SFR-3000/YR-3000

SERVICE MANUAL

French Model
SFR-3000

AEP Model
YR-3000

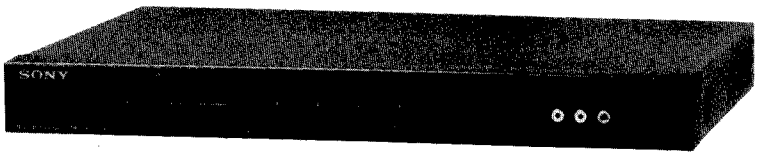


photo : YR-3000

SPECIFICATIONS

Entrées/sorties

ENTREE 1, 2, 3

Entrées Y/C	Mini prise DIN à 4 broches (3)
Entrées vidéo	Prise coaxiale phono (3)
Entrées audio	Prise coaxiale phono (6)

SORTIE ENREGISTREMENT

Sortie Y/C	Mini prise DIN à 4 broches (1)
Entrée vidéo	Prise coaxiale phono (1)
Entrées audio	Prise coaxiale phono (2)

SORTIE TV A 21 broches

Autres caractéristiques

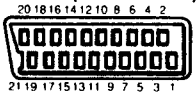
Alimentation	Secteur de 220 V, 50 Hz
Consommation	**13W (SFR-3000)**
	11W (YR-3000)
Dimensions	430 × 55 × 329 mm (l/h/p) (17 × 2 1/4 × 13 pouces)
Poids	Env. 3,4 kg (7 li. 8 on.)

Assignation des broches

Connecteur d'entrée/sortie Y/C

① Signal de chrominance (C)
② Signal de luminance (Y)
③ Masse
④ Masse

Connecteur SORTIE TV (21 broches)



N° de broche	Signal	Niveau du signal
1	Sortie audio B (droite)	0,5 V, 80% de modulation (AM/FM) Moins de 1 kohm
2	Ouvert	
3	Sortie audio A (gauche)	0,5 V, 80% de modulation (AM/FM) Moins de 1 kohm
4	Masse (audio)	
5	Masse (bleu)	
6	Ouvert	
7	Bleu	0,7 V, 75 ohms, positif
8	Sélection de fonction (contrôle AV)	Etat haut: 9,5 à 12 V Etat bas: 0 à 2 V Impédance d'entrée: Plus de 10 kohms Capacitance d'entrée: Moins de 2 µF
9	Masse (vert)	
10	Ouvert	
11	Vert	(Identique à la broche 7)
12	Ouvert	
13	Masse (rouge)	
14	Masse (suppression)	
15	Rouge	(Identique à la broche 7)
16	Suppression	Etat haut: 1 à 3 V Etat bas: 0 à 0,4 V 75 ohms
17	Masse (sortie vidéo)	
18	Ouvert	
19	Sortie vidéo	1 Vc-c, 75 ohms, positif
20	Ouvert	
21	Masse commune (fiche, blindage)	

La conception et les spécifications sont modifiables sans préavis.

MICROFILM

S-RGB TRANSCODEUR

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

TABLE OF CONTENTS

SECTION 1
GENERAL

This section is extracted from SFR-3000 instruction manual

Avertissement

Pour éviter tout risque d'incendie ou d'électrocution, ne pas exposer l'appareil à la pluie ou à l'humidité.

Pour éviter tout risque d'électrocution, ne pas ouvrir le coffret et confier l'entretien de l'appareil uniquement à un personnel qualifié.

Caractéristiques

(SFR-3000 MODEL)

Le SFR-3000 convertit le signal d'entrée PAL Y/C en signaux RVB et les envoie à un moniteur couleur avec un minimum de perte de la qualité d'image. Il peut aussi convertir un signal couleur d'entrée PAL en un signal couleur SECAM à sortir du connecteur SORTIE ENREGISTREMENT. Cet appareil permet de raccorder et de choisir l'entrée de trois appareils AV stéréo dont les images peuvent être visionnées sur le moniteur couleur et enregistrées sur un magnétoscope raccordé à cet appareil.

(YR-3000 MODEL)

The YR-3000 transcoder converts the input S VIDEO signal into RGB signals and outputs them to a colour monitor with minimum picture quality loss. The unit allows connection and input selection of three stereo AV equipments to be watched on the colour monitor and be recorded with a video cassette recorder connected to this unit.

Précautions

Sécurité

- Faire fonctionner l'appareil sur courant alternatif de 220 V.
- Si un liquide ou un solide venait à s'infiltrer à l'intérieur de l'appareil, débrancher celui-ci et le faire examiner par un technicien qualifié avant de le remettre en service.
- Débrancher l'appareil de la prise murale si l'on prévoit de ne pas l'utiliser pendant longtemps. A cet effet, saisir la fiche et ne jamais tirer sur le cordon proprement dit.

Installation

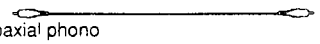
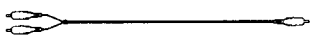
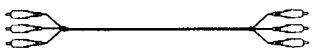
- Ne pas placer l'appareil à proximité d'une source de chaleur, comme un radiateur ou une bouche d'air chaud, au rayonnement solaire direct, à la poussière dense, à des vibrations mécaniques, ou à des chocs.
- Une bonne ventilation est essentielle pour empêcher toute surchauffe interne de l'appareil. Placer l'appareil dans un endroit bien aéré. Ne pas poser l'appareil sur une surface molle, comme un tapis, qui risque de boucher les orifices de ventilation.

Entretien de l'appareil

Nettoyer le coffret, les panneaux et les commandes à l'aide d'un chiffon doux légèrement humidifié d'une solution savonneuse douce. N'utiliser aucun type de tampon abrasif, de poudre à récurer ou de solvant comme l'alcool ou l'essence.

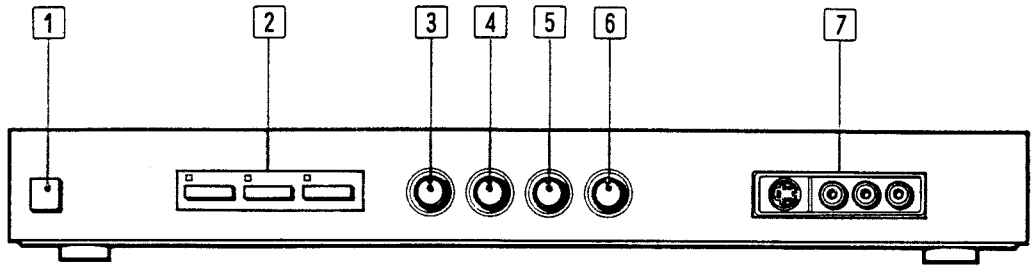
Cordons de raccordement

Utiliser les cordons adéquats en fonction du type des prises et de la longueur requise.

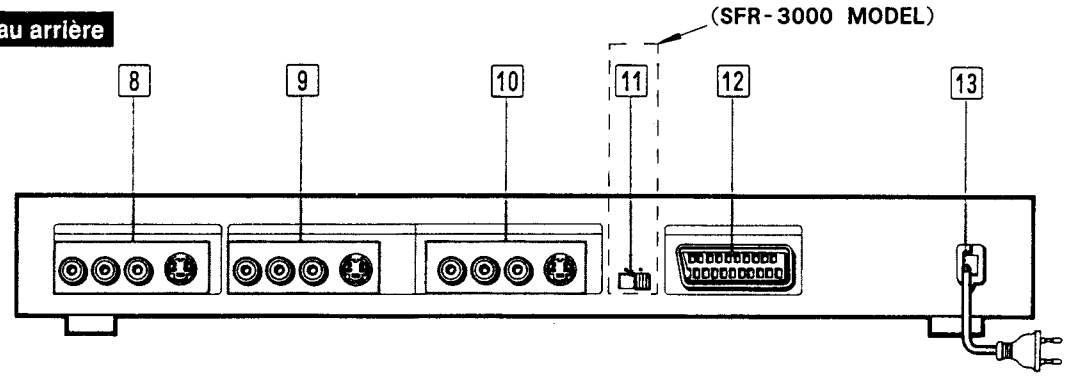
	Modèle	Longueur	Aspect
Cordon vidéo	VMC-1S -3S	1,2 m 3 m	 Coaxial phono
	SY-15V -30V	1,5 m 3 m	Connecteur S
Cordon audio	RK-C74 -C150	1,5 m 3 m	
	RK-C72 -C71	1 m 3 m	
Cordon audio/vidéo	VMC-810S -820S	1 m 2 m	
	VMC-910MS -920MS	1 m 2 m	
	VMC-2121F	1,5 m	 21 broches

Nomenclature

Panneau avant



Panneau arrière



1 Interrupteur d'alimentation (ALIMENTATION)

2 Interrupteurs et témoins de sélection d'entrée (SELECTEUR D'ENTREES)
Choisissent le signal à entrer.
1: pour le signal raccordé aux connecteurs ENTREE 1
2: pour le signal raccordé aux connecteurs ENTREE 2
3: pour le signal raccordé aux connecteurs ENTREE 3

3 Réglage de netteté (RESOLUTION)
Le tourner vers MAX pour obtenir une image plus nette ou vers MIN pour obtenir une image plus douce. Laisser normalement ce réglage sur sa position centrale.

4 Réglage de luminosité (LUMIERE)
Le tourner vers MAX pour éclaircir l'image, ou vers MIN pour l'assombrir. Laisser normalement ce réglage sur sa position centrale.

5 Réglage de couleur (COULEUR)
Le tourner vers MAX pour augmenter l'intensité des couleurs ou vers MIN pour la diminuer. Laisser normalement ce réglage sur sa position centrale.

6 Réglage de l'image (CONTRASTE)
Le tourner vers MAX pour augmenter le contraste de l'image ou vers MIN pour le diminuer. Laisser normalement ce réglage sur sa position centrale.

7 Connecteurs d'entrée 1 (ENTREE 1)
8 Connecteurs d'entrée 3 (ENTREE 3)
9 Connecteurs d'entrée 2 (ENTREE 2)
Les brancher aux sorties vidéo/audio de la source d'entrée.
- Lorsque les fiches sont insérées simultanément dans le connecteur Y/C et la prise VIDEO, celle-ci est automatiquement débranchée.

10 Connecteurs de sortie d'enregistrement (SORTIE ENREGISTREMENT)
Les raccorder aux entrées vidéo/audio d'un magnétoscope.
- Le signal entré aux connecteurs ENTREE 2 ne peuvent sortir des connecteurs SORTIE ENREGISTREMENT même si l'interrupteur SELECTEUR D'ENTREES "2" est enclenché.

12 Connecteur de sortie de télévision (SORTIE TV) (21 broches)
Le relier à l'entrée analogique RVB d'un moniteur couleur. Quand le moniteur couleur est branché sur ce connecteur, placer le sélecteur d'entrée du moniteur couleur sur RVB.

13 Cordon d'alimentation

Remarques sur les réglages de l'image
- Les réglages RESOLUTION, LUMIERE, COULEUR et CONTRASTE n'agissent que sur le signal sorti du connecteur SORTIE TV.
- Quand le moniteur couleur est raccordé au connecteur SORTIE TV et que cet appareil est mis sous tension, les réglages de l'image du moniteur couleur deviennent inopérants. Ajuster l'image avec les réglages de cet appareil.

(SFR-3000 MODEL)

11 Sélecteur PAL/SECAM
Lorsque le signal PAL est entré, permet de choisir le système couleur du signal à sortir du connecteur SORTIE ENREGISTREMENT, à savoir, PAL ou SECAM.

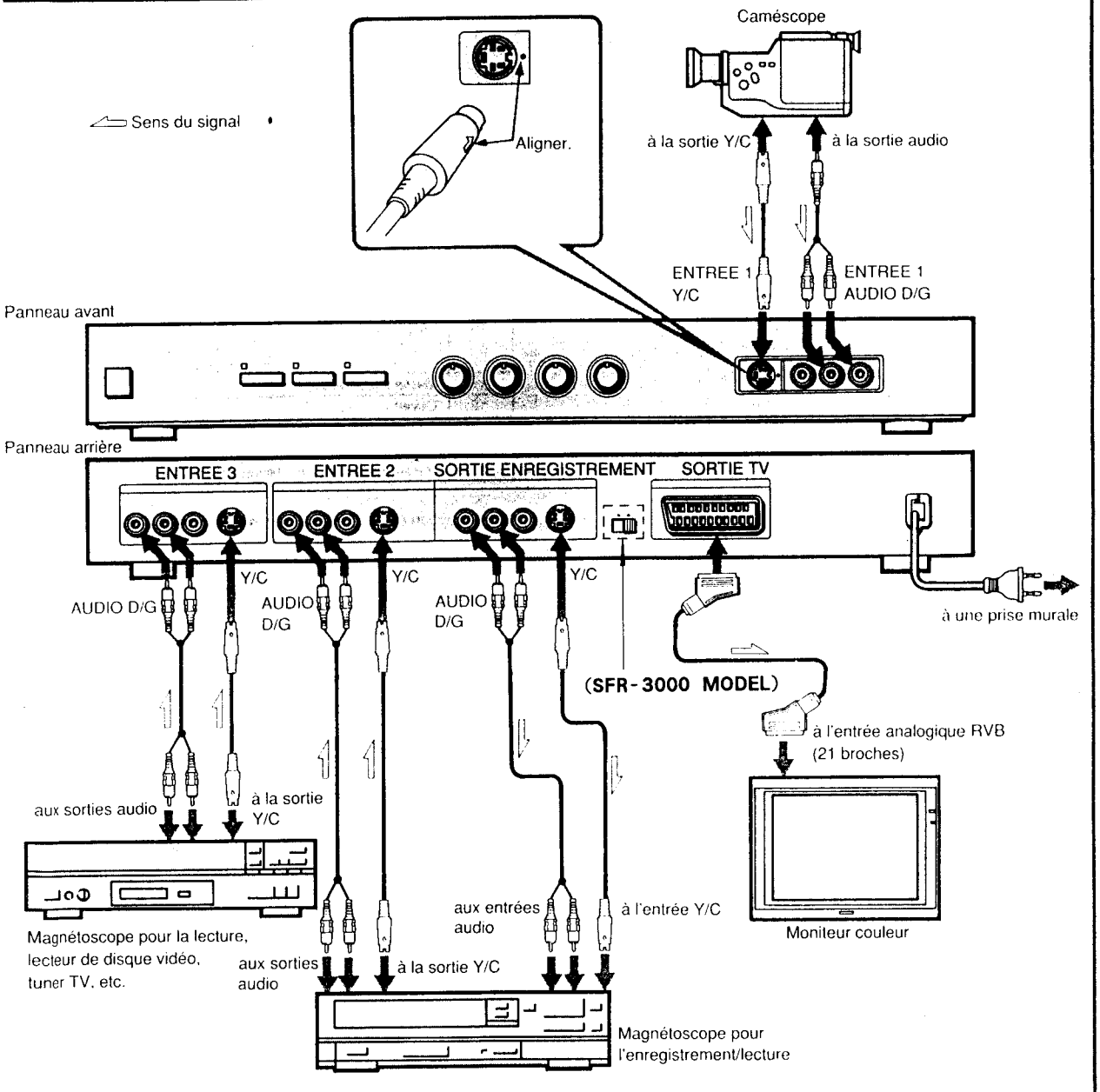
Lorsque le signal vidéo SECAM est entré à la prise vidéo ENTREE 1 ou 3
- Le signal vidéo SECAM est sorti par la prise vidéo SORTIE ENREGISTREMENT, sans tenir compte de la position du sélecteur PAL/SECAM. Aucun signal n'est sorti du connecteur Y/C.
- La sortie du signal de couleur normale du connecteur SORTIE TV n'est pas garantie.

Connexions

Remarques sur les raccordements

- Avant de procéder aux raccordements, veiller à mettre tous les appareils hors tension.
- Insérer les fiches à fond, car des connexions relâchées risquent de provoquer un ronflement et du bruit.
- Pour débrancher le cordon, saisir la fiche et ne jamais tirer sur le cordon proprement dit.
- Pour éviter tout parasitage, mettre l'appareil inutilisé hors tension.
- Si l'image ou le son est parasité, écarter les appareils l'un de l'autre.
- Pour les détails sur les raccordements, se reporter au mode d'emploi de chaque appareil.
- En ce qui concerne les cordons de raccordement, voir en quatrième de couverture.

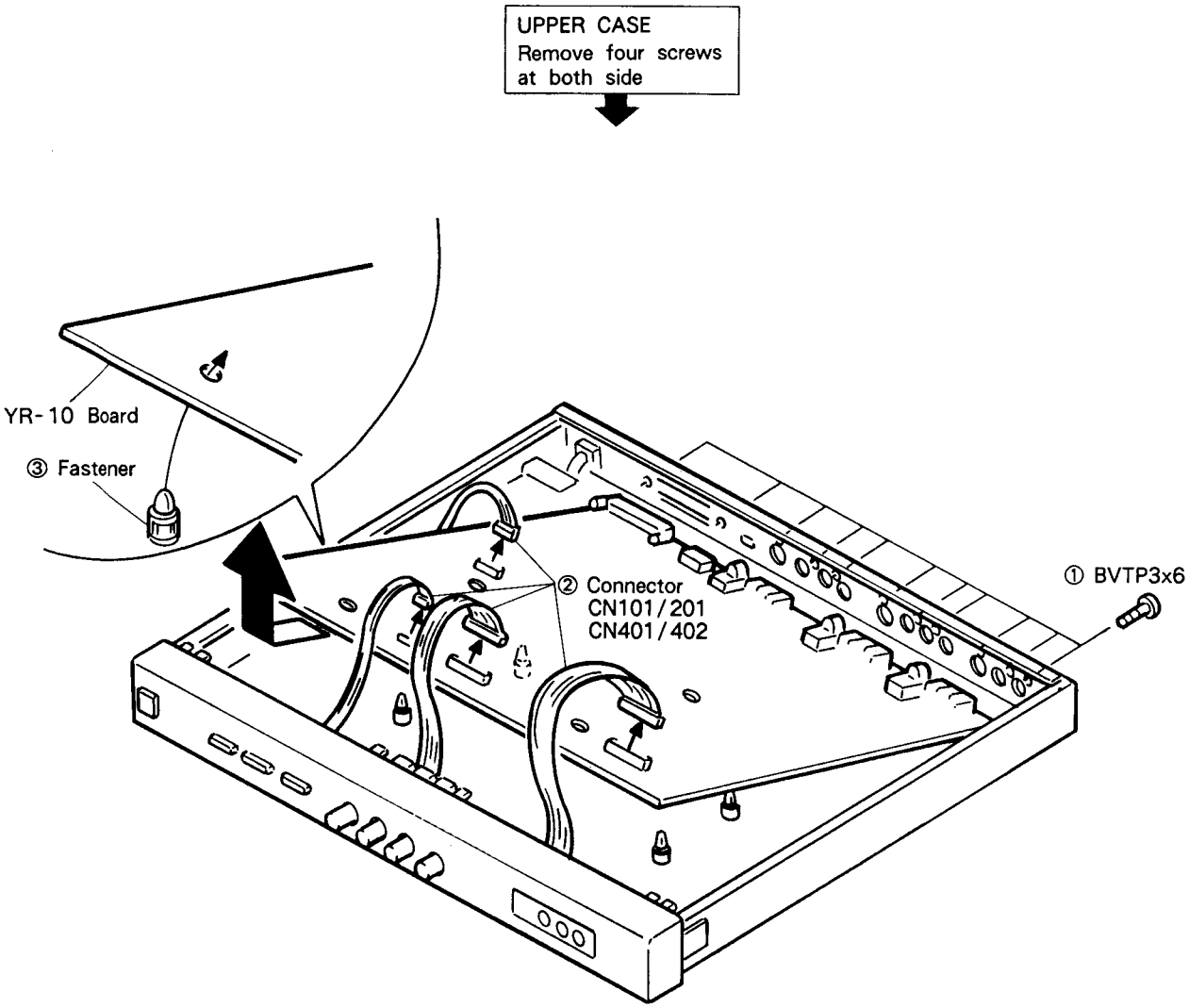
Exemples de connexion



- Si l'appareil à raccorder ne possède pas de connecteur Y/C, effectuer le raccordement par les prises VIDEO de type coaxial phono, à l'aide d'un cordon de raccordement vidéo munis de fiches coaxiales phono.

SECTION 2
DISASSEMBLY

YR-10 BORAD



SECTION 3
THEORY OF OPERATION

3-1. INPUT SELECTOR BLOCK

There are a total of three input systems: one input system on the front panel (INPUT 1) for video signals, Y/C signals, audio L/R signals, and two input systems on the rear panel (INPUT 2, 3). One input system outputs a total of three input systems is selected by the INPUT selector switch on the front panel.

As for composite video input and audio L/R input signals, one input signal out of the three can be selected using selector IC103.

IC103 input/output pin

	input		output
composite video	INPUT 1 : pin-9		pin-17
	INPUT 2 : pin-5		
	INPUT 3 : pin-7		
audio	L-ch	INPUT 1 : pin-22	pin-1
		INPUT 2 : pin-20	
		INPUT 3 : pin-21	
	R-ch	INPUT 1 : pin-15	pin-11
		INPUT 2 : pin-13	
		INPUT 3 : pin-14	

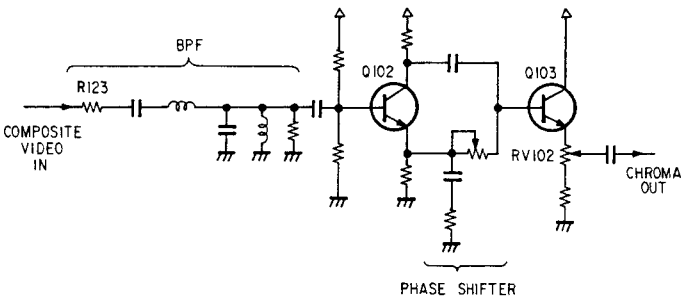
IC103 control (for input selection) is driven by two Low-High signals that are supplied from the INPUT selector switch on the front panel. Possible combinations of these signals are shown in the chart below.

INPUT select switch	pin-4	pin-6
INPUT 1	H	H
INPUT 2	H	L
INPUT 3	L	H

The audio signals that are supplied from pin-1 and pin-11 are buffered by Q618 and Q621 respectively, one signal passing through the output muting relay RY601 and fed to the AV connector pins-1/-3, while the other signal passes through the output muting relay RY602 and is fed to the AV connector CNJ601.

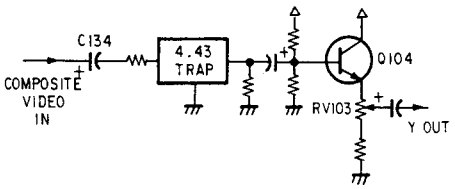
3-2. Y/C SEPARATOR BLOCK

The composite video signal that is supplied from IC103 pin-17, is sent to the Y/C separator block and to the output selector (IC602 pin-3).



Removing Y

The chroma signal passes through Q102/Q103, having its amplitude adjusted to the same level as that of the other Y/C input chroma level, with adjustment RV102, and sent to IC101 pin-9 (chroma selector).



Removing Chroma

As for the Y signal system, the Y signal is generated by removing the chroma component with a 4.43 MHz trap (FL101), buffered by Q104, amplitude-adjusted with adjustment RV103 to the same level as other Y/C input's Y signal, and then sent to IC102 pin-9 (Y selector). Each signal (Y and chroma) that is separated by the Y/C separator is sent to a corresponding selector (Y: IC102, chroma: IC101) in the same manner as other Y/C input signals, and then sent to subsequent circuits.

When generating control signals using IC101/IC102, the Y/C input has priority over composite video input.

Insertion of the Y/C connector is detected by INPUT selector switch on the front panel that generates the Low-High signal. The Low-High signal tells whether the Y/C connector is connected or not, and is converted (IC201) as shown below. It also drives the input selector IC.

IC102 input/output pins

	input	output
Y signal system	INPUT 1 : pin-3	pin-17
	INPUT 2 : pin-5	
	INPUT 3 : pin-7	
	Y (composite video) : pin-9	

IC101 input/output pins

	input	output
chroma signal system	INPUT 1 : pin-3	pin-17
	INPUT 2 : pin-7	
	INPUT 3 : pin-5	
	C (composite video) : pin-9	

Control signal for IC101/IC102

input selector	Y/C ⁄ V	pin-4	pin-6
INPUT 1	Y/C	L	L
	V	H	H
INPUT 2	Y/C	L	H
	V	H	H
INPUT 3	Y/C	H	L
	V	H	H

3-3. COLOR DIFFERENCE DECODER BLOCK

The Y and chroma signals that are selected by the input selector are sent to the output selector block and the color difference decoder block.
IC303 decodes chroma signals to generate the color difference signals (R-Y, B-Y). The chroma signal is input to IC303 pin-5 while the Y signal is input to IC303 pin-27.
The chroma input signal is amplitude-adjusted (RV306) by VCA, output once from pin-3, separated of its chroma signal by the UV separator circuit Q304 /DL301/T301, again input via pins-15/-17 where the chroma signal is converted into the color difference signals (R-Y, B-Y) by the IC's internal decoder circuit, and then output from pin-21 (R-Y) and pin-20 (B-Y).
Since this type of IC always requires a PAL ID pulse, it has an external AFC circuit. Due to this AFC circuit, color phase inversion will not occur even when input signal is pseudo VD, etc.

3-4. AFC BLOCK

The Y signal that is input to IC303 pin-5, passes through the sync separator circuit, so that separated sync is output from IC303 pin-30. The separated sync is sent to IC302 pin-10 output through pin-15 at a constant frequency locked to fH = 15.625 kHz which is generated by a loop consisting of IC internal oscillator, phase detector, external Q305.
When an input signal is present at pin-10, the frequency and phase of the internal oscillator is locked to the fH of the input signal. When the input signal is not supplied, the fH can also be obtained at a free running state.
Output (pin-15) of this AFC is sent to IC305 pin-5 where its pulse width is shaped, output via pin-7 for input to IC303 pin-26 as the HD pulse to generate the ID pulse.

(only in SFR-3000)
Output of this AFC is also sent to IC305 pin-11 and output from pin-10 so that it is used as the HD pulse for SECAM chroma encoding.

The SYNC OUT signal that is supplied from IC302 pin-8 is sent to IC304 pin-4, passes through pin-6 to pin-11 to pin-10 where VD is generated as output. The output VD is sent to the OR logic gate with IC305 pin-7 output to generate the COMPOSITE BLANKING that is returned to IC303 pin-25. The COMPOSITE BLANKING is phase-inverted (Q306) and is used as the BLANKING signal for the RGB decoder.
The SYNC OUT is sent to IC301 pin-4, passes through pin-6 to pin-11 to pin-10 and output where the clamp pulse for the RGB decoder is generated.

(only SFR-3000)
The VD output of IC304 pin-9 is used as the VD signal for the SECAM chroma encoder, too. The VD output is sent to the OR logic gate with the IC305 pin-10 output HD that generates the COMPOSITE BLANKING signal.

3-5. RGB DECODER BLOCK

The R-Y and B-Y signals that are supplied from the color difference encoder IC are passed through low-pass filters to remove demodulating carrier signals, the buffered (R-Y: Q417/Q416, B-Y: Q419) and sent to the RGB decoder (IC401).

R-Y: pin-5
B-Y: pin-7

The Y signal that is selected by the input selector receives additional delay (Q422/DL401/Q420) to compensate for the delay due to the above described low-pass filters, and sent to the decoder IC401 pin-7. This Y signal is at the same time passed through the equalizer and then to the decoder IC401 pin-10 where it is gain-adjusted (the gain is controlled by the DC voltage at pin-24 and pin-24 voltage is controlled by the SHARPNESS control on the front panel). It is then output via pin-8 so that it is mixed with the original Y signal to adjust frequency response characteristics in the 2 MHz to 4 MHz range.
The color difference signal and Y signal that are input to IC401 pass through the COLOR level control block, the PICTURE level control block and the BRIGHT level control block to generate the RGB signals. These are then output via pin-19 (RED), pin-17 (GREEN) and pin-15 (BLUE).
The COLOR level control is determined by the DC voltage at pin-26 as is SHARPNESS.
The BRIGHT level control is determined by the DC voltage at pin-23 as is SHARPNESS.
The PICTURE level control is determined by the DC voltage at pin-27 as is SHARPNESS.

The Green (blue and red) signal that is supplied from pin-17 (-15, -19) has a blanking signal of too large an amplitude such that the blanking pulse amplitude is limited by the limiters Q409/Q410 (Q414/Q415, Q404/Q405). In order to unify the gain of the blanking levels of the RGB outputs, the red and blue output amplitudes can be adjusted using controls RV402 and RV403.

After passing through the limiter, the green (blue, red) signal is buffered by Q407/Q406 (Q412/Q411, Q402/Q401), and sent out to the 21-pin AV connector pin-11 (pin-7, pin-15).

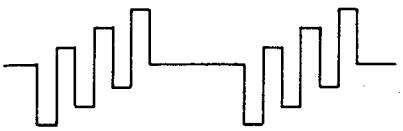
3-6. SECAM CHROMA ENCODER BLOCK (ONLY SFR-3000)

After passing through the low-pass filter to remove demodulating carriers, the color difference signal R-Y is phase-inverted by Q417 and buffered by Q507. The B-Y is phase-inverted by Q417 and buffered by Q418. They are sent to the SECAM chroma encoder IC501 pin-8 and pin-10.
During this circuit process, SECAM white balance is corrected by potentiometers RV501 and RV502.

