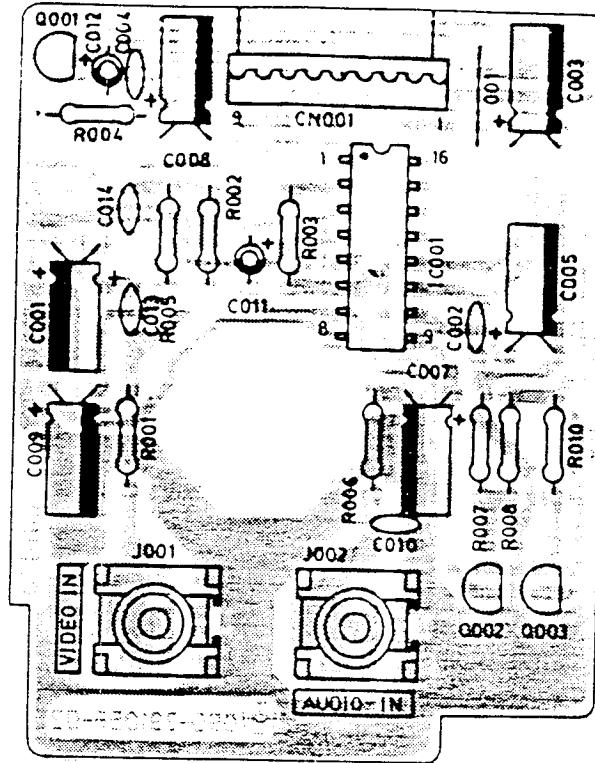
COMPONENT DIAGRAM

A/V BOARD

(BOTTOM VIEW)



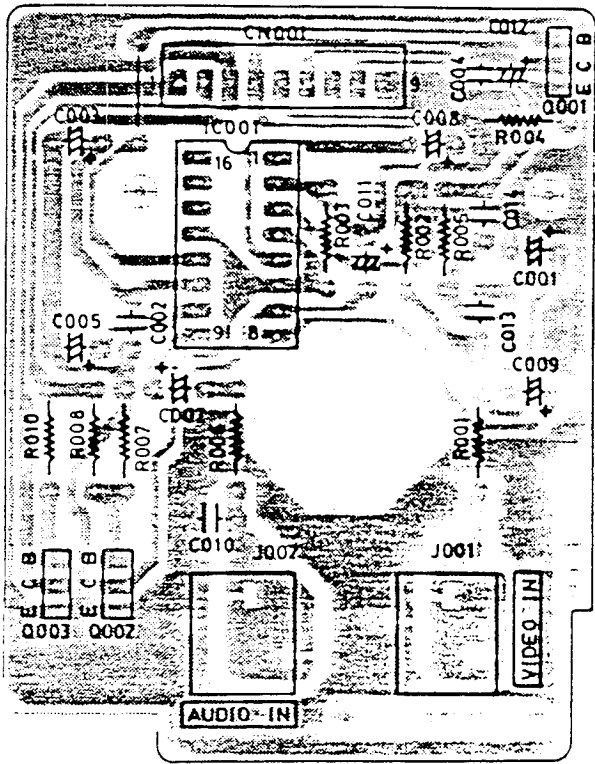
(TOP VIEW)



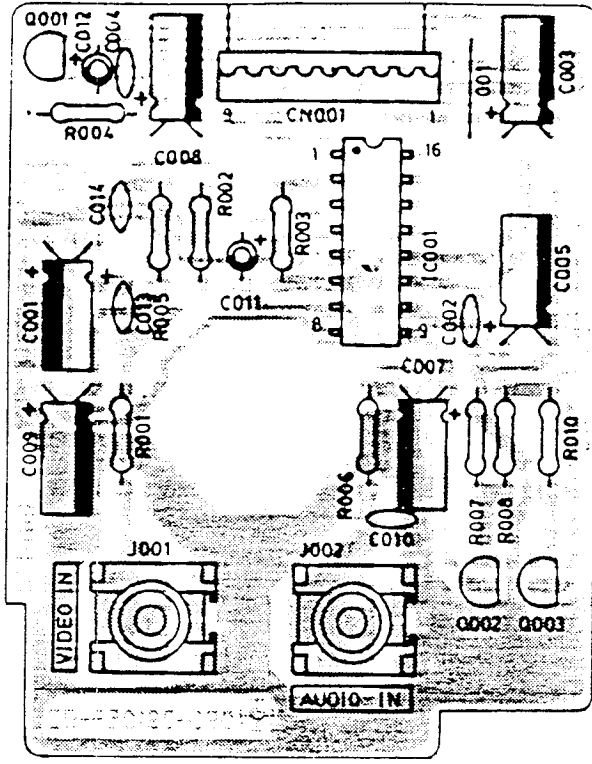
CONTROL FUNCTION BOARD

(BOTTOM VIEW)

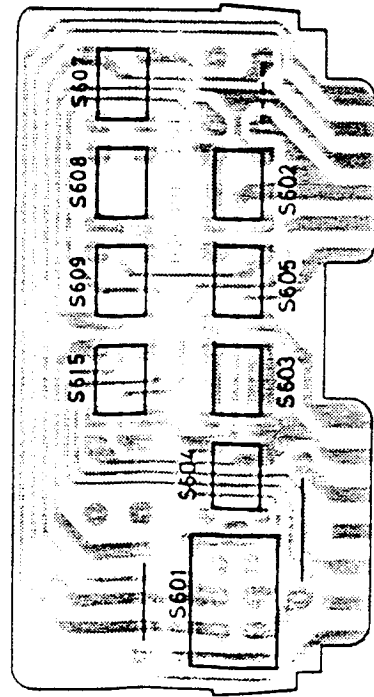
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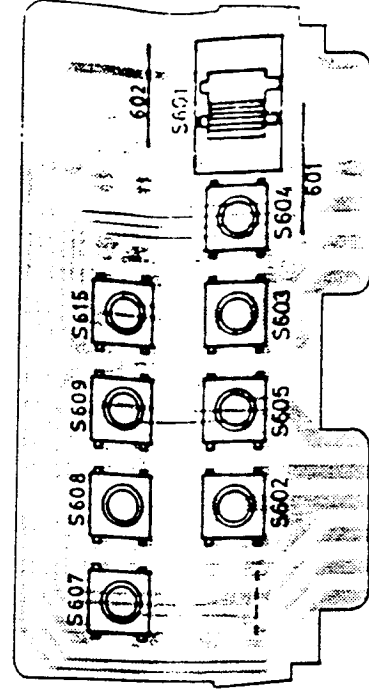
(BOTTOM VIEW)

