

General Information

1995

Covers Models:

Nokia 6197 / 7282

Chassis: FW (16:9)

CRT: W56LCZ696X01

Remote Control: ERNC600

Door Flap: E80402475

Door Latch: E80413473

Main Power Button:

E80425241

Battery Cover: 80418036

Matrix

Item	See Model
Safety Notice	Nokia FS Chassis
Comb Filter Diagram	Nokia FS Chassis
PIP Diagram	Nokia FS Chassis
Subwoofer Diagram	Nokia FS Chassis
Velocity Diagram	Nokia FS Chassis

Specifications

Mains Power:	230V (-10% ... +6%), 50 Hz
Power Consumption:	
Stand-by:	Max. 10W
Average:	120W (2E)
(Depends on accessories)	
Picture Tube:	24" (16:9), 28" (16:9)
Programme Memory Locations:	9E
AV Memory Locations:	E
Sound Output:	2 x 12W (8E)
Internal Subwoofer:	14W (16E)
Dolby Surround:	
Surround Channel:	2 x 6W (8E)
Centre Channel:	12W (8E)
Chassis:	Mains isolated, digital controller
Connections	
On the front panel	
3 x chinch	Audio in 0.5V/10kE
	Video in 1V/75E
	Y/C in (S-VHS)
Headphones	3.5mm 8 ... 600E
On the rear panel:	
SCART 1	Audio out 0.5V/10kE
	Audio in 0.5V/10kE
	Video out 1V/75E
	Video in 1V/75E
	Y/C in 0.7V/75E
SCART 2	Audio out 0.5V/10kE
	Audio in 0.5V/10kE
	Video out 1V/75E
	Video in 1V/75E
	RGB in (S-VHS)
Extra Loudspeakers:	12W (8E)
Aerial:	75E

Service Adjustments

Safety Regulations

Ray Regulations

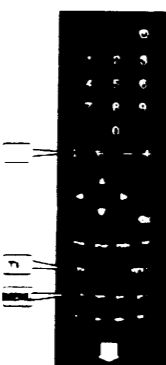
The picture tube type and the maximum permissible high voltage ensure that the X-ray intensity of the receiver remains far below the permissible value. The high voltage must not exceed 30 kV. The high voltage is within the permissible limits when the operating voltage of the horizontal deflection stage equals 155V at the minimum beam current. In servicing check and adjust this voltage to the nominal value with Po1.

Service and Adjustments

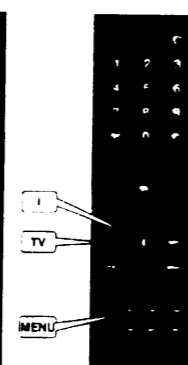
Service Mode Selection

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

A menu



B menu



Operating Instructions

A menu



Language Selection

- Press the MENU button (under the lid).
- Select the INSTALLATION with the cursor buttons (up/down) and press the OK button.
- Select the LANGUAGE and press the OK button.

- Select the desired language and press the OK button.
- Press the TV button to exit.

Manual Tuning

- Select the programme number you want to tune.
- Press the MENU button.
- Select MANUAL TUNING and press the OK button.
- Press red button (SEARCH).
- Press the OK button to store.
- Press the TV button to exit.

APSi (Automatic Programming System)

- Press the MENU button.
- Select INSTALLATION and press the OK button.
- Select REPROGRAMMING and press the OK button.
- To re-tune the channels, press the OK button.
- Press the TV button to exit.

B Menu

Language Selection

B menu



- Press the PRG button.
- Select the install by pressing the blue button.
- Select the language by pressing the red button.
- Select the desired language with the cursor buttons and press the OK button.
- Press the TV button to exit.

Manual Tuning

- Press the PRG button.
- Press the rec button (Tune).
- Press the red button (Search).
- Select the programme number on which the channel is to be stored.
- Press the blue button (Store) to store.
- Press the TV button to exit.

APSi (Automatic Programming System)

- Press the PRG button.
- Press the blue button (Install).
- Press the yellow button (Re-prog.).
- Press the red button (APSi).
- Press the green button (Re-prog.).
- Press the blue button (OK) to exit.

NVRAM (ICf2)

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.

Service Adjustments

Service Mode Selection

- The receiver is set to the service mode by switching on the receiver with the main switch and within 5 seconds pressing the remote control buttons MENU, TV and "I" 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 "I" button.



In the service mode an adjustment menu (including the adjustment number and name), initialising (left) and adjustment (right) values is shown on the screen.

