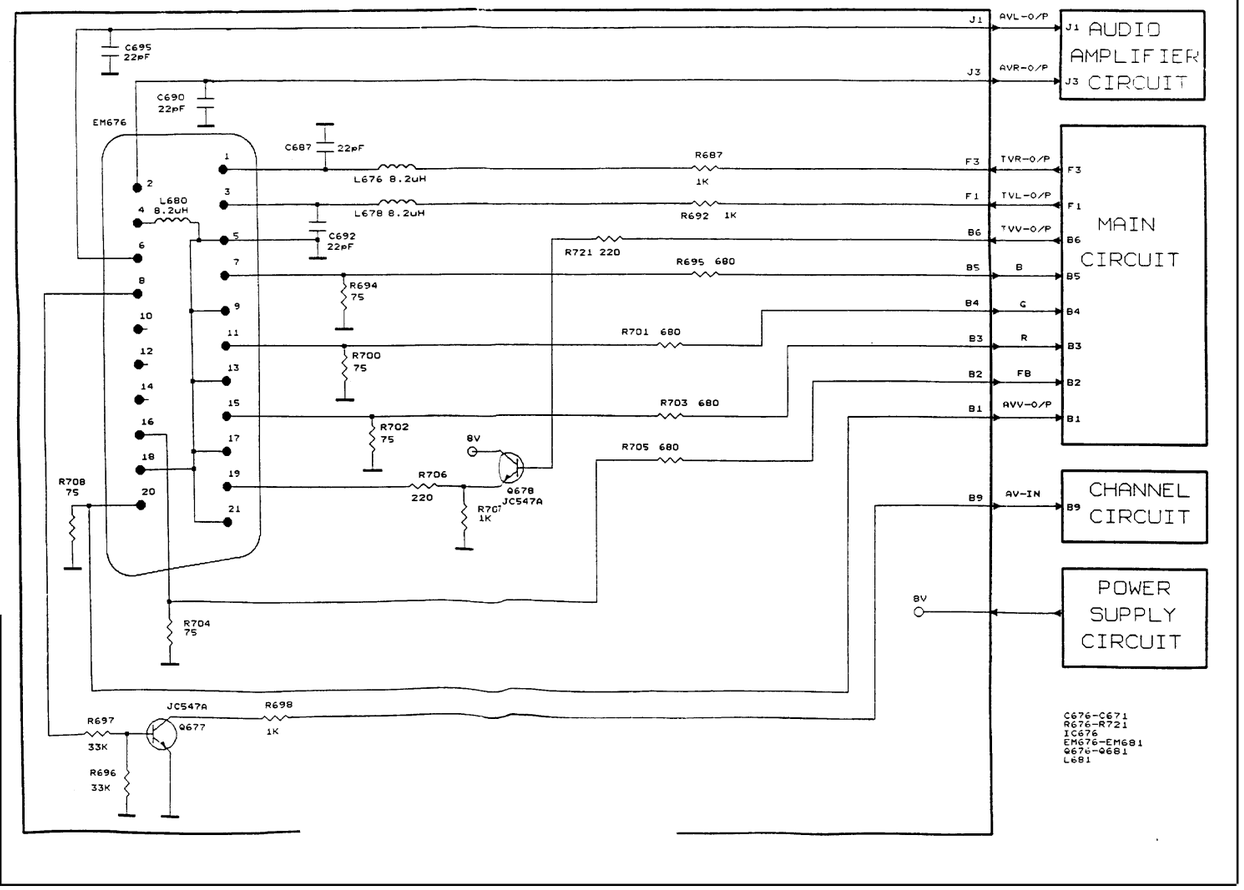
MATSUI 2196 N

Specifications

Television
Picture Tube: ..... 33cm measured diagonally
Colour System: ..... PAL I
Tuning System : ..... 69 tunable programmes & one SCART input channel
.....(70 in total)
External antenna: ..... 75 Ohm DIN type
Stereo Sound Output: ..... 2x5 Watts RMS
SCART socket: 21PIN
Sleep Timer: ..... 120 minutes maximum
Digital Nicam Stereo
Fastext
Swap Function
On Screen Display
Personal Preference Level Settings
Auto Search Tuning

General
Mains supply: ..... AC 240V 50Hz
Power Consumption: ..... 70W(max.)
Accessories: ..... Remote Control
UHF: ..... 21 - 69 channel coverage
Speaker: 2x8Ω
Gross Weight 27Kg
Dimensions : ..... 595(W) x 540(H) x 555(D)mm

AV Circuit Diagram



Adjustments

HIGH VOLTAGE TEST
There is no high voltage adjustments component on the chassis. Changing of +120 depends on the supply voltage. If high voltage is to measured.

1. Connect the + probe of high voltage tester to the anode of cpt.
2. Adjust contrast and brightness to minimum.
3. Measure the high voltage as 23.0+5%KVdc for 14". That voltage is 25.5+/-5%KVdc KV for 20" (5 I cm) screen size.
4. For maximum brightness, high voltage regulation should be 2KVdc max.

