

## General Information

### Also Covers

**2855 DB**  
**2852 DB**  
**2552 DB**

## Safety Instructions

### 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 26.5 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 29.0 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 24.5 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 interna-

tional 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 50 Hz 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 29.0 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.

### SIF FM DET (LG04) ADJUSTMENT (NICAM BOARD)

- Connect SIF generator through 0.01 pF capacitor to pin D1 of PD01 on NICAM Board.
- Connect the oscilloscope to pin 9 of ICD03.
- Set up the SIF generator as described. Sound carrier frequency: 6.0 MHz Modulation frequency :1000 Hz Frequency

deviation :  $\pm 15$  kHz  
Signal level :100 dBp (50 ohm load)  
4. Adjust LG04 for the maximum response of 1000 Hz det-out on scope.

### 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.

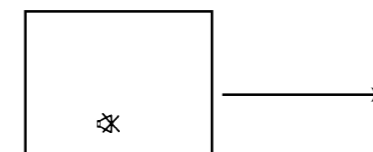
### SUB-BRIGHTNESS ADJUSTMENT


- 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.

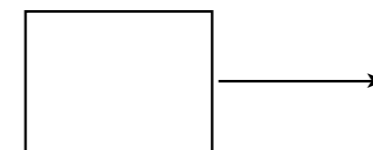
## Service Mode General Instructions


### 1. ENTERING TO SERVICE MODE

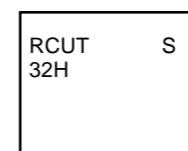
- Press  button once on Remote Control.



- Press  button again to keep pressing.





- Keep pressing the  button, press MENU button on TV set.





(Service mode display)

### 2. SELECTING THE ADJUSTING ITEMS

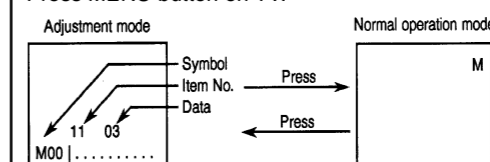
Every pressing of CHANNEL  button changes the adjustment items in the following order. ( button for reverse order.)

### 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.

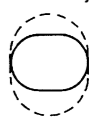
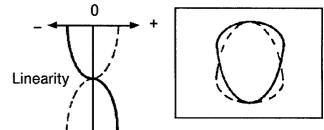
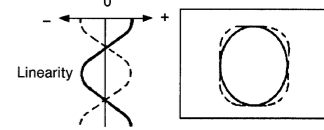


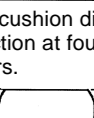
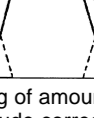
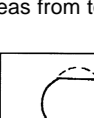



### 5. EXIT FROM SERVICE MODE

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

See next page for Adjustment Procedure and Rom Data List.

## SUB DATA ADDITIONAL DESCRIPTION

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

## Recommended Safety Parts

Item	Part No.	Description
C440	24082581	PF, 7000pF, $\pm 3\%$ , 1500V
C463	24212222	CD, 2200pF, $\pm 10\%$
C801	24082318	PF, 0.1 $\mu$ F, $\pm 20\%$ , AC250V
C802	24094656	CD, 2200pF, $\pm 20\%$ , AC400V
C803	24094656	CD, 2200pF, $\pm 20\%$ , AC400V
C804	24082318	PF, 0.1pF, $\pm 20\%$ , AC250V
R327	24339479	MF, 4.7 ohm, 2W
R448	24338338	ME, 0.33 ohm, 1W
R801	24004914	Metal-Glazed Resistor, 5.6M ohm, 1/2W
R878	24531560	FR, 56 ohm, 1/2W
R884	24531120	FR, 12 ohm, 1/2W
3890	24019340	PTC Thermistor, 18 ohm, 290V
3920	24000907	FR, 3.9 ohm, 1W
RD01	24000211	FR, 15 ohm, 1/2W
RV25	24019261	FR, 47 ohm, $\pm 2\%$ , 1/4W
L462	-----	DY, Supplied with V901
L901	23200275	Coil, Degaussing, TSB-2329BR (2555DB/2552DB)
L901	23200276	Coil, Degaussing, TSB-2330BR (2855DB/2852DB)
T401	23224336	Transformer, Horiz. Drive, TLN1083
T461	23236454	Transformer, Flyback, TFB41 17AR
T801	23211670	Line, Filter, TRF3164G
T803	23217214	Transformer, Converter, TPW3283AR
Q404	A6872801	Transistor, 2SD2253(FA)
Q826	A8643108	Photo Coupler, TLP621(GR-LF)
Q827	A6907751	IC, S1854
F801	23144507	Fuse, 3.15A
F803	23144874	Fuse, 0.8A
P801	23372012	Power Cord
V901A	23902891	Socket, CRT, lop
V901	23312462	Picture Tube, A59EAK71X01 (2555DB/2552DB)
V901	23312463	Picture Tube, A66EAK71X01 (2855DB/2852DB)

Service Mode / Safety Parts / Safety Instructions / Service Adjustments / Adjustment Procedure / Block Diagram

Signal Processing (2555 & 2855) ... Cont'd / Signal Processing (2552 & 2852) ... Cont'd

Power Audio Deflection (2555 & 2855) ... Cont'd / Power Audio Deflection (2552 & 2852) ... Cont'd

## Adjustment Procedure

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)	WG Philips pattern  Do not use the Philips pattern of FRANCESECAM.	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  Do not use the Philips pattern of FRANCESECAM.	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.

