

## General Information

1994

### Covers Models:

Nokia 7496 / 7186 / 6386

Finlux 71U1 / 71Z2 / 63U1 / 63Z2

Salora 28V80 / 25V80

Luxor 7438 / 7046 / 7045 / 6346 / 6345

### Chassis: FS

#### CRT's:

A66EDN43X01

A59EDN43X01

A56EDN43X01

A68EEH048X101

A66ECY13X01

Remote Control: ERCN600

## Specifications

Main Power	230V (-10% ... +6%), 50Hz
Power consumption:	
Stand by	Max 6W
Average (depends on accessories)	145W
Picture tube	25", 28", 29"
Programme memory locations	99
AV memory locations	3
Sound output	2 x 12W (8 ohm)
Internal subwoofer (option)	14W (16 ohm)
Dolby surround:	
Surround channel	2 x 6W (8 ohm)
Centre channel	6W
Connections:	
Front panel	Audio in 0.5V/10 ohm Video in 0.5V/75 ohm Y/C in (s-VHS)
Rear panel	SCART E1 SCART E2
Extra loudspeakers	2 x DIN

## Service Adjustments

### Safety Regulations

Service and repair work must be performed only in accordance with existing safety regulations. Safety components in accordance with existing regulations. These components must be replaced only with original parts.

### X-Ray Regulations

The picture tube type and the maximum permissible high voltage ensure that the X-ray intensity of the receiver remains far below the permissible value. The high voltage must not exceed 30 kV. The high voltage is within the permissible limits when the operating voltage of the horizontal deflection stage equals 140V (25", 28"), 136V (29") at the minimum beam current. In servicing, check and adjust this voltage to the nominal value with Po1.

### Service and Adjustments

#### Service Mode Selection

Switch on the receiver by pressing the mains switch and within 5 seconds press the remote control buttons MENU, TV and "1" successively.

#### A menu

#### B menu

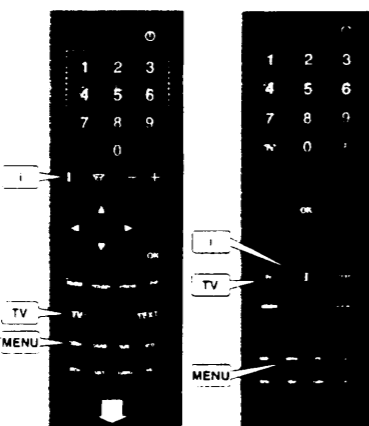
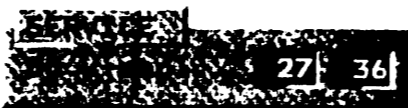


Fig. 1.

- The receiver is put to the service mode by switching on the receiver with the mains switch and within 5 seconds press the remote control buttons MENU, TV and "1" successively.

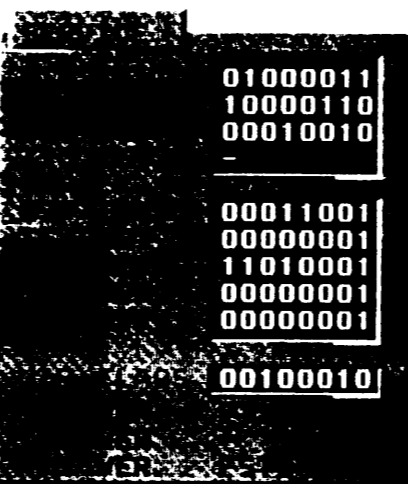
**Note:** If the receiver remains in stand by mode after selecting the service mode, switch on the receiver by pressing the TV button twice and select the service mode by pressing the "1" button.



- Return from the service mode by switching off the receiver with the main switch.

#### Changing the Option Bytes

- When in service mode, select the configuration mode by pressing the RED button.



**Description**  
SW VER = ICP software version  
IPO VER = -  
NVM VER = NVM software version.

- Select IC Device byte 1 - 4 or Option byte 1 - 5 with the cursor button (up/downwards). Selected byte is shown highlighted.
- Set the bits with the number buttons (0 - 7).
- Store the settings by pressing the OK button.
- Return to the service mode by pressing the RED button again.

### Option Byte Descriptions

#### Option bits to be set automatically

Bit	Description	Setting	1	0
01000011				
0	TV Tuner		YES	NO
1	Decoder TDA9162		YES	NO
5	RGB processor TDA4750		YES	NO
6	Video switch TDA6417		YES	NO
7	PIP controller SDA9188		YES	NO

Bit	Description	Setting	1	0
10000110				
0	PIP tuner		YES	NO
1	RGB processor TDA4680		YES	NO
2	Mxgate SDA5273		YES	NO
7	MSP3400 3410		YES	NO

Bit	Description	Setting	1	0
00010010				
0	DSP (surround)		YES	NO
1	Subwoofer		YES	NO
4	Comb filter (SVHS line 10)		YES	NO

Bit	Description	Setting	1	0
00011001				
0-3	Loudspeaker configuration (Set in user mode)			

Bit	Description	Setting	1	0
00000001				
0	TEXT with external RAM		YES	NO

Bit	Description	Setting	1	0
11010001				
4	NTSC 3.58 Mhz		YES	NO

Bit	Description	Setting	1	0
00000001				
0	B/G system		YES	NO
1	I system		YES	NO
2	D/K system		YES	NO
3	L/L system		YES	NO
5	Baseband		YES	NO

Bit	Description	Setting	1	0
00110000				
4	Bass splitting (normally yes)		YES	NO
6	Pre-equalisation for E and B2 cabinet		YES	NO

#### Option bits to be set manually:

Bit	Description	Setting	1	0
00000100				
2	First text enabled		YES	NO

Bit	Description	Setting	1	0
11000001				
0	Camera connector installed		YES	NO
6	TV-CAM enabled		YES	NO
7	Business enabled		YES	NO

Bit	Description	Setting	1	0
10000000				
7	Only UHF tuner		YES	NO

Bit	Description	Setting	1	0
01100010				
4	OEM option		YES	NO

#### Service Adjustments via IIC Bus

##### Remote Control Buttons in Service Mode

When the receiver is in service mode you can select the normal TV mode by pressing the TV button and return to the service mode by pressing the "1" button.

Number and cursor buttons are used for service adjustment.

The yellow button hides, temporarily, the service menu.

The OK button stores the settings.

**Note:** Before other adjustments U1 voltage must be adjusted.

#### Making the Service Adjustment

- Give a two numbered code which determines the adjustment (e.g. 05 = horizontal phase, see the following tables) with the number buttons.

**Note:** The adjustment can also be selected with the cursor button (up/downwards).

- Adjust with the cursor button (left/right).
- Store the new value by pressing the OK button.