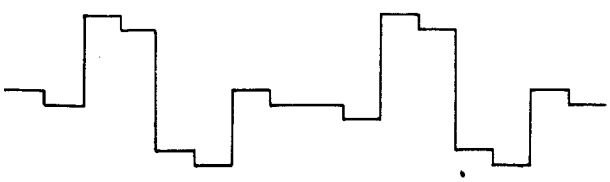
SECAM Encoder

The color difference signals that are input via pin-8 and pin-10, are alternatively switched every horizontal period by an internal switch to generate the line sequential color difference signal that is output once through pin-6. The line sequential color difference signal passes through the equalizer and then input again via pin-23. It is fm modulated and again output from pin-3. It passes through the bell filter and is input again via pin-3 where blanking signals are added before being output from pin-1.

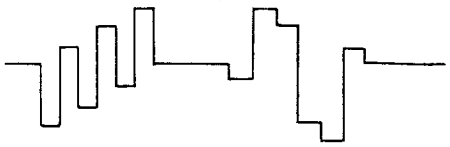
pin-10



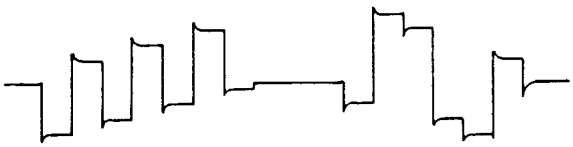
pin-8



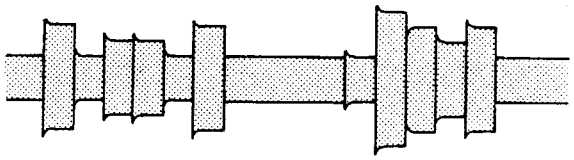
pin-6



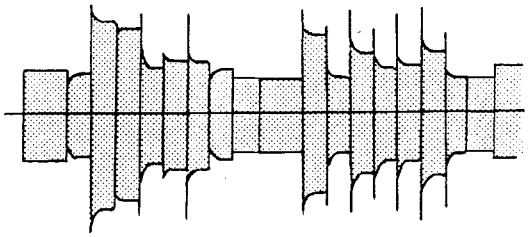
pin-23



pin-3



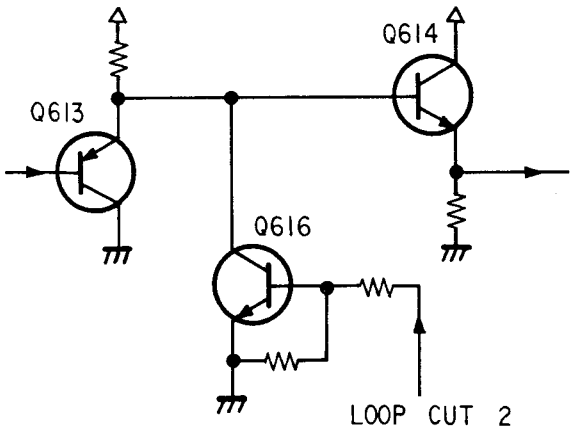
pin-1



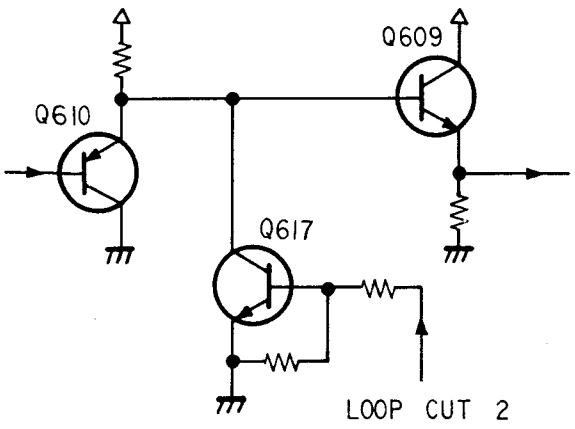
IC502 is a control IC for the SECAM encoder, forming PLL as connected with IC501. Output frequency is locked by crystal X501 so that the center frequency of the fm signal output from IC501 pin-3 is maintained at 4.40 MHz.
The chroma signal that is output from IC501 pin-1, is amplified by Q505/Q506/Q504 and sent to the chroma select switch IC503 pin-1. The PAL chroma signal that is selected using the input selector is sent to IC503 pin-3, and is selected according to the PAL/SECAM mode and then fed to pin-7 to be sent to next circuit.
The Y signal that is selected by the input selector is buffered by Q508 and sent to the Y select switch IC504 pin-3 where in SECAM mode it is replaced by the Y signal whose timing is adjusted to match the chroma encode delay (DL501 to Q509 to IC504 pin-1). It is then output through pin-7.

3-7. OUTPUT SELECTOR Y/C DRIVER BLOCK

The Y signal that is selected by the input selector (YR-3000), or that output from IC504 pin-7 (SFR-3000), is sent to the output muting circuit, to the drive circuit and then to the Y/C mix circuit.
The muting circuit consists of Q613/Q616/Q614 which cut off Q613/Q614 when the LOOP CUT 2 signal is high. This is done in order to mute the signal to be sent to driver IC603.



Though IC603 is a dual-type video amplifier, only half (1/2) is used to suppress cross-talk as much as possible. The input signal is supplied to pin-5 and the output signal is sent to pin-7. Amplification gain can be adjusted in the range of + (6 ± α) dB with RV604.
The chroma signal that is selected by the input selector (YR-3000), or that output from IC503 pin-7 (SFR-3000), is sent to the output muting circuit to drive circuit and then to the Y/C mix circuit.
The muting circuit of the chroma signal has the same circuit cinfiguration as that of the Y signal which cuts off Q609/Q610 when the LOOP CUT 2 signal is high in order to mute the signal.



In IC602, amplification gain can also be adjusted by RV605 in the same manner as IC603 (the Y signal drive amplifier).
The chroma signal and the Y signal that are supplied from IC602 and IC603 (pin-7 respectively) are output via Y/C connector CN603.

3-8. Y/C MIX BLOCK, VIDEO DRIVER

The Y and chroma signals that are selected by the input selector (YR-3000), or those output (Y signal from IC504 pin-7 and chroma signal IC503 pin-7 (SFR-3000)), are buffered by Q607/Q608 and Y/C-mixed by Q606. The Y/C mixing ratio is determined by potentiometer RV602 while its amplification gain is adjusted using RV603. The Y/C-mixed signal is buffered by Q605 and sent to the video output selector switch IC602 pin-1. IC602 pin-3 receives the video input signal that is selected by the input selector, and the video signal is sent to the next circuit via pin-7.
Pin-1 input and pin-3 input are switch-selected to pass the signal THROUGH. This is done in order to suppress signal deterioration as much as possible because the Y/C signal is input to pin-1 which provides the composite video signal output which is in turn input to pin-3, too.
Pin-7 output has two feeds. One feed is sent to the line driver IC601 pin-5 and is sent from pin-7 to the AV connector pin-19. The other feed is passed through the muting circuit consisting of Q604/Q615/Q603, through IC601 (input pin-3, output pin-1), and sent to REC OUT connector CNJ601.
The same type of muting circuit is used for the Y signal circuit and the chroma signal circuit. It is designed so that mute is energized when the LOOP CUT 1 signal is high.

3-9. PAL IDENTIFICATION, LOOP CUT LOGIC BLOCK

Identification of whether the input composite video signal or the Y/C signal is PAL system or not is performed by APC circuit of IC303.
As the APC control voltage is supplied to IC303 pin-23, this control voltage is compared with the reference voltage by comparator IC306. When the input signal is PAL, low output is present at IC306 pin-7. When the input signal is not PAL, high output is present at IC306 pin-7.
The operation of logic control consisting of IC202 and IC203 is shown below.

YR-3000, SFR-3000 (PAL MODE)

			OUTPUT CONTROL MODE			
			LOOP CUT 1	LOOP CUT 2	S/V CONT	P/S CONT
INPUT 1	Y/C IN	PAL	L	L	L	H
		$\overline{\text{PAL}}$	L	L	L	H
	V IN	PAL	L	L	H	H
		$\overline{\text{PAL}}$	L	H	H	H
INPUT 2	Y/C IN	PAL	H	H	L	H
		$\overline{\text{PAL}}$	H	H	L	H
	V IN	PAL	H	H	H	H
		$\overline{\text{PAL}}$	H	H	H	H
INPUT 3	Y/C IN	PAL	L	L	L	H
		$\overline{\text{PAL}}$	L	L	L	H
	V IN	PAL	L	L	H	H
		$\overline{\text{PAL}}$	L	H	H	H

$\overline{\text{PAL}}$ indicates signals that are not PAL signals.

(SFR-3000)

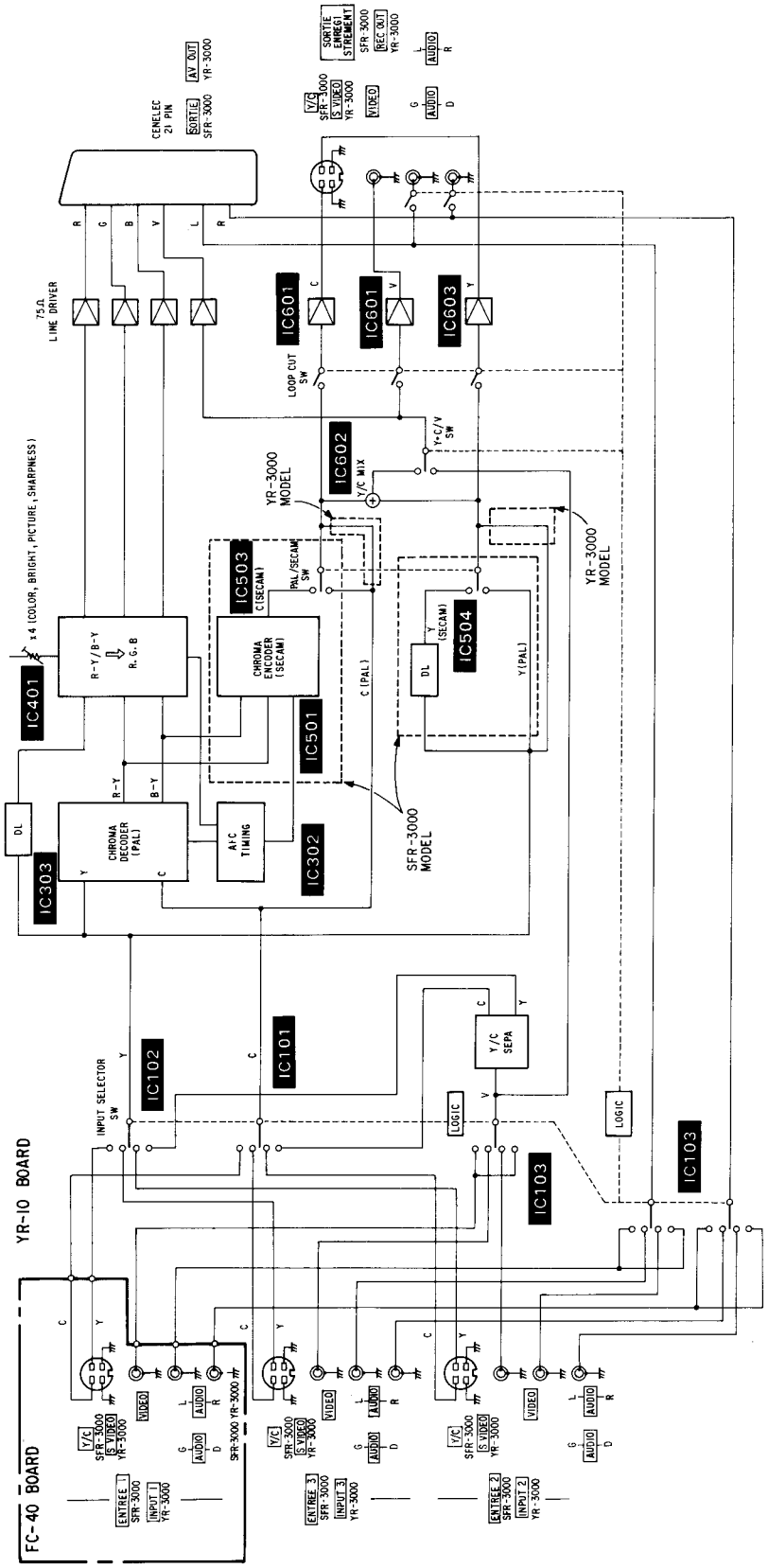
SFR-3000 (SECAM MODE)

			OUTPUT CONTROL MODE			
			LOOP CUT 1	LOOP CUT 2	S/V CONT	P/S CONT
INPUT 1	Y/C IN	PAL	L	L	L	L
		$\overline{\text{PAL}}$	L	L	L	H
	V IN	PAL	L	L	L	L
		$\overline{\text{PAL}}$	L	H	H	H
INPUT 2	Y/C IN	PAL	H	H	L	L
		$\overline{\text{PAL}}$	H	H	L	H
	V IN	PAL	H	H	L	L
		$\overline{\text{PAL}}$	H	H	H	H
INPUT 3	Y/C IN	PAL	L	L	L	L
		$\overline{\text{PAL}}$	L	L	L	H
	V IN	PAL	L	L	L	L
		$\overline{\text{PAL}}$	L	H	H	H

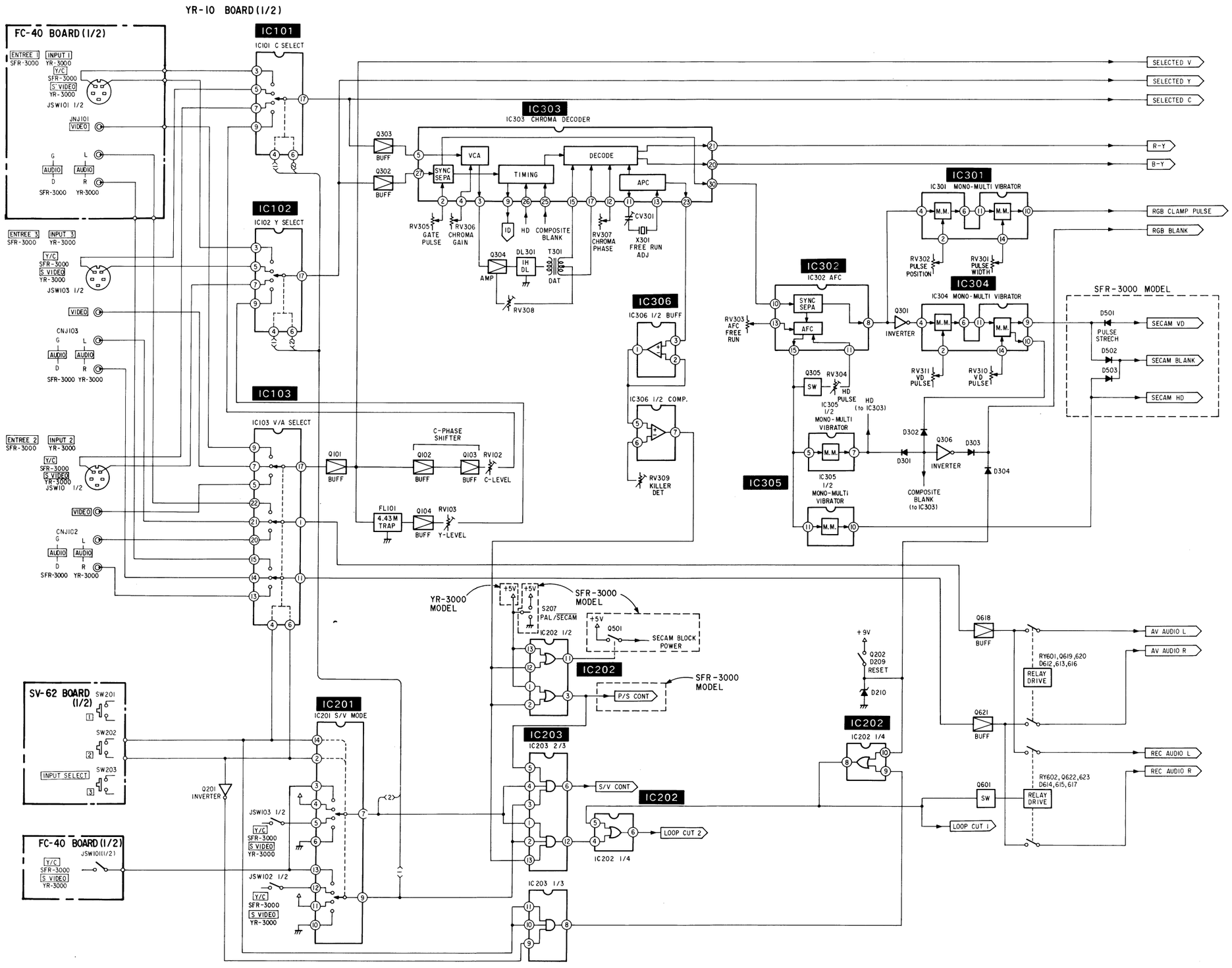
$\overline{\text{PAL}}$ indicates signals that are not PAL signals.

SECTION 4
DIAGRAMS

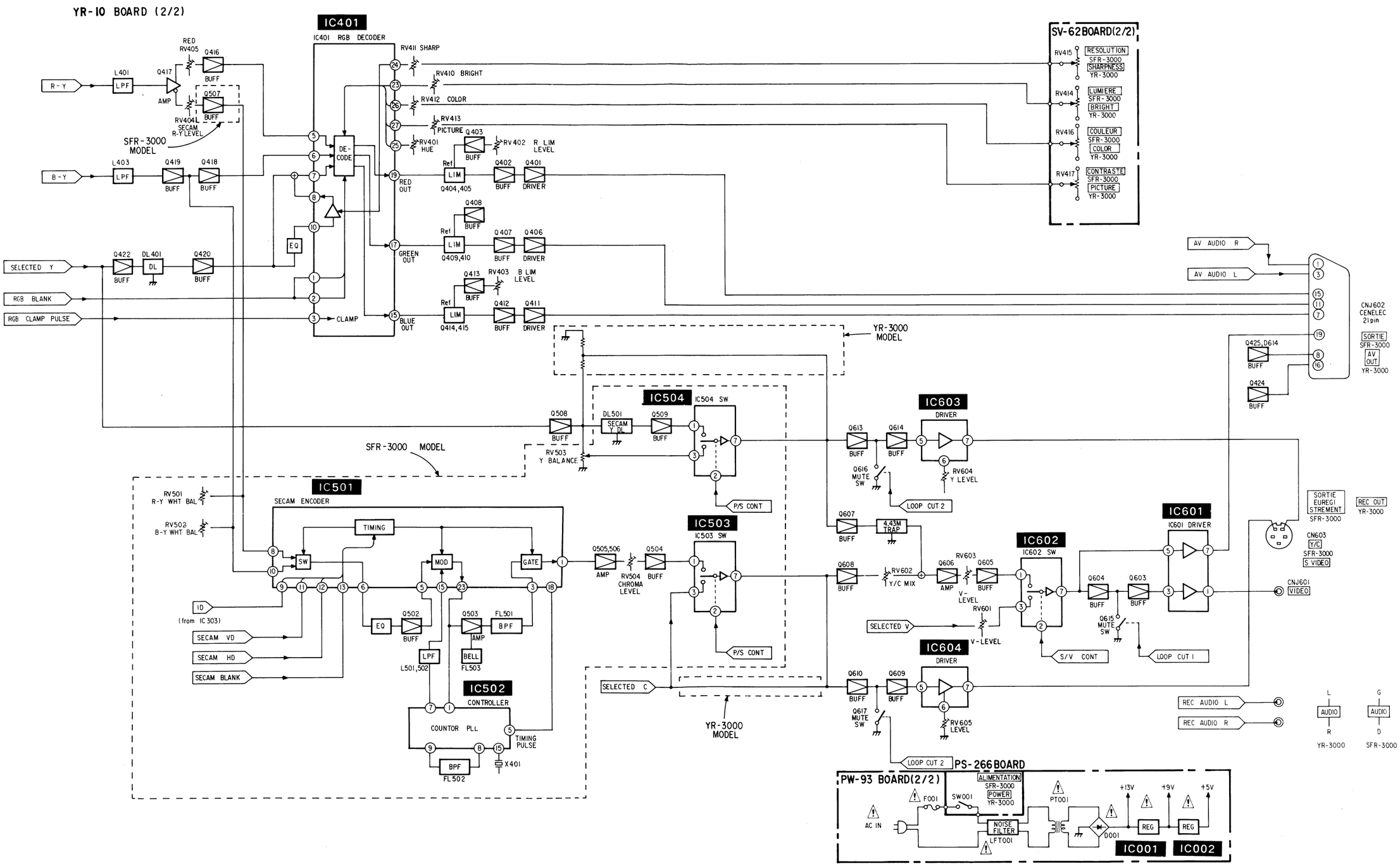
4-1. OVERALL BLOCK DIAGRAM



4-2. BLOCK DIAGRAM (1/2)

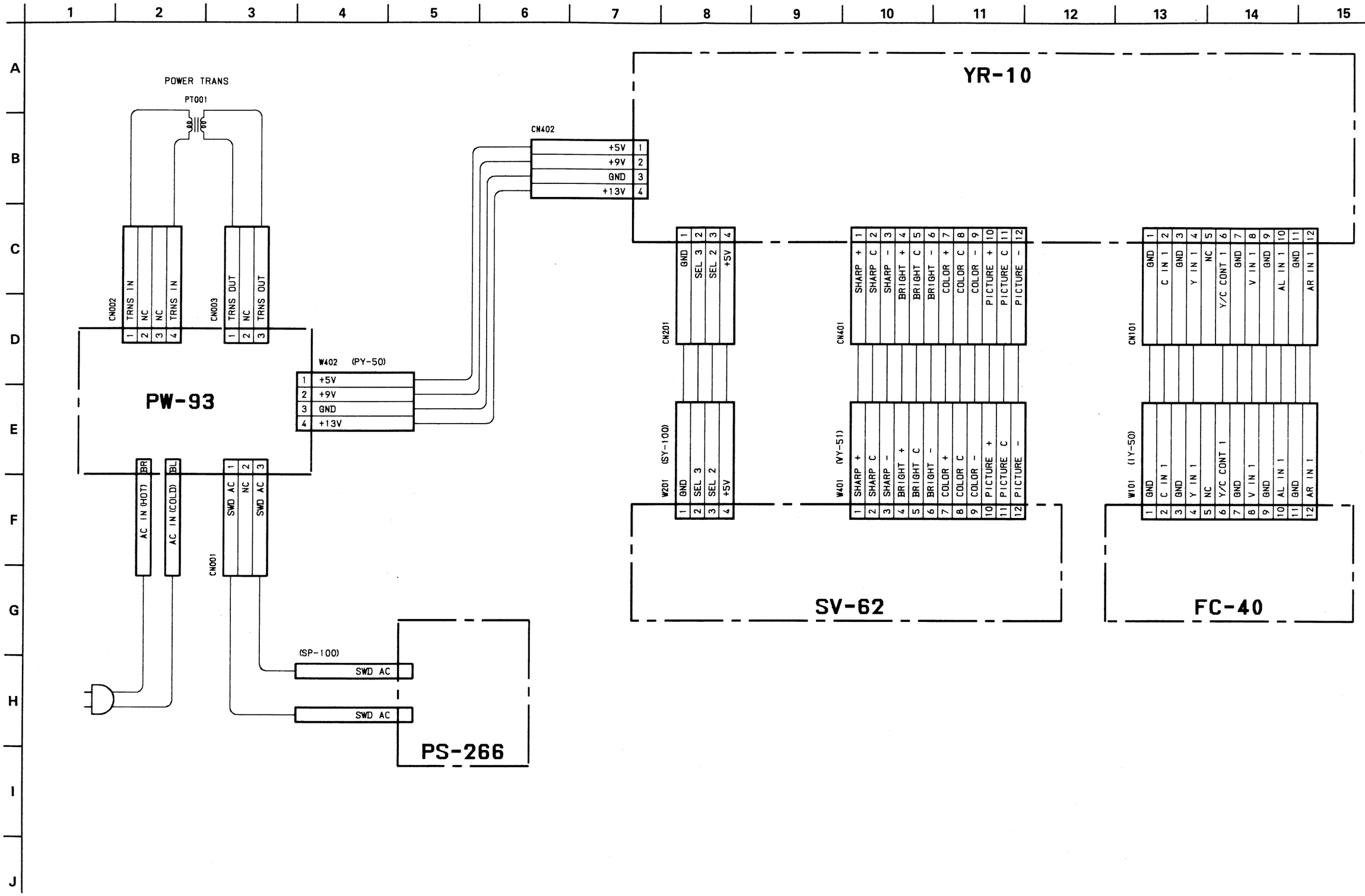


4-3. BLOCK DIAGRAM (2/2)



SECTION 5
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

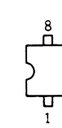
5-1. FRAME SCHEMATIC DIAGRAM



5-2. CIRCUIT

5-3. SEMICO

BA4558F
MC1457
MC1457
NJM223

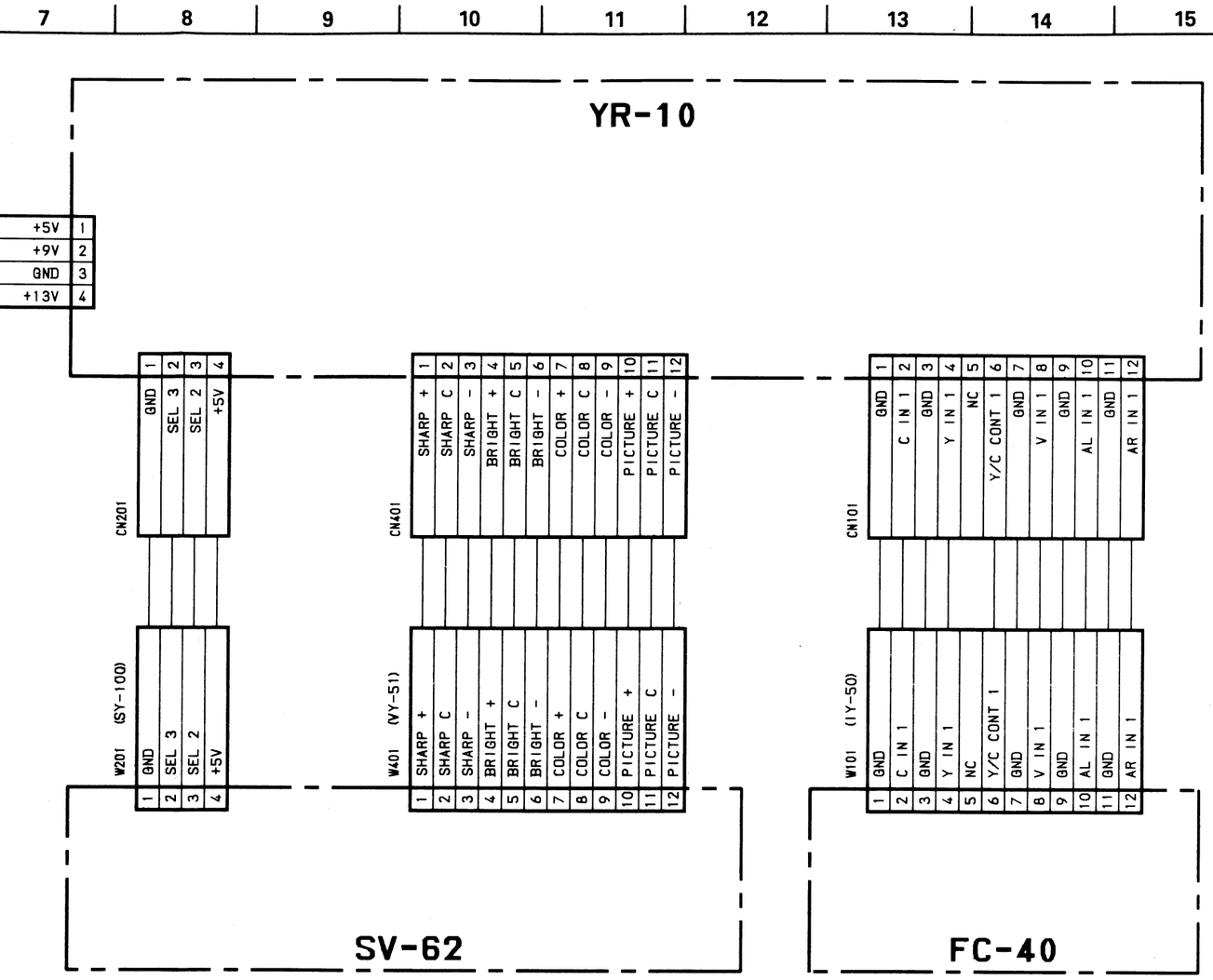


(Top vie

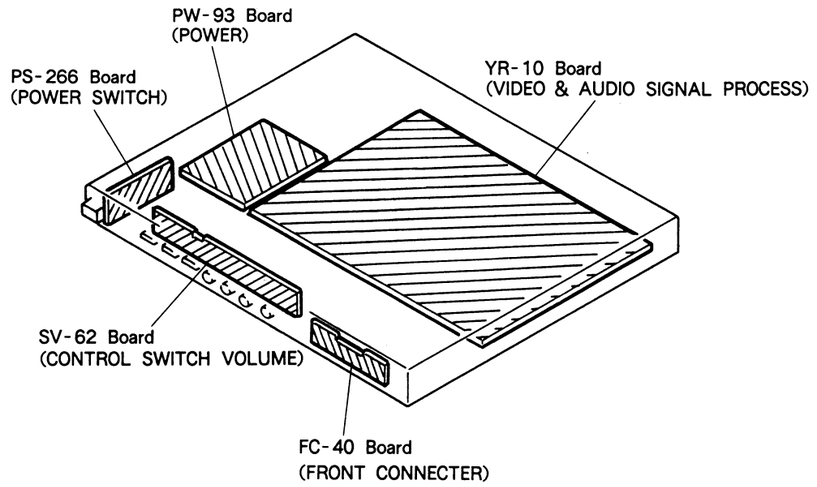
CXA121

(Top vie

HA114



5-2. CIRCUIT BOARDS LOCATION



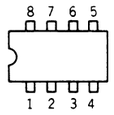
5-3. SEMICONDUCTORS

BA4558P

MC14576AP

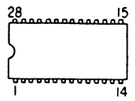
MC14577AP

NJM2233BD



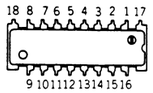
(Top view)

CXA1216P



(Top view)

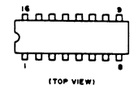
HA1141



MC74HC4538N

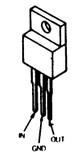
TDA2506

µPD74HC153C

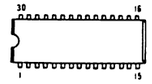


M5F7805

µPC2409HF



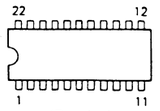
M51271SP



(Top view)

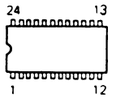
M52470P

M52471P



(Top view)

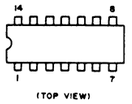
TDA2507



(Top view)

µPC74HC11P

µPC74HC32C

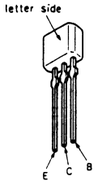


DTA144ES

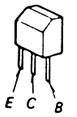
DTC144ES

2SA1175-HFE

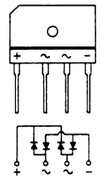
2SC2785-HFE



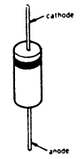
2SB733-K1



D2SB10

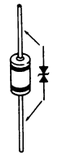


1SS119

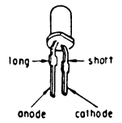


RD10EB2

RD9.1EW



SLR-34YC3



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

- ▒▒ : Pattern from the side which enables seeing.