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

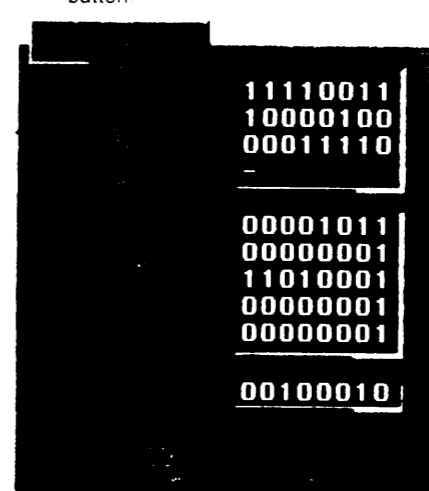
Configuration and Fault Diagnosis

The set must be configured after adding or removing some options. By pressing the red button in the service mode, the processor checks all possible addresses of bus driven circuits and shows the settings on the screen.

This feature can also be used in fault finding, if an option bit is not "1" when it should be or if it is not possible to set it to "1" by using number buttons, the IC is either not present or faulty.

Changing of Option Bytes

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



Description

SW VER = uP software version
IPO VER =
NVM VER = NVM software version

- Select IIC 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	0
		11110011	
0	TV tuner	YES	NO
1	Decoder TDA9141	YES	NO
4	Deflection controller TDA9141	YES	NO
5	RGE processor TDA4781	YES	NO
6	Video switch TDA6411	YES	NO
7	PIP controller SDA9155	YES	NO

Bit	Description	Setting	0
		10000100	
0	PIP tuner	YES	NO
2	Megatext SDA5273	YES	NO
7	MSP3400 3410	YES	NO

Bit	Description	Setting	0
		10010011	
0	DSP (surround)	YES	NO
1	Subwoofer	YES	NO
2	Display processor SDA9281	YES	NO
3	PALplus processor 1870751	YES	NO
4	Comp filter SVHS line low	YES	NO

Bit	Description	Setting	0
		01011011	
0-2	Loudspeaker configuration (user mode)	YES	NO
4	Bass splitting (Manual)	YES	NO
6-7	Pre-equalisation for DSP (Manual)	YES	NO

Bit	Description	Setting	0
		00000001	
0	TXT with external RAM	YES	NO
2	Flot text enabled (manual)	YES	NO
4	TXT sync mode (manual)	YES	NO
5	Subpage rolling (manual)	YES	NO

Bit	Description	Setting	1	0
		11110001		
0	Camera connector (installed (manual)	YES	NO	
4	NTSC 3.85 Mhz	YES	NO	
5	ACI enabled (manual)	YES	NO	
6	NICAM enabled (manual)	YES	NO	
7	Loudness enabled (manual)	YES	NO	

Bit	Description	Setting	1	0
		00000000		
6	Start TV to demo mode	YES	NO	
7	Hotel TV functions enabled	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	
7	Only UHF tuner	YES	NO	

Bit	Description	Setting	1	0
		00000001		
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 "I" 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.

Adjustment for Different Picture Format

First make all adjustments with normal 4:3 picture format. The TV uses these adjustment values for all picture formats if no other

Recommended Safety Parts

Item	Part No.	Description
FOK.BL	31250002	Foc. Pot 144M 10% 1W
FO 7	31440032	Metox 2R7 5% 1W5
FS 4	31514520	Carf 470R 5% 0W25 FP
OK 52	22201162	MKP 10n 3.5% 1600V
OK 54	33241016	MKP 180n 5% 400V
TE	E93020035	Degaussing Coil 25 Orega
3E	G41210005	Mains Switch 250V 4/80A

Service Adjustments Cont'd.

adjustments were made. In each adjustment it is mentioned if the adjustment must be done separately for different picture format, repeat only those adjustments.

Note: The picture geometry adjustments must be done with 16:9 picture format.

Making the Service Adjustment

- 1: 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).

27 26

- 2: Adjust with the cursor button (left/right).

27 27

- 3: Store the new value by pressing the OK button.

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

If the adjustment has to be made separately for different picture format, select the normal user mode by pressing the TV button and change the picture format with the zoom button. Return to service mode by pressing the "I" button.

O Power Supply Block

Supply Voltage (U1) and Protection Circuit

- 1: Set the brightness and contrast to normal level. Connect an universal voltmeter to the cathode of Do11.
- 2: Adjust with Po1 the DC voltage (U1) for +155V or ($\pm 1V$).
- 3: 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.

