

General Information

C6SR Chassis Also Covers 2863 DB

Safety Notice

X-RAY RADIATION PRECAUTION

- The E.H.T. must be checked every time the receiver is serviced to ensure that the C.R.T. does not emit X-ray radiation as result of excessive E.H.T. voltage. The nominal E.H.T. for this receiver is 27.7 kV at zero beam current (minimum brightness) operating at 240V a.c. The maximum E.H.T. voltage permissible in any operating circumstances must not exceed 29.9 kV. When checking the E.H.T., use the 'High Voltage Check' procedure in this manual using an accurate E.H.T. voltmeter.
- The only source of X-RAY radiation in this receiver is the C.R.T. To prevent X-ray radiation, the replacement C.R.T. must be identical to the original fitted as specified in the Parts List.
- Some components used in this receiver have safety related characteristics preventing the C.R.T. from emitting X-ray radiation. For continued safety, replacement component should only be made after referring the Product Safety Notice below.

SAFETY PRECAUTION

- This receiver has a nominal working E.H.T. voltage of 26.0 kV. Extreme caution should be exercised when working on the receiver with the back removed. Do not attempt to service this receiver if you are not conversant with the precautions and procedures for working on high voltage equipment. When handling or working on the C.R.T., always discharge the anode to the receiver chassis before removing the anode cap. The C.R.T., if broken, will violently expel glass fragments. Use shatter proof goggles and take extreme care while handling. Do not hold the C.R.T. by the neck as this is a very dangerous practice.
- It is essential that to maintain the safety of the customer all cable forms be replaced exactly as supplied from factory.
- A small part of the chassis used in this receiver is, when operating, at approximately half mains potential at all times. It is therefore essential in the interest of safety that when serving or connecting any test equipment the receiver should be supplied via a suitable isolating transformer of adequate rating.
- Replace blown fuses within the receiver with the fuse specified in the parts list.
- When replacing wires or components to terminals or tags, wind the leads around the terminal before soldering. When replacing safety components identified by the international hazard symbols on the circuit diagram and parts list, it must be a Toshiba approved type and must be mounted as the original.
- Keep wires away from high temperature components.

PRODUCT SAFETY NOTICE

Many electrical and mechanical components in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-ray radiation protection afforded by them cannot necessarily be obtained by using replacements rated at higher voltages or wattage, etc. Components which have these

special safety characteristics in this manual and its supplements are identified by the international hazard symbols on the schematic diagram and parts list. Before replacing any of these components read the parts list in this manual carefully. Substitute replacement components which do not have the same safety characteristics as specified in the parts list may create X-ray radiation.

Service Adjustments

GENERAL INFORMATION

All adjustments are thoroughly checked and corrected when the receiver leaves the factory. Therefore the receiver should operate normally and produce proper colour and B/W pictures upon installation. However, several minor adjustments may be required depending on the particular location in which the receiver is operated.

This receiver is shipped completely in cardboard carton. Carefully draw out the receiver from the carton and remove all packing materials. Plug the power cord into a convenient 240 volts 50Hz AC two pin power outlet. Turn the receiver ON. Check and adjust all the customer controls such as BRIGHTNESS, CONTRAST and COLOUR Controls to obtain natural colour or B/W picture.

AUTOMATIC DEGAUSSING

A degaussing coil is mounted around the picture tube so that external degaussing after moving the receiver is normally unnecessary, providing the receiver is properly degaussed upon installation. The degaussing coil operates for about 1 second after the power to the receiver is switched ON. If the set is moved or faced in a different direction, the power switch must be switched off at least 30 minutes in order that the automatic degaussing circuit operates properly. Should the chassis or parts of the cabinet become magnetized to cause poor colour purity, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube, the sides and front of the receiver and slowly withdraw the coil to a distance of about 2 m before disconnecting it from AC source. If colour shading still persists, perform the COLOUR PURITY ADJUSTMENT and CONVERGENCE ADJUSTMENTS procedures.

HIGH VOLTAGE CHECK

CAUTION:

There is no HIGH VOLTAGE ADJUSTMENT on this chassis.

- Connect an accurate high voltage meter to the second anode of the picture tube.
- Turn on the receiver. Set the BRIGHTNESS and CONTRAST Controls to minimum (zero beam current).
- High voltage will be measured below 29.9 kV.

HORIZONTAL CENTRE ADJUSTMENT

- Receive the UK PHILIPS pattern.
- Set the contrast and colour to centre, and the brightness to centre.
- Adjust H. CENTER USER Control (R452) so the pattern centre can be located at the screen centre.

FOCUS ADJUSTMENT

Adjust FOCUS Control on FLYBACK TRANS. (T461) for well defined scanning lines in the centre area on the screen.

PAL MATRIX ADJUSTMENT

- Tune in the colour programme of the Philips pattern.
- Set the COLOUR Control to obtain the proper colour.
- If the PAL MATRIX adjustment is incorrect, the Venetian Blind would appear in the colour bars area. This case needs the adjustment.
- At the first, adjust DL PHASE ADJ. Coil (L551) to minimize the Venetian Blind.
- Next adjust 1H-DL ADJ. VR (R551) to minimize the Blind.
- If the Venetian Blind still remains, adjust 1 H-DL PHASE ADJ. Coil (L551) to minimize the Blind again.
- Repeat the item 5 and 6 procedures, adjust the R551 and L551 until the Blind does not appear.

CRT GREY SCALE ADJUSTMENT

- Tune in an active channel.
- Set the SERVICE SW. (S202) in the "H. LINE" position.
- Turn the SCREEN Control (on T461) fully counterclockwise.
- By rotating the RED, GREEN and BLUE CUT OFF Controls (R557, R558, R559) to the mid position.
- Set the GREEN and BLUE DRIVE Controls (R252, R253) to the center.
- Rotate the SCREEN Control gradually clockwise until the first line appears slightly on the screen. Set the SCREEN Control to this position.
- Adjust the CUT OFF Controls to obtain the slightly lighted horizontal lines in the same levels of three colours (RED, GREEN and BLUE). The lines may look like white if the CUT OFF Controls are adjusted properly.
- Set the SERVICE SW. (S202) in the "RECEIVE" position.
- Set the CONTRAST and COLOUR Controls to minimum, and BRIGHTNESS Control to the maximum.
- Adjust the BLUE and GREEN DRIVE Controls (R252/R253) to obtain proper white-balanced picture in high light areas.
- Set the BRIGHTNESS and CONTRAST Controls to obtain dark grey raster. Then check the white balance in low brightness. If the white balance is not proper, retouch the CUT OFF Controls and DRIVE Controls to obtain a good white balance in both low and high light areas.


SUB-BRIGHTNESS ADJUSTMENT

- Tune in a colour programme.
- Set the CONTRAST Control to the minimum and the BRIGHTNESS Control to the centre.
- Set the COLOUR Control to the centre.
- Set the SUB-BRIGHT. Control (R255) to the centre and leave the receiver for five minutes in this state.
- Watching the picture well, adjust the SUB-BRIGHT. Control in the position where the picture does not show evidence of blooming in high bright area and not appear too dark in low bright portion.
- Check the proper picture variation by rotating the CONTRAST and BRIGHTNESS Controls to both extremes.
- If the picture does not appear dark with the CONTRAST and BRIGHTNESS Controls turned to the minimum, or not appear bright with the controls turned to the maximum, adjust the SUB-BRIGHT. Control again for the acceptable picture.