**Note:** To avoid incomplete adjustments store each adjustment in the memory immediately after adjusting.

### O Power Supply Block

#### U1 Voltage and Protection Circuit

- Set the brightness and contrast to normal level. Connect an universal voltmeter to the cathode of Do11.
- Adjust with Po1 the DC voltage (U1) for +140V or +136V (±1V) depending on the picture tube type. Look at the schematic diagram.
- Check the over-current protection after making any service operations in the primary circuit of the power supply. Set the receiver to the stand-by mode. Short circuit the cathode of Do 13 to the ground and keep the short circuit connected. When the over-current works correctly the power supply stops. Remove the short circuit and switch on the receiver by pressing the mains button.

### K Horizontal Deflection Block

#### Focusing

- Set brightness and contrast to normal level.
- Use cross hatch pattern and adjust the picture for optimum resolution.

#### Ug2 Voltage (Screen Grid Voltage)

- Set contrast to minimum, brightness and colour saturation to normal level.

VERTICAL PICTURE ADJUSTMENTS				
Adjustment	Code	OSD name	Init. value	Note!
Vertical off-centre shift	01	V- shift	25	Adjust the colour edge to the centre of the picture
Vertical amplitude	00	V- ampli	21	Adjust the upper part of the picture to correct ration
Vertical slope	02	V- slope	33	Adjust the lower part of the picture to correct ration

HORIZONTAL PICTURE ADJUSTMENTS				
Adjustment	Code	OSD name	Init. value	Note!
EW width	04	Width	48	In addition make same adjustment by using RGB signal
Horizontal phase	05	H- shift	43	
Horizontal phase RGB				
EW parabola	06	Parabola	26	
EW corner	07	Corner	26	
EW trapezium	08	Trapezium	30	

OTHER ADJUSTMENTS				
Adjustment	Code	OSD name	Init. value	Note!
Red reference	20	R ref.	32	<i>Note! This procedure is necessary e.g. when the picture tube, CRT module etc., has been replaced. Apply a test picture and adjust the R, G and B references. Then adjust the R, G and B gains.</i>
Green reference	21	G ref.	32	
Blue reference	22	B ref.	32	
Red gain	17	R gain	32	Normally no need to adjust
Green gain	18	G gain	32	
Blue gain	19	B gain	32	
Peak white limit	23	PWL	63	
Tuner AGC	25	TV AGC	160	Apply a 1 mV (60dBuV) test signal. Adjust the picture just without noise.

## Recommended Safety Parts

Item	Part No.	Description
	31250002	Focus Block POT 144M 10% 1W
C 2	33260001	100n 20% 250 VAC
CO 12	32960002	1N5 20% 400 VAC
CO 3, 4	32960001	2N2 20% 400 VAC
CO 48	34510004	1000U 20% 16V
F 1	43751652	Fuse T3.15A
FO 1	43770002	F1, 6A Miniature
FO 2, 3, 4	43770003	T4, 0A Miniature
ICO 2	36950003	Opto Coupl TCDT1101G
M 1	45390003	Mains Coil 2X27mH
MK 1	45360009	DST Transformer Eldor
MK 2	45380015	Transformer
RK 15	31630017	0R68 5% 0W25 FP
RK 19	31820003	0R1 10% 0W4
RK 2	31630014	1R5 5% 0W5 FP
RK 3	31514509	0R47 5% 0W25
RK 39	31850002	390R 10% 1W0
RK 4	31630021	27R 5% 0W25 FP

## Recommended Safety Parts Cont'd.

Item	Part No.	Description
RK 5	31850001	1R0 5% 0W5
RK 50	31460002	220K 5% 0W5
RK 6, 23	31514513	10R 5% 0W25 FP
RO 21	31460001	10M 5% 0W5
RO 23	31630032	12K 5% 0W25 FP
RO 35	31430004	220R 5% 4W0
RO 36	31820003	CR1 10% 0W4
RO 71	31430001	10R 5% 2W0
RO 72	31514511	2R2 5% 0W25 FP
RO 80, 81, 82	31440019	CR47 5% 0W6

## Service Adjustments Cont'd.

- At the end of vertical blanking, there is a black current measurement pulse (clamp pulse) at pins 9, 12 and 15 of ICH1. Use an oscilloscope and find the output stage with the highest cut-off (i.e. the highest voltage during the black current measurement pulse).
- Adjust the voltage of the clamp pulse to +140V with Ug2 (see fig 2).

**Note:** Adjust the voltage with clamp pulse.

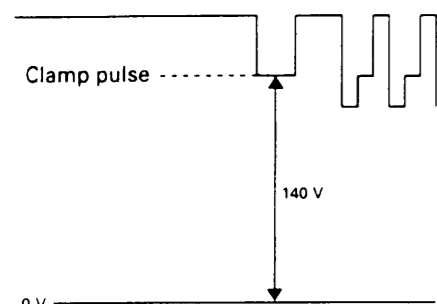


Fig 2.

### LL Picture and Sound IF Module

#### Video Demodulator

- Apply a test signal (1mV = 60 dBmV).
- Connect an universal voltmeter to the module connector X1 pin 6.
- Adjust with LL6 the DC voltage to the point where it changes from 0 to 3.5V.

#### Sound Demodulator

- Apply a CCIR B/G standard (FM modulated sound) test signal.
- Connect a universal voltmeter to IC11 pin 13.
- Adjust with LL1 the DC voltage for +3.7V.

#### NVRAM (IC12)

##### Installation of NVRAM

In case that the NVRAM is replaced, it must be initialised and configured.

- Set the receiver to the service mode by switching on the receiver with the main switch and within 5 seconds pressing the buttons MENU, TV and "I" successively.

**Note:** The receiver is in the service mode even though it looks like the receiver is in stand-by mode.

- Initialise the NVRAM by pressing the RED button. The green LED flashes once. Wait approximately 15 seconds. When the initialisation is completed the green LED will light up.
- Switch off the receiver by pressing the mains switch.
- Start the receiver to the TV mode by pressing the main switch. Tune in one or more TV channels.
- Switch off the receiver by pressing the mains switch.
- Start the receiver into the service mode. If the receiver remains in stand-by mode press the TV button twice and then press the "I" button.
- Configure the receiver by pressing the

- RED button. The configuration menu will show up.
- Press the OK button.
- Make all the service adjustments (see section Service Adjustments via IIC BUS).
- Switch off the receiver by pressing the mains switch.