For schematic diagram:

- All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- ▬ : B+ line.
- Voltages are dc between measurement points and ground unless otherwise noted.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.
- ▨ : IN/OUT direction of B line (+, −).
- Circled numbers refer to waveforms.

When indicating parts by reference number, please include the board name.

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

YR-10 Board

Ref. No.	Location	Ref. No.	Location
D106	B-3	Q102	F-1
D107	B-3	Q103	F-1
D108	B-2	Q104	F-2
D109	B-2	Q201	H-2
D110	B-1	Q202	H-2
D111	B-6	Q301	H-6
D112	B-7	Q302	H-4
D113	B-5	Q303	I-3
D114	B-5	Q304	I-4
D115	B-4	Q305	H-9
D116	D-1	Q306	H-4
D203	B-3	Q401	G-12
D205	B-6	Q402	H-12
D209	G-1	Q403	H-12
D210	H-2	Q404	H-12
D301	H-5	Q405	H-12
D302	G-5	Q406	G-12
D303	H-5	Q407	H-12
D304	F-4	Q408	H-13
D401	C-9	Q409	H-11
D501	E-5	Q410	I-11
D502	D-5	Q411	C-11
D503	D-5	Q412	G-11
D601	B-13	Q413	H-13
D602	B-13	Q414	H-11
D603	B-12	Q415	H-11
D604	B-12	Q416	I-10
D605	B-12	Q417	H-9
D606	B-11	Q418	H-10
D607	B-10	Q419	G-10
D608	B-10	Q420	H-11
D609	B-9	Q422	F-11
D610	B-8	Q424	G-13
D611	B-7	Q425	G-13
D612	C-9	Q501	E-8
D613	D-9	Q502	E-7
D614	H-13	Q503	E-7
D615	C-9	Q504	D-8
D616	D-9	Q505	D-8
D617	D-8	Q506	C-8
		Q507	G-9
IC101	C-4	Q508	E-11
IC102	E-4	Q509	D-11
IC103	D-2	Q601	D-9
IC201	F-3	Q603	D-13
IC202	G-3	Q604	E-13
IC203	H-2	Q605	D-12
IC301	F-8	Q606	D-12
IC302	G-8	Q607	E-11
IC303	I-6	Q608	E-12
IC304	F-6	Q609	D-9
IC305	H-5	Q610	D-10
IC306	H-7	Q613	D-10
IC401	I-12	Q614	C-10
IC501	D-6	Q615	D-13
IC502	C-7	Q616	D-9
IC503	D-9	Q617	D-9
IC504	E-10	Q618	E-9
IC601	C-13	Q619	C-9
IC602	E-13	Q620	D-9
IC603	C-10	Q621	E-8
IC604	C-10	Q622	D-8
		Q623	D-8
Q101	D-1		

Difference List

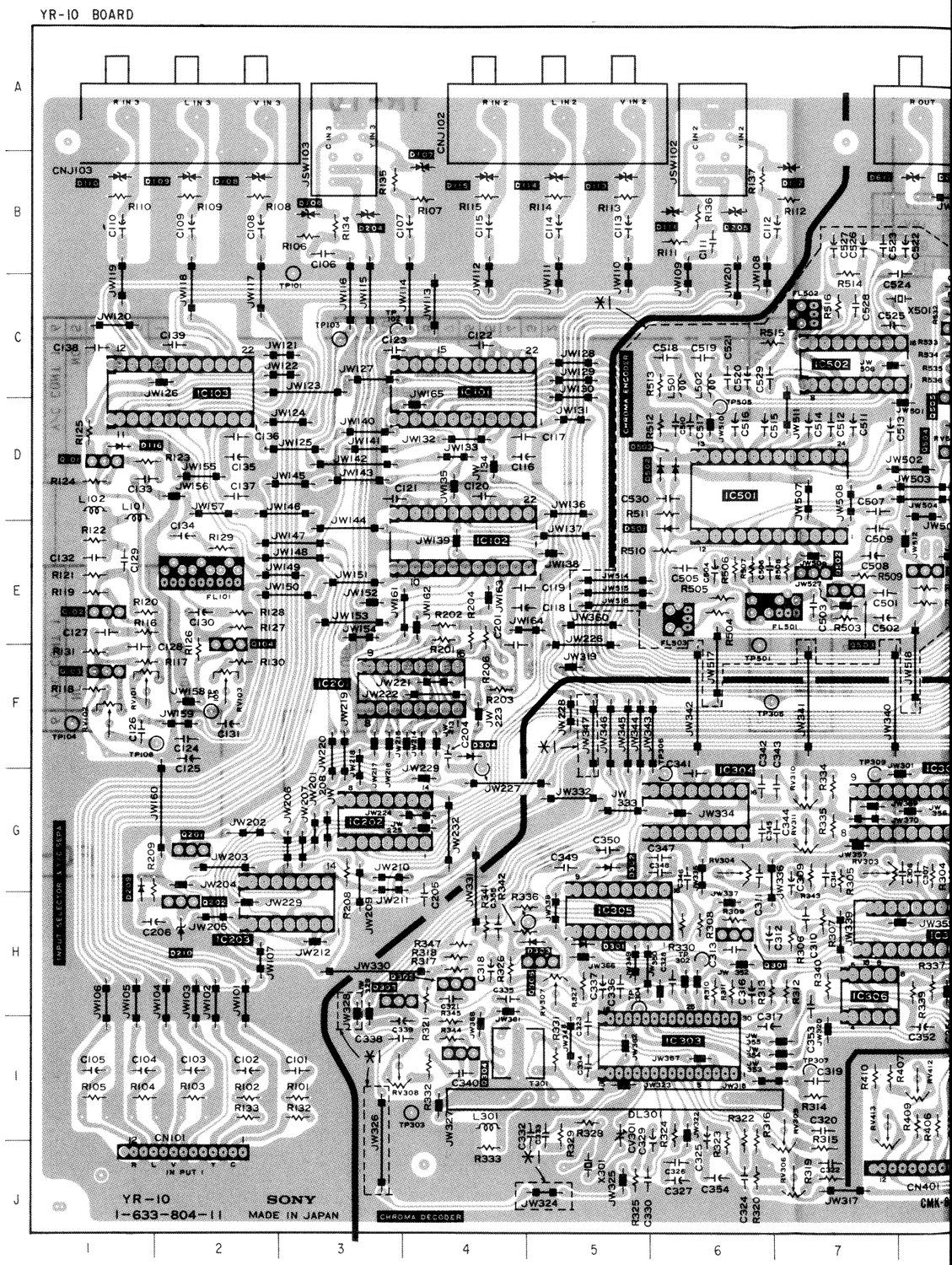
Ref. No.	SFR-3000	YR-3000
C501	○	–
~	⋮	⋮
C543	⋮	–
C544	⋮	JW
C545	⋮	–
C546	⋮	⋮
C548	○	–
D501	○	–
D502	○	–
D503	○	–
JW235	–	○
JW324	○	–
JW325	⋮	⋮
JW326	⋮	⋮
JW328	⋮	⋮
JW347	⋮	⋮
JW501	⋮	⋮
~	⋮	⋮
JW525	⋮	⋮
JW527	⋮	⋮
JW528	○	–
JW619	–	○
JW636	–	○
JW637	–	○
L501	○	–
L502	○	–
Q501	○	–
~	⋮	⋮
Q507	⋮	⋮
Q509	○	–
R501	○	–
~	⋮	⋮
R524	⋮	⋮
R526	⋮	⋮
~	⋮	⋮
R537	○	–
RV404	○	JW
RV501	⋮	⋮
~	⋮	⋮
RV504	○	–

Note
○ (○ •• ○): mounted
– (– •• –): not mounted
JW : jumper wire

YR-10 (VIDEO & AUDIO SIGNAL PROCESS) PRINTED WIRING BOARDS

– Ref. No. YR-10 BOARD : 1000series –

YR-10 BOARD



nce List

No.	SFR-3000	YR-3000
01	○	—
43	○	—
44	○	JW
45	○	—
46	○	—
48	○	—
01	○	—
02	○	—
03	○	—
7235	—	○
7324	○	—
7325	○	—
7326	○	—
7328	○	—
7347	○	—
7501	○	—
7525	○	—
7527	○	—
7528	○	—
7619	—	○
7636	—	○
7637	—	○
01	○	—
02	○	—
01	○	—
07	○	—
09	○	—
01	○	—
24	○	—
26	○	—
37	○	—
404	○	JW
501	○	—
504	○	—

Note

○ (○ •• ○): mounted

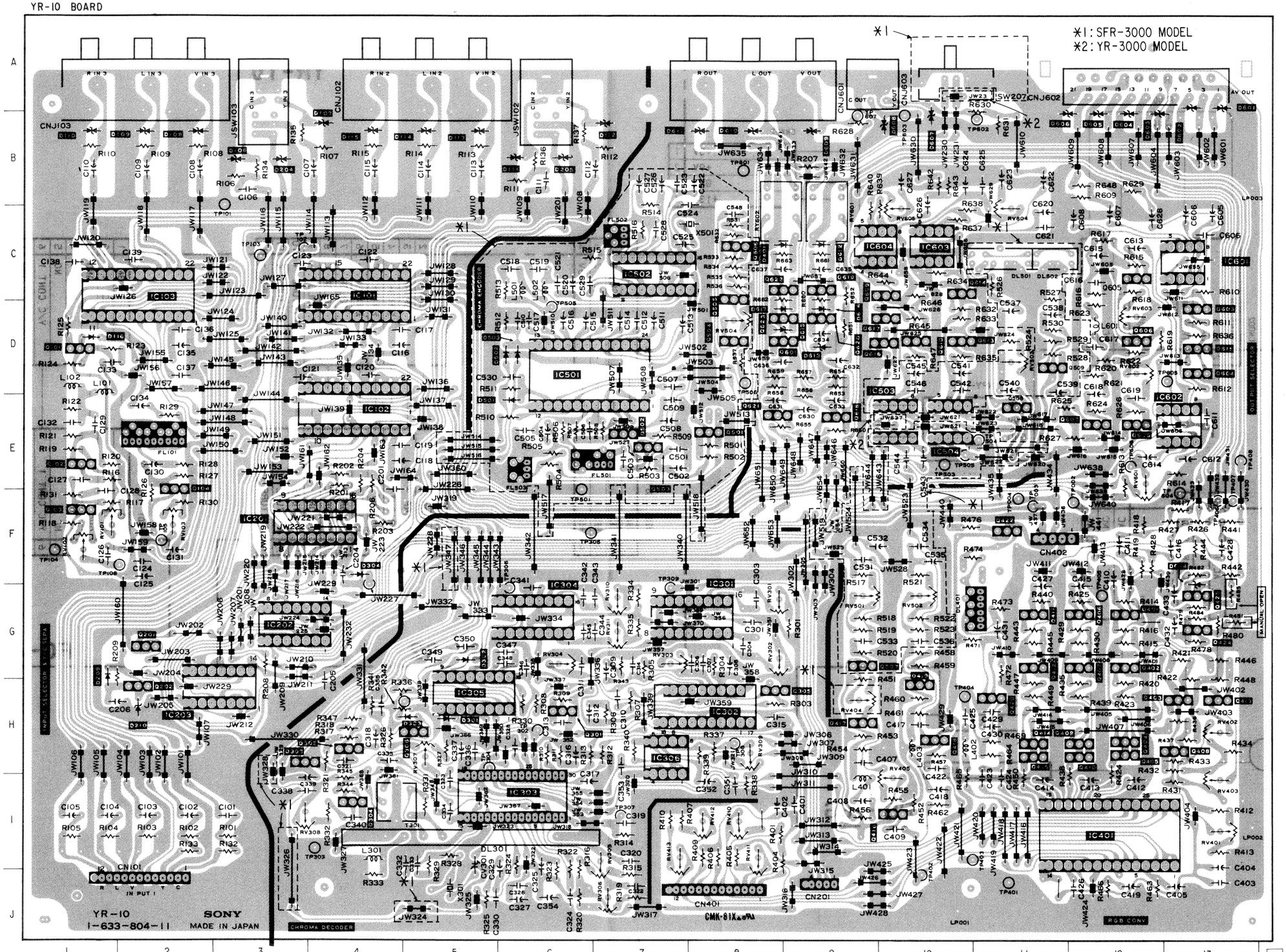
— (— •• —): not mounted

JW : jumper wire

YR-10 (VIDEO & AUDIO SIGNAL PROCESS) PRINTED WIRING BOARDS

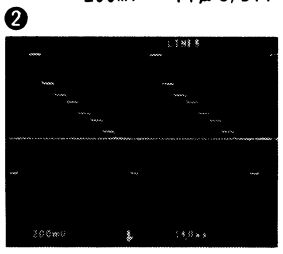
– Ref. No. YR-10 BOARD : 1000series –

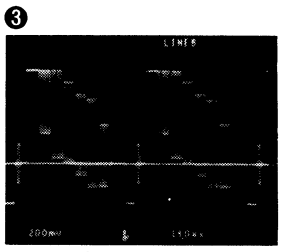
YR-10 BOARD

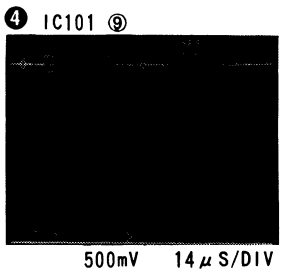


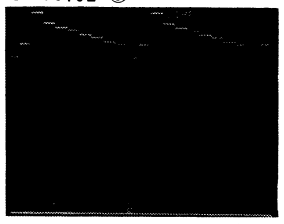
❶

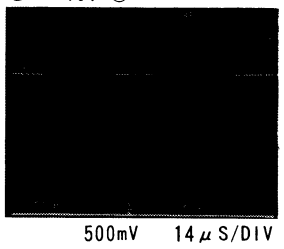
200mV 14μS/DIV

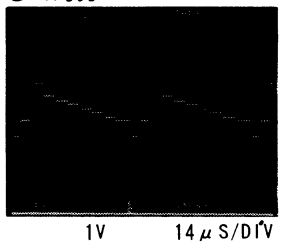
❷

200mV 14μS/DIV

❸

200mV 14μS/DIV

❹ IC101 ⑨

500mV 14μS/DIV

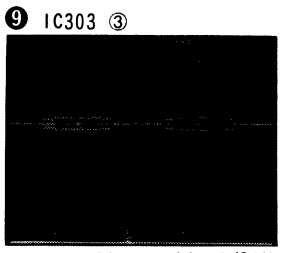
❺ IC102 ⑨

500mV 14μS/DIV

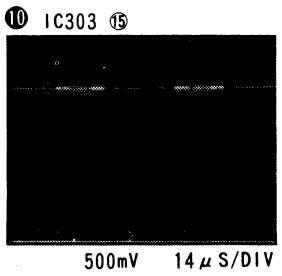
❻ IC101 ⑰

500mV 14μS/DIV

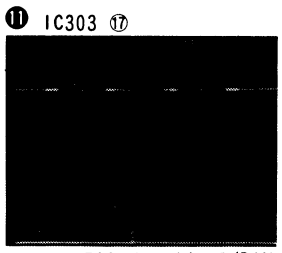
❼ TP305

1V 14μS/DIV

❽ IC303 ⑤

500mV 14μS/DIV

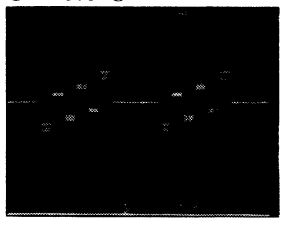
❾ IC303 ③

500mV 14μS/DIV

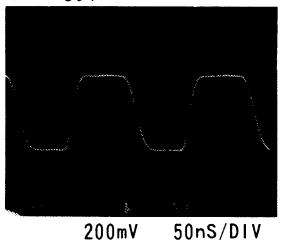
❿ IC303 ⑮

500mV 14μS/DIV

⓫ IC303 ⑰

500mV 14μS/DIV

⓬ IC303 ㉑

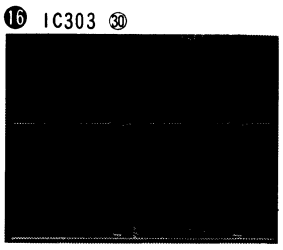
500mV 14μS/DIV

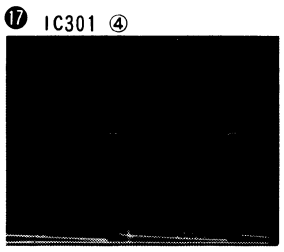
⓭ IC303 ⑳

500mV 14μS/DIV

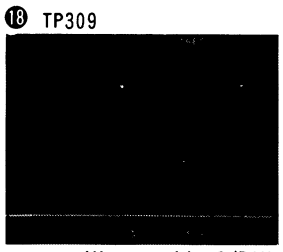
⓮ TP304

200mV 50nS/DIV

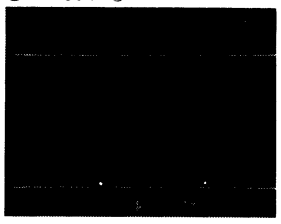
⓯ IC303 ㉗

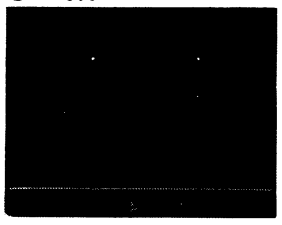
500mV 14μS/DIV

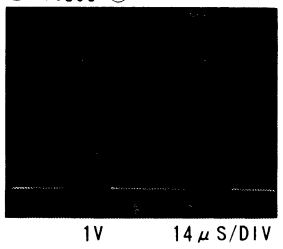
⓰ IC303 ㉚

1V 14μS/DIV

⓱ IC301 ④

1V 14μS/DIV

⓲ TP309

1V 14μS/DIV

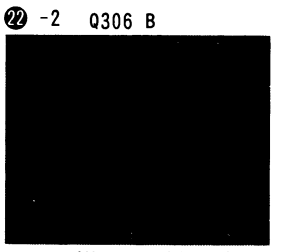
⓳ IC304 ④

1V 5mS/DIV

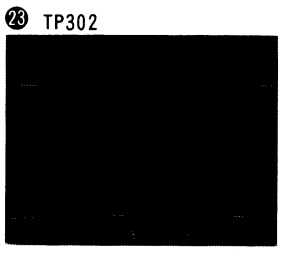
⓴ TP306

1V 5mS/DIV

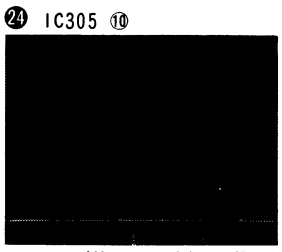
㉑ IC305 ⑪

1V 14μS/DIV

㉒ -1 Q306 B

1V 14μS/DIV

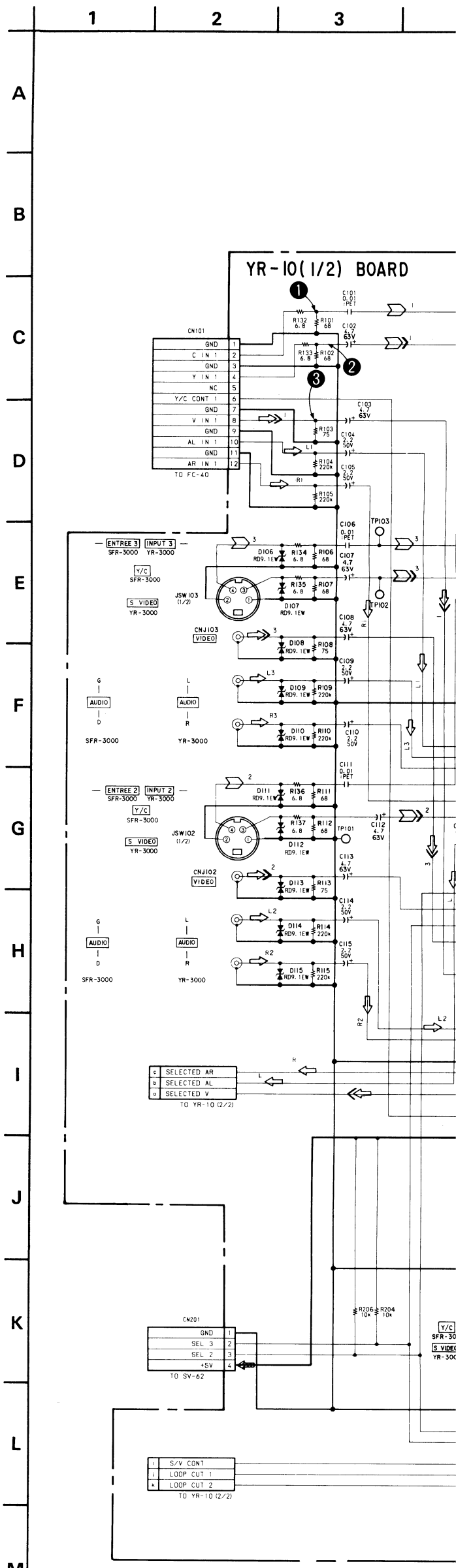
㉒ -2 Q306 B

1V 14μS/DIV

㉓ TP302

1V 14μS/DIV

㉔ IC305 ⑩

1V 14μS/DIV

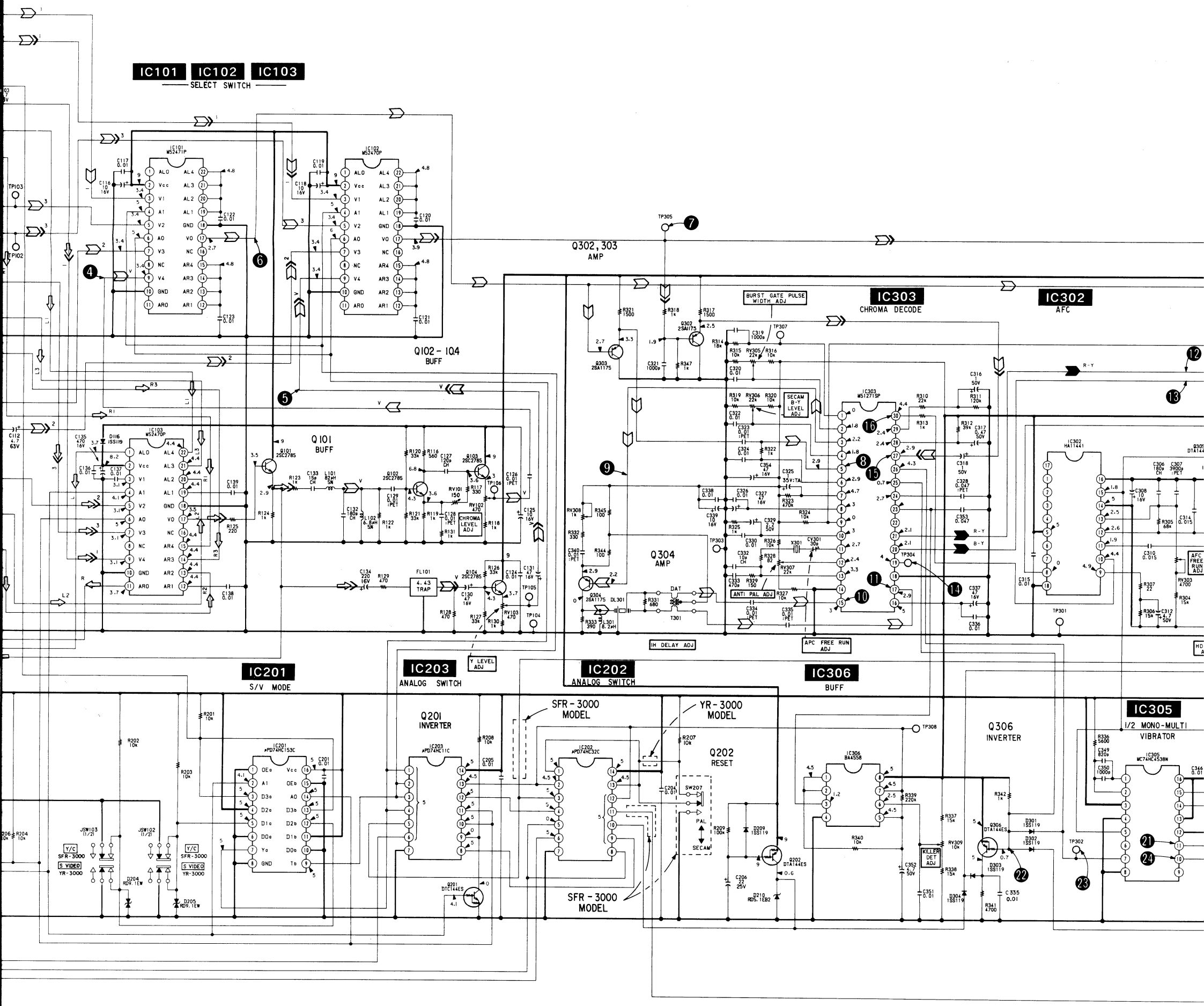
YR-10 (1/2) (VIDEO & AUDIO SIGNAL PROCESS) SCH

– Ref. No. YR-10 BOARD : 1000series –



4 5 6 7 8 9 10 11 12 13 14 15

OARD



13 | 14 | 15 | 16 | 17 | 18 | 19

IC302
AFC

Q305
SWITCH

Q301
INVERTER

IC301
MONO-MULTI VIBRATOR

SFR-3000 MODEL

SELECTED Y
TO YR-10 (2/2)

+9V
SELECTED C
TO TR-10 (2/2)

ID PULSE
TO YR-10 (2/2)

R-Y
B-Y
TO YR-10 (2/2)

PULSE POSITION ADJ

PULSE WIDTH ADJ

AFC FREE RUN ADJ

HD PULSE ADJ

CLAMP PULSE
COMPO BLANK
TO YR-10(2/2)

P/S CONT
TO YR-10(2/2)

SFR-3000 MODEL

+5V
TO YR-10 (2/2)

Q306
INVERTER

IC305
1/2 MONO-MULTI VIBRATOR

IC304
MONO-MULTI VIBRATOR

VD PULSE ADJ

GND
TO YR-10 (2/2)

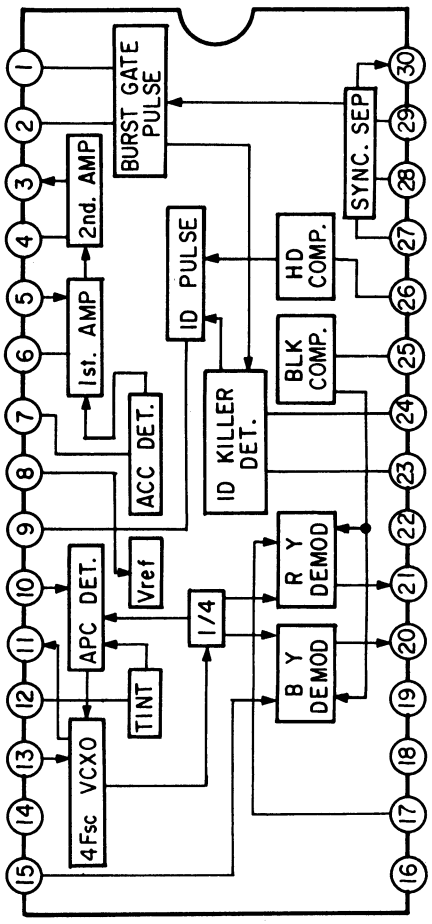
VD
HD
TO YR-10(2/2)

SFR-3000 MODEL

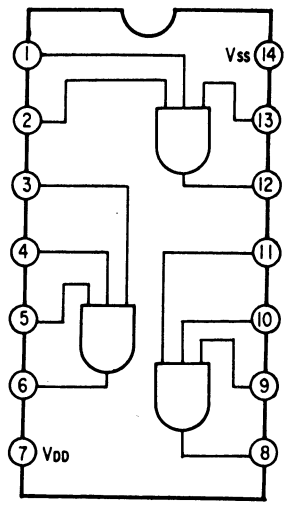
+B CONT
TO YR-10(2/2)

