Introducing Samsung DVD Recorder & VCR (DVD-VR375)

2008.2.

Samsung Electronics Co. LTD

Digital AV Division

☞ Samsung DVD Recorder & VCR

➢ General Introduction

- ☐ Model No : DVD-VR375
- ☐ Market Introduction Date
  : APR 2008 (EU)

➢ Characteristics

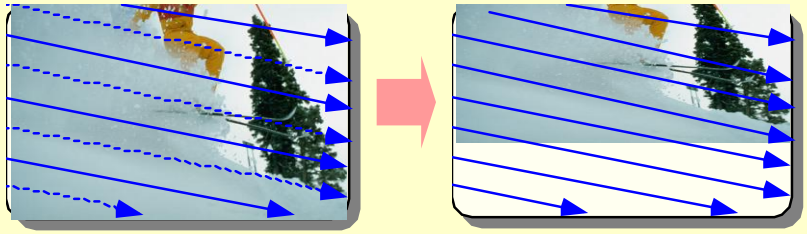
1. Super picture & sound quality recording with MPEG-2(VBR) on DVD-RW, DVD-R compatible with A/V & PC (Playback only for DVD-RAM)
2. Convenient control through random accessibility of optical discs
   - *One touch recording : Automatic empty area recording*
   - *Program Navigation*
   - *High Speed Search and Play*
3. Advanced playback functions for multiple purposes

(Compatible with DVD, Audio-CD, CD-R/RW(MP-3), DVD-R, DVD-RW Disc)

DVD-VR375 Playback & other Features

■ Progressive Scan

By scanning all 576 lines in one pass, progressive scanning provides high vertical resolution and flicker-free, high-density image output that does not suffer from the loss of quality during subject movement -- which is characteristic of the conventional interlaced scanning method.



30 Frame/Sec **60 Frame/Sec**

■ Program Navigator

Recorded programs are shown as thumbnail pictures, and information such as title, recording dates and times are displayed on menu screen. User can choose a desired program.

■ Editing

Simple non-linear editing is possible on menu screen without additional editing system. User can delete part of a program or entire program, and edit program title.

DVD-VR375 Key Features

➢ Recording Features

- MPEG-2 VBR(Variable Bit Rate) Recording
- Creating a DVD video title using DVD-RW/DVD-R
- Automated Quality Adjustment for Timer Recording
- Copying data from a digital camcorder using a DV input jack
- Selectable Recording Mode

➢ Playing Features

- Progressive Scan both DVD and VCR modes
- Program Navigation

➢ Other Features

- Easy Editing
- Quick Recording
- Auto Chaptering
- HDMI out /w up-scale
  - Anynet+ (HDMI CEC), up to 1080P

’08 DVD Recorder New Features

Samsung’s Unique Features

- EZ REC mode
- 1 sec Quick Recording on All Format

Differential Features

- -R Dual Layer Recording
  DivX Playback
- EVQ (Enhanced Video Quality)

Convenience

EZ REC Mode (DVDR Like VCR)

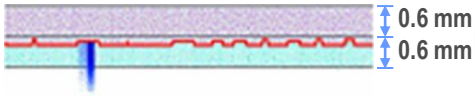
Design

Slim & Deluxe Design Identity

Dual Layer Recording (only for -R disc)

- 1 dual layer disc is enough for 3hrs movie (SP mode)

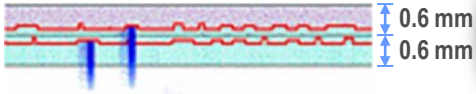
Single Layer Disc



4.7GB

- HQ (60min), HSP(90MIN)
- SP (120MIN), LSP(150MIN)
- ESP (180MIN), LP(240MIN)
- EP (360MIN), SLP(480MIN)

Dual Layer Disc



8.5GB

- HQ (108min), HSP(162MIN)
- SP (217MIN), LSP(271MIN)
- ESP (325MIN), LP(434MIN)
- EP (651MIN), SLP(868MIN)

EVQ (Enhanced Video Quality)

◆ Video Noise Reduction

Reduce the pixel noise, produced during Digital signal processing

◆ False Color Reduction

False Color reduction filter reduces the cross color phenomenon produced by in complemented separation of Y & C signal

◆Sharpness Enhance

EZ REC Mode

- DVD Recorder like VCR

Complicate…

Finalize, Format, Unfinalize, Select V/VR mode, Disc Manager, Edit Playlist, Edit Chapter…etc

Press EZ REC Mode

Simple!

Like VCR

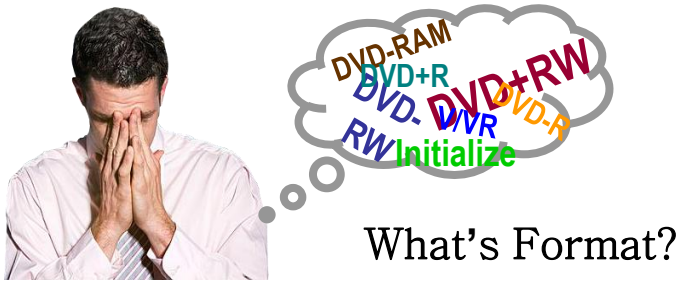
● REC ■ STOP ▶ PLAY

EZ REC Mode

- DVD Recorder like VCR

1. *Auto Setting for All Formats*

Operated in their separate ways



	Initialize	Finalize	Format	Edit
DVD-RAM	O	-	V/VR	Play list
DVD-RW	O	O	V/VR	Play list
DVD+ RW	O	O	O	Chapter
DVD-R	-	O	O	-
DVD+ R	O	O	O	-

Samsung DVD Recorder does setting itself for all Formats

	Initialize	Finalize	Format	Edit
DVD-RAM	O	-	V/VR	st
DVD-RW	O	O	V/VR	lay list
DVD+ RW			O	Chapter
D		O	O	-
DV	O	O	O	-

Don't need to know about it!

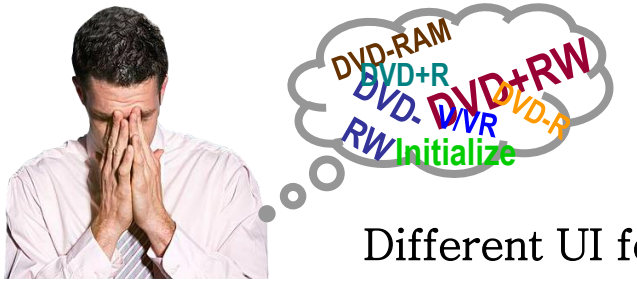
There is
One Format
from now on

Beginner Mode

- DVD Recorder like VCR

2. *UI Identity for All formats*

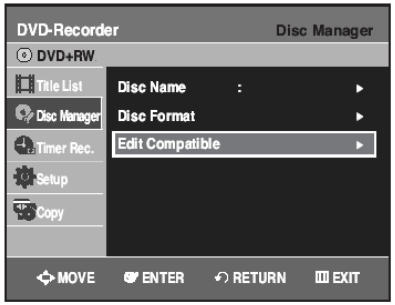
Operated in their separate ways



Different UI for each format!

- Different Menu
- Different UI Scenario
- Different Menu Naming

Same UI to operate DVD Recorder with All Format



Same Menu

Same UI Scenario

For All Format

HDMI OUT

HDMI (High Definition Multimedia Interface)
- Pure Digital for Perfect Vision

- **HDMI Output** -High Definition DIGITAL Video Out (Up to 1080P)

1080P HDMI OUT

No More high quality! 1080p

Bypass

1080p

HDMI

De – Interlacing

Scale-Up

1080p

480p

480i

480i

[DVD Title]

- Samsung DVD is perfect matching with Full HD TV

HDMI CEC

HDMI (High Definition Multimedia Interface)

- 100% Digital way of AV Streaming without Loss
- Up Scaled Video Output upto 1080P: Better DVD
- HDMI CEC(Commands go each Devices through HDMI Cable)

HDMI CEC	Intellectual Action
1) One Touch Play	• Disc In → TV ON → Auto Setting → AutoPlay
2) Sysetm Stand-By	• Power Off by one Click
3) Deck Control	• Play, Stop, Pause with Any Remote
4) Device Menu Control	• Send menu command by TV remote
5) Remote Control Pass Through	• Channel, Volume Up / DN
⋮	
13) Vendor Specific Commands	

Specification – Product Specifications

General	Power requirements	AC 220-240V, 50Hz
	Power consumption	30 Watts/4Watts(Standby mode)
	Weight	4.4Kg
	Dimensions	430(W) X 331(D) X 79(H)
	Operating temp	+5°C to + 35°C
	Other conditions	Keep level when operating. Less than 75% operating humidity
Input	Video input(Rear)	Euro Scart socket : 1.0 V p-p (unbalanced) 75Ω
	Audio input(Rear)	Euro Scart socket : -8dBm, 47Kohm unbalanced
	Front input	RCA jack, DV (DVD-VR375 only)
Output	RF out	UHF 21-69 (Initial CH60)
	Audio (DVD, VCR)	RCA Jack, Euro Scart socket, Audio L/R
	Audio (DVD, Only)	Digital audio out OPTICAL, COAXIAL
	Video (DVD, VCR)	RCA JACK (composite) : 1,0Vp-p, 75Ω Component out Euro Scart socket (composite) (RGB) HDMI output [480P, 720P, 1080i, 1080P (DVD-VR375 only)]
VCR	Tape format	VHS type video tape
	Colour system	PAL
	Tuning System	I
	Video S/N	Above 43dB (standard recording)
	Resolution	Above 240 lines (standard recording)
	Audio S/N	Above 68dB (Hi-Fi), 39dB(Mono)
DVD	Audio frequency characteristics	20Hz-20KHz(Hi-Fi)
	Picture compression format	MPEG-II
	Audio compression format	Dolby AC-3 256kbps
	Recording Quality	HQ(Approx. 1 hour), HSP(Approx. 1 hour 30 minutes), SP(Approx. 2 hours), LSP(Approx. 2 hours 30 minutes), ESP(Approx. 3 hours), LP(Approx. 4 hours), EP(Approx. 6 hours), SLP(Approx. 8 hours)
	Video S/N	Ratio Min. 50dB at standatd recording
	Audio S/N	Ratio Min. 75dB
	Audio frequency characteristics	20Hz ~ 20KHz

Specification – Chassis Product Specifications

General	Model Name		DVD-VR350	DVD-VR375	DVD-VR370
Chassis					
REMOTE CON-TROLLER	Design (Type Name)		VR-7253	VR-7253	VR-7253
	Remocon Code		SEC R-COMBO	SEC R-COMBO	SEC R-COMBO
	Button		53Key	53Key	53Key
	Battery Type		AAAx2EA	AAAx2EA	AAAx2EA
	Body Color		Black	Black	Black
	Language		English	English	English
	Multi-Brand TV Control		Yes	Yes	Yes
	Illuminated Button		-	-	-
TERMI-NALS (Input/Out-put)	INPUT SELECT(PR/AV1/AV2/AV3/DV)		PR/AV1/AV2/AV3/DV	PR/AV1/AV2/AV3/DV	PR/AV1/AV2/AV3
	Scart Jack-1 A/V Input/Out-put	Rear	AV1	AV1	AV1
	Scart AV 2	Rear	AV2	AV2	AV2
	CVBS Output - RCA Jack	Rear	Yes x 1	Yes x 1	Yes x 1
	Audio Output -RCA Jack	Rear	Yes x 2 (L,R)	Yes x 2 (L,R)	Yes x 2 (L,R)
	S-Video Output	Rear	Yes x 1	-	-
	Component Video out	Rear	Yes x 1(Y,Pb,Pr)	Yes x 1(Y,Pb,Pr)	Yes x 1(Y,Pb,Pr)
	Digital Audio Out (Optical)	Rear	Yes x 1	-	-
	Digital Audio Out (Coaxial)	Rear	Yes x 1	Yes x 1	Yes x 1
	CVBS Input - RCA Jack	Rear	-	-	-
		Front	Yes x 1(AV3)	Yes x 1(AV3)	Yes x 1(AV3)
	Audio Input -RCA Jack	Rear	-	-	-
		Front	Yes x 1 (L,R / AV3)	Yes x 1 (L,R / AV3)	Yes x 1 (L,R / AV3)
	S-Video Input	Rear	-	-	-
		Front	-	-	-
	DV Input	Front	Yes	Yes	-
	Aerial Input	Rear	Yes x 1	Yes x 1	Yes x 1
	RF Out	Rear	Yes x 1(w/o Modulator)	Yes x 1(w/o Modulator)	Yes x 1(w/o Modulator)
	HDMI Output	Rear	Yes x 1	Yes x 1	-
	HDMI-CEC	Rear	Yes	Yes	-
	USB2.0 Mass Storage Host	Front	-	-	-
	USB2.0 PictBridge Slave	Front	-	-	-
	Built-In Bluetooth	Front	-	-	-
	Memory Card Slot	Front	-	-	-

General	Model Name	DVD-VR350	DVD-VR375	DVD-VR370
Chassis				
PLAY-ABLE MEDIA & FORMAT	DVD-VIDEO	Yes	Yes	Yes
	DVD-RAM	Yes	Yes	Yes
	DVD-RW	Yes	Yes	Yes
	DVD-R	Yes	Yes	Yes
	DVD+RW	Yes	Yes	Yes
	DVD+R	Yes	Yes	Yes
	VCD	-	-	-
	SVCD	-	-	-
	MPEG4 (DivX3.1/DivX 4/DivX 5)	Yes	Yes	Yes
	DVD-Audio	-	-	-
	SACD	-	-	-
	CD	Yes	Yes	Yes
	CD-R/RW	Yes	Yes	Yes
	MP3	Yes	Yes	Yes
	JPEG	Yes(1000Folder)	Yes(1000Folder)	Yes(1000Folder)
	WMA	-	-	-
	MIDI / SEMI - KARAOKE	-	-	-
	Memory Card	-	-	-
	Hard Disc (HDD)	-	-	-
	VHS Tape	Yes	Yes	Yes
Recording Media	DVD-RAM	Yes	Yes	Yes
	DVD-RW	Yes	Yes	Yes
	DVD-R	Yes	Yes	Yes
	DVD+RW	-	Yes	-
	DVD+R	-	Yes	-
	CD-R	-	-	-
	CD-RW	-	-	-
	DUAL LAYER RECORDING	Yes(-R)	Yes(±R)	Yes(-R)
	Hard Disc (HDD)	-	-	-
	VHS Tape	Yes(SP/LP)	Yes(SP/LP)	Yes(SP/LP)
Recording Format	Video	MPEG-2	MPEG-2	MPEG-2
	Audio	2ch	2ch	2ch
	DVD-Video	Yes	Yes	Yes
	DivX (MPEG4)	-	-	-
	REN Recording	-	-	-
	CD-DA	-	-	-

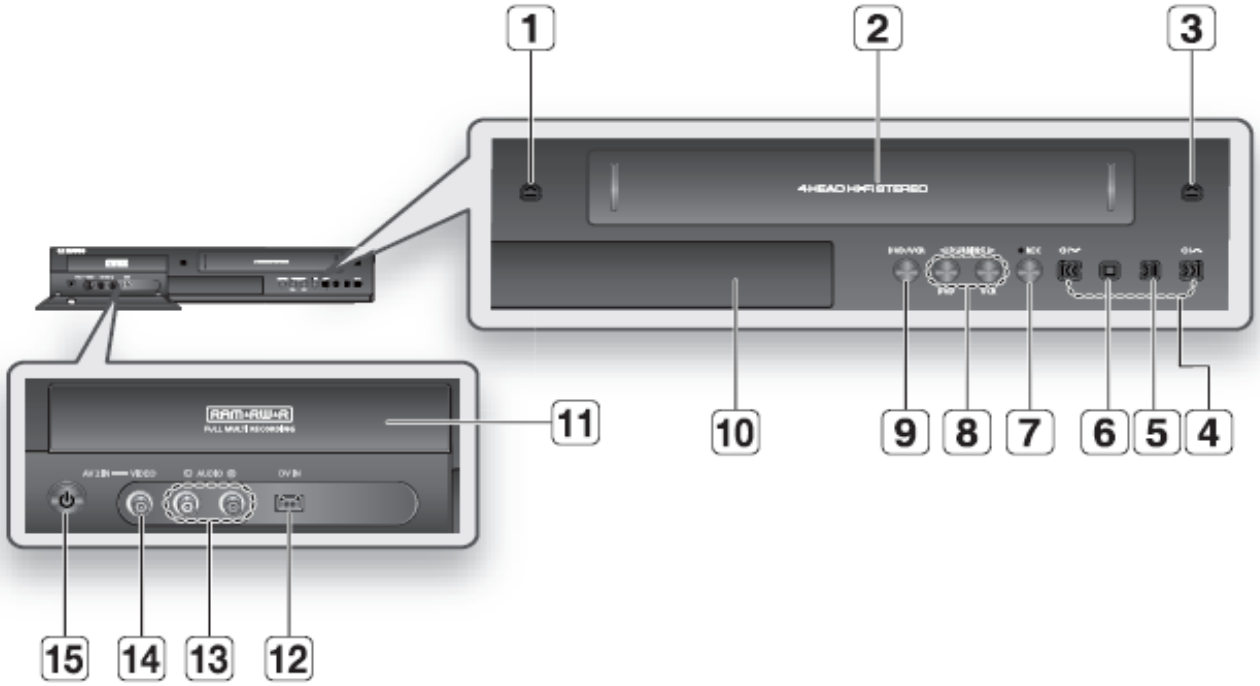
General	Model Name	DVD-VR350	DVD-VR375	DVD-VR370
Chassis				
RECORD-ING TIME/ MODE	MODE	XP/SP/LP/EP	DVD(HQ/HSP/SP/ LSP/ESP/LP/EP/SLP), VCR(SP/LP)	DVD(HQ/HSP/SP/LSP/ESP/ LP/EP/SLP), VCR(SP/LP)
	Recording Speed (Drive Speed)	x2	x2	x2
	MPEG2 (HQ/HSP/SP/LSP/ESP/LP/ EP/SLP)	-	1H/1.5H/2H/2.5H/3H/4H/ 6H/8H	1H/1.5H/2H/2.5H/3H/4H/ 6H/8H
	MPEG4	-	-	-
	HDD (MPEG2) : (XP/SP/LP/EP)	-	-	-
	HDD (MPEG4)	-	-	-
	Quick Dubbing (x8 Speed)	-	-	-
	Quick Start(1sec Recording)	Yes	-	-
COLOR SYSTEM	VIDEO (NTSC3.58) REC/PB	No/NTSC3.58	No/NTSC3.58	No/NTSC3.58
	(NTSC4.43) REC/PB	No/No	No/No	No/No
	(PAL) REC/PB	Yes/Yes	Yes/Yes	Yes/Yes
	(PAL-M) REC/PB	No/No	No/No	No/No
	(PAL-N) REC/PB	No/No	No/No	No/No
	(SECAM) REC/PB	PAL Recording & Play-back	PAL Recording & Playback	PAL Recording & Playback
	(MESECAM) REC/PB	No/No	No/Yes(VCR Only)	No/Yes(VCR Only)
TUNER	Broadcast System	PAL,SECAM - B/G,D/K	SECAM-L/L', PAL-B/G	SECAM-L/L', PAL-B/G
	Audio (Stereo System)	A2/NICAM	A2/NICAM	A2/NICAM
	Number of Preset(Station Capacity)	99	99	99
	Tuning System	Inteligent Auto Set-up	Inteligent Auto Set-up	Inteligent Auto Set-up
	CH Coverage	VHF / UHF / CATV	VHF / UHF / CATV	VHF / UHF / CATV
	RF(Modulator) Out CH & System	E21~E69	-	-
	Default RF Channel	36CH	-	-
	Auto CH Sorting & Mappingup	Yes	Yes	Yes
	Station Name Display	Auto Detect	Auto Detect	Auto Detect
	Analog BS	-	-	-
	Digital (DTT)	-	-	-
	Digital BS	-	-	-

General	Model Name	DVD-VR350	DVD-VR375	DVD-VR370
Chassis				
DTT	Middleware	-	-	-
	RS-232C(DTT Upgrade)	-	-	-
	Timer Recording/Timer Watching	-	-	-
	EPG(Digital)	-	-	-
	TTX (VBI / OSD)	-	-	-
	LCN	-	-	-
	Caption	-	-	-
	OS : Itron	-	-	-
	Auto ch scan	-	-	-
	Manual ch scan	-	-	-
	Favorite Channel	-	-	-
	Parental Guide	-	-	-
	Channel List	-	-	-
	Change PIN Code	-	-	-
	STB Radio	-	-	-
	OTA	-	-	-
TIMER PRO-GRAM-MING	Number of Events (Programming No)	12 Events / 1 Month	12 Events / 1 Month	12 Events / 1 Month
	Gemstar (G-CODE/ShowView/Vid-eoPlus+)	ShowView	ShowView	ShowView
	VPS / PDC	VPS/PDC	VPS/PDC	VPS/PDC
	EPG(Analog)	-	-	-
	OTR (Instant Recording Timer)	Yes	Yes	Yes
CLOCK	Back-Up Type & Time	-	Endless	Endless
	Clock Type	-	Quartz	Quartz
	Auto Clock Set	-	Yes	Yes
VIDEO OUTPUT	Video DAC	10bit / 54MHz	10bit / 108MHz	10bit / 108MHz
	Progressive Scan Output	Yes	Yes	Yes
	Component Video Output	Yes	Yes	Yes
	RGB Output with Scart AV 1	Yes	Yes	Yes
	HDMI Output	-	Yes	-
	HDMI - Upscaling(720P/1080i/ 1080P)	-	Yes	-
AUDIO OUTPUT	Audio DAC	96kHz / 24bit	96kHz / 24bit	96kHz / 24bit
	Dolby Digital Out	Yes	Yes	Yes
	DTS Digital Output	Yes	Yes	Yes
	PCM / Bit Stream	Yes / Yes	Yes / Yes	Yes / Yes

General	Model Name	DVD-VR350	DVD-VR375	DVD-VR370
Chassis				
PLAY-BACK RECORD-ING FEA-TURES	Custom AV Mode	-	-	-
	Play List Playback	Yes	Yes	Yes
	FR(Auto) MODE for Timer Rec	Yes	Yes	Yes
	Automatic Chapter Creation	Yes	Yes	Yes
	Scan Search (DVD-RAM/-R/-RW)	2/4/8/16/32/128	FF1/FF2/FF3(FR1/FR2/FR3)	FF1/FF2/FF3(FR1/FR2/FR3)
	Slow Speed	1/8,4,2	SLOW 1/SLOW 2/SLOW 3	SLOW 1/SLOW 2/SLOW 3
	Step (Forward / Reverse)	Yes	Yes	Yes
	Zoom	Yes(x2,x4)	-	-
	Resume Playback	1Disc	1Disc	1Disc
	Quick View with Audio(x1.7)	Yes	Yes	Yes
	Repeat(Title/Chapter/A-B)	Yes	-	-
	Marker	Yes	-	-
	Closed Caption	Yes	-	-
	Black Level Select	-	-	-
	CM Skip	-	-	-
	Book Mark	Yes	-	-
	Custom Parental Control	Yes	Yes	Yes
	Time Slip	-	-	-
	Quick Dubbing (x8 Speed)	-	-	-
	EZ Editing	-	-	-
	EZ-REC Mode	Yes	Yes(OSD/Remote)	Yes(OSD/Remote)
	Music Slide Show(Authoring)	Yes	Yes	Yes
	Enhaced Video Quality (EVQ)	Yes	Yes	Yes
	Child Door lock for DVD Tray	-	-	-
ACCES-SORY	Remote Controller	Yes	Yes	Yes
	Batteries	Yes	Yes	Yes
	AV Cable (RCA Type)	Yes	Yes	Yes
	RF Cable	Yes	Yes	Yes
	Euro Scart Cable(21pin)	-	-	-
	HDMI - HDMI Cable	-	-	-
	HDMI - DVI Cable	-	-	-
	User's Manual (Instruction Manual)	Yes	Yes	Yes
	Manual Quick Guide	Yes	Yes	Yes
	DISC (Bundle)	-	-	-
	Customer Request Card	Yes	Yes	Yes
	Product Registration Card	Yes	Yes	Yes
	Warranty Card	-	-	-

General	Model Name	DVD-VR350	DVD-VR375	DVD-VR370
Chassis				
DISPLAY	Display of Front	5 Digit LED	5 Digit LED-M	5 Digit LED-M
	Power LED	Yes(Blue)	-	-
	REC LED	Yes(RED)	-	-
	HDD/DVD LED	-	-	-
COMBO ONLY	Copy	YES	YES	YES
	SQPB	-	-	-
	SECAM PB	-	YES	YES
	MESECAM PB	-	YES	YES
	NT4.43 PB	-	-	-
	NT3.58 PB	-	YES	YES
	Recoding Time	(E-180)SP:3Hr/LP:9Hr	(E-180)SP:3Hr/LP:6Hr	(E-180)SP:3Hr/LP:6Hr
	Recoding Speed	SP/LP	SP/LP	SP/LP
	IPC (VCR)	Yes	-	-
	Auto speed Timer Recording	Yes	Yes	Yes
	AUDIO DUBBING	-	-	-

4. Description

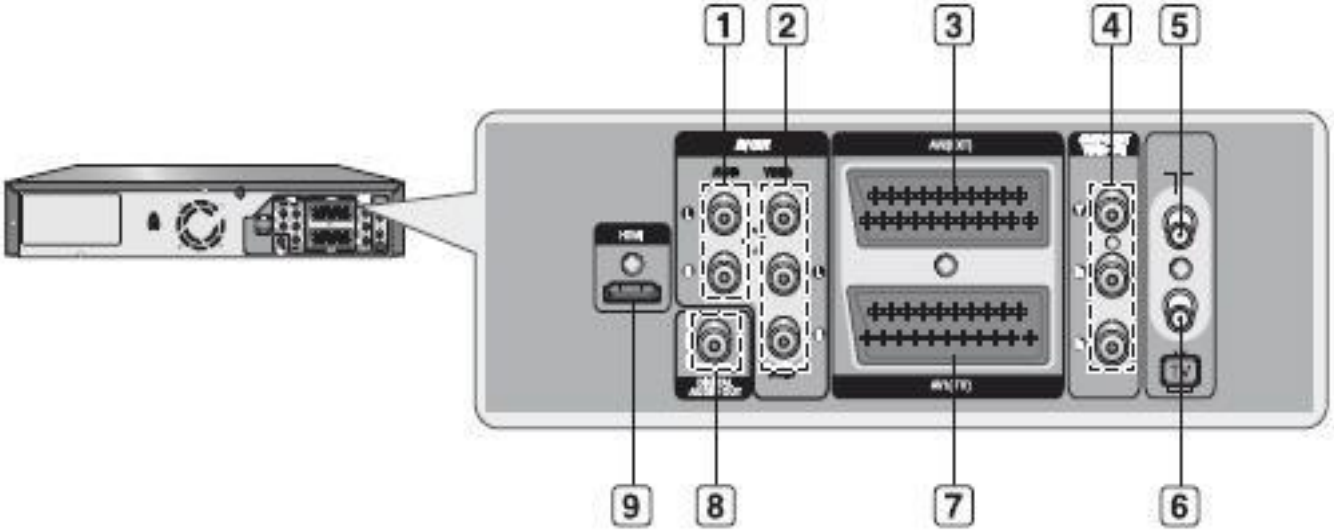


1 DVD OPEN/CLOSE BUTTON	2 VCR DECK	3 VCR EJECT BUTTON
4 CH (∨/∧), SEARCH/SKIP BUTTON	5 PLAY/PAUSE BUTTON	6 STOP BUTTON
7 RECORD BUTTON	8 DUBBING BUTTON	9 DVD/VCR SELECT BUTTON
10 FRONT PANEL DISPLAY	11 DVD DECK	12 DV INPUT JACK
13 AUDIO L, R INPUT JACKS (AV 2 IN)	14 VIDEO INPUT JACK (AV 2 IN)	15 POWER BUTTON

Front Panel Display

1 In Disc Indicator	2 Progressive Scan Indicator	3 DVD view Indicator
4 VCR view Indicator	5 STATUS Indicator	6 TIMER Indicator
7 Disc Media Indicator		

Rear Panel (DVD-VR375)



1 AUDIO L, R OUT JACKS	2 AUDIO/VIDEO JACK (AV OUT)	3 AV2 (EXT) SCART
4 COMPONENT VIDEO OUT JACKS	5 AERIAL IN CONNECTOR	6 OUT TO TV CONNECTOR
7 AV1 (TV) IN/OUT SCART	8 DIGITAL AUDIO OUT (COAXIAL)	9 HDMI OUT