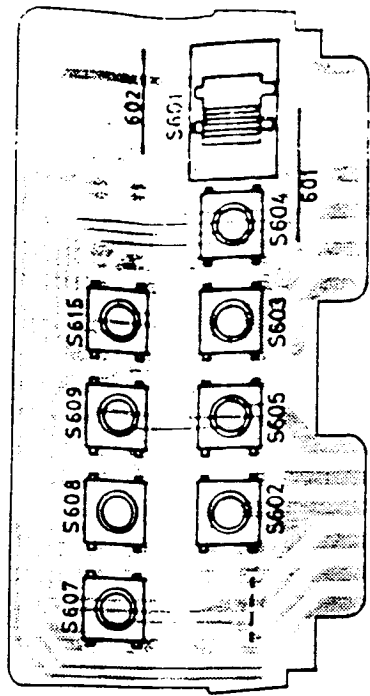
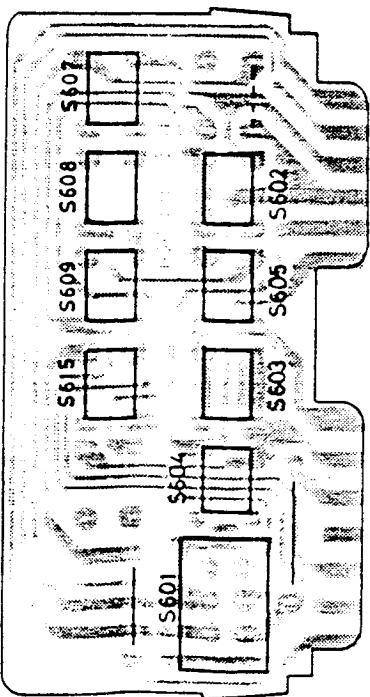


(TOP VIEW)



SENSOR BOARD

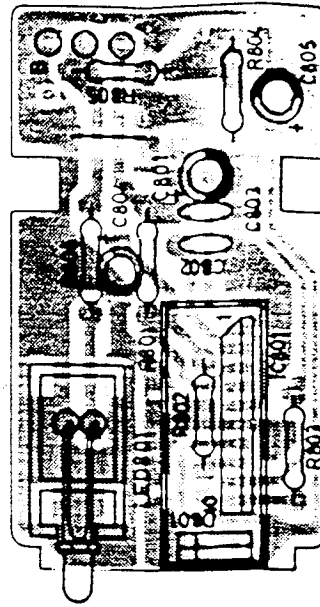
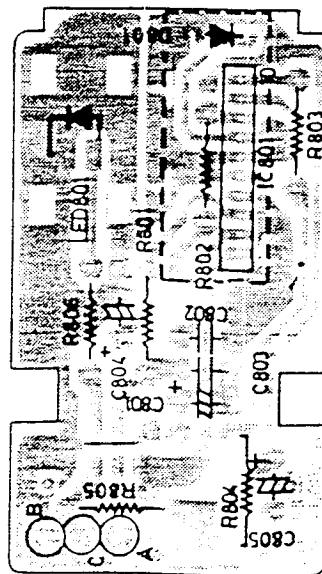




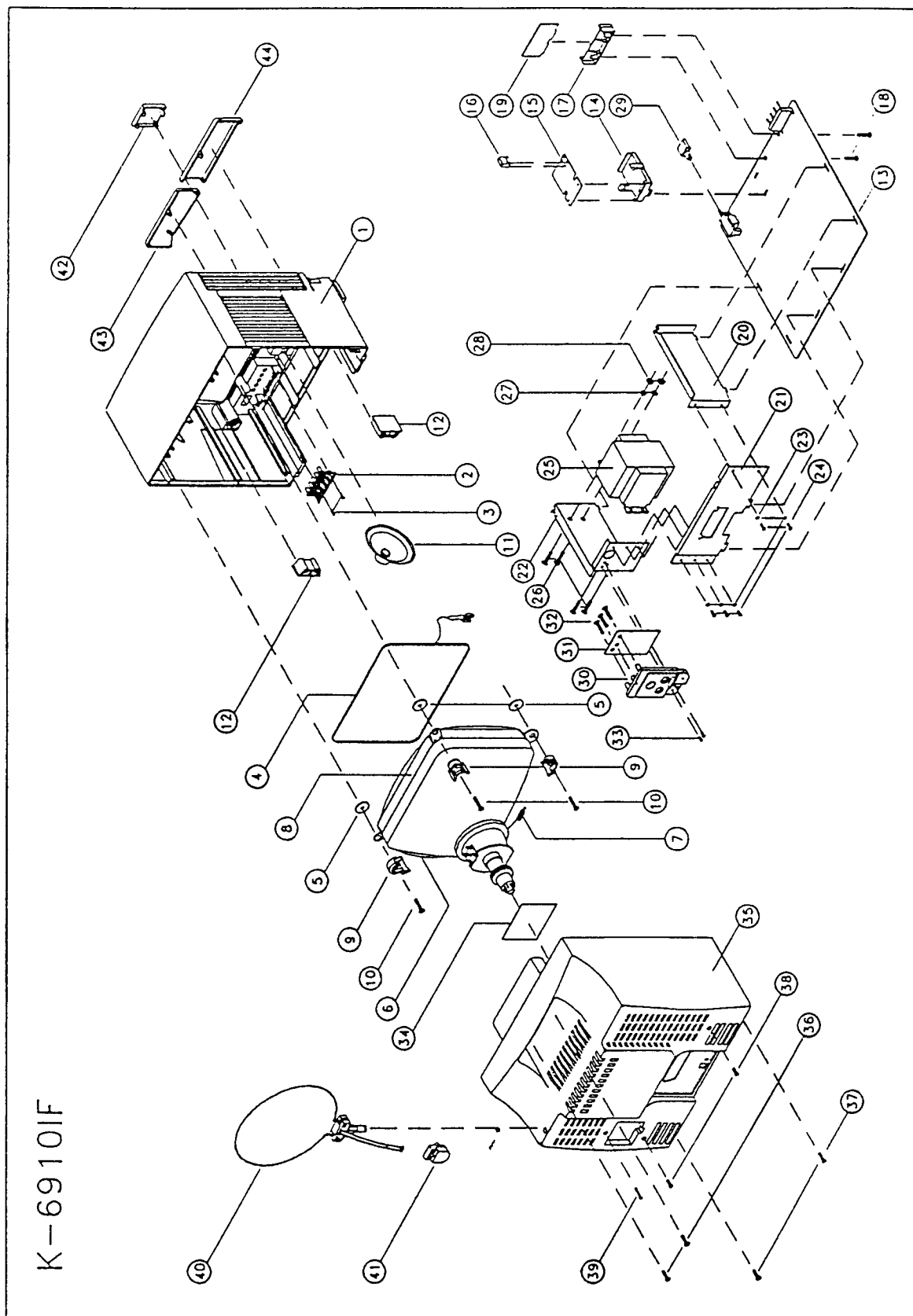
SENSOR BOARD

(BOTTOM VIEW)