IC BLOCK DIAGRAMS

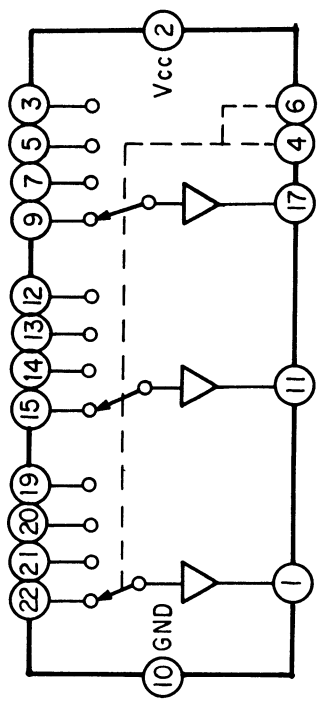
• IC303, M51271SP



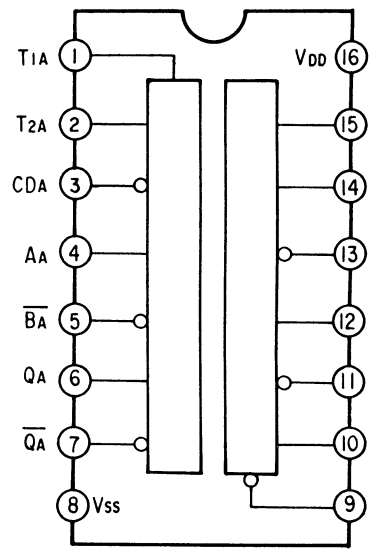
• IC203, μ PD74HC11C



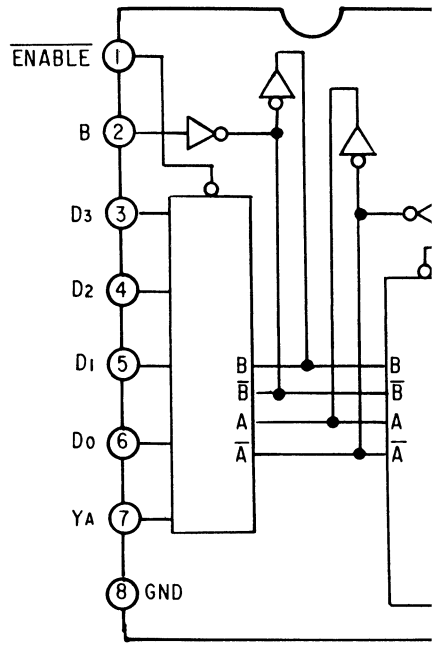
• IC101, M52471P
• IC102, 103, M52470P



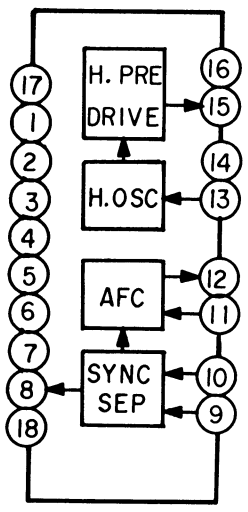
• IC301, 304, 305, MC74HC4538I



• IC201, μ PD74HC153C

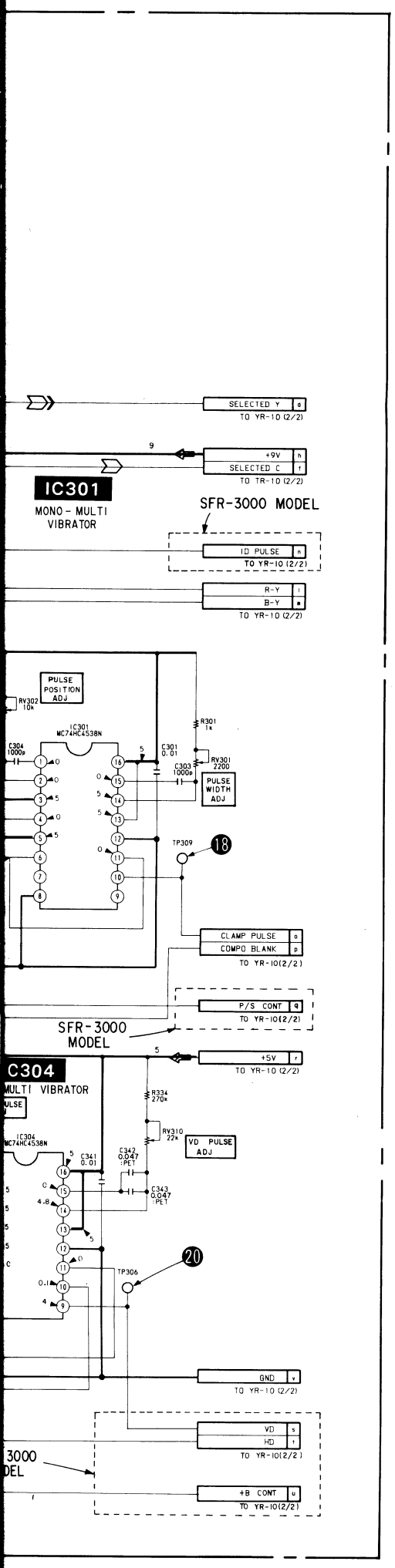


• IC302, HA1141



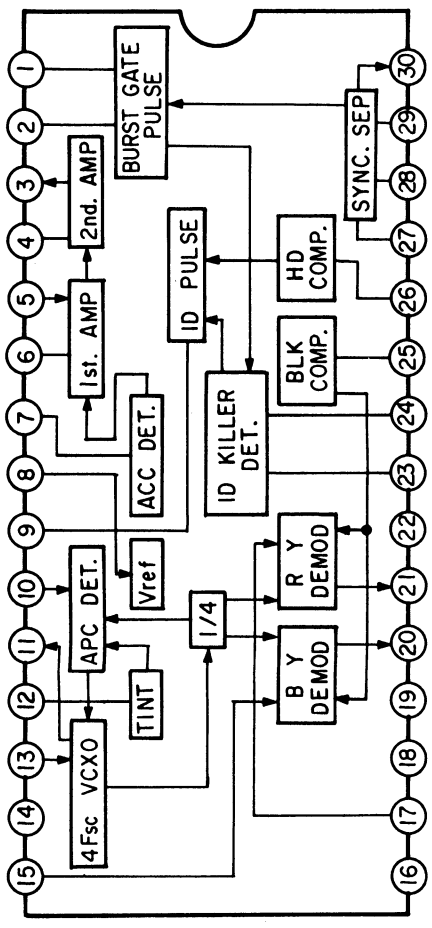
• Signal path

⇨ : AUDIO Signal
⇨⇨ : VIDEO Signal
▷ : CROMA Signal
▷▷ : Y Signal
▶ : Y/C CHROMA Signal

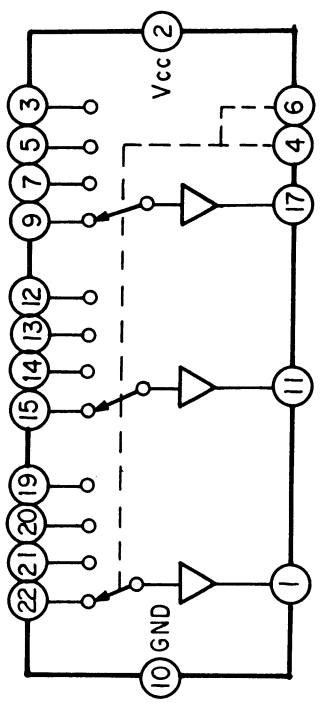


IC BLOCK DIAGRAMS

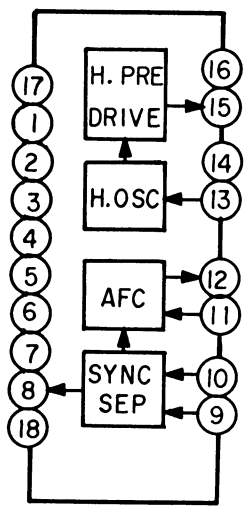
• IC303, M51271SP



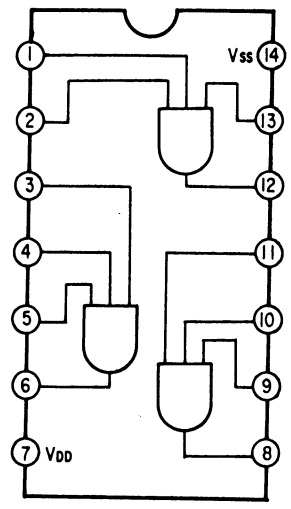
• IC101, M52471P
• IC102, 103, M52470P



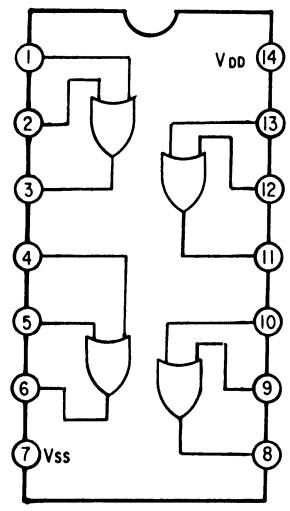
• IC302, HA1141



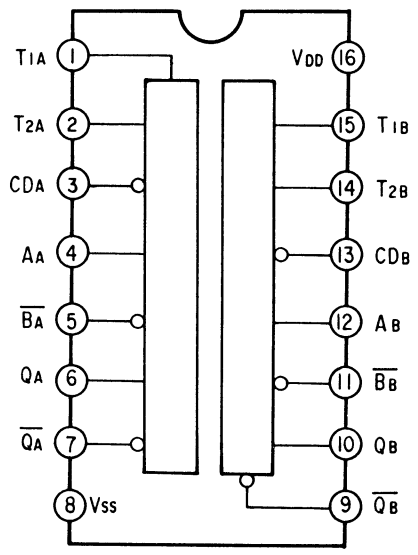
• IC203, μ PD74HC11C



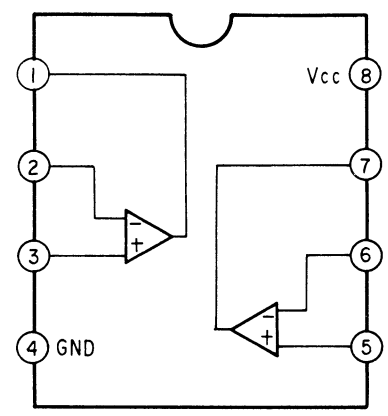
• IC202, μ PD74HC32C



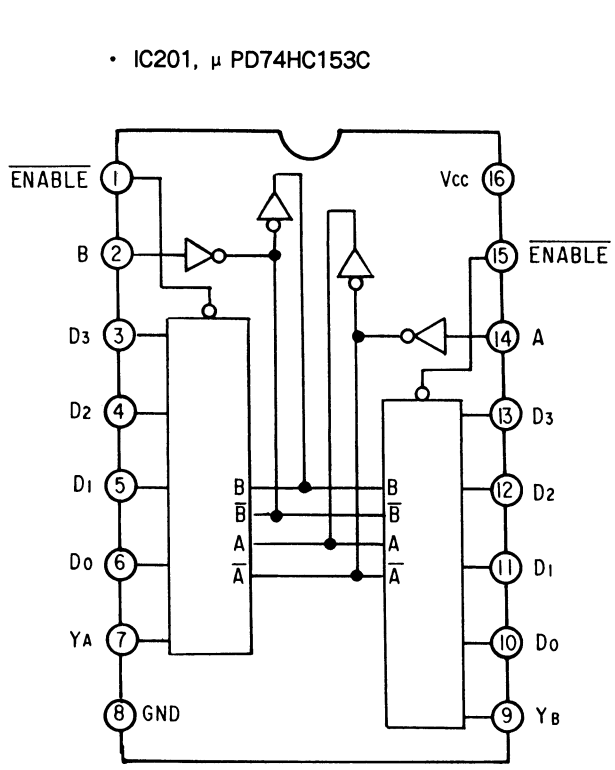
• IC301, 304, 305, MC74HC4538N



• IC306, BA4558



• IC201, μ PD74HC153C



• Signal path

⇨ : AUDIO Signal
⇨⇨ : VIDEO Signal
▷ : CROMA Signal
▷▷ : Y Signal
▶ : Y/C CHROMA Signal

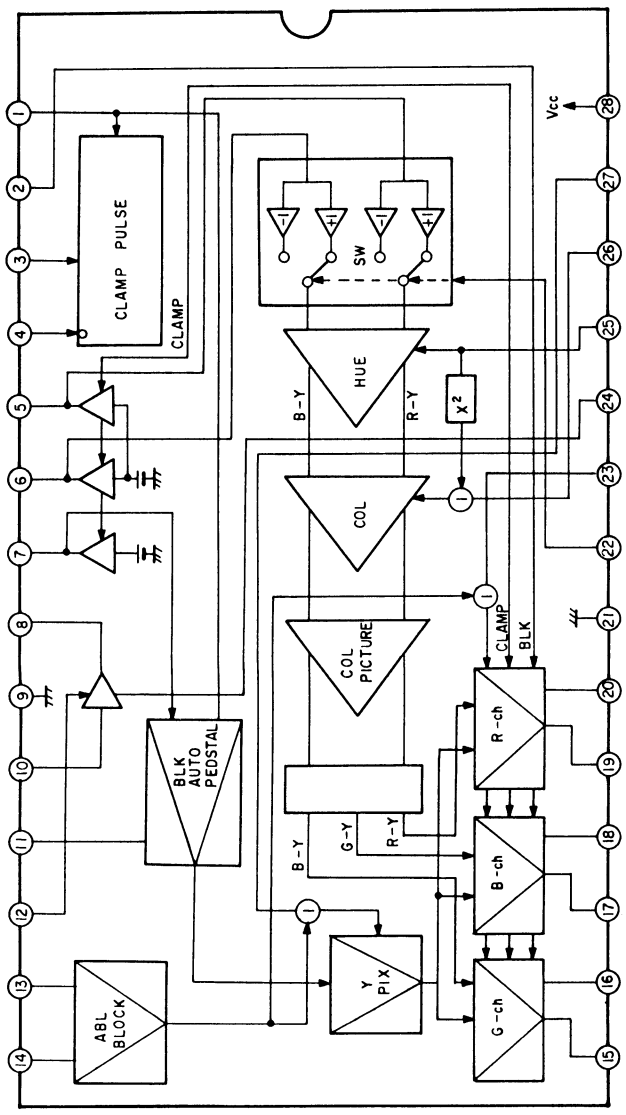
YR-10 (2/2) (VIDEO & AUDIO SIGNAL PROCESS) SCHEMATIC DIAGRAMS

– Ref. No. YR-10 BOARD : 1000series –

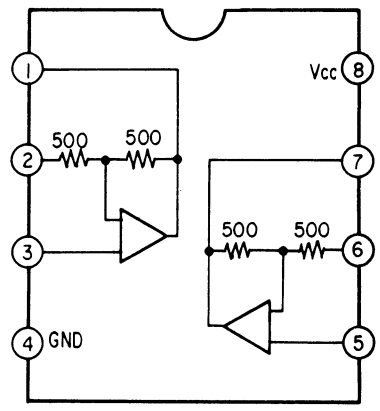
1 2 3 4 5 6 7 8 9 10 11

A B C D E F G H I J K L M N O

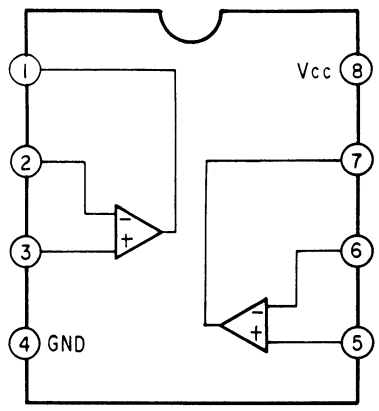
• IC401, CXA1216P



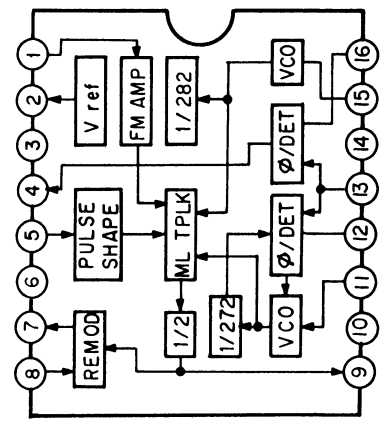
• IC601, MC14576AP



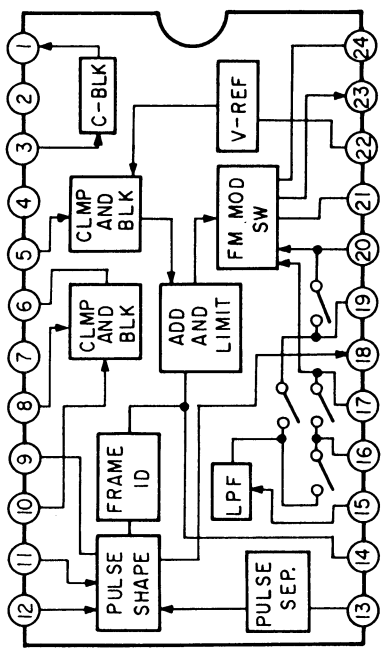
• IC603, 604, MC14577AP



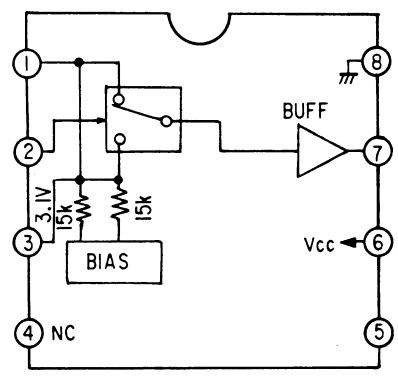
• IC502, TDA2507

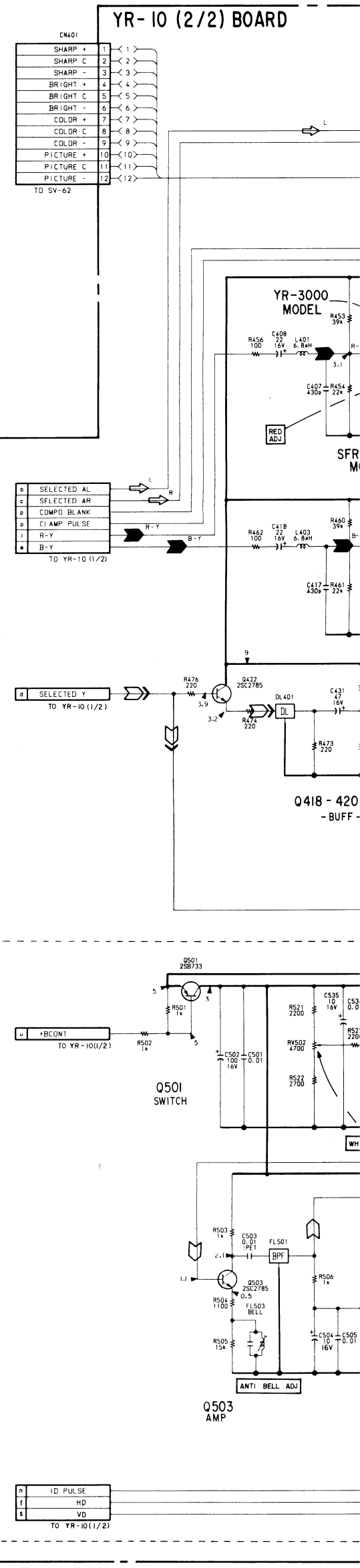


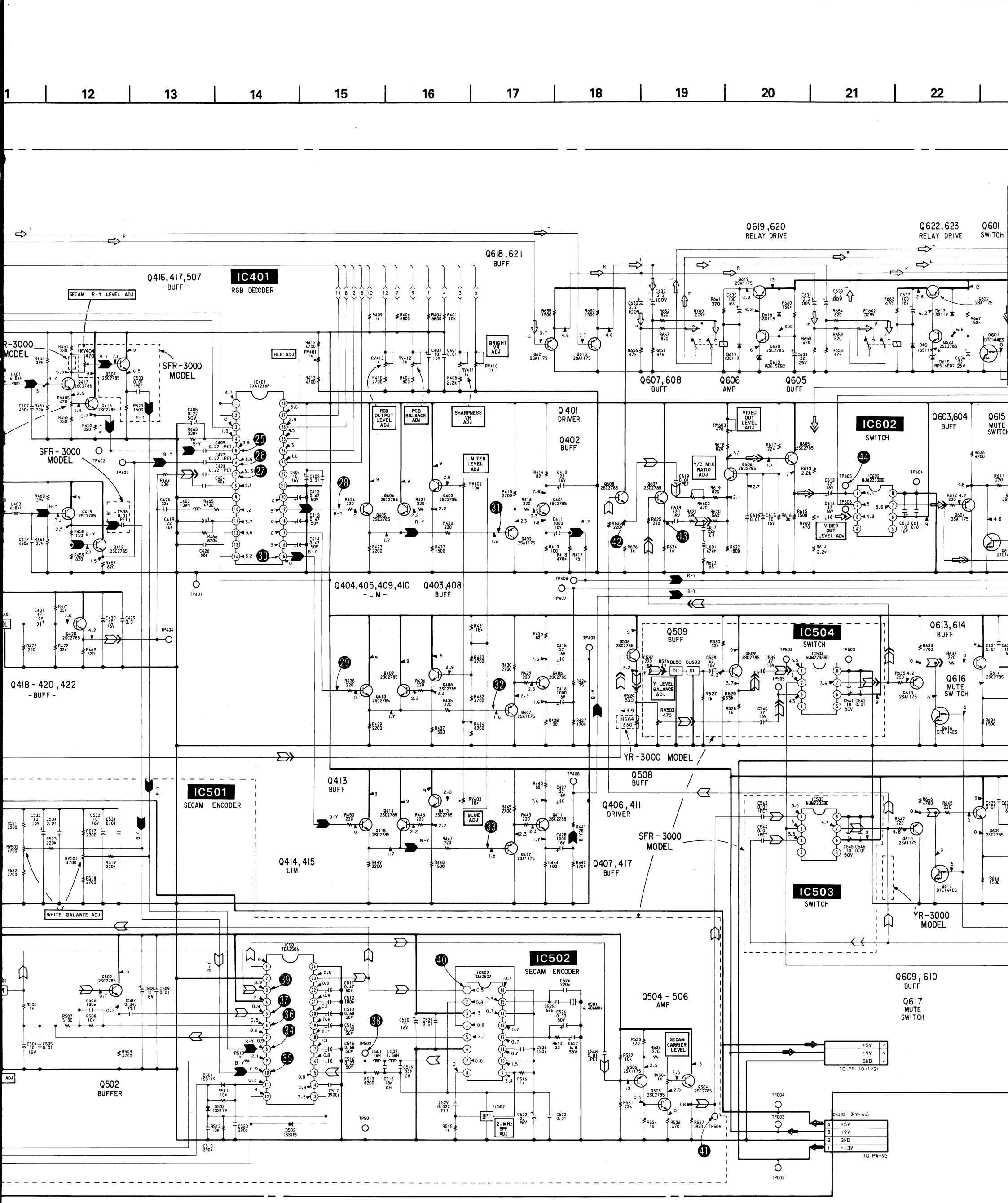
• IC501, TDA2506



• IC503, 504, 602, NJM2233BD






1
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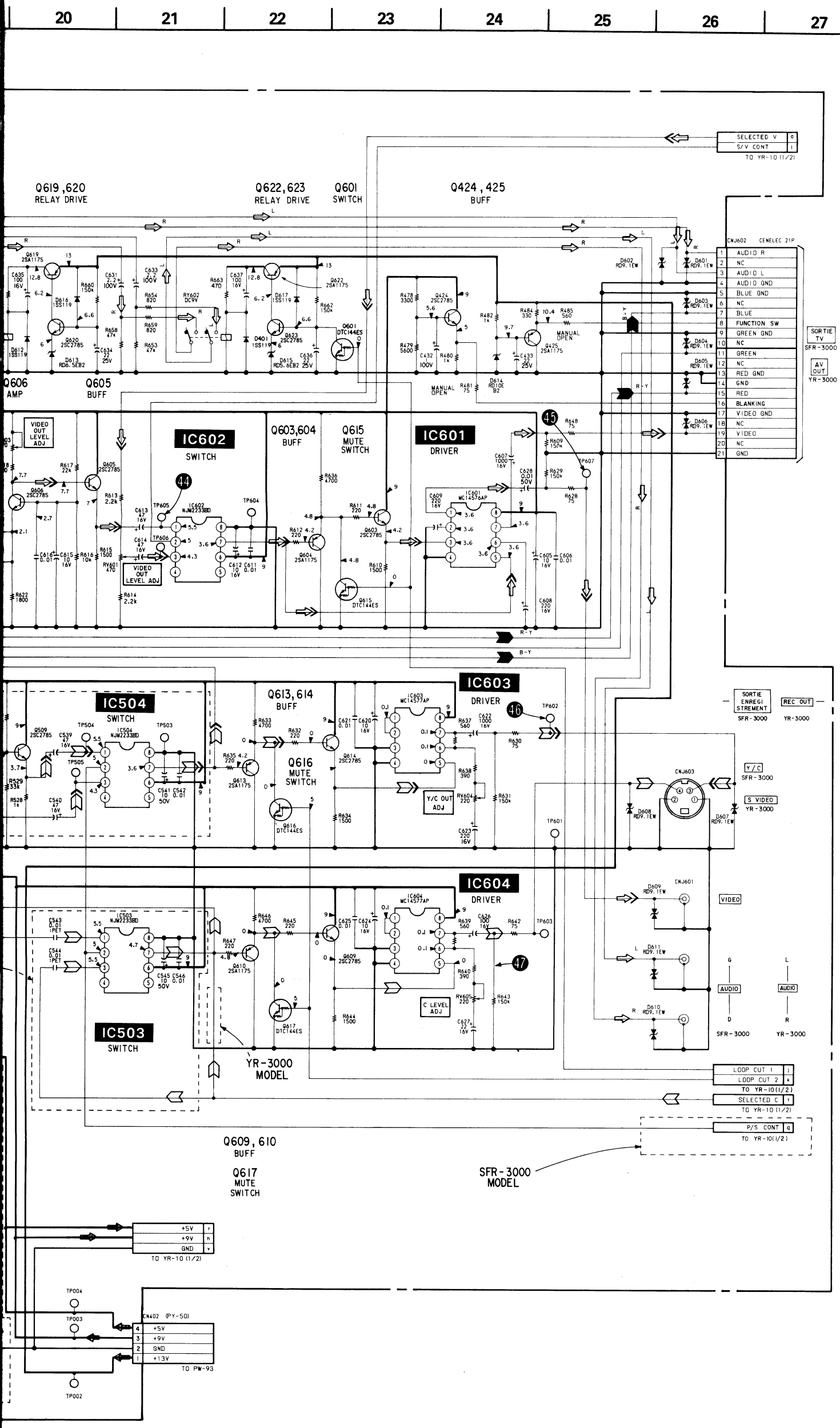
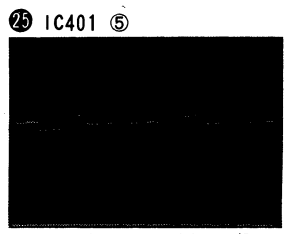
22
IC401
RGB DECODER
Q416,417,507
- BUFF -
Q618,621
BUFF
Q619,620
RELAY DRIVE
Q622,623
RELAY DRIVE
Q601
SWITCH
SECAM R-Y LEVEL ADJ
SFR-3000 MODEL
HLE ADJ
BRIGHT VR ADJ
RGB OUTPUT LEVEL ADJ
RGB BALANCE ADJ
SHARPNESS VR ADJ
Q401 DRIVER
Q402 BUFF
Q607,608 BUFF
Q606 AMP
Q605 BUFF
LIMITER LEVEL ADJ
Y/C MIX RATIO ADJ
VIDEO OUT LEVEL ADJ
IC602
SWITCH
Q603,604 BUFF
Q615 MUTE SWITCH
Q404,405,409,410
- LIM -
Q403,408
BUFF
Q418 - 420, 422
- BUFF -
Q509
BUFF
IC504
SWITCH
Q613,614
BUFF
Q616
MUTE SWITCH
Y LEVEL BALANCE ADJ
YR-3000 MODEL
Q508
BUFF
IC501
SECAM ENCODER
Q413
BUFF
Q406,411
DRIVER
BLUE ADJ
Q414,415
LIM
Q407,417
BUFF
SFR-3000 MODEL
IC503
SWITCH
YR-3000 MODEL
WHITE BALANCE ADJ
Q609,610
BUFF
Q617
MUTE SWITCH
IC502
SECAM ENCODER
Q504 - 506
AMP
SECAM CARRIER LEVEL
Q502
BUFFER
2.1MHz BPF ADJ
TO YR-10 (1/2)
TO PW-93
+5V
+9V
GND
+13V