Disassembly and Reassembly

3-1 Cabinet and PCB

3-1-1 Cabinet Top Removal

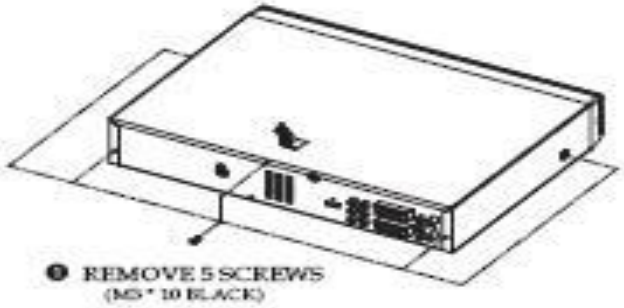


Fig. 3-1Cabinet Top Removal

3-1-2 Ass'y Bottom Cover Removal

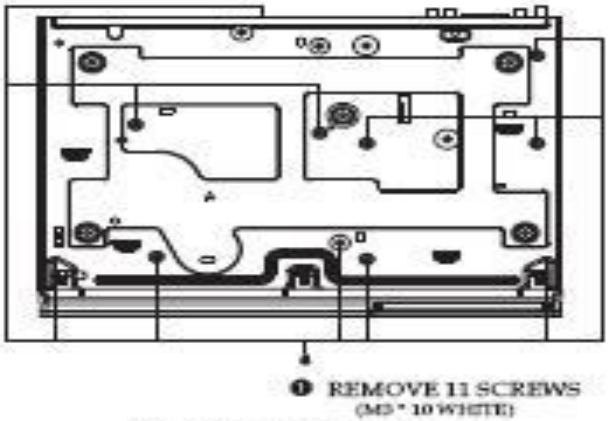


Fig. 3-2 Ass'y Bottom Cover Removal

3-1-3 Ass'y Front Panel Removal

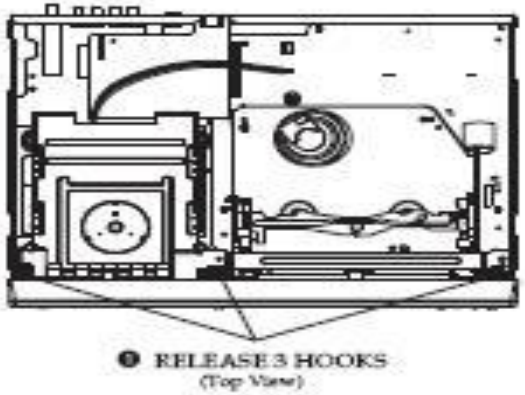


Fig. 3-3 Ass'y Front Panel Removal(Top View)

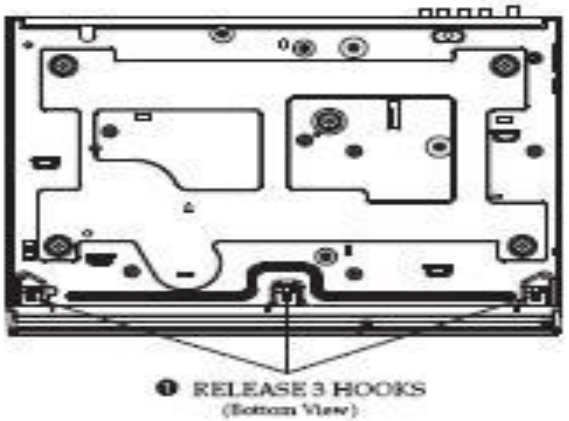


Fig. 3-4 Ass'y Front Panel Removal(Bottom View)

3-1-4 Chassis Removal

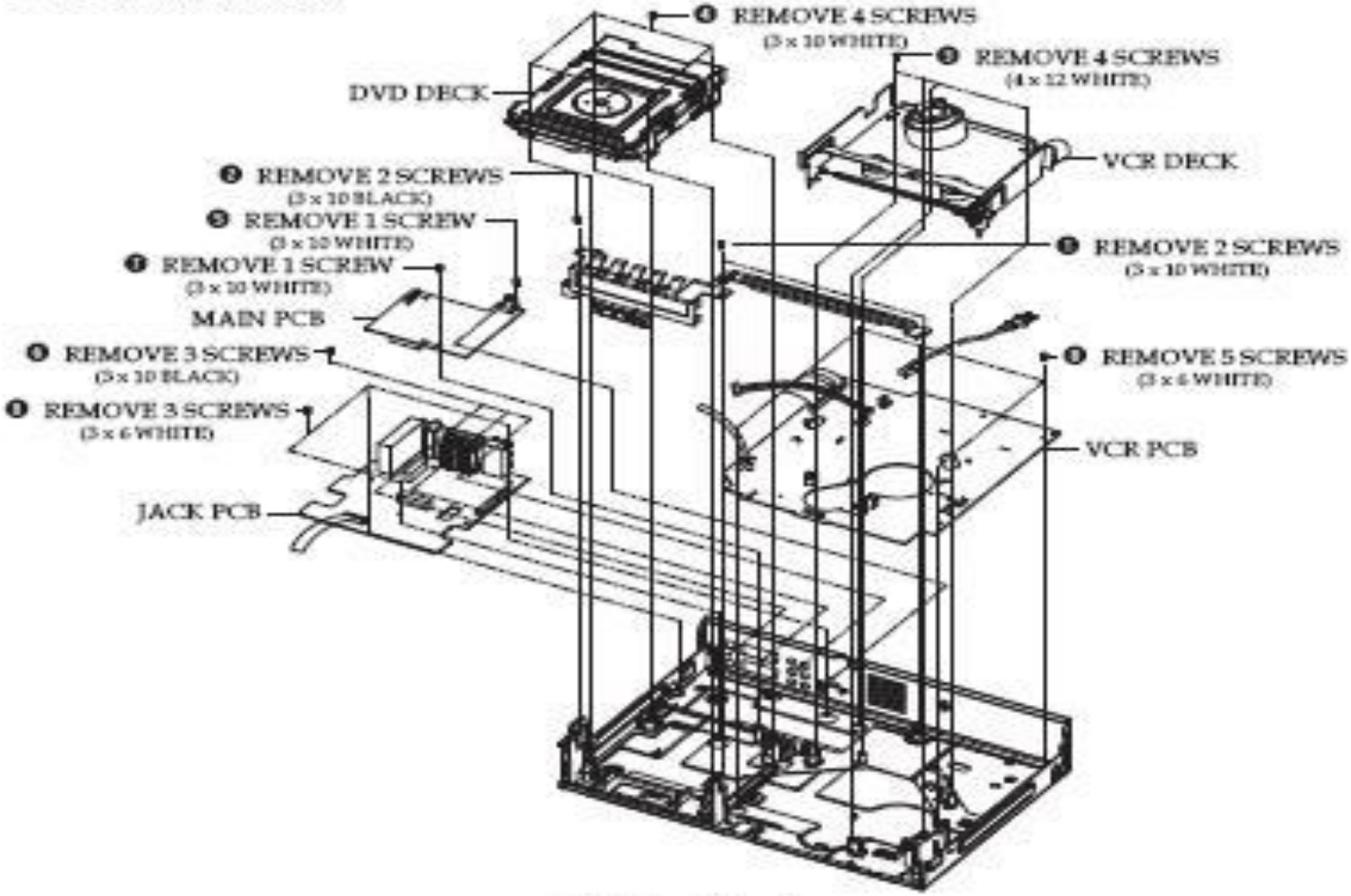
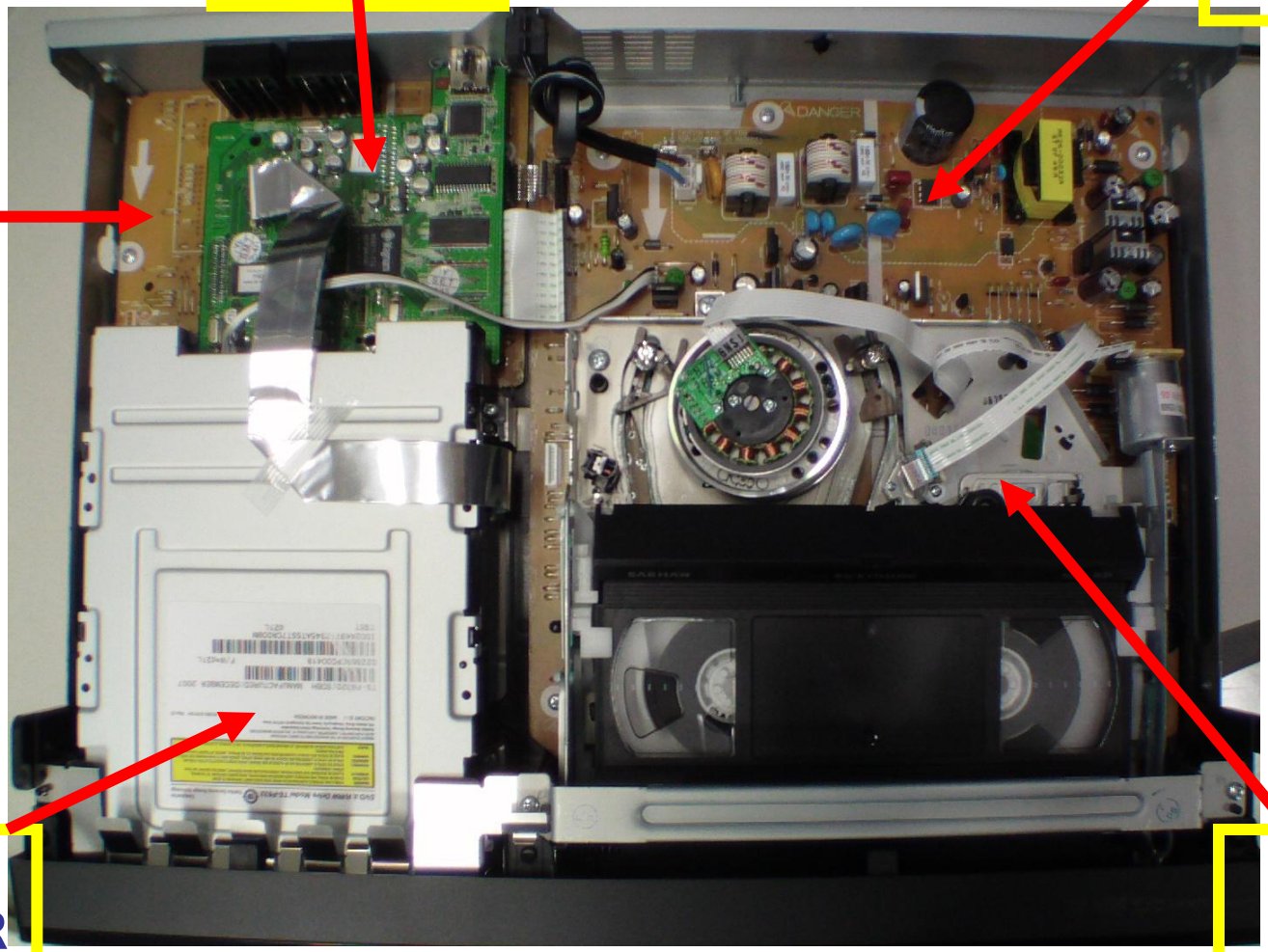


Fig. 3-5 Chassis Removal

5. Disassemble / Reassemble



3-1-5 VCR PCB Removal

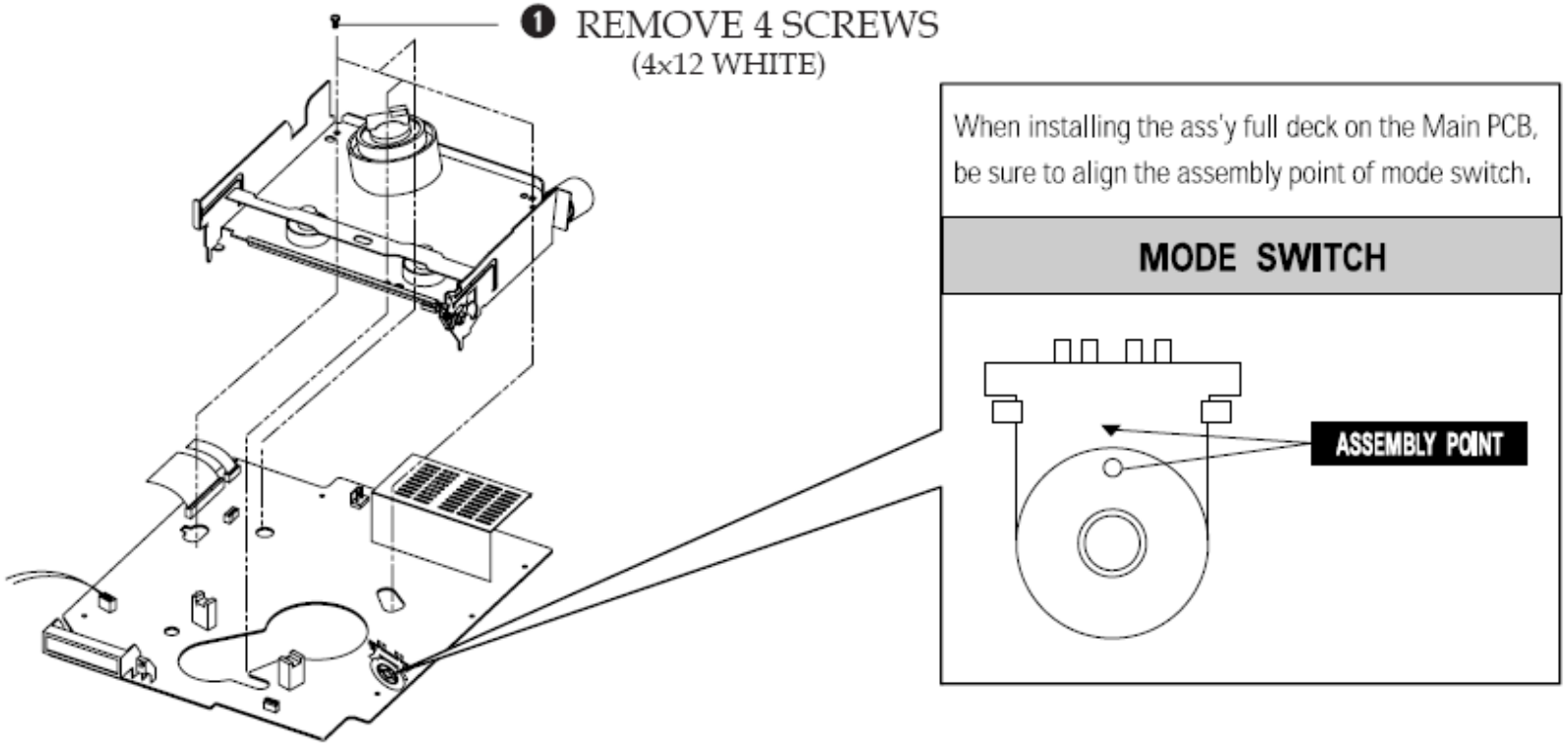


Fig. 3-6 VCR PCB Removal

3-2 Circuit Board Locations

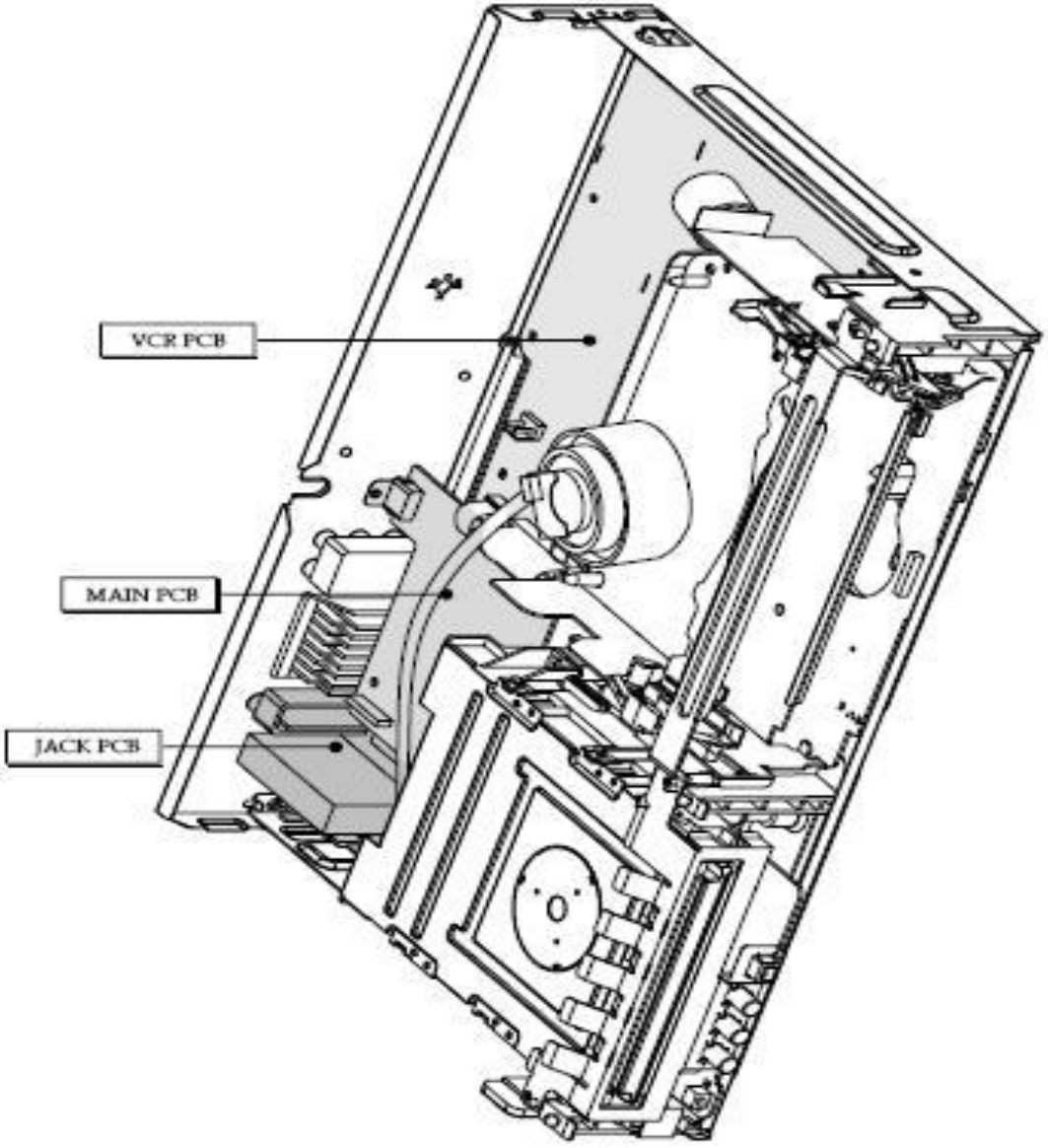


Fig. 3-7 Circuit Board Locations

3-3 VCR Deck Parts Locations

3-3-1 Top View

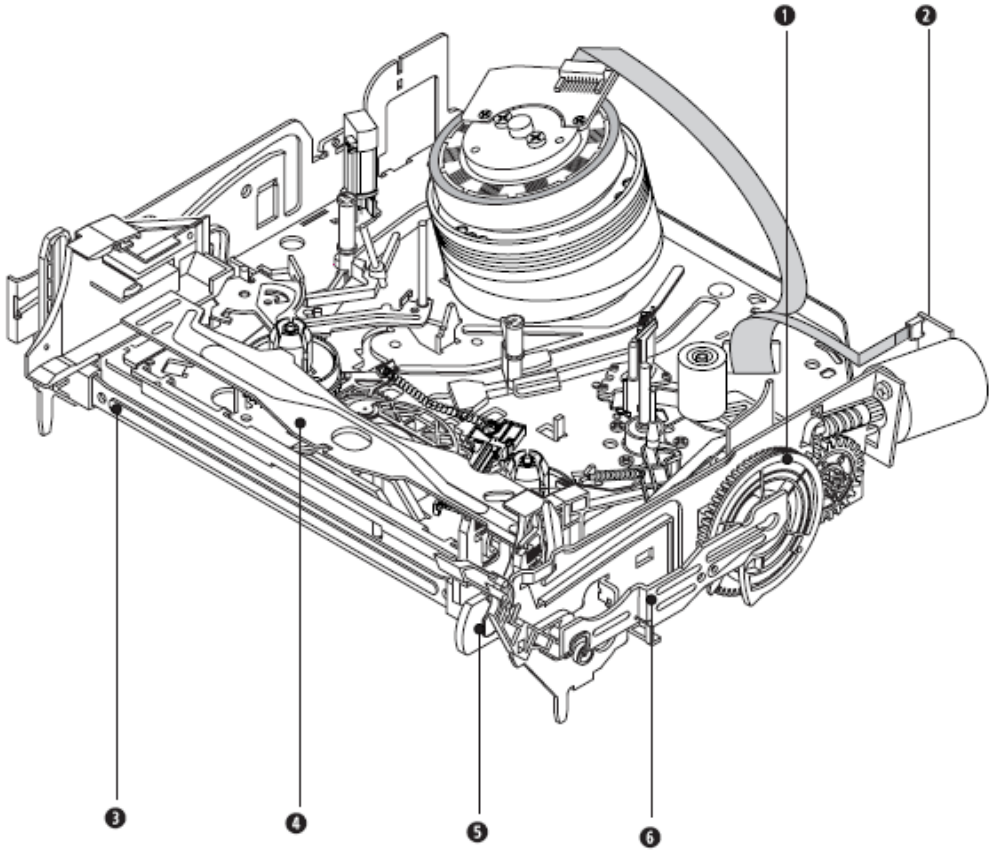


Fig. 3-8 Top parts Location-1

❶ GEAR FL CAM
❷ ASS'Y MOTOR LOADING
❸ ASS'Y LEVER ARM
❹ ASS'Y HOLDER CASSETTE
❺ LEVER DOOR
❻ SLIDER FL DRIVE

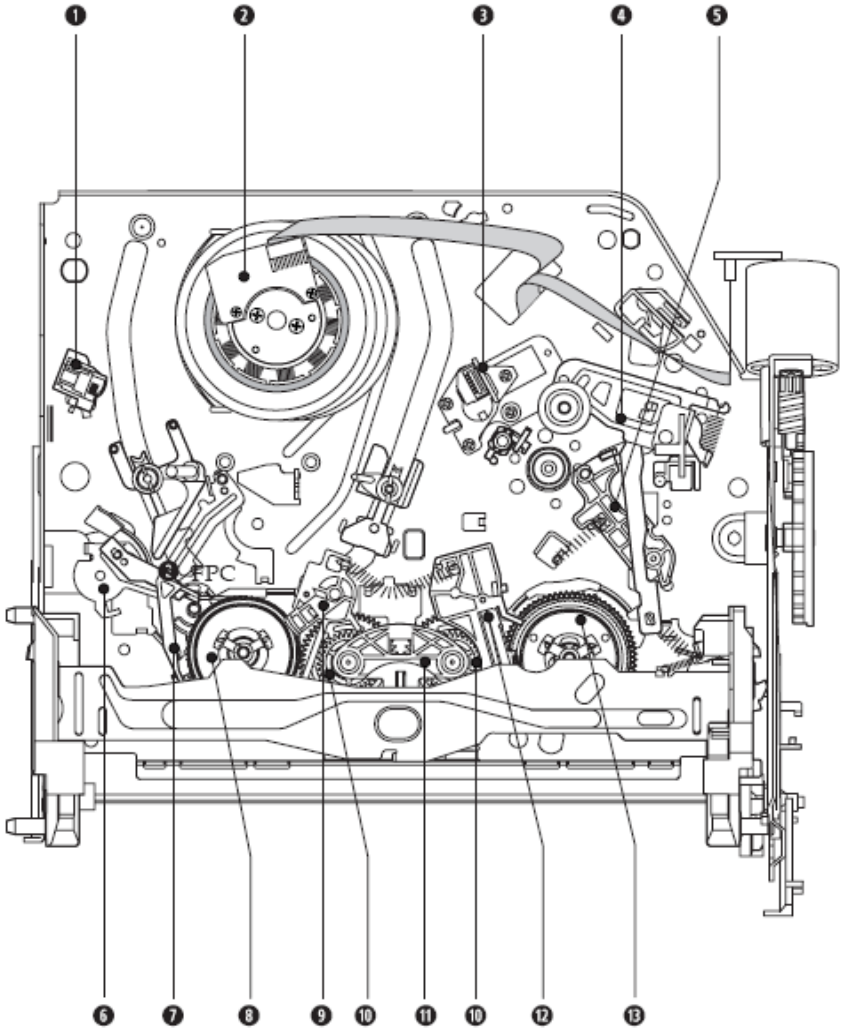


Fig.3-9 Top Parts Location-2

❶ FE HEAD
❷ ASS'Y CYLINDER
❸ ASS'Y CE HEAD
❹ ASS'Y LEVER UNIT PINCH
❺ ASS'Y LEVER #9 GUIDE
❻ ASS'Y LEVER TENSION
❼ ASS'Y BAND BRAKE
❽ DISK S REEL
❾ ASS'Y LEVER S BRAKE
❿ GEAR IDLE
⓫ LEVER IDLE
⓬ ASS'Y LEVER T BRAKE
⓭ DISK T REEL

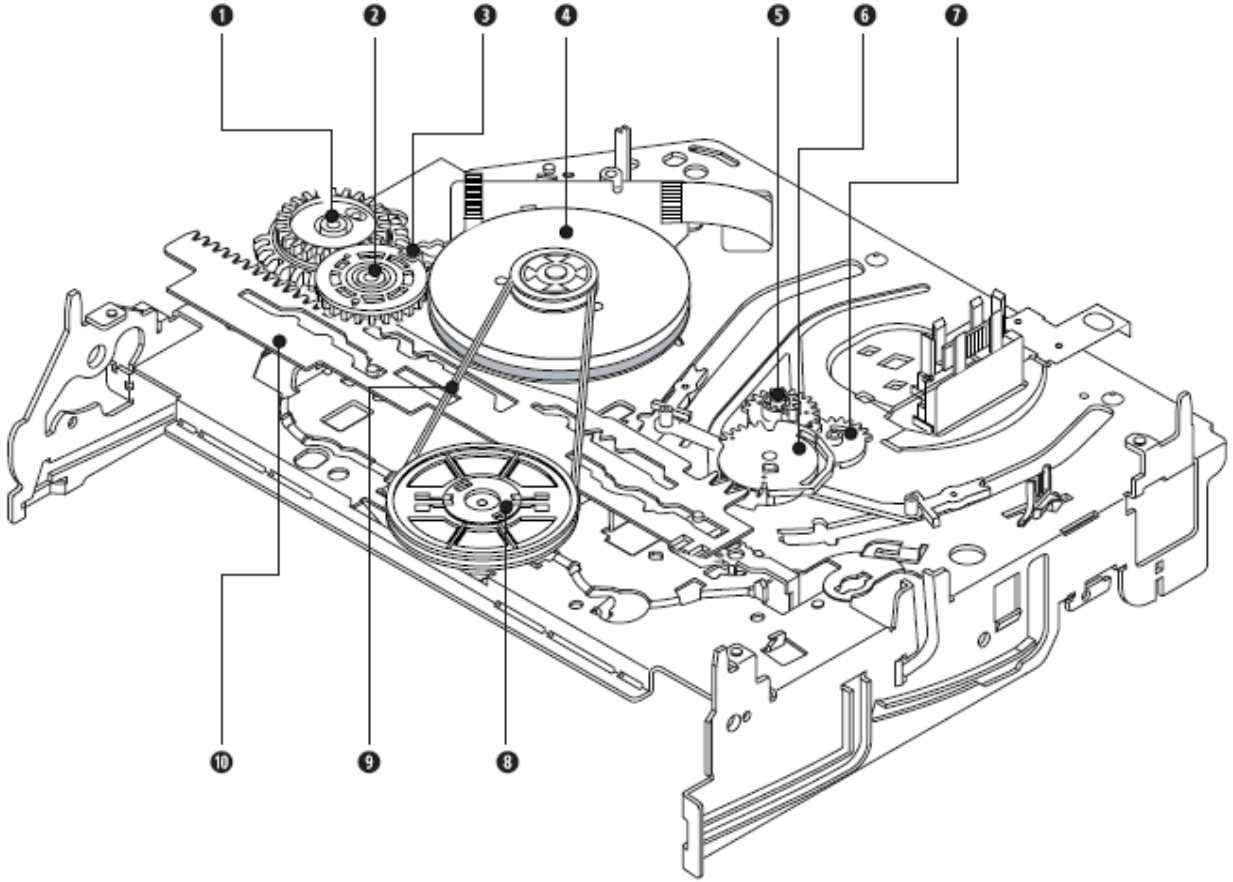


Fig. 3-10 Bottom Parts Location

❶ GEAR JOINT 1
❷ GEAR JOINT 2
❸ BRACKET GEAR
❹ MOTOR CAPSTAN ASS'Y
❺ LEVER T LOAD ASS'Y
❻ GEAR LOADING DRIVE
❼ LEVER S LOAD ASS'Y
❽ ASS'Y CLUTCH
❾ BELT PULLEY
❿ SLIDER CAM

3-4 VCR Deck

3-4-1 Ass'y Holder Cassette Removal

1) Pull the Ass'y Holder Cassette ❶ to the eject position.
2) Pull the Ass'y Holder Cassette ❶ as grasping the Ass'y Holder Cassette ❶ and Lever Lock ❷ in the same time to release hooking from Main Base until the Boss [A] of Ass'y Holder Cassette ❶ is taken out from the Rail [B].
3) Lift the Ass'y Holder Cassette ❶, in this time, you have to grasp the Lever Lock ❷ Continuously until the Ass'y Holder Cassette ❶ is taken out completely.