#### Re-initialisation of NVRAM

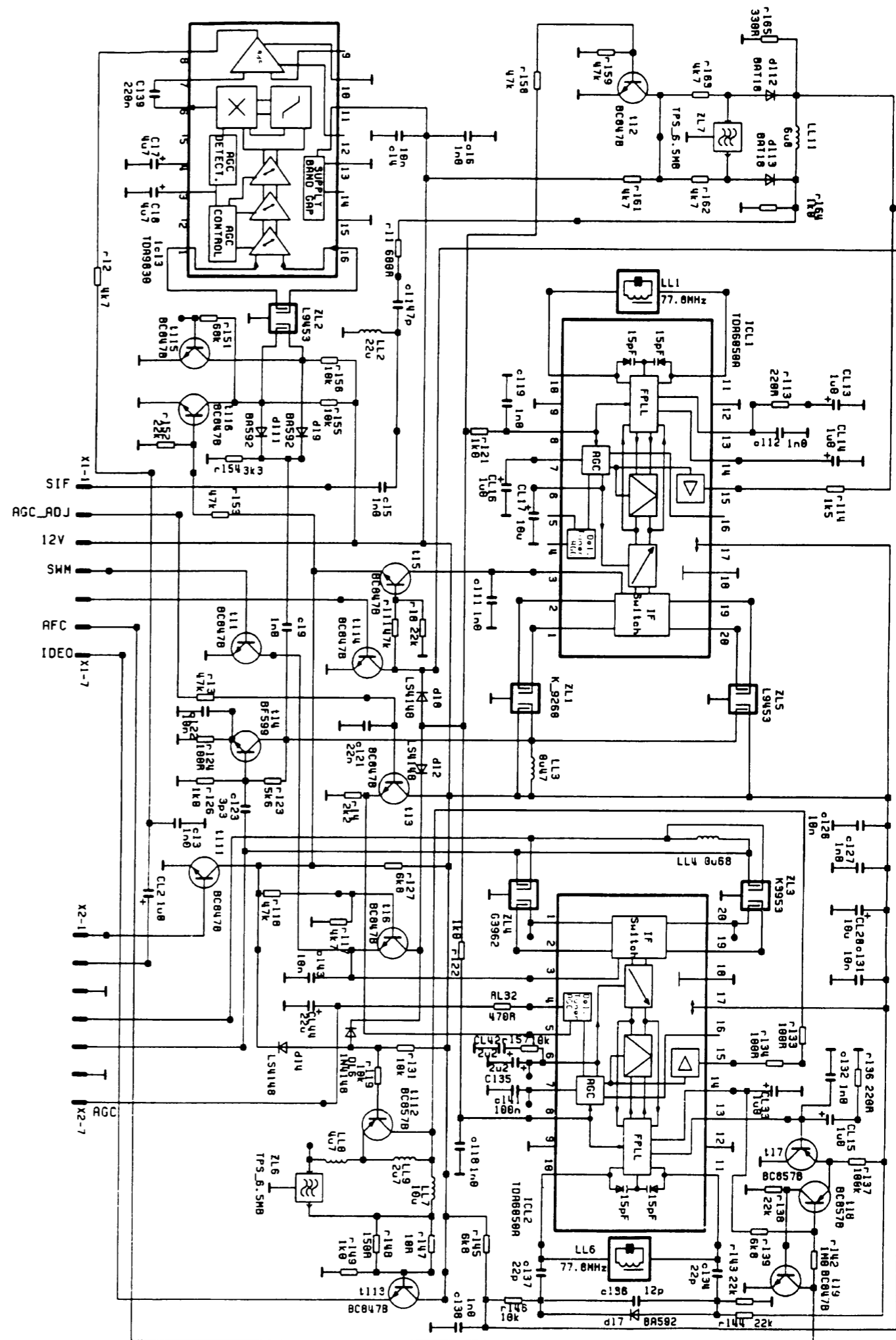
For example when the receiver doesn't start to normal picture, the NVRAM may need re-initialisation.

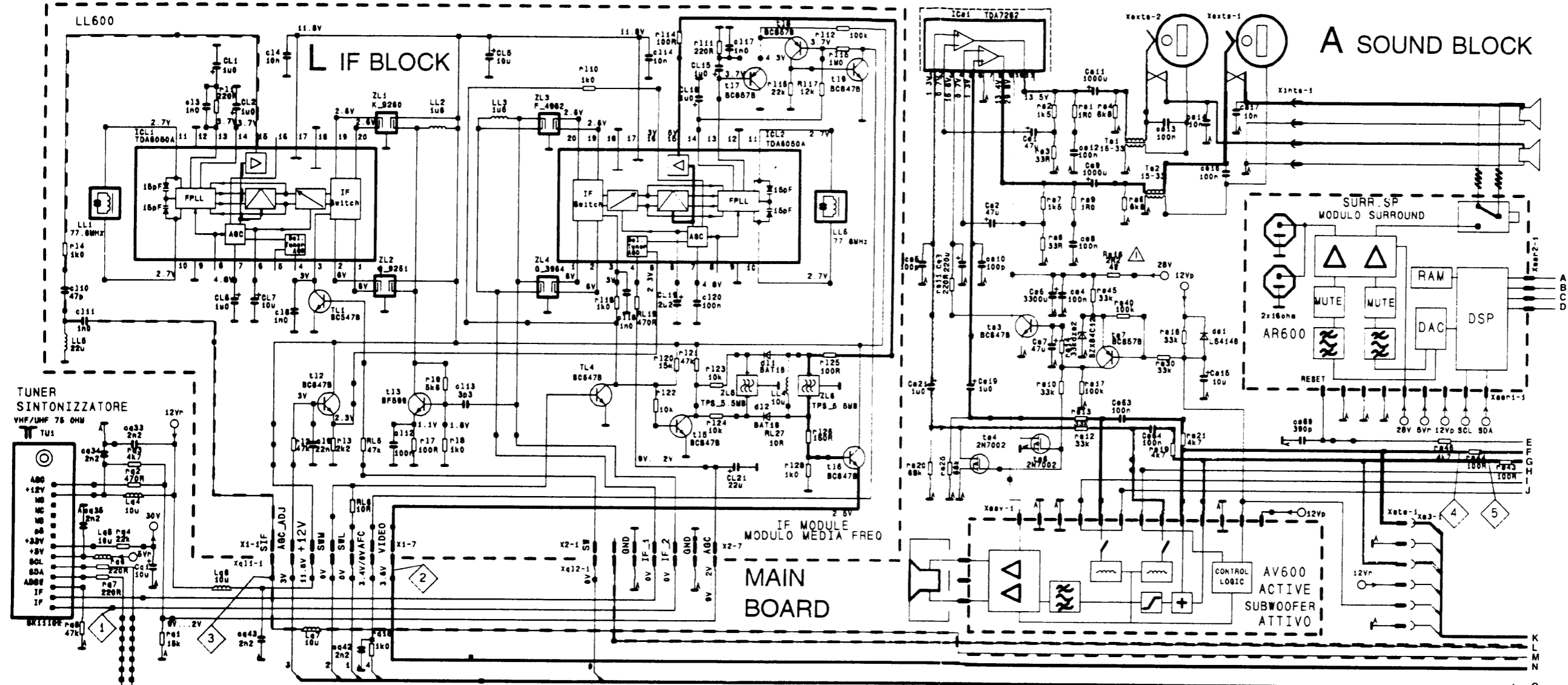
- Set the receiver to the service mode by switching on the receiver with the main switch and within 5 seconds pressing the MENU, TV and "I" buttons successively.