Electrical Adjustment

MODEL NAME: C6SR

Circuit name: VIDEO/CHROMA

Adjustment parts	Name	Setting	Input signal	Measurement point	Instrument	Adjustment procedure	Adjustment standard
R551	PAL matrix VR (amplitude)		PHILIPS Pattern	Q501 62 pin	Synchroscope	Adjust IH-DL ADJ VR (R551) to minimize the blind.	(Same as Current) $E = \frac{1+A}{1-A} > 10$
L551	PAL matrix coil (phase)		PHILIPS Pattern	Q501 62 pin	Synchroscope	Adjust DL PHASE ADJ coil (L551) to minimize the Venetian Blind.	$\frac{Rn+1}{Rn} > 0.7$
R255	Sub-bright	Cont: MAX BRT: Center Color Min.	Sub-bright signal	Screen adjustment		Adjust the number of black collapsed lines in the sub-bright signal.	5 ± 1.5 lines
R557 - R559 Screen VR	Screen adjustment Cut-off adjustment	R557-R559 (Cut-off VR) R252, R253 Service switch Cont: Min BRT: Center Color: Min	→ Center → Center → ON (HORIZ-line)			1. Gradually increase the screen brightness until either R, G or B line starts to light up slightly. 2. Determine the screen VR adjustment position here. 3. Using the cut-off VR (R557-R559), gradually increase remaining two lines until respective line starts to light up slightly. (Adjust until the screen becomes almost white.) 4. Turn off the service SW.	
R557 - R559 R252, R253	White balance	Color :Center BRT: Center CONT: MAX  Two-tone signal (Burst: ON)	Upper screen: White Lower screen: Black CRT	W/B checker.	Use a checker which adjusts brightness by varying modulation ratio.	*DB, DD, DN, DS models HIGH LIGHT (103 cd/m ²) 7195 K - 0.005 uv DARK (17 cd/m ²) 7695 K - 0 uv *DF model HIGH LIGHT (103 cd/m ²) 8750 K - 0.002 uv DARK (17cd/m ²) 8750 K - 0.002 uv	

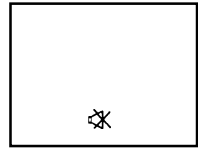
MODEL NAME: C6SR

Adjustment part	Input point, Output point	Adjustment signal	Adjustment condition and procedure
Horizontal amplitude adjustment Pin-cushion distortion Correction amount adjustment Keystone distortion correction amount adjustment	Visual adjustment with figures on the screen. (Bus control)	WG Philips pattern. Do not use Philips pattern for FRANCE SECAM.	1. Conditions: V. height, VERT position. After H. center adjustment, set the contrast to max., bright to center and color to center. 2. Adjustment procedures a. Adjust the horizontal amplitude by the sub-address WID. • For French model: Adjust the horizontal amplitude so that the first inner white lines next to the left and right white flag of Philips pattern just disappear behind the frame. • For other models: adjust the horizontal amplitude so that the left and right white flags of Philips pattern just disappear behind the frame. b. By the sub-address DPC, make the left and right horizontal bar straight. c. By the sub-address KEY, correct the keystone distortion. d. Again, adjust the sub-address WID.
HEIGHT VERT. POSITION	Visual adjustment with figures on the screen. (Bus control)	WG Philips pattern Do not use Philips pattern for FRANCESECAM.	1. Conditions: Cont max, Bright cent, Color cent. 2. Adjustment procedure a. Change V. Position by the sub-address VPS so that the upper and lower positions of the circle of Philips pattern come to the center of the screen. b. By the sub-address HIT, make the top and bottom flags of Philips pattern just disappear behind the frame.

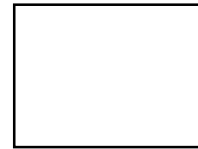
Service Mode Cont'd

1. ENTERING TO SERVICE MODE

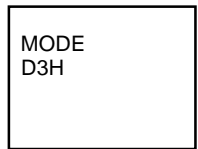
1) Press button once on Remote Control.



2) Press button again to keep pressing.



3) Keep pressing the button, press MENU button on TV set.



(Service mode display)

2. SELECTING THE ADJUSTING ITEMS

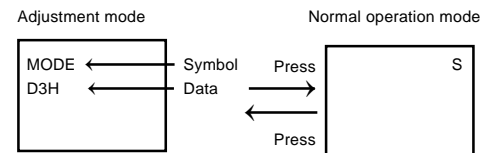
Every pressing of CHANNEL button changes the adjustment items in the following order. (button for reverse order.)

3. ADJUSTING THE DATA

Pressing of VOLUME or button will change the value of data in the range from 00 to FF. The variable range depends on the adjusting item.

4. NORMAL OPERATION ON THE SERVICE MODE

Press MENU button on TV.



5. EXIT FROM SERVICE MODE

Press POWER button on the remote control to turn off the TV once.

SELECTING THE ADJUSTING ITEMS (See Table)

1) Every pressing of CHANNEL button changes the adjustment items in the following order. (button for reverse order.)

S ... semi-fixed data area which is fixed by model. (Do not adjust in field service.)
F ... This item may require adjustments by models after initialization, when QA02 is replaced.

ADJUSTING THE DATA

1) Pressing of VOLUME or button will change the value of data in the range from OOH to FFH. The variable range depends on the adjusting item.

EXIT FROM SERVICE MODE

1) Press POWER button to turn off the TV once.

QA02 MEM ADR	ITEM NAME	Comment	2563DB		2863DB	
			Preset data	Reference data	Preset data	Reference data
S 0D3H	MODE	MODE DATA	DA	A9	DA	A9
S 0D4H	CNTX	SUB CONTRAST MAX	FF	←	FF	←
S 0DSH	CNTC	SUB CONTRAST CENTER	70	←	70	←
S 0D6H	CNTN	SUB CONTRAST MIN	2B	←	2B	←
F 0D7H	HIT	HEIGHT	2A	40	2A	40
F 0D8H	LIN	V LINEARITY	11	0E	11	10
S 0D9H	VSC	V-S CORRECTION	0F	11	0F	0E
F 0DAH	VPS	V SHIFT	02	03	02	03
S 0DBH	VCP	V COMPENSATION	04	←	04	←
F 0DCH	WID	WIDTH	20	16	20	16
F 0DDH	DPC	E-W PARABOLA	20	←	20	←
S 0DEH	CNR	E-WCONER	0A	←	0A	←
F 0DFH	KEY	TRAPEZIUM	0A	09	0A	09
S 0EGH	HCP	H COMPENSATION	03	←	03	←
S 0EIH	VMC	V- \int CORRECTION	00	0F	00	0F
S 0E2H	SHI	(WIDE) SUB HEIGHT	E3	DA	E3	DB
S 0E3H	SLI	(WIDE) SUB V LINEARITY	00	01	00	02
S 0E4H	SVS	(WIDE) SUB V-S CORRECTION	FA	←	FA	←
S 0E5H	SDP	(WIDE) SUB E-W PARABOLA	F0	←	F0	←
S 0E6H	SCN	(WIDE) SUB E-W CONER	FD	←	FD	←
S 0E7H	BASC	SUB BASS CENTER	08	←	08	←
S 0E8H	TREC	SUB TREBLE CENTER	07	←	07	←
S 0E9H	WON2		17	←	17	←
S 0EAH	UBCP	USER BASS DATA AT RESET OF EEPROM	00	←	00	←
S 0EBH	EMX	NICAM ERROR MAX	FC	←	FC	←
S 0ECH	EMN	NICAM ERROR MIN	64	←	64	←
S 0EDH	FMA	NICAM FM ATT	00	←	00	←
S 0EEH	STS	IGR STEREO SEPARATION	00	←	00	←
S 0EFH	TEXT	HN POSITION OF TEXT	00	←	00	←

SUB DATA ADDITIONAL DESCRIPTION

Symbol	Description
HIT	V amplitude adjustment.
LIN	V linearity correction 1.
VSC	V linearity correction 2.

