

## General Information

1995

CRT: A48ECR11X16

Remote Control:

79000151103

Door Flap: 219A2200101

Door Catch: 70239120102

Main Power Button:

292A2200101

## Specifications

System:	PAL-I
Destination:	UK
Channel Coverage:	UHF 21 - 69
Frequency Range:	UHF 471.25 - 855.25MHz
Scanning:	
Lines:	625 lines
Horizontal:	15625Hz
Vertical:	50Hz
IF Frequency:	
Video:	39.5MHz
Sound:	33.5MHz
Chroma:	35.07MHz
Vision/Sound separation:	6MHz
Sensitivity:	UHF 80uV
Output Power:	Maximum 2W
	10% THD 1.5W
CRT:	20" (51cm) diagonal
Speaker:	2" x 3"
Antenna Impedance:	75 ohm
Power Consumption:	80Watts
Power Source:	180 - 240V

## Service Adjustments

### Colour Television Alignment Instructions

#### Please Read Before Attempting Service

- Never disconnect any leads while receiver is in operation.
- Disconnect all power before attempting any repairs.
- Do not short any portion of the circuit while power is on.
- For reasons of safety, all parts replaced should be identical, (for parts numbers see parts list).
- 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.

#### Test Equipment

- VIF Sweep Generator
- SIF Sweep Generator
- Colour Bar/Dot/Cross Hatch Generator
- DC Power Supply (14V)
- Oscilloscope
- Vacuum Tube Voltmeter
- Volt Ohmmeter
- High Voltage Meter
- Ampere Meter (0.5 Class, DC 3mA Max)
- Demagnetising Coil
- Philips Pattern Generator
- Frequency Counter
- Continuous Waveform Generator

#### Tank Coil Alignment

Preparation Step (see fig. 2.)

- Connect OUTPUT lead of VIF Sweep Generator between TP103 (pin 4 of IC101) and ground.
- Connect lead of FROM DET between TP106 (pin 19 of IC101) and Ground.
- Apply a +14V DC across C423 (+).
- Apply a +5.2V DC dummy AGC bias to TP104 (pin 1 of IC101) see fig. 1.

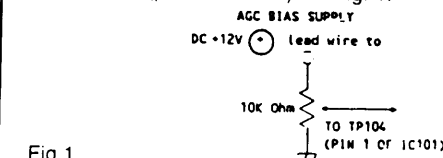


Fig 1.

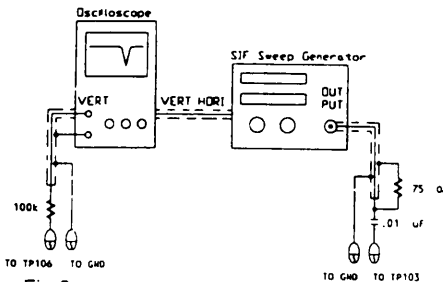


Fig 2.

#### Alignment Step (see fig. 3)

- Set output level to 6Vp-p.
- Adjust T104 (TANK COIL) to obtain maximum amplitude of response at 39.5MHz as in fig. 3

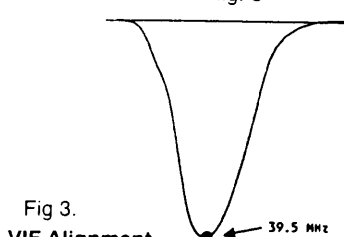


Fig 3.

#### VIF Alignment

Preparation Step (see fig. 4)

- Connect output lead of VIF Sweep Generator between tuner test point TP and tuner case.
- Connect resistor (100 Ohm) between TP109 and TP120.
- Connect lead of FROM DET between TP106 (pin 19 of IC101) and Ground.
- Apply a +14V DC across C423 (+).
- Apply a +5.25C DC dummy AGC bias to TP104 (pin 1 of IC101).

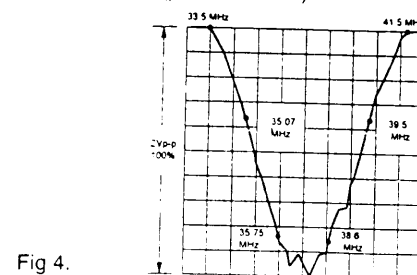


Fig 4.

#### Alignment Step

- Adjust AGC bias voltage for maximum amplitude of waveform.
- Adjust level of Sweep Generator to achieve 2Vp-p output.
- Increase the output level of Sweep Generator into 30dB.
- Adjust AGC bias voltage to achieve 5Vp-p output (on Oscilloscope).
- Adjust tuner converter coil to obtain the waveform as in fig. 4.