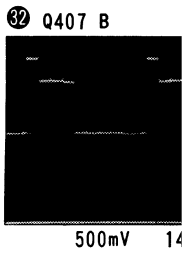


25 IC401 ⑤



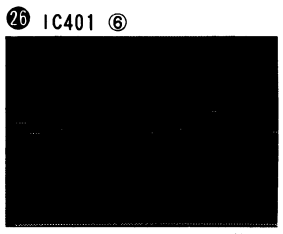
1V 14μS/DIV

32 Q407 B



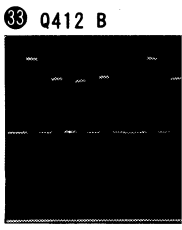
500mV 14

26 IC401 ⑥



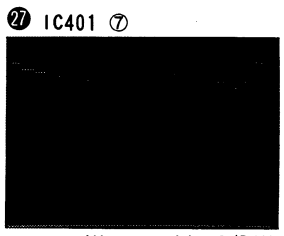
1V 14μS/DIV

33 Q412 B



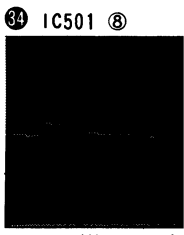
500mV 14

27 IC401 ⑦



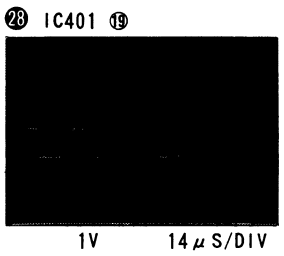
1V 14μS/DIV

34 IC501 ⑧



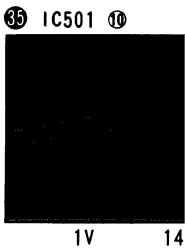
1V 14

28 IC401 ⑲



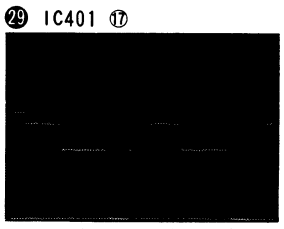
1V 14μS/DIV

35 IC501 ⑩



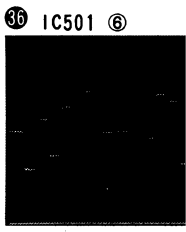
1V 14

29 IC401 ⑰



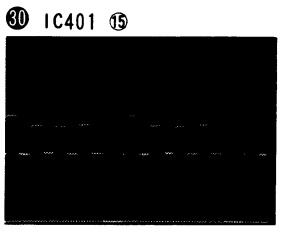
1V 14μS/DIV

36 IC501 ⑥



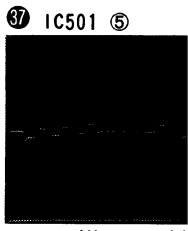
500mV 14

30 IC401 ⑮



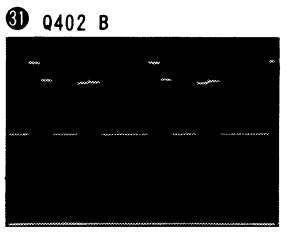
1V 14μS/DIV

37 IC501 ⑤



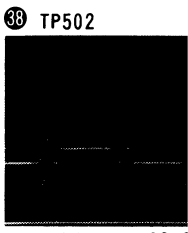
1V 14

31 Q402 B



500mV 14μS/DIV

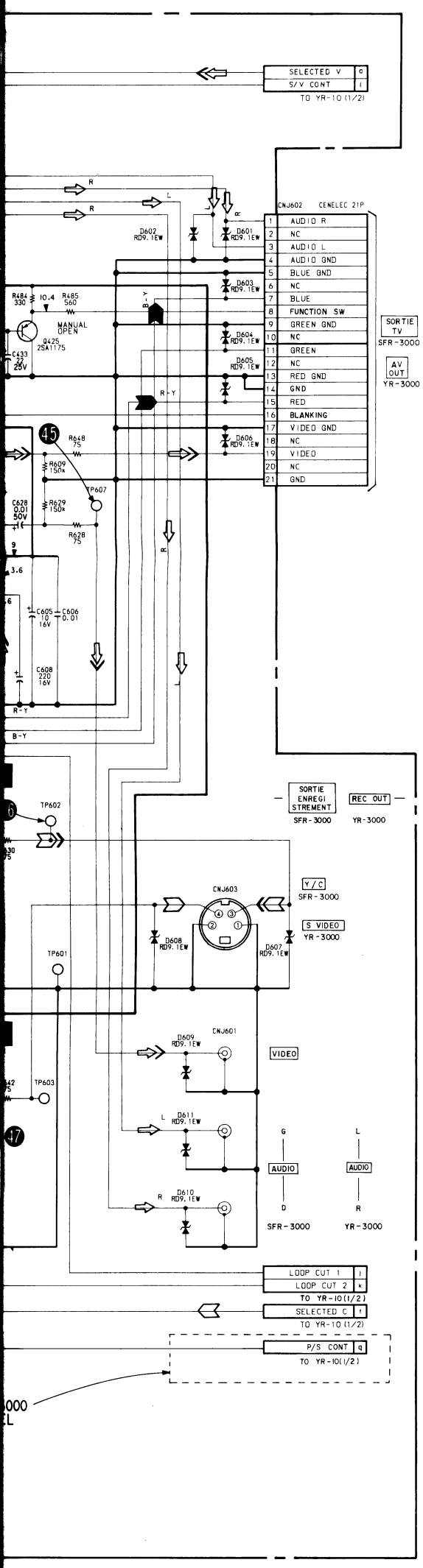
38 TP502



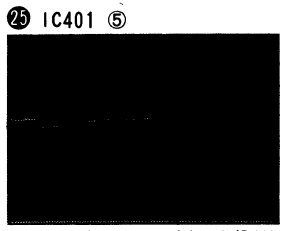
1V 69.9

• Signal path

⇨ : AUDIO Signal
⇨⇨ : VIDEO Signal
▷ : CROMA Signal
▷▷ : Y Signal
▶ : Y/C CHROMA Signal

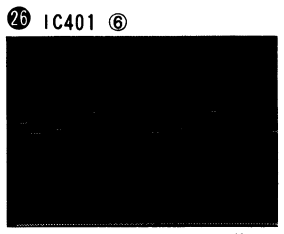


㉕ IC401 ⑤



1V 14μS/DIV

㉖ IC401 ⑥

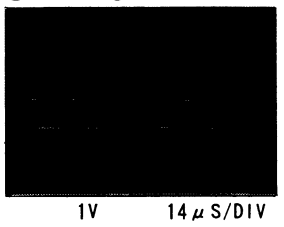


1V 14μS/DIV

㉗ IC401 ⑦

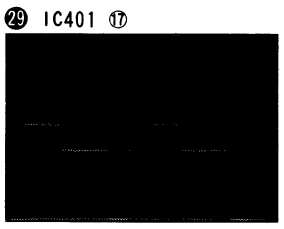
1V 14μS/DIV

㉘ IC401 ⑲



1V 14μS/DIV

㉙ IC401 ⑰

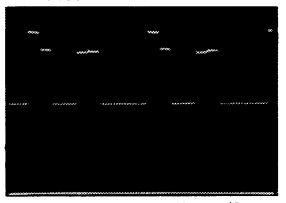


1V 14μS/DIV

㉚ IC401 ⑮

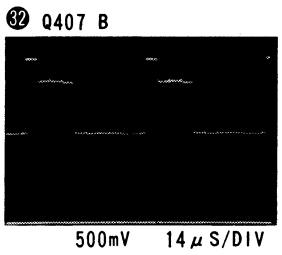
1V 14μS/DIV

㉛ Q402 B



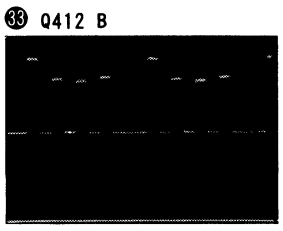
500mV 14μS/DIV

㉜ Q407 B



500mV 14μS/DIV

㉝ Q412 B

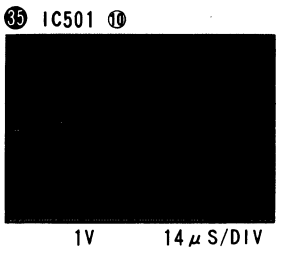


500mV 14μS/DIV

㉞ IC501 ⑧

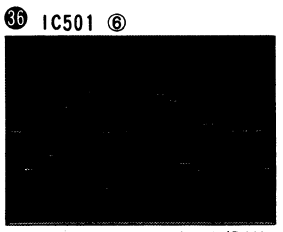
1V 14μS/DIV

㉟ IC501 ⑩



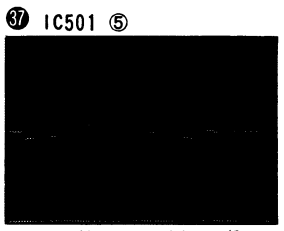
1V 14μS/DIV

㊱ IC501 ⑥



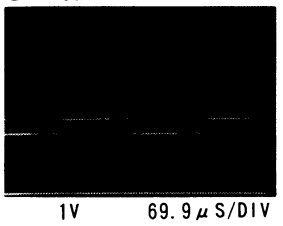
500mV 14μS/DIV

㊲ IC501 ⑤



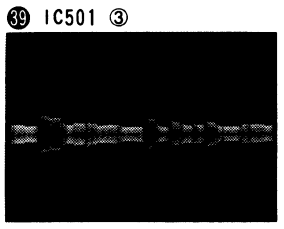
1V 14μS/DIV

㊳ TP502



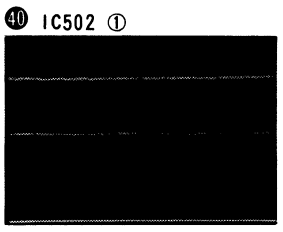
1V 69.9μS/DIV

㊴ IC501 ③



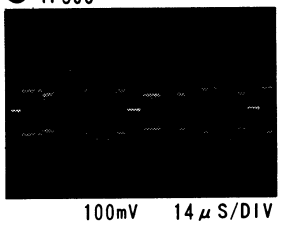
100mV 14.0μS/DIV

㊵ IC502 ①



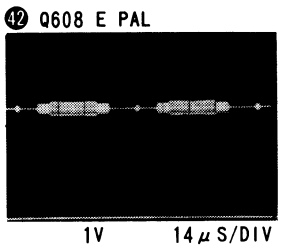
500mV 14μS/DIV

㊶ TP506



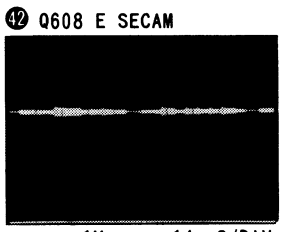
100mV 14μS/DIV

㊷ Q608 E PAL



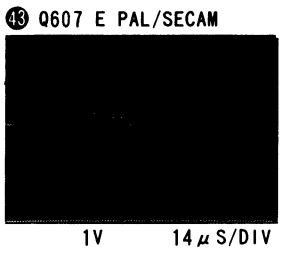
1V 14μS/DIV

㊷ Q608 E SECAM



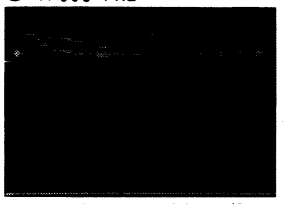
1V 14μS/DIV

㊸ Q607 E PAL/SECAM



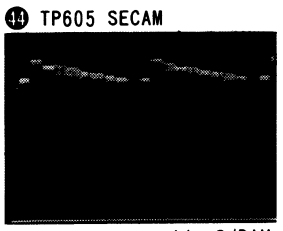
1V 14μS/DIV

㊹ TP605 PAL



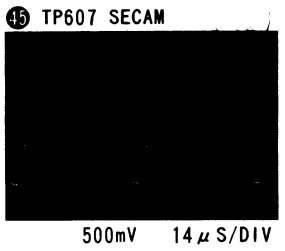
1V 14μS/DIV

㊹ TP605 SECAM



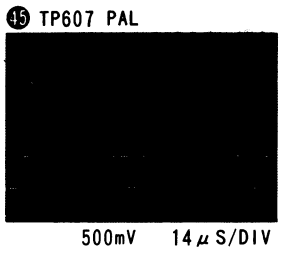
1V 14μS/DIV

㊺ TP607 SECAM



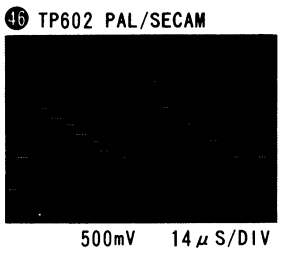
500mV 14μS/DIV

㊺ TP607 PAL



500mV 14μS/DIV

㊻ TP602 PAL/SECAM

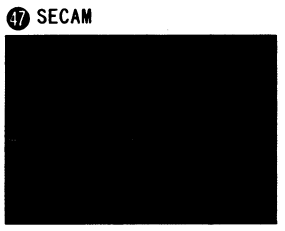


500mV 14μS/DIV

㊼ PAL

500mV 14μS/DIV

㊼ SECAM



500mV 14μS/DIV

• Signal path

⇨ : AUDIO Signal
⇛ : VIDEO Signal
▷ : CROMA Signal
▷» : Y Signal
▰ : Y/C CHROMA Signal

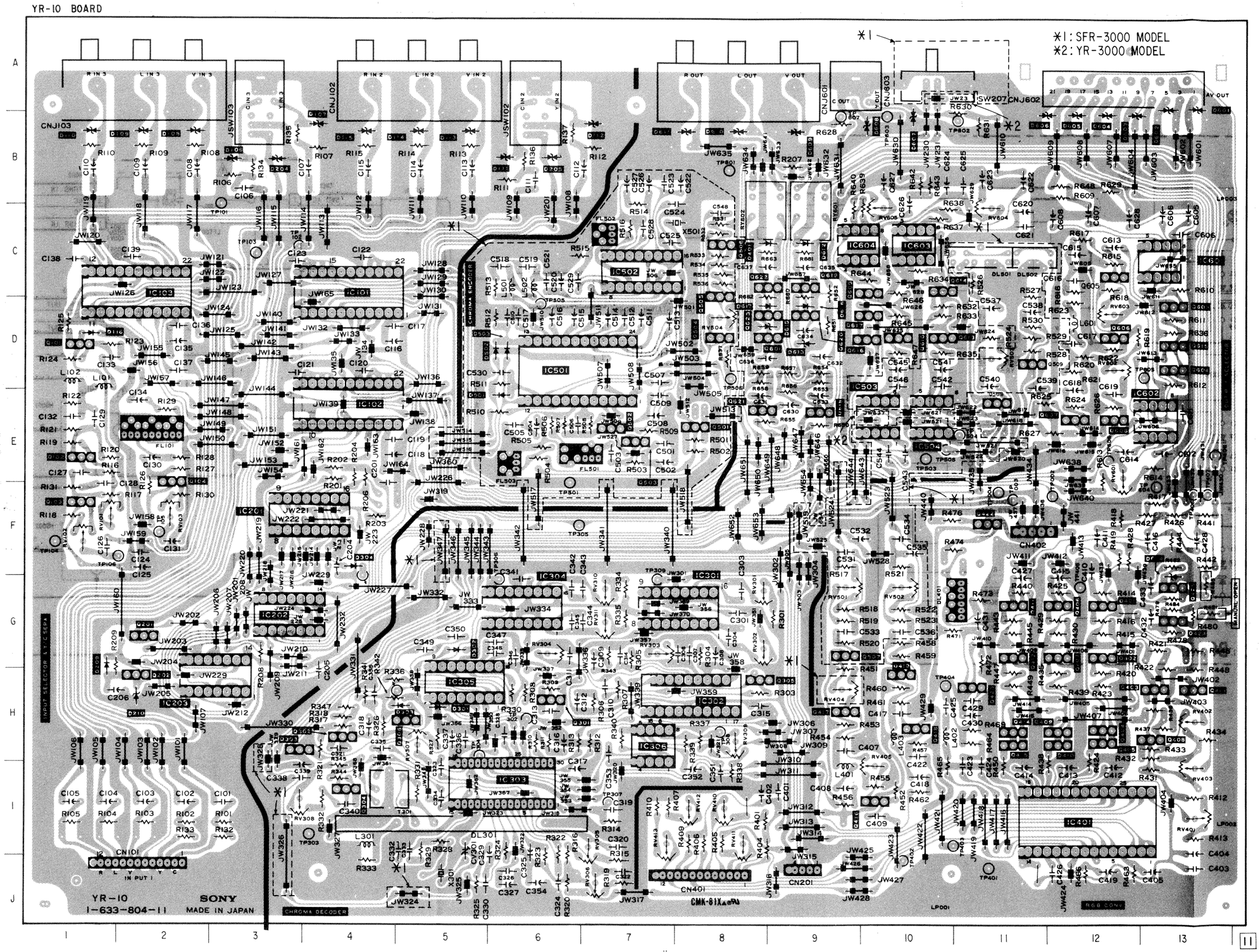
YR-10 (VIDEO & AUDIO SIGNAL PROCESS) PRINTED WIRING BOARDS

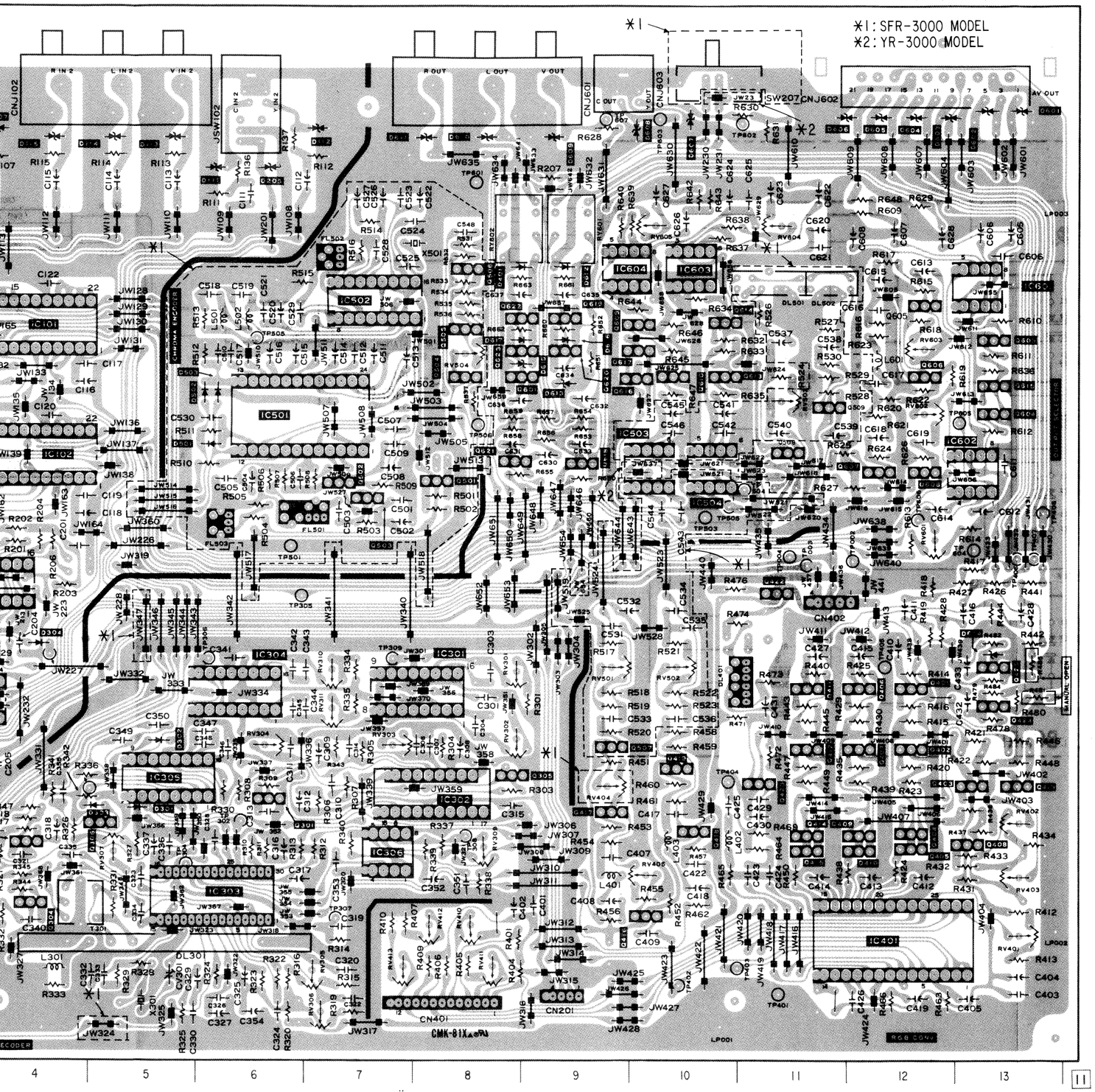
– Ref. No. YR-10 BOARD : 1000series –

YR-10 Board

Ref. No.	Location	Ref. No.	Location
D106	B-3	Q102	F-1
D107	B-3	Q103	F-1
D108	B-2	Q104	F-2
D109	B-2	Q201	H-2
D110	B-1	Q202	H-2
D111	B-6	Q301	H-6
D112	B-7	Q302	H-4
D113	B-5	Q303	I-3
D114	B-5	Q304	I-4
D115	B-4	Q305	H-9
D116	D-1	Q306	H-4
D203	B-3	Q401	G-12
D205	B-6	Q402	H-12
D209	G-1	Q403	H-12
D210	H-2	Q404	H-12
D301	H-5	Q405	H-12
D302	G-5	Q406	G-12
D303	H-5	Q407	H-12
D304	F-4	Q408	H-13
D401	C-9	Q409	H-11
D501	E-5	Q410	I-11
D502	D-5	Q411	C-11
D503	D-5	Q412	G-11
D601	B-13	Q413	H-13
D602	B-13	Q414	H-11
D603	B-12	Q415	H-11
D604	B-12	Q416	I-10
D605	B-12	Q417	H-9
D606	B-11	Q418	H-10
D607	B-10	Q419	G-10
D608	B-10	Q420	H-11
D609	B-9	Q422	F-11
D610	B-8	Q424	G-13
D611	B-7	Q425	G-13
D612	C-9	Q501	E-8
D613	D-9	Q502	E-7
D614	H-13	Q503	E-7
D615	C-9	Q504	D-8
D616	D-9	Q505	D-8
D617	D-8	Q506	C-8
		Q507	G-9
IC101	C-4	Q508	E-11
IC102	E-4	Q509	D-11
IC103	D-2	Q601	D-9
IC201	F-3	Q603	D-13
IC202	G-3	Q604	E-13
IC203	H-2	Q605	D-12
IC301	F-8	Q606	D-12
IC302	G-8	Q607	E-11
IC303	I-6	Q608	E-12
IC304	F-6	Q609	D-9
IC305	H-5	Q610	D-10
IC306	H-7	Q613	D-10
IC401	I-12	Q614	C-10
IC501	D-6	Q615	D-13
IC502	C-7	Q616	D-9
IC503	D-9	Q617	D-9
IC504	E-10	Q618	E-9
IC601	C-13	Q619	C-9
IC602	E-13	Q620	D-9
IC603	C-10	Q621	E-8
IC604	C-10	Q622	D-8
		Q623	D-8
Q101	D-1		

YR-10 BOARD





Difference List

Ref. No.	SFR-3000	YR-3000
C501 ~ C543	○ ‥ ○	– ‥ –
C544	○	JW
C545 ~ C546	○ ‥ ○	– ‥ –
C548	○	–
D501 ~ D503	○ ‥ ○	– ‥ –
JW235	–	○
JW324	○	–
JW325 ~ JW328	○ ‥ ○	– ‥ –
JW347	○	–
JW501 ~ JW525	○ ‥ ○	– ‥ –
JW527 ~ JW528	○ ‥ ○	– ‥ –
JW619	○	–
JW636 ~ JW637	– ‥ –	○ ‥ ○
L501 ~ L502	○ ‥ ○	– ‥ –
Q501 ~ Q507	○ ‥ ○	– ‥ –
Q509	○	–
R501 ~ R524	○ ‥ ○	– ‥ –
R526 ~ R537	○ ‥ ○	– ‥ –
RV404	○	JW
RV501 ~ RV504	○ ‥ ○	– ‥ –

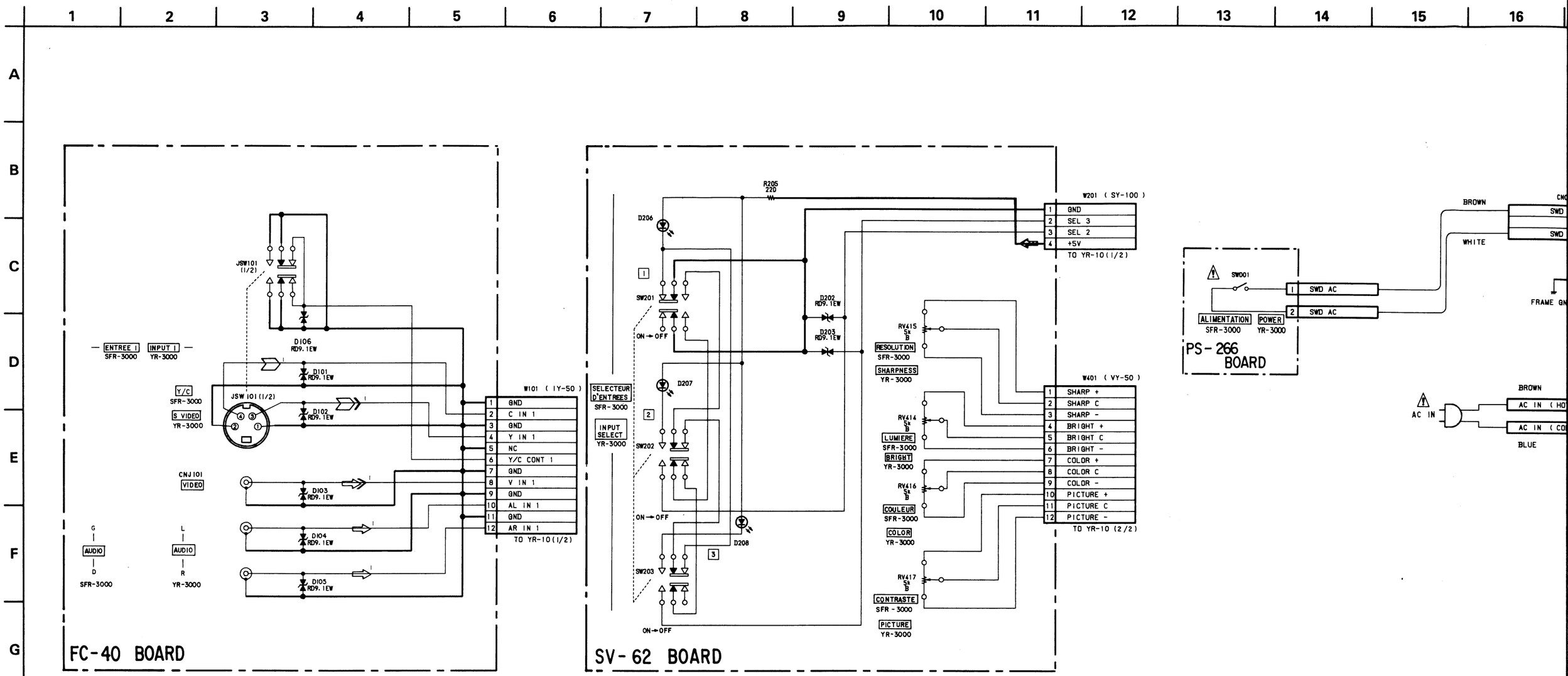
Note

○ (○ ‥ ○): mounted

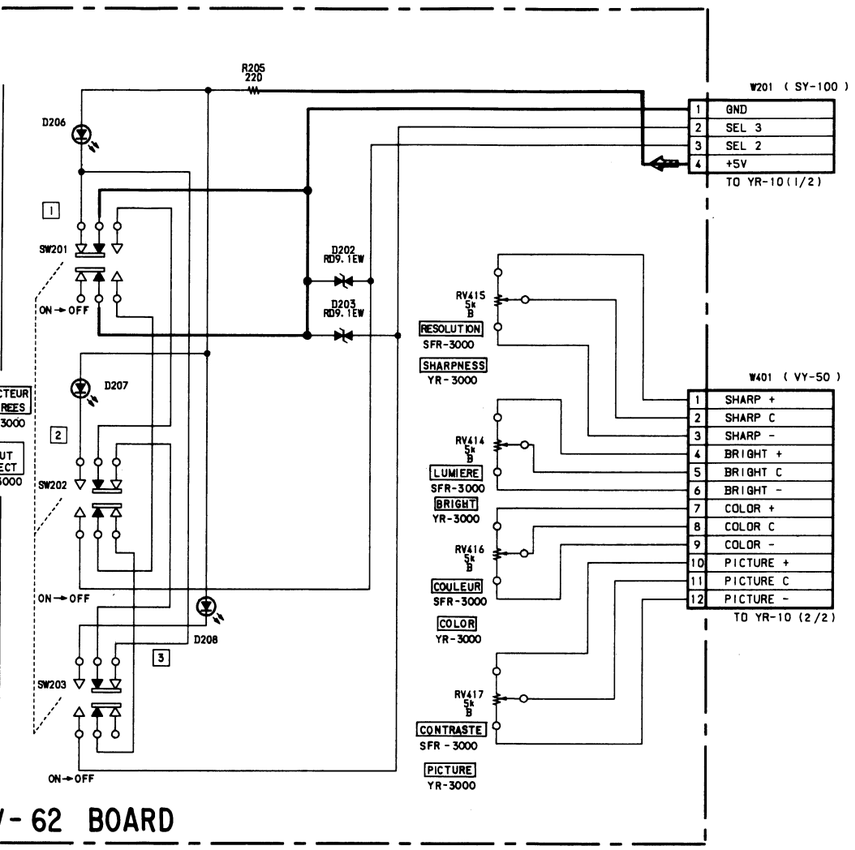
– (– ‥ –): not mounted

JW : jumper wire

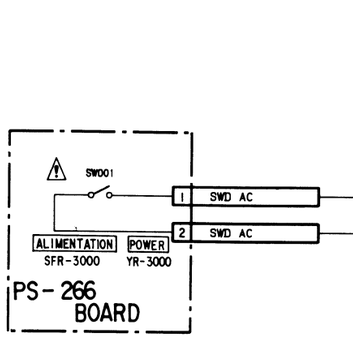
– Ref. No. FC-40 BOARD : 2000series, SV-62 BOARD : 3000 series, PS-266 BOARD : 40000 series, PW-93 BOARD : 5000series –