(TOP VIEW)



EXPLODED DIAGRAM



K-6910IF

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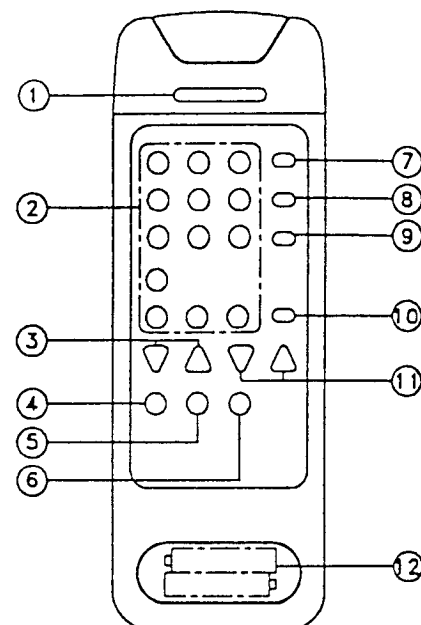
EXPLODED VIEW PARTS LIST

LOCATION	PARTS NO.	DESCRIPTION	QTY
1	200-691001-0X	CABINET FRONT	1
2	277-691001-0X	FUNCTIONAL KNOB	1
3	610-260108-10	SELF-TAPPING SCREW R/T 2.6X8MM	2
4		DEGAUSSING COIL ASS'Y	1
5	334-371601-01	RUBBER RING	4
6	072-830000-48	FLAT BRAIDED WIRE	1
7	477-371601-01	C.R.T SPRING	1
8		C.R.T	1
9	229-371501-01	C.R.T MTG CLIP	4
10	614-500425-10	SELF-TAPPING SCREW B/T 5X25MM	4
11		SPEAKER	1
12	229-691002-01	MTG BRACKET	2
13		MAIN P.C. BOARD ASS'Y	1
14	229-391001-01	REMOTE P.C BOARD MTG BRACKET	1
15		PRE-AMP P.C. BOARD ASS'Y	1
16	229-391002-01	LED MTG BRACKET	1
17	229-391003-01	CHANNEL P.C. BOARD MTG BRACKET	1
18	610-300110-10	SELF-TAPPING SCREW R/T 3X10MM	2
19		CONTROL P.C. BOARD ASS'Y	1
20	428-391003-01	MTG BRACKET	1
21	428-391006-01	FLYBACK MTG BRACKET	1
22	428-391004-01	TRANSFORMER MTG BRACKET	1
23	633-055032-07	SPRING WASHER	5
24	600-305008-10	MACHINE SCREW P/H 3X8MM	5
25		POWER TRANSFORMER	1
26	603-407008-10	MACHINE SCREW T/H 4X8MM	4
27	633-055042-07	SPRING WASHER	2
28	620-407030-70	NUT M4	2
29	292-691001-0X	POWER KNOB	1
30	280-391006-0X	ANTENNA TERMINAL	1
31		ANTENNA P.C. BOARD ASS'Y	1
32	612-300110-10	SELF-TAPPING SCREW W/T 3X10MM	3
33	600-305010-10	MACHINE SCREW P/H 3X10MM	2
34		C.R.T P.C BOARD ASS'Y	1
35	202-691001-XO	CABINET BACK	1
36	614-500416-XO	SELF-TAPPING SCREW B/T 5.0X16MM	2
37	614-400416-XO	SELF-TAPPING SCREW B/T 4.0X16MM	2
38	600-407012-XO	MACHINE SCREW P/H 4X12MM	2
39	610-300120-XO	SELF-TAPPING SCREW R/T 3X20MM	1
40	485-691001-01	LOOP ANTENNA ASS'Y	1
41	062-110011-00	ANTENNA ADAPTOR	1
42	263-691001-01	CABINET FRONT LENS	1
43	219-691001-0X	FRONT PANEL DOOR 'R'	1
44	219-691002-0X	FRONT PANEL DOOR 'L'	1

REMOTE HANDSET UNIT

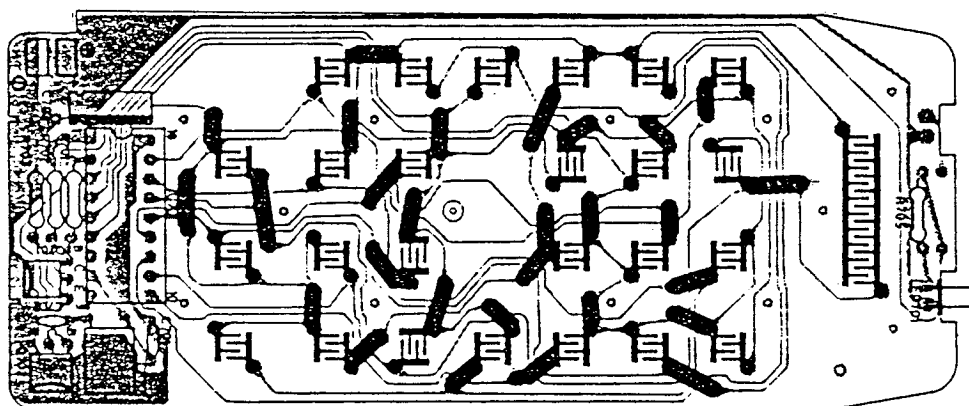
CONTROL LOCATION

- 1 STAND BY BUTTON
- 2 NUMBER BUTTONS
- 3 VOLUME UP/DOWN BUTTONS
- 4 PICTURE SELECTOR BUTTON
- 5 PICTURE DOWN BUTTON
- 6 PICTURE UP BUTTON
- 7 MUTE BUTTON
- 8 SLEEP BUTTON
- 9 RECALL BUTTON
- 10 TV/AV BUTTON
- 11 PROGRAM UP/DOWN BUTTONS
- 12 BATTERY COMPARTMENT LID

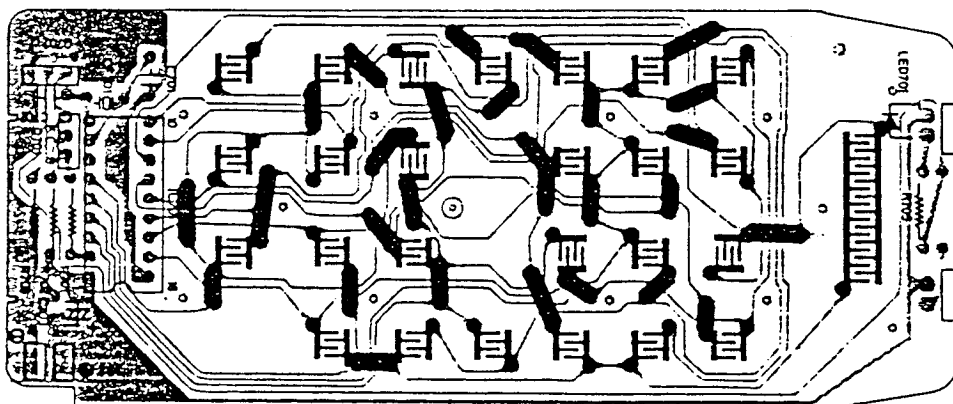


COMPONENT DIAGRAM OF REMOTE HANDSET P.C BOARD :