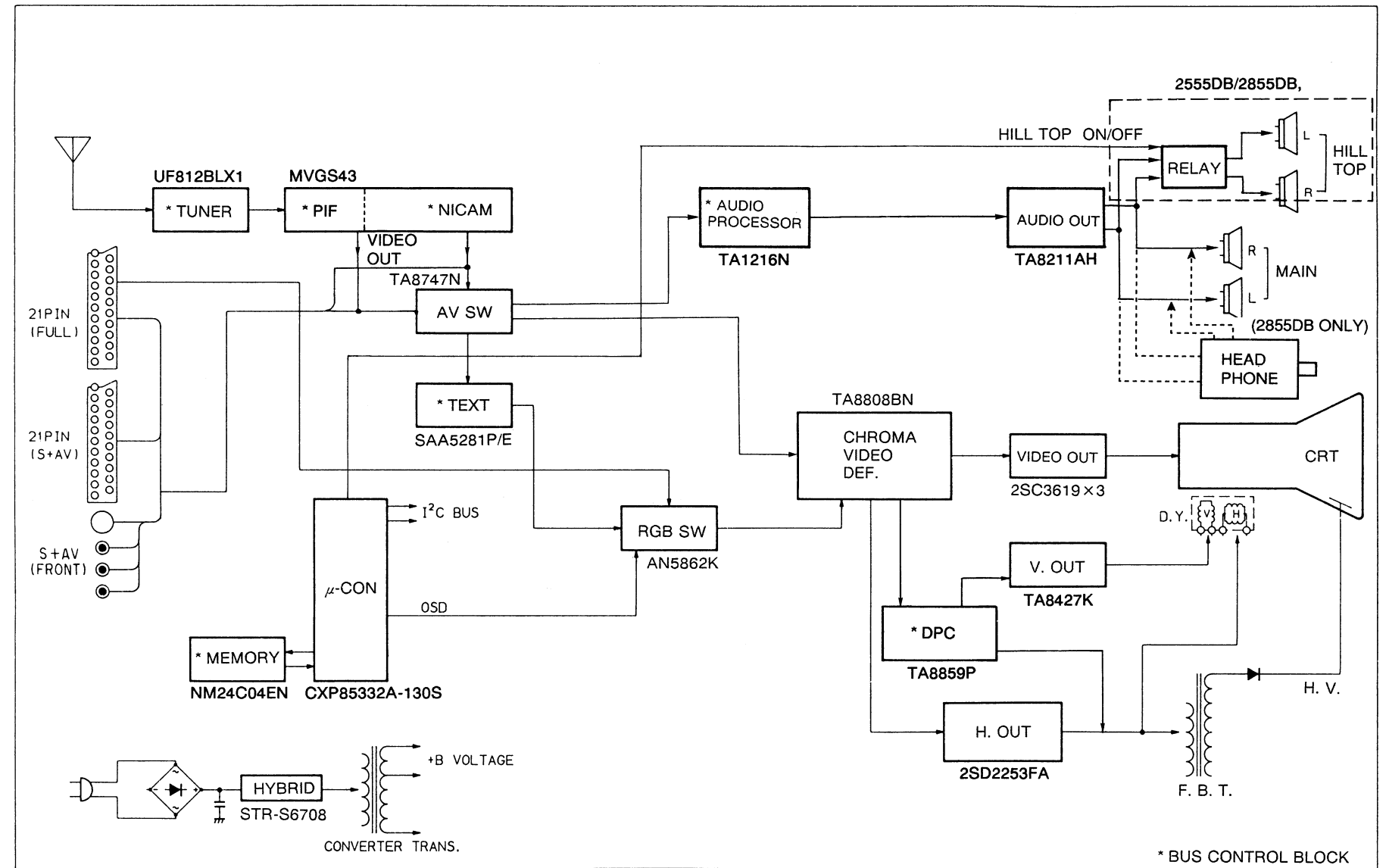
ROM DATA LIST FOR IIC BUS CONTROL

(Reference Value)

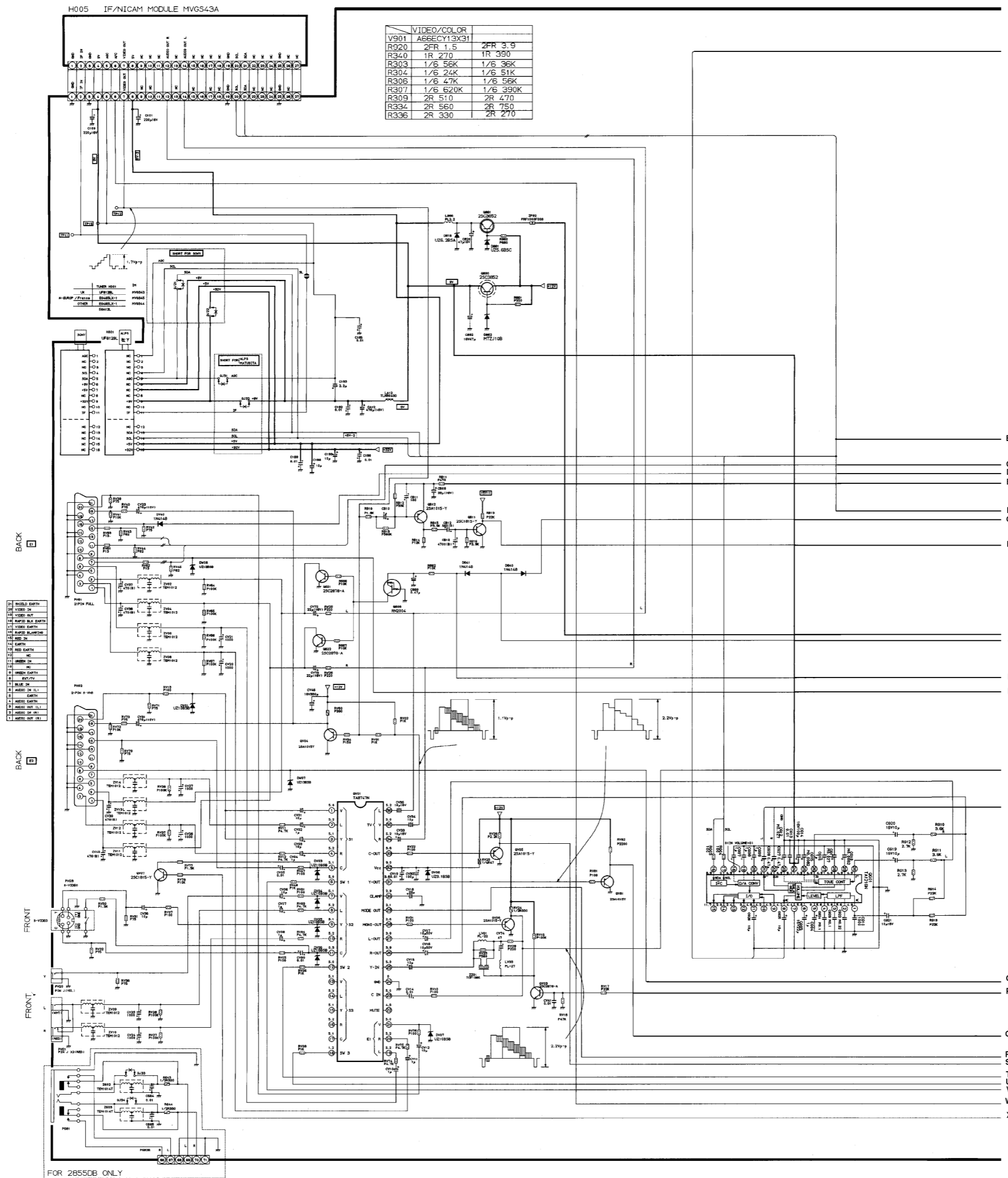
Symbol	Comment	Data			
		2555DB	2855DB	2552DB	2852DB
M00	MODE 0	51	51	51	51
M01	MODE 1	33	33	33	33
M01	MODE 1 USE ALPS TUNER	01	01	01	01
M02	MODE 2	03	03	02	02
M03	MODE 3	17	17	49	49
HIT	HEIGHT	*30	*30	*30	*30
LIN	V. LINEARITY	32	32	32	32
VSC	V. S-CORRECTION	32	32	32	32
VPS	V. POSITION	*07	*07	*07	*07
VCP	V. COMPENSATION	30	30	30	30
WID	H.WIDTH	*22	*26	*22	*26
DPC	DPC	*26	*24	*26	*24
CNR	DPC CORNER	P44V32		P44V32	32
KEY	KEystone	*09	*09	*09	*09
HCP	H. COMPENSATION	10	10	10	10
VMC	V. M-CORRECTION	52	41	52	41
SHI	16:9 SUB HEIGHT	00	00	00	00
SLI	16:9 SUB V. LINEARITY	32	32	32	32
SVS	16:9 SUB V.S-CORRECTION	17	17	17	17
SDP	16:9 SUB DPC	P18V21	P17V21	P18V21	P17V21
SCN	16:9 SUB CORNER	30	30	30	30
WCT	WOOFER FC SET	12	08	12	12
BAC	BASS CENTER	40	34	50	50
TRC	TREBLE CENTER	48	52	44	44
BAX	BASS MAX	79	79	79	79
WON	BAZOOKA AUTO	05	30	06	06
WOF	BAZOOKA OFF	20	47	25	25
BAE	BASS UP	01	03	01	01
TRE	TREBLE UP	12	17	10	10
VOE	VOL UP	02	02	00	00
WFL	WOOFER LEVEL	100	100	100	100
EMX	NICAM OFF LEVEL (PHIL)	252	252	252	252
EMN	NICAM ON LEVEL (PHIL)	100	100	100	100
FMA	FM INPUT ATT (PHIL)	00	00	00	00
STS	STEREO SEPARATION	—	—	—	—