**Note:** The receiver is in service mode although it looks like the receiver is in stand-by mode.

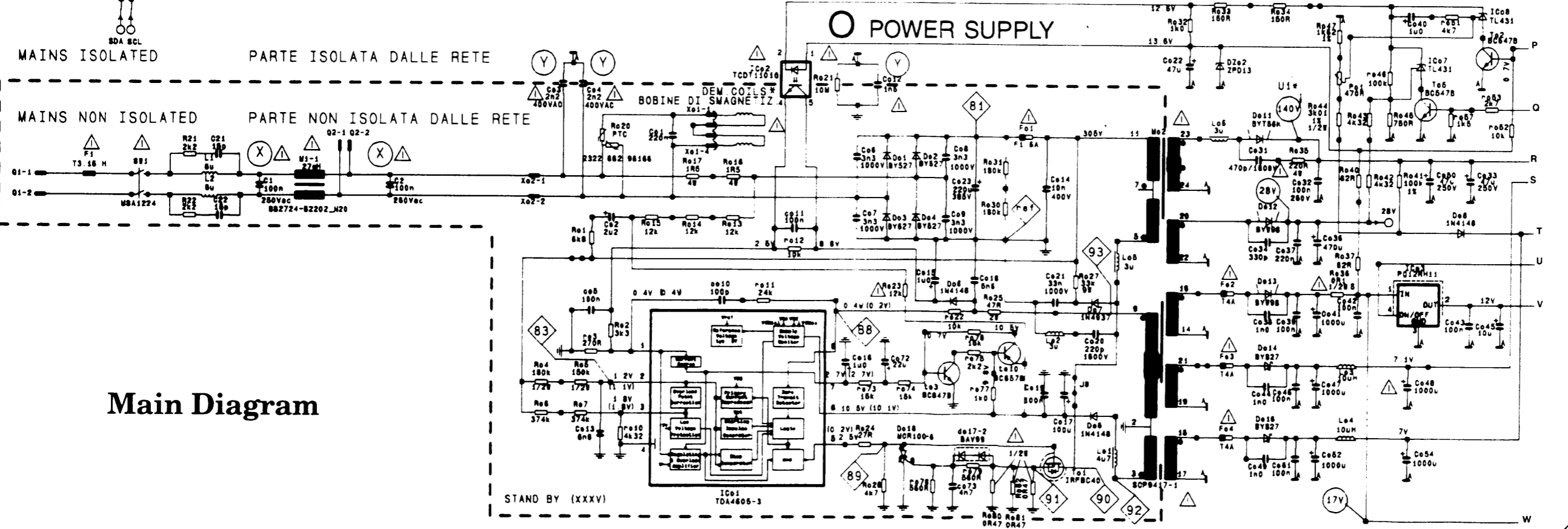
- Select the initialisation of the NVRAM by pressing the RED button. The green LED will light up. Wait approximately 2 seconds and then press the BLUE button. Again wait approx. 2 seconds and then press the numbered buttons 2, 5 and 4 successively. Wait approx. 2 seconds.
- Press the OK button to initialise the NVRAM. Initialisation will take approx. 15 seconds.
- Switch off the receiver by pressing the mains switch.
- Start the receiver to the TV mode by pressing the main switch. Tune in one or more channels.
- Switch off the receiver by pressing the main switch.
- Start the receiver into the service mode. If the receiver remains in stand-by mode, press the TV button twice and then press the "I" button.
- Configure the receiver by pressing the RED button. The configuration menu will show up.
- Press the OK button.
- Make all the service adjustments (see section Service Adjustments via IIC BUS).
- Switch off the receiver by pressing the mains switch.

## IF Diagram





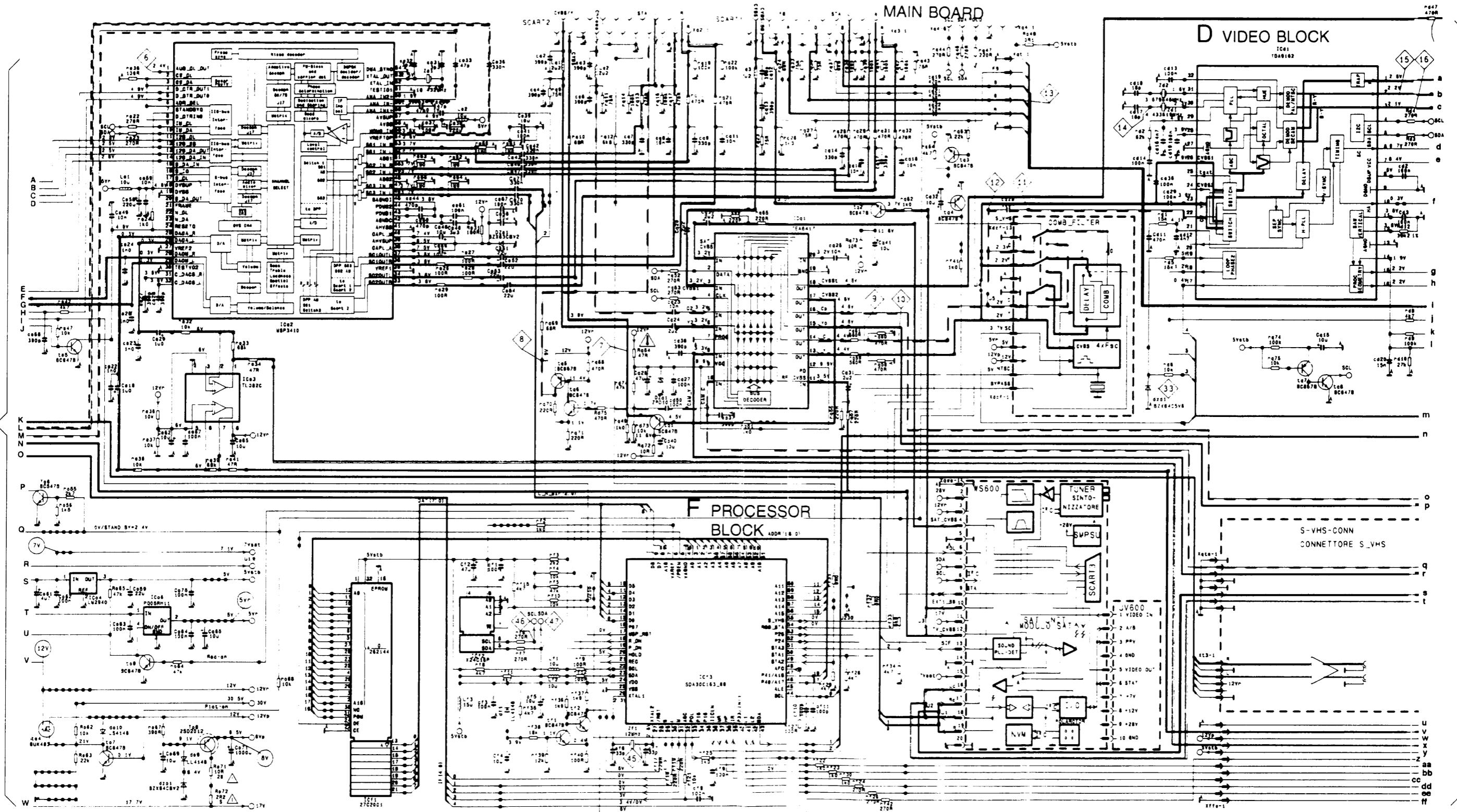
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Main Diagram

