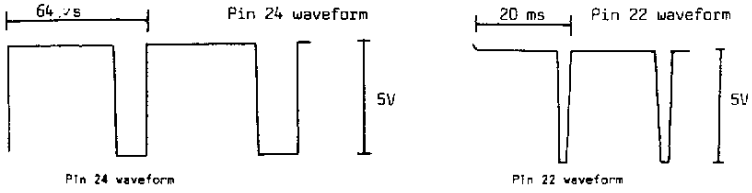
GENERAL INFORMATION

CRT 14" A36JUF60-60 Model Z114T 1987
CRT 20" 510YUB22-TC03 Model 2020T 1987
CRT 21" A51JSY61-03 Model 2321T Nov 1988

TROUBLE SHOOTING GUIDE

FOR TELETEXT DECODER BOARD

System does not enter into the TEXT mode	a- Check Teletext Decoder Power supply circuit b- Check Teletext Decoder Clock circuit c- Check TPU blank output d- Check DRAM circuit
System enters into an unidentified mode (Neither in Teletext mode nor in TV mode)	a- Check/Replace IC002 TPU 2732) b- Check/Replace IC004(4164)
System enters into the teletext mode but can not display teletext information	a- Check R,G,B outputs b- Check data blank output of IC002 (TPU2732)
Text informations on the screen are not synchronized	Check waveforms and synchronization signal outputs (pins 22 and 24) of IC003 (DPU2540) (See figure below)
So many faulty characters on the screen	If the trouble is certainly origined from the Teletext decoder board a- Check the level of composite video signal at pin1 of PL01 b- Check the digital signal outputs (pins 3 to 9) of IC001 (VAD 2150) c- Check IC004 (4164) and and its circuit
Contrast level of teletext data is very high (characters are destroyed)	a- Check the voltage level (4V) at pin28 of IC003 (DPU2540) b- Check the circuit built up with TR003 c- Check pin 6 of IC005 (74L574). This output should be high in teletext mode
Flicker on text informations on vertical direction.	a- Check the waveform at pin 9 of IC005 (It should be a square wave of 25 Hz in teletext mode) b- Check/replace R008



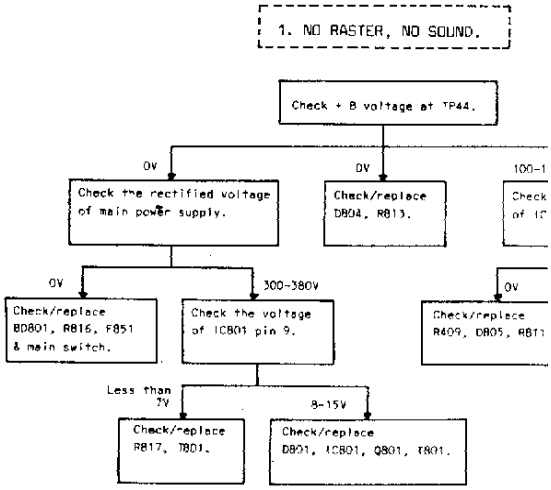
Pin 24 waveform

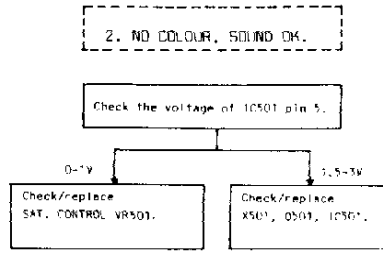
Pin 22 waveform

Displays are not activated	a- Check/Replace Voltage Regulators (IC04-IC05) b- Check if there is a short circuit on 110V line c- Check/Replace IC01 SAA1293A-03
Incorrect band displays of stations	a- Check/Replace band output transistor (T6-T7-T8) b- Check/Replace band output diodes (D09-D10-D11-D12) c- Check pins 29-30 of IC01 d- Check/Replace R56-R57-R58-R59-R60
No Tuning	a- Check/Replace T5 (BF240) b- Check/Replace D13 (33V Zener) c- Check output pin 13 of IC01 SAA1293A-03
Function errors of analogue functions (Any of volume, brightness, colour or contrast)	a- Check output pins 10,11,33 and 34 of IC01 SAA1293A-03
Error on automatic search function	a- Check/Replace IC03 (HEF4066) b- Check/Replace external discrete components of IC03 c- Check output pins 17 and 39 of IC01 SAA1293A-03