\* Mark items should be adjusted.

## Block Diagram



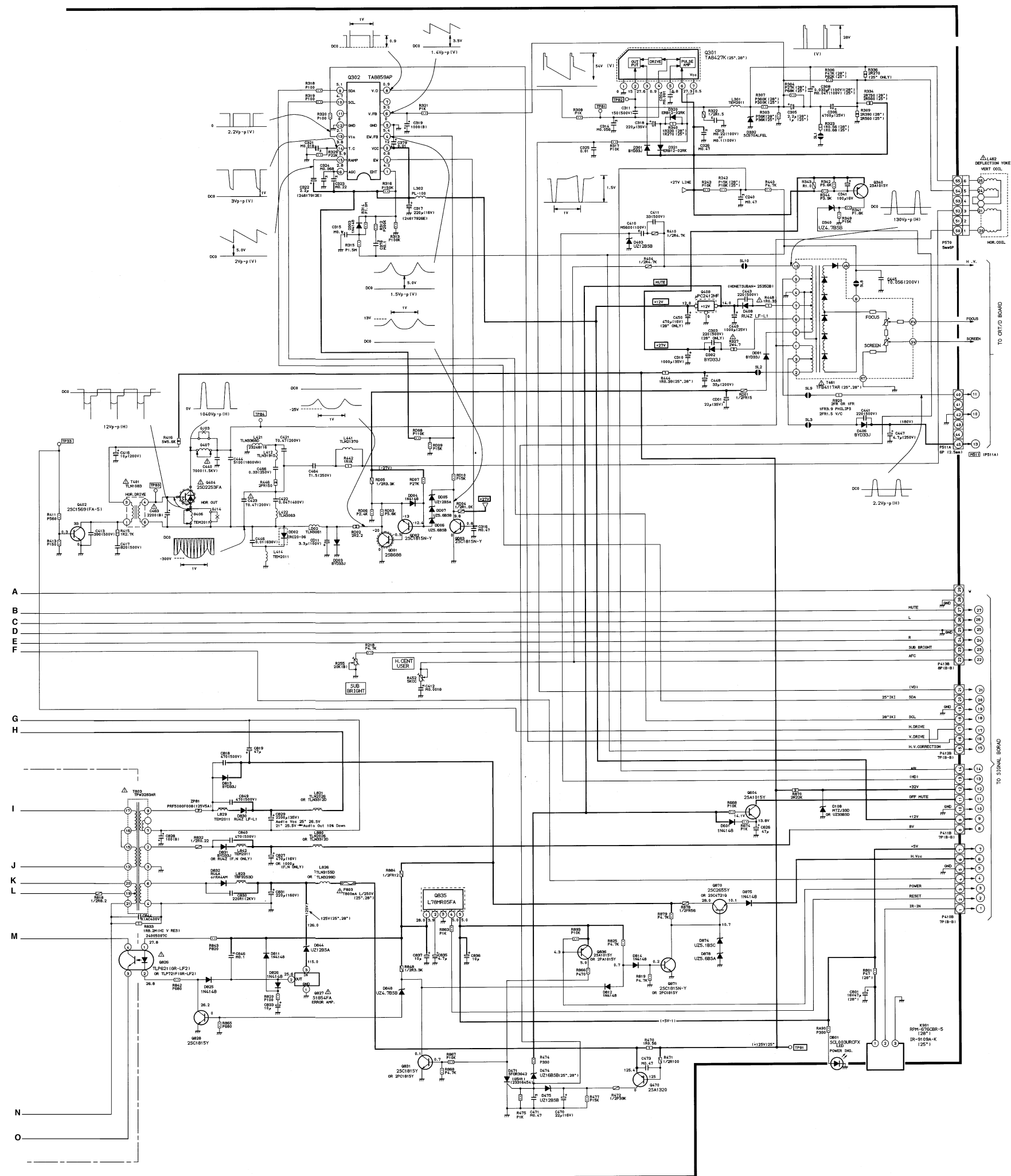
Signal Processing  
(2555 & 2855)  
Diagram