#### AFC Alignment

Preparation Step (see fig. 5)

- Connect the signal output of Sweep/Marker Generator to TP101.
- Connect the vertical input terminal of

- sync. oscilloscope to TP105.
- Apply a +14V DC across C423 (+).
- Apply a +5.25V DC to TP104 (pin 1 of IC101).

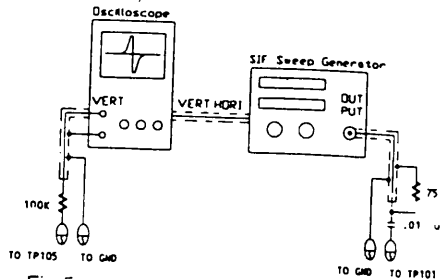


Fig 5.

#### Alignment Step

- Adjust the output level of Sweep Generator in 30 - 40 dB.
- Adjust waveform to 6Vp-p.
- Adjust T105 (AFC coil) for waveform as shown in fig. 6.

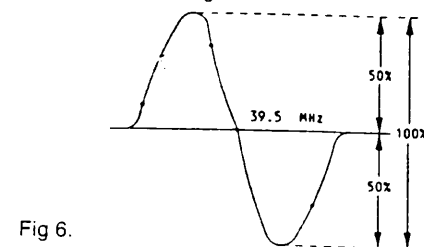


Fig 6.

#### SIF Alignment

Preparation Step (see fig. 7)

- Connect output lead of SIF Sweep Generator between TP107 (pin 18 of IC101).
- Connect lead of FROM DET between TP108 (pin 8 of IC101).
- Supply DC +14V to C423 (+).
- Connect TP104 to GND (pin 1 of IC101).

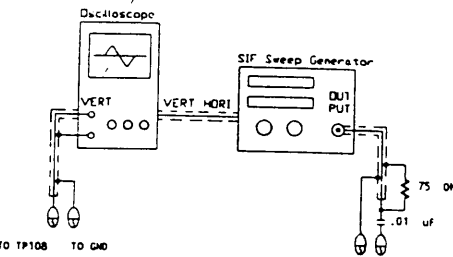


Fig 7.

#### Alignment Step

- Adjust output of Sweep Generator to achieve 5Vp-p between markers of 100 kHz.
- Adjust T103 so sound carrier is centred as in Fig. 8.
- Confirm the waveform as in Fig. 8.

Note: Input level: 90 dB.

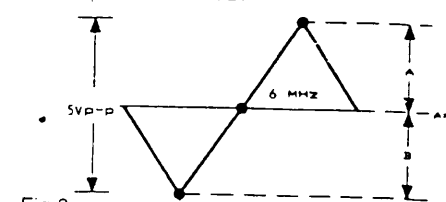


Fig 8.

#### Colour Demodulator Alignment, Delay Line Alignment

- Receive Philips pattern.
- Set colour control (VR201) to maximum position.
- Set contrast control to minimum position.
- Connect oscilloscope to TP301 (B out).
- Adjust CT301 to obtain the waveform as in fig. 9.

- Adjust VR305 to obtain waveform as in fig. 9.
- Adjust T301 to obtain waveform as in fig. 9.

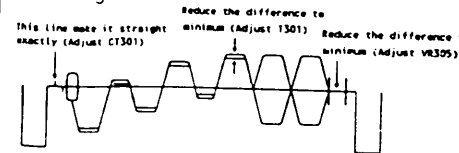


Fig 9.

#### B+ Adjustment

- Connect the Digital Voltmeter to TP901.
- Adjust semi-fixed resistor VR901 for the reading of DC 115V.

#### Vertical Circuit Adjustment

- Without RF input signal connect the frequency counter between V-DEFLECTION YOKE and GROUND.
- Adjust V-HOLD (VR303) to the reading 44Hz.
- Receive monoscope pattern.
- Adjust V-SIZE (VR401) control to obtain a normal picture.

#### Horizontal Circuit Adjustment

- Receive monoscope pattern input signal 80dBuV.
- IC302 (pin 28, 29) short by 1K ohm resistor.
- Adjust VR302 to obtain the picture running at the centre.
- Remove the 1K ohm resistor.
- Adjust VR301 to change the horizontal of the pattern for centre.