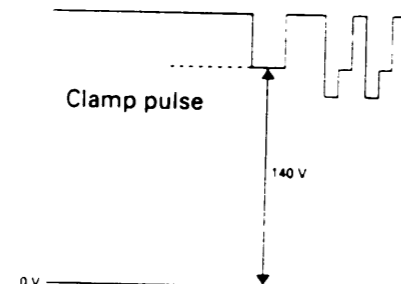
K Horizontal Deflection Block

Focusing

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

Ug2 Voltage (Screen Grid Voltage)

- 1: Set contrast to minimum, brightness and colour saturation to normal level.
- 2: 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).
- 3: Adjust the voltage of the clamp pulse to +140V with Ug2.



Note: Adjust the voltage with clamp pulse.

LL Picture and Sound IF Module

Video Demodulator

- 1: Apply a test signal (1mV = 60 dBmV).
- 2: Connect an universal voltmeter to the module connector X1 pin 6.
- 3: Adjust with LL6 the DC voltage to the point where it changes from 0 to 5V.

Sound Demodulator

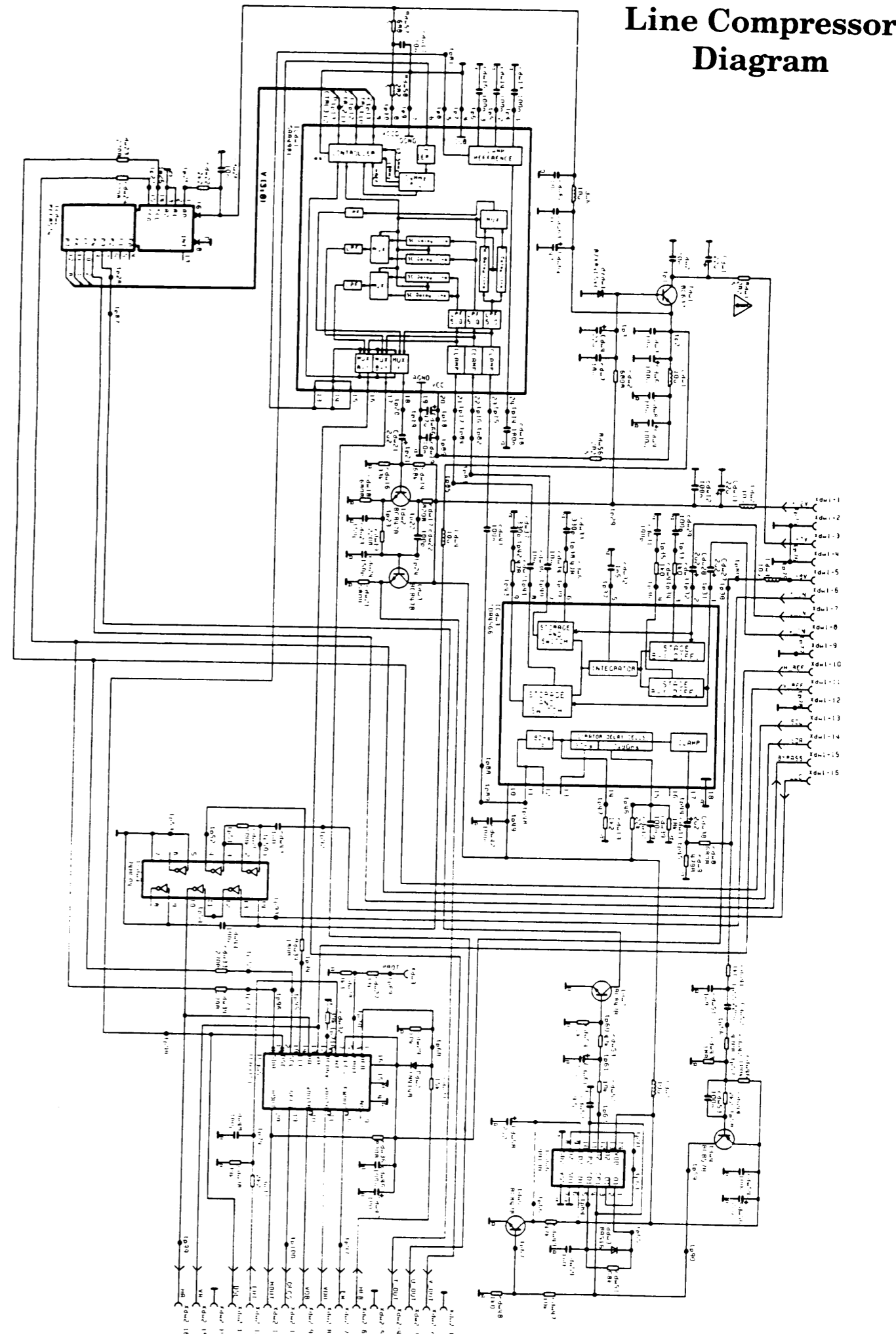
- 1: Apply a CCIR B/G standard (FM modulated sound) test signal.
- 2: Connect a universal voltmeter to IC11 pin 13.
- 3: Adjust with LL1 the DC voltage for +2.7V.