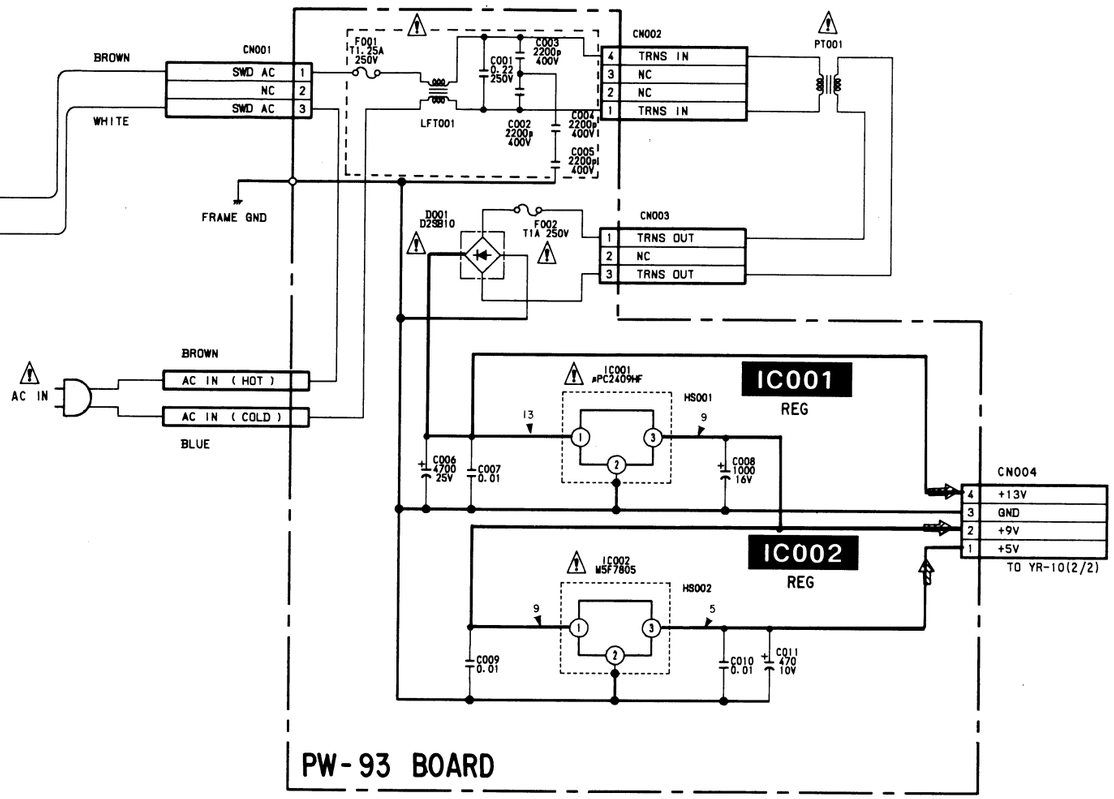


7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22



V-62 BOARD





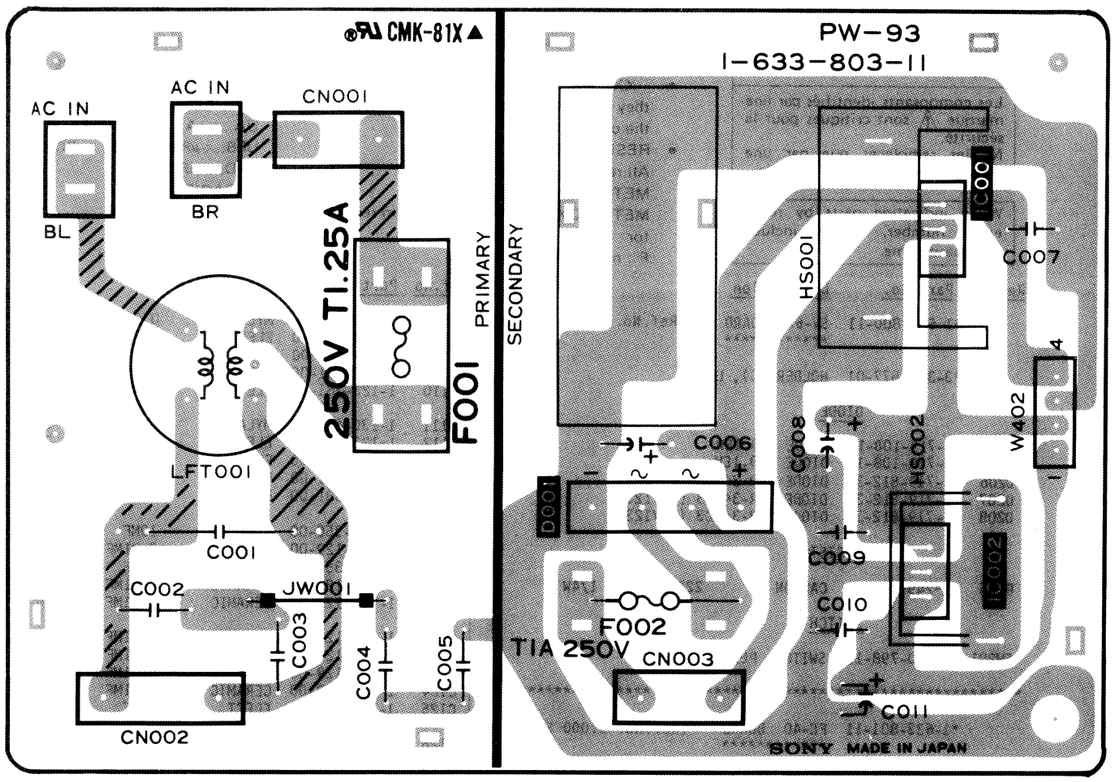
PW-93 BOARD

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

FC-40 (FRONT CONNECTOR), SV-62 (CONTROL SWITCH VOLUME), PS-266 (POWER SWITCH), PW-93 (POWER) PRINTED WIRING BOARDS

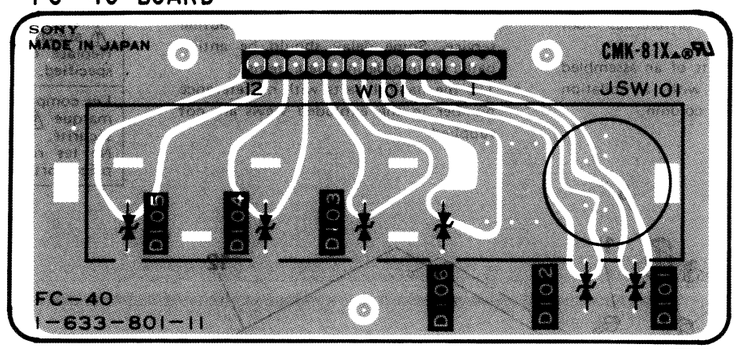
– Ref. No. FC-40 BOARD : 2000series, SV-62 BOARD : 3000 series, PS-266 BOARD : 40000 series, PW-93 BOARD : 5000series –

PW - 93 BOARD



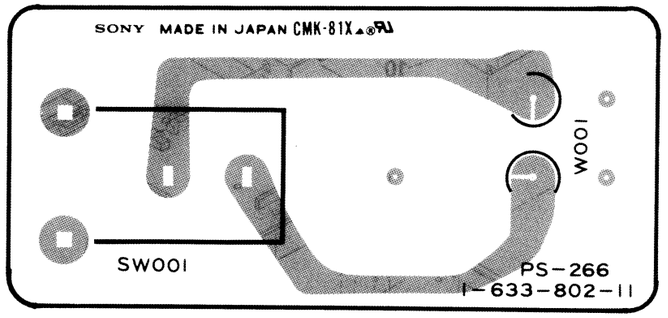
11

FC - 40 BOARD



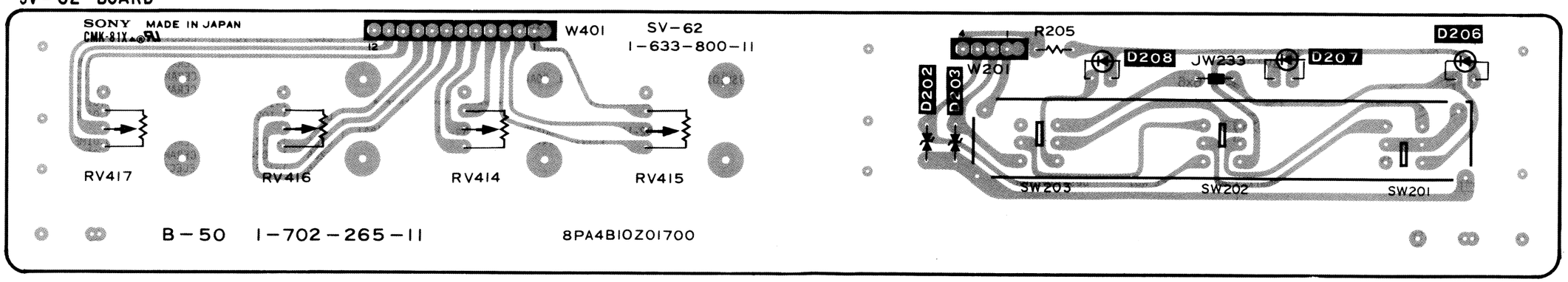
11

PS - 266 BOARD



11

SV - 62 BOARD



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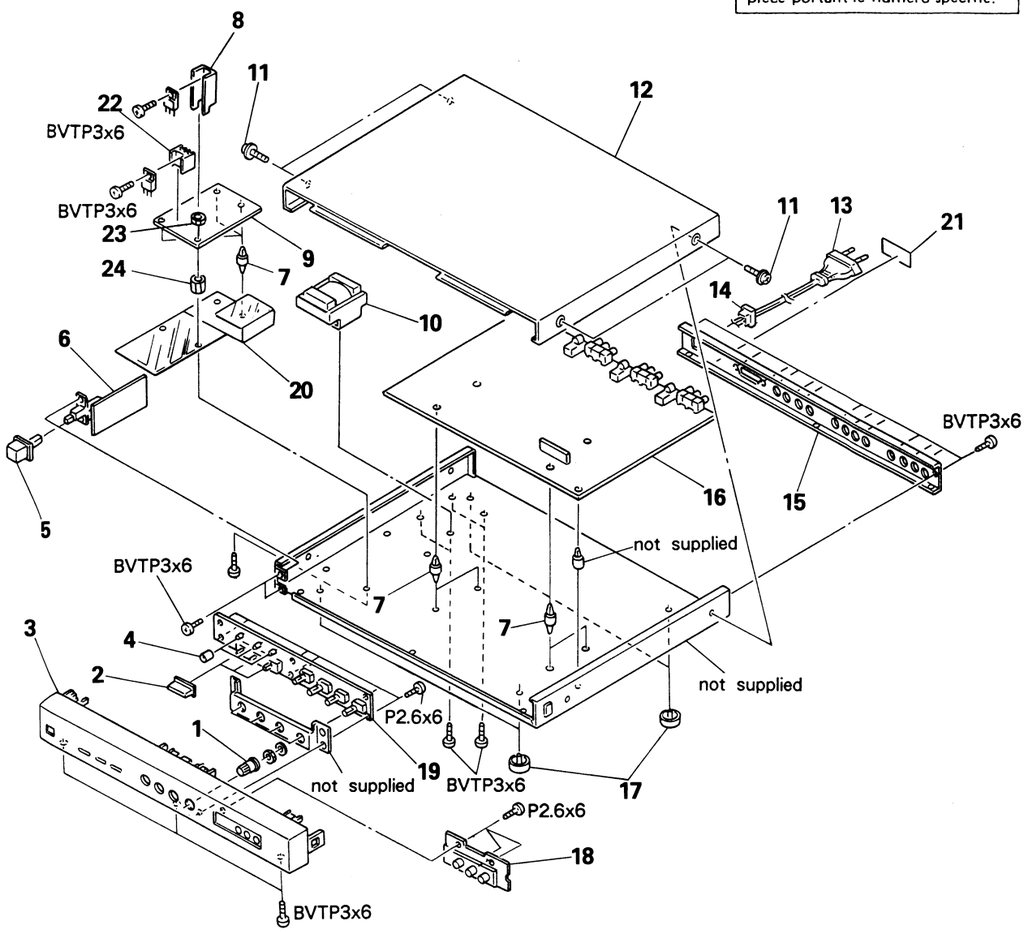
SECTION 6
EXPLODED VIEWS

NOTE:

- –XX, –X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.



No.	Part No.	Description	Remark
1	X-2118-215-1	KNOB (S) ASSY, VOL	
2	2-143-105-01	BUTTON, SELECT	
3	X-2143-104-1	PANEL SUB ASSY, FRONT (SFR-3000)	
	X-2143-103-1	PANEL SUB ASSY, FRONT (YR-3000)	
4	*3-349-577-01	HOLDER (C), LED	
5	2-143-102-01	BUTTON, POWER	
6	*1-633-802-11	PS-266 BOARD	
7	*4-835-627-00	FASTENER, (A)	
8	*4-875-327-01	HEAT SINK	
9	*1-633-803-11	PW-93 BOARD	
10	⚠1-449-976-11	TRANSFORMER, POWER	
11	3-703-668-11	SCREW, CASE	
12	2-119-112-01	CASE, UPPER	
13	⚠1-555-795-00	CORD, POWER	
14	⚠*3-703-244-00	BUSHING (2104), CORD	
15	*2-143-106-01	PANEL, REAR (SFR-3000)	
	2-143-106-11	PANEL, REAR (YR-3000)	
16	*A-7071-041-A	YR-10 BOARD, COMPLETE (SFR-3000)	
	*A-7071-035-A	YR-10 BOARD, COMPLETE (YR-3000)	
17	X-3701-069-0	FOOT ASSY, M.F	
18	*1-633-801-11	FC-40 BOARD	
19	*1-633-800-11	SV-62 BOARD	
20	9-911-863-99	FIBER SHEET, INSULATION	
21	*2-143-112-01	LABEL, MODEL NUMBER (YR-3000)	
	*2-143-113-01	LABEL, MODEL NUMBER (SFR-3000)	
22	*4-363-146-00	HEAT SINK, V.OUT	
23	7-684-023-04	NUT	
24	2-143-115-01	HOLDER	

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- –XX, –X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, U : μ, for example:
  UA...: μA..., UPA...: μPA...,
  UPB...: μPB..., UPC...: μPC...,
  UPD...: μPD...
- CAPACITORS
  MF : μF, PF : μμF
- COILS
  MMH : mH, UH : μH

Ref.No	Part No.	Description	Remark
	*1-633-800-11	SV-62 BOARD **********	(Ref.No. 3.000 Series)
	*3-349-577-01	HOLDER (C), LED	
		DIODE	
D202	8-719-108-12	DIODE RD9.1EW	
D203	8-719-108-12	DIODE RD9.1EW	
D206	8-719-812-32	DIODE SLR-34YC3 (TLY123)	
D207	8-719-812-32	DIODE SLR-34YC3 (TLY123)	
D208	8-719-812-32	DIODE SLR-34YC3 (TLY123)	
		RESISTOR	
R205	1-249-409-11	CARBON 220 5% 1/4W	
		SWITCH	
SW201	1-570-798-11	SWITCH, PUSH (3 KEY)	
**********			
	*1-633-801-11	FC-40 BOARD **********	(Ref.No. 2.000 Series)
		DIODE	
D101	8-719-108-12	DIODE RD9.1EW	
D102	8-719-108-12	DIODE RD9.1EW	
D103	8-719-108-12	DIODE RD9.1EW	
D104	8-719-108-12	DIODE RD9.1EW	
D105	8-719-108-12	DIODE RD9.1EW	
D106	8-719-108-12	DIODE RD9.1EW	
		TERMINAL BOARD	
JSW101	1-537-115-21	TERMINAL BOARD	
**********			
	*1-633-802-11	PS-266 BOARD **********	(Ref.No. 4.000 Series)
		SWITCH	
SW1	⚠1-571-877-11	SWITCH, PUSH (AC POWER)	
**********			
	*A-7071-041-A	YR-10 BOARD, COMPLETE (SFR-3000)	
	*A-7071-035-A	YR-10 BOARD, COMPLETE (YR-3000) **********	
		CAPACITOR	(Ref.No. 1.000 Series)
C101	1-130-483-00	MYLAR 0.01MF 5% 50V	
C102	1-123-369-00	ELECT 4.7MF 20% 63V	
C103	1-123-369-00	ELECT 4.7MF 20% 63V	
C104	1-123-381-00	ELECT 2.2MF 20% 50V	
C105	1-123-381-00	ELECT 2.2MF 20% 50V	
C106	1-130-483-00	MYLAR 0.01MF 5% 50V	
C107	1-123-369-00	ELECT 4.7MF 20% 63V	
C108	1-123-369-00	ELECT 4.7MF 20% 63V	
C109	1-123-381-00	ELECT 2.2MF 20% 50V	
C110	1-123-381-00	ELECT 2.2MF 20% 50V	
C111	1-130-483-00	MYLAR 0.01MF 5% 50V	
C112	1-123-369-00	ELECT 4.7MF 20% 63V	
C113	1-123-369-00	ELECT 4.7MF 20% 63V	
C114	1-123-381-00	ELECT 2.2MF 20% 50V	
C115	1-123-381-00	ELECT 2.2MF 20% 50V	
C116	1-123-356-00	ELECT 10MF 20% 16V	
C117	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C118	1-123-356-00	ELECT 10MF 20% 16V	
C119	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C120	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C121	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C122	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C123	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C124	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C125	1-123-356-00	ELECT 10MF 20% 16V	
C126	1-130-483-00	MYLAR 0.01MF 5% 50V	
C127	1-102-816-00	CERAMIC 120PF 5% 50V	
C128	1-130-483-00	MYLAR 0.01MF 5% 50V	
C129	1-130-483-00	MYLAR 0.01MF 5% 50V	
C130	1-124-126-00	ELECT 47MF 20% 16V	
C131	1-124-126-00	ELECT 47MF 20% 16V	
C132	1-102-976-00	CERAMIC 180PF 10% 50V	
C133	1-162-203-31	CERAMIC 15PF 5% 50V	
C134	1-123-321-00	ELECT 220MF 20% 16V	
C135	1-126-103-11	ELECT 470MF 20% 16V	
C136	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C137	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C138	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C139	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C201	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C204	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C205	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C206	1-123-330-00	ELECT 22MF 20% 25V	
C301	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C303	1-162-294-31	CERAMIC 0.001MF 10% 50V	
C304	1-162-294-31	CERAMIC 0.001MF 10% 50V	
C306	1-102-976-00	CERAMIC 180PF 10% 50V	
C307	1-108-811-11	MYLAR 0.039MF 5% 50V	
C308	1-123-356-00	ELECT 10MF 20% 16V	
C309	1-123-369-00	ELECT 4.7MF 20% 50V	
C310	1-130-485-00	MYLAR 0.015MF 5% 50V	
C311	1-108-812-11	MYLAR 0.047MF 5% 50V	
C312	1-123-369-00	ELECT 4.7MF 20% 50V	
C313	1-161-377-00	CERAMIC 0.0047MF 20% 16V	
C314	1-130-485-00	MYLAR 0.015MF 5% 50V	
C315	1-102-129-00	CERAMIC 0.01MF 10% 50V	
C316	1-123-380-00	ELECT 1MF 20% 50V	
C317	1-124-465-00	ELECT 0.47MF 5% 50V	
C318	1-123-380-00	ELECT 1MF 20% 50V	

Ref.No	Part No.	Description				Remark
C319	1-162-294-31	CERAMIC	0.001MF	10%	50V	
C320	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C321	1-162-294-31	CERAMIC	0.001MF	10%	50V	
C322	1-102-129-00	CERAMIC	0.01MF	20%	50V	
C323	1-130-483-00	MYLAR	0.01MF	5%	50V	
C324	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C325	1-131-347-00	TANTAL	1MF	10%	35V	
C326	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C327	1-124-126-00	ELECT	47MF	20%	16V	
C328	1-108-812-11	MYLAR	0.047MF	5%	50V	
C329	1-123-381-00	ELECT	2.2MF	20%	50V	
C330	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C332	1-102-947-00	CERAMIC	10PF	± 0.5PF	50V	
C333	1-102-824-00	CERAMIC	470PF	10%	50V	
C334	1-130-483-00	MYLAR	0.01MF	5%	50V	
C335	1-130-483-00	MYLAR	0.01MF	5%	50V	
C336	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C337	1-124-126-00	ELECT	47MF	20%	16V	
C338	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C339	1-123-356-00	ELECT	10MF	20%	16V	
C340	1-130-483-00	MYLAR	0.01MF	5%	50V	
C341	1-102-129-00	CERAMIC	0.01MF	5%	50V	
C342	1-130-491-00	MYLAR	0.047MF	5%	50V	
C343	1-130-491-00	MYLAR	0.047MF	5%	50V	
C344	1-164-086-11	CERAMIC	0.0012MF	10%	50V	
C345	1-161-374-11	CERAMIC	0.0015MF	20%	16V	
C346	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C347	1-162-290-31	CERAMIC	470PF	10%	50V	
C348	1-162-291-31	CERAMIC	560PF	10%	50V	
C349	1-162-293-31	CERAMIC	820PF	10%	50V	
C350	1-162-294-31	CERAMIC	0.001MF	10%	50V	
C351	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C352	1-123-369-00	ELECT	4.7MF	20%	50V	
C353	1-108-812-11	MYLAR	0.047MF	5%	50V	
C354	1-124-126-00	ELECT	47MF	20%	16V	
C401	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C402	1-123-356-00	ELECT	10MF	20%	16V	
C403	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C404	1-123-356-00	ELECT	10MF	20%	16V	
C405	1-124-464-11	ELECT	0.22MF	20%	50V	
C407	1-102-823-00	CERAMIC	430MF	10%	50V	
C408	1-123-330-00	ELECT	22MF	20%	25V	
C409	1-108-820-11	MYLAR	0.22MF	5%	50V	
C410	1-123-330-00	ELECT	22MF	20%	16V	
C411	1-124-360-00	ELECT	1000MF	20%	16V	
C412	1-124-465-00	ELECT	0.47MF	20%	50V	
C413	1-124-465-00	ELECT	0.47MF	20%	50V	
C414	1-124-465-00	ELECT	0.47MF	20%	50V	
C415	1-123-330-00	ELECT	22MF	20%	16V	
C416	1-124-360-00	ELECT	1000MF	20%	16V	
C417	1-102-823-00	CERAMIC	430MF	10%	50V	
C418	1-123-330-00	ELECT	22MF	20%	16V	
C419	1-123-330-00	ELECT	22MF	20%	16V	
C422	1-108-820-11	MYLAR	0.22MF	5%	50V	
C423	1-108-820-11	MYLAR	0.22MF	5%	50V	

Ref.No	Part No.	Description				Remark
C424	1-162-284-31	CERAMIC	150PF	10%	50V	
C425	1-162-211-31	CERAMIC	33PF	5%	50V	
C426	1-162-219-31	CERAMIC	68PF	5%	50V	
C427	1-123-330-00	ELECT	22MF	20%	16V	
C428	1-124-360-00	ELECT	1000MF	20%	16V	
C429	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C430	1-123-356-00	ELECT	10MF	20%	16V	
C431	1-124-126-00	ELECT	47MF	20%	16V	
C432	1-123-380-00	ELECT	1MF	20%	100V	
C433	1-123-330-00	ELECT	22MF	20%	25V	
C501	1-102-129-00	CERAMIC	0.01MF	10%	50V	(SFR-3000)
C502	1-126-101-11	ELECT	100MF	20%	16V	(SFR-3000)
C503	1-130-483-00	MYLAR	0.01MF	5%	50V	(SFR-3000)
C504	1-123-356-00	ELECT	10MF	20%	16V	(SFR-3000)
C505	1-102-129-00	CERAMIC	0.01MF	10%	50V	(SFR-3000)
C506	1-162-285-31	CERAMIC	180PF	10%	50V	(SFR-3000)
C507	1-108-812-11	MYLAR	0.047MF	5%	50V	(SFR-3000)
C508	1-123-356-00	ELECT	10MF	20%	16V	(SFR-3000)
C509	1-102-129-00	CERAMIC	0.01MF	10%	50V	(SFR-3000)
C510	1-162-289-31	CERAMIC	390PF	10%	50V	(SFR-3000)
C511	1-124-465-00	ELECT	0.47MF	20%	50V	(SFR-3000)
C512	1-162-285-31	CERAMIC	180PF	10%	50V	(SFR-3000)
C513	1-124-254-00	ELECT	0.68MF	20%	50V	(SFR-3000)
C514	1-124-464-11	ELECT	0.22MF	20%	50V	(SFR-3000)
C515	1-124-254-00	ELECT	0.68MF	20%	50V	(SFR-3000)
C516	1-124-464-11	ELECT	0.22MF	20%	50V	(SFR-3000)
C517	1-130-478-00	MYLAR	0.0039MF	5%	50V	(SFR-3000)
C518	1-162-205-31	CERAMIC	18PF	5%	50V	(SFR-3000)
C519	1-162-211-31	CERAMIC	33PF	5%	50V	(SFR-3000)
C520	1-123-356-00	ELECT	10MF	20%	16V	(SFR-3000)
C521	1-102-129-00	CERAMIC	0.01MF	10%	50V	(SFR-3000)
C522	1-123-330-00	ELECT	22MF	20%	16V	(SFR-3000)
C523	1-102-129-00	CERAMIC	0.01MF	10%	50V	(SFR-3000)
C524	1-162-286-31	CERAMIC	220PF	10%	50V	(SFR-3000)
C525	1-162-219-31	CERAMIC	68PF	5%	50V	(SFR-3000)
C526	1-124-252-00	ELECT	0.33MF	20%	50V	(SFR-3000)
C527	1-126-230-11	ELECT	6.8MF	20%	35V	(SFR-3000)
C528	1-162-284-31	CERAMIC	150PF	10%	50V	(SFR-3000)
C529	1-108-808-11	MYLAR	0.022MF	5%	50V	(SFR-3000)
C530	1-162-289-31	CERAMIC	390PF	10%	50V	(SFR-3000)
C531	1-102-129-00	CERAMIC	0.01MF	10%	50V	(SFR-3000)
C532	1-123-356-00	ELECT	10MF	20%	16V	(SFR-3000)
C533	1-130-483-00	MYLAR	0.01MF	5%	50V	(SFR-3000)
C534	1-102-129-00	CERAMIC	0.01MF	10%	50V	(SFR-3000)
C535	1-123-356-00	ELECT	10MF	20%	16V	(SFR-3000)
C536	1-130-483-00	MYLAR	0.01MF	5%	50V	(SFR-3000)
C537	1-123-321-00	ELECT	220MF	20%	16V	(SFR-3000)
C538	1-124-126-00	ELECT	47MF	20%	16V	(SFR-3000)
C539	1-124-126-00	ELECT	47MF	20%	16V	(SFR-3000)
C540	1-124-126-00	ELECT	47MF	20%	16V	(SFR-3000)
C541	1-123-356-00	ELECT	10MF	10%	50V	(SFR-3000)
C542	1-102-129-00	CERAMIC	0.01MF	20%	50V	(SFR-3000)
C543	1-130-483-00	MYLAR	0.01MF	5%	50V	(SFR-3000)
C544	1-130-483-00	MYLAR	0.01MF	5%	50V	(SFR-3000)
C545	1-123-356-00	ELECT	10MF	20%	50V	(SFR-3000)
C546	1-102-129-00	CERAMIC	0.01MF	10%	50V	(SFR-3000)
C548	1-130-483-00	MYLAR	0.01MF	5%	50V	(SFR-3000)

When indicating parts by reference number, please include the board name.