#### White Balance Adjustment

- Receive a Monoscope pattern picture signal.
- Turn the red, green and blue LOW-LIGHT (VR501, VR502, VR503) controls to minimum position (counter clockwise) and turn the DRIVE (VR504, VR505) controls to the middle position.
- Turn the SCREEN control on the FBT to minimum position.
- Set the Sub-brightness (VR304) control to middle position, then set the contrast control and colour control to minimum position.
- Connect volt meter to the emitter of Q505 and GND. and adjust Sub-brightness control to the reading of DC 1.4V.
- Set the SERVICE switch (S401) to SERVICE position.
- Slowly turn the SCREEN control clockwise to the point where a horizontal line just illuminates.
- Adjust VR501 to get a red horizontal line on CRT.
- Adjust VR502 to get a yellow horizontal line on CRT.
- Adjust VR503 to get a white horizontal line on CRT.
- Reset the Service switch (S401) to normal position and turn brightness control to middle position.
- Adjust Drive (VR504, VR505) control to obtain a uniform white picture.

#### Focus Adjustment

- Set CONTRAST control to maximum position and BRIGHTNESS control to middle position.
- Adjust FOCUS control (on the FBT) to obtain a sharpest and clearest picture on CRT.

#### RF AGC Alignment

- Connect a TV signal (471.25MHz, 60dB) from centre system to the tuner.
- A digital voltmeter is connected to the AGC terminal of tuner (pin ).
- Adjust VR101 until the voltmeter reads 4.8V.

#### Sub-Brightness Alignment

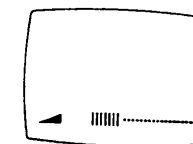
- Receive a Monoscope pattern.
- Set controls as follows:  
BRIGHTNESS Control - MIN position.  
CONTRAST Control - MIN position.  
COLOUR Control - MIN position.
- Adjust the SUB-BRIGHTNESS control (VR304) until light just appears on the screen.

#### Colour Purity Adjustment (see fig. 11)

Note: Before all adjustments described below are attempted, V-HOLD, H-HOLD, V-HEIGHT, B+ VOLTAGE and FOCUSING ADJUSTMENT must be completed.

- Place the TV receiver facing North or South.
- Plug in TV receiver and turn it on.
- Operate TV receiver for over 30 minutes.
- Fully degauss the TV receiver by using an external degaussing coil.
- Receive a crosshatch pattern and adjust the static convergence control roughly.
- Loosen the clamp screw of the deflection yoke and pull the deflection yoke towards you.
- Fully turn the red and blue Drive (VR503, VR505) controls counterclockwise.

Fig 10.



- Adjust the purity magnets so that green field is obtained at the centre of the screen.
- Slowly push the deflection yoke toward bell of CRT and set it where a uniform green field is obtained.
- Tighten the clamp screw of the deflection yoke.

#### On Screen Adjustment (see fig. 10)

- Receive the Monoscope pattern.
- Adjust ON SCREEN (VR601) for adjust the lettering to centre of CRT.

#### Convergence Adjustment (see fig. 11)

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

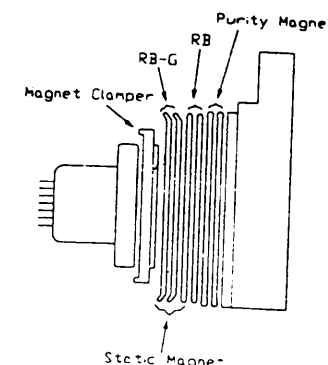
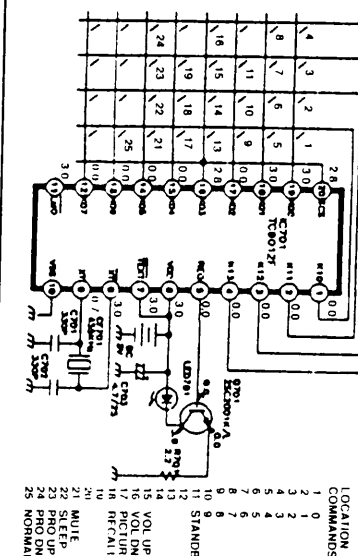
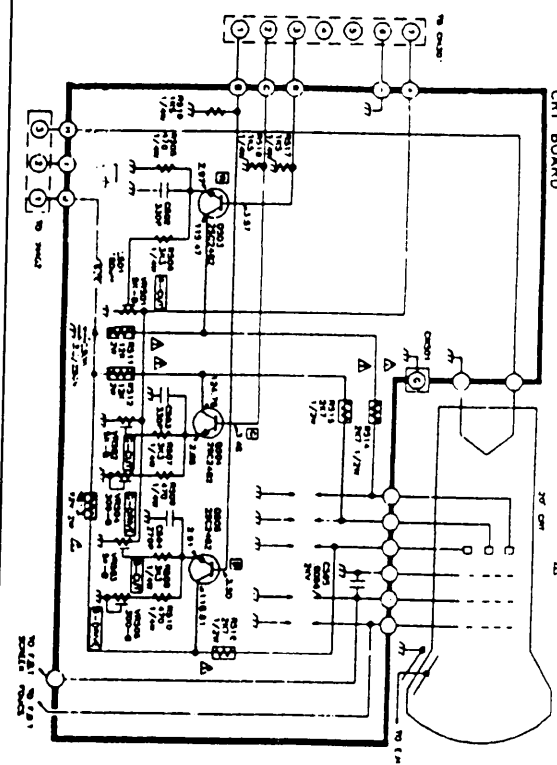


Fig 11.