AGC ADJUSTMENT
1. Apply Philips pattern signal which is 60dB uV amplitude (IV) to the RF input.
2. Adjust VR182 until the picture is without snow.

VERTICAL ADJUSTMENT
1. Apply Philips pattern.
2. Cut down vertical amplitude with VR576.
3. Centre picture with three position key.

HORIZONTAL ADJUSTMENT
1. Apply Philips pattern signal.
2. Centre the picture while shifting to right and left with VR 181.

STEREO/DUAL ADJUSTMENT
1. Connect oscilloscope 14 pin out of IC901 (TDA9840)
2. Apply one channel signal with stereo publication.
3. Adjust sound signal of 1 KHz and 3KHz by means of VR326 that the difference between should be minimum.

TELETEXT ADJUSTMENT
1. Apply one channel signal with teletext publication.
2. Cut video signal to IC730.
3. Stop horizontal shifting picture with VC726.
4. Again connect video signal to IC730 and check picture.

ADJUSTMENT OF SUPPLY VOLTAGE
1. Apply Philips pattern signal.
2. Make the volume, brightness and contrast adjustment to minimum.
3. Adjust the supply voltage on the pin cathode of D 112 as Vsys= 120+/-0.5 by using VR101.

FOCUS ADJUSTMENT
Adjust the thickness of lines until being minimum, by focus trimpot on the eht transformer. By using cross-hatch of multi-burst test pattern.

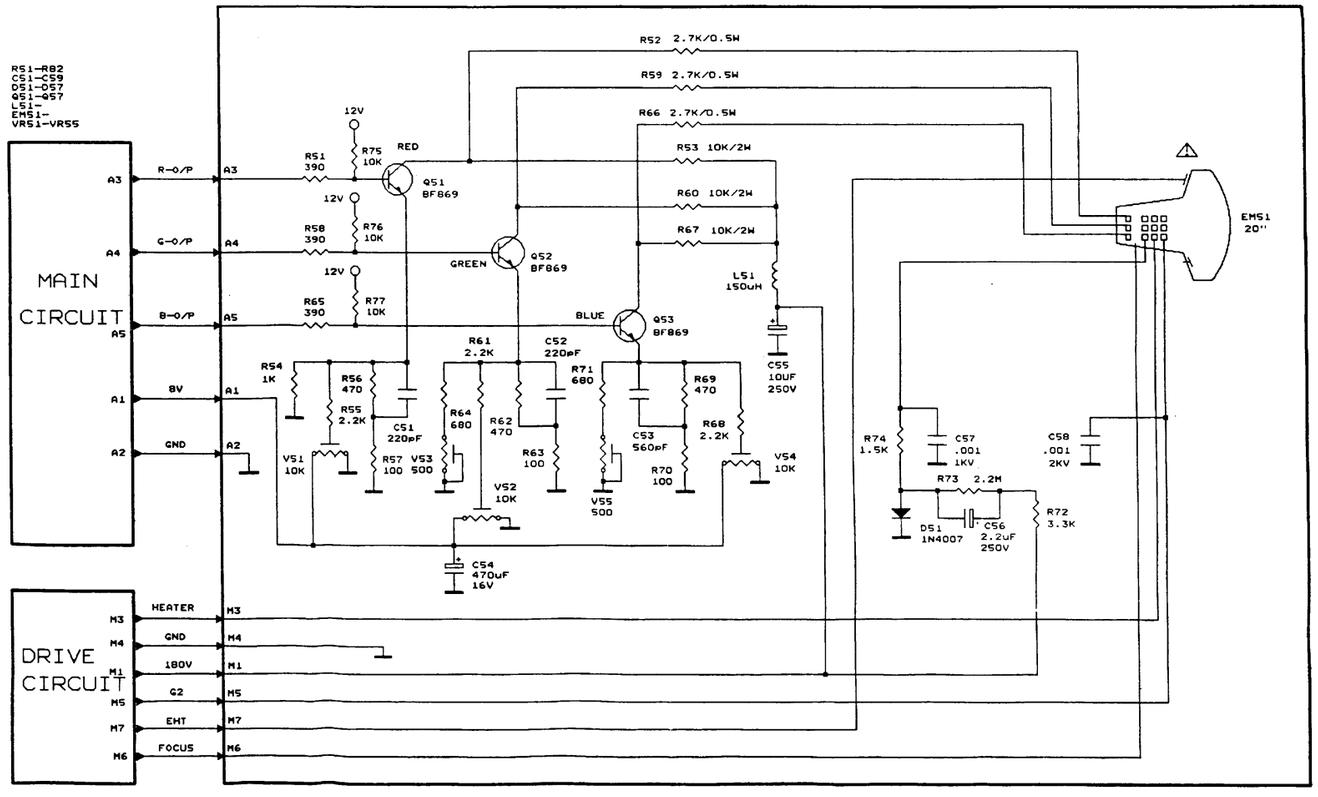
WHITE BALANCE ADJUSTMENT
1. Apply Philips pattern.
2. Adjust VR53, VR55, are trimpots to middle position and VR51, VR52 and VR54 are trimpots to minimum.
3. Adjust brt, cont, col to mm.
4. Adjust at lower grey bar of Philips pattern by screen trimpot that two bars should be seen.
5. Increase brt control little and adjust white balance by using VR51, VR52, VR54 with eyes.
6. Apply white pattern. Settle screen probe of Minolta. Adjust Y ÷ 5 nits with brightness.
7. Increase contrast adjust X=Y=270 ÷ 276nits by means of VR53, VR55.
8. Set contrast to minimum. Adjust X=Y=270 ÷ 276nits at Y ÷ 5nits by means of VR51, VR52, VR54.
9. Check white balance at high and low contrast level. Again make adjustment if its necessary.