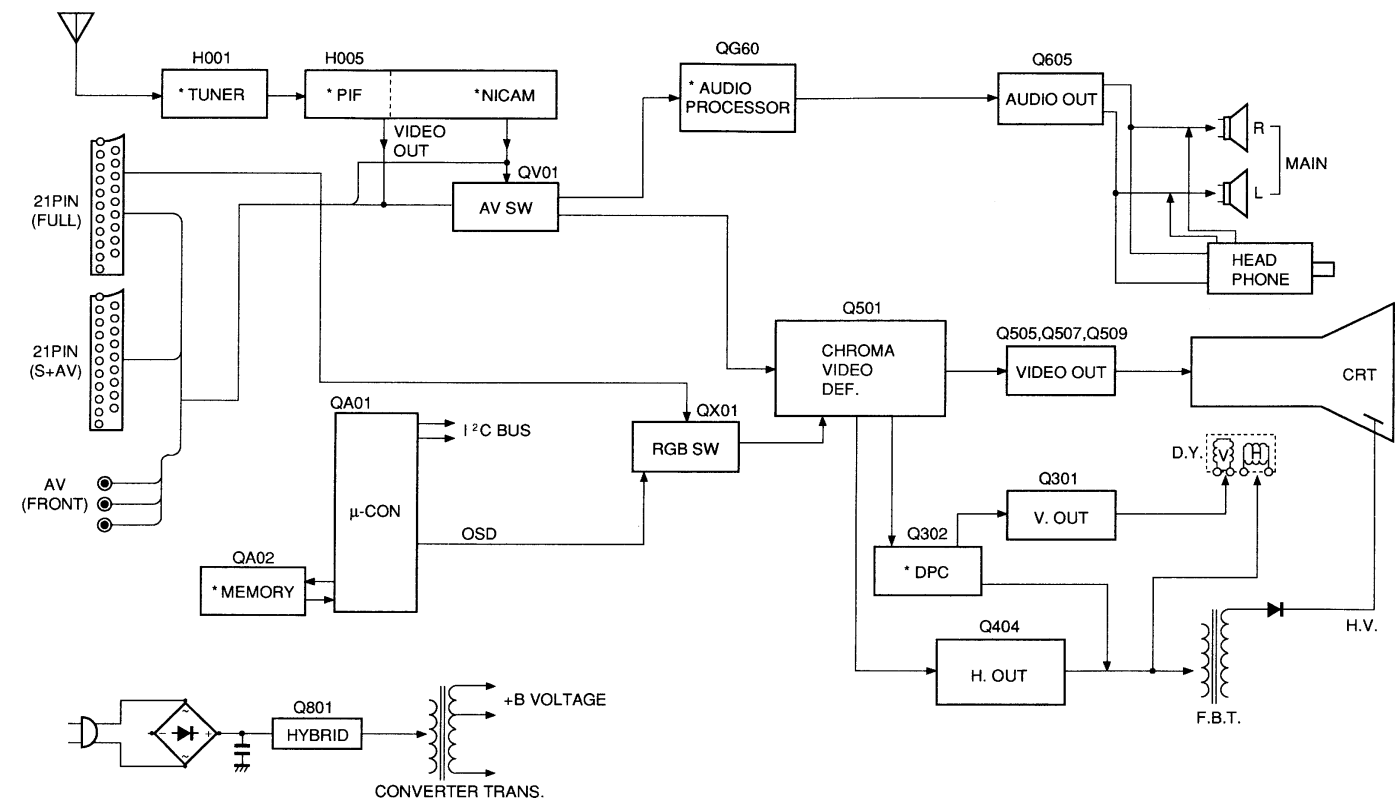
Symbol	Description
VPS	V picture position adjustment.
VCP	Setting of amount of V amplitude correction against variation of screen brightness.
WID	H amplitude adjustment.
DPC	H pin-cushion distortion correction.
CNR	H pin-cushion distortion correction at four corners.

Symbol	Description
KEY	Pedestal distortion correction.
HCP	Setting of amount of H amplitude correction against variation of screen brightness.
VMC	V linearity correction. Linearity balance at 1/4, 3/4 areas from top.