Variable comp. for CRT types				
AS**	B	D	C	
Picture tube	VID	VID	VID	
	2528	2528	29	
Type	Inver	WP	Super	
	A59	A59	A66	
	A66	A66		
	END43x01	ECY13X01	EEH48X001	
WK1	ELDOR 1182.9004	Or4732	ELDOR 1182.90040	
	0			
Ck 15	220n	220n	220n	
Ck 22				
Ck 24	5n6	6n6	5n6	
Ck 26	11n	12n5	11n	
Ck 27	300n	300n	330n	
Ck 29	150n	150n		
Ck 33		680p		
Dk 11	BYV36C	BYV36C		
Dk 12	BYV36C	BYV36C		
F0601				
Foc bl	Temic		Temic	
Lk 3	FJ1375	FJ1375		
Lk 4	55632	55632	55632	
Rd 11	180k	220k	220k	
Rk 03	0R47		0R47	
Rk 18		2R2		
Rk 20	56k	100k	56k	
Rk 40	1k8	1k8		
Rk 41	100k	100k	100k	
Rk 42	220k	220k	150k	
Rk 45	330R	330R		
Rk 47	100k	100k	100k	
Rs 10	5k6	5k6	5k6	
Tk 5	BUX84	BUX84		
U1*	140V+-1V	140V+-1V	140V+-1V	
Xk 2	1-2	1-2	1-2	

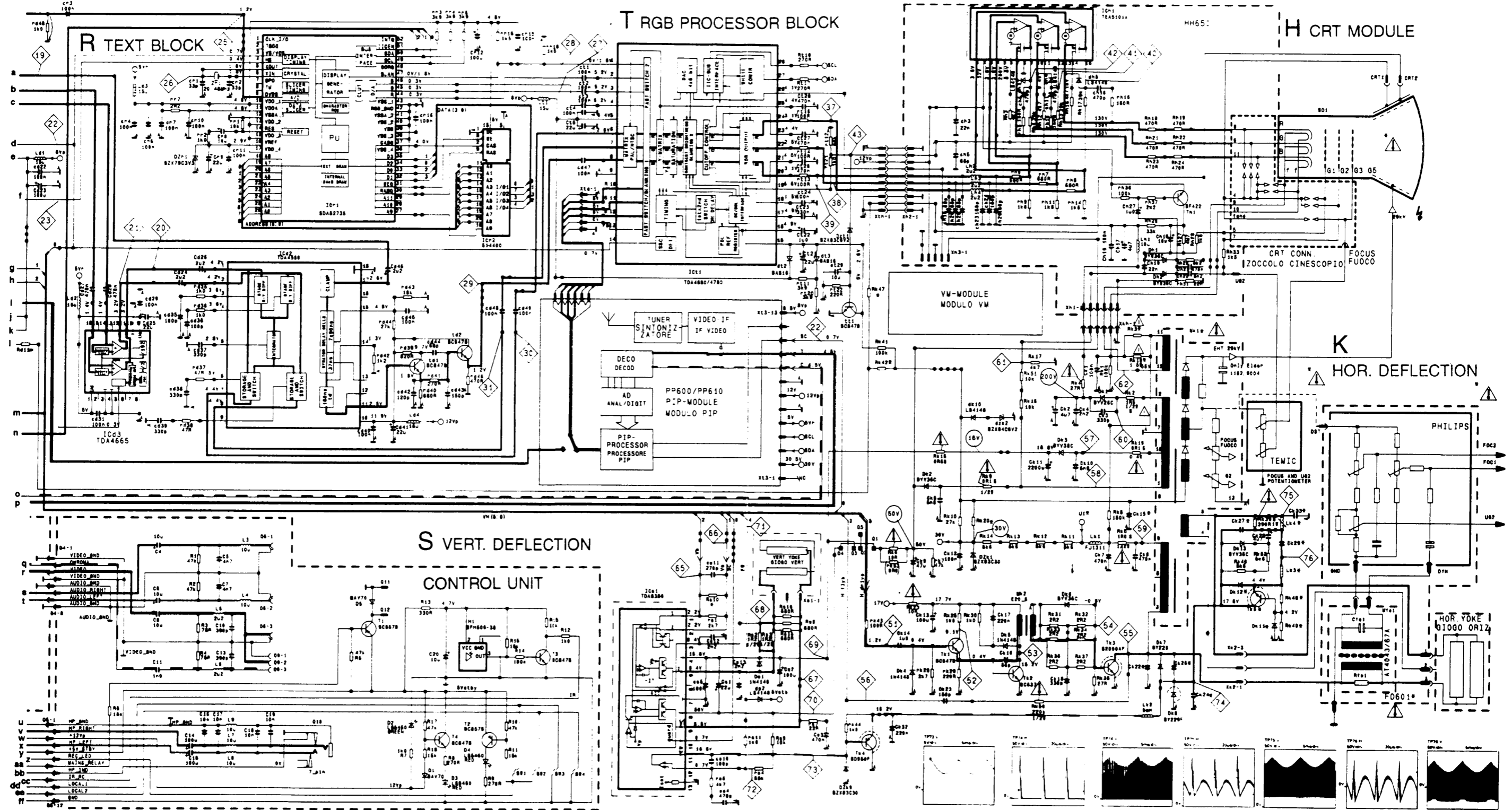
Main Diagram Cont'd.