AFT ADJUSTMENT
1. Disconnect the if output of tuner from if input.
2. Apply 38.9 MHz signal with signal generator to if input.
3. Connect a digital voltmeter to aft pin of IC476.
4. Adjust T181 coil until the voltage ol IC476 is being 2.5Vdc
5. Connect the if input which input is disconnected in the beginning.

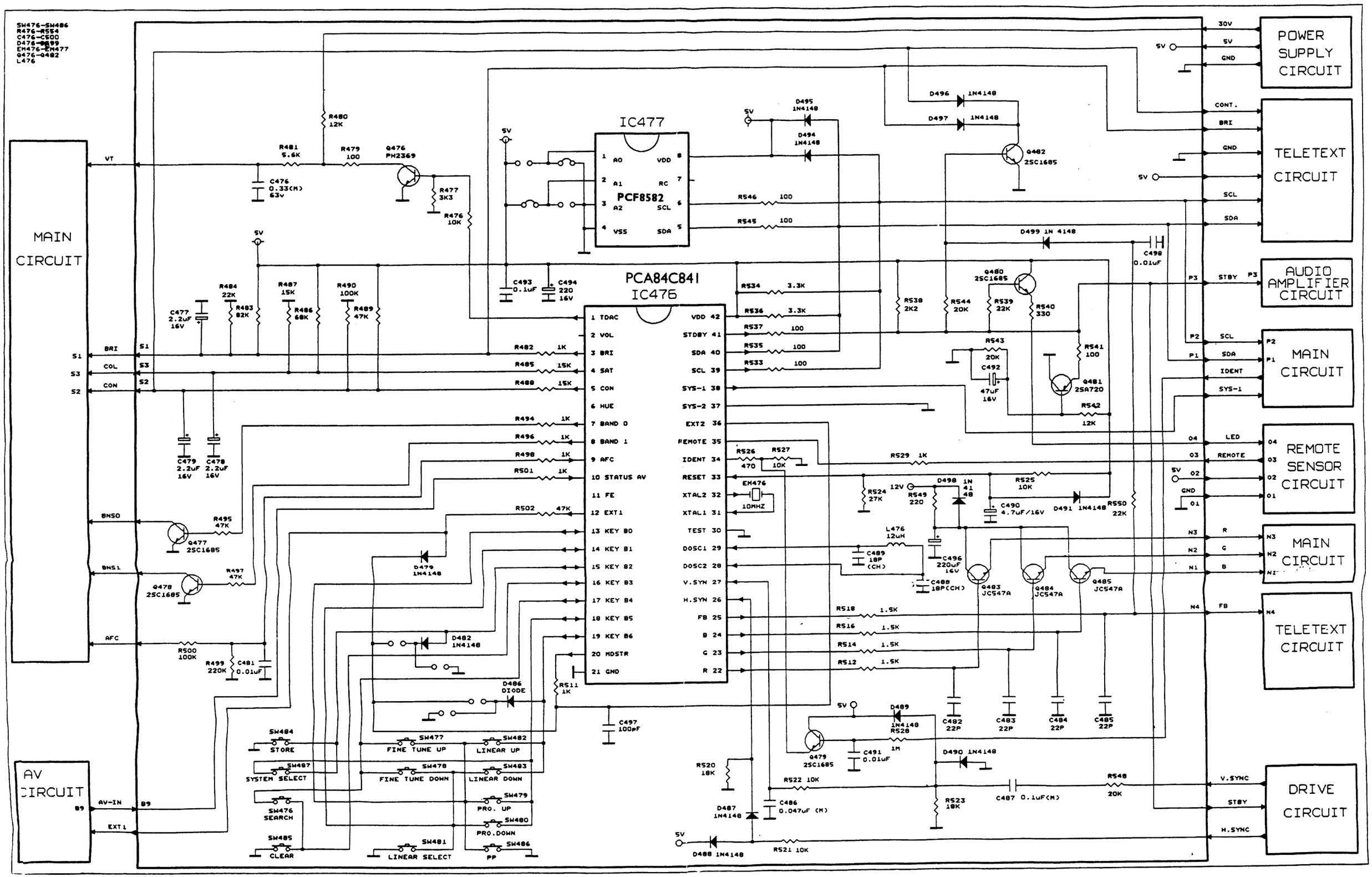
NOTE: Aft ad!ustment will be done at 39.5 MHz on pal I chassis.