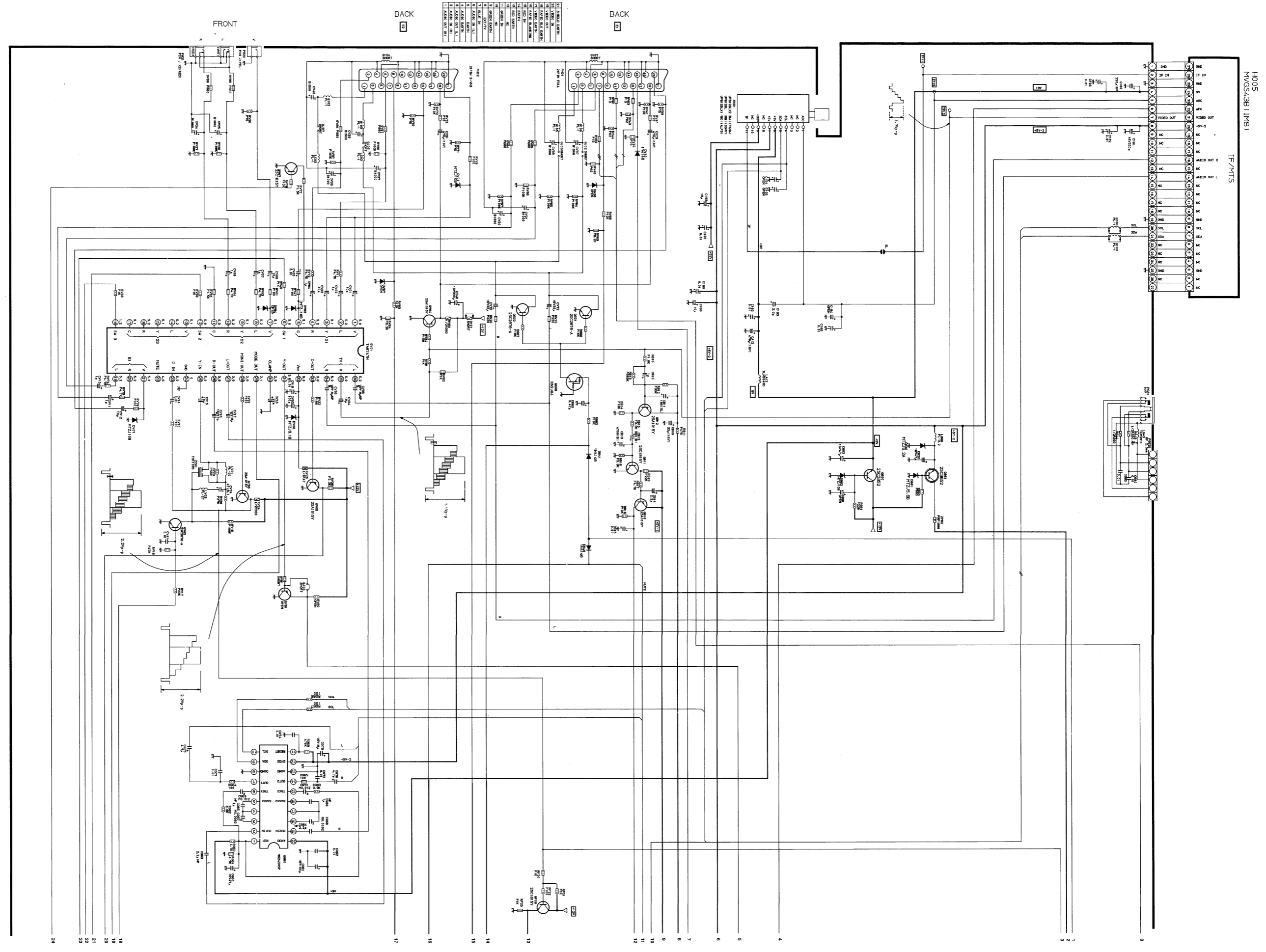
Electrical Adjustments

Adjustment Parts or Bus control item	Input Point' Output point	Adjustment signal	Adjustment conditions and procedures
Horizontal amplitude adjustment (WID) Pin distortion compensation amount adjustment (DPC) Keystone distortion compensation amount adjustment (KEY)	Visual check of picture (Bus control)	UK Philips pattern	1. Conditions: After V. HEIGHT, VERT POSITION and H. CENT have been adjusted, set the controllers as follows: Contrast: Max Brightness: Center Color: Center 2. Adjustment procedure a. Adjust the horizontal amplitude by the sub address WID. Adjust so that the left and right white flags of Philips pattern disappear at the very limits. b. Make the left and right vertical bars straight by the sub address DPC. c. Compensate the key distortion by the sub address KEY. d. Again, adjust the sub address WID.
HEIGHT (HIT) VERT. POSITION	Visual check of picture (Bus control)	WG Philips pattern	1. Conditions: Contrast: Max Brightness: Center Color: Center 2. Adjustment procedure a. By the bus address VPS, adjust V. position so that the circle of Philips pattern comes to the vertical center. b. Adjust HIT so that the upper and lower flags of Philips pattern disappear at the very limits.