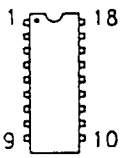
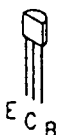
TRANSISTOR AND IC IDENTIFY



(TOP VIEW)



(BOTTOM VIEW)

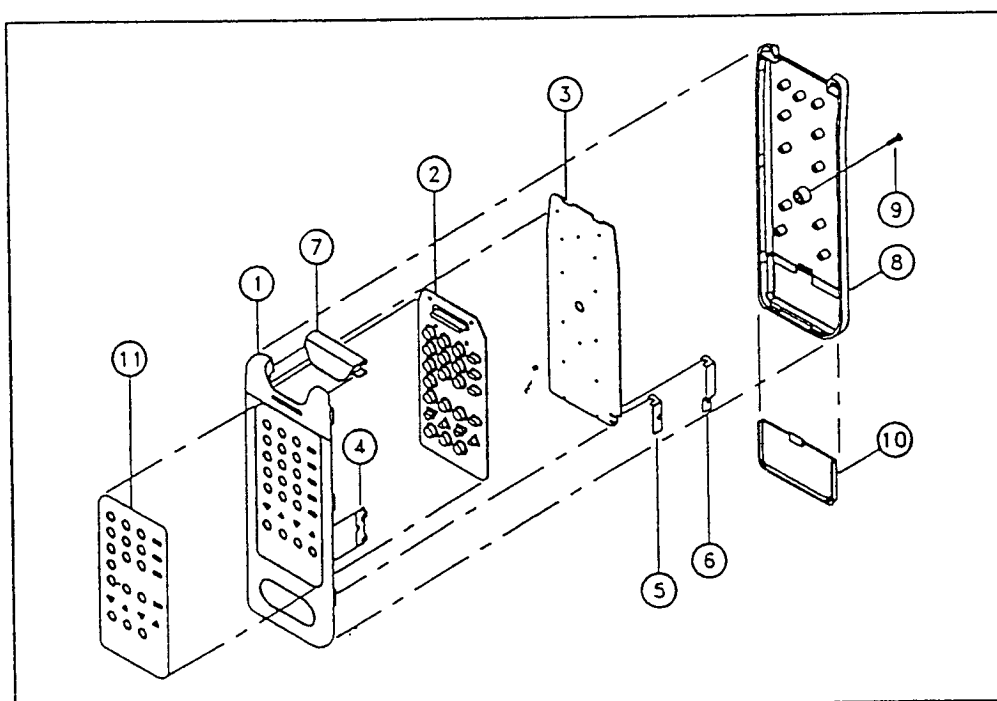
 TOP VIEW	
MN 6014A	2SC 2001L 2SC 945

VOLTAGE FOR IC							
PIN NO.	1	2	3	4	5	6	7
	3	0	3	3	3	3	0
PIN NO.	8	9	10	11	12	13	14
	0	3	0	0	0	0	0
PIN NO.	15	16	17	18			
	0	0	0	GND			

VOLTAGE FOR TRANSISTOR			
SYMBOL	B (V)	C (V)	E (V)
Q701	0	3	0
Q702	0	2.1	GND

REMOTE HANDSET UNIT OF EXPLODED VIEW PARTS LIST:

LOCATION	PARTS NO.	DESCRIPTION	QTY
1	201-390201-XX	TOP CABINET	1
2	334-390206-01	CONDUCTIVE RUBBER	1
3		HANDSET P.C. BOARD ASS'Y	1
4	472-390201-01	BATTERY CONTACT PLATE +, -VE	1
5	472-390202-01	BATTERY CONTACT PLATE - VE	1
6	472-390203-01	BATTERY CONTACT PLATE + VE	1
7	263-390201-01	FRONT LENS	1
8	203-390201-XX	BOTTOM CABINET	1
9	610-260108-00	SELF-TAPPING SCREW R/T 2.6X8MM	1
10	210-390201-XX	BATTERY COVER	1
11	411-390206-XX	NAME PLATE	1