Note : Be sure to insert Lever Lock ❷ in the direction of "A" to prevent separation and breakage of the Lever Lock ❷ at disassembling and reassembling.

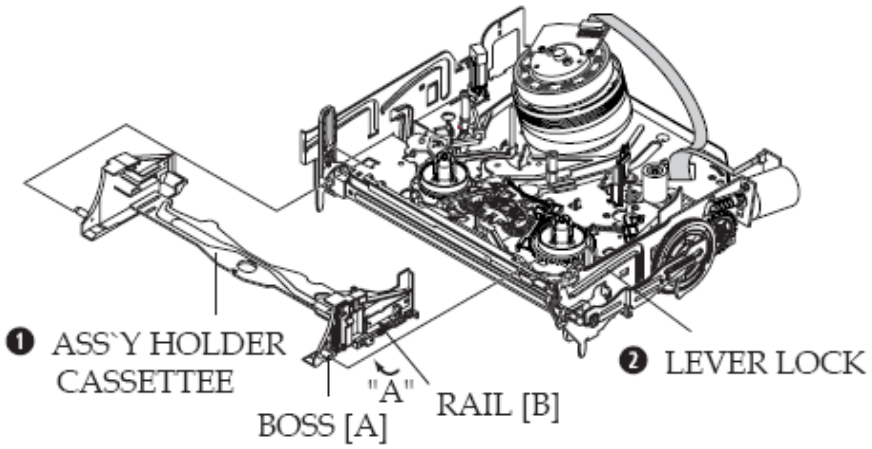


Fig. 3-11 Ass'y Holder Cassette Removal

3-4-2 Ass'y Lever Arm Removal

1) Push the hole "A" in the direction of arrow "B" use the pin.(about Dia. 2.5)
2) Pull out the Ass'y Lever Arm ❶ from the Boss of Main Base.
3) Remove the Ass'y Lever Arm ❶ in the direction of arrow "C".

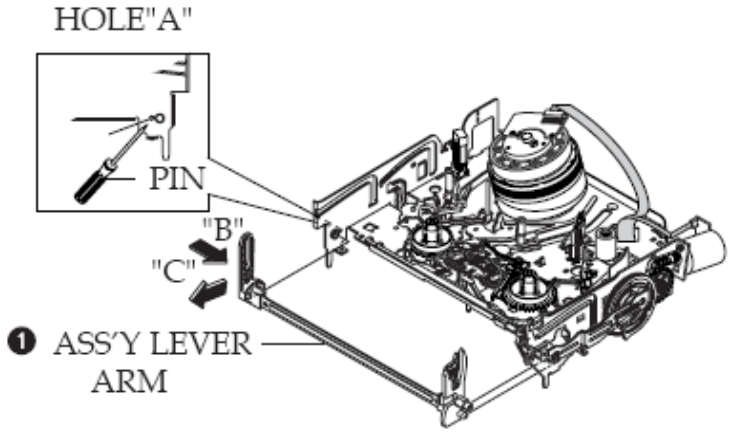


Fig. 3-12 Ass'y Lever Arm Removal

3-4-3 Lever Door Removal

1) Release the Hook ❷ and Remove the Lever Door ❶ in the direction of arrow "A".

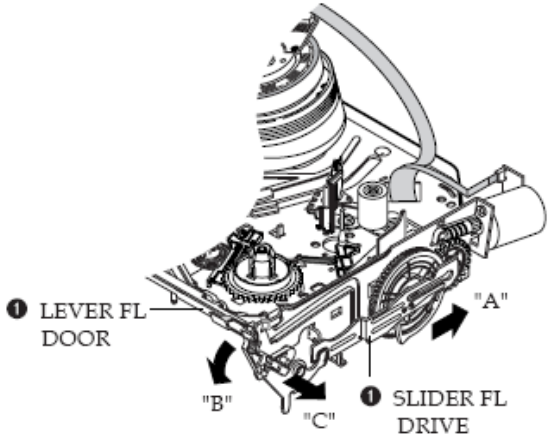


Fig. 3-13 Lever Door Removal

3-4-4 Slider FL Drive, Gear FL Cam Removal

1) Pull the Slider FL Drive ❶ to the front direction.
2) Remove the Slider FL Drive ❶ in the direction of arrow. (Refer to Fig. 3-13)
3) Remove the Gear FL cam ❷.

Note : When reinstalling be sure to reassemble Slider FL drive ❶ after you insert the Boss of Lever ARM-R in Groove of Slider Fl drive ❶.

Assembly : Align the Gear FL Cam ❶ with the Gear worm wheel Post as shown drawing.
(Refer to Timing point)

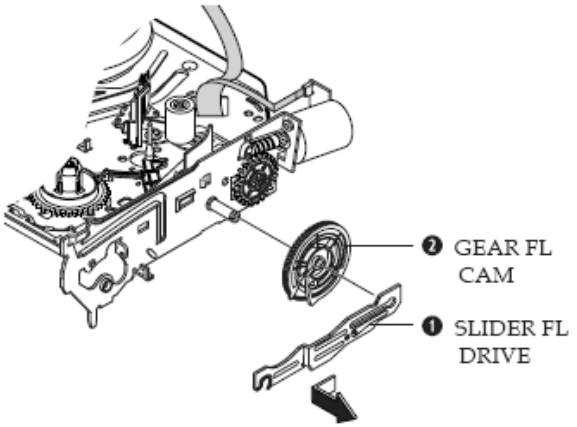


Fig. 3-14 Slider FL Drive Removal

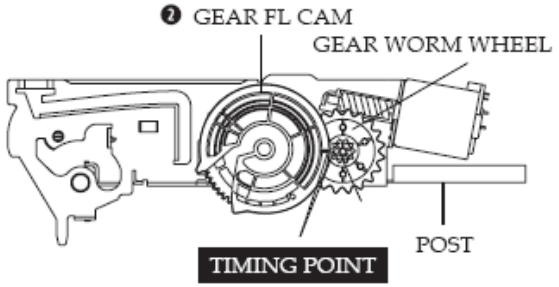


Fig. 3-15 Gear FL Cam, Gear Worm

3-4-5 Gear Worm Wheel Removal

1) Remove the Gear Worm wheel ❶.

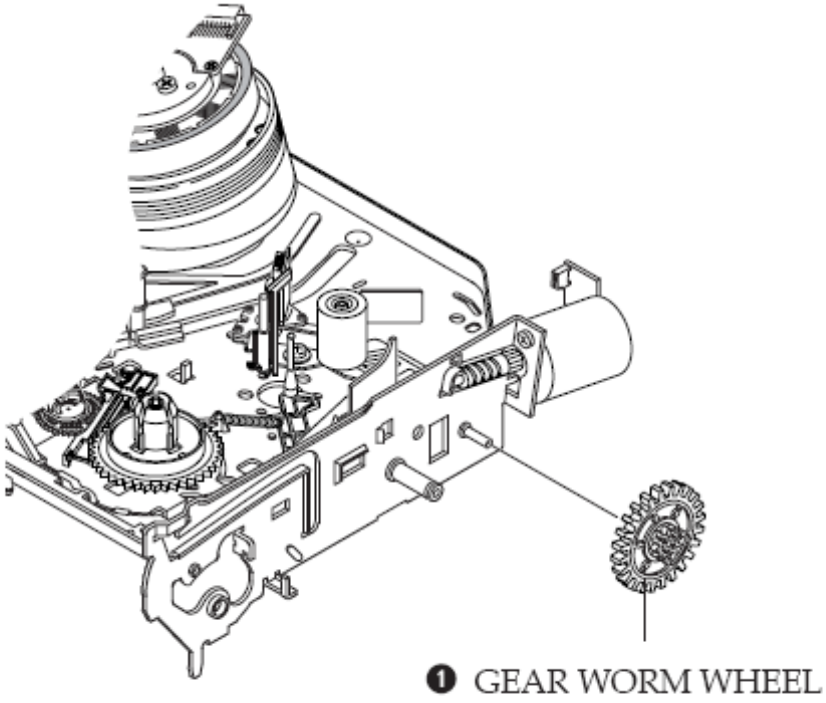


Fig. 3-16 Gear Worm Wheel Removal

3-4-6 Cable Flat Removal

1) Remove the Drum connecting part of Cable Flat ❶ from Connector Waffer ❷, ❸.

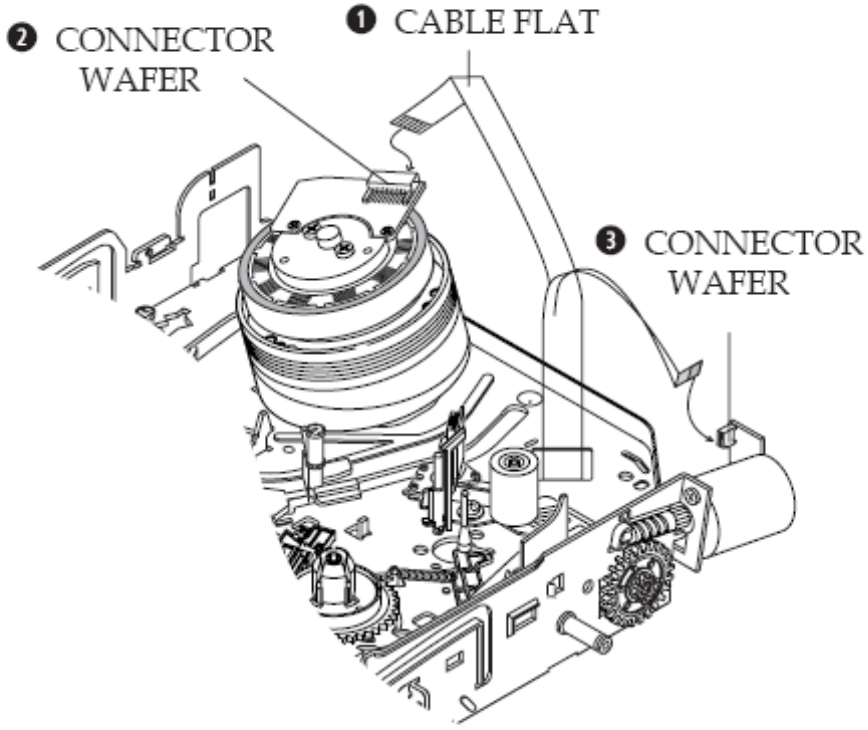


Fig. 3-17 Cable Flat Removal

3-4-7 Ass'y Motor Loading Removal

1) Remove the Screw ❶.
2) Remove the Ass'y Motor Loading ❷.

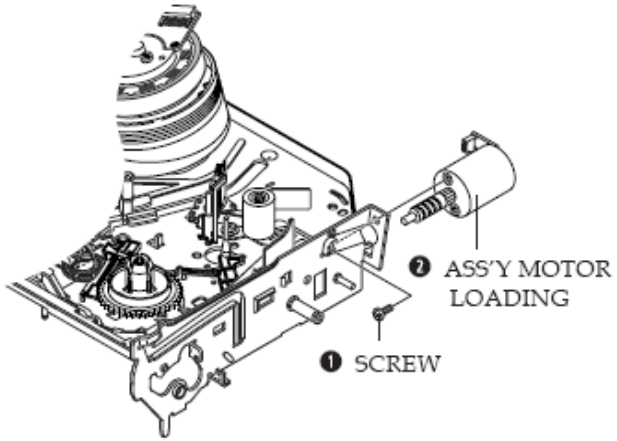


Fig.3-18 Ass'y Motor Loading Removal

3-4-8 Bracket Gear, Gear Joint 2, 1 Removal

1) Remove the Screw ❶.
2) Remove the Bracket Gear ❷.
3) Remove the Gear Joint 2 ❸.
4) Remove the Gear Joint 1 ❹.

Assembly :
1) Be sure to align dot mark of Gear Joint 1 ❶ with dot mark of Gear Joint 2 ❷ as shown Fig 3-20. (Refer to Timing point1)
2) Confirm the Timing Point 2 of the Gear Joint 2 ❷ and Slider Cam ❸.

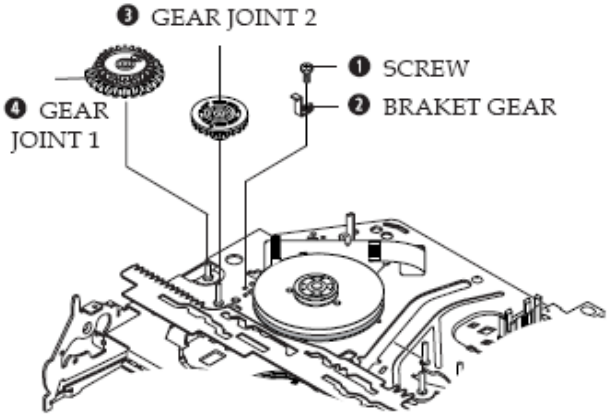


Fig. 3-19 Bracket Gear, Gear Joint 1,2 Removal

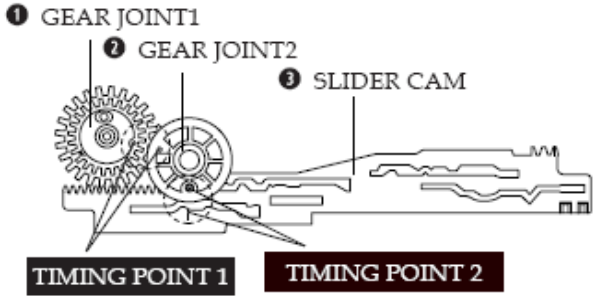


Fig. 3-20 Gear Joint 1,2 Assembly

3-4-9 Gear Loading Drive, Slider Cam, Ass'y Lever Load S, T Removal

1) Remove the Belt Pulley. (Refer to Fig. 3-38)
2) Remove the Gear Loading Drive ❶ after releasing Hook [A] in the direction arrow as shown in detail drawing.
3) Remove the Slider Cam ❷.
4) Remove the Ass'y Lever Load S ❸ & Ass'y Lever Load T ❹.

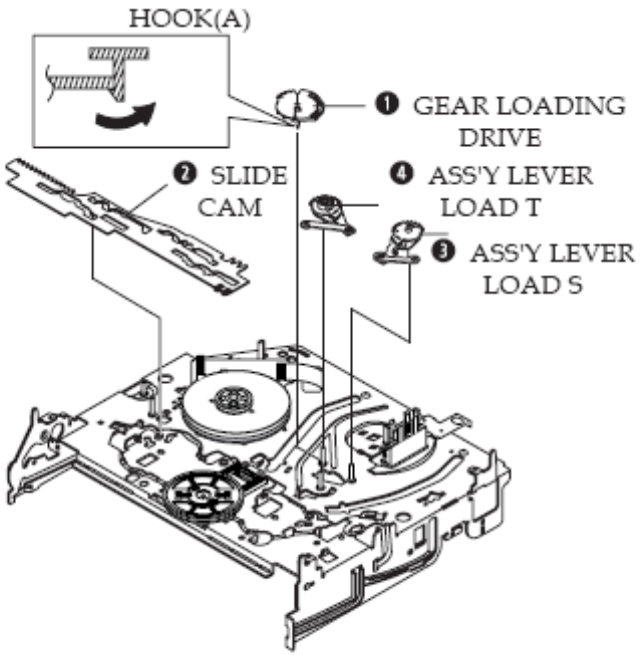


Fig. 3-21 Gear Loading Drive, Slider Cam, Ass'y Lever T, S Load Removal

3-4-10 Gear Loading Drive, Slider Cam, Ass'y Lever Load S, T Assembly

1) When reinstalling, be sure to align dot of Ass'y Lever Load T ❶ with dot of Ass'y Lever Load S ❷ as shown in drawing, (Refer to Timing Point 1).
2) Insert the Pin A,B,C,D into the Slider Cam ❸ hole,
3) Be sure to align dot of Ass'y Lever Load T ❶ and dot of Gear Loading Drive ❹, (Refer to Timing Point 2).
4) Aline dot of Gear Loading drive ❹ with mark of Slider Cam ❸ as shown in drawing(Refer to Timing Point 3).

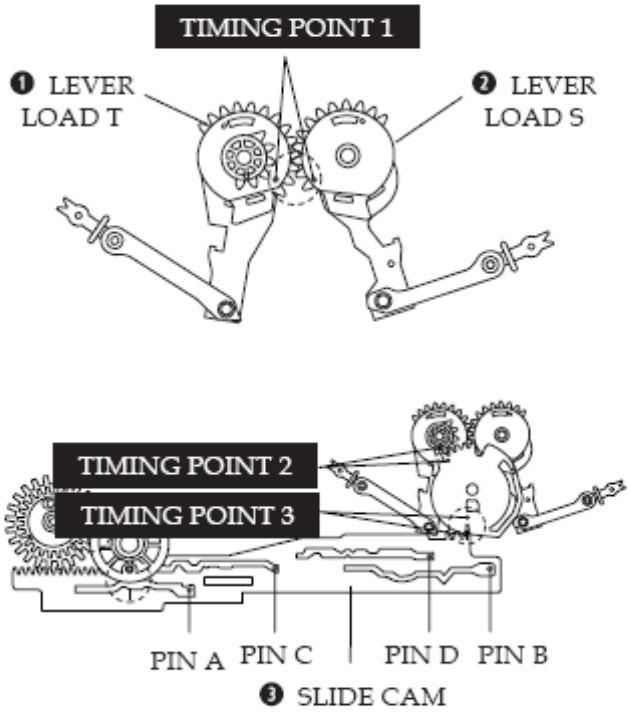


Fig.3-22 Gear Loading Drive, Slider Cam, Ass'y Lever Load S, T Assembly

3-4-11 Lever Pinch Drive, Lever Tension Drive Removal

1) Remove the Lever Pinch Drive ❶, Lever Tension Drive ❷.

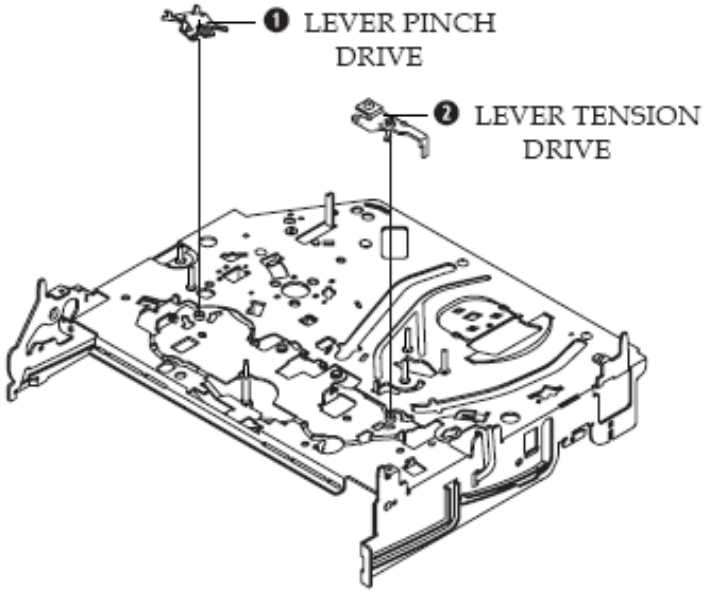


Fig. 3-23 Lever Pinch Drive, Lever Tension Drive Removal

3-4-12 Ass'y Lever Tension , Ass'y Band Brake Removal

1) Remove the Ass'y Lever Brake S (Refer to Fig 3-25).
2) Remove the Spring Tension Lever ❶.
3) Rotate stopper of Main Base in the direction of arrow "A".
4) Lift the Ass'y Lever Tension ❷ & Ass'y Band brake ❸.

Note :

1) When replacing the Ass'y Lever Tension ❷, be sure to apply Grease on the post,
2) Take care not to touch stain on the felt side, and not to be folder and broken Ass'yBand brake.
3) After Ass'y Lever Tension seated, Rotate stopper of Main Base to the Mark[B].

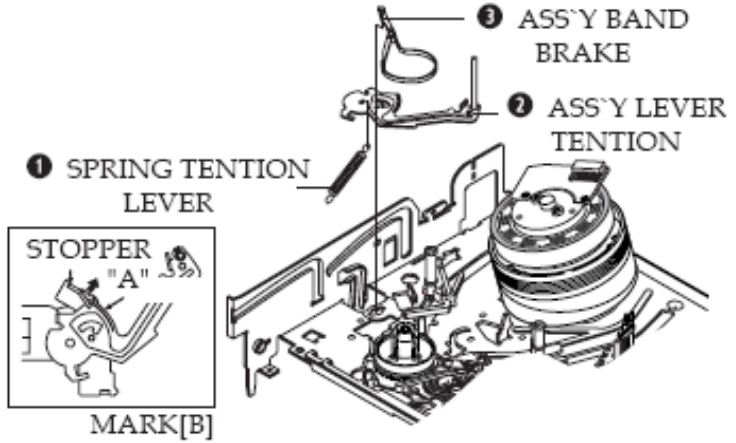


Fig. 3-24 Ass'y Lever Tension , Ass'y Band Brake Removal

3-4-13 Ass'y Lever Brake S, T Removal

1) Release the Hook [A] and the Hook [B], [C] in the direction of arrow as shown in Fig 3-25.
2) Lift the Ass'y Lever S, T Brake ❶, ❷ with spring brake ❸.

Assembly :

1)Assembly the Ass'y Lever S Brake ❶ on the Main Base.
2)Assembly the Ass'y Lever T Brake ❷ with spring brake ❸.

Note : Take extreme care not to be folded and transformed Spring Brake at removing or rein stalling.

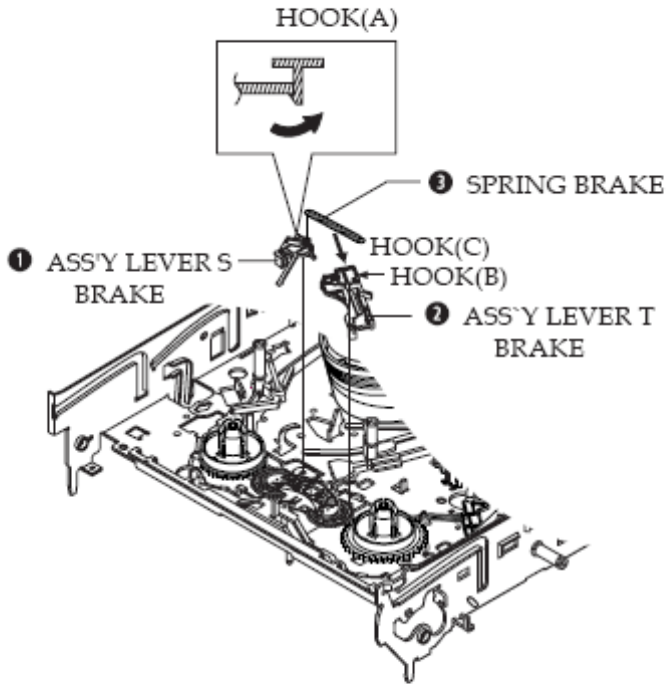


Fig. 3-25 Ass'y Lever Brake S, T Removal

3-4-14 Ass'y Gear Idle Removal

1) Push the Lever Idle ❶ in the direction of arrow "A", "B".
2) Lift the Lever Idle ❶.

Assembly :

1) Apply oil in two Bosses of Lever Idle ❶.
2) Assemble the Gear Idle ❷ with the Lever Idle ❶.

Note : When replacing the Gear Idle ❷, be sure to add oil in the boss of Lever Idle ❶.

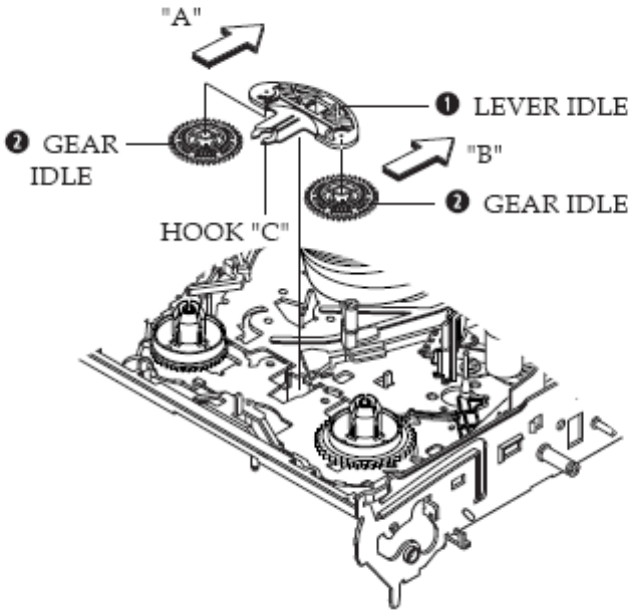


Fig. 3-26 Ass'y Gear Idle Removal

3-4-15 Disk S, T Reel Removal

1) Lift the Disk S, T Reel ❶, ❷.

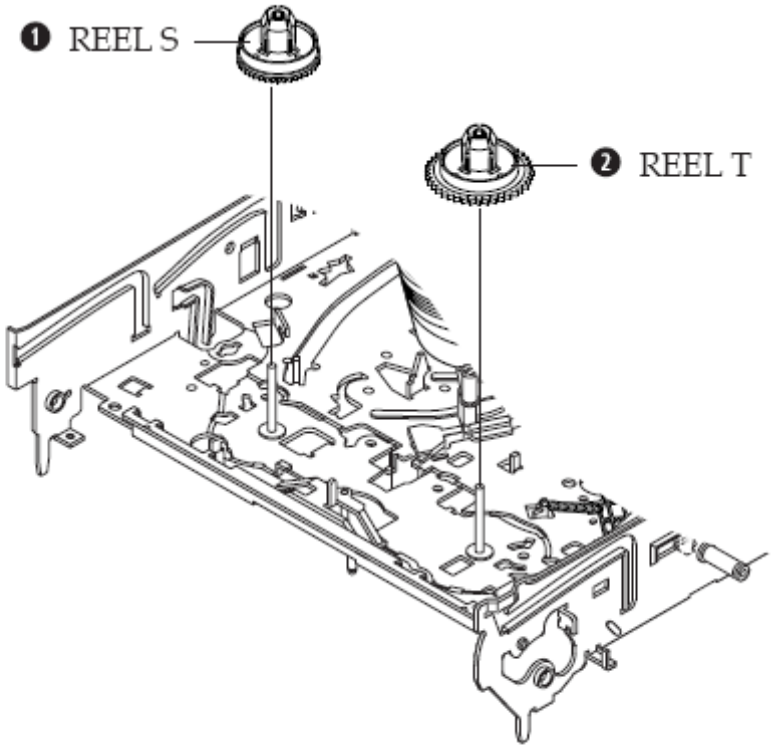
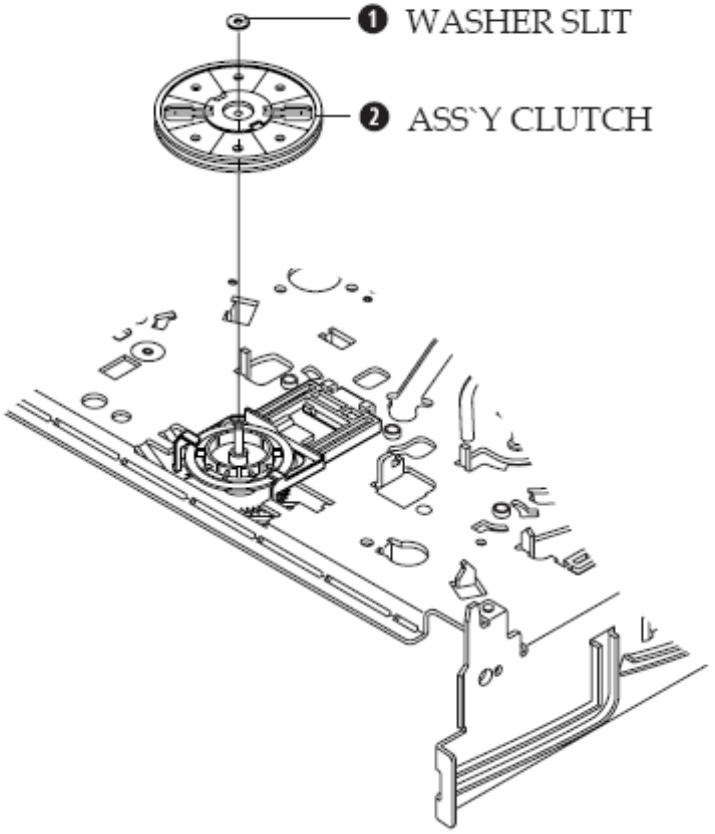


Fig. 3-27 Disk S, T Reel Removal

3-4-16 Ass'y Holder Clutch Removal

1) Remove the Washer Slit ❶.
2) Lift the Ass'y Holder Clutch ❷.