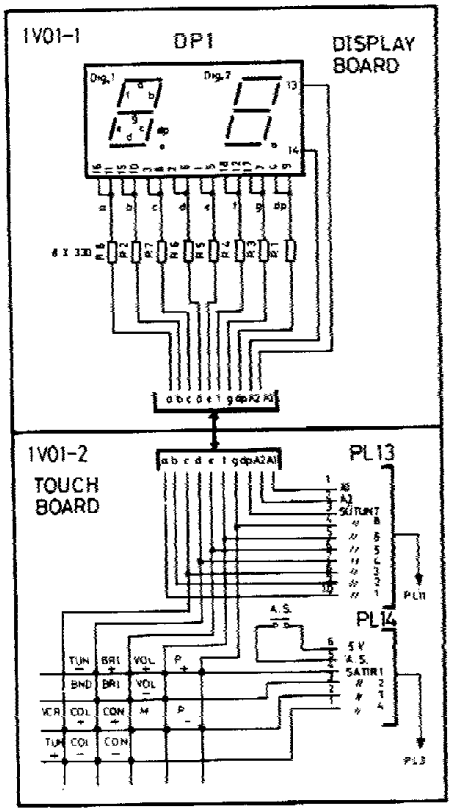
Flicker on teletext informations	a- Check pin 3 of plug 6. (DST/ not be exist)
MDA 2061 (IC2) can not be programmed. Errors on memory function.	a- Check/Replace D02(20V zener) b- Check/Replace IC02(MDA 2061) c- Check I.M. Bus
TV set is forced into the stand-by mode after it is switched on	a- Check if there is a short ci output pins of IC01 SAA1293A
Remote control handset can not activate the TV	a- Check pin 12 of IC01 SAA1293 b- Check/Replace the components line from plug1 to IC01
Any buttons on the touch board can not perform its duties	a- Check port II and port III p SAA1293A-03
No VCR control	a- Check pin 32 of IC01 SAA1293A b- Check/Replace D08 (2V7 Zener c- Check if there is a short cir
No AFC control	a- Check pin 35 of IC01 SAA1293A b- Check/Replace R55 c- Check if there is a short cir
TV set is always in stand by mode when power on/off switch is pressed	a- Check/Replace T3 (BC547) and components b- Check pins of Plug4.
ON button does not activate TV set in stand-by made	a- Check/Replace T9 (BC547) and components
TV set can not enter into the teletext mode	a- Check pins 7,8 and 9 of IC01 (I.M. bus error) b- Check voltage supplies -12V ((FBT) at plug 6.