PART NO	DESCRIPTION
001-19391C-96	HORI DRIVE TRANSFORMER E1-19 R0711
001-663910-42A	POWER TRANSFORMER E1-66 BS STANDARD 240V
002-370000-02	TANK IFT COIL 51M7L (MSC) /E22-E69EA
002-670000-02	SOUND IFT COIL 31M-7L (MSC)/R22-E497A
002-770000-02	CARBON IFT COIL L-4M703(MSC)/R22 E498A
002-810017-03	REC OSC COIL CLA-24948YIG TCKO
002-570000-02	IFT TV COIL 31M7-L(MSC)/R22-E499A
006-210012-02	RELAY 12V VS 12ME 12VDC TV-5
007-106000-16	TRAP FILTER 6.0MHZ TPS6.0M3 MURATA
007-300455-46	CERAMIC RESONATOR 455KHZ CSB455EB MURATA
007-304000-06	CERAMIC RESONATOR 4KHZ CSA4.00N6 MURATA
007-306000-04	CERAMIC FILTER 6.0KHZ SFB6.0MB MURATA
007-739000-09	SAW FILTER 39.5MHZ 462211
011-204291-70	VARIABLE RES. B-200K OHM RK09K1110AX5A
013-100205-22	FLAME PROOF CARBON FILM RES 10 OHM 172W
013-100405-75	FIXED METAL OXIDE RESISTOR 10 OHM 2K 5%
013-101005-12	CARBON FILM RESISTOR 100 OHM 1/10W 5%
013-101205-12	FLAME PROOF CAR FILM RES KOARDF5CST52
013-102005-12	CARBON FILM RESISTOR 1K OHM 1/16W 5%
013-102005-12h	CARBON FILM RESISTOR 1K OHM 1/16W 5%
013-163005-12	CARBON FILM RESISTOR 10K OHM 1/16W 5%
013-103005-12h	CARBON FILM RESISTOR 10K OHM 1/16W 5%
013-103105-12h	CARBON FILM RESISTOR 10K OHM 1/16 5%
013-103405-75	FIXED METAL OXIDE FILM RESISTOR
013-104005-12h	CARBON FILM RESISTOR 100K OHM 1/16W 5%
013-105005-12h	CARBON FILM RESISTOR 1M OHM 1/16W 5%
013-109005-12	CARBON FILM RESISTOR 1 OHM 1/16W 5%
013-109005-12k	CARBON FILM RESISTOR 1 OHM 1/16W 5%
013-109205-12	CARBON FILM RESISTOR 1 OHM 1/2W 5%
013-121005-12	CARBON FILM RESISTOR 120 OHM 1/16W 5%
013-121605-25	FIXED METAL OXIDE FILM RESISTOR 120 OHM
013-122005-12	CARBON FILM RESISTOR 1.2K OHM 1/16W 5%
013-122005-12k	CARBON FILM RESISTOR 1.2K OHM 1/16W 5%
013-122205-22	FLAME PROOF CAR FILM RES K04RDFSCT52
013-123005-12	CARBON FILM RESISTOR 12K OHM 1/16W 5%
013-123005-13h	CARBON FILM RESISTOR 12K OHM 1/16W 5%
013-129305-82	FLAME PROOF FUSING RESISTOR
013-133005-12h	CARBON FILM RESISTOR 13K OHM 1/16W 5%
013-151005-12	CARBON FILM RESISTOR 150 OHM 1/16 5%
013-152005-12	CARBON FILM RESISTOR 1.5K OHM 1/16W 5%
013-152005-12h	CARBON FILM RESISTOR 1.5K OHM 1/16W 5%
013-153005-12h	CARBON FILM RESISTOR 15K OHM 1/16W 5%
013-153305-75	FIXED METAL OXIDE FILM RESISTOR
013-154005-12	CARBON FILM RESISTOR 150K OHM 1/16W 5%
013-154005-12h	CARBON FILM RESISTOR 150K OHM 1/16W 5%
013-182005-12h	CARBON FILM RESISTOR 1.8K OHM 1/16W 5%
013-183005-12h	CARBON FILM RESISTOR 18K OHM 1/16W 5%
013-204005-12	CARBON FILM RESISTOR 200K OHM 1/16W 5%
013-220205-12	CARBON FILM RESISTOR 22 OHM 1/2W 5%
013-220305-75	FIXED METAL OXIDE FILM RESISTOR
013-221005-12k	CARBON FILM RESISTOR 220 OHM 1/16W 5%
013-221205-12	CARBON FILM RESISTOR 220 OHM 1/2W 5%
013-222005-12	CARBON FILM RESISTOR 2.2K OHM 1/16W 5%
013-222005-12h	CARBON FILM RESISTOR 2.2K OHM 1/16W 5%
013-223005-12	CARBON FILM RESISTOR 22K OHM 1/16W 5%
013-223005-12h	CARBON FILM RESISTOR 22K OHM 1/16W 5%

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PART NO	DESCRIPTION
013-224005-12h	CARBON FILM RESISTOR 220K OHF 1/16W 5%
013-224205-22	FLAME PROOF CAR FILM RESISTOR 220K OHM
013-229205-12	CARBON FILM RESISTOR 2.2 OHM 1/26 5%
013-229305-82	FLAME PROOF FUSING RESISTOR 2.2 OHM
013-240005-12	CARBON FILM RESISTOR 24 OHM 1/16W 5%
013-242005-12h	CARBON FILM RESISTOR 2.4K OHM 1/16W 5%
013-270005-12h	CARBON FILM RESISTOR 27 OHM 1/16W 5%
013-271005-12h	CARBON FILM RESISTOR 270 OHM 1/16W 5%
013-272005-12h	CARBON FILM RESISTOR 2.7K OHM 1/16W 5%
013-272205-22	FLAME PROOF CAR FILM RES KOARDF5CST52
013-273005-12	CARBON FILM RESISTOR 27K OHM 1/16W 5%
013-273005-12h	CARBON FILM RESISTOR 27K OHM 1/16W 5%
013-330005-12h	CARBON FILM RESISTOR 33 OHM 1/16W 5%
013-331005-12	CARBON FILM RESISTOR 330 OHM 1/16W 5%
013-331005-12h	CARBON FILM RESISTOR 330 OHM 1/16W 5%
013-331105-12	CARBON FILM RESISTOR 330 OHM 1/4W 5%
013-331105-12h	CARBON FILM RESISTOR 330 OHM 1/4W 5%
013-332005-12	CARBON FILM RESISTOR 3.3K OHM 1/16W 5%
013-332005-12h	CARBON FILM RESISTOR 3.3K OHM 1/16W 5%
013-333005-12h	CARBON FILM RESISTOR 33K OHM 1/16W 5%
013-334005-12h	CARBON FILM RESISTOR 330K OHM 1/16W 5%
013-362005-12h	CARBON FILM RESISTOR 3.6K OHM 1/16W 5%
013-363005-12h	CARBON FILM RESISTOR 36K OHM 1/16W 5%
013-392005-12h	CARBON FILM RESISTOR 3.9K OHM 1/16W 5%
013-393005-12	CARBON FILM RESISTOR 39K OHM 1/16W 5%
013-393205-12	CARBON FILM RESISTOR 39K OHM 1/2W 5%
013-470005-12	CARBON FILM RESISTOR 67 OHM 1/16W 5%
013-471005-12h	CARBON FILM RESISTOR 470 OHM 1/16W 5%
013-471205-12	CARBON FILM RESISTOR 470 OHM 1/2W 5%
013-472005-12h	CARBON FILM RESISTOR 4.7K OHM 1/16W 5%
013-472305-75	FIXED METAL OXIDE FILM RESISTOR
013-473005-12h	CARBON FILM RESISTOR 47K OHM 1/16W 5%
013-510605-75	FIXED METAL OXIDE FILM RESISTOR 512 OHM
013-512005-12	CARBON FILM RESISTOR 5.1K OHM 1/16W 5%
013-560005-12h	CARBON FILM RESISTOR 56 OHM 1/16W 5%
013-561005-12h	CARBON FILM RESISTOR 560 OHM 1/16W 5%
013-562005-12	CARBON FILM RESISTOR 5.6K OHM 1/16W 5%
013-562005-12h	CARBON FILM RESISTOR 5.6K OHM 1/16W 5%
013-563005-12	CARBON FILM RESISTOR 456K OHM 1/16W 5%
013-563005-12h	CARBON FILM RESISTOR 56K OHM 1/16W 5%
013-564005-12h	CARBON FILM RESISTOR 560K OHM 1/16W 5%
013-560005-12h	CARBON FILM RESISTOR 68 OHM 1/16W 5%
013-680005-12	CARBON FILM RESISTOR 68 OHM 1/16W 5%
013-680005-12h	CARBON FILM RESISTOR 680 OHM 1/16W 5%
013-681005-12h	CARBON FILM RESISTOR 6.8K OHM 1/16W 5%
013-682005-12h	CARBON FILM RESISTOR 68K OHM 1/16W 5%
013-683005-12h	CARBON FILM RESISTOR 7.5K OHM 1/16W 5%
013-752005-12	CARBON FILM RESISTOR 82 OHM 1/16W 5%
013-820005-12h	CARBON FILM RESISTOR 82 OHM 1/16W 5%
013-720105-12	CARBON FILM RESISTOR 820 OHM 1/16W 5%
013-821005-12	CARBON FILM RESISTOR 820 OHM 1/16W 5%
013-821005-12h	CARBON FILM RESISTOR 8.2K OHM 1/16W 5%
013-822005-12h	CARBON FILM RESISTOR 82K OHM 1/16W 5%
013-823005-12h	CARBON FILM RESISTOR 820K OHM 1/16W 5%
022-100101-03	TRIMMER CAPACITOR 10PF ECV-12W 1032
026-102071-11	POLYESTER FILM CAP ECON1H102KV 0.001 MFD