Note : When you reinstall Ass'yHolder Clutch.
1) Check the condition of spring as shown in detail A.
2) Don't push Ass'y Holder Clutch down with excessive force Just insert Holder Clutch Ass'y into post center with dead force and Rotate it smoothly. Be sure to confirm that spring is in the slit of Ass'y Gear Center as shown in detail B.



3-4-17 Ass'y Lever Up Down, Ass'y Gear Center Removal

1) Remove the 2 hooks in the direction of arrow as shown Fig. 3-29 and lift the Ass'y Lever Up Down ❶.
2) Lift the Ass'y Gear Center ❷.

Assembly :

1) Insert the Ass'y Lever Up Down ❶ in the rectangular holes on Main Base as shown in Fig 3-30.
2) Lift the Lever Ass'y Up Down ❶ about 35°. (Refer to Fig 3-30)
3) Insert Ring of the Ass'y Gear Center ❷ in the Guide of the Ass'y Lever Up Down ❶.
4) Insert the Ass'y Gear Center ❷ in the post on Main Base.
5) Push down the Ass'y Lever Up Down ❶ for locking of the Hook.

Note :

1) Take care not to separate and sentence does not mark sense.
2) Be sure to confirm that Ring of the Ass'y Gear Center ❷ is in the Guide of the Ass'y Lever Up Down ❶ after finishing assembly of Ass'y Lever Up Down ❶ and Ass'y Gear Center ❷.

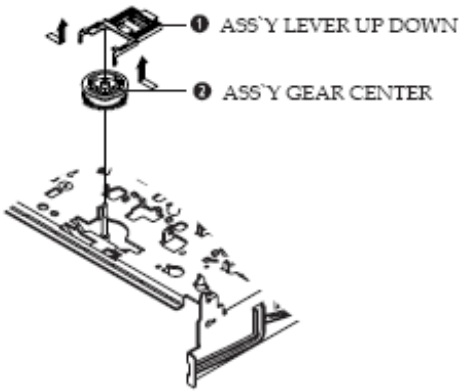


Fig. 3-29 Ass'y Lever Up Down Removal

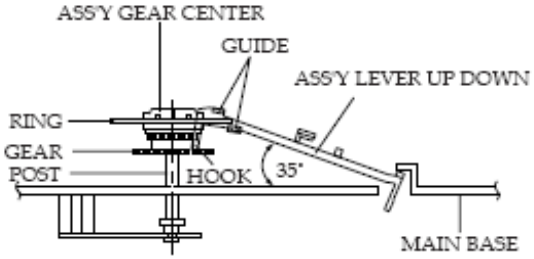


Fig. 3-30 Ass'y Lever Up Down Removal

3-4-18 Guide Cassette Door Removal

1) Lift the Hook [A].
2) Rotate the Guide Cassette Door ❶ in the direction of arrow.

Note : After reinstalling the Guide Cassette Door ❶ sure the Hook [A].

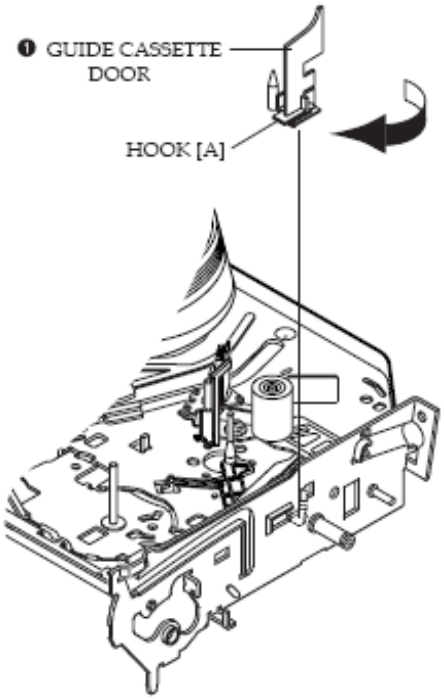


Fig. 3-31 Guide Cassette Door Removal

3-4-19 Ass'y Lever Unit Pinch , Plate Joint, Spring Pinch Drive Removal

1) Lift the Ass'y Unit Pinch ❶.
2) Remove the Plate Joint ❷ from Lever Pinch Drive.
3) Remove the Spring Pinch Drive ❸.

Note :
1) Take extreme care not to touch the grease on the Roller Pinch.
2) When reinstalling, be sure to apply grease on the post pinch roller.

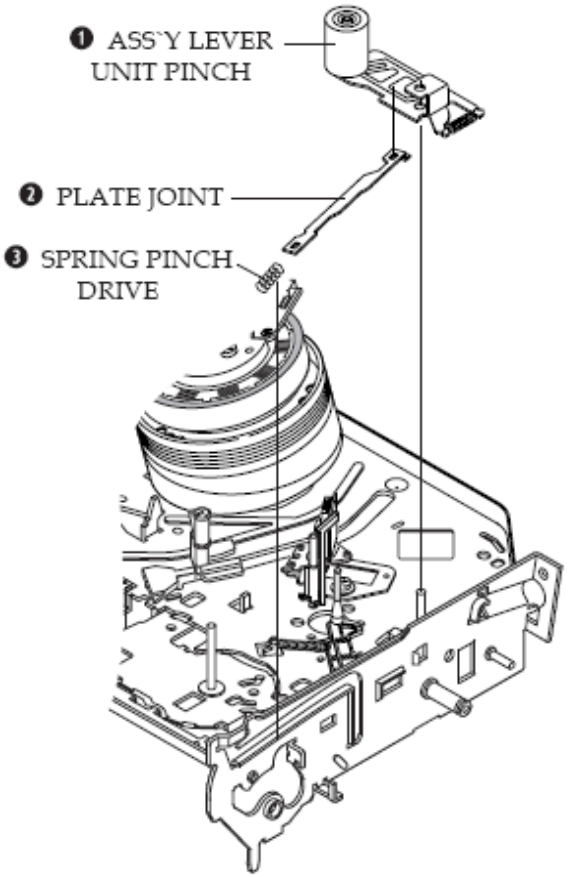


Fig. 3-32 Ass'y Lever Unit Pinch , Plate Joint, Spring Pinch Drive Removal

3-4-20 Ass'y Lever #9 Guide Removal

1) Remove the Spring #9 Guide ❶.
2) Lift the Ass'y Spring #9 Guide ❷ in the direction of arrow "A".

Note :
1) Take extreme care not to get grease on the tape Guide Post.
2) After reinstalling, check the bottom side of the Post #9 Guide to the top side of Main Base.

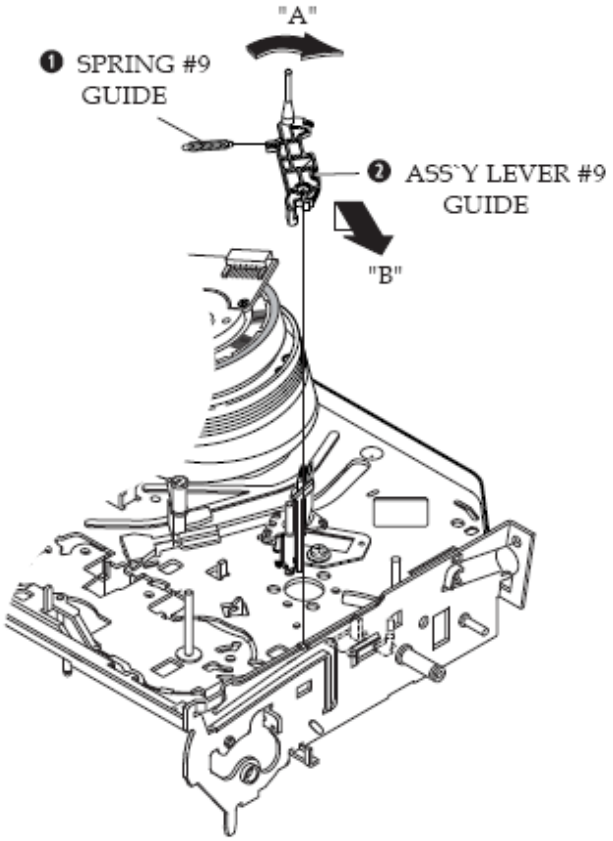


Fig. 3-33 Ass'y Lever #9 Guide Removal

3-4-21 FE Head Removal

1) Remove the Screw ❶.
2) Lift the FE Head ❷.

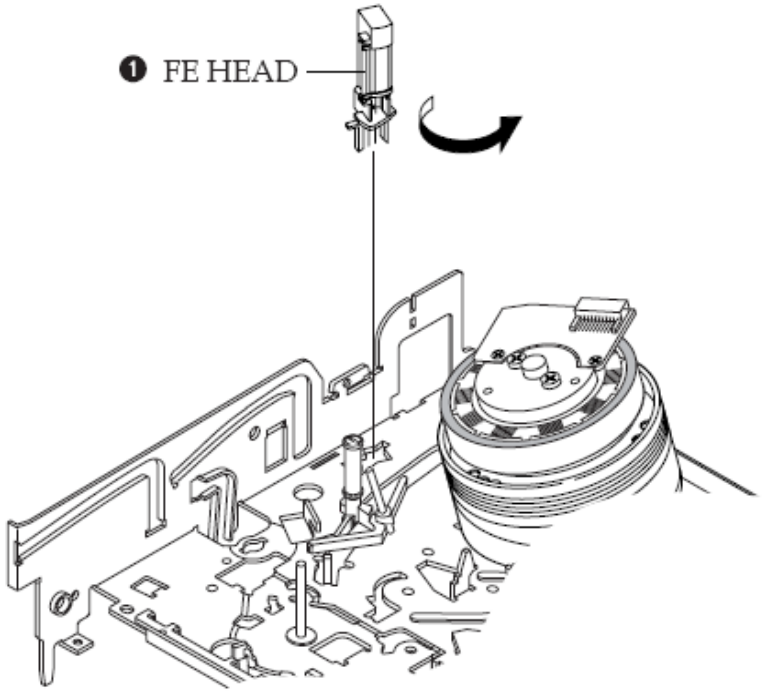


Fig. 3-34 FE Head Removal

3-4-22 Ass'y AC Head Removal

1) Pull out the FPC from connector of Ass'y AC Head ❷.
2) Remove the screw ❶.
3) Lift the Ass'y AC Head ❷.

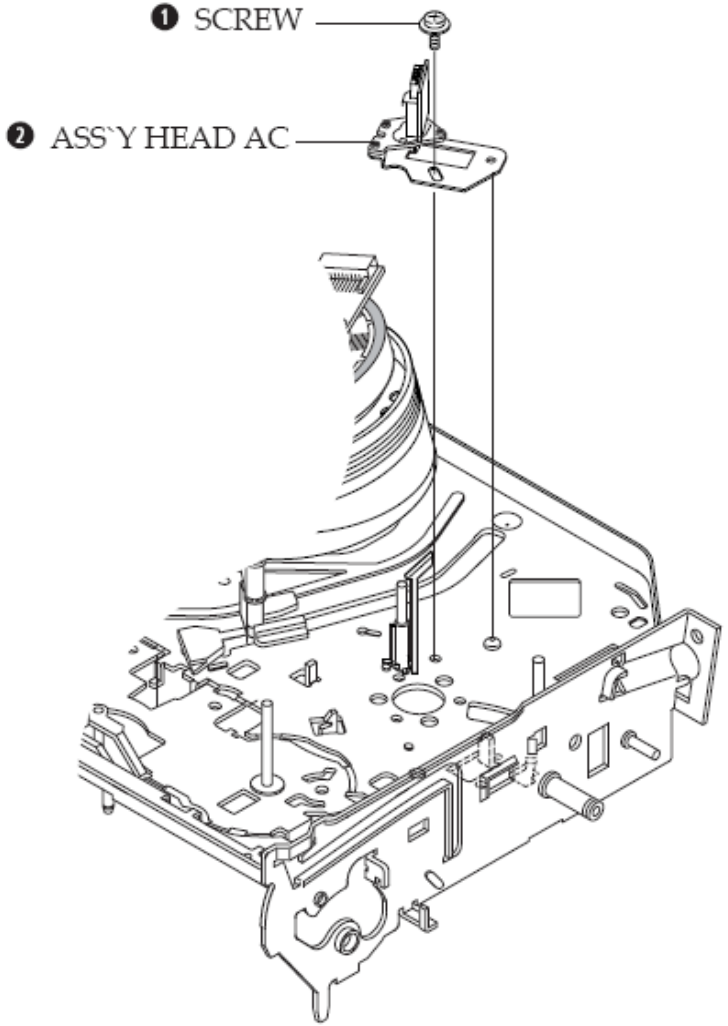


Fig. 3-35 Ass'h AC Head Removal

3-4-23 Ass'y Slider S, T Removal

1) Move the Ass'y Slider S, T ❶, ❷ to slot, and then lift it to remove. (Refer to arrow)

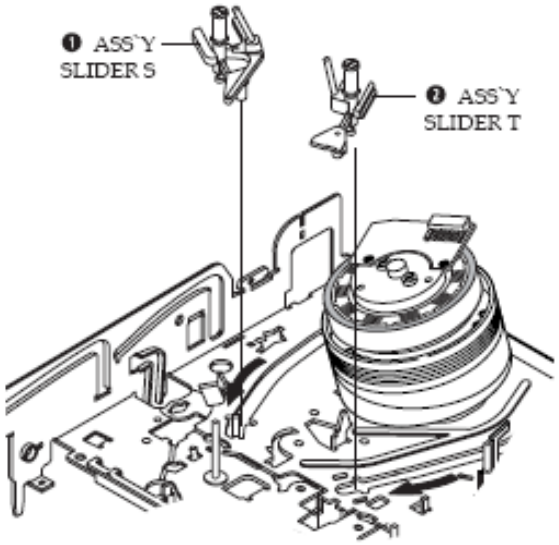


Fig. 3-36 Ass'y Slider S, T Removal

3-4-24 Plate Ground Deck, Ass'y Cylinder Removal

1) Remove the 3 Screws ❶.
2) Lift the Plate Ground Deck ❷.
3) Lift the Ass'y Cylinder ❸.

Assembly :
1) Match the 3 holes in the bottom of Ass'y Cylinder ❸ to the 3 holes of Main Base as attending not to drop or knock the Ass'y Cylinder ❸.
2) Tighten the 1 Screw ❶.
3) Match the Plate Ground Deck ❷ to the Hole of Base Main.
4) Tighten the other 2 Screws ❶.

Note :
1) Take care not to touch the Ass'y Cylinder ❸ and the tape guide post at reinstalling.
2) When reinstalling. Don't push down too much on Screw Driver.

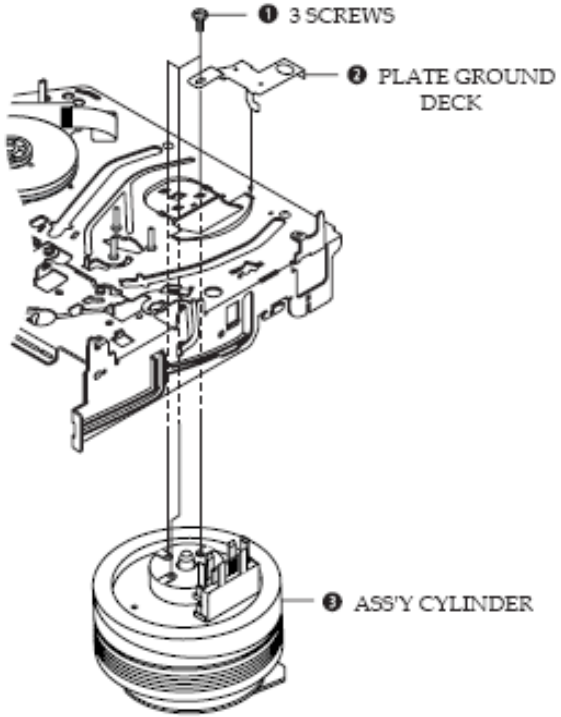


Fig. 3-37 Plate Ground Deck, Ass'y Cylinder Removal

3-4-25 Hook Capstan, Belt Pulley Removal

1) Remove the Hook Capstan ❶ after realeasing Hook in the direction arrow as shown in detail drawing.
2) Remove the Belt Pulley ❷.

Note : Take extreme care not to get grease on Belt Pulley ❷ at assembling or reassembling.

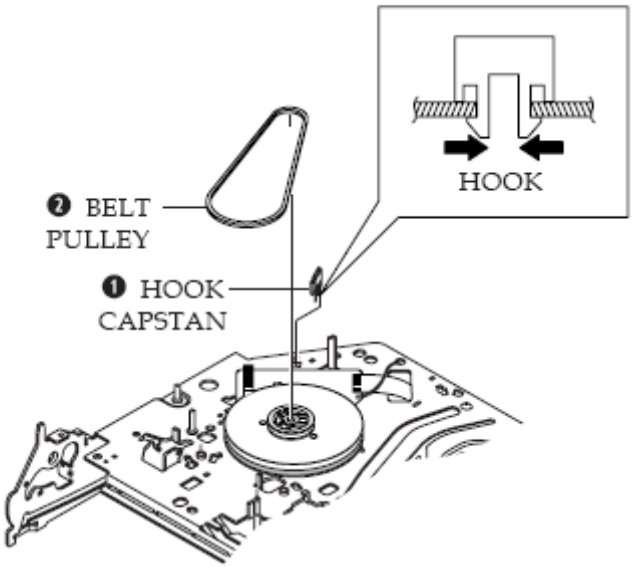


Fig. 3-38 Belt Pulley Removal

3-4-26 Ass'y Motor Capstan Removal

1) Remove the 3 Screws ❶.
2) Remove the Ass'y Motor Capstan ❷.

Assembly :

1) Match the 3 holes of Ass'y Motor Capstan ❷ to the 3 holes of Main Base. Be careful not to drop or knock the Ass'y Motor Capstan ❷.
2) Tighten the 3 Screws ❶ in the direction of arrow as shown detail drawing.

Note : After tightening screws, check if there is gap between the head of screws and the top side of Main Base. There should have no gap between the head of screws and the top side of Main Base. After reinstalling, adjusting the tape transport system again.

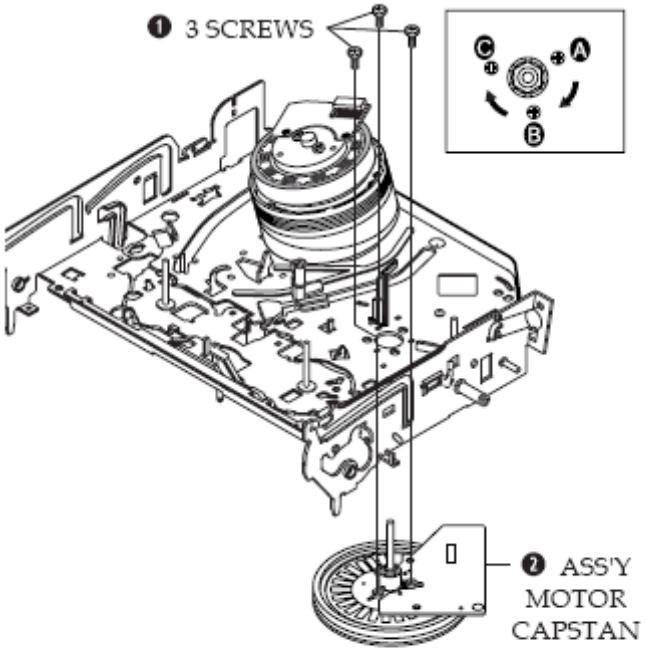


Fig. 3-39 Ass'y Motor Capstan Removal

3-4-27 Ass'y Post #8 Guide Removal

1) Rotate the Ass'y Post #8 Guide ❶ in the direction of arrow to lift up.

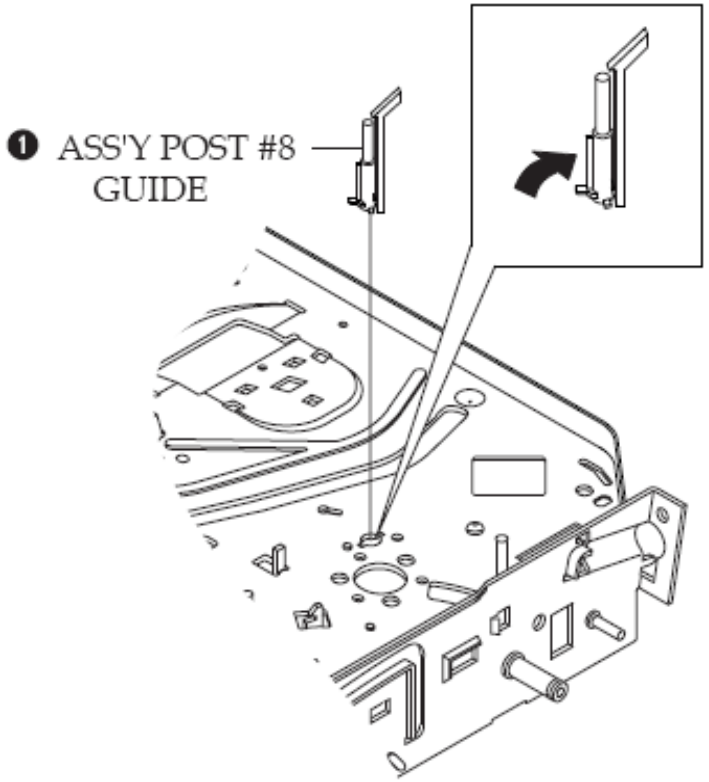


Fig. 3-40 Ass'y Post #8 Guide Removal

3-4-28 Ass'y Level Head Cleaner Removal (Optional)

1) Release the Hook ❶.
2) Lift the Ass'y Lever Head Cleaner ❷.

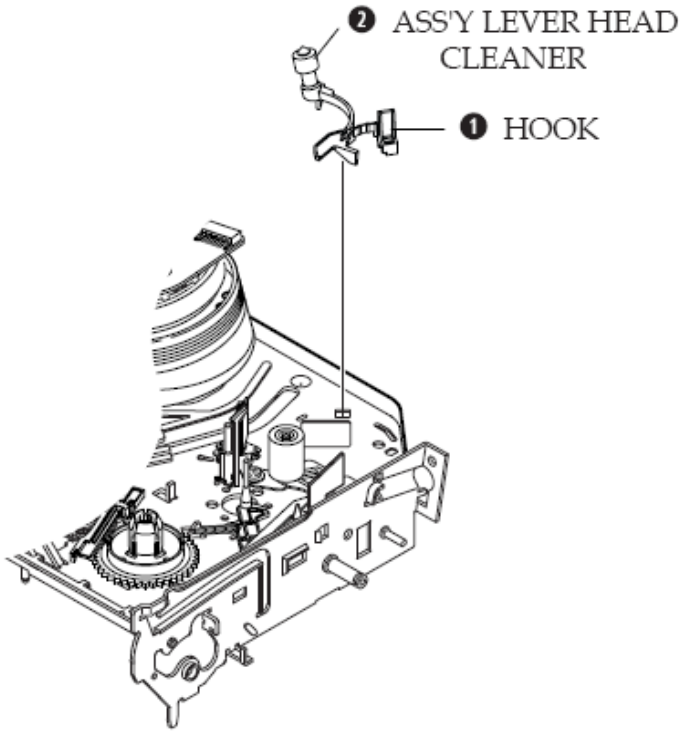


Fig. 3-41 Ass'y Lever Head Cleaner Removal

3-4-29 How to Eject the Cassette Tape (If the tape is stuck in the unit)

1) Turn the Gear worm ❶ clockwise with screw driver. (Refer to arrow)
(Other method : Remove the Screw of Ass'y Motor Load , Separate the Ass'yMotor Load)

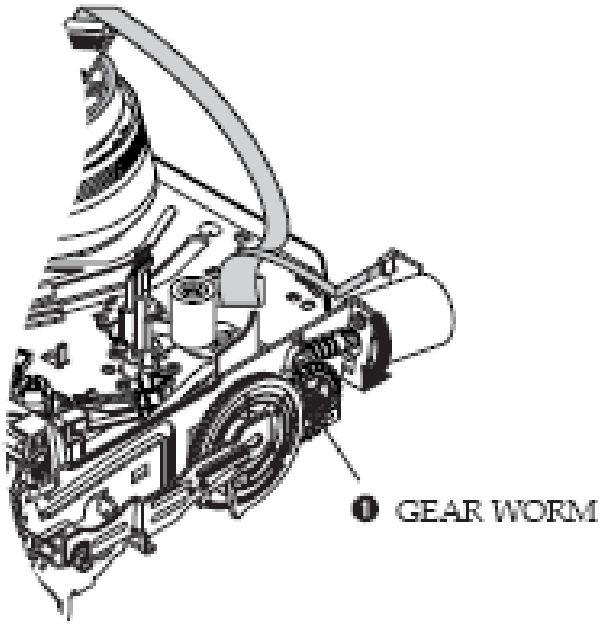


Fig.3-42

2) When Slider S,T are approched in the position of unloading, rotate holder Clutch counterclockwise after inserting screw driver in the hole of frame's bottom in order to wind the unwinded tape.
(Refer to Fig.3-43)
(If you rotate Gear Worm ❶ continuously when tape is in state of unwinding, you may cause a tape contamination by grease and tape damage. Be sure to wind the unwinded tape in the state of set horizontly.)
3) Rotate Gear Worm ❶ clockwise using screw driver again up to the state of eject mode and then pick out the tape.(Refer to Fig.3-42)

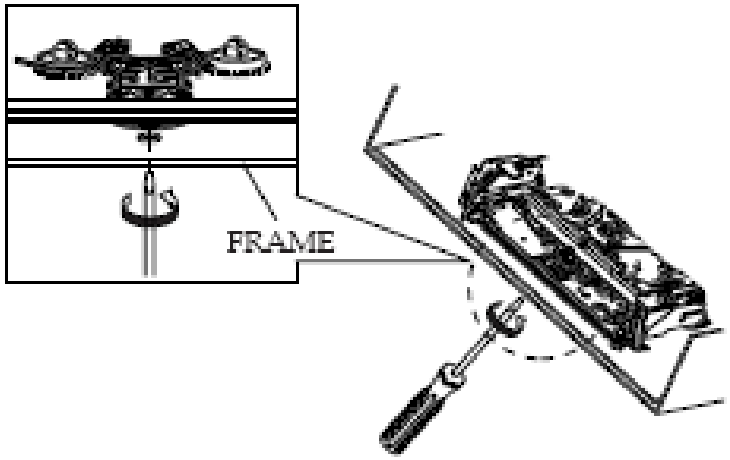


Fig. 3-43

3-5 The table of cleaning, Lubrication and replacement time about principal parts

1) The replacement time of parts is not life of parts.
2) The table 3-1 is that the VCR Set is in normal condition (normal temperature, normal humidity).
   The checking period may be changed owing to the condition of use, runtime and environmental conditions.
3) Life of the Cylinder Ass'y is depend on the condition of use.
4) See exploded view for location of each parts.