TROUBLESHOOTING CHAR





MODEL 2114



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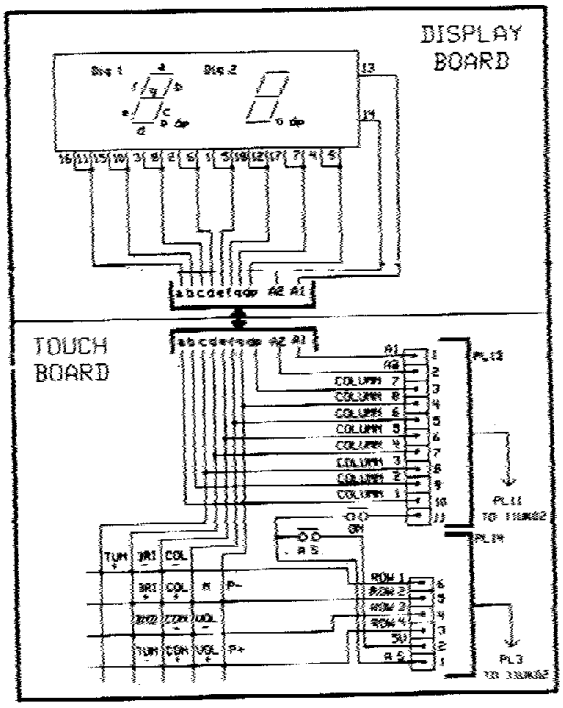