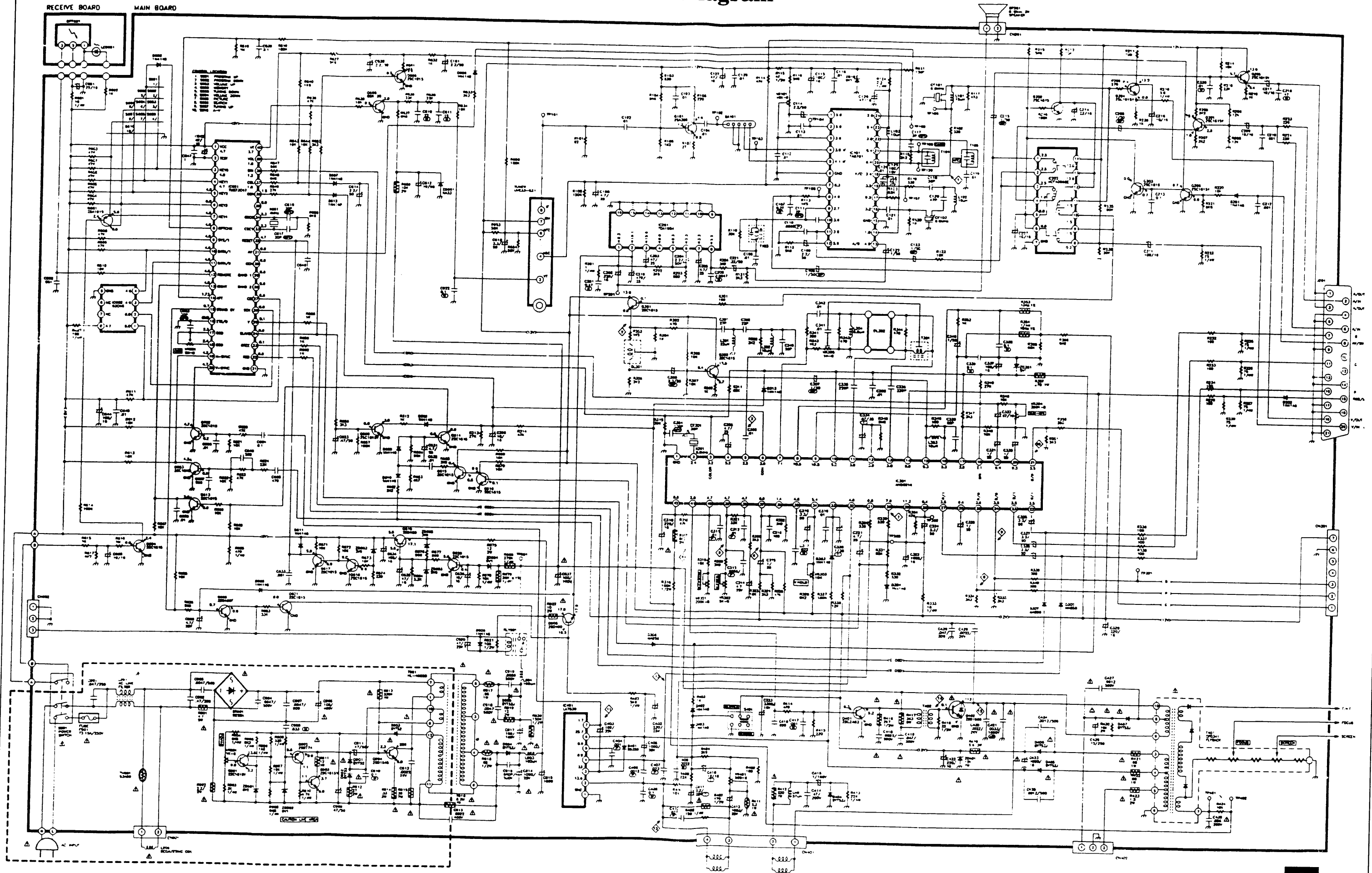
## Remote Control Diagram



## CRT Diagram



## Main Diagram



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