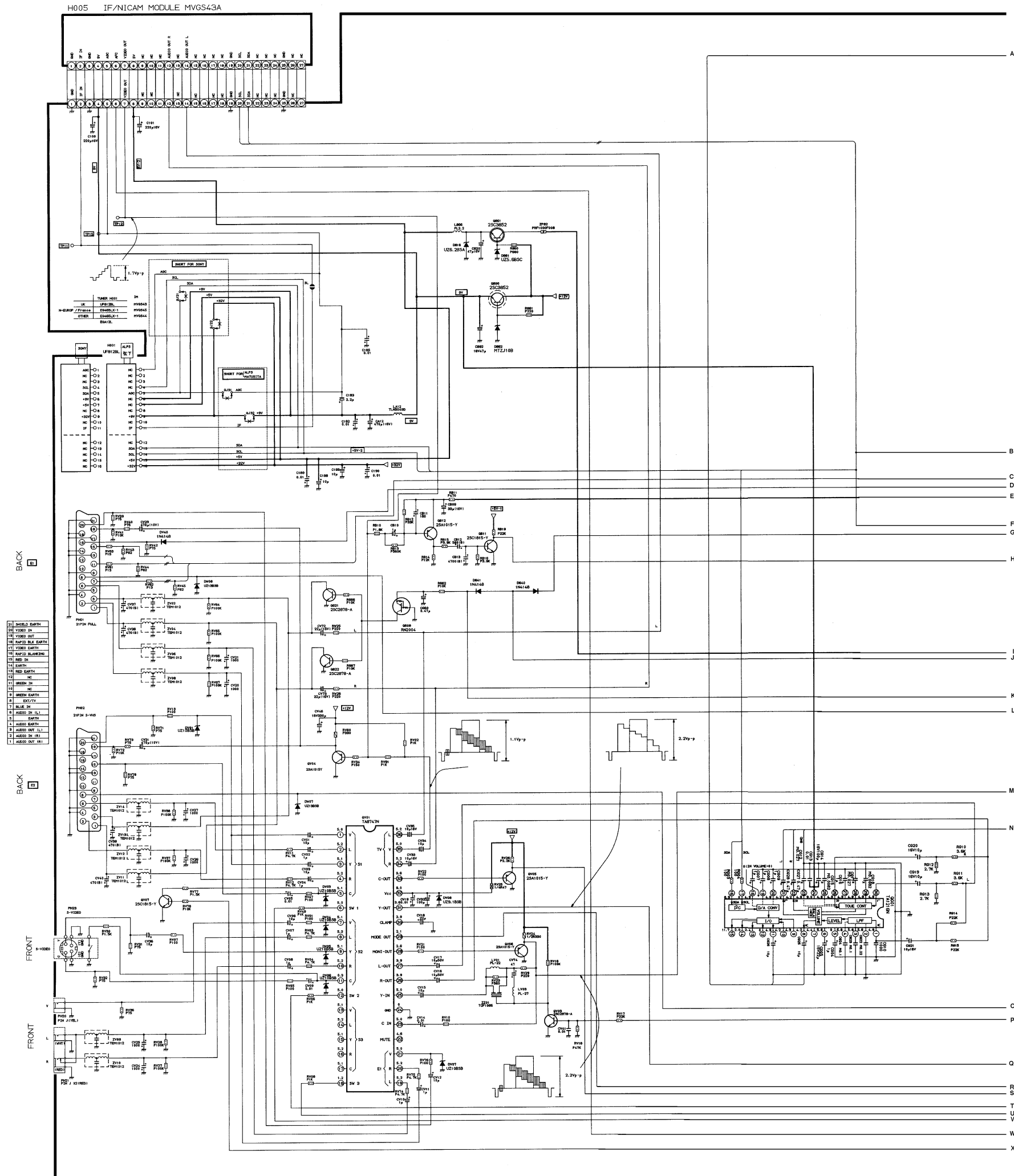
Continued at 1

## Signal Processing (2555 & 2855) Diagram Cont'd

1

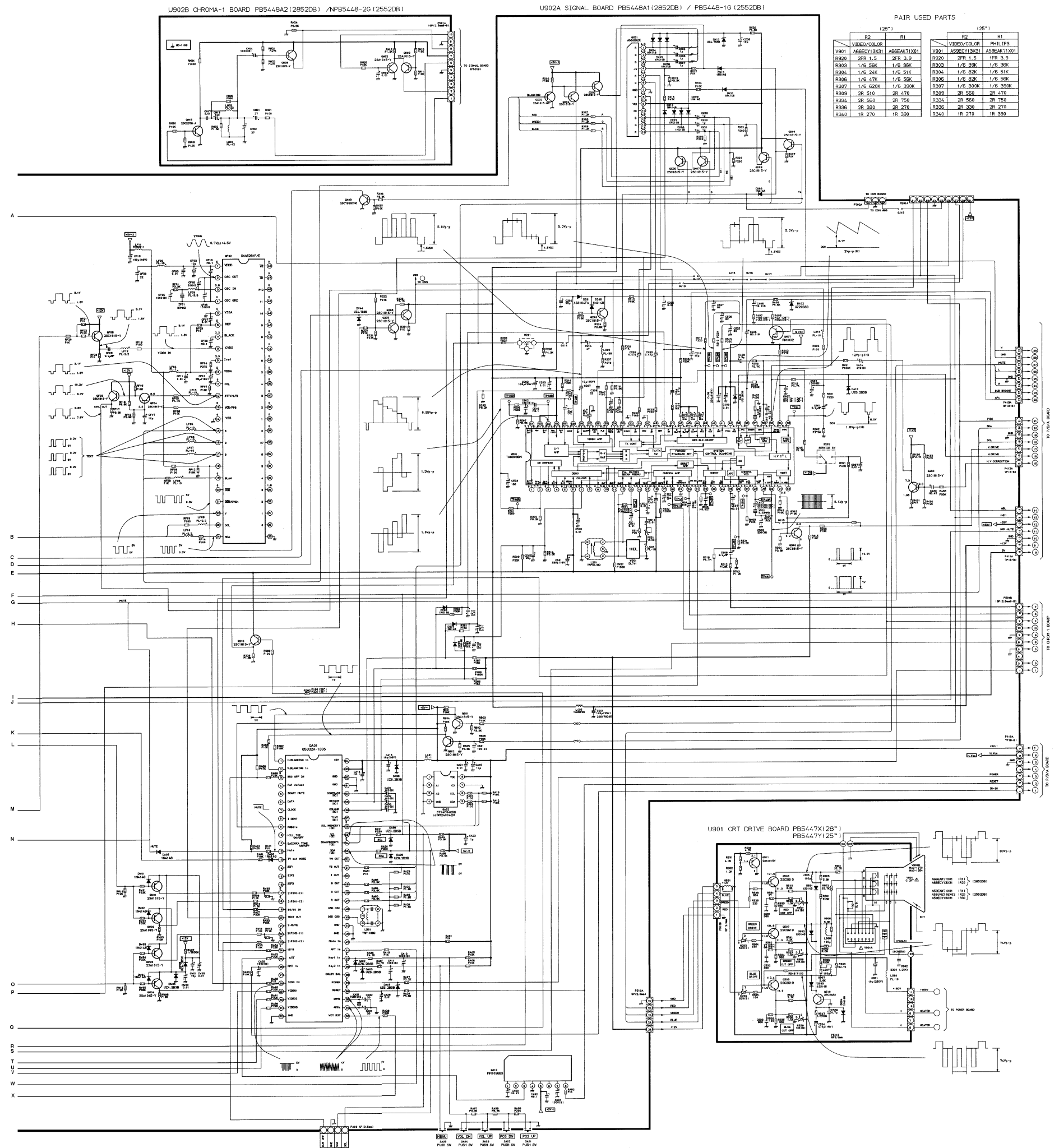


Signal Processing  
(2552 & 2852)  
Diagram



Continued at 2

Signal Processing  
(2552 & 2852)  