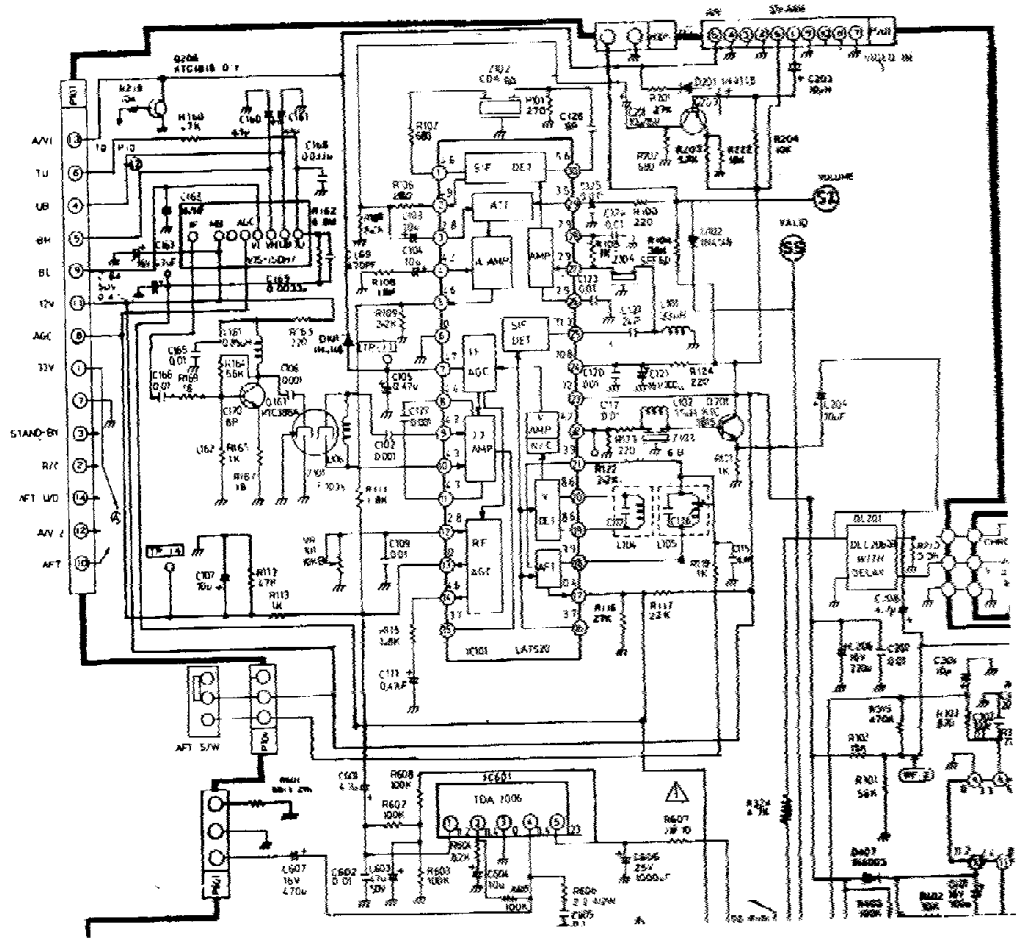
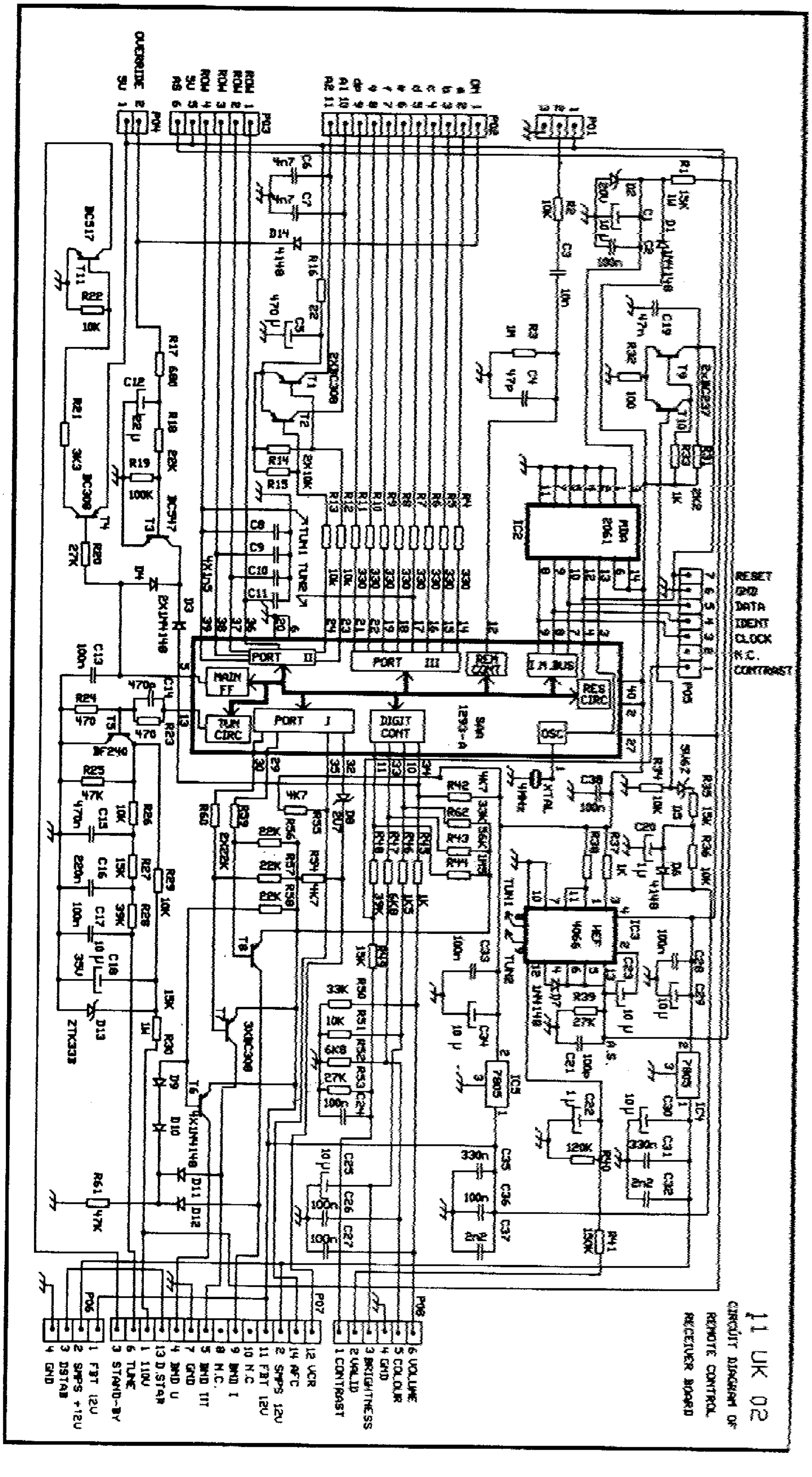
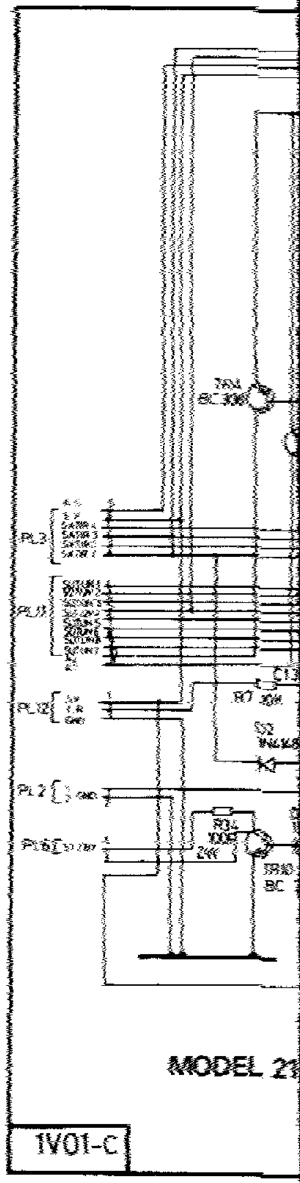