PART NO	DESCRIPTION
026-102111-01	MYLAR CAPACITOR .001MFD 10CV 10%
026-103071-11	POLYESTER FILM CAP ECON1K103KV 0.01MFD
026-104111-01	MYLAR CAPACITOR - 1MFD 100V 10%
026-104000-31	POLYPROPYLENE CAPACITOR 0.1MFD 400V 1-5%
026-152071-11	POLYESTER FILM CAP ECOM1H152KV 0.0015MFD
026-222111-01	MYLAR CAPACITOR .0022 MFD 100V 10%
026-223111-01	MYLAR CAPACITOR 0.022 MFD 100CV 10%
026-332111-01	MYLAR CAPACITOR .0033MFD 100V 10%
026-333071-01	POLYESTER FILM CAP ECOM1M333KV 0.033MFD
026-473111-01	MYLAR CAPACITOR 0.047 MFD 100V 10%
026-562071-31	POLYESTER CAP ECOM7K562KV 10% 50V
026-563201-00	POLYPROPYLENE CAP 0.056MFD 200V 10%
030-120060-00	GERMINIUM DIODE IN60 (MATCHING PAIR)
030-512110-00	LED 'REC' SEL211CR
031-210562-00	TRANSISTOR = 25A 562 TM
031-211015-00	TRANSISTOR = 25A 1015
031-230388-00	TRANSISTOR = 2SC388 ATF
031-230945-00	TRANSISTOR = 25C 945 (L) P
031-231573-26	TRANSISTOR = 250 1815-Y = 25C 1815-Y
031-231815-26	TRANSISTOR = 25C 2001 =K/L
031-232001-00	TRANSISTOR = 25C 2209
031-232209-00	TRANSISTOR = 25D 400F
031-240000-00	TRANSISTOR = 25D 1680
031-241680-00*	TRANSISTOR = 25K 30A
031-250030-01	TRANSISTOR = BSX20
031-380020-00	I.C. TA76880AF
033-200820-31	IC TBA820K
033-205512-11	IC TA5512
033-207698-14	IC TA7698AF
033-251326-12	IC MS1362
033-502710-63	DC REGULATOR AL2710K DC OUTPUT VOLTAGE
033-507812-31	DC078120V SGS
033-801220-11	IC MN1220
033-805026-11	ICAN5026K
033-806014-11	IC MN6014
033-815245-110	IC MN15245 KWC
037-443361-20	CRYSTAL 4.433618 MHZ K002210F
045-022410-05	SLIDE SWITCH 2P2T SS22F0465 PIC
045-022411-11	SLIDE SWITCH 2P2T SS22F12G11 PIC
046-100001-09	PUSH BUTTON PS --22F03 6(0)13 PIC
046-100001-13	TACT SWITCH 1P ALPS = SKHNAN0458
046-100001-14	POWER SWITCH ESB=999575
046-100001-16	LIGHT TOUCH SWITCH EVC-PAC OHM
060-101001-08	CONTACT FIN PCB TYPE (MALE) TAIKO
060-101802-08	PIN CONNECTOR 1 PIN SOCKET TS=80?-01-A1
060-102252-23	PIN CONNECTOR 2 PINS SOCKET 5051-02
060-102255-23	PIN CONNECTOR 2 PINS PLUG STRAIGHT TYPE
060-102805-08	PIN CONNECTOR 3 PIN SOCKET TSL-PC3H-E1
060-103252-28	PIN CONNECTOR 3 PINS PLUG TSL-P03P-V1
060-103255-28	PIN CONNECTOR 4 PINS SOCKET 5051-04
060-104252-23	PIN CONNECTOR 4 PINS PLUG 5045-04A
060-104255-23	PIN CONNECOTR 8 PINS SOCKET 5051-08
060-108252-23	PIN CONNECOTR 8 PINS PLUG 5045-08A MCLEX
060-108255-23	PIN CONNECOTR 9 PINS SOCKET 5051-09
060-109252-23	PIN CONNECTOR 9 PINS PLUG 5045-9A MCLEX
060-109234-23	CC POWER HACK HE00470-01-23C, HOSIDEA