Circuit Block Diagram



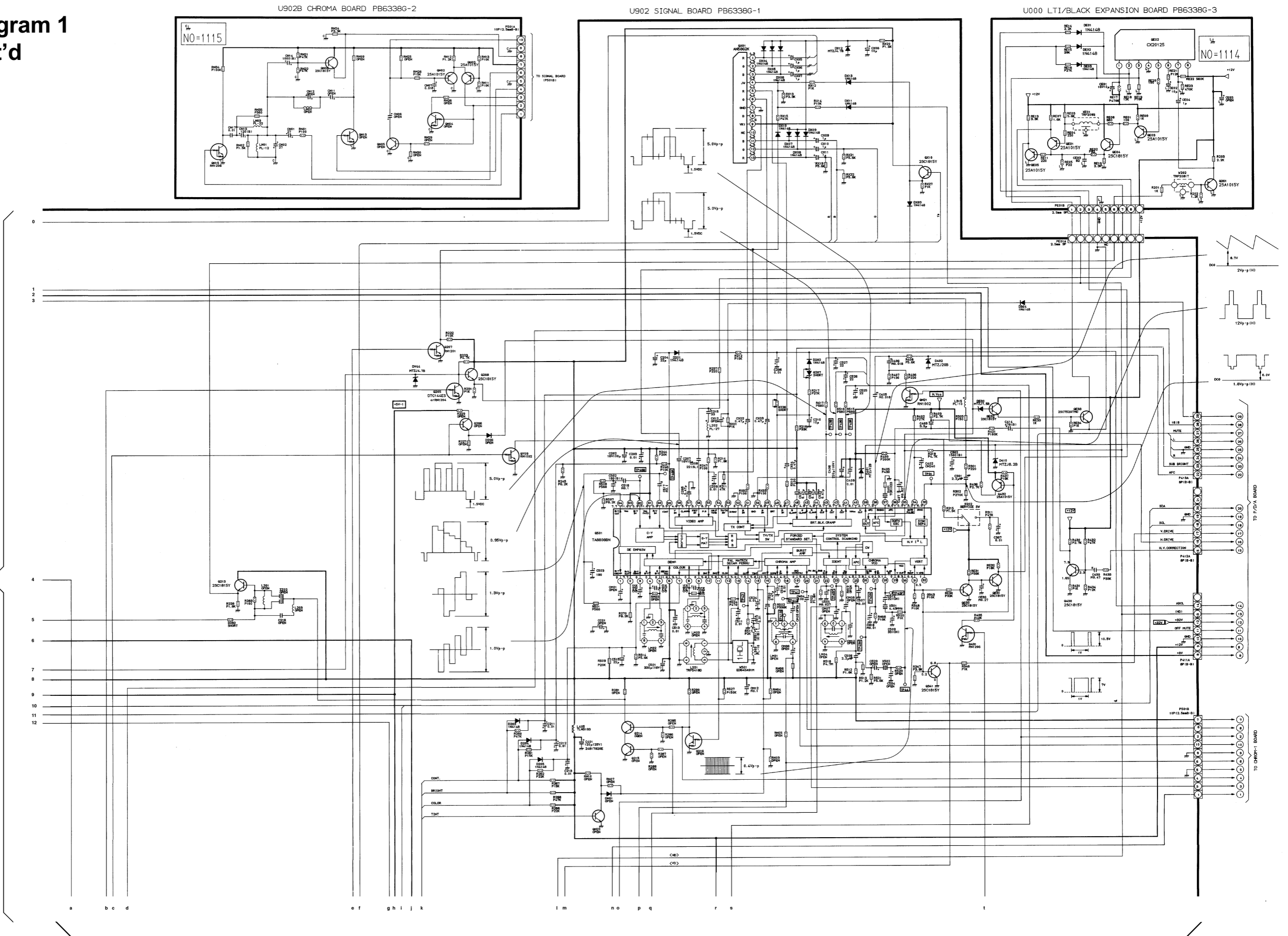
Main Diagram 1



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Main Diagram 1
Cont'd

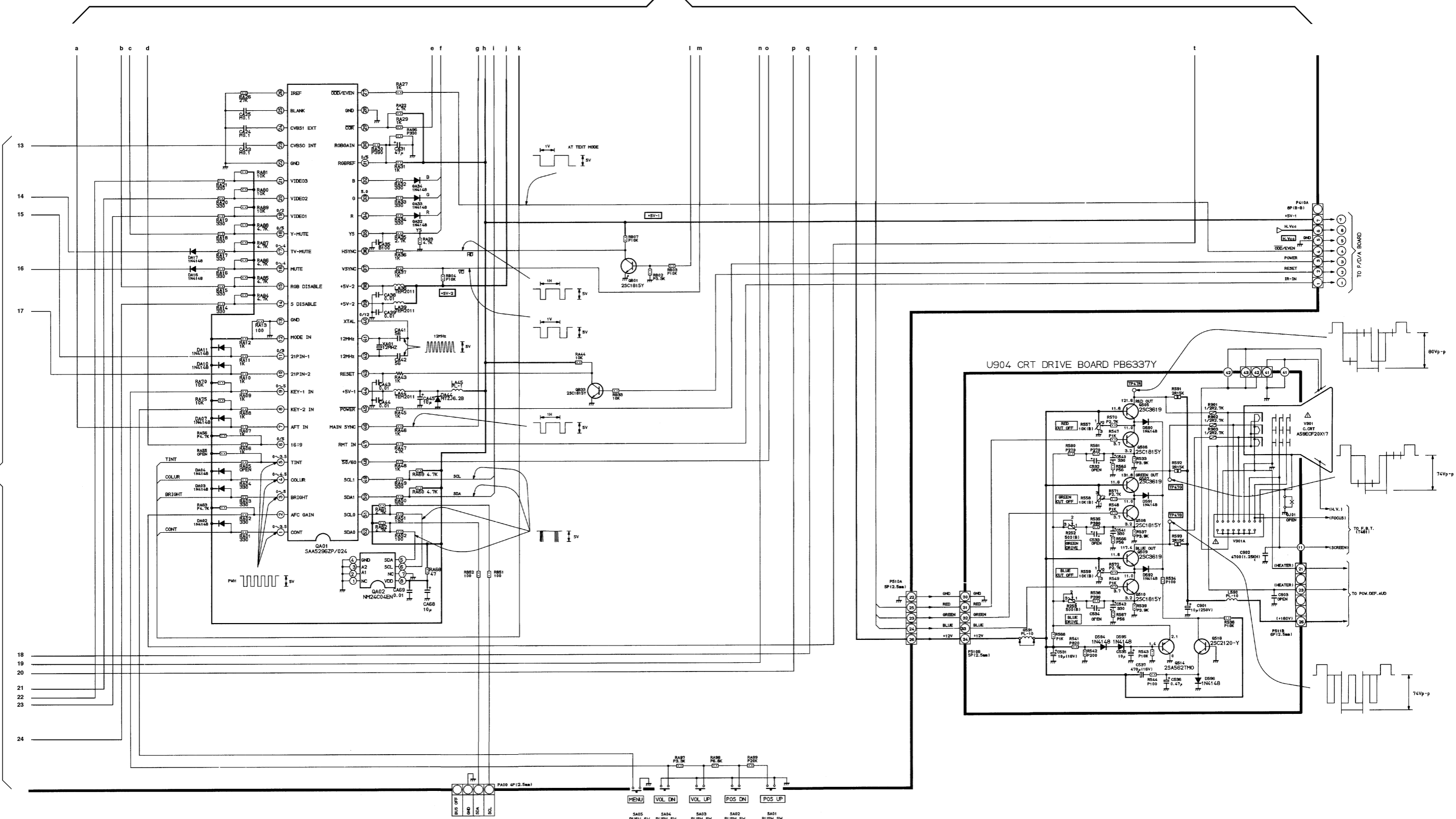