BUSH BASIC CHASSIS (1104KD)		
REF NO (*)	MODEL 2114	T
R108	18K	
R252	91K	
R415	100R	
R121	ORN7	
R424	43K	
C164	470N	
C411	0N2	
C602	10N	
L403	224L	
L406	6.8mH	
TUBE	370 HUBPP-TC02	51

*These components differ between chassis a...





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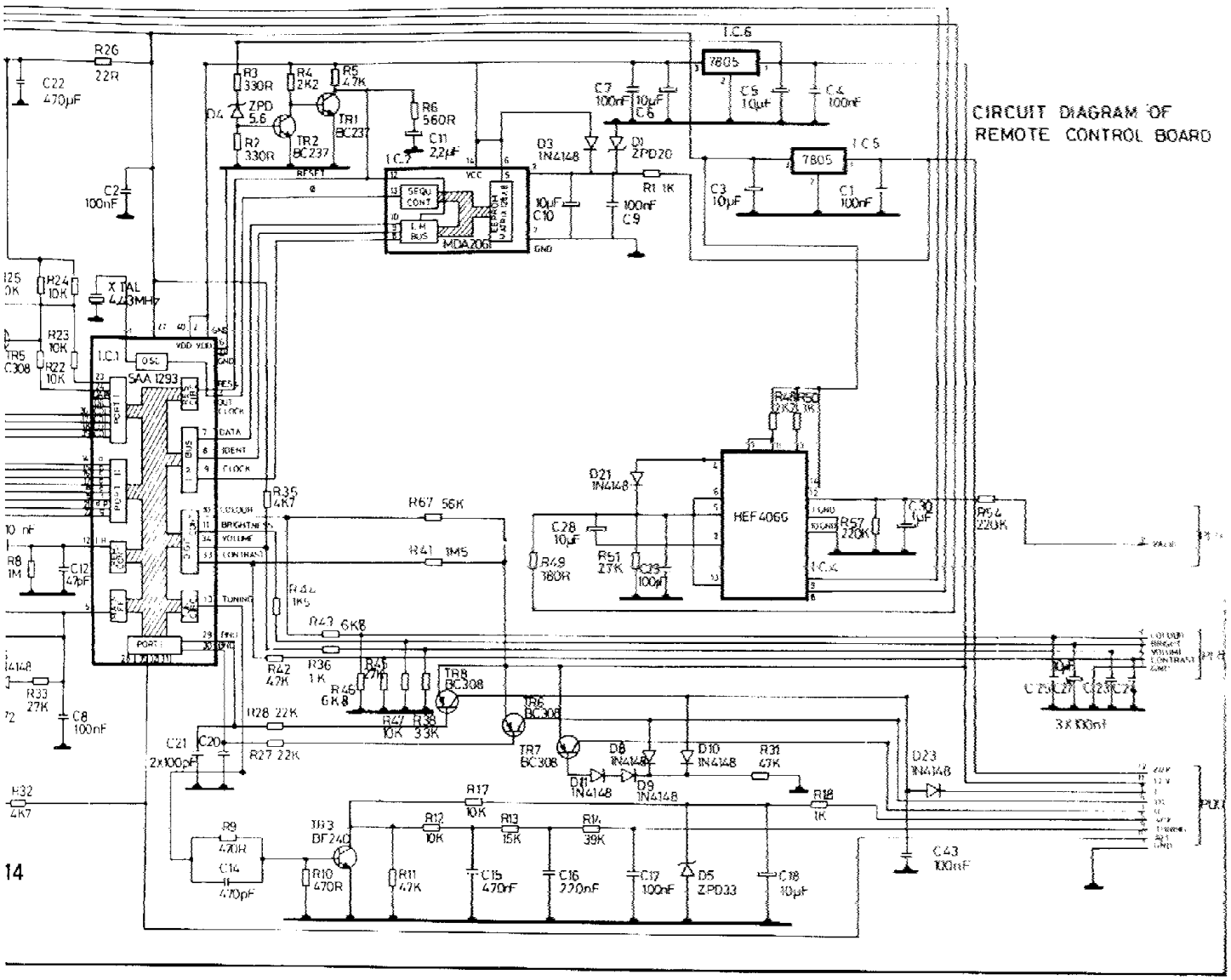
CIRCUIT DIAGRAM OF
REMOTE CONTROL BOARD