VERTICAL PICTURE ADJUSTMENTS				
Adjustment	Code	OSD name	Init. value	Note!
Vertical amplitude	00	V-ampl.	43	Adjust the picture height to the correct ratio.
Vertical off-centre shift	01	V-shift	3	
Vertical start scan	02	V-start	6	
Vertical slope 4:3 zoom (coarse)	12	Zoom-H	71	Select 4:3 zoom picture format and adjust the picture to correct ratio Separate adjustment for 60Hz NTSC transmission! Before adjustment select 4:3 zoom picture format!
Vertical slope 4:3 zoom (fine)	13	Zoom-L	0	
Centre value, 4:3 zoom shift (V Wait)	14	Shift	28	

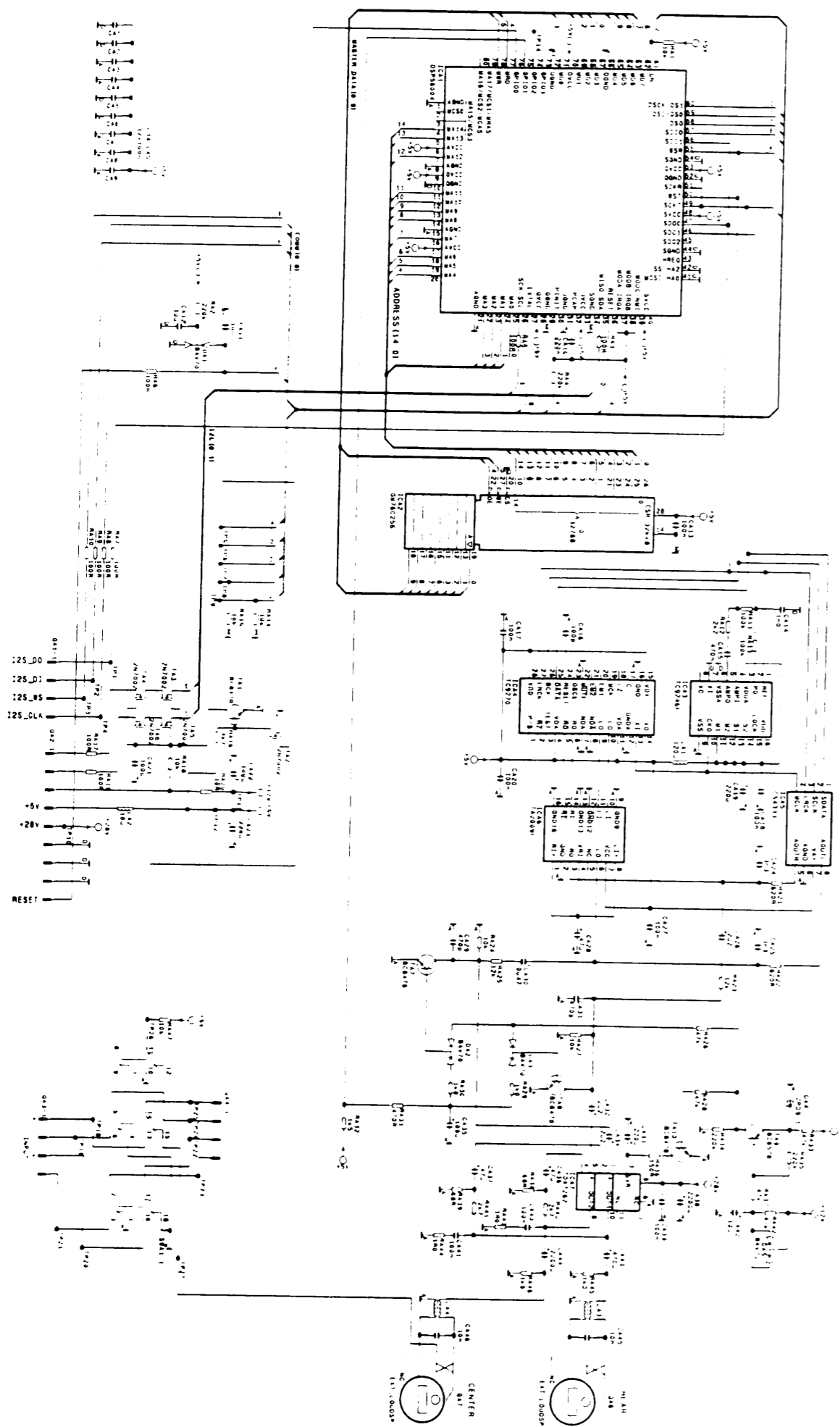
HORIZONTAL PICTURE ADJUSTMENTS				
Adjustment	Code	OSD name	Init. value	Note!
EW width	04	Width	36	Set brightness and contrast to 10% Separate adjustments for normal 4:3, H-phase zoom 4:3 zoom and full screen picture format (4:3 zoom or 16:9 format; adjust with only one of these picture formats)! In addition make same adjustments by using RGB signal!
Horizontal phase	05	H-shift	27	
H-phase RGB				
H-phase RGB zoom				
EW parabola	06	Parab.	13	Set brightness and contrast to 90% and compensate the change in picture size.
EW corner	07	Corner	0	
EW trapezium	08	Trapez	2	
EHT compensation	09	EHT	18	