YR-10

Ref.No	Part No.	Description				Remark
C605	1-123-356-00	ELECT	10MF	20%	16V	
C606	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C607	1-124-360-00	ELECT	1000MF	20%	16V	
C608	1-123-321-00	ELECT	220MF	20%	16V	
C609	1-123-321-00	ELECT	220MF	20%	16V	
C611	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C612	1-123-356-00	ELECT	10MF	20%	16V	
C613	1-124-126-00	ELECT	47MF	20%	16V	
C614	1-124-126-00	ELECT	47MF	20%	16V	
C615	1-123-356-00	ELECT	10MF	20%	16V	
C616	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C617	1-164-027-11	CERAMIC	22PF	5%	50V	
C618	1-123-321-00	ELECT	220MF	20%	16V	
C619	1-130-483-00	MYLAR	0.01MF	5%	50V	
C620	1-123-356-00	ELECT	10MF	20%	16V	
C621	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C622	1-124-360-00	ELECT	1000MF	20%	16V	
C623	1-123-321-00	ELECT	220MF	20%	16V	
C624	1-123-356-00	ELECT	10MF	20%	16V	
C625	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C626	1-126-101-11	ELECT	100MF	20%	16V	
C627	1-123-330-00	ELECT	22MF	20%	16V	
C628	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C630	1-123-381-00	ELECT	2.2MF	20%	100V	
C631	1-123-381-00	ELECT	2.2MF	20%	100V	
C632	1-123-381-00	ELECT	2.2MF	20%	100V	
C633	1-123-381-00	ELECT	2.2MF	20%	100V	
C634	1-123-330-00	ELECT	22MF	20%	25V	
C635	1-126-101-11	ELECT	100MF	20%	16V	
C636	1-123-330-00	ELECT	22MF	20%	25V	
C637	1-126-101-11	ELECT	100MF	20%	16V	

CONNECTOR

CN101	1-506-477-11	PIN, CONNECTOR 12P
CN201	1-506-469-11	PIN, CONNECTOR 4P
CN401	1-506-477-11	PIN, CONNECTOR 12P
CN402	*1-560-892-00	PIN, CONNECTOR 4P

JACK

CNJ102	1-568-528-11	JACK, PIN 3P
CNJ103	1-568-528-11	JACK, PIN 3P
CNJ601	1-568-528-11	JACK, PIN 3P
CNJ603	1-566-847-11	CONNECTOR,(S) TERMINAL 4P

TRIMMER

CV301	1-141-260-00	TRIMMER, CERAMIC

DIODE

D106	8-719-108-12	DIODE RD9.1EW
D107	8-719-108-12	DIODE RD9.1EW
D108	8-719-108-12	DIODE RD9.1EW
D109	8-719-108-12	DIODE RD9.1EW
D110	8-719-108-12	DIODE RD9.1EW
D111	8-719-108-12	DIODE RD9.1EW
D112	8-719-108-12	DIODE RD9.1EW
D113	8-719-108-12	DIODE RD9.1EW
D114	8-719-108-12	DIODE RD9.1EW
D115	8-719-108-12	DIODE RD9.1EW
D116	8-719-911-19	DIODE 1SS119
D204	8-719-108-12	DIODE RD9.1EW
D205	8-719-108-12	DIODE RD9.1EW
D209	8-719-911-19	DIODE 1SS119
D210	8-719-100-30	DIODE RD5.1EB2
D301	8-719-911-19	DIODE 1SS119
D302	8-719-911-19	DIODE 1SS119
D303	8-719-911-19	DIODE 1SS119
D304	8-719-911-19	DIODE 1SS119
D401	8-719-911-19	DIODE 1SS119
D501	8-719-911-19	DIODE 1SS119 (SFR-3000)
D502	8-719-911-19	DIODE 1SS119 (SFR-3000)
D503	8-719-911-19	DIODE 1SS119 (SFR-3000)
D601	8-719-108-12	DIODE RD9.1EW
D602	8-719-108-12	DIODE RD9.1EW
D603	8-719-108-12	DIODE RD9.1EW
D604	8-719-108-12	DIODE RD9.1EW
D605	8-719-108-12	DIODE RD9.1EW
D606	8-719-108-12	DIODE RD9.1EW
D607	8-719-108-12	DIODE RD9.1EW
D608	8-719-108-12	DIODE RD9.1EW
D609	8-719-108-12	DIODE RD9.1EW
D610	8-719-108-12	DIODE RD9.1EW
D611	8-719-108-12	DIODE RD9.1EW
D612	8-719-911-19	DIODE 1SS119
D613	8-719-100-35	DIODE RD5.6EB2
D614	8-719-100-57	DIODE RD10EB2
D615	8-719-100-35	DIODE RD5.6EB2
D616	8-719-911-19	DIODE 1SS119
D617	8-719-911-19	DIODE 1SS119
D618	8-719-911-19	DIODE 1SS119

DELAY LINE

DL301	1-415-313-00	DELAY LINE (1H)
DL401	1-415-734-11	DELAY LINE
DL501	1-235-448-21	DELAY LINE
DL502	1-415-735-11	DELAY LINE

FILTER

FL101	1-409-470-11	FILTER, TRAP
FL501	1-235-230-00	FILTER, BAND PASS (SFR-3000)
FL502	1-235-587-11	FILTER, BAND PASS (SFR-3000)
FL503	1-235-231-00	FILTER, BELL (SFR-3000)

IC

IC101	8-759-634-70	IC M52471P
IC102	8-759-634-69	IC M52470P
IC103	8-759-634-69	IC M52470P
IC201	8-759-104-62	IC UPD74HC153C
IC202	8-759-104-42	IC UPD74HC32C
IC203	8-759-916-19	IC UPD74HC11P
IC301	8-759-000-01	IC MC74HC4538N
IC302	8-759-314-41	IC HA11441
IC303	8-759-603-53	IC M51271SP
IC304	8-759-000-01	IC MC74HC4538N
IC305	8-759-000-01	IC MC74HC4538N
IC306	8-759-945-58	IC BA4558P
IC401	8-752-034-85	IC CXA1216P
IC501	8-759-920-90	IC TDA2506 (SFR-3000)
IC502	8-759-920-91	IC TDA2507 (SFR-3000)

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
IC503	8-759-710-85	IC NJM2233BD (SFR-3000)	
IC504	8-759-710-85	IC NJM2233BD (SFR-3000)	
IC601	8-759-030-67	IC MC14576AP	
IC602	8-759-710-85	IC NJM2233BD	
IC603	8-759-037-18	IC MC14577AP	
IC604	8-759-037-18	IC MC14577AP	
		CONNECTOR	
JSW102	1-566-980-21	CONNECTOR, ROUND TYPE 4P	
JSW103	1-566-980-21	CONNECTOR, ROUND TYPE 4P	
		COIL	
L101	1-408-420-00	INDUCTOR 82UH	
L102	1-408-407-00	INDUCTOR 6.8UH	
L301	1-408-408-00	INDUCTOR 8.2UH	
L401	1-408-407-00	INDUCTOR 6.8UH	
L402	1-408-409-00	INDUCTOR 10UH	
L403	1-408-407-00	INDUCTOR 6.8UH	
L501	1-410-119-11	INDUCTOR 1MMH (SFR-3000)	
L502	1-410-121-41	INDUCTOR 1.5MMH (SFR-3000)	
L601	1-408-417-00	INDUCTOR 47UH	
		TRANSISTOR	
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q102	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q104	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q201	8-729-900-89	TRANSISTOR DTC144ES	
Q202	8-729-900-65	TRANSISTOR DTA144ES	
Q301	8-729-900-89	TRANSISTOR DTC144ES	
Q302	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q303	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q304	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q305	8-729-900-65	TRANSISTOR DTA144ES	
Q306	8-729-900-65	TRANSISTOR DTA144ES	
Q401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q402	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q403	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q404	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q405	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q406	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q407	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q408	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q409	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q410	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q411	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q412	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q413	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q414	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q415	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q416	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q417	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q418	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q419	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q420	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q422	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q424	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q425	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q501	8-729-101-86	TRANSISTOR 2SB733-K1 (SFR-3000)	
Q502	8-729-119-78	TRANSISTOR 2SC2785-HFE (SFR-3000)	
Q503	8-729-119-78	TRANSISTOR 2SC2785-HFE (SFR-3000)	
Q504	8-729-119-78	TRANSISTOR 2SC2785-HFE (SFR-3000)	
Q505	8-729-119-78	TRANSISTOR 2SC2785-HFE (SFR-3000)	
Q506	8-729-119-76	TRANSISTOR 2SA1175-HFE (SFR-3000)	
Q507	8-729-119-78	TRANSISTOR 2SC2785-HFE (SFR-3000)	
Q508	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q509	8-729-119-76	TRANSISTOR 2SA1175-HFE (SFR-3000)	
Q601	8-729-900-89	TRANSISTOR DTC144ES	
Q603	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q604	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q605	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q606	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q607	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q608	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q609	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q610	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q613	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q614	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q615	8-729-900-89	TRANSISTOR DTC144ES	
Q616	8-729-900-89	TRANSISTOR DTC144ES	
Q617	8-729-900-89	TRANSISTOR DTC144ES	
Q618	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q619	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q620	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q621	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q622	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q623	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		RESISTOR	
R101	1-249-403-11	CARBON 68 5% 1/4W	
R102	1-249-403-11	CARBON 68 5% 1/4W	
R103	1-247-804-11	CARBON 75 5% 1/4W	
R104	1-247-887-00	CARBON 220K 5% 1/4W	
R105	1-247-887-00	CARBON 220K 5% 1/4W	
R106	1-249-403-11	CARBON 68 5% 1/4W	
R107	1-249-403-11	CARBON 68 5% 1/4W	
R108	1-247-804-11	CARBON 75 5% 1/4W	
R109	1-247-887-00	CARBON 220K 5% 1/4W	
R110	1-247-887-00	CARBON 220K 5% 1/4W	
R111	1-249-403-11	CARBON 68 5% 1/4W	
R112	1-249-403-11	CARBON 68 5% 1/4W	
R113	1-247-804-11	CARBON 75 5% 1/4W	
R114	1-247-887-00	CARBON 220K 5% 1/4W	
R115	1-247-887-00	CARBON 220K 5% 1/4W	
R116	1-249-414-11	CARBON 560 5% 1/4W	
R117	1-249-411-11	CARBON 330 5% 1/4W	
R118	1-249-417-11	CARBON 1K 5% 1/4W	
R119	1-249-417-11	CARBON 1K 5% 1/4W	
R120	1-249-435-11	CARBON 33K 5% 1/4W	
R121	1-249-435-11	CARBON 33K 5% 1/4W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R122	1-249-417-11	CARBON	1K	5%	1/4W	
R123	1-249-417-11	CARBON	1K	5%	1/4W	
R124	1-249-417-11	CARBON	1K	5%	1/4W	
R125	1-249-409-11	CARBON	220	5%	1/4W	
R126	1-249-435-11	CARBON	33K	5%	1/4W	
R127	1-249-435-11	CARBON	33K	5%	1/4W	
R128	1-249-413-11	CARBON	470	5%	1/4W	
R129	1-249-413-11	CARBON	470	5%	1/4W	
R130	1-249-417-11	CARBON	1K	5%	1/4W	
R131	1-249-417-11	CARBON	1K	5%	1/4W	
R132	1-249-391-11	CARBON	6.8	5%	1/4W	
R133	1-249-391-11	CARBON	6.8	5%	1/4W	
R134	1-249-391-11	CARBON	6.8	5%	1/4W	
R135	1-249-391-11	CARBON	6.8	5%	1/4W	
R136	1-249-391-11	CARBON	6.8	5%	1/4W	
R137	1-249-391-11	CARBON	6.8	5%	1/4W	
R201	1-249-429-11	CARBON	10K	5%	1/4W	
R202	1-249-429-11	CARBON	10K	5%	1/4W	
R203	1-249-429-11	CARBON	10K	5%	1/4W	
R204	1-249-429-11	CARBON	10K	5%	1/4W	
R206	1-249-429-11	CARBON	10K	5%	1/4W	
R207	1-249-429-11	CARBON	10K	5%	1/4W	
R208	1-249-429-11	CARBON	10K	5%	1/4W	
R209	1-249-441-11	CARBON	100K	5%	1/4W	
R301	1-249-417-11	CARBON	1K	5%	1/4W	
R303	1-249-417-11	CARBON	1K	5%	1/4W	
R304	1-249-431-11	CARBON	15K	5%	1/4W	
R305	1-249-439-11	CARBON	68K	5%	1/4W	
R306	1-249-431-11	CARBON	15K	5%	1/4W	
R307	1-249-397-11	CARBON	22	5%	1/4W	
R308	1-249-418-11	CARBON	1.2K	5%	1/4W	
R309	1-249-429-11	CARBON	10K	5%	1/4W	
R310	1-249-433-11	CARBON	22K	5%	1/4W	
R311	1-247-881-00	CARBON	120K	5%	1/4W	
R312	1-249-436-11	CARBON	39K	5%	1/4W	
R313	1-249-417-11	CARBON	1K	5%	1/4W	
R314	1-249-432-11	CARBON	18K	5%	1/4W	
R315	1-249-429-11	CARBON	10K	5%	1/4W	
R316	1-249-429-11	CARBON	10K	5%	1/4W	
R317	1-249-419-11	CARBON	1.5K	5%	1/4W	
R318	1-249-417-11	CARBON	1K	5%	1/4W	
R319	1-249-429-11	CARBON	10K	5%	1/4W	
R320	1-249-429-11	CARBON	10K	5%	1/4W	
R321	1-249-419-11	CARBON	1.5K	5%	1/4W	
R322	1-249-417-11	CARBON	1K	5%	1/4W	
R323	1-247-895-00	CARBON	470K	5%	1/4W	
R324	1-249-429-11	CARBON	10K	5%	1/4W	
R325	1-249-417-11	CARBON	1K	5%	1/4W	
R326	1-249-429-11	CARBON	10K	5%	1/4W	
R327	1-249-429-11	CARBON	10K	5%	1/4W	

Ref.No	Part No.	Description				Remark
R328	1-249-404-00	CARBON	82	5%	1/4W	
R329	1-249-407-11	CARBON	150	5%	1/4W	
R330	1-249-426-11	CARBON	5.6K	5%	1/4W	
R331	1-249-415-11	CARBON	680	5%	1/4W	
R332	1-249-411-11	CARBON	330	5%	1/4W	
R333	1-249-412-11	CARBON	390	5%	1/4W	
R334	1-247-889-00	CARBON	270K	5%	1/4W	
R335	1-249-438-11	CARBON	56K	5%	1/4W	
R336	1-249-426-11	CARBON	5.6K	5%	1/4W	
R337	1-249-431-11	CARBON	15K	5%	1/4W	
R338	1-249-431-11	CARBON	15K	5%	1/4W	
R339	1-247-887-00	CARBON	220K	5%	1/4W	
R340	1-249-429-11	CARBON	10K	5%	1/4W	
R341	1-249-425-11	CARBON	4.7K	5%	1/4W	
R342	1-249-417-11	CARBON	1K	5%	1/4W	
R343	1-249-425-11	CARBON	4.7K	5%	1/4W	
R344	1-249-405-11	CARBON	100	5%	1/4W	
R345	1-249-405-11	CARBON	100	5%	1/4W	
R347	1-249-417-11	CARBON	1K	5%	1/4W	
R401	1-249-429-11	CARBON	10K	5%	1/4W	
R404	1-249-427-11	CARBON	6.8K	5%	1/4W	
R405	1-249-421-11	CARBON	2.2K	5%	1/4W	
R406	1-249-427-11	CARBON	6.8K	5%	1/4W	
R407	1-249-420-11	CARBON	1.8K	5%	1/4W	
R409	1-249-417-11	CARBON	1K	5%	1/4W	
R410	1-249-422-11	CARBON	2.7K	5%	1/4W	
R412	1-249-425-11	CARBON	4.7K	5%	1/4W	
R413	1-249-425-11	CARBON	4.7K	5%	1/4W	
R414	1-249-404-00	CARBON	82	5%	1/4W	
R415	1-249-422-11	CARBON	2.7K	5%	1/4W	
R416	1-249-409-11	CARBON	220	5%	1/4W	
R417	1-247-804-11	CARBON	75	5%	1/4W	
R418	1-247-895-00	CARBON	470K	5%	1/4W	
R419	1-249-405-11	CARBON	100	5%	1/4W	
R420	1-249-409-11	CARBON	220	5%	1/4W	
R421	1-249-409-11	CARBON	220	5%	1/4W	
R422	1-249-419-11	CARBON	1.5K	5%	1/4W	
R423	1-249-421-11	CARBON	2.2K	5%	1/4W	
R424	1-249-409-11	CARBON	220	5%	1/4W	
R425	1-249-404-00	CARBON	82	5%	1/4W	
R426	1-247-804-11	CARBON	75	5%	1/4W	
R427	1-247-895-00	CARBON	470K	5%	1/4W	
R428	1-249-405-11	CARBON	100	5%	1/4W	
R429	1-249-409-11	CARBON	220	5%	1/4W	
R430	1-249-422-11	CARBON	2.7K	5%	1/4W	
R431	1-249-432-11	CARBON	18K	5%	1/4W	
R432	1-249-425-11	CARBON	4.7K	5%	1/4W	
R433	1-249-425-11	CARBON	4.7K	5%	1/4W	
R434	1-249-428-11	CARBON	8.2K	5%	1/4W	
R435	1-249-409-11	CARBON	220	5%	1/4W	
R436	1-249-409-11	CARBON	220	5%	1/4W	
R437	1-249-419-11	CARBON	1.5K	5%	1/4W	
R438	1-249-409-11	CARBON	220	5%	1/4W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R439	1-249-421-11	CARBON	2.2K	5%	1/4W	
R440	1-249-404-00	CARBON	82	5%	1/4W	
R441	1-247-804-11	CARBON	75	5%	1/4W	
R442	1-247-895-00	CARBON	470K	5%	1/4W	
R443	1-249-409-11	CARBON	220	5%	1/4W	
R444	1-249-405-11	CARBON	100	5%	1/4W	
R445	1-249-422-11	CARBON	2.7K	5%	1/4W	
R446	1-249-409-11	CARBON	220	5%	1/4W	
R447	1-249-409-11	CARBON	220	5%	1/4W	
R448	1-249-419-11	CARBON	1.5K	5%	1/4W	
R449	1-249-421-11	CARBON	2.2K	5%	1/4W	
R450	1-249-409-11	CARBON	220	5%	1/4W	
R451	1-249-411-11	CARBON	330	5%	1/4W	
R452	1-249-416-11	CARBON	820	5%	1/4W	
R453	1-249-436-11	CARBON	39K	5%	1/4W	
R454	1-249-433-11	CARBON	22K	5%	1/4W	
R455	1-249-411-11	CARBON	330	5%	1/4W	
R456	1-249-405-11	CARBON	100	5%	1/4W	
R457	1-249-416-11	CARBON	820	5%	1/4W	
R458	1-249-407-11	CARBON	150	5%	1/4W	
R459	1-249-416-11	CARBON	820	5%	1/4W	
R460	1-249-436-11	CARBON	39K	5%	1/4W	
R461	1-249-433-11	CARBON	22K	5%	1/4W	
R462	1-249-405-11	CARBON	100	5%	1/4W	
R463	1-247-891-00	CARBON	330K	5%	1/4W	
R464	1-249-411-11	CARBON	330	5%	1/4W	
R465	1-249-425-11	CARBON	4.7K	5%	1/4W	
R466	1-427-901-11	CARBON	820K	5%	1/4W	
R469	1-249-416-11	CARBON	820	5%	1/4W	
R471	1-249-435-11	CARBON	33K	5%	1/4W	
R472	1-249-435-11	CARBON	33K	5%	1/4W	
R473	1-249-409-11	CARBON	220	5%	1/4W	
R474	1-249-409-11	CARBON	220	5%	1/4W	
R476	1-249-409-11	CARBON	220	5%	1/4W	
R478	1-429-423-11	CARBON	3.3K	5%	1/4W	
R479	1-429-462-11	CARBON	5.6K	5%	1/4W	
R480	1-429-471-11	CARBON	1K	5%	1/4W	
R481	1-247-804-11	CARBON	75	5%	1/4W	
R482	1-429-417-11	CARBON	1K	5%	1/4W	
R484	1-429-411-11	CARBON	330	5%	1/4W	
R485	1-429-414-11	CARBON	560	5%	1/4W	
R501	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R502	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R503	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R504	1-247-832-11	CARBON	1.1K	5%	1/4W	(SFR-3000)
R505	1-249-431-11	CARBON	15K	5%	1/4W	(SFR-3000)
R506	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R507	1-247-848-11	CARBON	5.1K	5%	1/4W	(SFR-3000)
R508	1-249-429-11	CARBON	10K	5%	1/4W	(SFR-3000)
R509	1-249-425-11	CARBON	4.7K	5%	1/4W	(SFR-3000)
R510	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R511	1-249-429-11	CARBON	10K	5%	1/4W	(SFR-3000)
R512	1-249-429-11	CARBON	10K	5%	1/4W	(SFR-3000)
R513	1-249-428-11	CARBON	8.2K	5%	1/4W	(SFR-3000)
R514	1-249-399-11	CARBON	33	5%	1/4W	(SFR-3000)
R515	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R516	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R517	1-249-421-11	CARBON	2.2K	5%	1/4W	(SFR-3000)
R518	1-249-422-11	CARBON	2.7K	5%	1/4W	(SFR-3000)
R519	1-247-887-00	CARBON	220K	5%	1/4W	(SFR-3000)

Ref.No	Part No.	Description				Remark
R520	1-249-419-11	CARBON	1.5K	5%	1/4W	(SFR-3000)
R521	1-249-421-11	CARBON	2.2K	5%	1/4W	(SFR-3000)
R522	1-249-422-11	CARBON	2.7K	5%	1/4W	(SFR-3000)
R523	1-247-887-00	CARBON	220K	5%	1/4W	(SFR-3000)
R524	1-249-411-11	CARBON	330	5%	1/4W	(SFR-3000)
R526	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R527	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R528	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R529	1-249-435-11	CARBON	33K	5%	1/4W	(SFR-3000)
R530	1-249-435-11	CARBON	33K	5%	1/4W	(SFR-3000)
R531	1-249-433-11	CARBON	22K	5%	1/4W	(SFR-3000)
R532	1-249-429-11	CARBON	10K	5%	1/4W	(SFR-3000)
R533	1-249-413-11	CARBON	470	5%	1/4W	(SFR-3000)
R534	1-249-417-11	CARBON	1K	5%	1/4W	(SFR-3000)
R535	1-249-410-11	CARBON	270	5%	1/4W	(SFR-3000)
R536	1-249-413-11	CARBON	470	5%	1/4W	(SFR-3000)
R537	1-249-416-11	CARBON	820	5%	1/4W	(SFR-3000)
R609	1-247-883-00	CARBON	150K	5%	1/4W	
R610	1-249-419-11	CARBON	1.5K	5%	1/4W	
R611	1-249-409-11	CARBON	220	5%	1/4W	
R612	1-249-409-11	CARBON	220	5%	1/4W	
R613	1-249-421-11	CARBON	2.2K	5%	1/4W	
R614	1-249-421-11	CARBON	2.2K	5%	1/4W	
R615	1-249-419-11	CARBON	1.5K	5%	1/4W	
R616	1-249-429-11	CARBON	10K	5%	1/4W	
R617	1-249-433-11	CARBON	22K	5%	1/4W	
R618	1-249-416-11	CARBON	820	5%	1/4W	
R619	1-249-416-11	CARBON	820	5%	1/4W	
R620	1-249-414-11	CARBON	560	5%	1/4W	
R621	1-249-412-11	CARBON	390	5%	1/4W	
R622	1-249-420-11	CARBON	1.8K	5%	1/4W	
R623	1-249-403-11	CARBON	68	5%	1/4W	
R624	1-249-417-11	CARBON	1K	5%	1/4W	
R625	1-249-409-11	CARBON	220	5%	1/4W	
R626	1-249-417-11	CARBON	1K	5%	1/4W	
R627	1-249-409-11	CARBON	220	5%	1/4W	
R628	1-247-804-11	CARBON	75	5%	1/4W	
R629	1-247-883-00	CARBON	150K	5%	1/4W	
R630	1-247-804-11	CARBON	75	5%	1/4W	
R631	1-247-883-00	CARBON	150K	5%	1/4W	
R632	1-249-409-11	CARBON	220	5%	1/4W	
R633	1-249-425-11	CARBON	4.7K	5%	1/4W	
R634	1-249-419-11	CARBON	1.5K	5%	1/4W	
R635	1-249-409-11	CARBON	220	5%	1/4W	
R636	1-249-425-11	CARBON	4.7K	5%	1/4W	
R637	1-249-414-11	CARBON	560	5%	1/4W	
R638	1-249-412-11	CARBON	390	5%	1/4W	
R639	1-429-414-11	CARBON	560	5%	1/4W	
R640	1-249-412-11	CARBON	390	5%	1/4W	
R642	1-247-804-11	CARBON	75	5%	1/4W	
R643	1-247-883-00	CARBON	150K	5%	1/4W	
R644	1-249-419-11	CARBON	1.5K	5%	1/4W	
R645	1-249-409-11	CARBON	220	5%	1/4W	
R646	1-249-425-11	CARBON	4.7K	5%	1/4W	
R647	1-249-409-11	CARBON	220	5%	1/4W	

When indicating parts by reference number, please include the board name.

YR-10 PW-93

Ref.No	Part No.	Description				Remark
R648	1-247-804-11	CARBON	75	5%	1/4W	
R650	1-249-419-11	CARBON	1.5K	5%	1/4W	
R651	1-249-437-11	CARBON	47K	5%	1/4W	
R652	1-249-416-11	CARBON	820	5%	1/4W	
R653	1-249-437-11	CARBON	47K	5%	1/4W	
R654	1-249-416-11	CARBON	820	5%	1/4W	
R655	1-249-419-11	CARBON	1.5K	5%	1/4W	
R656	1-249-437-11	CARBON	47K	5%	1/4W	
R657	1-249-416-11	CARBON	820	5%	1/4W	
R658	1-249-437-11	CARBON	47K	5%	1/4W	
R659	1-249-416-11	CARBON	820	5%	1/4W	
R660	1-247-883-00	CARBON	150K	5%	1/4W	
R661	1-249-413-11	CARBON	470	5%	1/4W	
R662	1-247-883-00	CARBON	150K	5%	1/4W	
R663	1-249-413-11	CARBON	470	5%	1/4W	
R664	1-249-411-11	CARBON	330	5%	1/4W	(YR-3000)

VARIABLE RESISTOR

RV101	1-249-407-11	RES, ADJ, CARBON	150
RV102	1-228-989-00	RES, ADJ, CARBON	470
RV103	1-228-989-00	RES, ADJ, CARBON	470
RV301	1-228-991-00	RES, ADJ, CARBON	2.2K
RV302	1-228-994-00	RES, ADJ, CARBON	10K
RV303	1-228-993-00	RES, ADJ, CARBON	4.7K
RV304	1-228-989-00	RES, ADJ, CARBON	470
RV305	1-228-995-00	RES, ADJ, CARBON	22K
RV306	1-228-995-00	RES, ADJ, CARBON	22K
RV307	1-228-995-00	RES, ADJ, CARBON	22K
RV308	1-228-990-00	RES, ADJ, CARBON	1K
RV309	1-228-994-00	RES, ADJ, CARBON	10K
RV310	1-228-995-00	RES, ADJ, CARBON	22K
RV311	1-228-996-00	RES, ADJ, CARBON	47K
RV401	1-228-990-00	RES, ADJ, CARBON	1K
RV402	1-228-994-00	RES, ADJ, CARBON	10K
RV403	1-228-994-00	RES, ADJ, CARBON	10K
RV404	1-228-989-00	RES, ADJ, CARBON	470 (SFR-3000)
RV405	1-228-989-00	RES, ADJ, CARBON	470
RV410	1-228-990-00	RES, ADJ, CARBON	1K
RV411	1-228-990-00	RES, ADJ, CARBON	1K
RV412	1-228-990-00	RES, ADJ, CARBON	1K
RV413	1-228-990-00	RES, ADJ, CARBON	1K
RV501	1-228-993-00	RES, ADJ, CARBON	4.7K (SFR-3000)
RV502	1-228-993-00	RES, ADJ, CARBON	4.7K (SFR-3000)
RV503	1-228-989-00	RES, ADJ, CARBON	470 (SFR-3000)
RV504	1-228-990-00	RES, ADJ, CARBON	1K (SFR-3000)
RV601	1-228-989-00	RES, ADJ, CARBON	470
RV602	1-228-989-00	RES, ADJ, CARBON	470
RV603	1-228-989-00	RES, ADJ, CARBON	470
RV604	1-230-504-11	RES, ADJ, CARBON	220
RV605	1-230-504-11	RES, ADJ, CARBON	220

Ref.No	Part No.	Description	Remark
		RELAY	
RY601	1-515-529-11	RELAY	
RY602	1-515-529-11	RELAY	
		SWITCH	
SW207	1-570-898-11	SWITCH, SLIDE (SFR-3000)	
		TRANSFORMER	
T301	1-425-928-00	TRANSFORMER, DELAY ADJUSTING	
		CRYSTAL	
X301	1-527-724-21	VIBRATOR, CRYSTAL	
X501	1-527-382-00	CRYSTAL, OSC (SFR-3000)	

****

*1-633-803-11	PW-93 BOARD (Ref.No. 5.000 Series)	
	**********	
*1-533-189-11	HOLDER, FUSE	
*4-363-146-00	HEAT SINK, V.OUT	
*4-875-327-01	HEAT SINK	

CAPACITOR

C1	⚠1-136-937-11	FILM	0.22MF	20%	250V
C2	⚠1-161-742-00	CERAMIC	0.0022MF	20%	400V
C3	⚠1-161-742-00	CERAMIC	0.0022MF	20%	400V
C4	⚠1-161-742-00	CERAMIC	0.0022MF	20%	400V
C5	⚠1-161-742-00	CERAMIC	0.0022MF	20%	400V
C6	1-124-564-11	ELECT	4700MF	20%	25V
C7	1-102-129-00	CERAMIC	0.01MF	10%	50V
C8	1-124-360-00	ELECT	1000MF	20%	16V
C9	1-102-129-00	CERAMIC	0.01MF	10%	50V
C10	1-102-129-00	CERAMIC	0.01MF	10%	50V
C11	1-124-472-11	ELECT	470MF	20%	10V

CONNECTOR

CN1	*1-564-687-11	PIN, CONNECTOR 3P
CN2		PIN, CONNECTOR 4P
CN3		PIN, CONNECTOR 3P
CN4	*1-560-892-00	PIN, CONNECTOR 4P

DIODE

D1	⚠8-719-500-35	DIODE D2SB10

FUSE

F1	⚠1-532-285-00	FUSE, TIME-LAG (1.25A)
F2	1-532-078-00	FUSE, TIME-LAG (1A)

IC

IC1	⚠8-759-144-83	IC UPC24M09HF
IC2	8-759-604-29	IC M5F7805

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		TRANSFORMER	
LFT001	⚠1-421-765-11	TRANSFORMER, LINE FILTER	

****

ACCESSORIES AND PACKING MATERIALS
****

Part No.	Description	Remark
*2-143-109-01	CUSHION (RIGHT)	
*2-143-110-01	CUSHION (LEFT)	
*2-143-111-01	INDIVIDUAL CARTON (SFR-3000)	
2-143-111-11	INDIVIDUAL CARTON (YR-3000)	
*3-677-503-00	SHEET, PROTECTION	
3-751-411-11	MANUAL, INSTRUCTION (English) (YR-3000)	
3-751-411-41	MANUAL, INSTRUCTION (French) (SRF-3000)	

****

HARDWARE LIST
****

SCREW

7-685-133-19	SCREW +P	2.6X6	TYPE2 SLIT
7-685-645-79	SCREW +BVTP	3X6	TYPE2 IT-3

****

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

SECTION 8
ELECTRICAL ADJUSTMENTS

During the Adjustment, See the Parts Arrangement Diagram for the Adjustments on Page 62.