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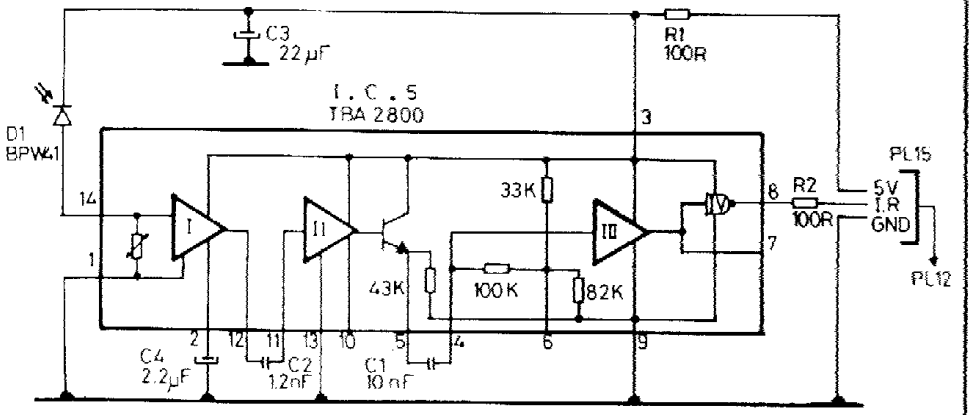
CIRCUIT DIAGRAM OF INFRA-RED SIGNAL PREAMPLIFIER



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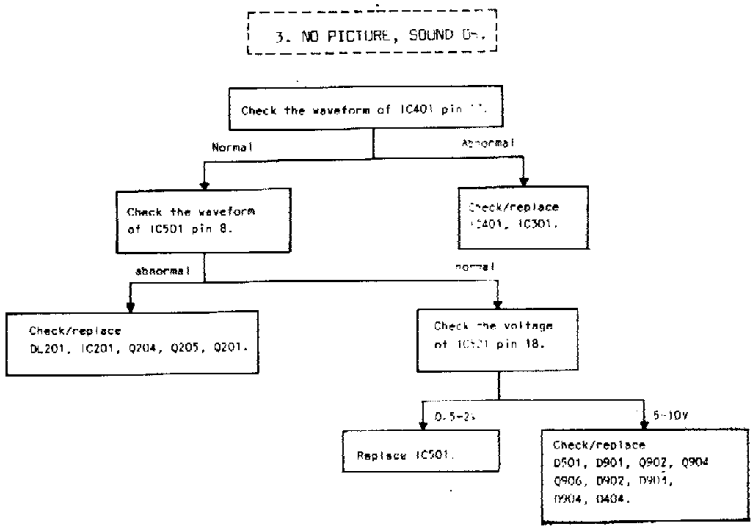
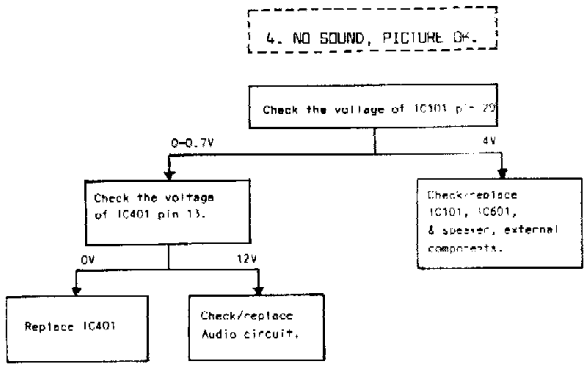
MODEL 2114