OTHER ADJUSTMENTS				
Adjustment	Code	OSD name	Init. value	Note!
Red gain	17	R gain	41	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.
Green gain	18	G gain	32	
Blue gain	9	B gain	32	
Red reference	20	R ref.	52	Normally no need to adjust.
Green reference	21	G ref.	21	
Blue reference	22	B ref.	16	
Clamp shift	11	Clamo	0	Normally no need to adjust.
Peak white limit	23	PWL	63	Normally no need to adjust.
Gamma correction	24	GAMMA	32	Normally no need to adjust.
Tuner AGC	25	TV AGC	170	Apply a 1 mV (60dBuV) test signal. Adjust the picture just without noise.

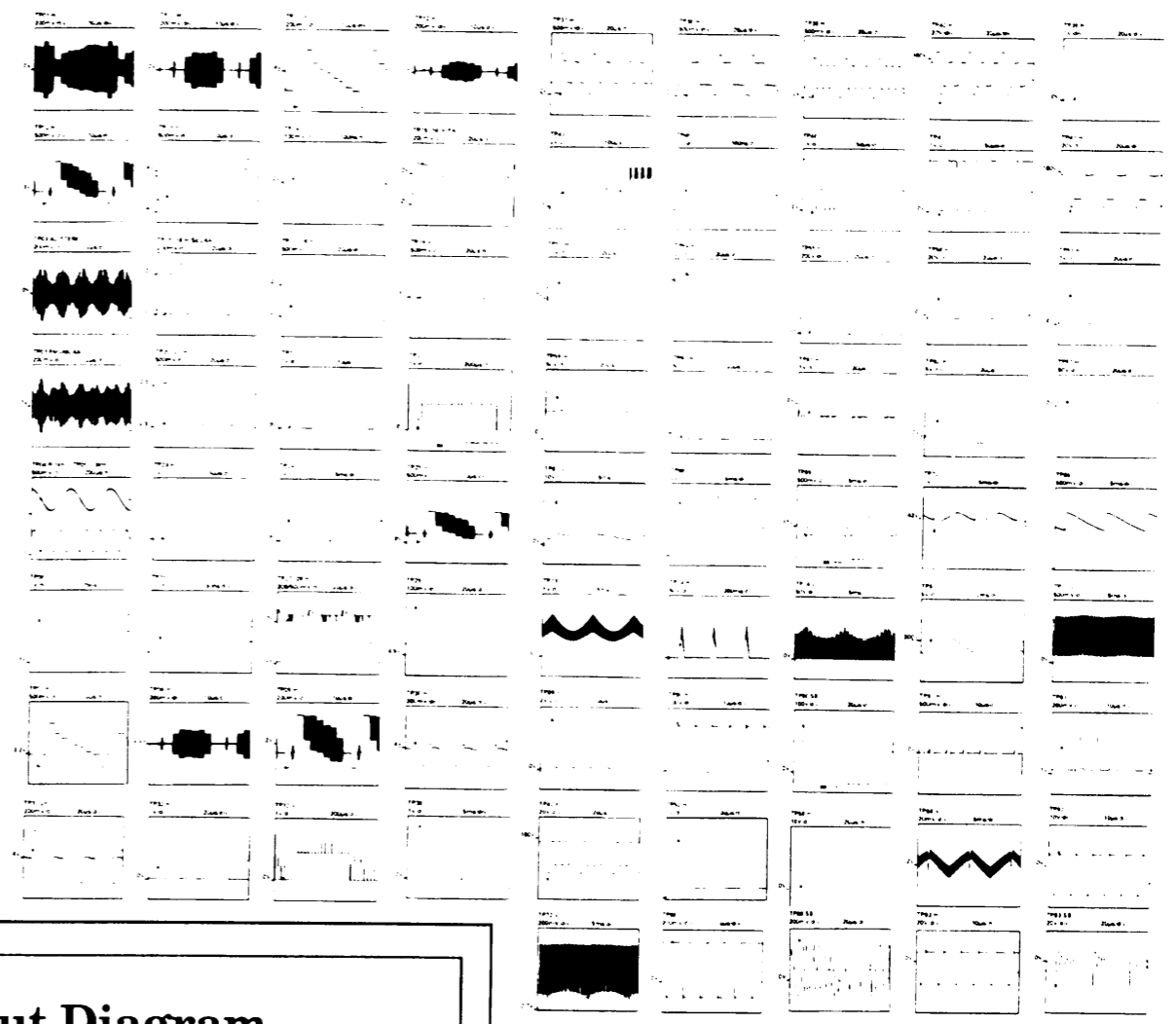
Line Compressor Diagram



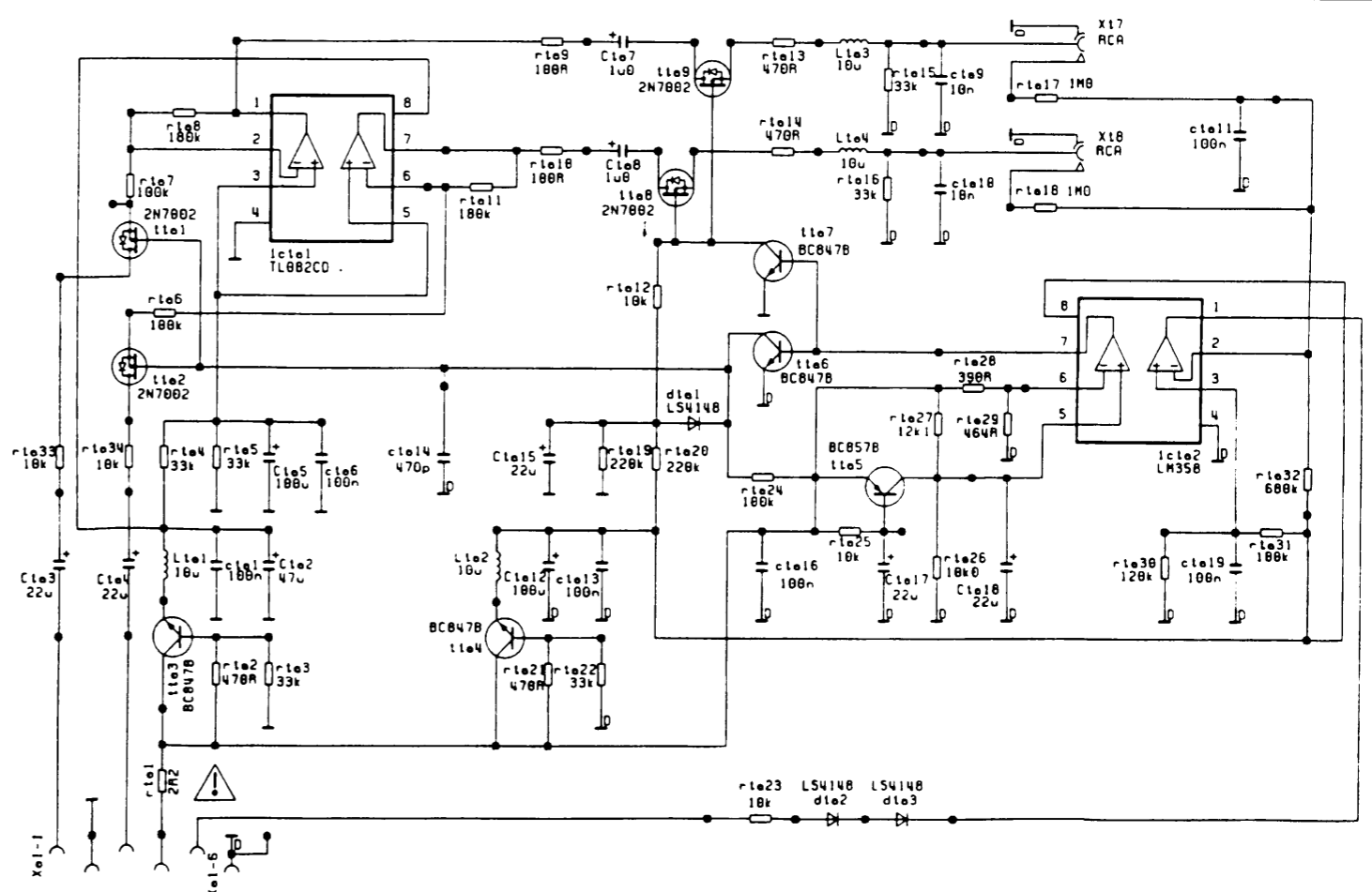