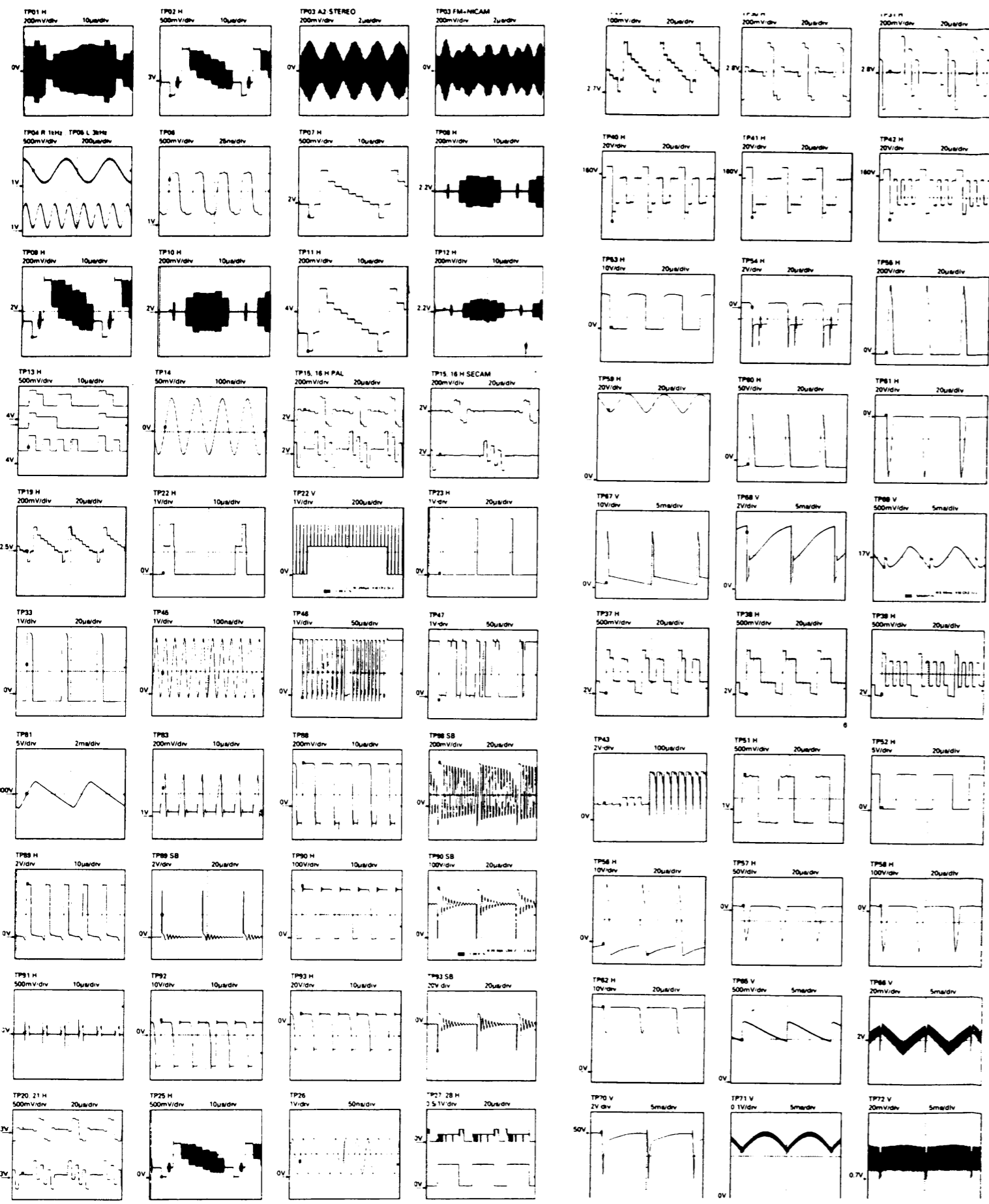
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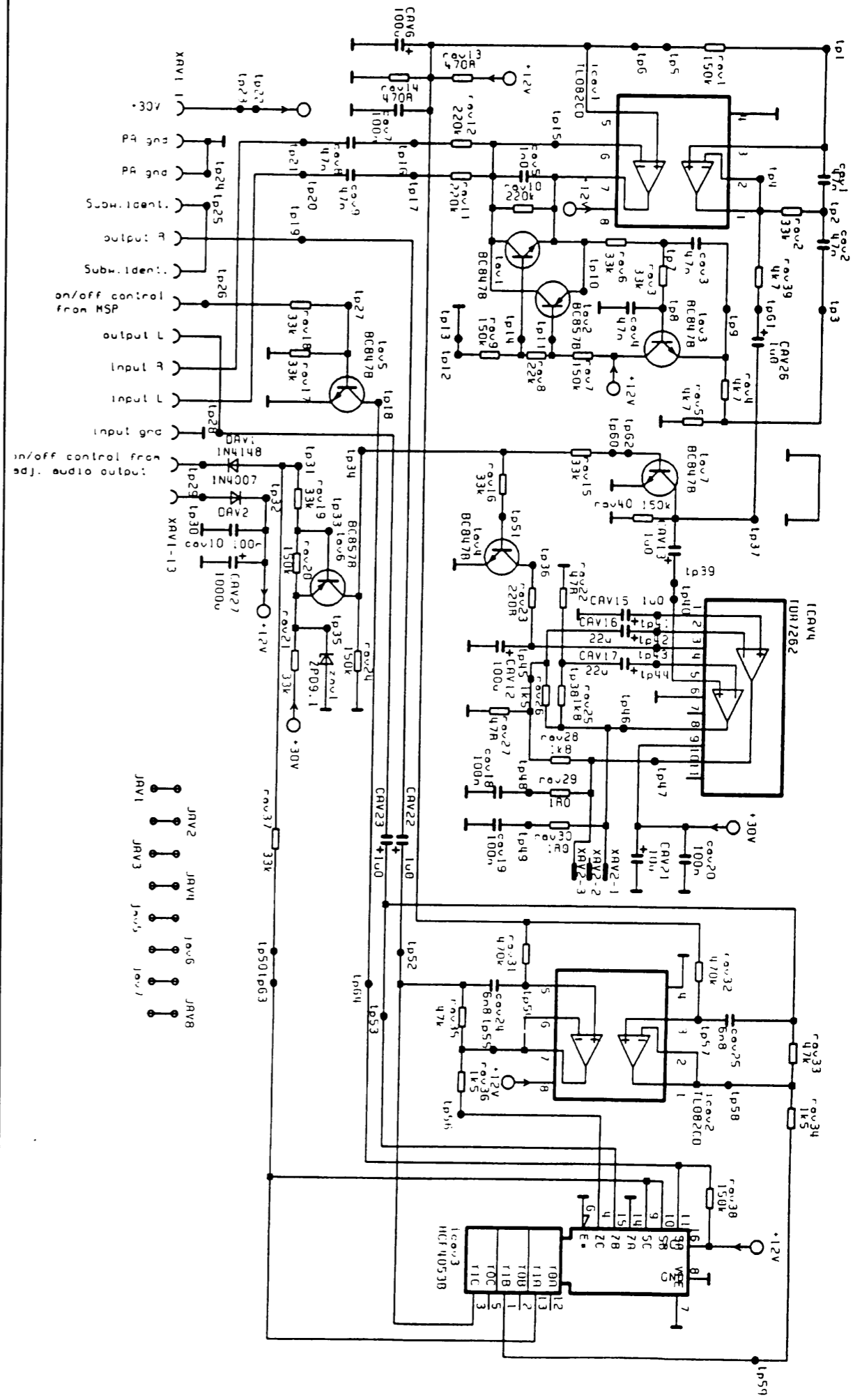
Main Diagram Cont'd.