FTZT ADJUSTMENT
1. Disconnect the if output of tuner from if input.
2. Apply 30.9 MHz signal with a signal generator.
3. Connect oscilloscope probe L151 by Q151 adjust signal at oscilloscope by T27 coil that the signal should be minimum level.
4. Apply 40.4 MHz signal with a signal generator.
5. Connect oscilloscope probe L151 by Q151 adjust signal at oscilloscope by T26 coil that the signal should be minimum level.
6. Connect the if input which is disconnected in the beginning.

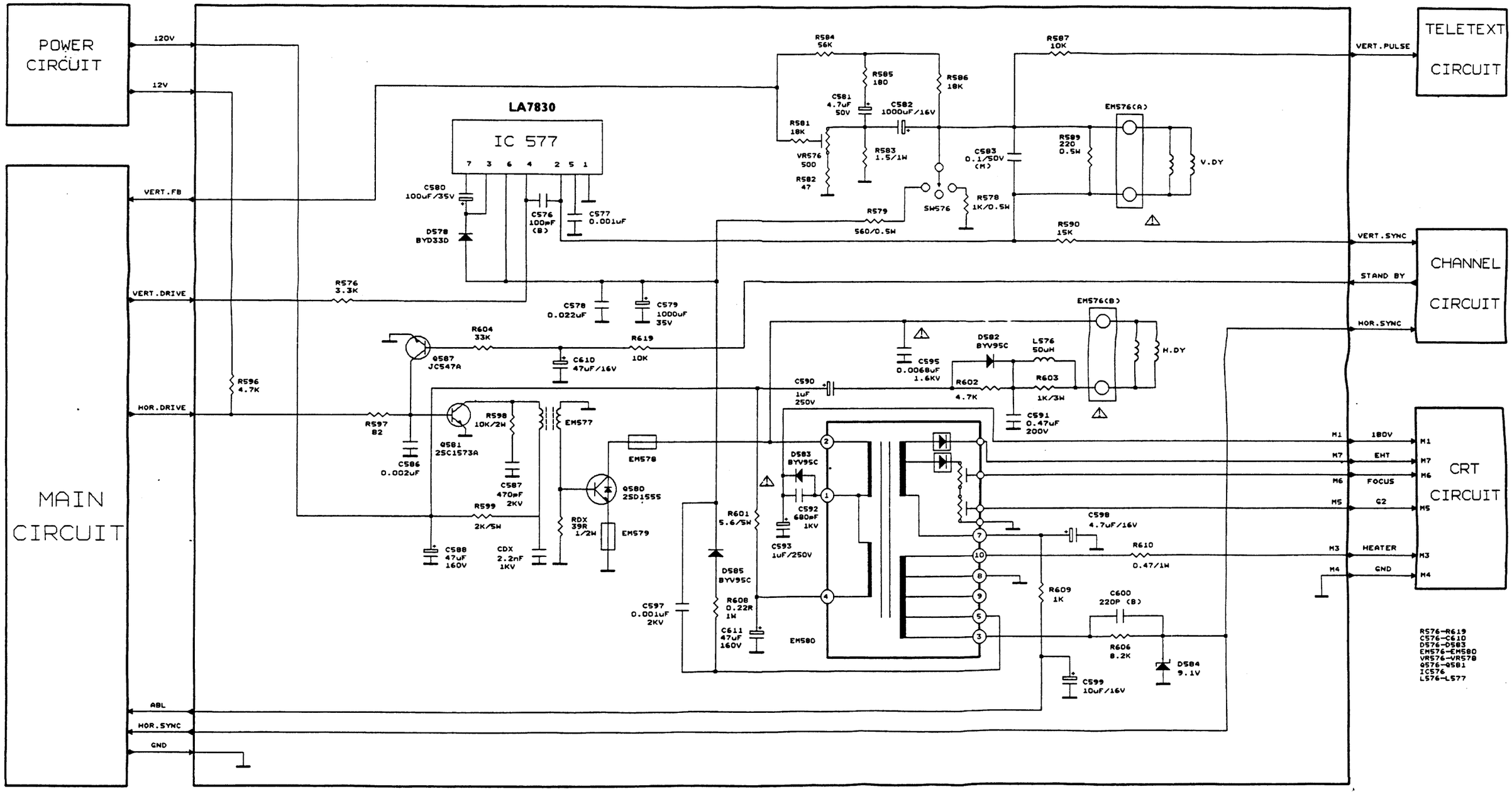
CRT Diagram