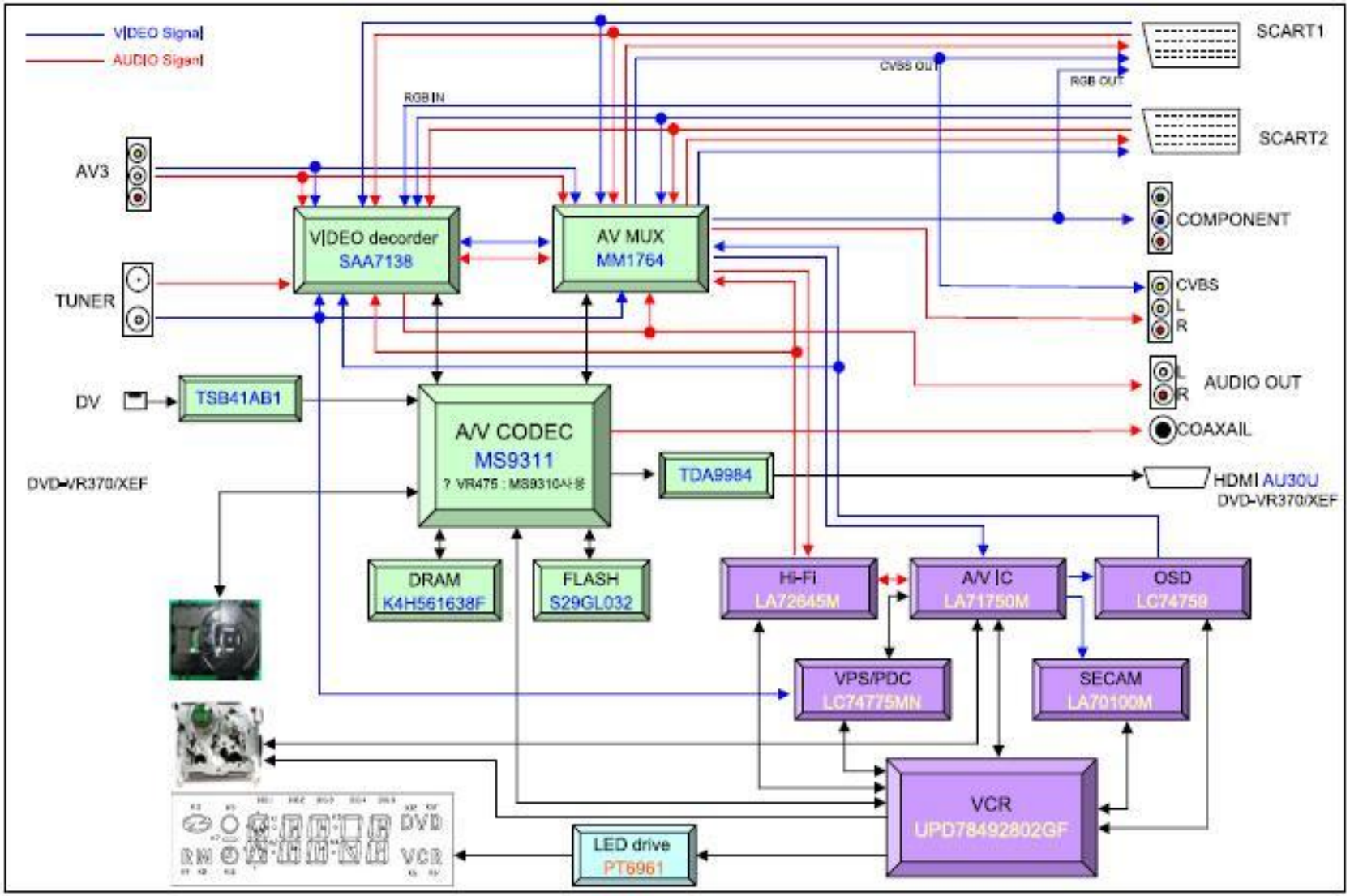
*	Parts Name	Checking Period										Remark
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
TAPE PATH SYS-TEM	POST TENSION	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	- To clean the parts, use patch and alcohol (solvent). - After cleaning, use the video tape after alcohol is gone away completely. - We recommend to use oil [EP-50] or solvent. - One or two drops of oil should be applied after cleaning with alcohol.
	SLANT POST S, T	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#8 GUIDE SHAFT	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	CAPSTAN SHAFT	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#9 GUIDE POST	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	#3 GUIDE POST	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	GUIDE ROLLER S, T	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	CYLINDER ASS'Y	Δ	O	O	O	O	O	O	O	O	O	
	FE HEAD	Δ	Δ	Δ	O	O	O	O	O	O	O	
	ACE HEAD	Δ	O	O	O	O	O	O	O	O	O	
	PINCH ROLLER	Δ	O	O	O	O	O	O	O	O	O	
	POST REEL S, T		♦		♦		♦		♦		♦	- Periodic time of applying oil (Apply oil after cleaning) - The excessive applying oil may be the cause of malfunction.
	SLEEVE TENSION		♦		♦		♦		♦		♦	
	POST CENTER		♦		♦		♦		♦		♦	
DRIV-ING SYS-TEM	LEVER IDLE BOSS (2Point)		♦		♦		♦		♦		♦	
	CAPSTAN MOTOR PULLEY	Δ	Δ	Δ	Δ	Δ	O	O	O	O	O	
	BELT PULLEY				O	O	O	O	O	O	O	
	HOLDER CLUTCH ASS'Y	Δ	O	O	O	O	O	O	O	O	O	
	GEAR CENTER ASS'Y		O	O	O	O	O	O	O	O	O	
	GEAR IDLE (2Point)		O	O	O	O	O	O	O	O	O	
BRAKE SYS-TEM	LOADING MOTOR		O	O	O	O	O	O	O	O	O	
	BAND BRAKE ASS'Y		O	O	O	O	O	O	O	O	O	
	BRAKE T ASS'Y		O	O	O	O	O	O	O	O	O	

Δ : Cleaning O : Check and replacement in necessary ♦ : Add Oil

Front-Micom Interface

- Front-Micom UPD78F4928GF(IC601, NEC) is used to control Power, LED Module, MTS Block, KEY Input Matrix etc.
- The SPI (Serial Peripheral Interface) port provides a bus for a serial interface with AV-CODEC MS9301

Video Interface



- MIC1 (MPEG2 Encoder/Decoder) diverges from the 13.5MHz crystal, then generates V-SYNC and H-SYNC.

- MIC1 does RGB encoding, copy guard processing and D/A conversion of 10bit Video signal converted into analog signal is outputted via amplifier of analog part.
- MIC1 inputted from pin 131 with 13.5MHz generates HSYNC and VSYNC which are based on video signal. It is synchronous signals with decoded video signal.
- The above signals, which are CVBS (Composite Video Blanking Sync), Y(S_Video)/C(S_Video), Y(Component)/Cb(component)/Cr(component), R(Red)/G(Green)/B(Blue) are selectively outputted 576i(interlaced Video Output), 576P(progressive Video Output).

- MIC1 adopts 10bit D/A converter. It performs video en-coding as well as copy protection.

- IC801(MM1764) switch whole the I/O signals of jack block. This switching IC is controlled by I2C protocol between IC601(IO front micom).

NTSC/PAL Video DECODER

- Video Decoder(SAA7138) is a high quality NTSC, PAL, and SECAM video decoder plus YPbPr component inputs designed for multimedia applications.

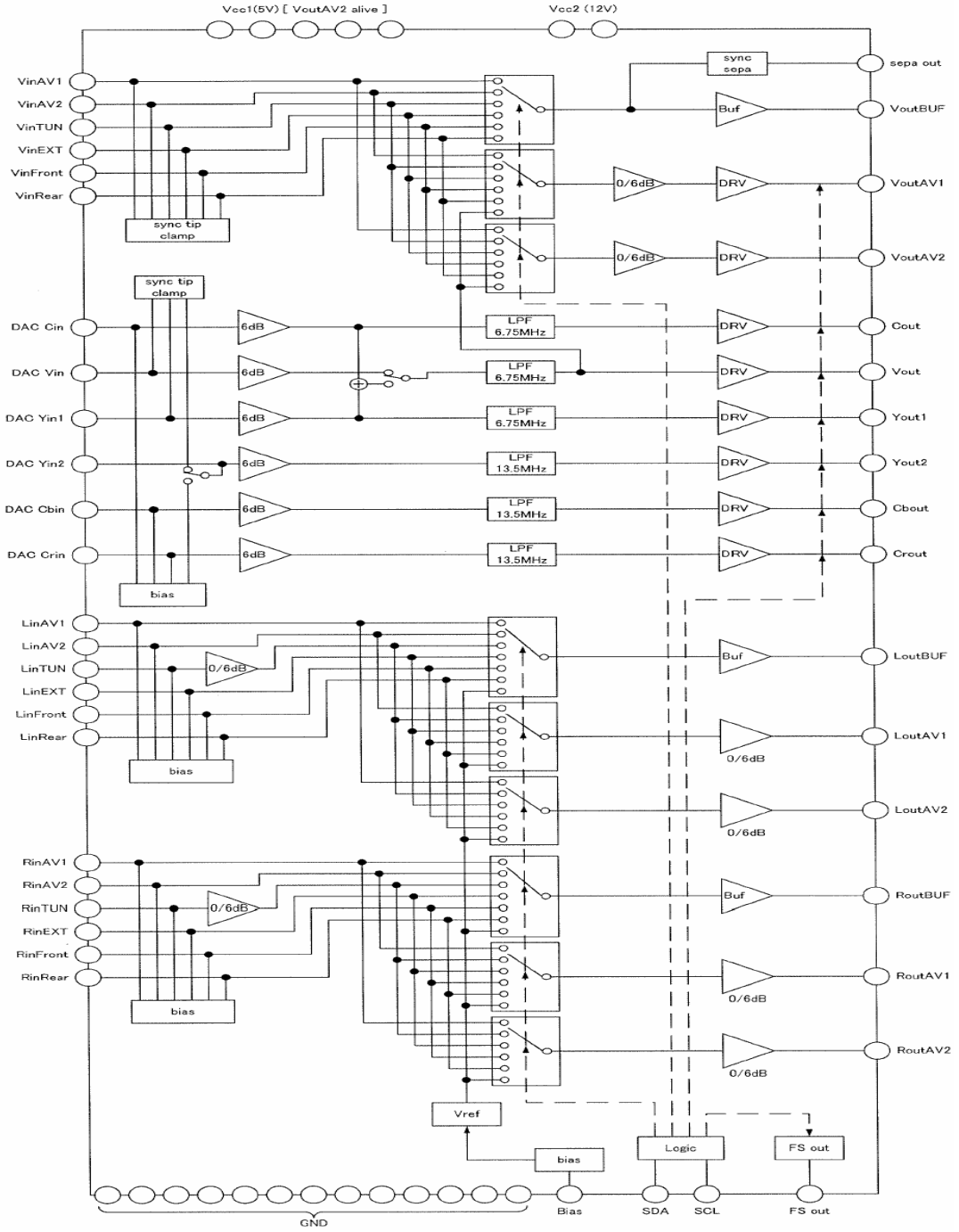
- This AVIC1 (SAA7138) includes three 10-bit high speed ADCs.con verters. and A/D conversion of 10bit analog Video signal converte d into Digital Video signal (ITU-R656 Format) is outputted via

- On CVBS inputs, the user can control video characteristics such a s contrast, Brightness, saturation, and hue via an I2C DIC1 port in terface.

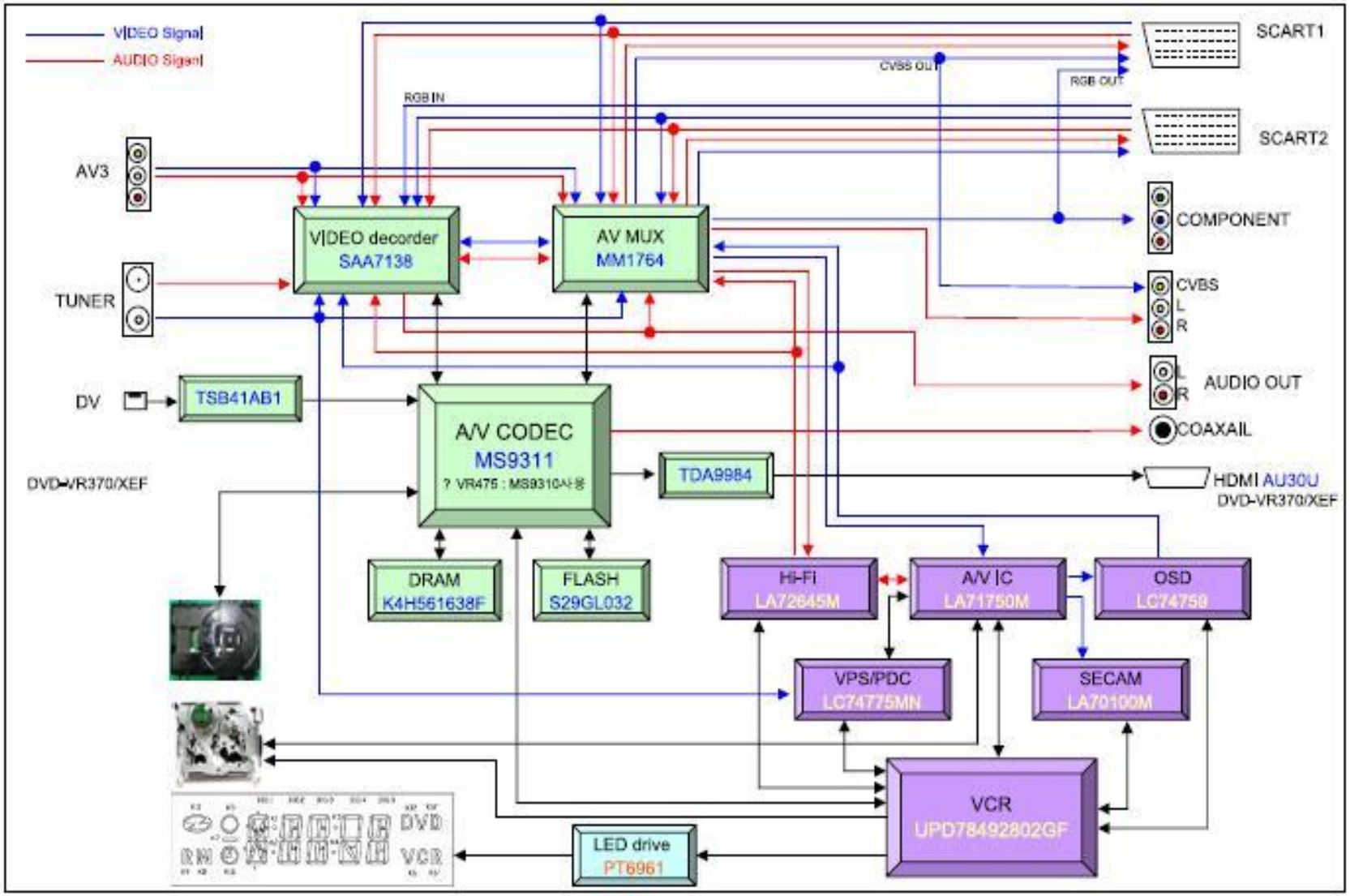
- A built-in versatile VBI slice and VBI data pass-through capability support common data services (VPS/PDC, auto clock search)

Analog Video MUX with AMP.(M1764AQ)

- IC801 is analog MUX.
  As SCL,SDA[Pin 38,39] of the IC801 are controlled by the Front Micom, IC801 select AV 1 of CVBS[Pin 56] , AV 2 of CVBS[Pin 58] and RF signal.
- The analog Video Signal of IC801 output is selected by the IC601 via AVIC1 (Video Decoder : SAA7138) of analog Video input parts.
- IC801 includes 6dB amplifier.
- Based on CVBS signal, the final output l evel must be 2Vpp without 75ohm terminal resistance. Because the level of video encoder output is only 1Vpp, the level is adjusted with the special amplifier .
- CVBS, Y, C, Y(R), Cb(B), Cr(R) outputted from video encoder are inputted to AVIC1[Pin 2,8,6,11,14,16] respectively.
- The signal to which gain is adjusted by amplifier is outputted from jack via 75ohm Resistance (VR30, 31, 32, 33, 34).



Audio Interface



AUDIO

1.Input block

DVD-VR375 has two stereo line input terminals and internal TV-audio from RF Tuner Block. These three analog audio signal sources are converted to digital data by Input Block. Input block has a Multiplexer (IC801), A/D converter inner AV-codec. IC801 change it's output by selection control signal from IC601(front micom).

2.Output Block

DVD-VR375 has two stereo analog line out terminals and one digital output terminal. Decoded signal by MIC1 is inputted to AVIC1 (D/A converter inner video decoder) then filtered and amplified by AIC4(OP-AMP). And the digital audio signal (SPDIF) is outputted in Coaxial terminal.

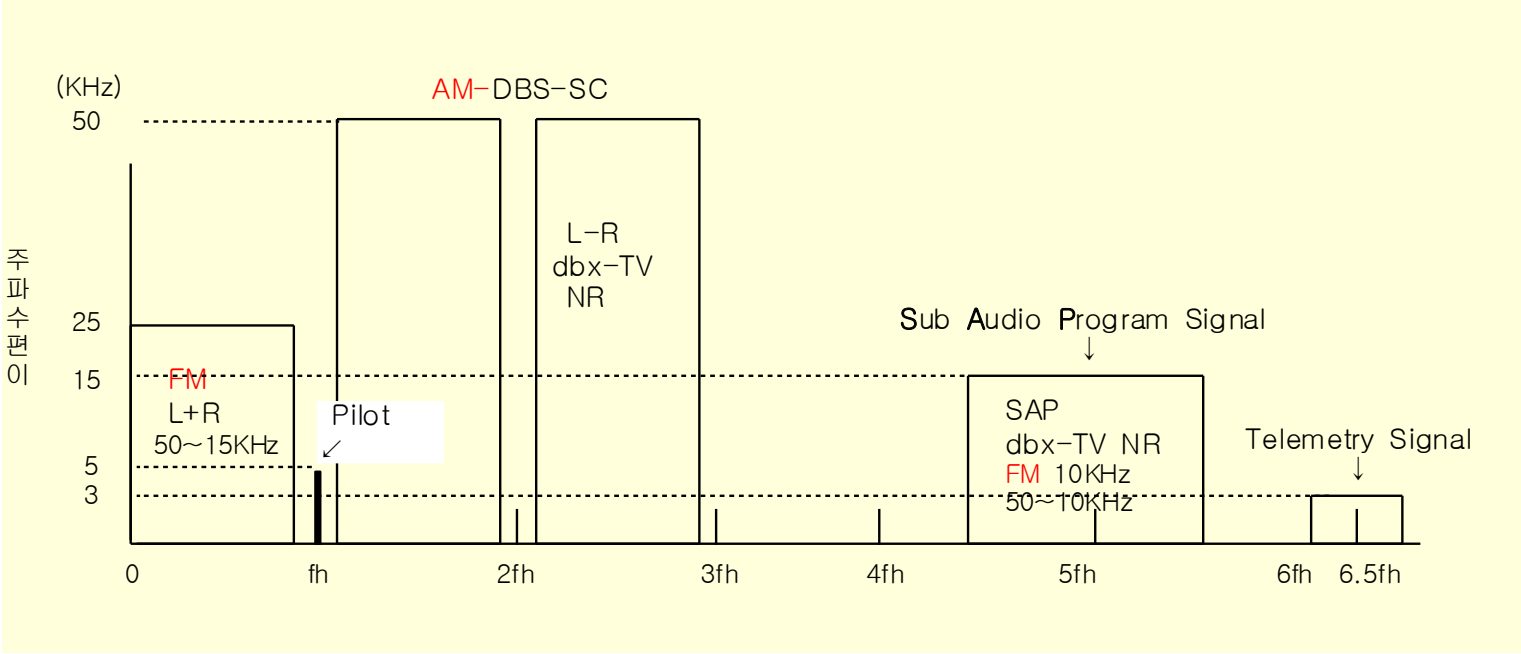
Stereo/Bilingual
(MTS inner Video decoder,SAA7138)

- summary

1) MTS SIGNAL : MONO(L+R),STEREO(L,R),MONO+SAP,STEREO+SAP

2) SAP : Sub Audio Program Signal (American MTS system only)

< MTS system base-band spectrum >



< MTS signal table >

item / signal		Signal freq. Band	Signal Processing System	Maximum Audio Carrier dev(KHz)
Monaural Signal (L + R)		50Hz~15KHz		25
Stereo Pilot		15.734 KHz	Only Stereo Broadcasting	5
Stereo Signal (L - R)		50Hz~15KHz	AM modulation(Carrier frequency 2fh) dbx Noise Reduction processing	50
SAP Signal		50Hz~10KHz	FM modulation(Carrier frequency 5fh) Maximum frequency deviation 10KHz) dbx Noise Reduction processing	15
Telemetry Signal	Audio	0Hz~3.4KHz	FM modulation(Carrier frequency 6.5fh) Maximum frequency deviation 3KHz)	3
	Data	0Hz~1.5KHz		

➢ Signal route

1) SIF signal from tuner (TM1) is connected to Video decoder(MTS processor block, SAA7138 33pin).

*.SIF : Sound Intermediate Frequency

2) MTS processor block(Inner SAA7138) detect the stereo and sap signal and send the detecting state to front micom (IC601) by I^2C data.

It will display the screen by OSD.

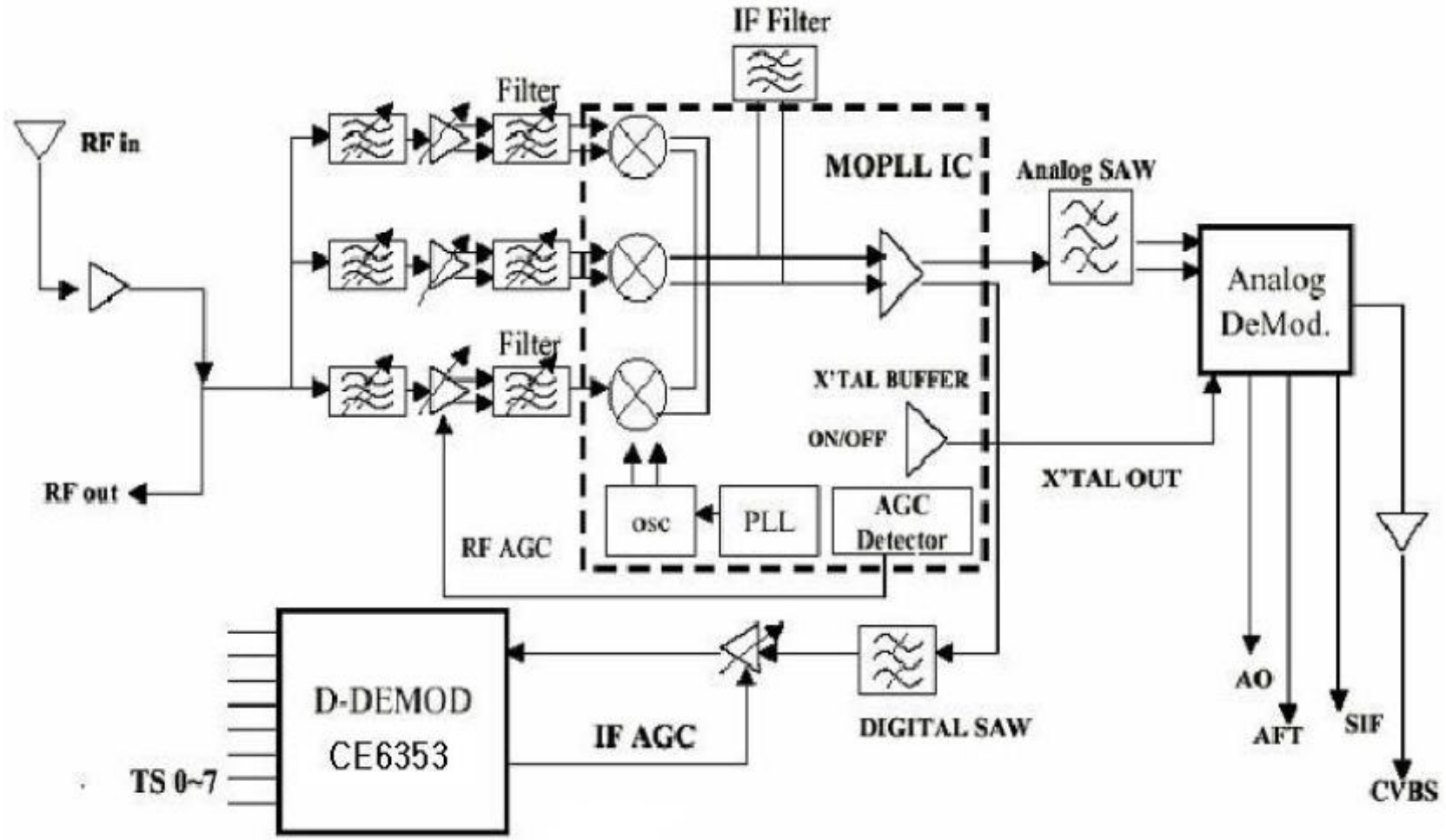
*.OSD : On Screen Display

3) MTS processor block decode the SIF signal and send the decoded audio signal to 106 pin(L out) and 107 pin(R out).

4) L out(106 pin) and R out(107 pin) of MTS processor block go to IC801 for audio processing.

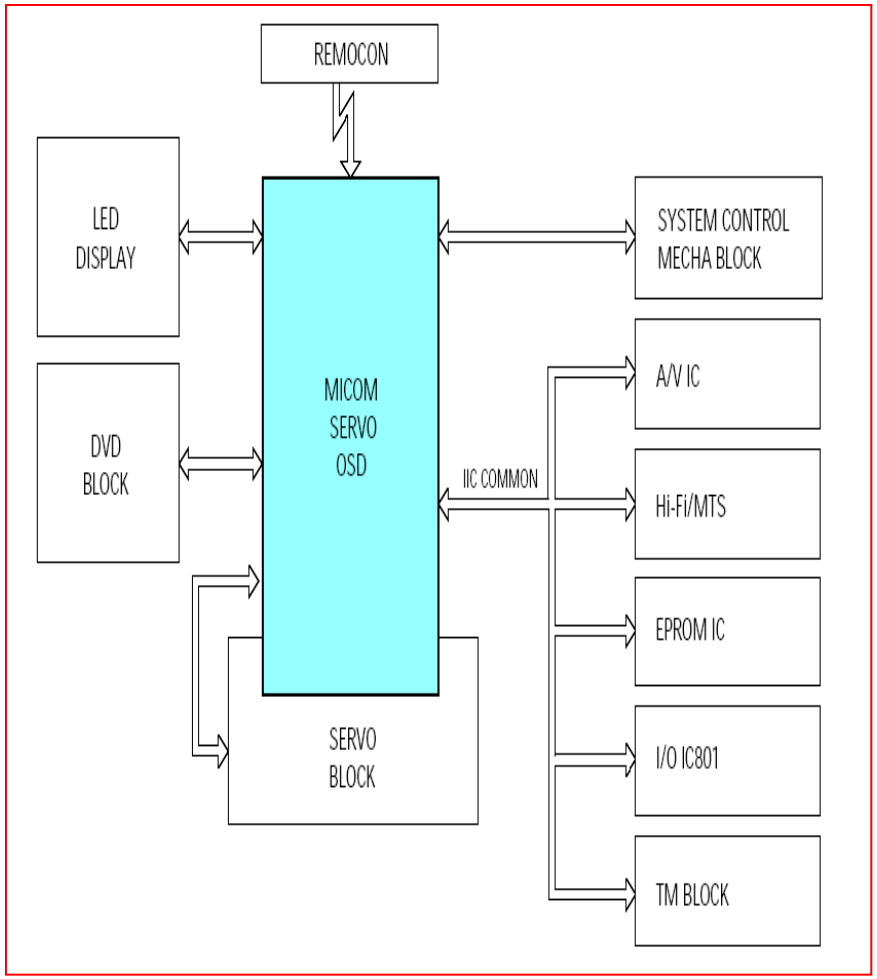
Tuner

<Block diagram of Tuner >



VCR System Control

- The system control circuit inputs the commands given by the operator to set the mechanism and circuit to the commanded mode.
- The circuit also inputs the detected output from the tape and mechanism protection sensor and protects the VCR and tape against abnormal operation.
- The system control is performed by 4 control sections. (System and timer control, Servo control, F/S Tuner, On Screen Display).



VCR Servo

The servo system is divided into two loops.
The cylinder servo controls the rotation of video heads and the capstan servo controls the tape speed. In addition it's necessary to control cylinder motor, especially during trick play in 4H'D models.

The cylinder servo loop controls the phase and speed of the cylinder motor. The speed is kept at a constant 1800 RPM and the phase determines the mechanical position relative to the vertical Sync signal.