Diagram Cont'd

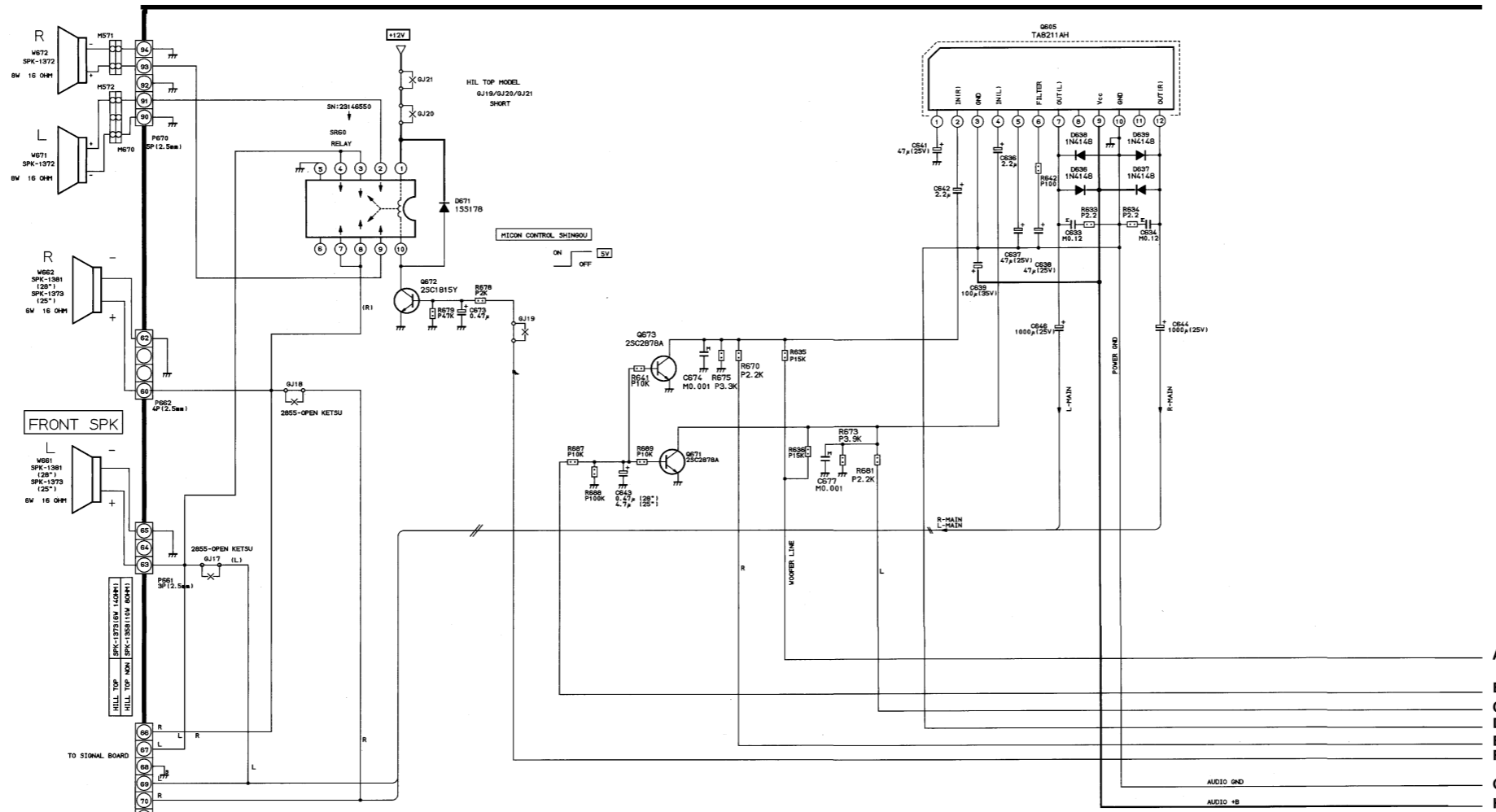


Service Mode / Safety Parts / Safety Instructions / Service Adjustments / Adjustment Procedure / Block Diagram

Signal Processing (2555 & 2855) ... Cont'd / Signal Processing (2552 & 2852) ... Cont'd