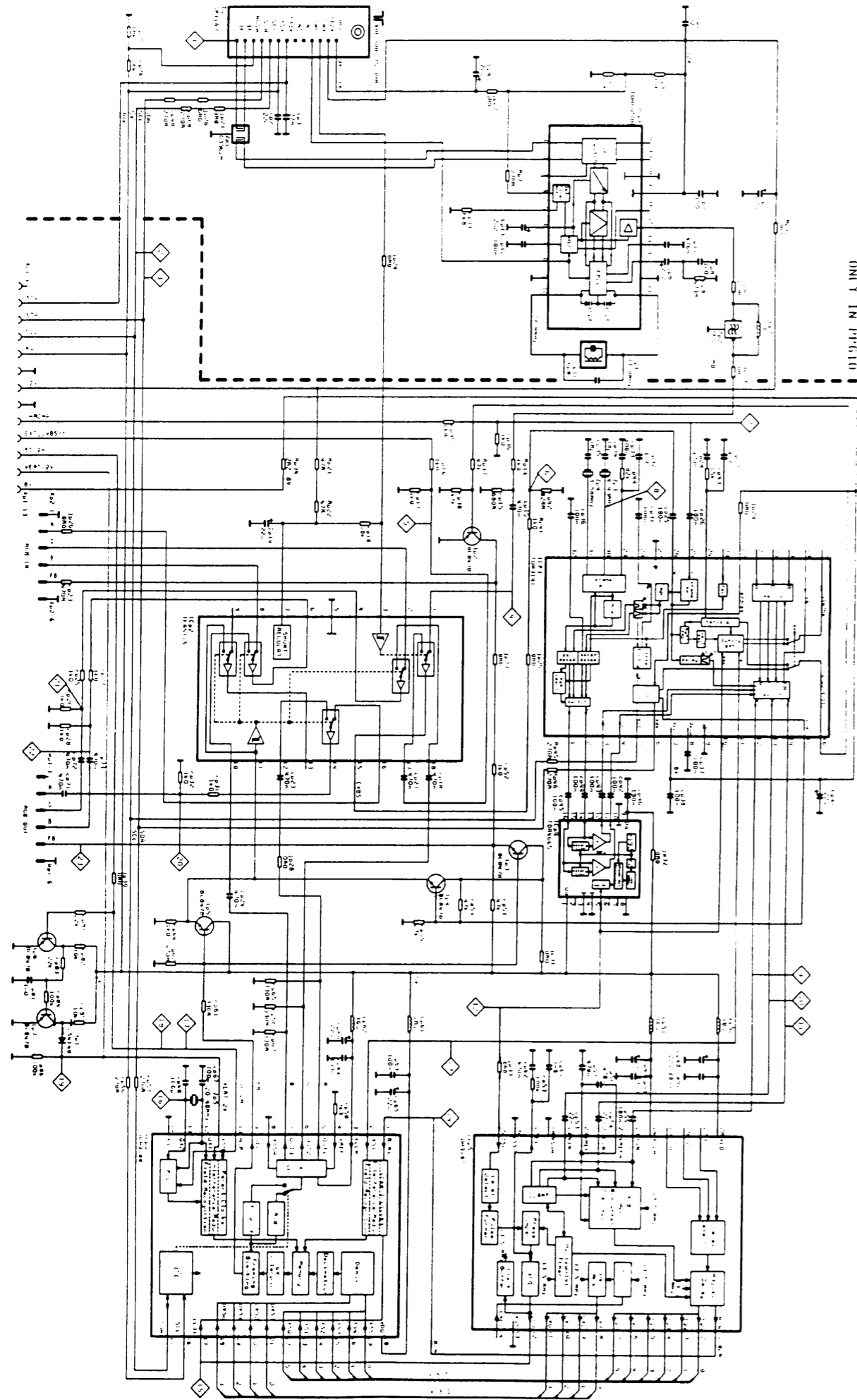
Main Diagram - Waveforms



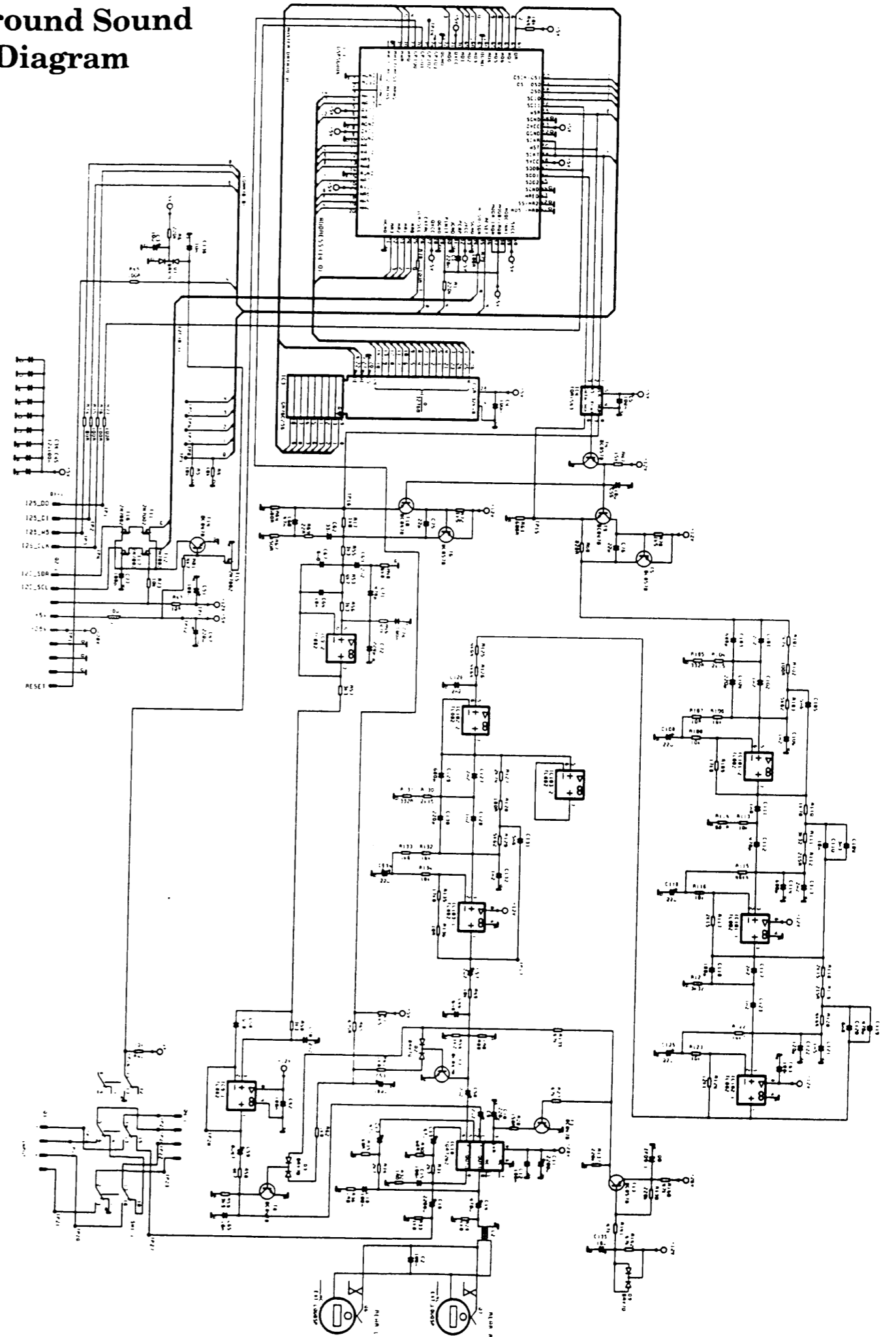
Subwoofer Diagram