The capstan servo loop controls the phase and speed of the capstan motor so that the video head can trace the video track correctly. It keeps tape speed constant according to the mode (SP, SLP) during playback and recording.

VCR Video

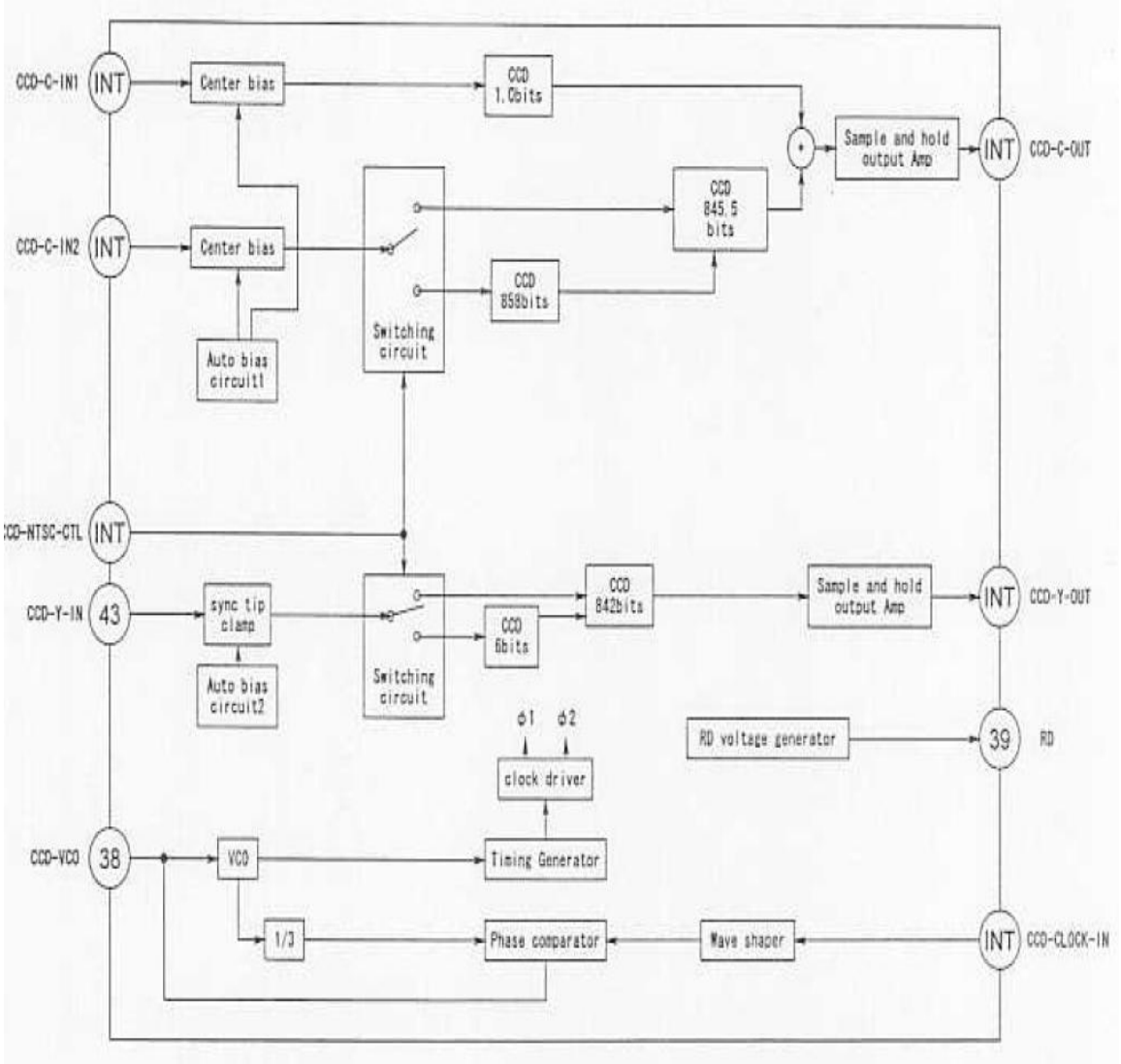
The selected video input signal goes to pin 50 of Lumi /Chroma processor IC (IC301).
And then it enters VIDEO AGC circuit.

The gain of AGC circuit is controlled by AGC detector so that the output is constant (approx. 2Vp-p).

The output signal of AGC is clamped by the FBC (Feed Back Clamp) circuit.
This signal appears at pin 65, after being amplified at the internal video amp and driver.

The output signal from the clamp circuit enter the detail enhancer circuit.

In the detail enhancer circuit,
the low level high frequency video signal is emphasized to improve the original signals frequency characteristics.



Nonlinear emphasis circuit is employed to improve S/N and frequency response characteristics together with the following main emphasis.

Noise effects the FM wave at a higher frequency, so the S/N can be improved by emphasizing the higher frequency before recording and by suppressing the play signal during demodulation.

The difference of non linear emphasis from main emphasis is that the emphasis characteristics change is depending on the input level.

The gain of the emphasis circuit is inversely proportional to the level of the high frequency component of the signal.

That is, if the high frequency portion of the signal is low the main emphasis circuit will amplify the signal.

Hi-Fi Audio

Hi-Fi circuit consists of Hi-Fi audio LPF, VCO, BPF, FM detect circuit and switching noise compensator, PRE-AMP etc. Linear audio consists of an ALC circuit, REC EQ circuit and a PB EQ circuit.

Hi-Fi and Linear audio share the same input selector, output selector and mute circuit.

1) REC Mode (L-CH Only)

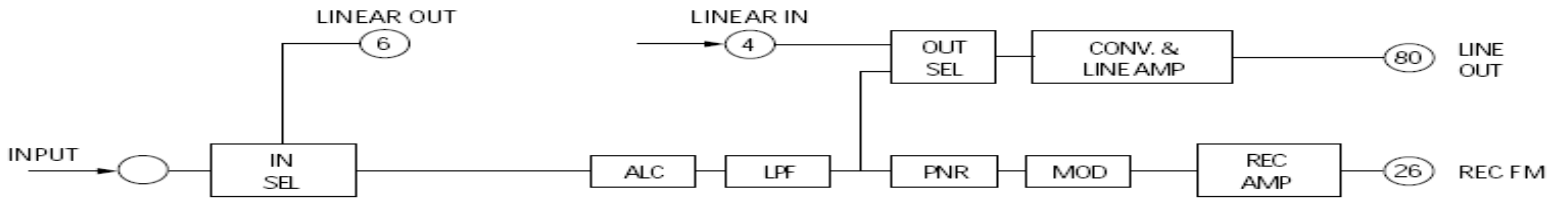


Fig. 7-24 REC Mode (L-CH Only)

2) PB Mode (L-CH Olny)

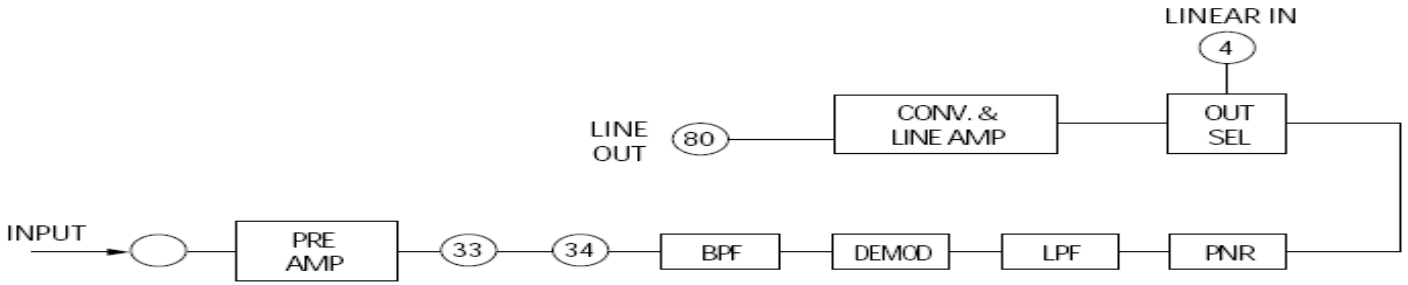


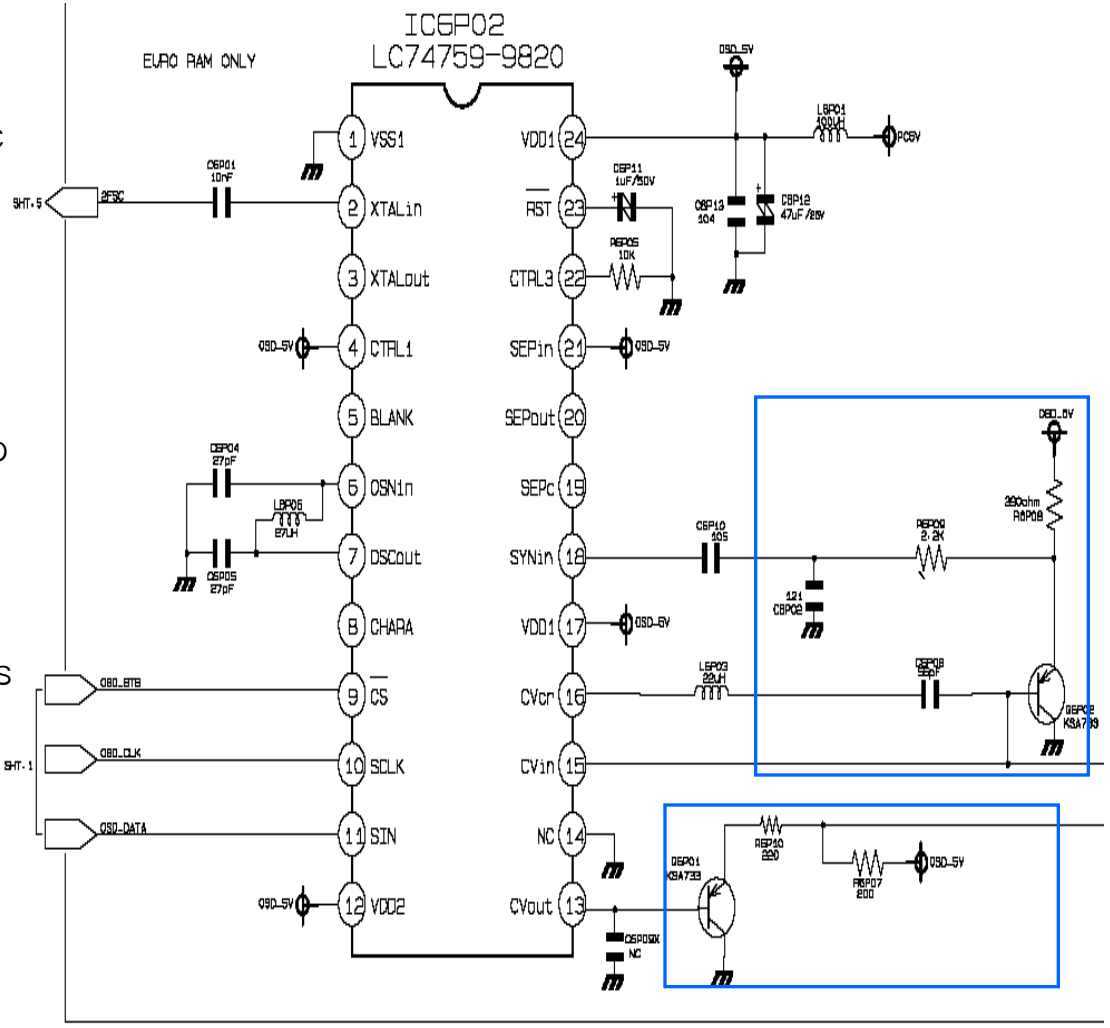
Fig. 7-25 PB Mode (L-CH Only)

OSD

The on screen display circuit consist of a character generator decoder, video mixer, sync separator and sync generator, sync detector circuit.

The data is decoded and generates characters in syncro with composite video signal applied pin 13, 15. Also the sync detector circuit discriminates the presence of a video signal by detecting sync, if no sync is detected, a blue screen is displayed.

In other word, the OSD circuit displays character on the video when there is a video signal or on blue screen when there is no video signal. (No sync).



9.MICOM Initialization & Update

. DVD Software Update (1)

(1). Introduction

Samsung will often support software update to improve the performance of DVD Recorder & VCR to the latest staus, through Samsung Internet Site.

(2). How to make an update disc

• Write the downloaded file onto a blank CD-R or CD-RW disc, using the following settings :

1) You have to download a new file through Samsung lnternet site. (www.samsung.com)

2) Write the file to disc using the CD-RW of your computer.

N O T E :

• Recommended Application Program

- Nero Burning / Easy CD Creator ..etc

• Option

- Only single session

- CD close & disc at once

- ISO 9660 or joliet format

-Extension name : "*.UPD“ (DVD Software)

- : "*.SMD“ (Loader Software)

9.MICOM Initialization & Update

. DVD Software Update (2)

WARNING :

It is very important : please read the below notice below before updatang your unit.
The following events may interrupt the update process and MAY RESULT IN PERMANENT DAMAGE TO THE UNIT WHILE UPDATING

1. Unplugging the power cord.
2. Power Outage.
3. Dirt or Scratches on the disc.
4. Opening a disc tray during processing.

9.MICOM Initialization & Update

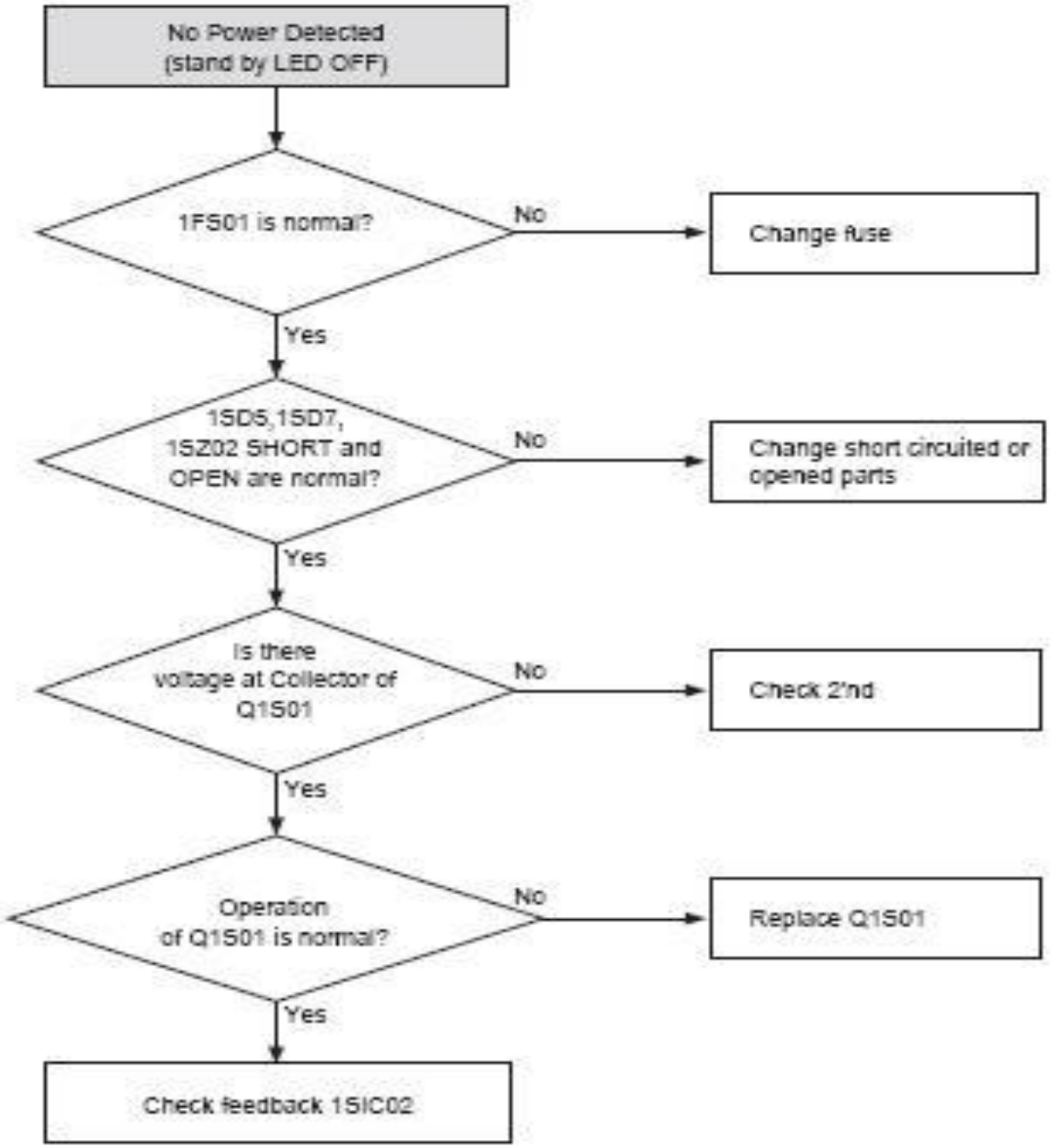
. DVD Software Update (3)

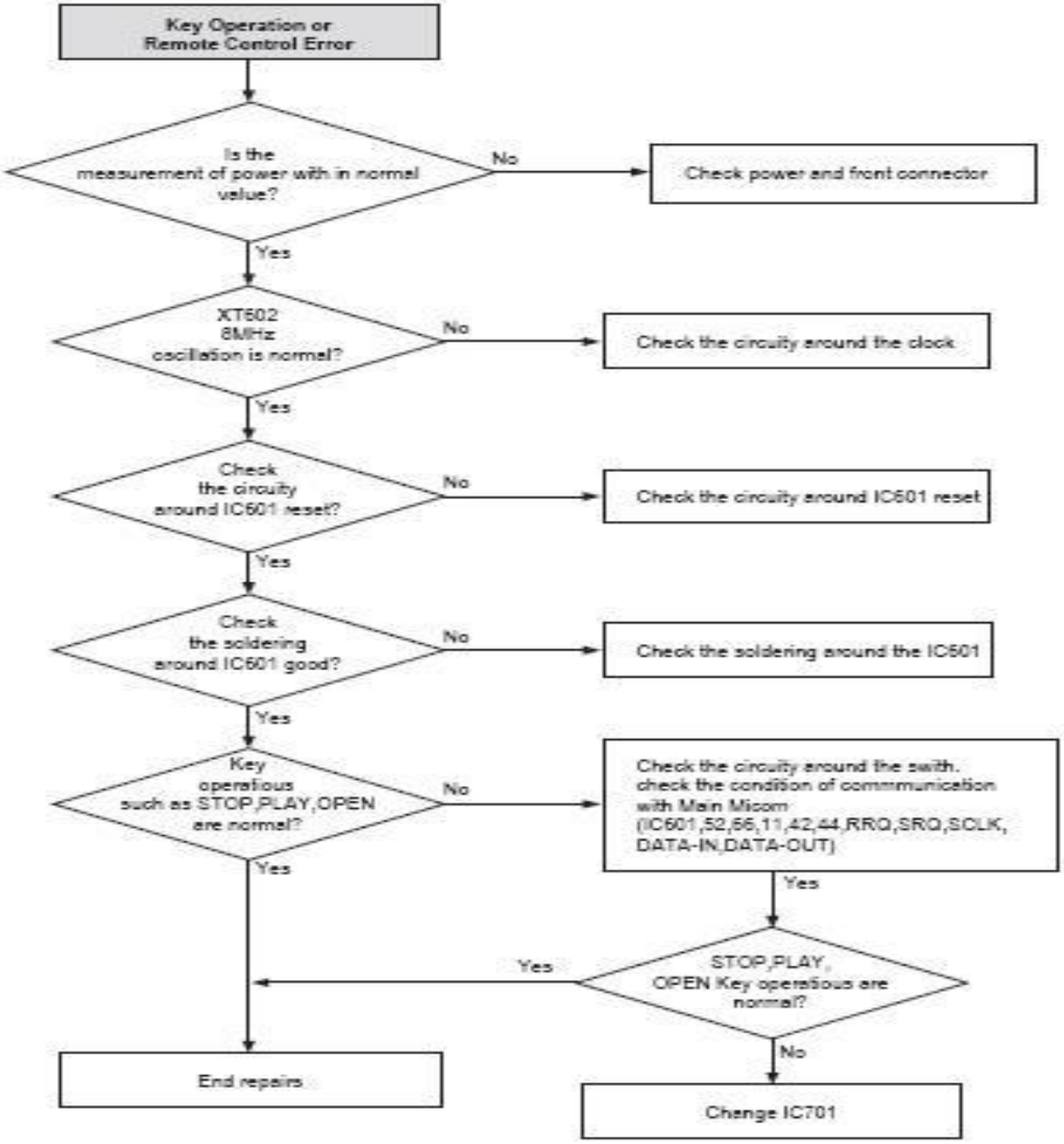
1) Press **OPEN/CLOSE** to open the disc tray.
2) Insert the update CD-R disc with the software update, label facing up.
3) Press **OPEN/CLOSE** to close the disc tray.
* If you don't see the message above, try another disc.
Generally, this is caused by disc quality and by disc creating problem.

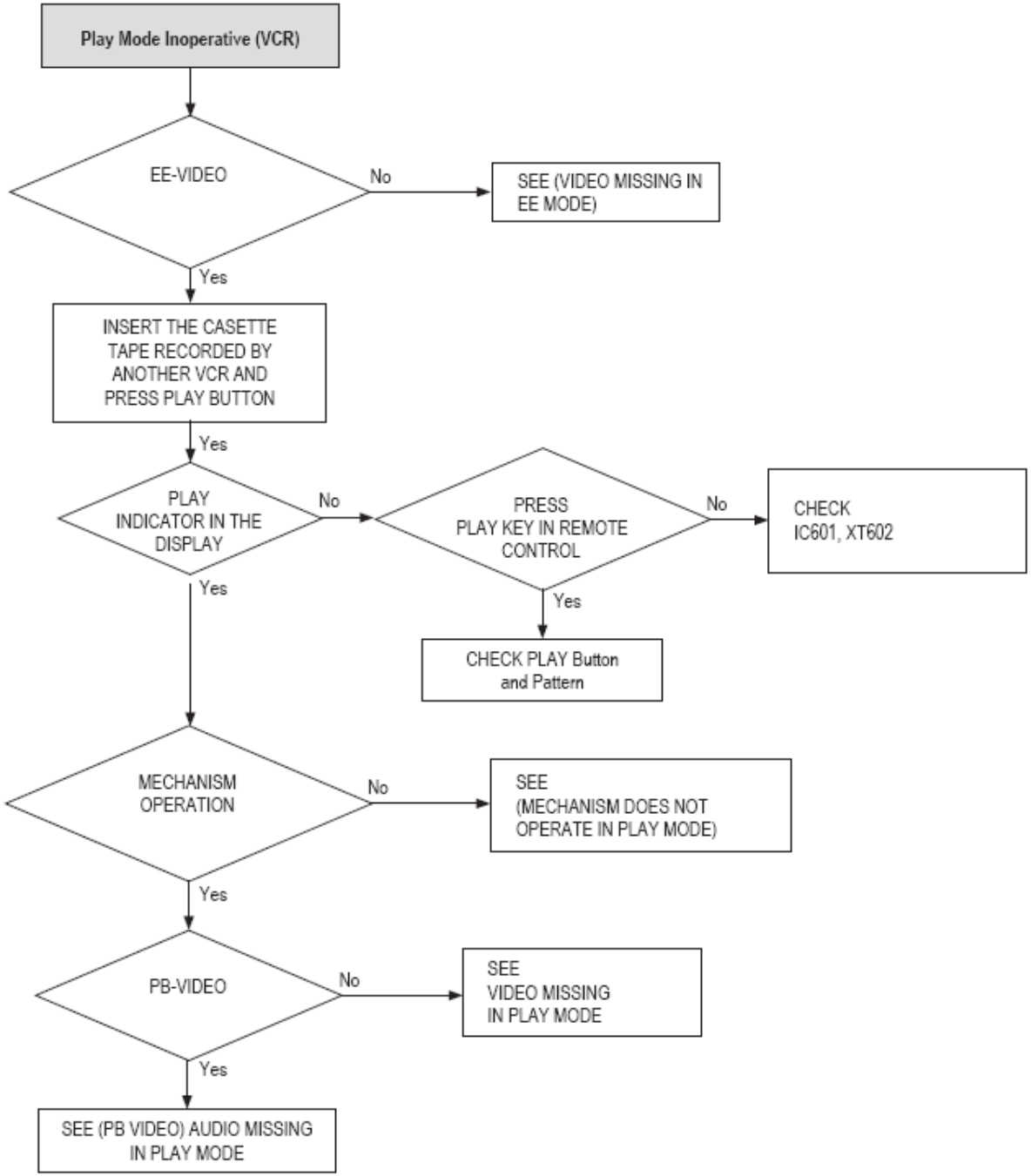
4) Press the **"Execute"** button on the remote control.
-. The disc tray will be opened automatically. Remove the disc on the tray.
-. The message below will be displayed n the screen while on updating.
5) It takes about 1~2 minutes to complete the update.
6) Turn off the unit with power button. And there after turn on the unit with
power button. The drive firmware is now completed.