PART NO	DESCRIPTION
061-183504-20	ANT PLUG PP-1S (MALE) IIZUKA DEAKI
061-420001-00	PIN JACK (VIDEO IN) RED
061-470002-00	PIN JACK (AUDIO IN) BLACK
061-470003-00	ANT SOCKET EP (PAL J RCS.J)
061-480006-00	CRT SOCKET HPS1171-01-050NCSIDEN
061-520001-01	SPEAKER SMALL ROUND HEAD 1W3" 16 OHM
066-161030-03	PC LINE CODE B5650G STANDARD BLACK
071-400000-00	FUSE T630MA/250V 5X2GMM SEMKO/VDE
082-220630-03	FUSE T5A/250V 5X20MM SEMKO/VDE APPROVED
082-225000-03	FERRITE BEAD W/FILTER COIL 2600-C3 HIKOM
084-030109-00	FERRITE BEAD W/FILTER COIL 2600-C3 HIKOM
088-151111-20	CAR BATTERY CORD W/DC PLUS STRAIGHT
090-390008-07	PC BOARD (C41088) 1X1.6MM HANDSET HIKOM
090-391002-01	PC BOARD (220188) PHENOLIC T=1.6MM
090-391007-01	PC BOARD (220188) PHENOLIC T=1.6MM
090-391015-04	PC BOARD (161289) PHENOLIC T=1.6MM
090-391052-01	PC BOARD (011188) PHENOLIC T=1.6MM
090-391056-02	PC BOARD (090189) PHENOLIC T=1.6MM
101-210001-03	10" FLYBACK CF124E LIEN CHANGE
102-310001-16	10" COLOUR CF1 ITC TYPE WEST GERMANY
103-113103-02	MITSUM UK TONER UE30-B03/0216-2516
105-150101-02	FIXED INDUCTOR COIL 15UH 10%
105-330101-02	FIXED INDUCTOR COIL 330H EL0606SKI-330K
105-331101-02	FIXED INDUCTOR COIL 330 UH 10%
105-568103-12	FIXED INDUCTOR COIL 56UK EC1645-R56M
105-569101-02	FIXED INDUCTOR COIL 5.6UH TDK
105-600101-01	FIXED INDUCTOR COIL 600H + 10%
105-659202-00	FIXED INDUCTOR COIL 6.50H +20% LS-11376
105-689101-02	FIXED INDUCTOR COIL 6.80H
108-550161-05	DEGAUSSING COIL ASS'Y 55T LS-1012 L1
112-102321-08	SEMI-FIXED RESISTOR E-1K OHM 3 PINS
112-103321-08	SEMI FIXED RESISTOR E-10K PINS
112-103531-08	SEMI FIXED RESISTOR 8-10K OHM 3 PINS
112-202321-08	SEMI FIXED RESISTOR 2KB OHM 3 PINS
112-203321-08	SEMI FIXED RESISTOR 20KB 3 PINS
112-301531-08	SEMI FIXED RESISTOR 0-300 OHM 3 PINS
112-501541-06	SEMI FIXED RESISTOR 0-500 OHM
112-502321-08	SEMI FIXED RESISTOR 0.5K OHM 3 PINS
113-100001-00	DELAY LINE EFD-EN645A11G
113-200005-00	DELAY LINE TYC-8C45A MITSUMI (RE762X)
123-020300-13	CERAMIC CAPACITOR 2PF 50V 0.25PF
123-100340-13	CERAMIC CAPACITOR 10PF 50V 5% CM TYPE
123-101340-13	CERAMIC CAPACITOR 100PF 50V 5% CM TYPE
123-101350-10	CERAMIC CAPACITOR 100PF 50V 10% SL TYPE
123-102370-30	CERAMIC CAPACITOR .001MFD 50V +80-20%
123-103370-30	CERAMIC CAPACITOR 0.01MFD 50V +80-20%
123-104270-30	CERAMIC CAPACITOR 0.1MFD 25V +80-20%
123-121350-10	CERAMIC CAPACITOR 120PF 10% SL TYPE
123-150340-13	CERAMIC CAPACITOR 15PF 50V 5% KFC TYPE
123-161350-10	CERAMIC CAPACITOR 180PF 50V 10% SL TYPE
123-200340-13	CERAMIC CAPACITOR 20PF 50V 5% CH TYPE
123-201350-10	CERAMIC CAPACITOR 200PF 50V 10% SL TYPE
123-202370-30	CERAMIC CAPACITOR 0.002 MFD 50V +80-20%
123-203370-30	CERAMIC CAPACITOR 0.02MFD 50V +80-20%
123-220340-13	CERAMIC CAPACITOR 22PF 50V 5% CM TYPE
123-221350-10	CERAMIC CAPACITOR 220PF 50V 10% SL TYPE

PART NO**DESCRIPTION**

123-302370-30	CERAMIC CAPACITOR .003 MFD 50V
123-330350-10	CERAMIC CAPACITOR 33PF 50V 10% SL TYPE
123-331340-10	CERAMIC CAPACITOR 330PF 50V 5% SL TYPE
123-390340-13	CERAMIC CAPACITOR 39PF 50V 105 SL TYPE
123-390350-10	CERAMIC CAPACITOR 39PF 50V 105 SL TYPE
123-403370-30	CERAMIC CAPACITOR .04 MFD 50V +80-20%
123-470350-10	CERAMIC CAPACITOR 47PF 50V 10% SL TYPE
123-471350-10	CERAMIC CAPACITOR 470PF 50V 10% SL TYPE
123-472580-42	CER CAP ECKD2H472PU 0.0047MFD 500V +100
123-502370-30	CERAMIC CAPACITOR 0.005 MFD 50V +80-20%
123-561350-10	CERAMIC CAPACITOR 56PF 50V 10% SL TYPE
123-680356-10	CERAMIC CAPACITOR 68PF 50V 50% SL TYPE
123-821350-10	CERAMIC CAPACITOR 820PF 50V 10%
123-821840-40	CERAMIC CAPACITOR 820PF 2KV 5%
124-224061-01	TAN CAP ECSF1VE224 0.22MFD 35V 10%
124-225051-01	TAN CAP ECSF1EE225 2.2MFD 25V 10%
124-474061-01	TAN CAP ECSF1VE476 0.47MFD 35V 10%
127-104077-01	ELECTROLYTIC CAPACITOR 1MFD 50V 20%
127-105077-01	ELECTROLYTIC CAPACITOR 1MFD 50V 20%
127-105135-01	ELECTROLYTIC CAPACITOR 1MFD 160V
127-106047-01	ELECTROLYTIC CAPACITOR 10MFD 16V 20%
127-106047-21	NON POLARIZED ELECTROLYTIC CAPACITOR
127-106057-51	NON POLARIZED ELECTROLYTIC CAPACITOR
127-106135-01	ELECT CAP 10MFD 160V +50-10%
127-107047-01	ELECTROLYTIC CAPACITOR 100MFD 16V 20%
127-107067-01	ELECTROLYTIC CAPACITOR 100MFD 35V 20%
127-108047-01	ELECTROLYTIC CAPACITOR 1000MFD 16V 20%
127-108057-01	ELECTROLYTIC CAPACITOR 1000MFD 25V 20%
127-108067-01	ELECTROLYTIC CAPACITOR 1000MFD 35V 20%
127-109063-01	ELECTROLYTIC CAPACITOR 10000MFD 35V
127-225077-01	ELECTROLYTIC CAPACITOR 2.2MFD 50V 20%
127-226047-01	ELECTROLYTIC CAPACITOR 22MFD 16V 20%
127-227047-01	ELECTROLYTIC CAPACITOR 220MFD 16V 20%
127-228047-01	ELECTROLYTIC CAPACITOR 2200MFD 16V 20%
127-335135-01	ELECTROLYTIC CAPACITOR 3.3MFD 160V
127-336047-01	ELECTROLYTIC CAPACITOR 33MFD 16V 20%
127-336057-01	ELECTROLYTIC CAPACITOR 33MFD 25V 20%
127-474077-01	ELECTROLYTIC CAPACITOR 0.47MFD 50V 20%
127-475057-01	ELECTROLYTIC CAPACITOR 4.7MFD 25V 20%
127-476027-01	ELECTROLYTIC CAPACITOR 47MFD 6.3V 20%
127-476047-01	ELECTROLYTIC CAPACITOR 47MFD 16V 20%
127-476057-01	ELECTROLYTIC CAPACITOR 47MFD 25V 20%
127-477047-01	ELECTROLYTIC CAPACITOR 470MFD 16V 20%
130-131555-00	SILICON DIODE 1S1555V
130-131555-01	SILICON DIODE 1S1555V,TPA2
130-134148-01	SILICON DIODE 1N4148 AXIAL MOUNT
130-158004-07	SCHOTTKY BARRIER DIODE (5A) VFM.0.55W
130-310012-00	RECTIFIER RL2 TV
130-310600-00	RECTIFIER DIODE P600A "SYMBOL"
130-310605-00	RECTIFIER DIODE FR605
130-314002-00	RECTIFIER DIODE 1N4002
130-315925-00	RECTIFIER DIODE S52956/BYT 52K
130-410033-00	ZENER DIODE KA33V
130-410056-01	ZENER DIODE 5.6V AXIAL MOUNT
130-410300-01	ZENER DIODE 30V AXIAL MOUNT
130-422420-00	ZENER DIODE 12V KA2120