HORIZONTAL SYNC. ALIGNMENT

1- Apply a standard colour signal (more than 60 dB) to the antenna terminal of the TV set.

2- Short between M (IC 401 pin 5) and N (GROUND)

3- Adjust VR 401 so as to obtain the best synchronization in vertical and horizontal direction.

VERTICAL LINEARITY AND AMPLITUDE ALIGNMENT

1- Apply a standard colour signal (PM 5544 digital pattern) to the antenna input of the TV set.

2- Adjust VR 301 so that the circle may be located at a position 5 mm distance from top and bottom of the effective screen (AMPLITUDE ALIGNMENT)

3- Adjust VR 501 so as to obtain an optimum circle. (LINEARITY ALIGNMENT)

PAL MATRIX ALIGNMENT

1- Set the contrast, brightness and colour control to maximum.

2- Connect the alignment oscilloscope to the base of Q 905 on the CRT board or pin 17 of IC 501.

3- Apply the standard PAL signal (PM 5544-digital pattern, more than 60 dB) to the antenna input of the TV set.

4- Adjust VR 501 for minimum amplitude of point A and B as shown in figure 4

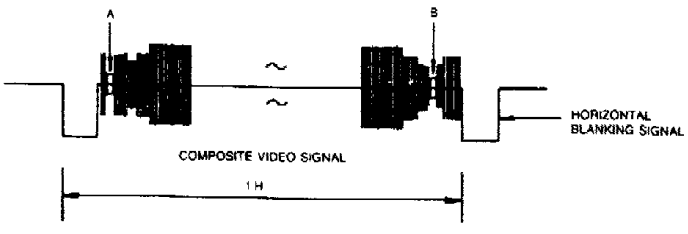


Figure 4 : Waveform of Alignment Oscilloscope

5- Change the applied signal to the standard colour bar signal.

6- Adjust L 502 to obtain minimum difference.

WHITE BALANCE ALIGNMENT IN HIGH AMBIENT LIGHT

1- CONNECT a standard colour signal more than 60 dB to the antenna board of the TV set.

2- Set the COLOUR CONTROL to minimum and CONTRAST and BRIGHTNESS CONTROL to maximum.

3- Adjust R 951 and R 953 on the CRT board IN ORDER to obtain the white screen (colour temperature : 8500°C - 9500°C)

HORIZONTAL CENTRE ALIGNMENT

1- Receive a standard OFF AIR signal.

2- Adjust VR 402 so that right HAND SIDE position of screen is equal to the left.

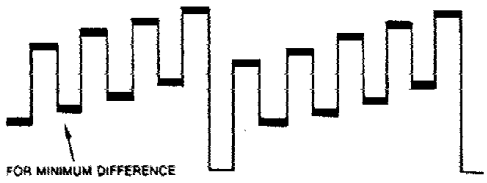


Figure 5: Oscilloscope Alignment Waveform

SCREEN VOLTAGE ALIGNMENT

(WHITE BALANCE ADJUSTMENT IN LOW AMBIENT LIGHT)

1- CONNECT a colour signal more than 60 dB to the antenna terminal of the TV set.