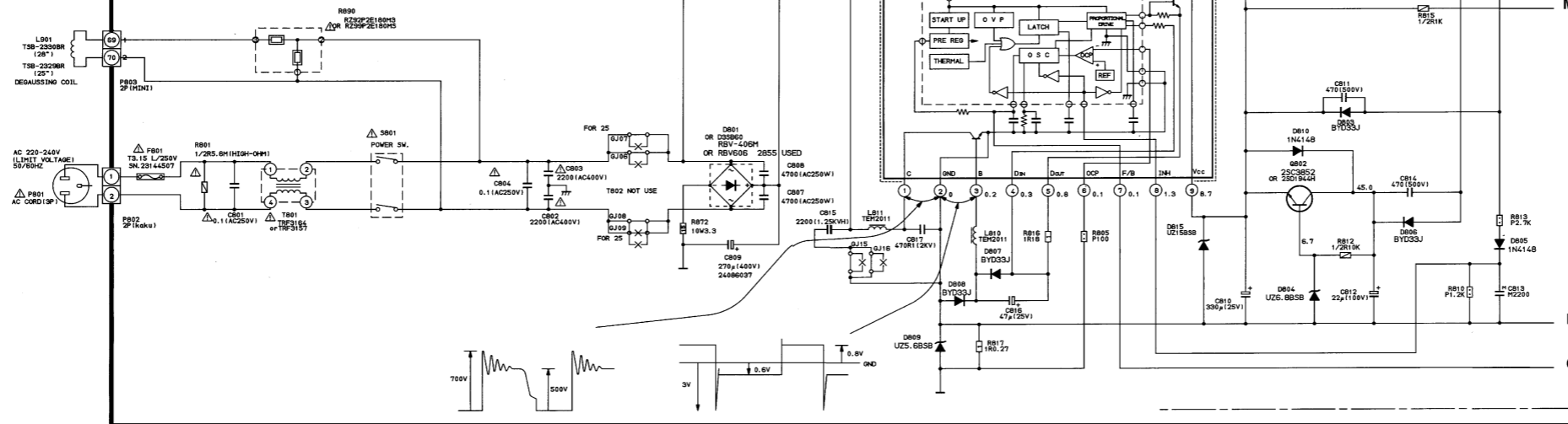
Power Audio Deflection (2555 & 2855) ... Cont'd / Power Audio Deflection (2552 & 2852) ... Cont'd

**Power, Audio & Deflection Diagram (2555 & 2855)**



**PAIR USED PARTS**

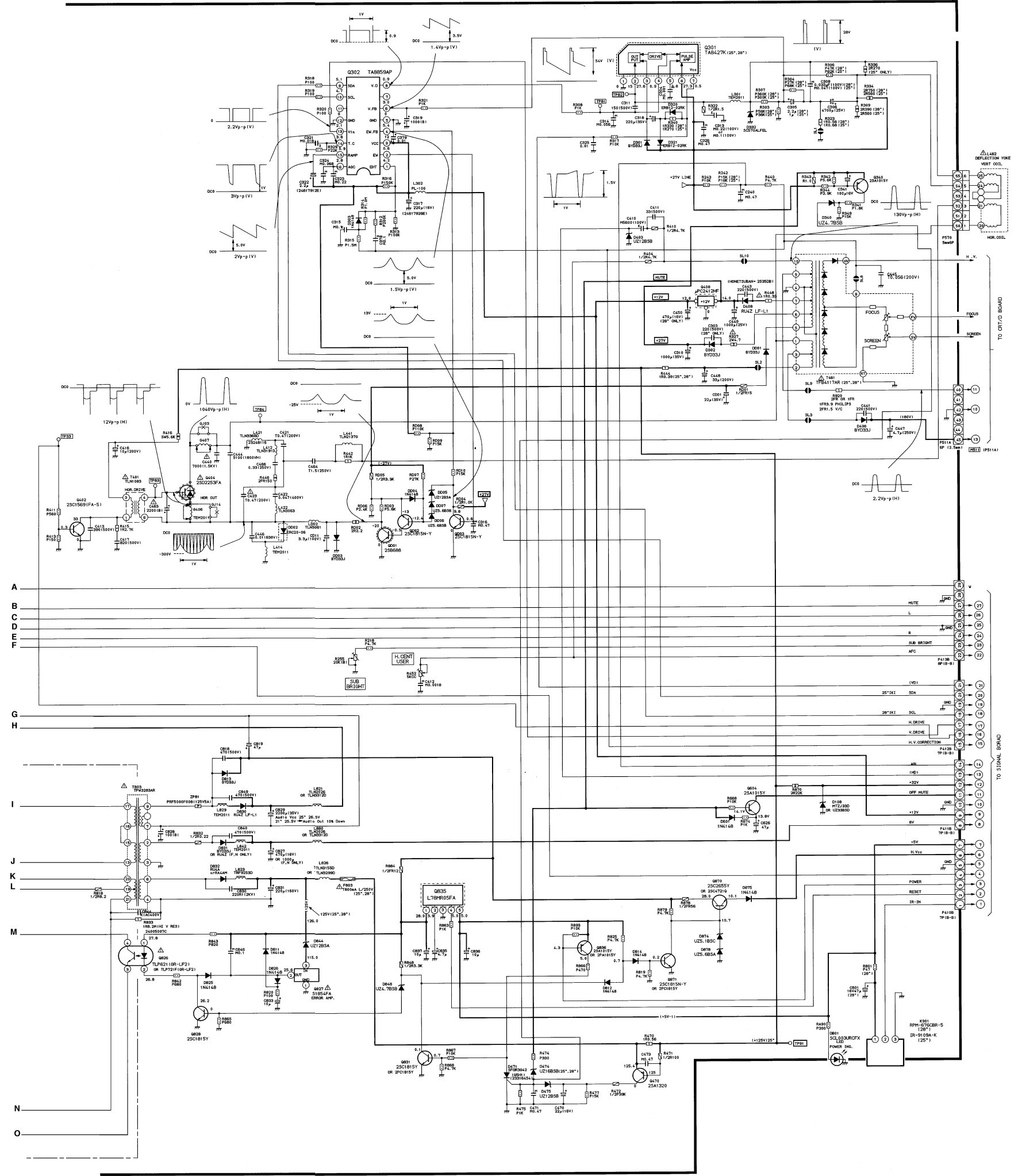
	R2	R1
V901	A59ECY13X31	A59EAK71X01
R920	2FR 1.5	1FR 3.9
R303	1/6 39K	1/6 36K
R304	1/6 82K	1/6 51K
R306	1/6 82K	1/6 56K
R307	1/6 300K	1/6 390K
R309	2R 560	2R 470
R334	2R 560	2R 750
R336	2R 330	2R 270
R340	1R 270	1R 390
R406	1/6 330	1/6 330
R407	1/6 150	1/6 150
C440	7000	7200
CNR	32	44
SDP	21	18