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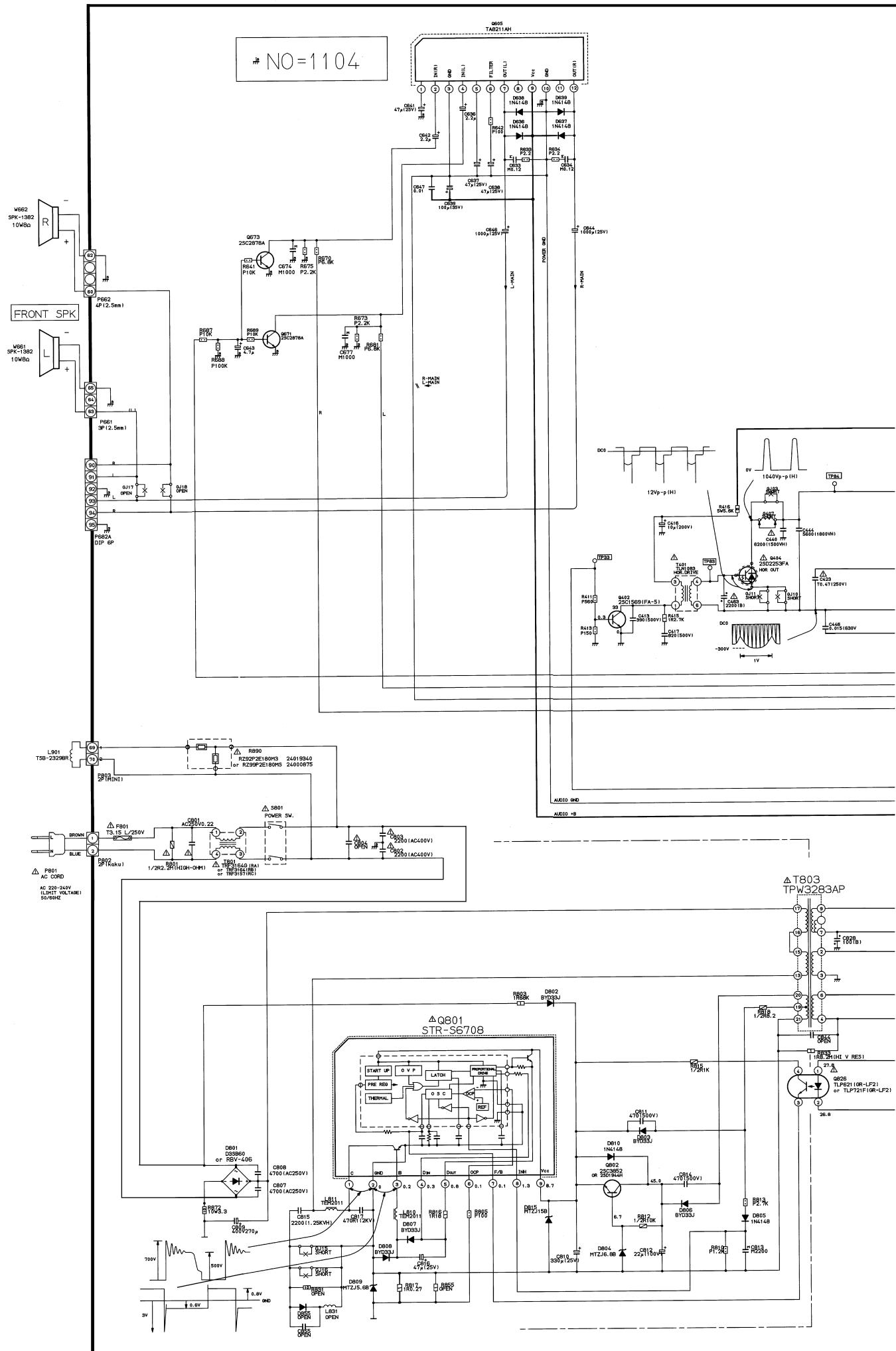
Main Diagram 1
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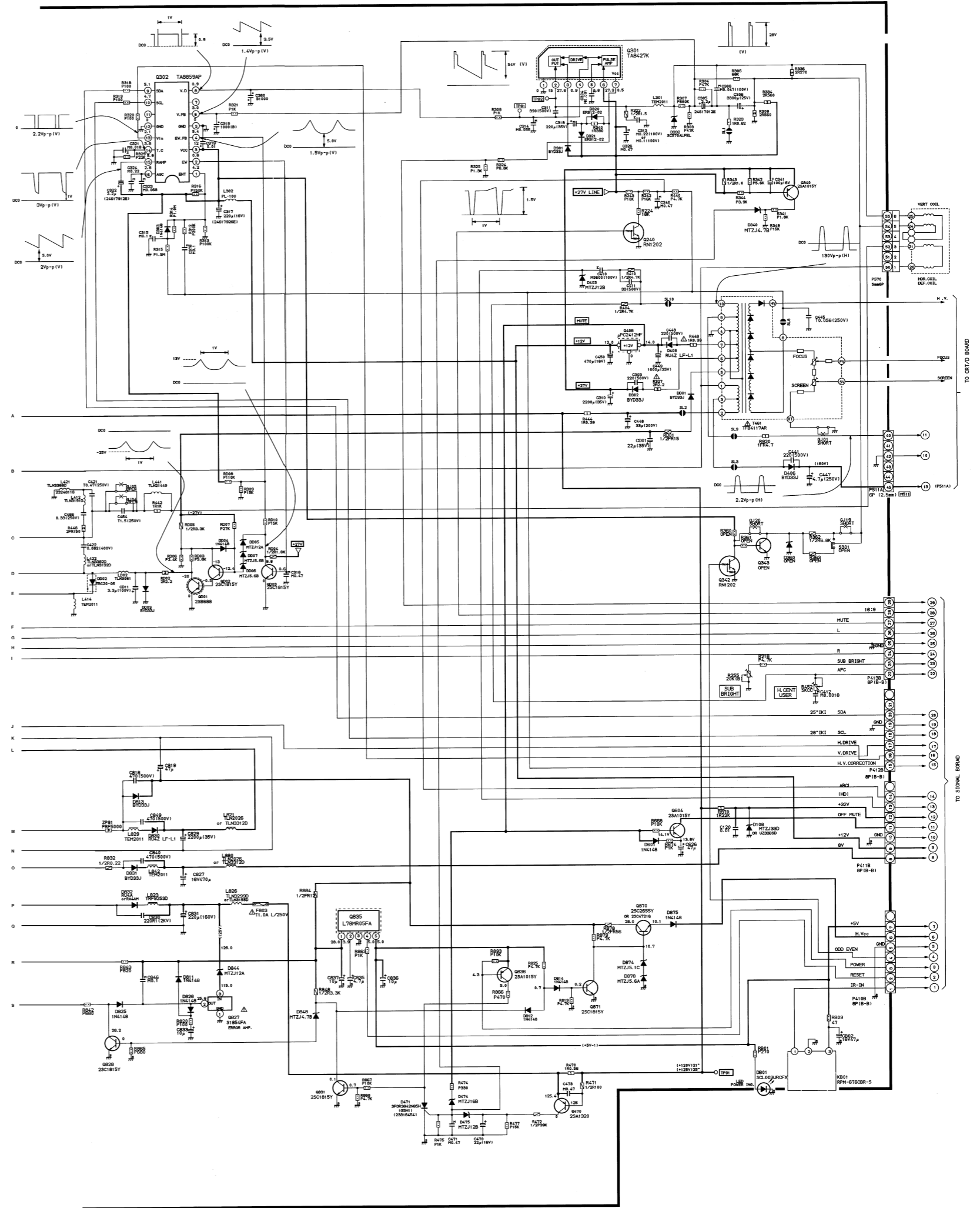