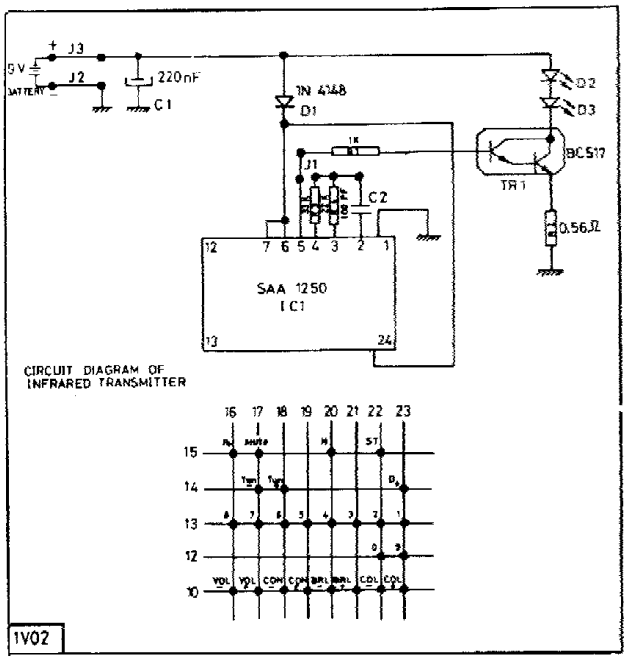
2- Set R 951 and R 953 on the CRT board to the mechanical centre and the COLOUR CONTROL to minimum.

3- ADJUST the CONTRAST and BRIGHTNESS CONTROL gradually counter-clockwise to obtain picture brightness of 40-100 LUX.

4- Vary the SCREEN CONTROL right and/or left and set it to the position WHERE a FLYBACK line and xmas DOES NOT appear on the screen.

5- Set the CONTRAST and BRIGHTNESS CONTROL to minimum and check the screen condition.

MODEL 2114



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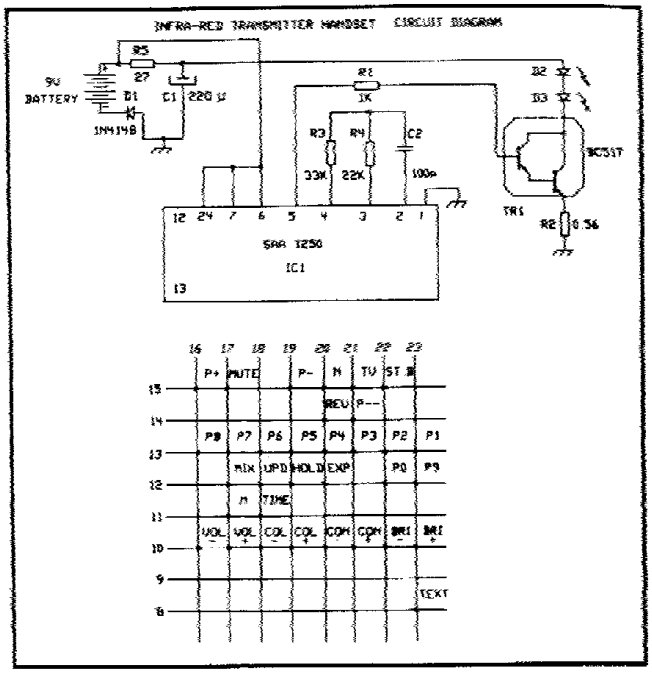

COMPONENT DIFFERENCES	
ODEL 2020	MODEL 2321
12K	12K
91K	82K
220R	220R
1R (1W)	1R (1W)
27K	27K
220N	220N
6N8	6N8
33N	33N
224C	224C
-	-
YU B22--TC02	A51JSX61X03

to different inductance values of tubes