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

PART NO**DESCRIPTION**

130-600100-00	INFRARED EMITTING DIODE EL-1L1
130-705004-00	PHOTO DIODE HP-5FR4
200-391101-02	CAB FRONT BLACK W/CH GR SP SILK'S PWS
201-390021-01N	CABINET TOP (DARK GREY-DIRECT INJECTION)
202-391005-03N	CABINET BACK BLACK W/CHAR GREY SPRAY
203-390002-01N	CABINET BOTTOM (DARK GREY DIRECT)
210-390001-01	BATTERY COVER (DARK GREY DIRECT)
219-391101-21	FRONT DOOR BLACK W/CHAR GRAY SPRAY
229-371501-01	CRT PTG CLIP WHITE CELON
229-391001-01	REMOTE PCB MTG BRACKET ABS
229-391001-01	LED PTG BRACKET ABS
229-391003-01	CHANNEL PCB MTG BRACKET ABS
229-391004-01A	MTG BKT WHITE M1-PS
263-390001-01	FRONT LENS AES 920 RED 20784
263-391101-01	CABINET FRONT LENS RED CLEAR ABS
277-391101-01	CHANNEL/VOLUME & STAND BY KNOB GREY 4050
280-391006-04A	ANT TERMINAL BLACK W/GREY SPRAY
292-391101-01	POWER KNOB GREY
334-380401-01	RUBBER WASHER
334-390021-01	CONDUCTIVE RUBBER 25 KEYS CHARCOAL GREY
381-391001-01	SWITCH COVER SHEET 7MMX10MMX0.2MM
411-390021-56	NAME PLATE "ALBA" 25 HOLES FOR PAL PLL
412-391101-05K	MODEL PLATE "ALBA" CTB10 ENG 240V
418-391011-02	CABINET BACK COVER OVERLAY BLACK W/WHITE
418-391103-01	PRESET OVERLAY BLACK B/G WHITE LETT
428-391003-01	MTG BRACKET
428-391004-01	TRANSFORMER MTG BRACKET
428-391006-01	FLYBACK MTG BRACKET
450-371601-01	SOLDERING PIN
450-371602-01	TEST PIN
450-701201-01	SOLDERING LLE (10015-5)
466-701201-01	FUSE HOLDER
472-390006-01	BATTERY CONTACT PLATE + VE
472-390007-01	BATTERY CONTACT PLATE
477-371601-01	CRT SPRING
481-391007-01	HEAT SINK
482-607181-01	ROD ANTENNA 6 SECTION 7X181MM SWIVEL
483-391002-01	SHIELD BOX COVER FOR REMOTE
483-391003-01	SHIELD BOX FOR REMOTE
483-391401-01	SHIELD BOX BODY
483-391403-01	SHIELD BOX BOTTOM
483-391407-01	SHIELD BOX TOP
484-391602-01	HEAT SINK "B"
510-391104-02	GIFT BOX "ALBA" CTB 10 ENG
530-080032-08	FIBRE WASHER (11030)
530-040033-16	FIBRE WASHER 14X3.3X1.6MM THK
530-160033-08	FIBRE WASHER DIA 16X3.3X0.8MM THK
561-391101-01	FUSE LABEL W/FUSE TEMPERATURE 130 DEGREE
565-371301-02K	MANUFACTURING LABEL
568-391501-11	CAUTION LABEL FOR "ALBA" CTV10
569-018101-10	QUALITY APPROVED LABEL
569-331001-02	AC SOCKET LABEL AC24CV/50 HZ
569-370661-10	TV SYSTEM LABEL (PAL 1)
569-371401-25	LIVE CHASSIS WARNING LABEL (FOR ES STO)
569-371401-26	CRT APPROVED LABEL ENGLISH/SERV
569-371401-30	ADDRESS LABEL FOR ALBA

PART NO	DESCRIPTION
569-391001-01	DC CAR CORD WARNING LABEL ENGLISH
569-391001-22	BAR CODE NO. LABEL FOR "ALBA"
569-391501-38	AC LINE CORD LABEL FOR ALBA (SPECIAL FOR
569-391501-42	STATIC LABEL FOR ALBA
569-392201-04	CATE CODE LABEL (WHITE BACKGROUND &
570-391104-04	I/B "ALBA" CTV10RC
579-C18108-01	COLOR ECT LABEL CHARCOAL GREY
600-305008-10	MACHINE SCREW P/H 2X8MM WHITE
600-305010-10	MACHINE SCREW P/H 3X10MM WHITE
600-407012-00	MACHINE SCREW P/H 4X12MM BLACK
603-407008-10	MACHINE SCREW P/H 4X8MM WHITE
608-305000-10	MACHINE SCREW T P/H 3X6MM WHITE
610-260108-00	SELF TAPPING SCREW R/T 2.6X8MM BLACK
610-300106-10	SELF TAPPING SCREW R/T 3X6MM WHITE
610-300108-10	SELF TAPPING SCREW R/T 3X10MM WHITE
610-300110-10	SELF TAPPING SCREW R/T 3.0X14MM BLACK
610-300114-00	SELF TAPPING SCREW R/T 3X10MM WHITE
612-300110-10	SELF TAPPING SCREW R/T 3.5X12MM
612-350212-10	SELF TAPPING SCREW R/T 4X12MM WHITE
614-400412-10	SELF TAPPING SCREW R/T 4X16MM BLACK
616-400416-00	SELF TAPPING SCREW R/T 5X16MM BLACK
614-500416-00	SELF TAPPING SCREW R/T 5X25MM WHITE
614-500423-10	STEEL NUT N3
620-305025-55	NUT N4
620-407030-70	EXT TOOTH WASHER (304)
630-060032-10	SPRING WASHER (503)
630-055032-07	SPRING WASHER M4 7.6X4.2X1MM
633-055042-07	DOOR LOCKER ASS'Y FLATBA PR-4PK
702-391201-01	REMOTE TRANSMITTER COMPLETE