Main Diagram 2

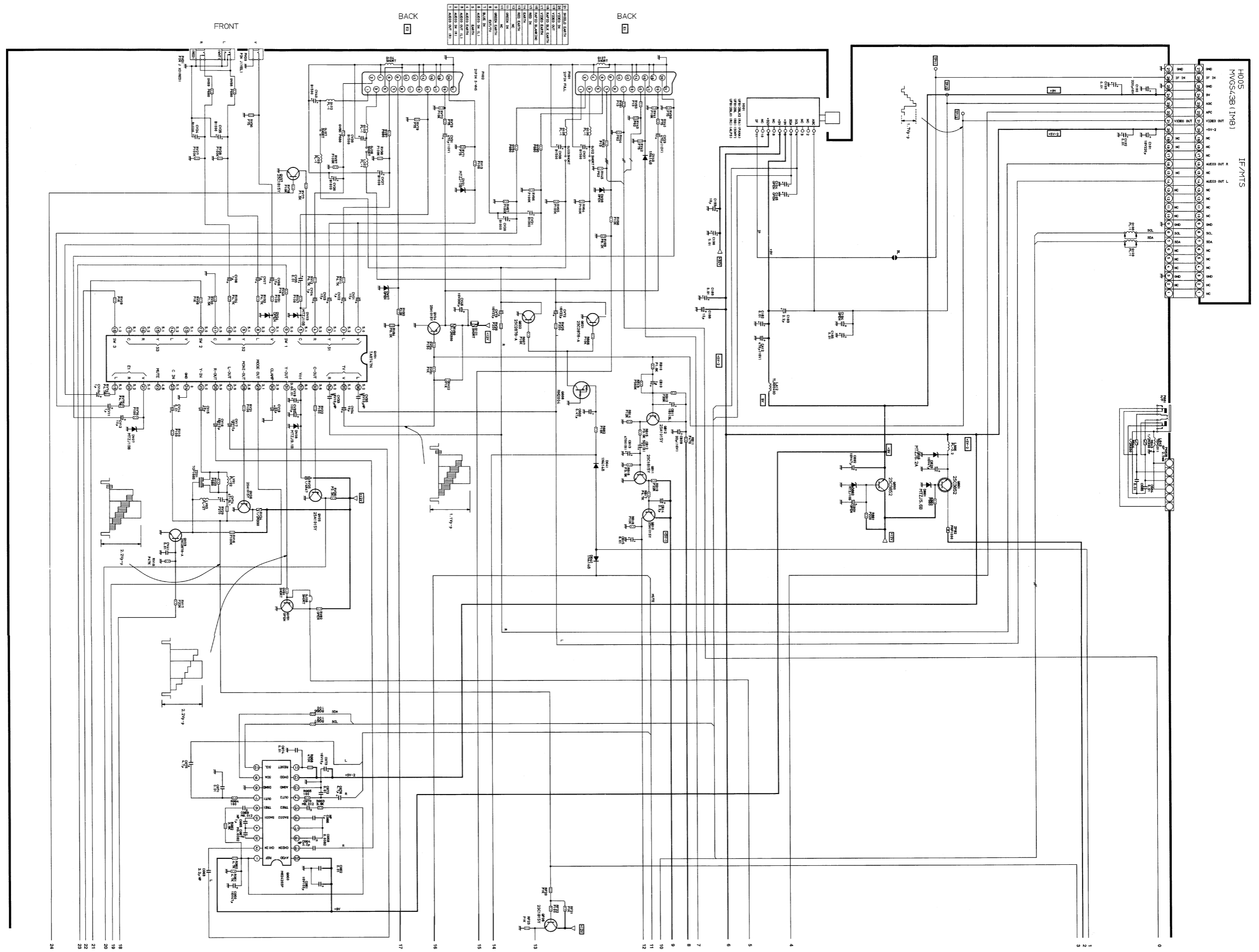


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Main Diagram 2
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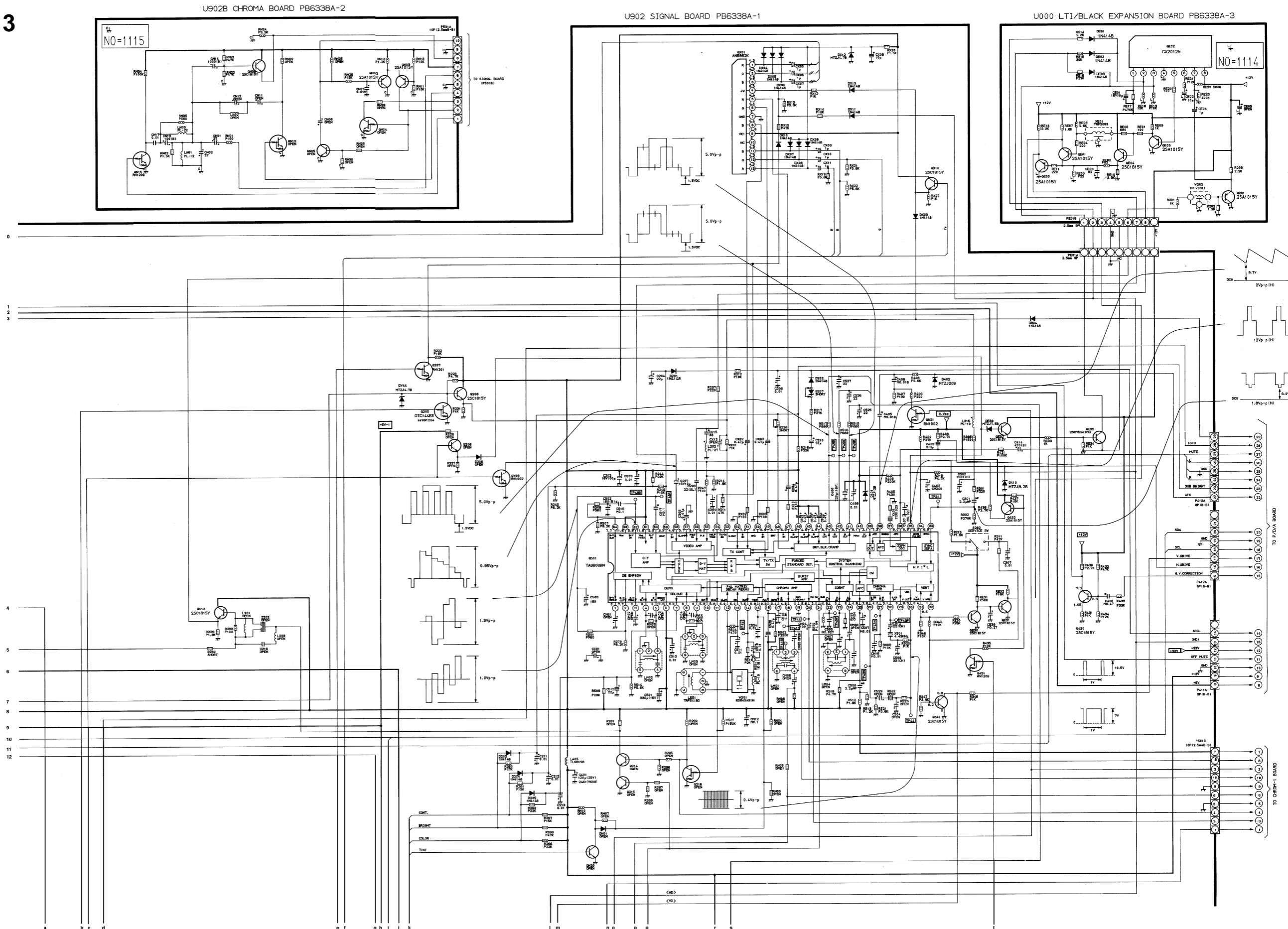
Main Diagram 3



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Main Diagram 3
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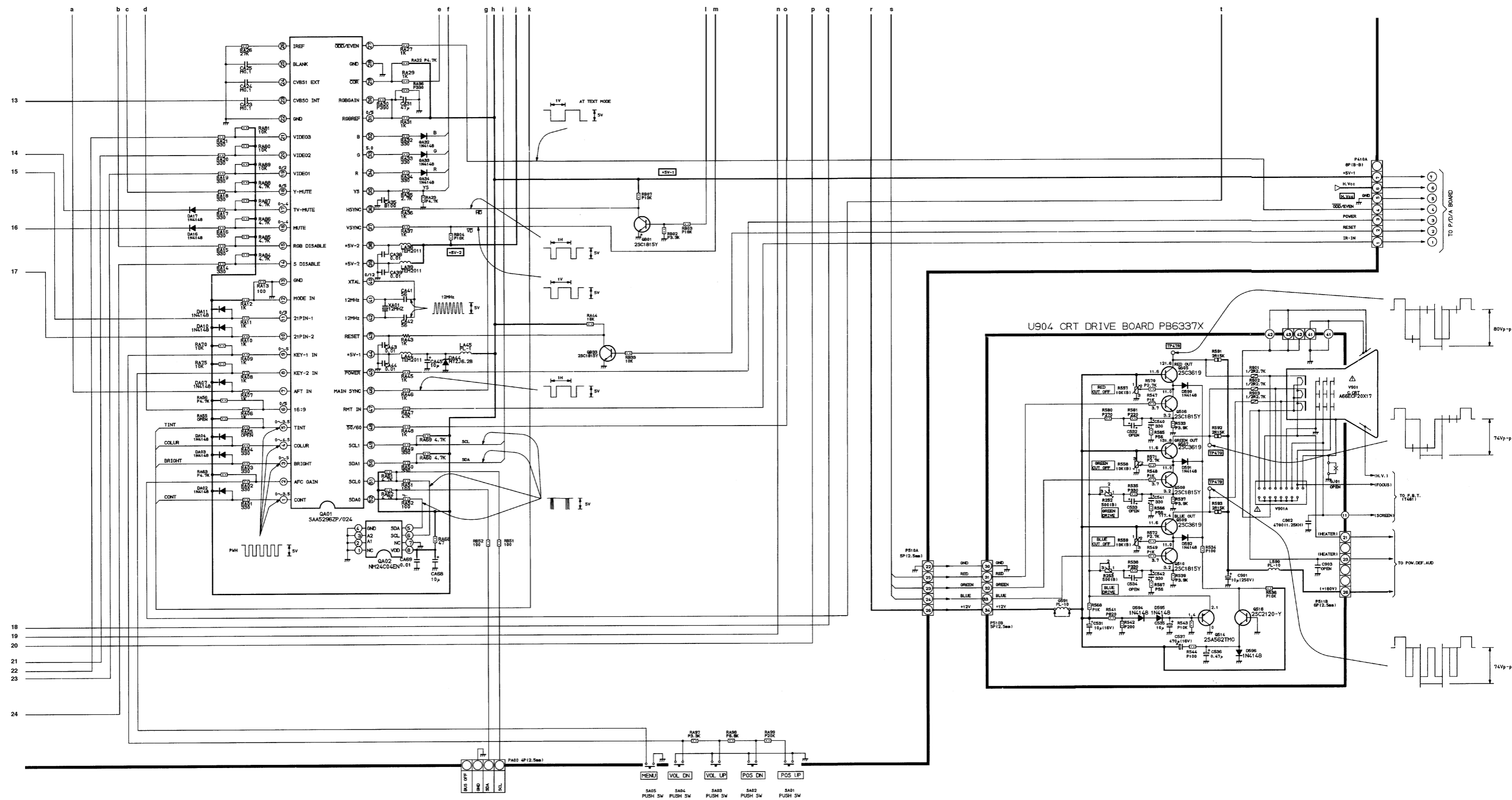