Continued at 3

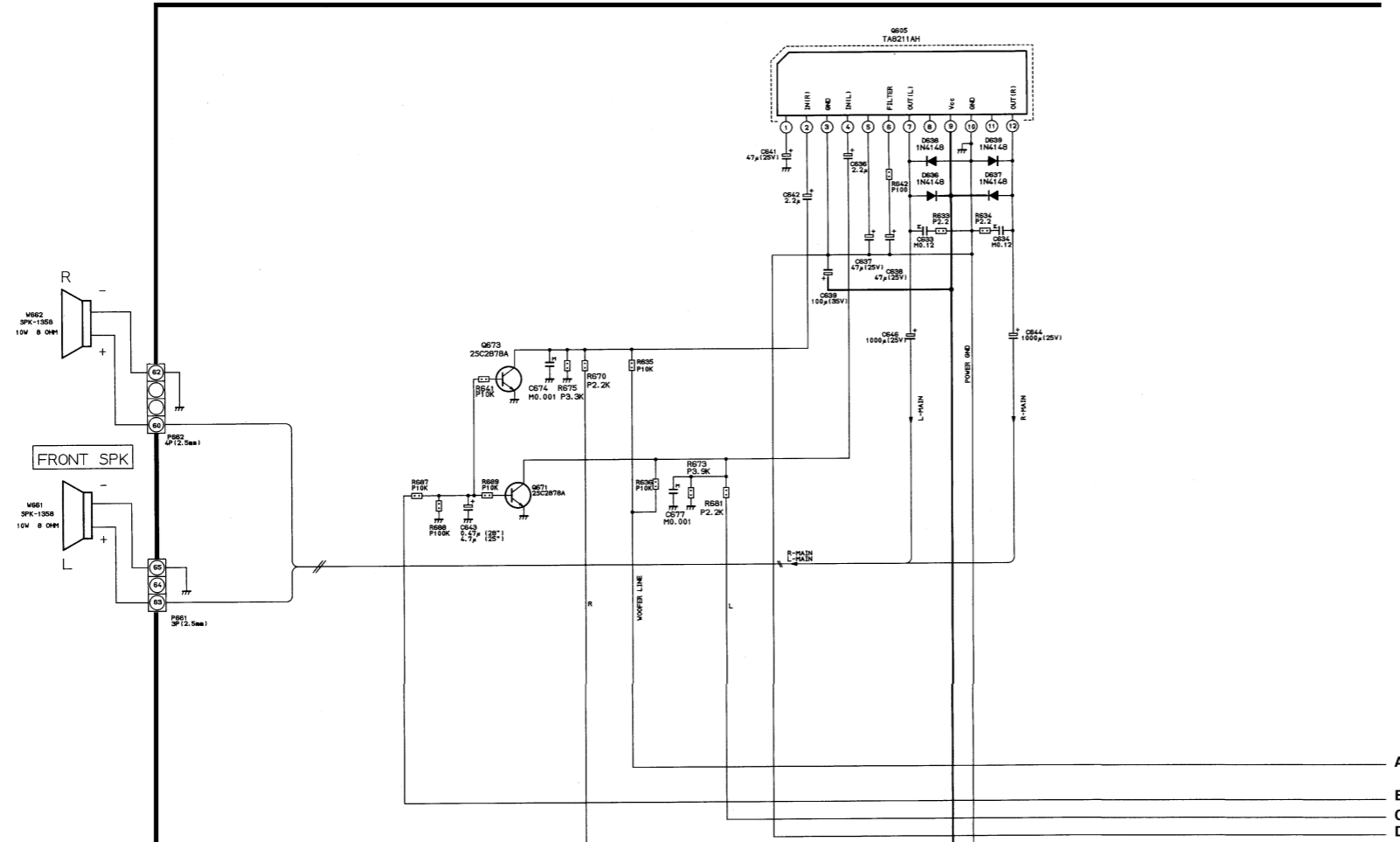
Power, Audio & Deflection Diagram (2555 & 2855) Cont'd