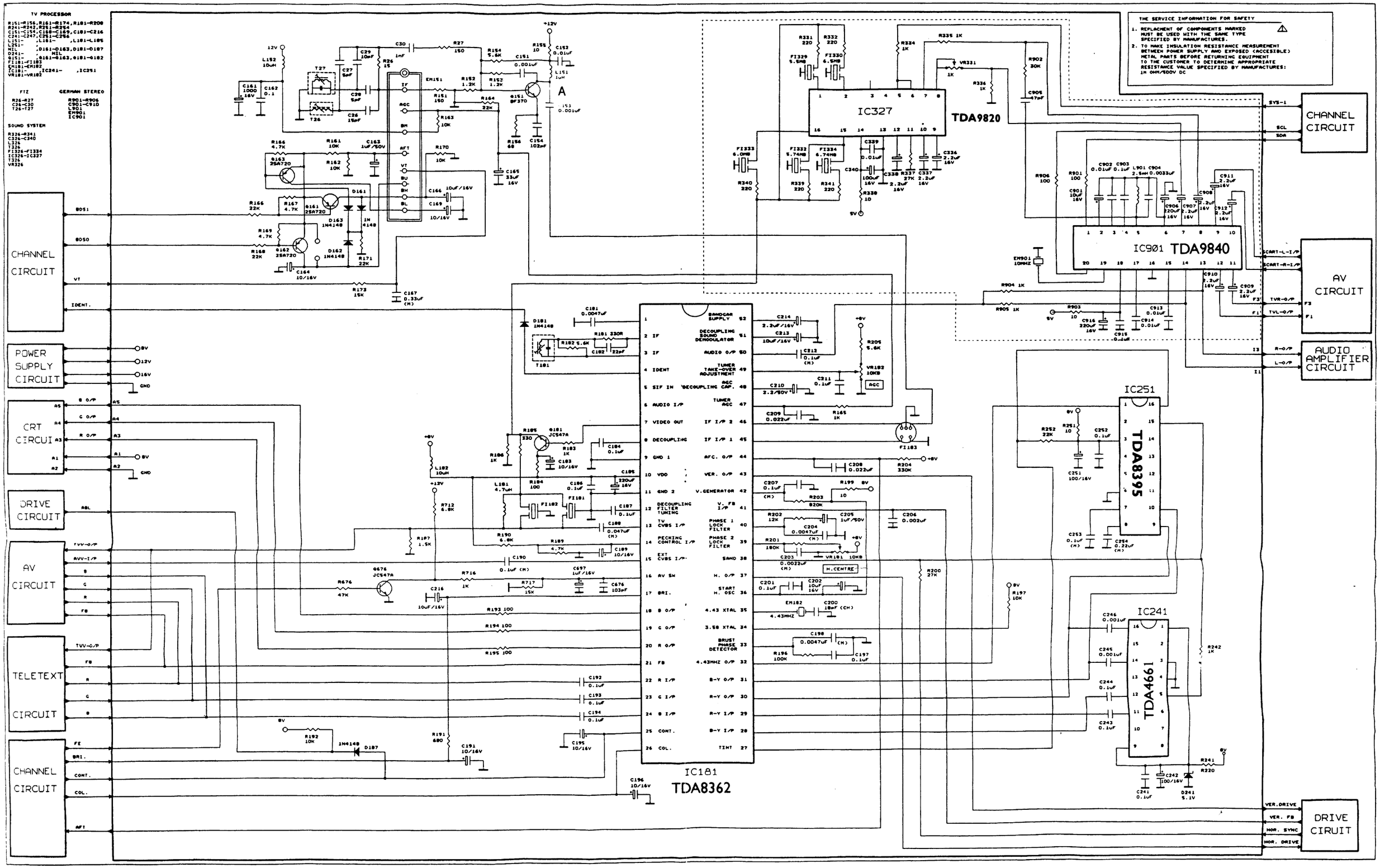
CPU Circuit Diagram



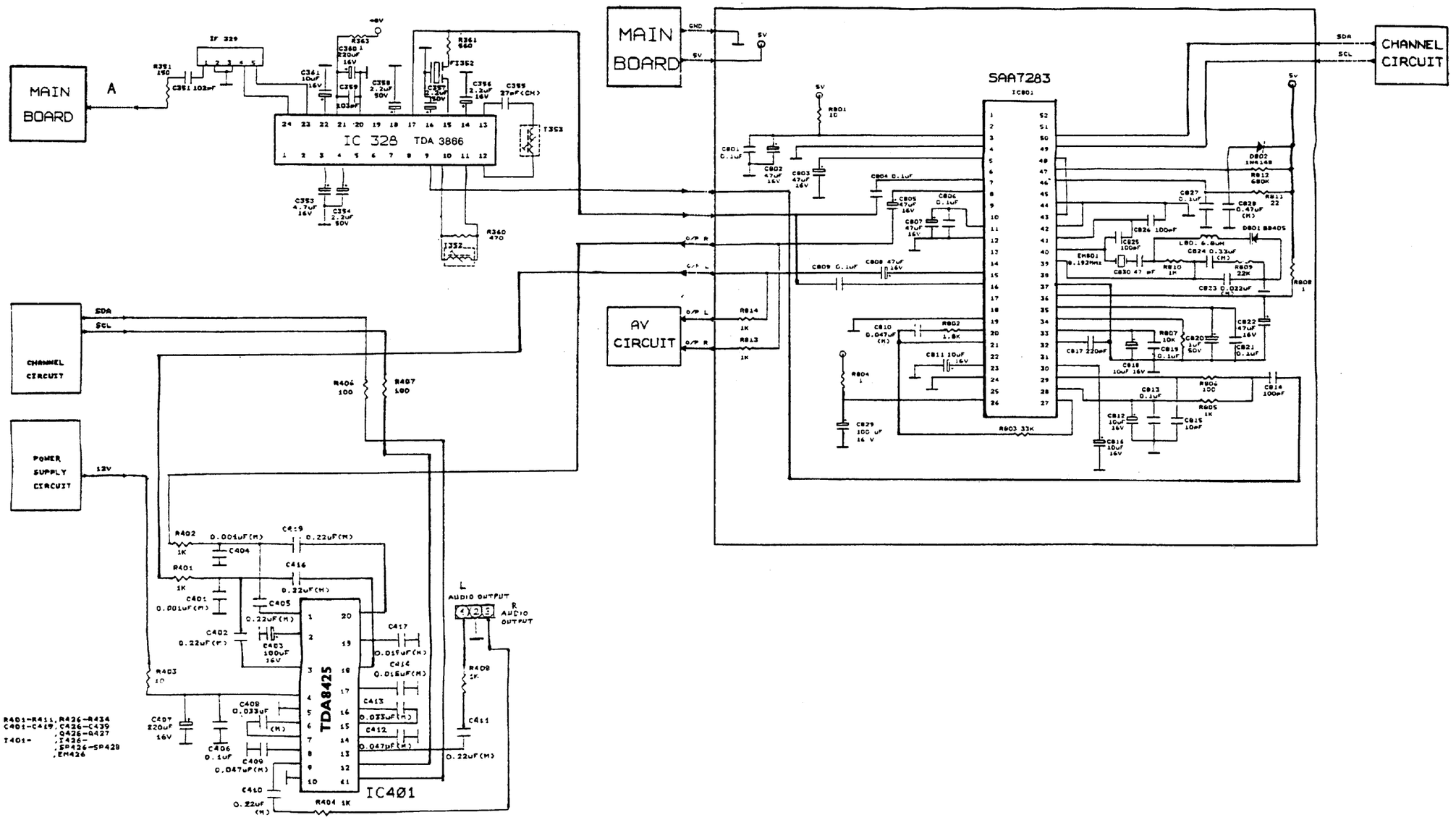
Deflection Diagram



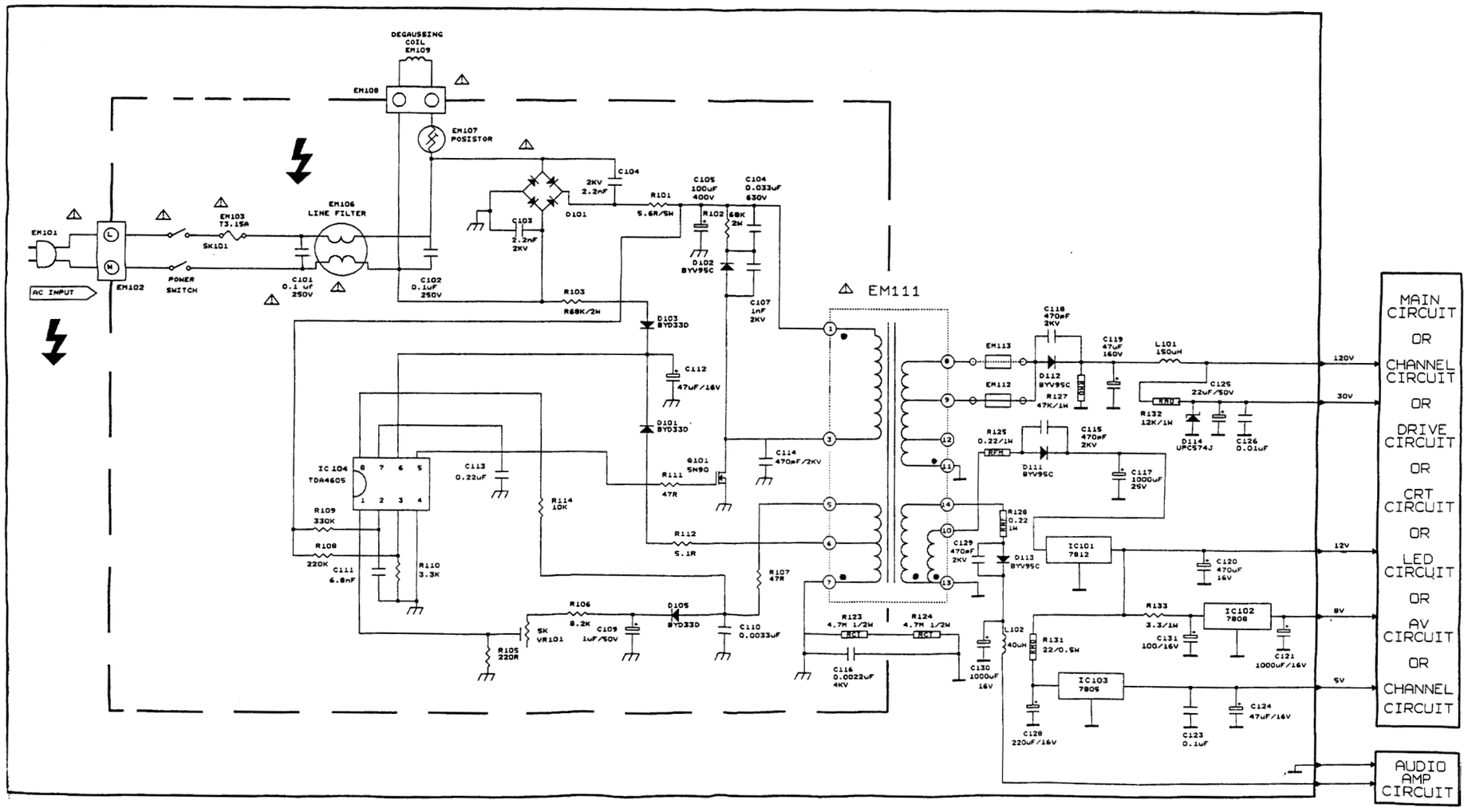
Main Diagram



NICAM Diagram



Power Supply Diagram



Voltage Charts

Pin.	TDA8361	ST63T85	TDA4661	TDA1905	TA8403	TDA4605	LM317
1	2.9V	3.9V(Vancap)	5.1V	10.2V	0V	0.4V	10.7V
2	5.8V	0.25V	0V	19.7V	14.6V	1.18V	11.9V
3	5.8V	4.8V	0V	18.27V	25.2V	2.9V	16.9V
4	6.9V	2.3V	0V	1.8V	0.9V	0V	-
5	0.5V	2.2V	0.4V	0V	0.8V	3V	-
6	3.8V	5V	3.3V	3.8V	25V	13.1V	-
7	3V	5V	1V	3.8V	1.35V	1.9V	-
8	1.8V	5V	0V	3.7V	-	0.4V	-