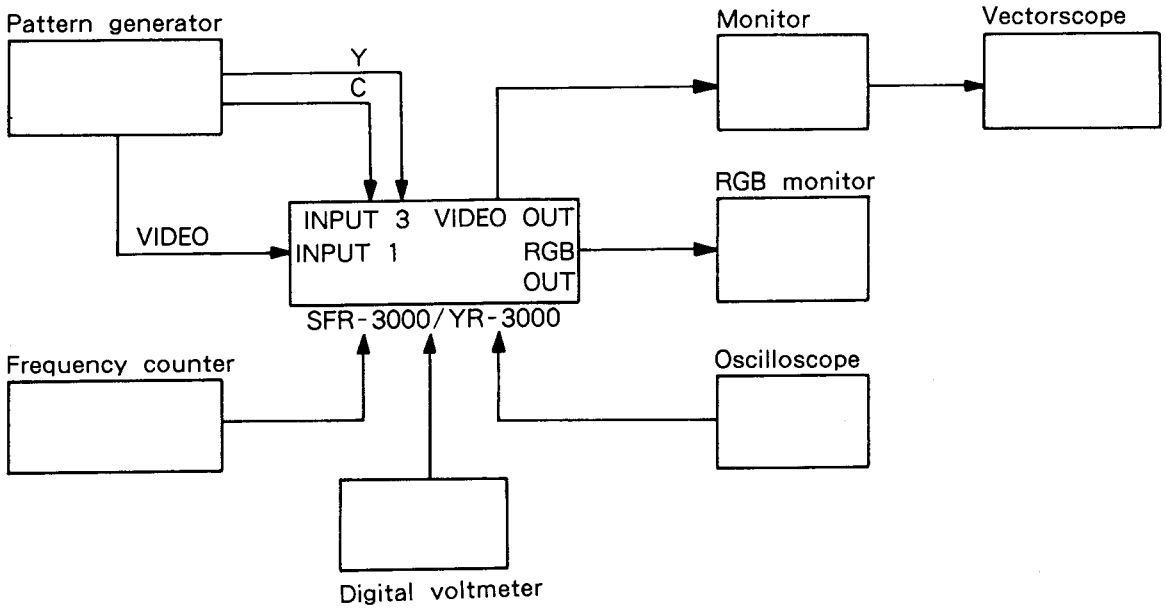
The acetate sheet is weant for use only wite the SFR-3000 and the SFR-1000 which is used under SECAM .

Necessary items and indications for total adjustment of electric circuit of this machine will be described in this chapter.

【Equipment required】

1) PAL/SECAM color monitor
2) Dual trace ocsilloscope
3) Frequency counter
4) PAL/SECAM signal pattern generator
5) Digital voltmeter
6) FET probe
7) Ceramic screw driver
8) SECAM vectorscope
9) RGB color monitor

【Equipment connection】



8-1. Power supply check (YR-10 board)

Power switch	ON
Measurement equipment	Digital voltmeter
Check value : 13 V	
Measurement point	TP002
Specified value	13.5 ± 1.0 Vdc
Check value : 9 V	
Measurement point	TP003
Specified value	9.0 ± 1.0 Vdc
Check value : 5 V	
Measurement point	TP004
Specified value	5.0 ± 0.2 Vdc

【Check】

1) Be sure that the voltages of the respective measurement points meet the specified values.

8-2. CONVERTER SECTION ADJUSTMENT (YR-10 board)

8-2-1. Y/C separate level adjustment

1. Y level adjustment

Signal	PAL Color-bar (100% white)
Measurement point	CH-1 : TP106 CH-2 : TP103
Measurement equipment	Oscilloscope
Adjustment element	RV103
Specified value	50 mVp-p or less

2. Chroma level adjustment

Signal	PAL Color-bar (100% white)
Measurement point	CH-1 : TP106 CH-2 : TP103
Measurement equipment	Oscilloscope
Adjustment element	RV102
Specified value	20 mVp-p or less

【Adjustment】

Adjust RV102 and RV103 so that the level difference of the waveform on CH-1 and CH-2 is 50 mVp-p or less.

8-2-2. AFC free run adjustment

Signal	No signal
Measurement point	TP302
Measurement equipment	Frequency counter
Adjustment element	RV303
Specified value	15,625 ± 15 Hz

【Adjustment】

Connect the frequency counter to TP302 and adjust RV303 so that the frequency is 15,625 Hz ± 15Hz.

8-2-3. APC free run adjustment

Signal	No signal
Measurement point	TP304
Measurement equipment	Frequency counter
Adjustment element	CV301
Specified value	4,433,619 ± 15 Hz

【Adjustment】

1) Connect the frequency couter to TP304.
2) Using a FET probe and a ceramic screw driver, adjust CV301 so that the frequency is 4,433,619 ± 15 Hz.

8-2-4. HD pulse adjustment

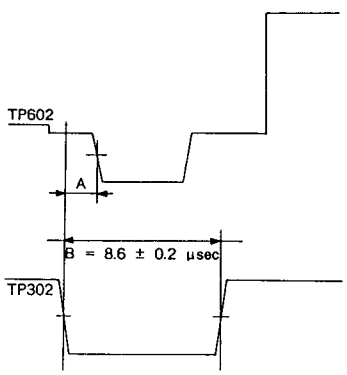
Signal	PAL color-bar
Measurement point	CH-1 : TP602 CH-2 : TP302
Measurement equipment	Oscilloscope
Phase adjusment	
Adjustment element	RV304
Specified value	1.5 ± 0.1 μsec
Pulse width check	
Specified value	8.6 ± 0.2 μsec

【Adjustment】

Adjust RV304 so that phase difference A is 1.5 ± 0.1 usec.

【Check】

Check that HD pulse width B is 8.6 ± 0.2 μsec.



8-2-5. AFC free run check

Signal	No signal
Measurement point	TP302
Measurement equipment	Frequency counter
Specified value	15,625 ± 15 Hz

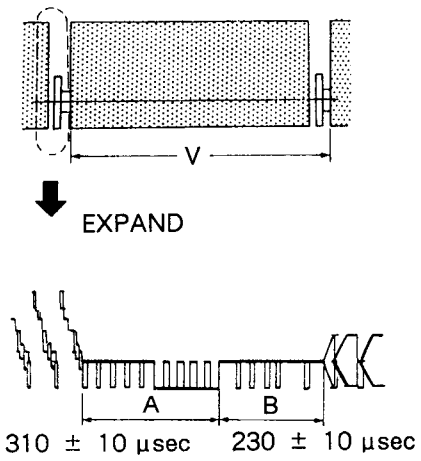
[Check]

1) Connect the frequency counter to TP302 and check the frequency is 15,625 ± 15 Hz.
2) If the specification is not met, readjust section 8-2-2 and recheck the frequency.

8-2-6. VD pulse adjustment

Signal	PAL color-bar
Measurement point	TP306
Measurement equipment	Oscilloscope
Adjustment element	RV311 and RV310
Specified value	A = 310 ± 10 μsec B = 230 ± 10 μsec

[Adjustment]

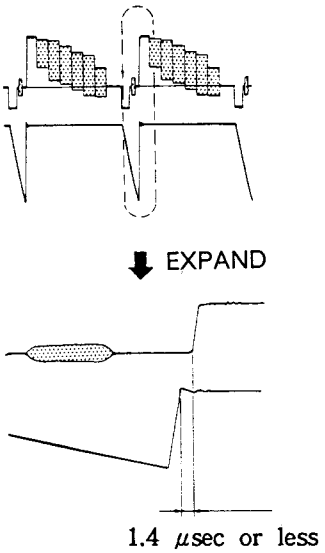


8-2-7. Burst gate pulse width adjustment

Signal	PAL color-bar
Measurement point	CH-1 : TP305 CH-2 : TP307
Measurement equipment	Oscilloscope
Adjustment element	RV305
Specified value	1.4 μsec or less

[Adjustment]

Adjust RV305 so that the phase difference is 1.4 μsec or less.



8-2-8. Killer det adjustment

Signal	SECAM color-bar
Measurement point	Pin 6, IC306
Measurement equipment	Digital voltmeter
Adjustment element	RV309
Specified value	Less than SECAM lock voltage by 0.1 V
PAL/SECAM switch	SECAM (SFR-3000)

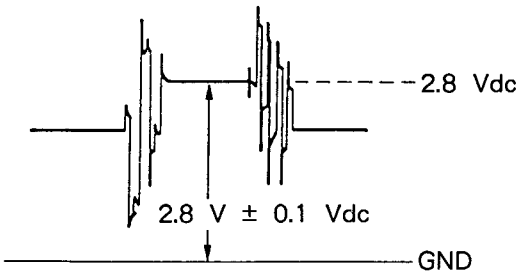
[Adjustment]

Fully turn RV309 clockwise so that the SECAM color-bar pattern appear correctly. Then, adjust RV309 so that the voltage at TP308 is less than the value at this time by 0.1V.

8-2-9. 2.1 MHz BPF adjustment (only for the SFR-3000)

Signal	PAL color-bar
Measurement point	TP502
Measurement equipment	Oscilloscope
Adjustment element	FL502
Specified value	2.8 ± 0.1 Vdc
PAL/SECAM switch	SECAM

[Adjustment]
Adjust so that the DC level of the waveform is 2.8 ± 0.1 Vdc.



8-2-10. Y level balance adjustment (only for the SFR-3000)

Signal	PAL color-bar
Measurement point	CH-1 : TP504 CH-2 : TP505
Measurement equipment	Oscilloscope
Adjustment element	RV503
Specified value	0.1 Vp-p or less
PAL/SECAM switch	SECAM

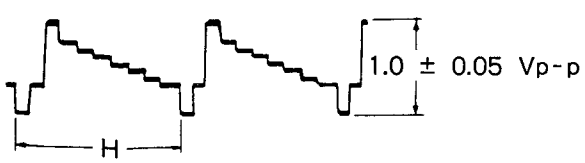
[Adjustment]
Adjust so that the level difference of the waveform in CH-1 and CH-2 is 0.1 Vp-p or less.

8-2-11. Y/C OUT adjustment

1. Y level adjustment

Signal	PAL color-bar
Measurement point	TP602
Measurement equipment	Oscilloscope
Adjustment element	RV604
Specified value	1.0 ± 0.05 Vp-p

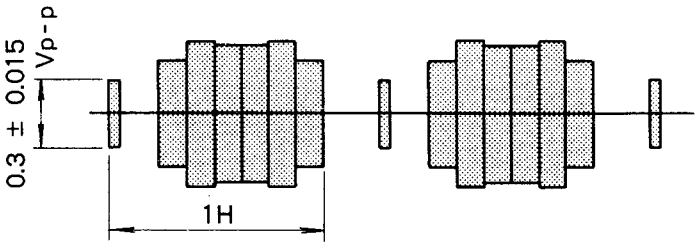
[Adjustment]
1) Terminate the Y/C OUT connector in 75 ohms.
2) Adjust so that the level of the waveform is 1.0 ± 0.05 Vp-p.



2. C level adjustment

Signal	PAL color-bar
Measurement point	TP603
Measurement equipment	Oscilloscope
Adjustment element	RV605
Specified value	0.3 ± 0.015 Vp-p

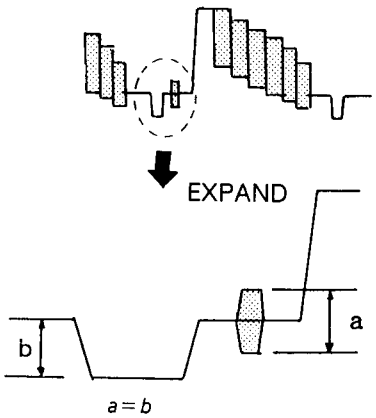
[Adjustment]
1) Terminate the Y/C OUT connector in 75 ohms.
2) Adjust so that the burst level of the waveform is 0.3 ± 0.015 Vp-p.



8-2-12. Y/C mix ratio adjustment

Signal	PAL color-bar
Measurement point	TP605
Measurement equipment	Oscilloscope
Adjustment element	RV602
Specified value	a - b ≦ 5%

[Adjustment]
Adjust so that the burst level difference (a - b) of the waveform is 5% or less.



8-2-13. VIDEO OUT level adjustment

1.

Signal	PAL color-bar
Measurement point	TP606
Measurement equipment	Oscilloscope
Adjustment element	RV601
Specified value	1.0 ± 0.05 Vp-p

【Adjustment】
Adjust so that the level of the waveform is 1.0 ± 0.05 Vp-p.

2.

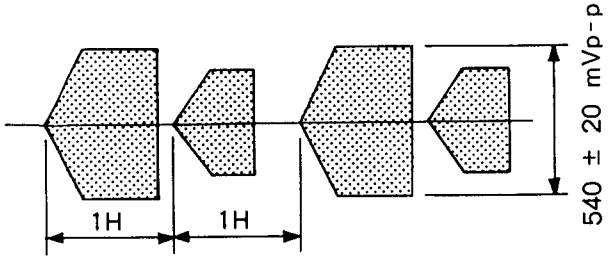
Signal	PAL color-bar
Measurement point	TP607
Measurement equipment	Oscilloscope
Adjustment element	RV603
Specified value	1.0 ± 0.05 Vp-p

【Adjustment】
Adjust so that the level of the waveform is 1.0 ± 0.05 Vp-p.

8-2-14. SECAM carrier level adjustment (only for the SFR-3000)

Signal	PAL color-bar
Measurement point	TP607
Measurement equipment	Oscilloscope
Adjustment element	RV504
Specified value	540 ± 20 mVp-p
PAL/SECAM switch	SECAM

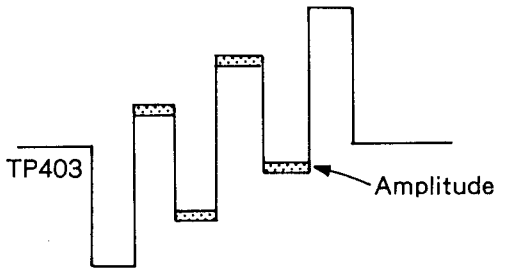
【Adjustment】
Adjust so that the FIELD ID level of the waveform is 540 ± 20 mVp-p.

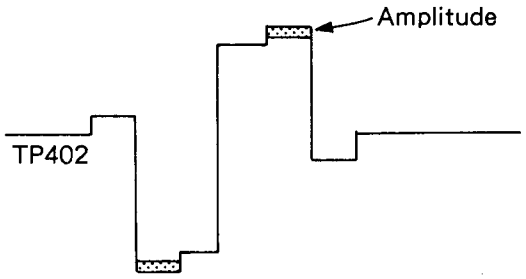


8-2-15. 1H delay adjustment

Signal	PAL color-bar
Measurement point	CH-1 : TP402 CH-2 : TP403
Measurement equipment	Oscilloscope
Adjustment element	T301 (RV308)
Specified value	Minimize as much as possible

【Adjustment】
1) Adjust T301 so that the amplitude is minimized.
2) If the specification is not met using T301, adjust using RV308.





8-2-16. SECAM B-Y level adjustment (only for the SFR-3000)

Signal	PAL color-bar
Measurement point	VIDEO OUT connector
Measurement equipment	SECAM vectorscope
Adjustment element	RV306
Specified value	Within ± 2.5 degrees
PAL/SECAM switch	SECAM

【Adjusment】
Ogn the B-Y level with the + mark on the SECAM vectorscope so that the level difference is within ± 2.5 degrees.

8-2-17. SECAM R-Y level adjusment (only for the SFR-3000)

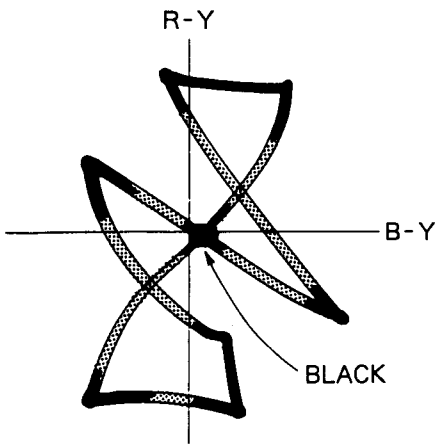
Signal	PAL color-bar
Measurement point	VIDEO OUT connector
Measurement equipment	SECAM vectorscope
Adjustment element	RV404
Specified value	Within ± 2.5 degrees
PAL/SECAM switch	SECAM

【Adjustment】
Align the R-Y level with the + mark on the SECAM vectorscope so that the level difference is within ± 2.5 degrees.

8-2-18. White balance adjustment (only for the SFR-3000)

Signal	PAL color-bar
Measurement point	VIDEO OUT connector
Measurement equipment	SECAM vectorscope
Adjustment element	RV501 and RV502
PAL/SECAM switch	SECAM

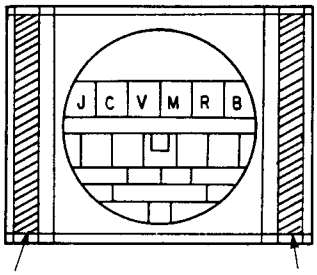
【Adjustment】
Adjust RV501 and RV502 so that each dot and corresponding black and white portions are placed in their respective correct positions.



8-2-19. Anti-PAL adjustment

Signal	PAL SP color-bar
Measurement point	RGB VIDEO OUT connector
Measurement equipment	Monitor (RGB)
Adjustment element	RV307
Specified value	Be sure that there is no color in the pattern as shown below.

【Adjustment】
Adjust RV307 so that there is no shading in the two anti PAL portions, or so there is no color.

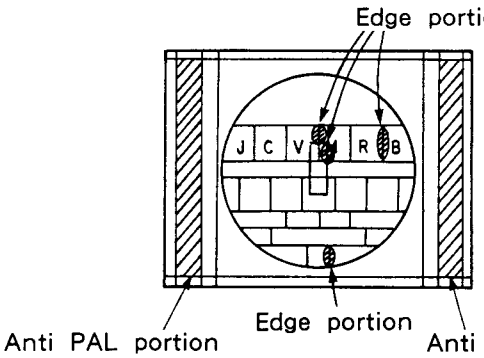


Be sure that there is no color.

8-2-20. Anti-Bell adjustment (only for the SFR-3000)

Signal	PAL color-bar
Measurement point	VIDEO OUT connector
Measurement equipment	SECAM monitor
Adjustment element	FL503
PAL/SECAM switch	SECAM

【Adjustment】
Adjust FL503 so that no overmodulation, comet tail, or color shading do not appear at the edge of the color-bar pattern.



8-2-21. SECAM R-Y/B-Y readjustment (only for the SFR-3000)

Signal	PAL color-bar
Measurement point	VIDEO OUT connector
Measurement equipment	SECAM vectorscope
Adjustment element	RV306 and RV404
Specified value	Within ± 2.5%

[Adjustment]
When the R-Y and B-Y colored luminance dots are located outside of the + mark, readjust using RV306 and RV404.

8-2-22. Clamp pulse adjustment

1. Pulse width adjustment

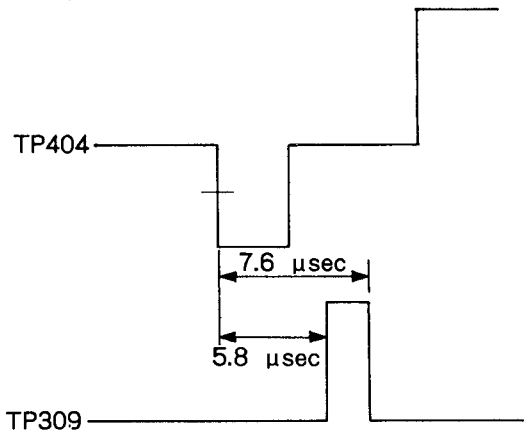
Signal	PAL color-bar
Measurement point	TP309 and TP404
Measurement equipment	Oscilloscope
Adjustment element	RV301
Specified value	7.6 ± 0.3 μsec

[Adjustment]
Adjust so that the pulse width of the waveform is 7.6 ± 0.3 μsec.

2. Pulse position adjusment

Signal	PAL color-bar
Measurement point	CH-1 : TP404
	CH-2 : TP309
Measurement equipment	Oscilloscope
Adjustment element	RV302
Specified value	5.8 ± 0.3 μsec

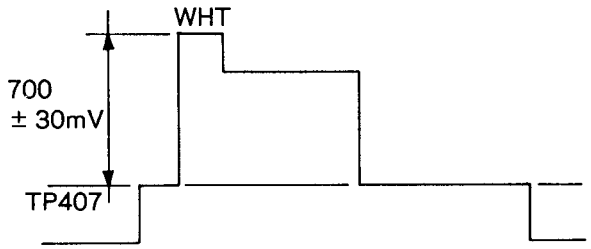
[Adjustment]
Adjust so that the phase difference of the waveform is 5.8 ± 0.3 μsec.



8-2-23. RGB output level adjustment

Signal	PAL 100% color-bar
Measurement point	TP407
Measurement equipment	Oscilloscope
Adjustment element	RV413
Specified value	700 ± 30 mV

[Adjustment]
1) Set the PICTURE VR on the front panel to the center click position and the BRIGHT VR to the 2 o'clock positon.
2) Terminate the GREEN OUT pin of the RGB OUT connector in 75 ohms.
3) Adjust so that the white level of the waveform is 700 ± 30 mV.

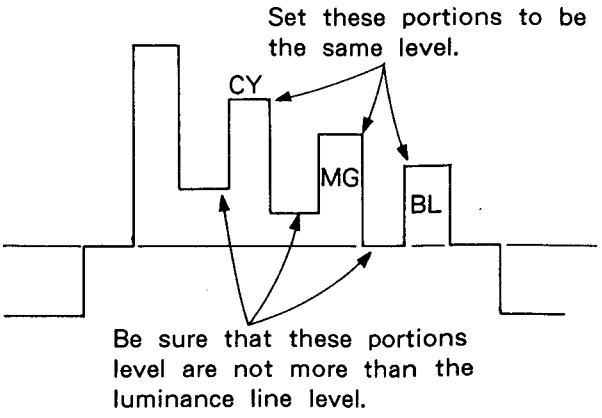


8-2-24. RGB balance adjustment

1. Blue adjustment

Signal	PAL 100% (white) color-bar
Measurement point	TP408
Measurement equipment	Oscilloscope
Adjustment element	RV412 (SFR-3000) and RV306 (YR-3000)
Specified value	Within ± 5%

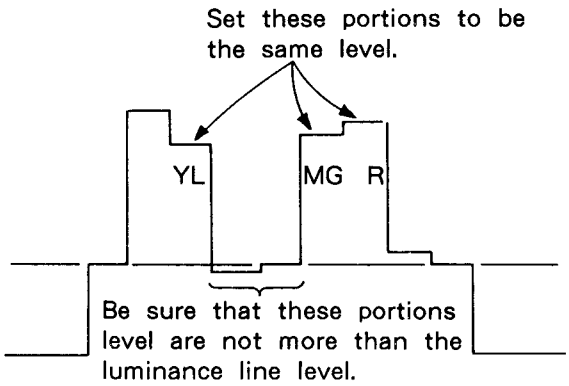
[Adjustment]
1) Set the COLOR VR on the front panel to the center click position and the BRIGHT VR on the front panel to the 2 o'clock position.
2) Adjust so that the level difference for cyan, magenta, and blue at TP408 is within ± 5%.



2. Red adjustment

Signal	PAL 100% color-bar
Measurement point	TP406
Measurement equipment	Oscilloscope
Adjustment element	RV405
Specified value	Within ± 5%

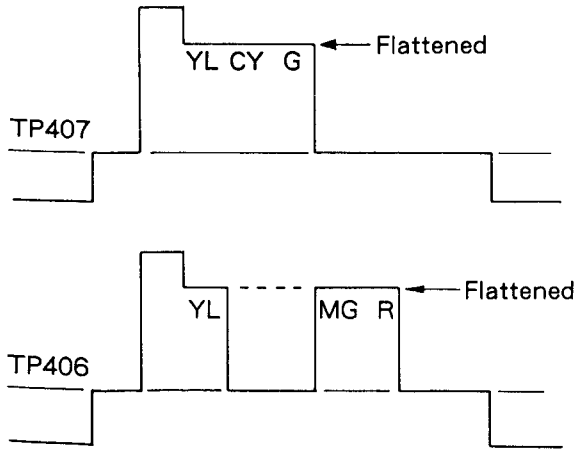
【Adjustment】
Adjust so that the level difference for yellow, magenta, and red at TP406 is within ±5%.



8-2-25. HUE adjustment

Signal	PAL 100% color-bar
Measurement point	TP407 and TP406
Measurement equipment	Oscilloscope
Adjustment element	RV401
Specified value	Within ± 5%

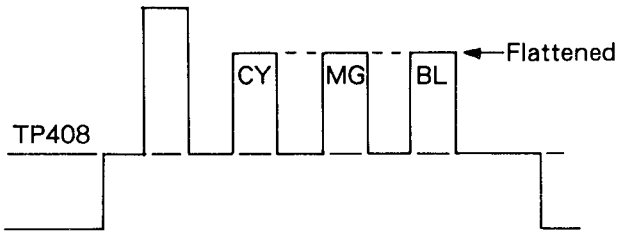
【Adjustment】
1) Set the COLOR VR on the front panel to the center click position and the BRIGHT VR on the front panel to the 2 o'clock position.
2) Adjust so that the level difference for yellow, cyan, and green at TP407 and yellow, magenta, and red at TP406 is within ±5%.



2. Check

Signal	PAL 100% color-bar
Measurement point	TP408
Measurement equipment	Oscilloscope
Specified value	Within ± 5%

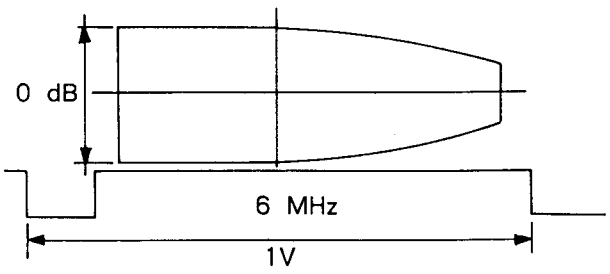
【Check】
1) Check that the level difference in the cyan, magenta, and blue at TP408 is within ± 5%.
2) If the specification is not met, readjust as described in section 8-2-24 and check the above step.



8-2-26. SHARPNESS VR adjustment

Signal	VIDEO sweep (Y/C)
Measurement point	TP407
Measurement equipment	Oscilloscope
Adjustment element	RV411
Specified value	Within 0 ± 1 dB

【Adjustment】
1) Set the SHARPNESS VR on the front panel to the center click position.
2) Adjust so that the waveform level of 6 MHz is flattened.

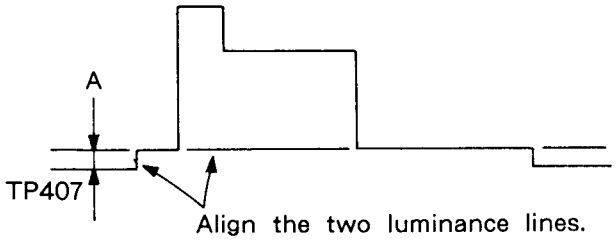


8-2-27. BRIGHT VR adjustment

Signal	PAL color-bar
Measurement point	TP407
Measurement equipment	Oscilloscope
Adjustment element	RV410
Specified value	A = 0

[Adjustment]

1) Set the BRIGHT VR on the front panel to the center click positon.
2) Adjust so that level difference A of the waveform is zero.



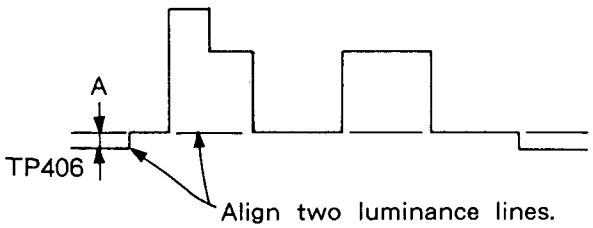
8-2-28. Limiter level adjustment

1. Red adjustment

Signal	2. PAL color-bar
Measurement point	TP406
Measurement equipment	Oscilloscope
Adjustment element	RV402
Specified value	A = 0

[Adjustment]

Adjust so that level difference A of the waveform is zero.

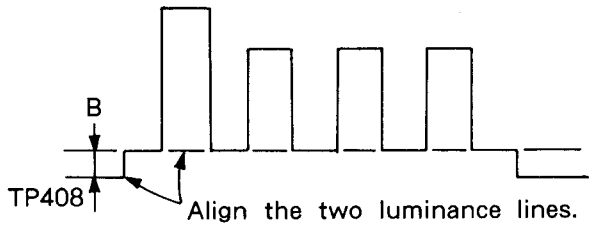


2. Blue adjustment

Signal	PAL color-bar
Measurement point	TP408
Measurement equipment	Oscilloscope
Adjustment element	RV403
Specified value	B = 0

[Adjustment]

Adjust so that level difference B of the waveform is zero.



8-3. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

YR-10 Board