3



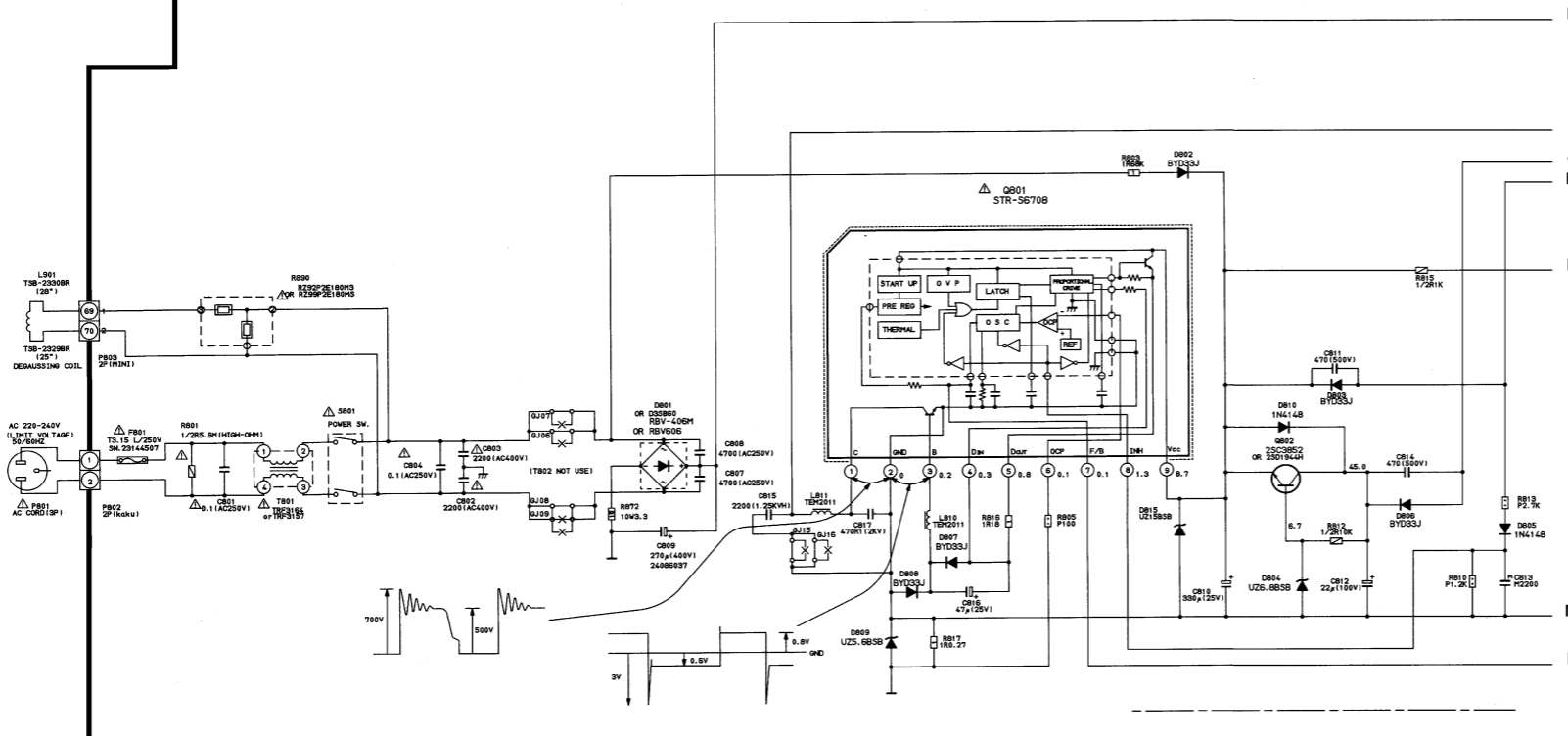


Power, Audio & Deflection Diagram (2552 & 2852)



PAIR USED PARTS

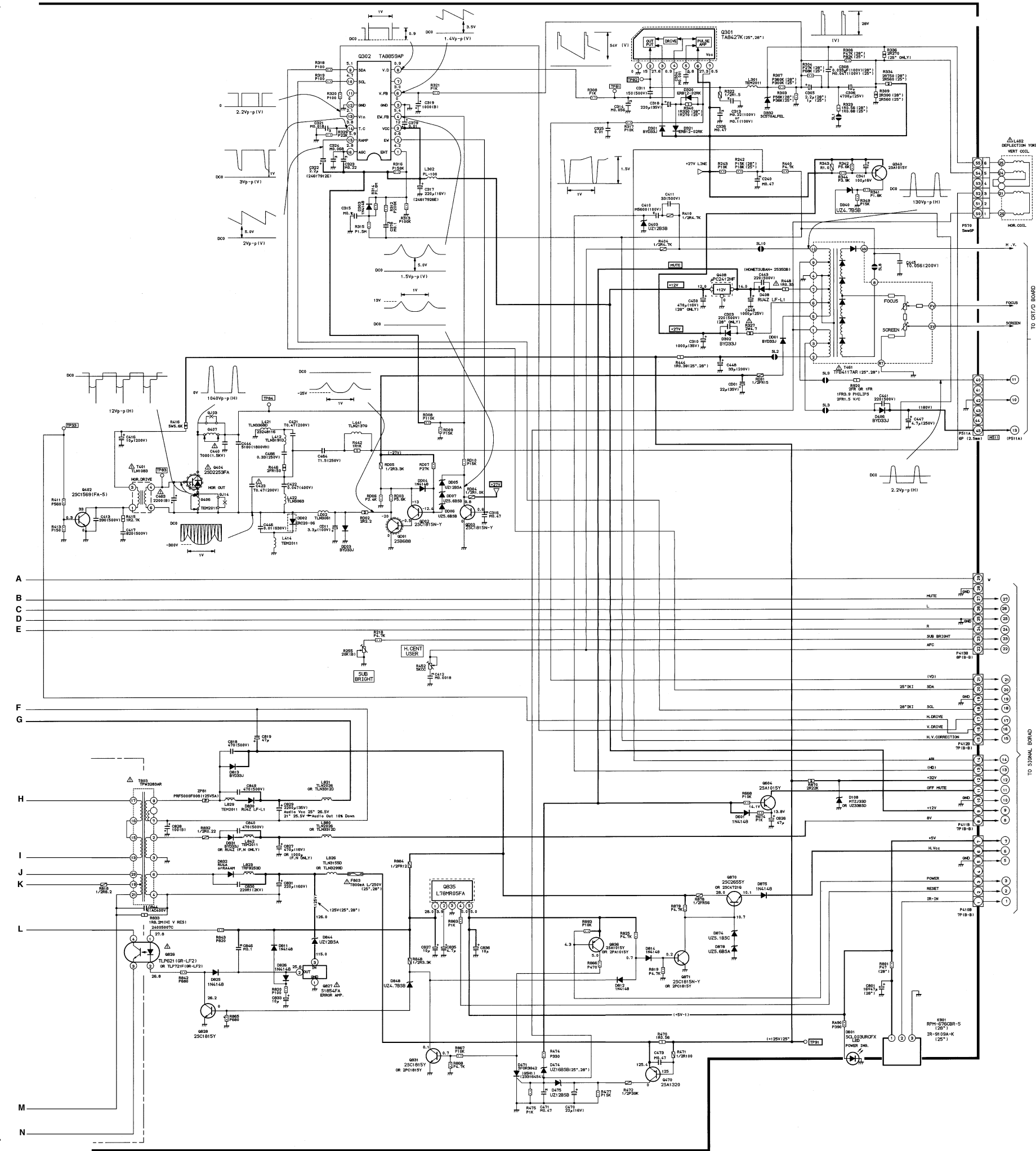
	(28")		(25")	
	R2	R1	R2	R1
V901	A66ECY13X31	A66EAK71X01	A59ECY13X31	A59EAK71X01
R920	2FR 1.5	2FR 3.9	2FR 1.5	1FR 3.9
R303	1/6 56K	1/6 36K	1/6 39K	1/6 36K
R304	1/6 24K	1/6 51K	1/6 82K	1/6 51K
R306	1/6 47K	1/6 56K	1/6 82K	1/6 56K
R307	1/6 620K	1/6 390K	1/6 300K	1/6 390K
R309	2R 510	2R 470	2R 560	2R 470
R334	2R 560	2R 750	2R 560	2R 750
R336	2R 330	2R 270	2R 330	2R 270
R340	1R 270	1R 390	1R 270	1R 390



Continued at 4

Power, Audio & Deflection Diagram (2552 & 2852) Cont'd

4



Service Mode / Safety Parts / Safety Instructions / Service Adjustments / Adjustment Procedure / Block Diagram

Signal Processing (2555 & 2855) ... Cont'd / Signal Processing (2552 & 2852) ... Cont'd

Power Audio Deflection (2555 & 2855) ... Cont'd / Power Audio Deflection (2552 & 2852) ... Cont'd