9	0V	2.8V(AFT)	5.1V	0V	-	-	-
10	8V	5V	0V	0V	-	-	-
11	0V	5V	2.8V	0V	-	-	-
12	2.8V	5V	2.8V	0V	-	-	-
13	4V	5V	0V	0V	-	-	-
14	2.9V	5V	1.2V	0V	-	-	-
15	3.4V	5V	0V	0V	-	-	-
16	0V	0V	1.2V	0V	-	-	-
17	2.5V	5V	-	-	-	-	-
18	1.8V	0V	-	-	-	-	-
19	1.8V	4.5V	-	-	-	-	-
20	2.4V	4.3V	-	-	-	-	-
21	0.2V	0V	-	-	-	-	-
22	3.2V	0V	-	-	-	-	-
23	3.3V	0V	-	-	-	-	-
24	3.3V	0V	-	-	-	-	-
25	2.5V	0V	-	-	-	-	-
26	1.8V	0.6V	-	-	-	-	-
27	5.2V	0.1V	-	-	-	-	-
28	3.5V	5V	-	-	-	-	-
29	3.9V	5V	-	-	-	-	-
30	1.5V	0V	-	-	-	-	-
31	1.4V	1.9V	-	-	-	-	-
32	0.03V	2.6V	-	-	-	-	-
33	4.7V	4.8V	-	-	-	-	-
34	2.5V	0V	-	-	-	-	-
35	2V	5V	-	-	-	-	-
36	7.9V	0.5V	-	-	-	-	
37	0.4V	0V	-	-	-	-	
38	0.4V	5V	-	-	-	-	
39	3.3V	5V	-	-	-	-	
40	3.7V	5V	-	-	-	-	
41	2.3V	4.7V	-	-	-	-	
42	2.8V	5V	-	-	-	-	
43	0.9V	-	-	-	-	-	
44	4.3V	-	-	-	-	-	
45	4V	-	-	-	-	-	
46	4V	-	-	-	-	-	
47	6.5V	-	-	-	-	-	
48	3.6V	-	-	-	-	-	
49	0.0V	-	-	-	-	-	
50	3.4V	-	-	-	-	-	
51	4.3V	-	-	-	-	-	
52	6.5V	-	-	-	-	-	

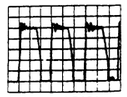
All voltages are in volt
Readings are taken with a digital multimeter
Readings are taken with a colour-bar signal input