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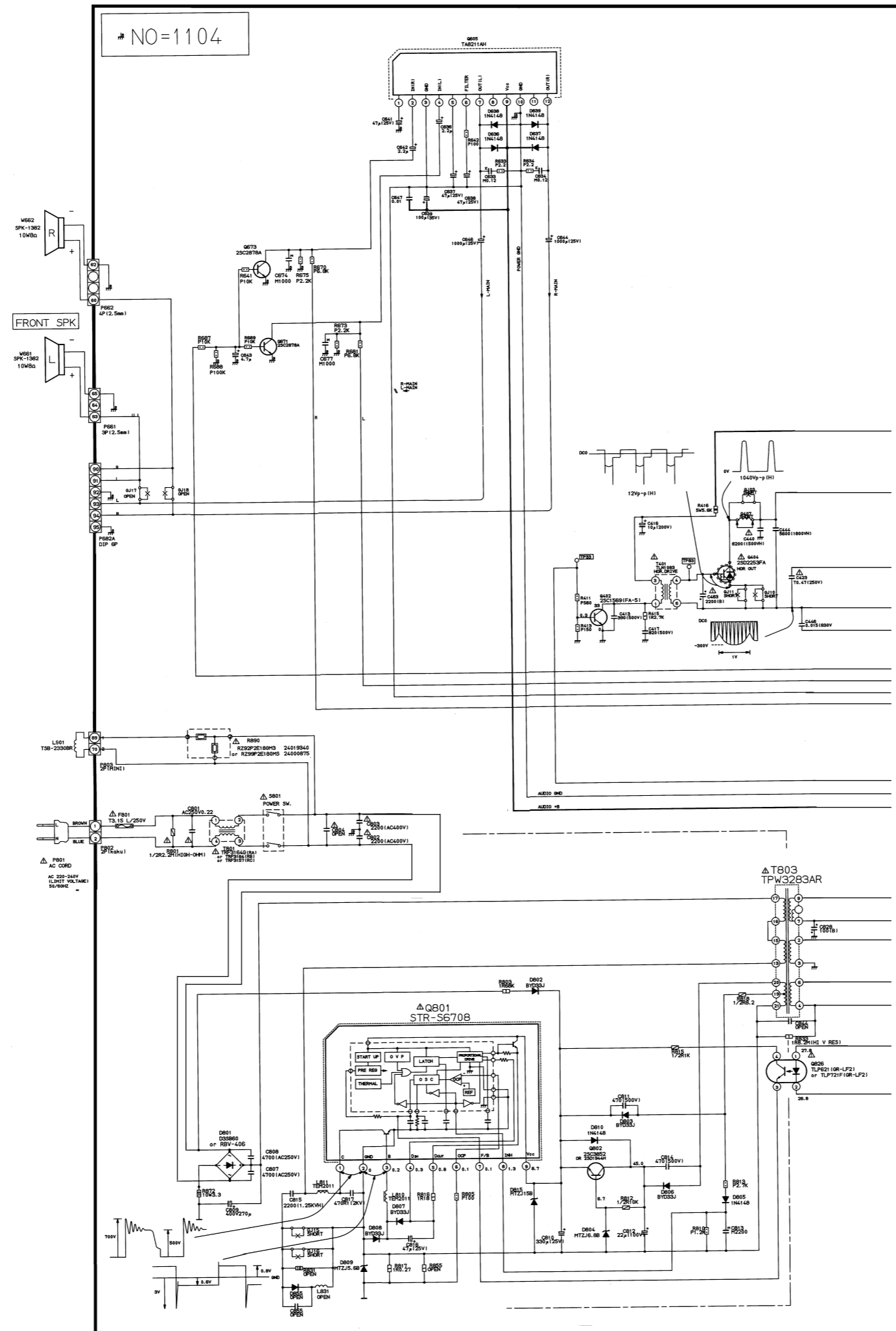
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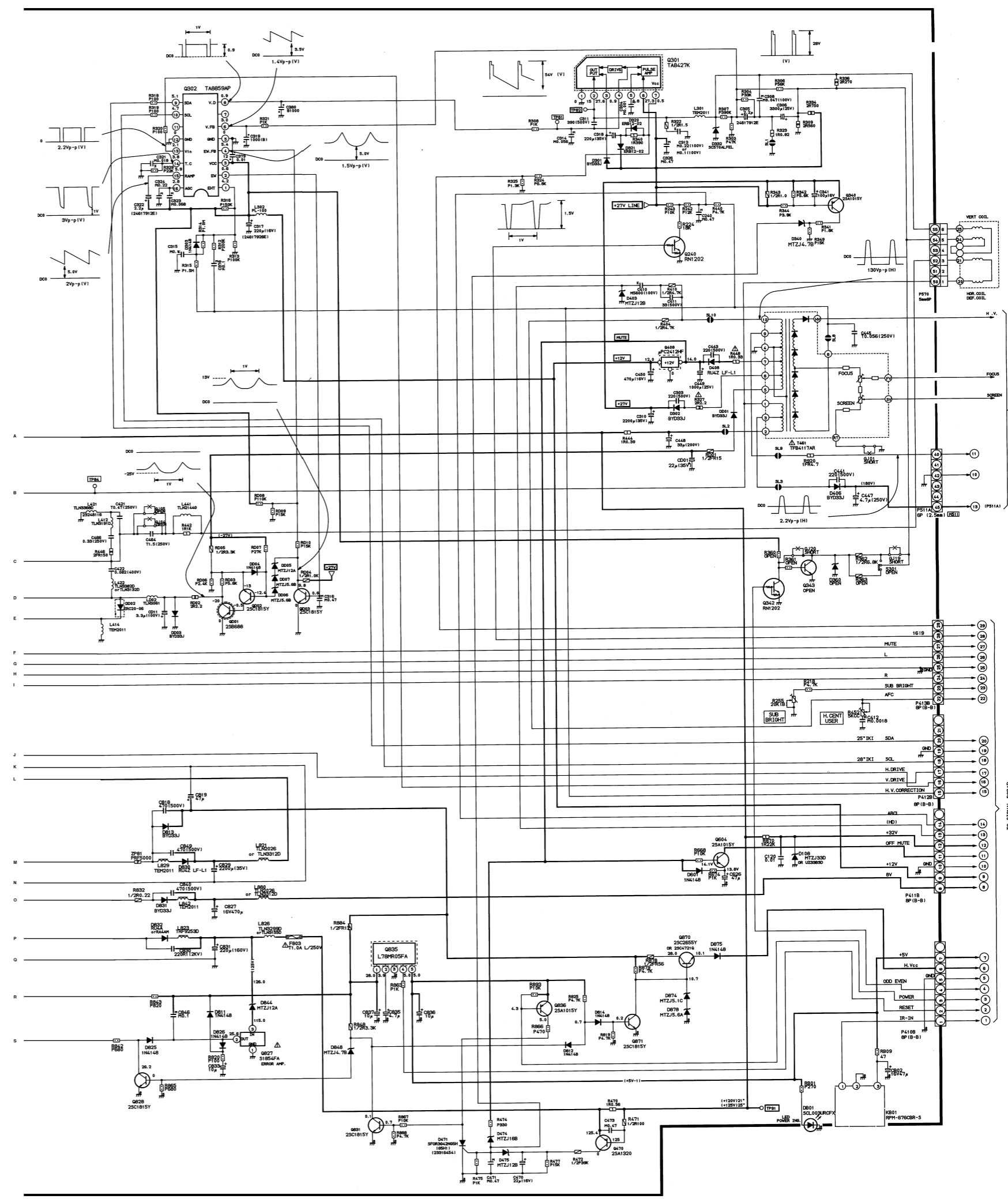


Main Diagram 4



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Main Diagram 4
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