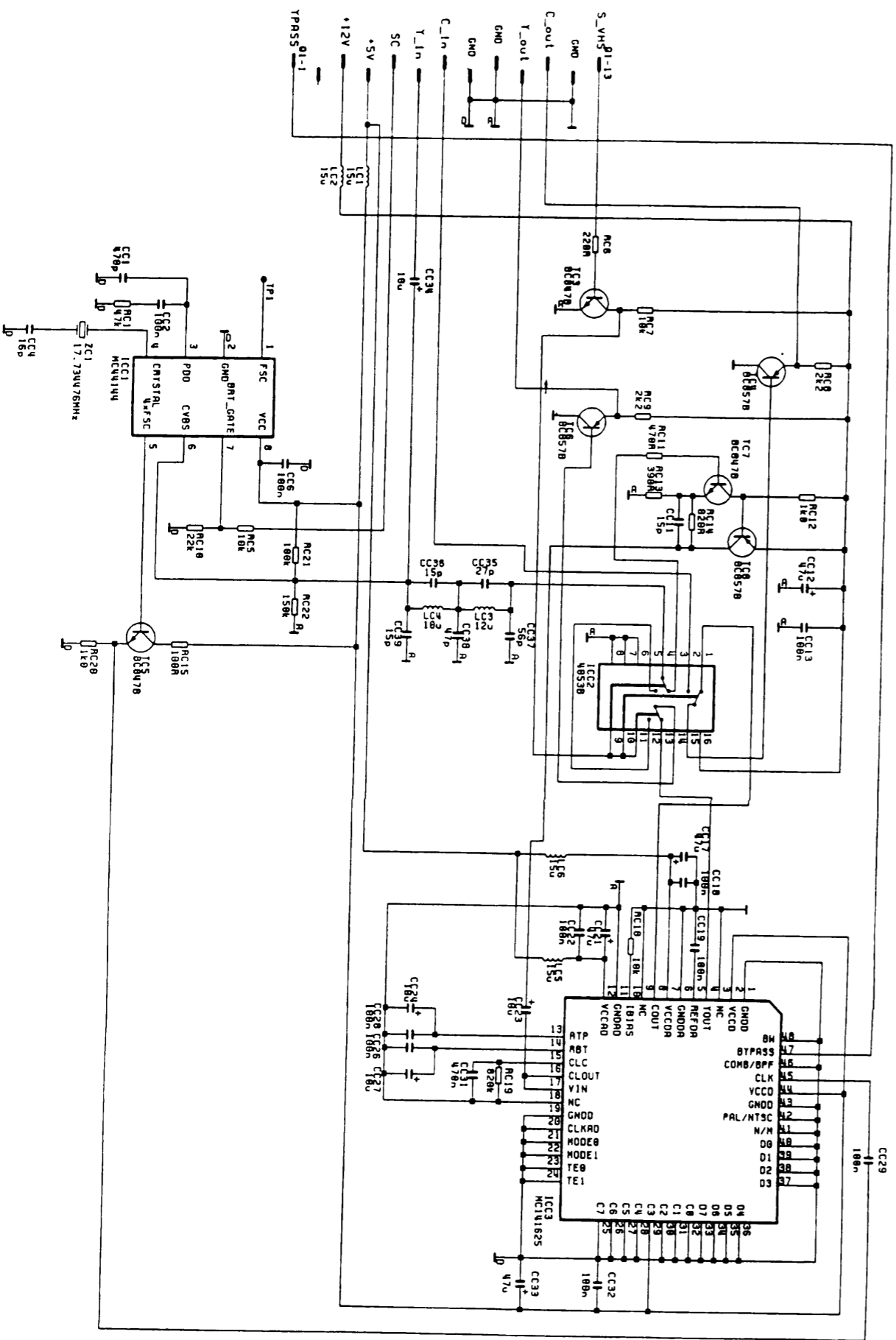
PIP Diagram



Surround Sound Diagram



### Comb Filter Diagram CF 600



### Comb Filter Diagram CF 601