Sound	**min.**
Contrast	
Brightness	normal
Colour	

PINNING SYMBOL	PIN	TDA 8362 DESCRIPTION
AUDEEM	1	audio de-emphasis
IFDEM1	2	IF demodulator tuned circuit
IFDEM2	3	IF demodulator tuned circuit
IDENT	4	video Identification output
SOIF	5	sound IF input and volume control
EXTAU	6	external audio input
IFVO	7	IF video output
DEC DIG	8	decoupling digital supply
GND1	9	ground 1
Vp	10	positive supply voltage (+8V)
GND2	11	ground 2
DEC FT	12	decoupling filter tuning
CVBS INT	13	internal CVBS input
PEAKIN	14	peaking control input
GVBS EXT	15	external CVBS input
CHROMA	16	chrominance and A/V switch input
BRI	17	brightness control input
BO	18	blue output
GO	19	green output
RO	20	red output
RGBIN	21	RGB insertion and blanking input
RI	22	red output
GI	23	green output
BI	24	blue output
CON	25	contrast control input
SAT	26	saturation control Input
HUE	27	hue control input (or chrominance outp.)
BYI	28	B-Y input signal
RYI	29	R-Y input signal
RYO	30	R-Y output signal
BYO	31	B-Y output signal
XTALOUT	32	4.43 MHz output for TDA8395
DET	33	loop filter burst phaae detector
XTAL1	34	3.58 MHz XTAL connection
XTAL2	35	4.43 MHz XTAL connection
HOSC	36	start horizontal oscillator
HOUT	37	horizontal output
FBI/SCO	38	flyback input/sandcastle output
PH2LF	39	phase 2 loop filter
PH1LF	40	phase 1 loop filter
VFB	41	vertical feedback input
VRAMP	42	vertical ramp generator
VOUT	43	vertical output
AFCOUT	44	AFC output
IFIN1	45	IF input 1
IFIN2	46	IF input 2
AGGOUT	47	tuner AGC output
DEC AGC	48	AGC decoupling capacitor
TUNE ADJ	49	tuner take-over adjustrnent
AUOUT	50	audio output
DEC DEM	51	decoupling sound demodulator
DEC BG	52	decoupling bandgap supply

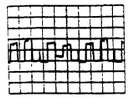
Waveforms

1) 5 usn/div 100 volt/div



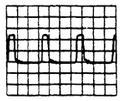
Collector of Q101

9) 20 usn/div 2 volt/div



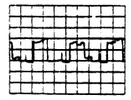
IC-181 pin 20

2) 20 usn/div 2volt/div



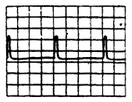
IC-476 pin 26

10) 20 usn/div 2 volt/div



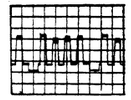
IC-181 pin 19

3) 5m sn/div 2volt/div



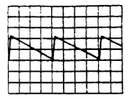
IC-476 pin 27

11) 10 usn/div 2 volt/div



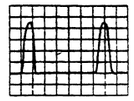
IC-181 pin 18

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



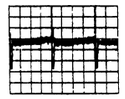
IC-181 pin 41

12) 10 usn/div 200 volt/div



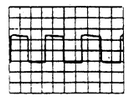
Collector of Q 580

5) 5 msn/div 1 volt/div



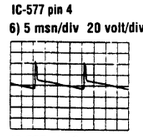
IC-577 pin 4

13) 20 usn/div 0.5 volt/div



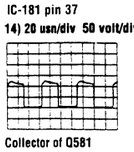
IC-181 pin 37

6) 5 msn/div 20 volt/div



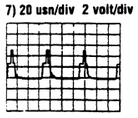
IC-577 pin 2

14) 20 usn/div 50 volt/div



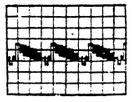
Collector of Q581

7) 20 usn/div 2 volt/div



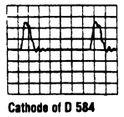
IC-181 pin 38

15) 20 usn/div 1 volt/div



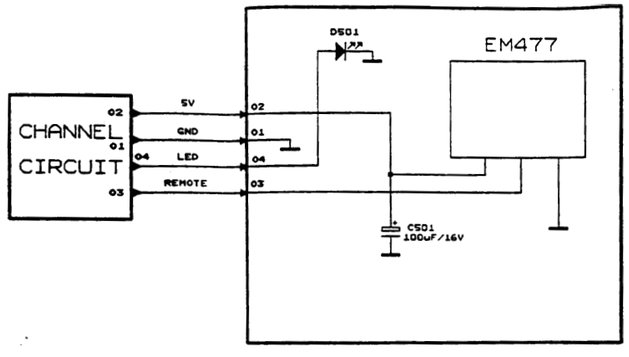
IC-181 pin 13

8) 10 usn/div 50 volt/div



Cathode of D 584

Remote Control Diagram



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Teletext Diagram