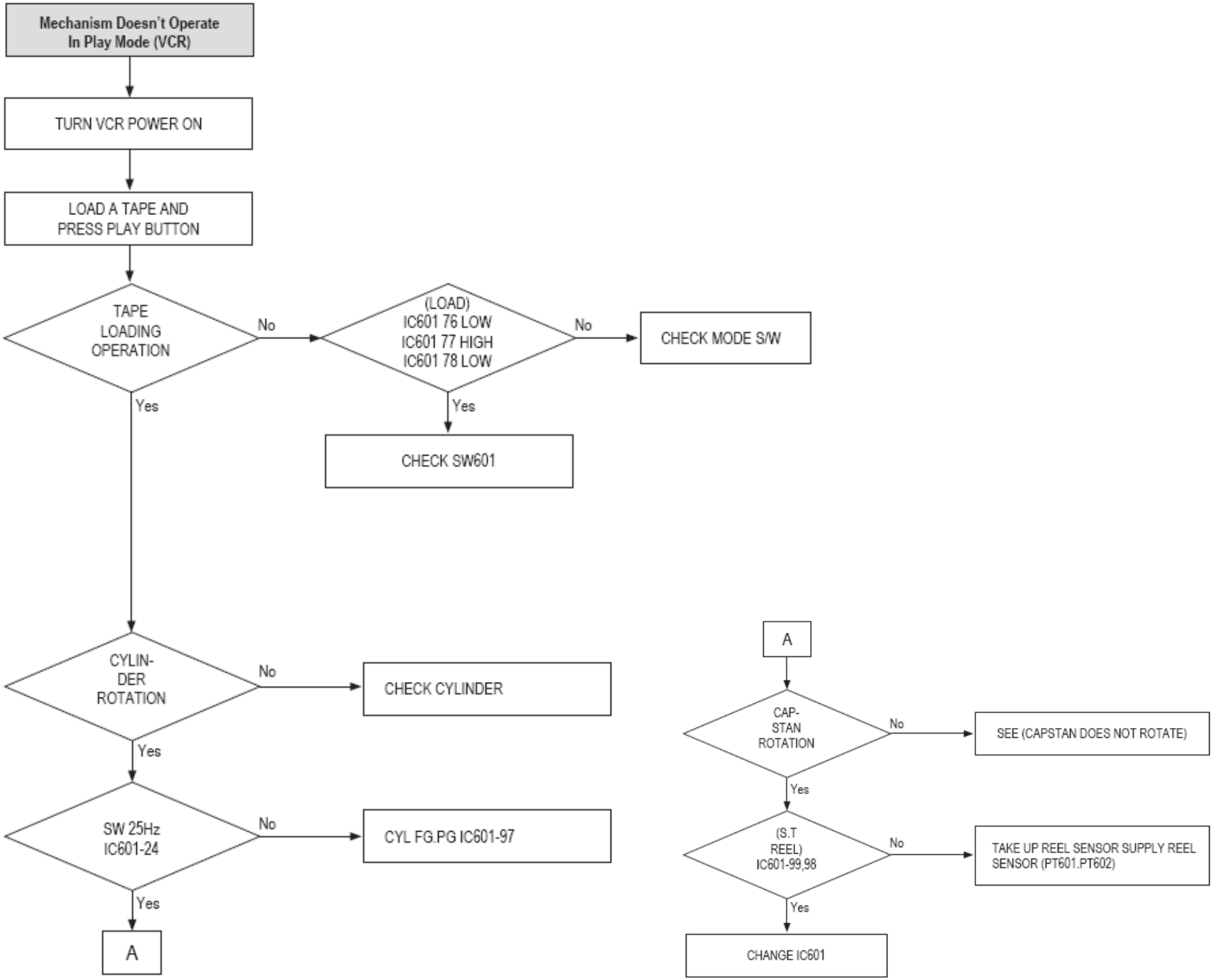
Atfer checking old and new version, select.
"Execute" or "Cancel" with "◀" or "▶" on the remote control.
* The Version is indicated by

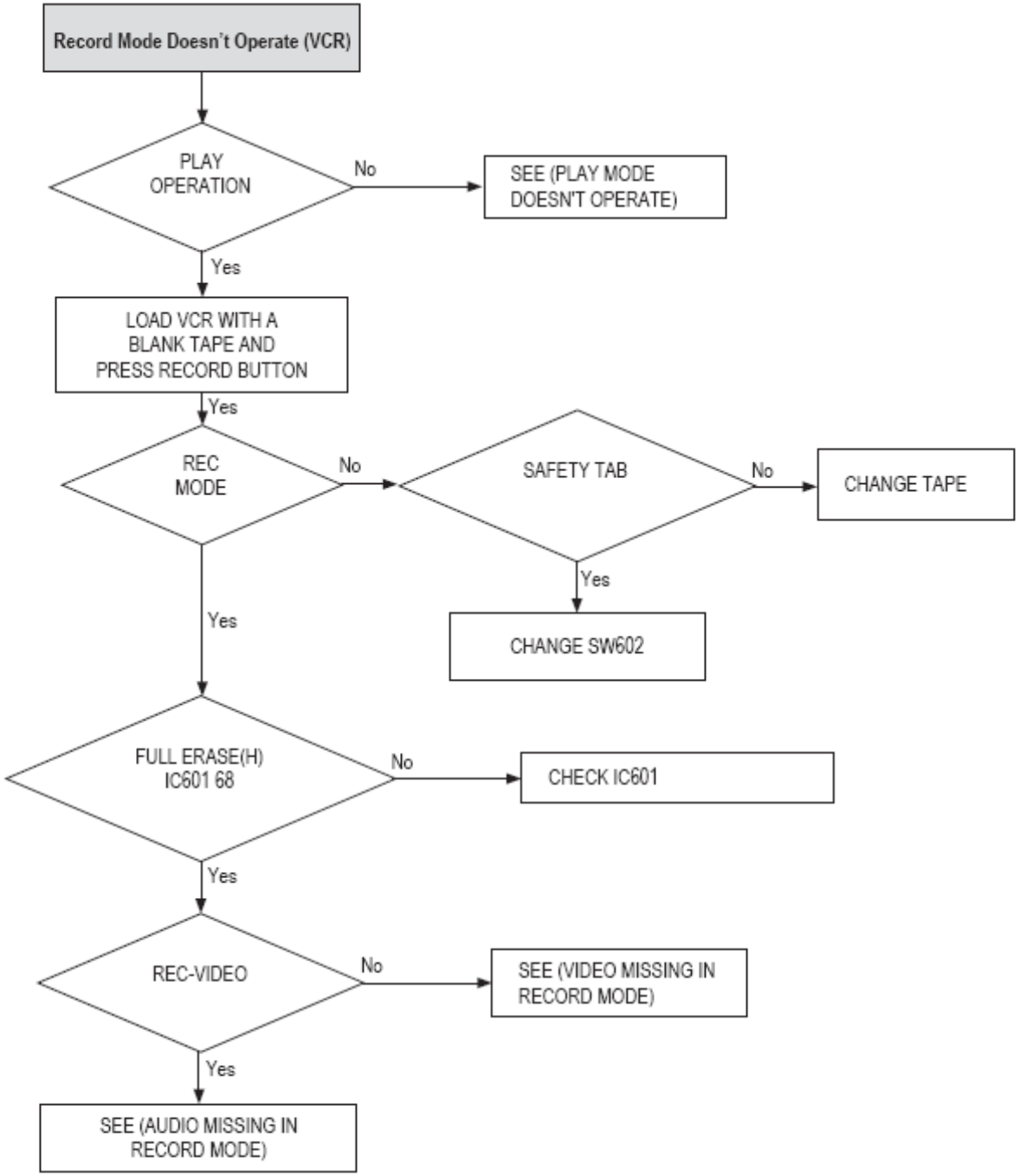
Troubleshooting

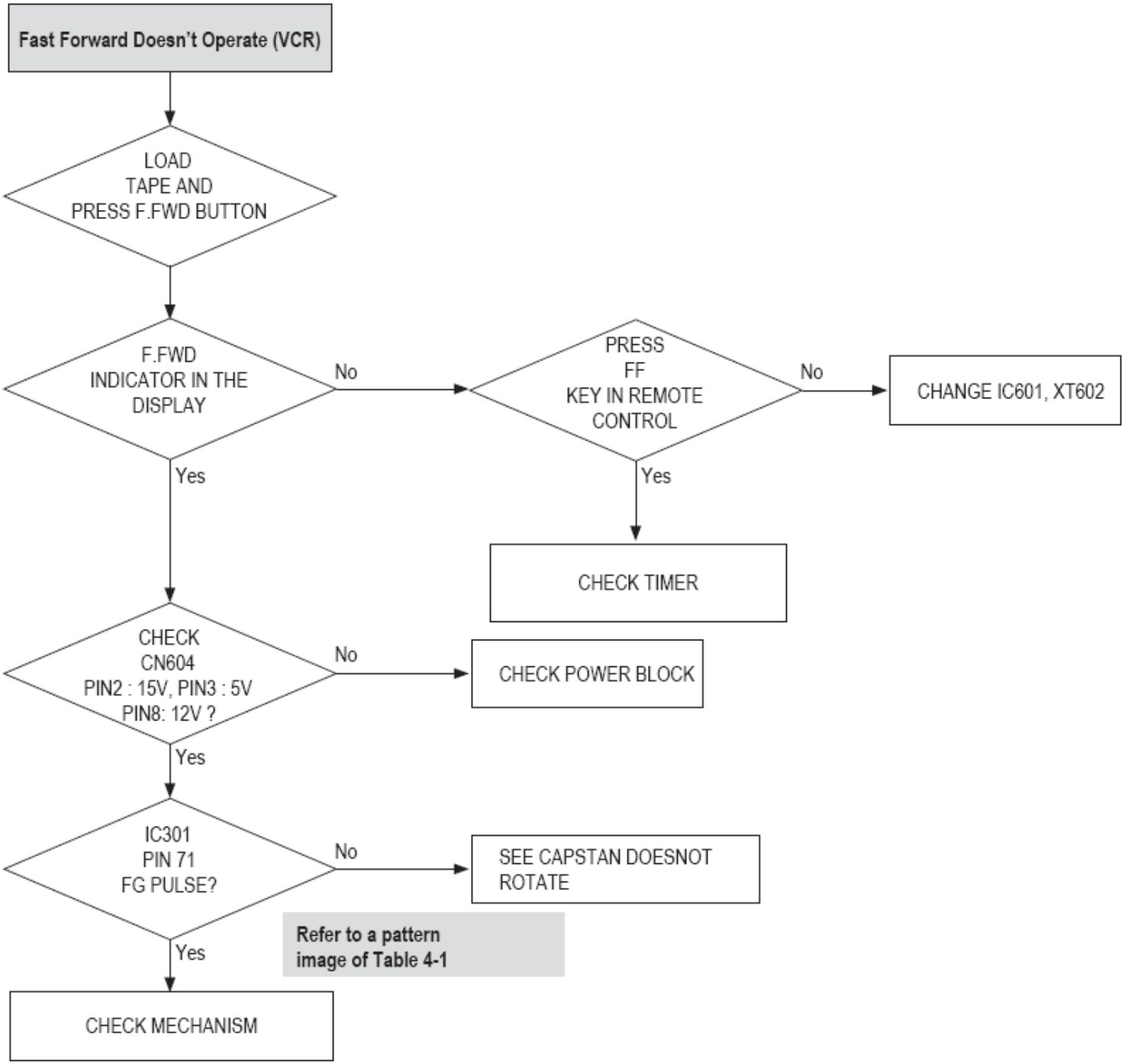


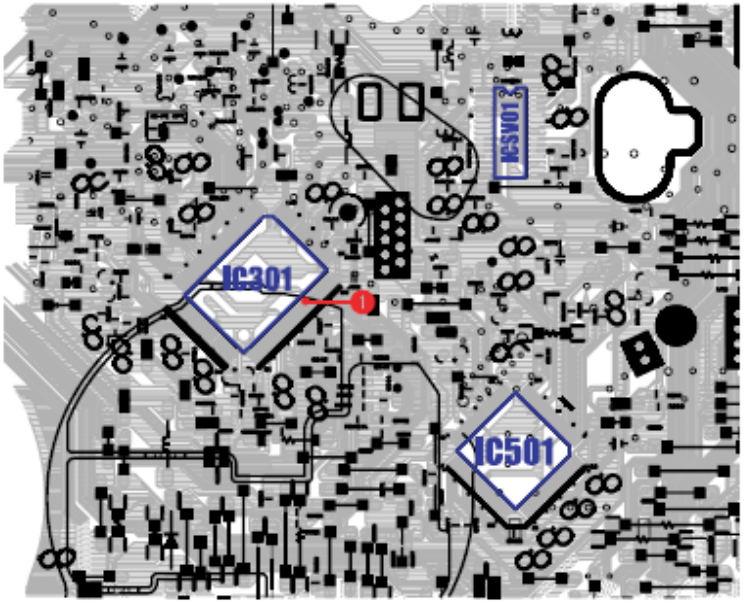

Key Operation or Remote Control Error
Is the measurement of power with in normal value?
No
Check power and front connector
Yes
XT602 8MHz cacillation is normal?
No
Check the circuity around the clock
Yes
Check the circuity around IC601 reset?
No
Check the circuity around IC601 reset
Yes
Check the soldering around IC601 good?
No
Check the soldering around the IC601
Yes
Key operatious such as STOP,PLAY,OPEN are normal?
No
Check the circuity around the swith. check the condition of commmunication with Main Micom (IC601,52,66,11,42,44,RRQ,SRQ,SCLK, DATA-IN,DATA-OUT)
Yes
Yes
STOP,PLAY, OPEN Key operatious are normal?
Yes
No
End repairs
Change IC701


Play Mode Inoperative (VCR)
EE-VIDEO
No
SEE (VIDEO MISSING IN EE MODE)
Yes
INSERT THE CASETTE TAPE RECORDED BY ANOTHER VCR AND PRESS PLAY BUTTON
Yes
PLAY INDICATOR IN THE DISPLAY
No
PRESS PLAY KEY IN REMOTE CONTROL
No
CHECK IC601, XT602
Yes
CHECK PLAY Button and Pattern
Yes
MECHANISM OPERATION
No
SEE (MECHANISM DOES NOT OPERATE IN PLAY MODE)
Yes
PB-VIDEO
No
SEE VIDEO MISSING IN PLAY MODE
Yes
SEE (PB VIDEO) AUDIO MISSING IN PLAY MODE

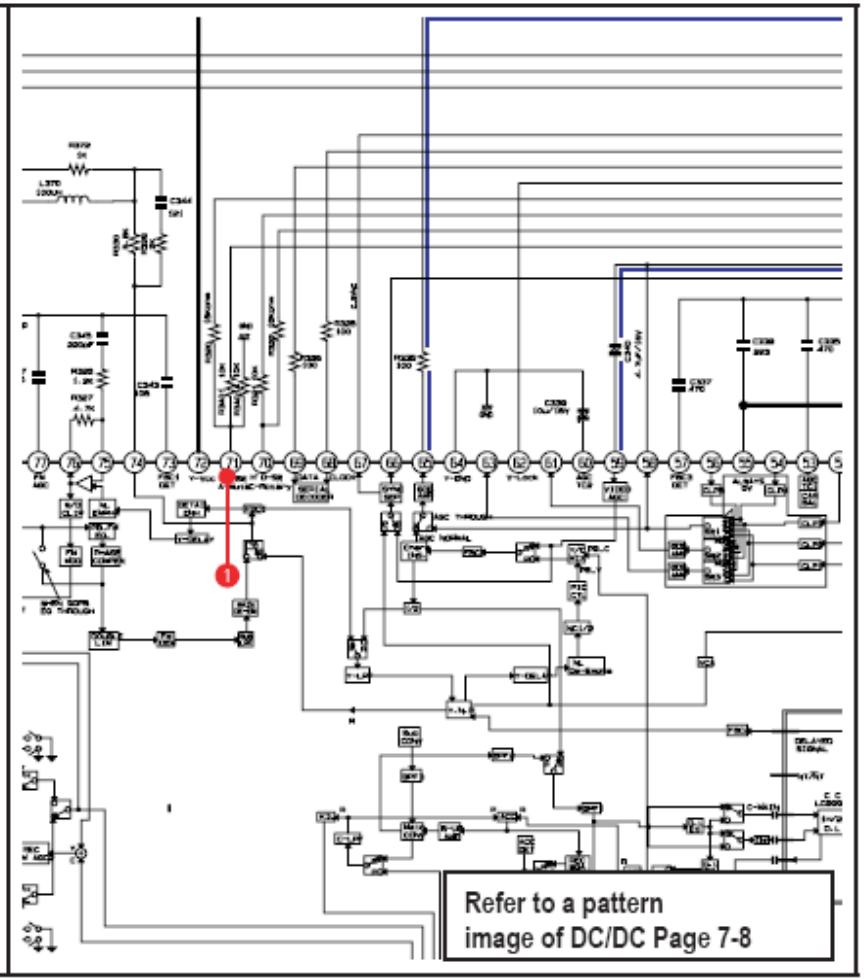

Mechanism Doesn't Operate In Play Mode (VCR)
TURN VCR POWER ON
LOAD A TAPE AND PRESS PLAY BUTTON
TAPE LOADING OPERATION
No
(LOAD) IC601 76 LOW IC601 77 HIGH IC601 78 LOW
No
CHECK MODE S/W
Yes
Yes
CHECK SW601
CYLIN- DER ROTATION
No
CHECK CYLINDER
Yes
SW 25Hz IC601-24
No
CYL FG.PG IC601-97
Yes
A
A
CAP- STAN ROTATION
No
SEE (CAPSTAN DOES NOT ROTATE)
Yes
(S.T REEL) IC601-99,98
No
TAKE UP REEL SENSOR SUPPLY REEL SENSOR (PT601.PT602)
Yes
CHANGE IC601


Record Mode Doesn't Operate (VCR)
PLAY OPERATION
No
SEE (PLAY MODE DOESN'T OPERATE)
Yes
LOAD VCR WITH A BLANK TAPE AND PRESS RECORD BUTTON
Yes
REC MODE
No
SAFETY TAB
No
CHANGE TAPE
Yes
CHANGE SW602
Yes
FULL ERASE(H) IC601 68
No
CHECK IC601
Yes
REC-VIDEO
No
SEE (VIDEO MISSING IN RECORD MODE)
Yes
SEE (AUDIO MISSING IN RECORD MODE)

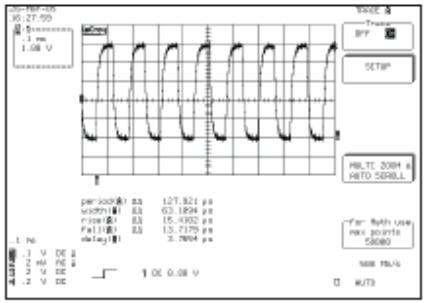

Fast Forward Doesn't Operate (VCR)
LOAD TAPE AND PRESS F.FWD BUTTON
F.FWD INDICATOR IN THE DISPLAY
No
PRESS FF KEY IN REMOTE CONTROL
No
CHANGE IC601, XT602
Yes
Yes
CHECK TIMER
CHECK CN604 PIN2 : 15V, PIN3 : 5V PIN8: 12V ?
No
CHECK POWER BLOCK
Yes
IC301 PIN 71 FG PULSE?
No
SEE CAPSTAN DOESNOT ROTATE
Refer to a pattern image of Table 4-1
Yes
CHECK MECHANISM



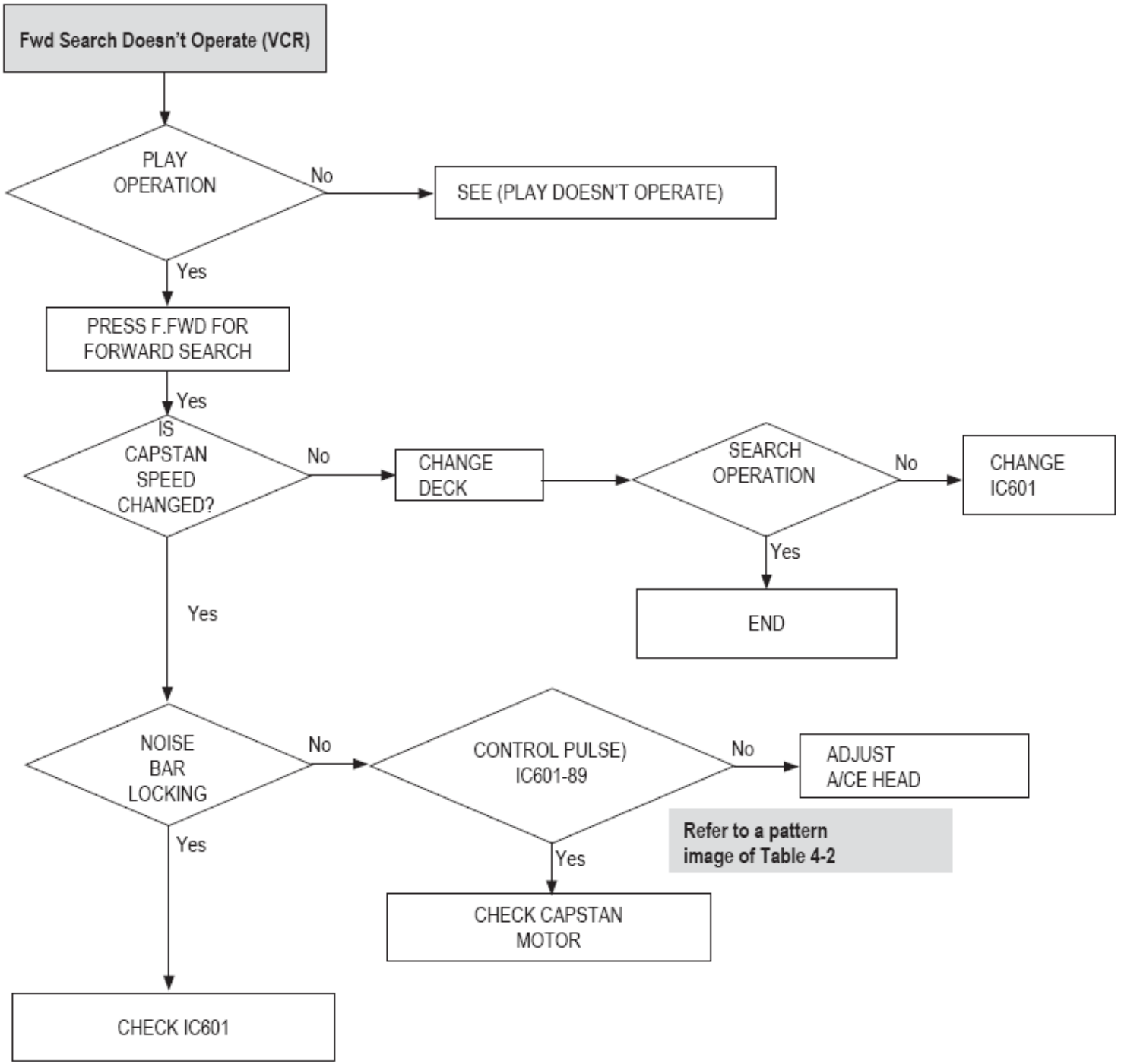
Refer to a pattern
image of Main PCB page 6-4

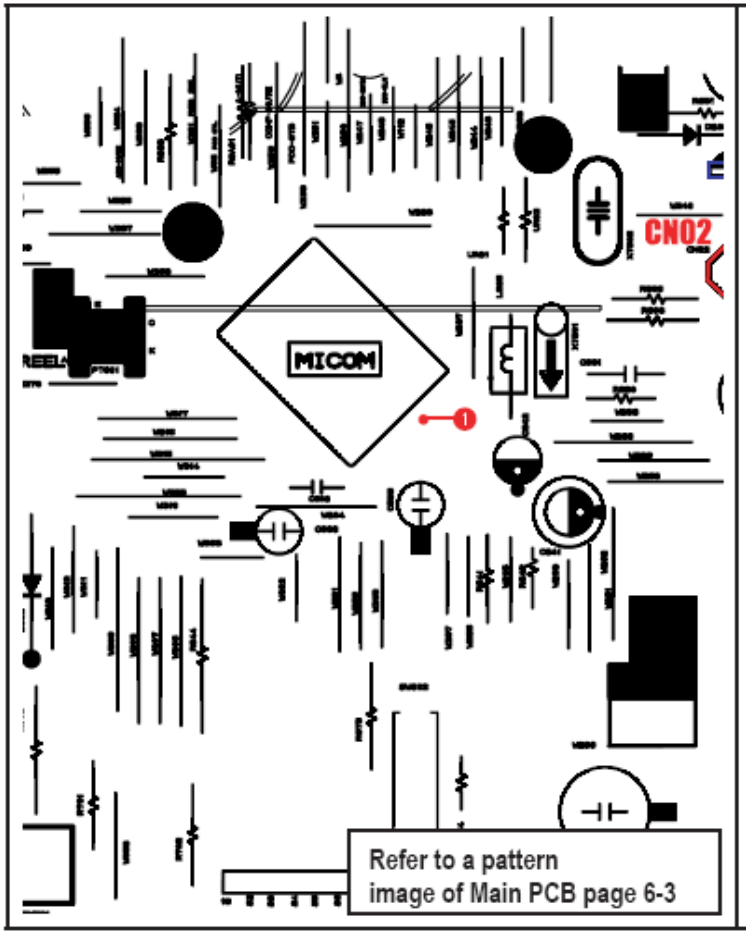


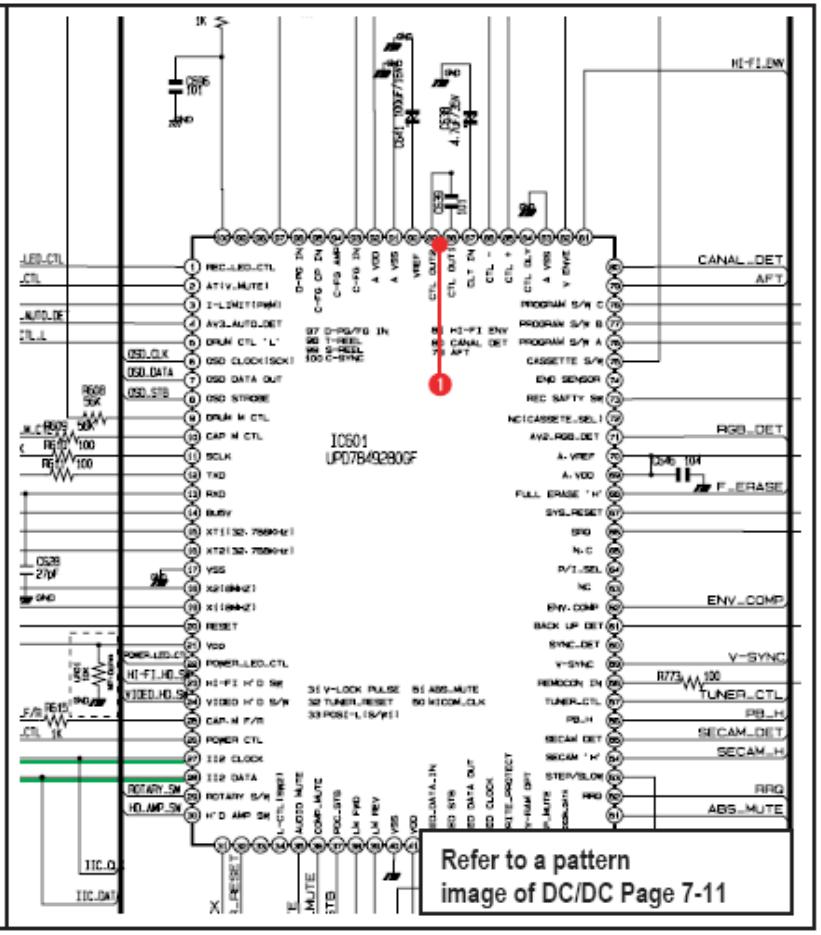
Refer to a pattern
image of DC/DC Page 7-8

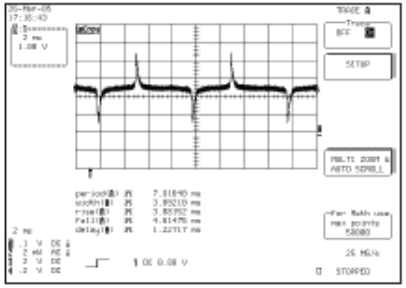


❶ FG
IC301 PIN 71


Fwd Search Doesn't Operate (VCR)
PLAY OPERATION
No
SEE (PLAY DOESN'T OPERATE)
Yes
PRESS F.FWD FOR FORWARD SEARCH
Yes
IS CAPSTAN SPEED CHANGED?
No
CHANGE DECK
SEARCH OPERATION
No
CHANGE IC601
Yes
END
Yes
NOISE BAR LOCKING
No
CONTROL PULSE) IC601-89
No
ADJUST A/CE HEAD
Refer to a pattern image of Table 4-2
Yes
CHECK CAPSTAN MOTOR
Yes
CHECK IC601