Surround Sound Diagram



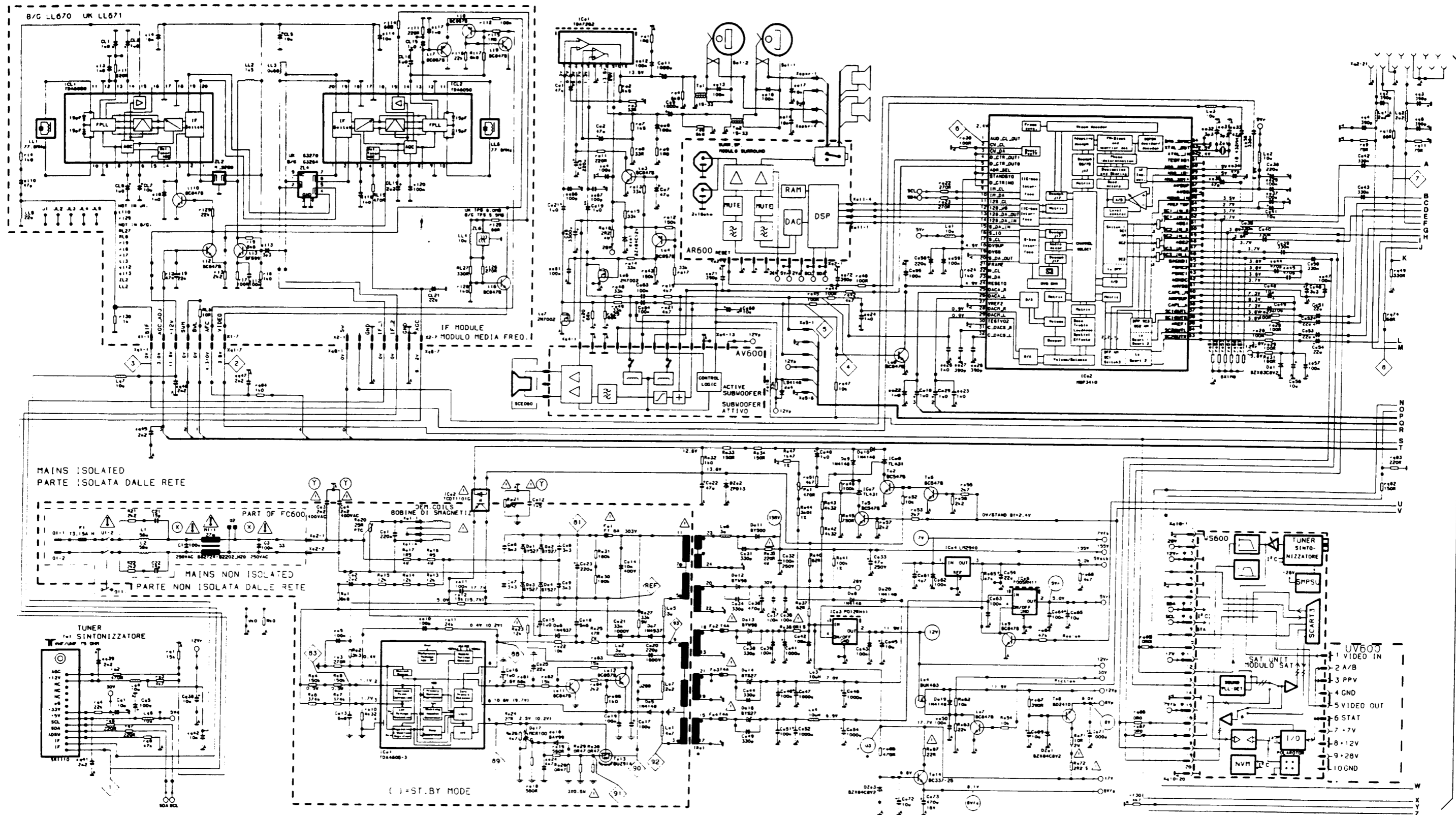
Waveforms
- Main Diagram



Line Output Diagram

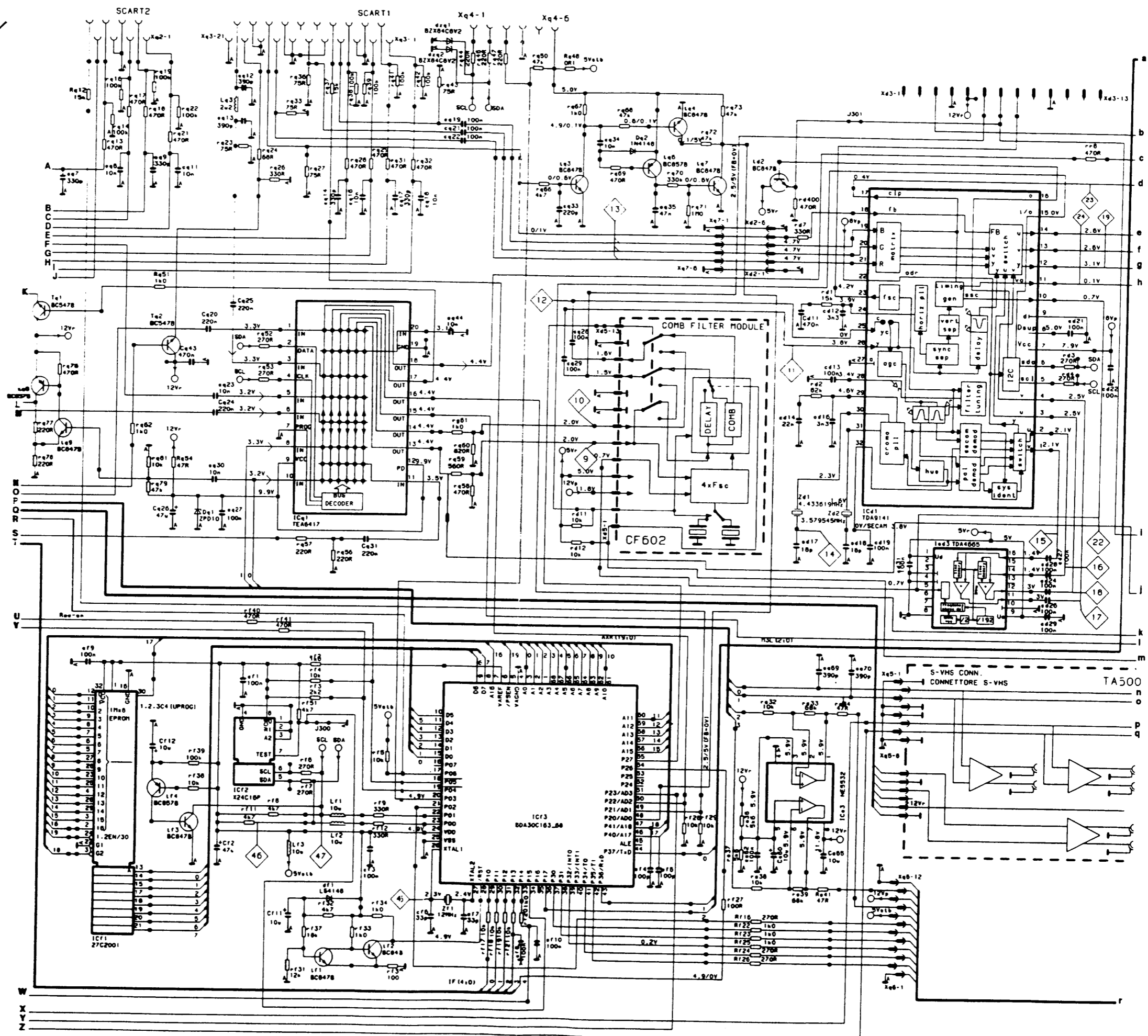


Main Diagram



Continued at 1

Main Diagram
Cont'd.



V128	Ta24
EDX	W56LCZ
012 x 001	003 x 01
AP TH	Ap TH
PW-673	PW-674
Rk 3	68k 150k
Rk 15	1R2 0.5W 3R0 0.5W
Rk 16	4R7
Rk 10	470R
Rs 1	1k8 1k8
Rs 2	1R2 0R82
Rs 3	1R2 0R82
Rs 8	470R 470R
Ck 52	9n1 10n
Ck 54	240n 10n
TRk 1	Eldor Eldor
TRo 1	FM36028 FM36028
dk 4	BZ084C91 BZ084C9V1
Lk 52	5820903700 5820903700
CRT-Base	HH654 HH654
Rk 44	100k 100k
U3	14V 14V

Continued at 2

Main Diagram Cont'd.

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