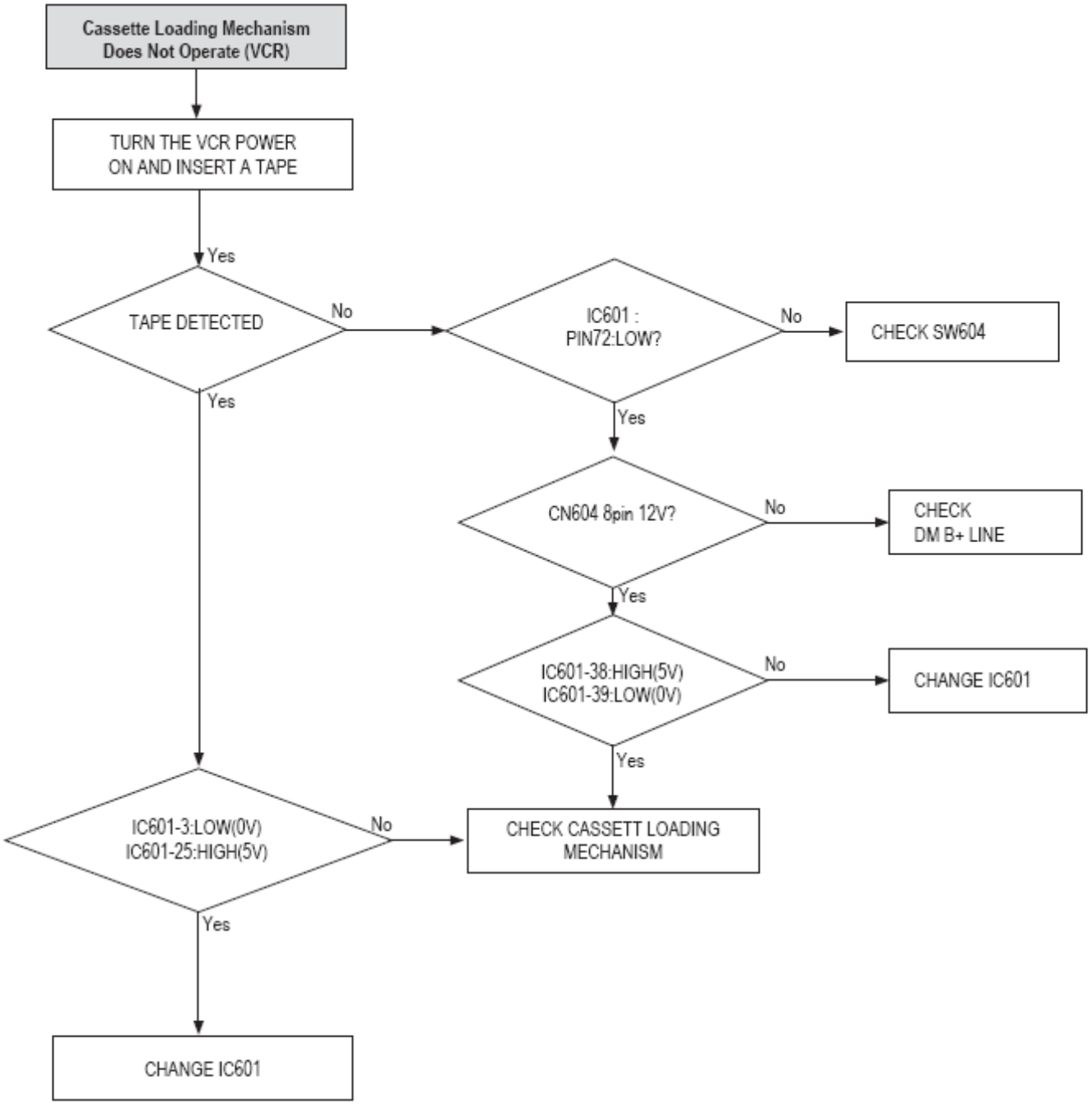


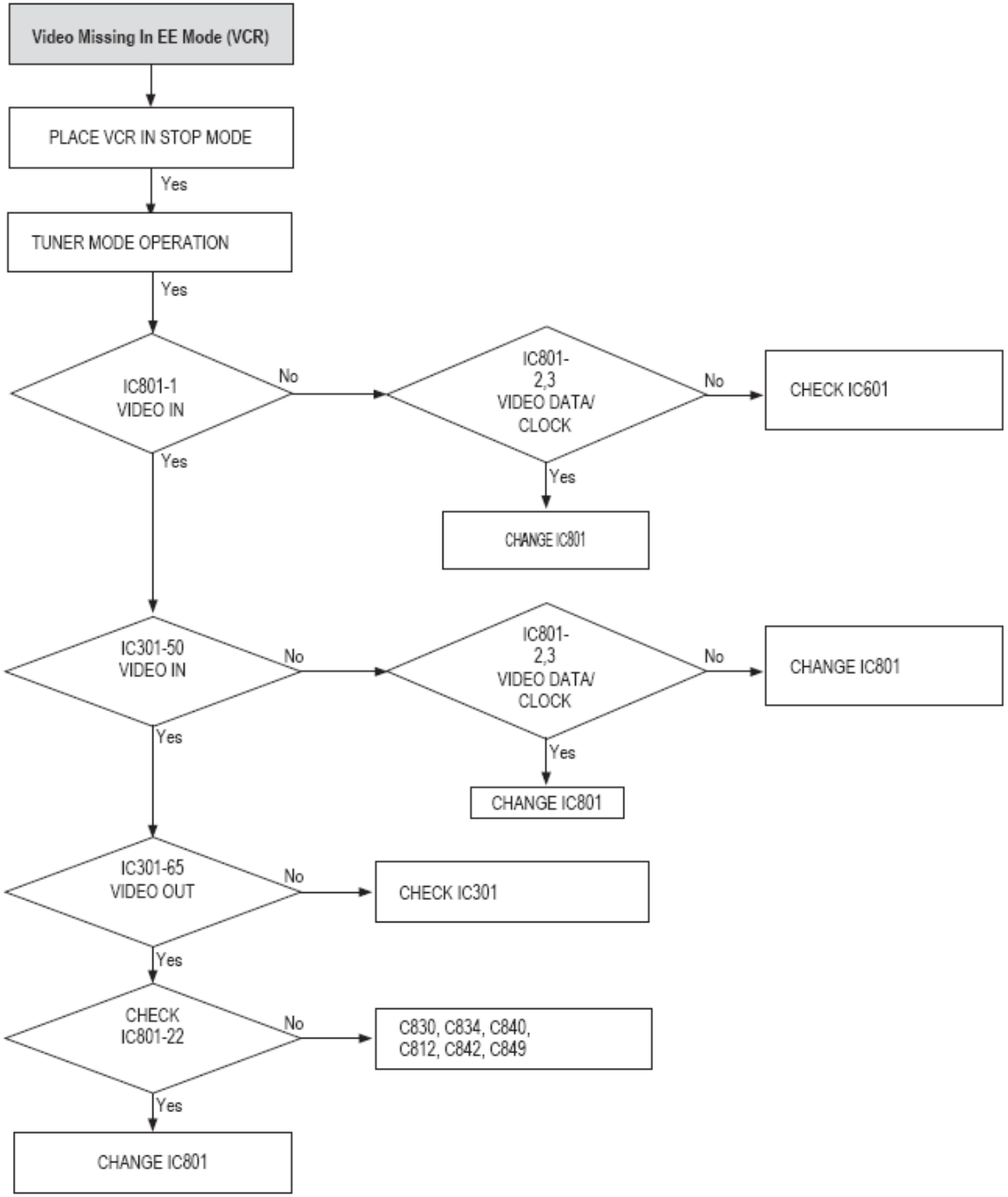


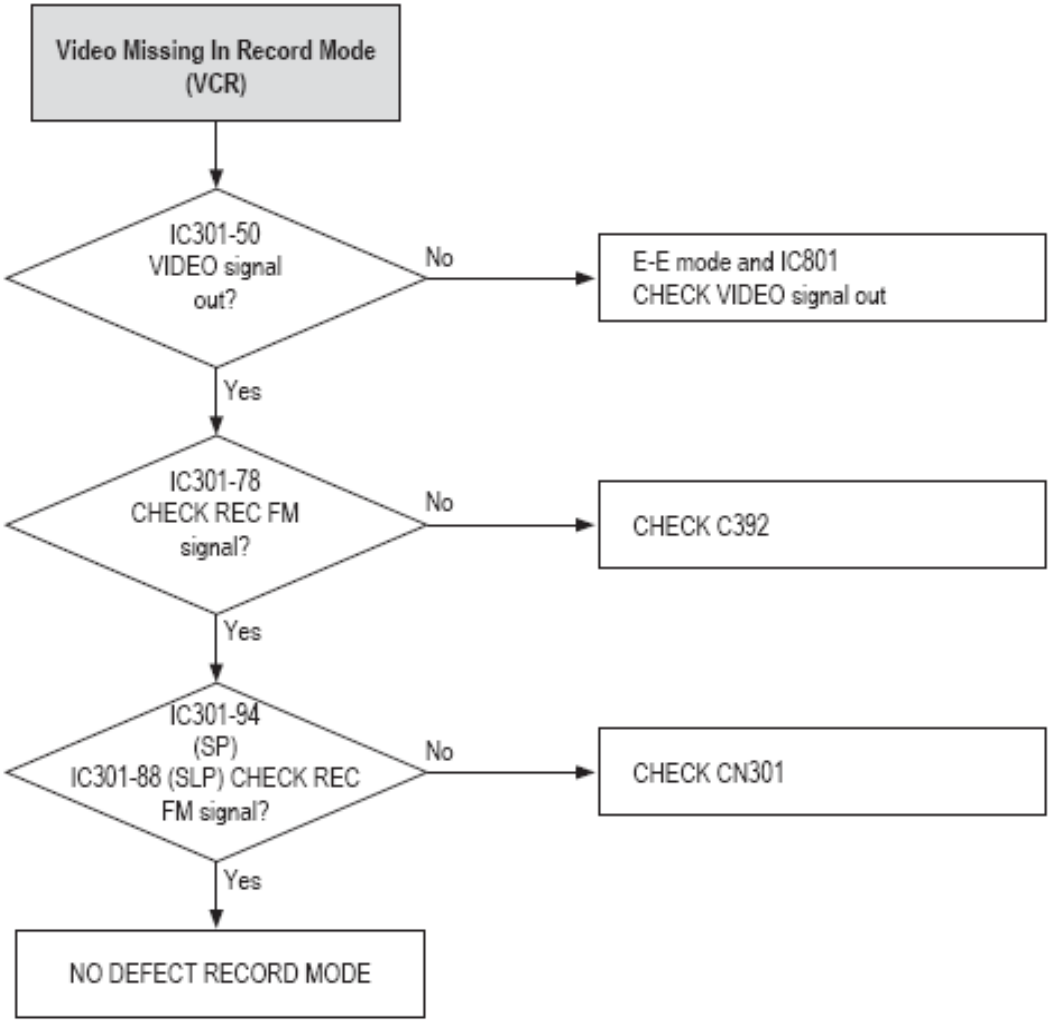


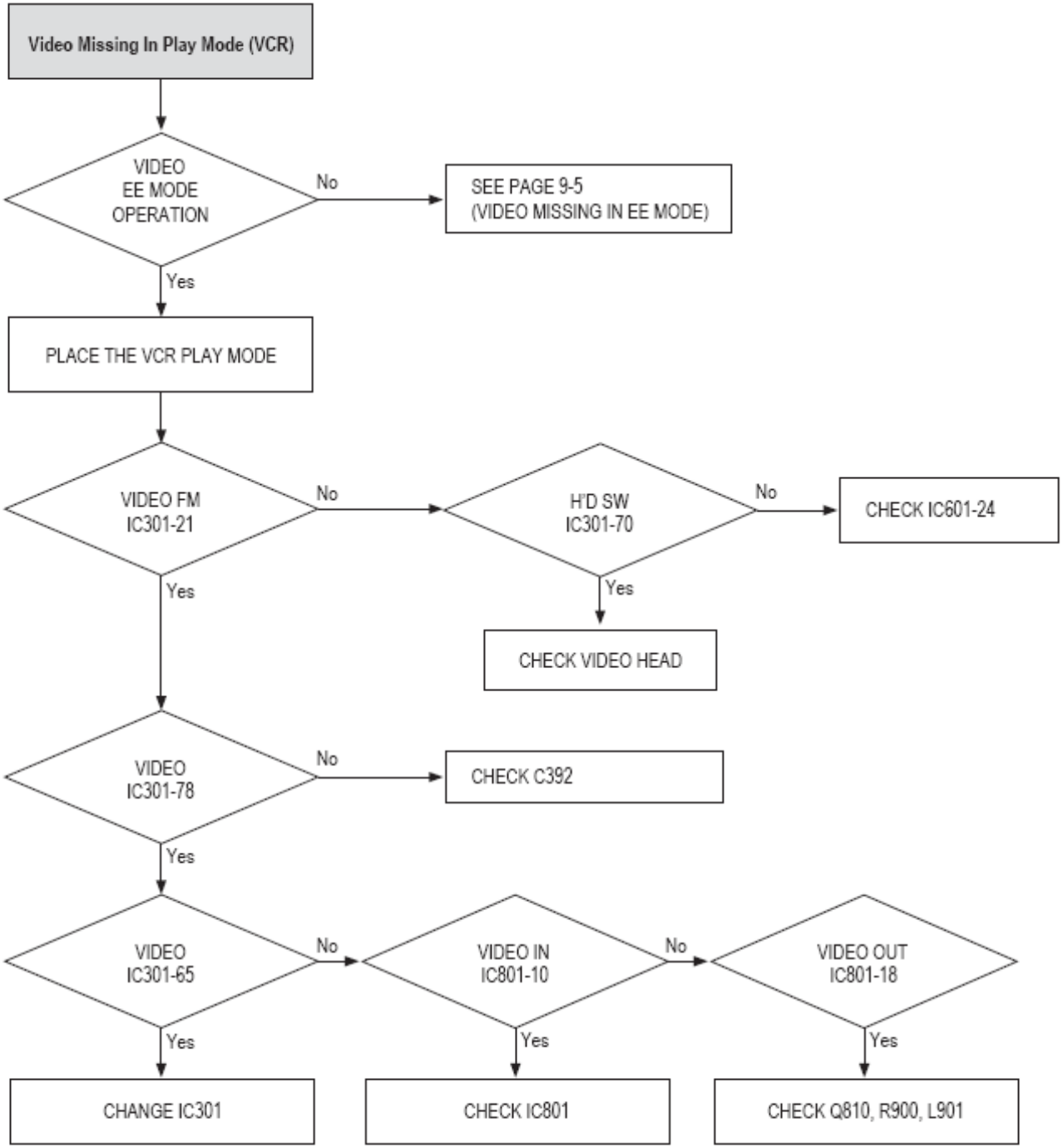
1 Control
IC601-89

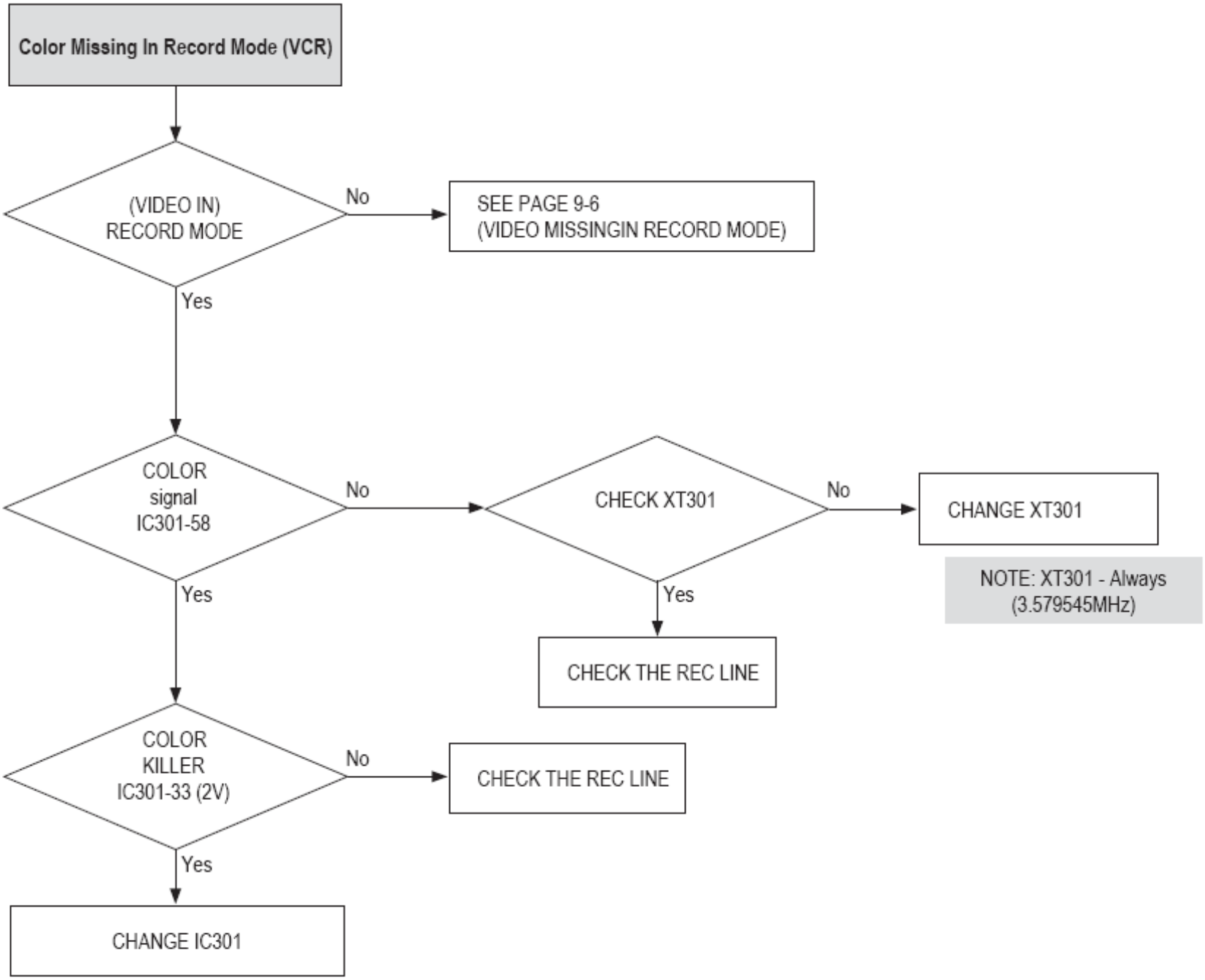
Fig. 4-2

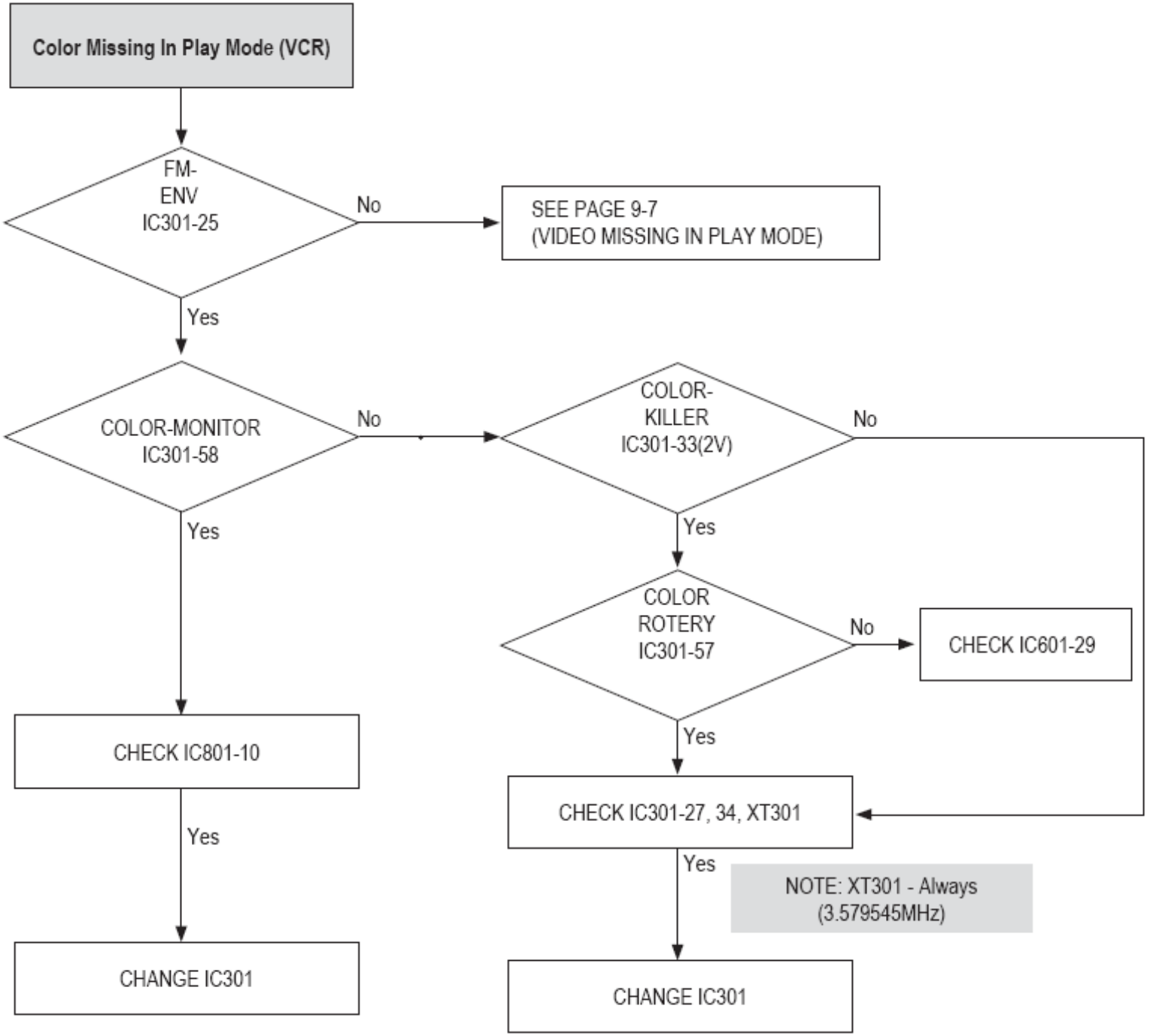

Cassette Loading Mechanism Does Not Operate (VCR)
TURN THE VCR POWER ON AND INSERT A TAPE
Yes
TAPE DETECTED
No
IC601 : PIN72:LOW?
No
CHECK SW604
Yes
CN604 8pin 12V?
No
CHECK DM B+ LINE
Yes
IC601-38:HIGH(5V) IC601-39:LOW(0V)
No
CHANGE IC601
Yes
IC601-3:LOW(0V) IC601-25:HIGH(5V)
No
CHECK CASSETT LOADING MECHANISM
Yes
CHANGE IC601

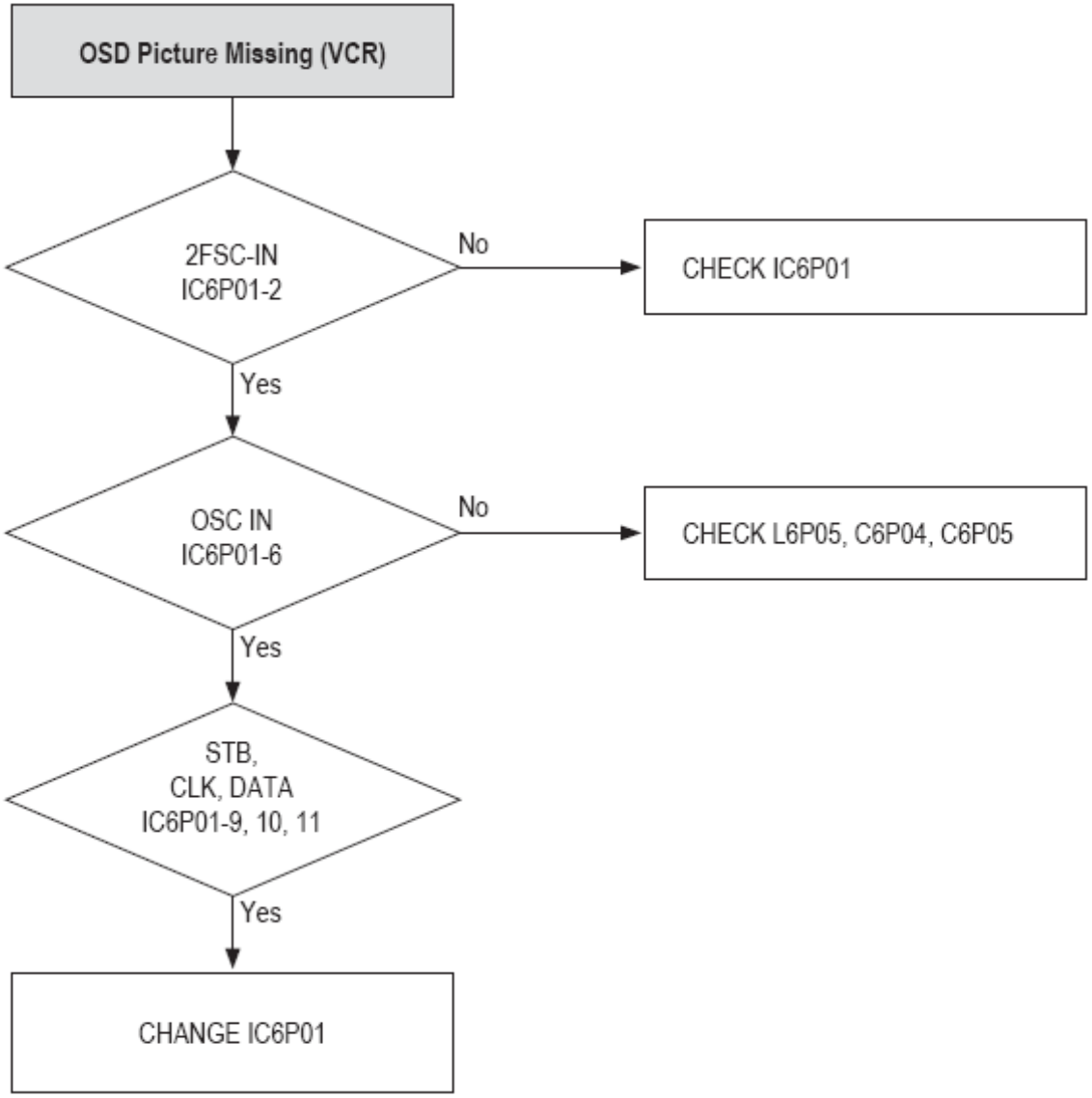

Video Missing In EE Mode (VCR)
PLACE VCR IN STOP MODE
Yes
TUNER MODE OPERATION
Yes
IC801-1
VIDEO IN
No
IC801-
2,3
VIDEO DATA/
CLOCK
No
CHECK IC601
Yes
CHANGE IC801
Yes
IC301-50
VIDEO IN
No
IC801-
2,3
VIDEO DATA/
CLOCK
No
CHANGE IC801
Yes
CHANGE IC801
Yes
IC301-65
VIDEO OUT
No
CHECK IC301
Yes
CHECK
IC801-22
No
C830, C834, C840,
C812, C842, C849
Yes
CHANGE IC801

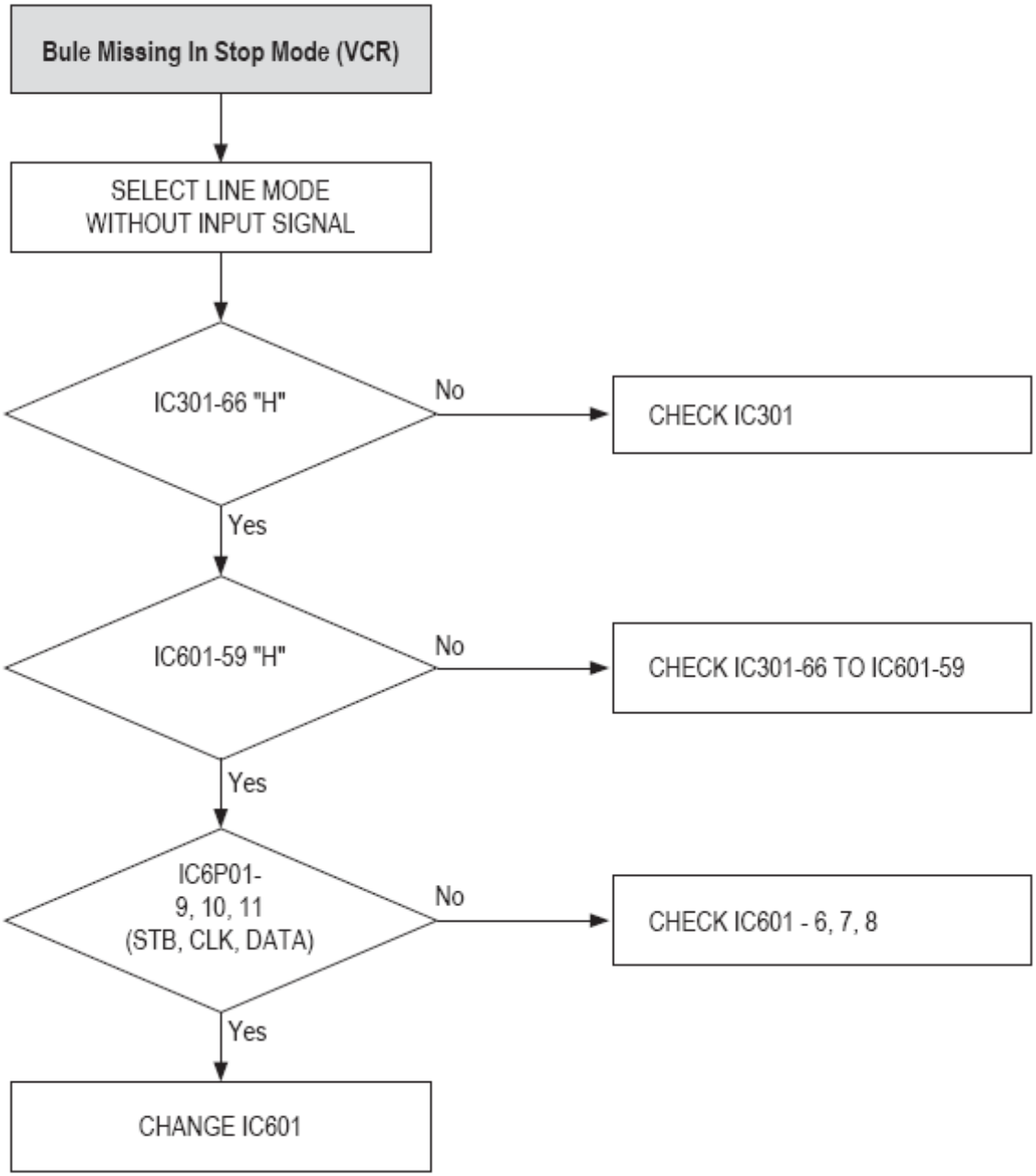

Video Missing In Record Mode (VCR)
IC301-50 VIDEO signal out?
No
E-E mode and IC801 CHECK VIDEO signal out
Yes
IC301-78 CHECK REC FM signal?
No
CHECK C392
Yes
IC301-94 (SP) IC301-88 (SLP) CHECK REC FM signal?
No
CHECK CN301
Yes
NO DEFECT RECORD MODE

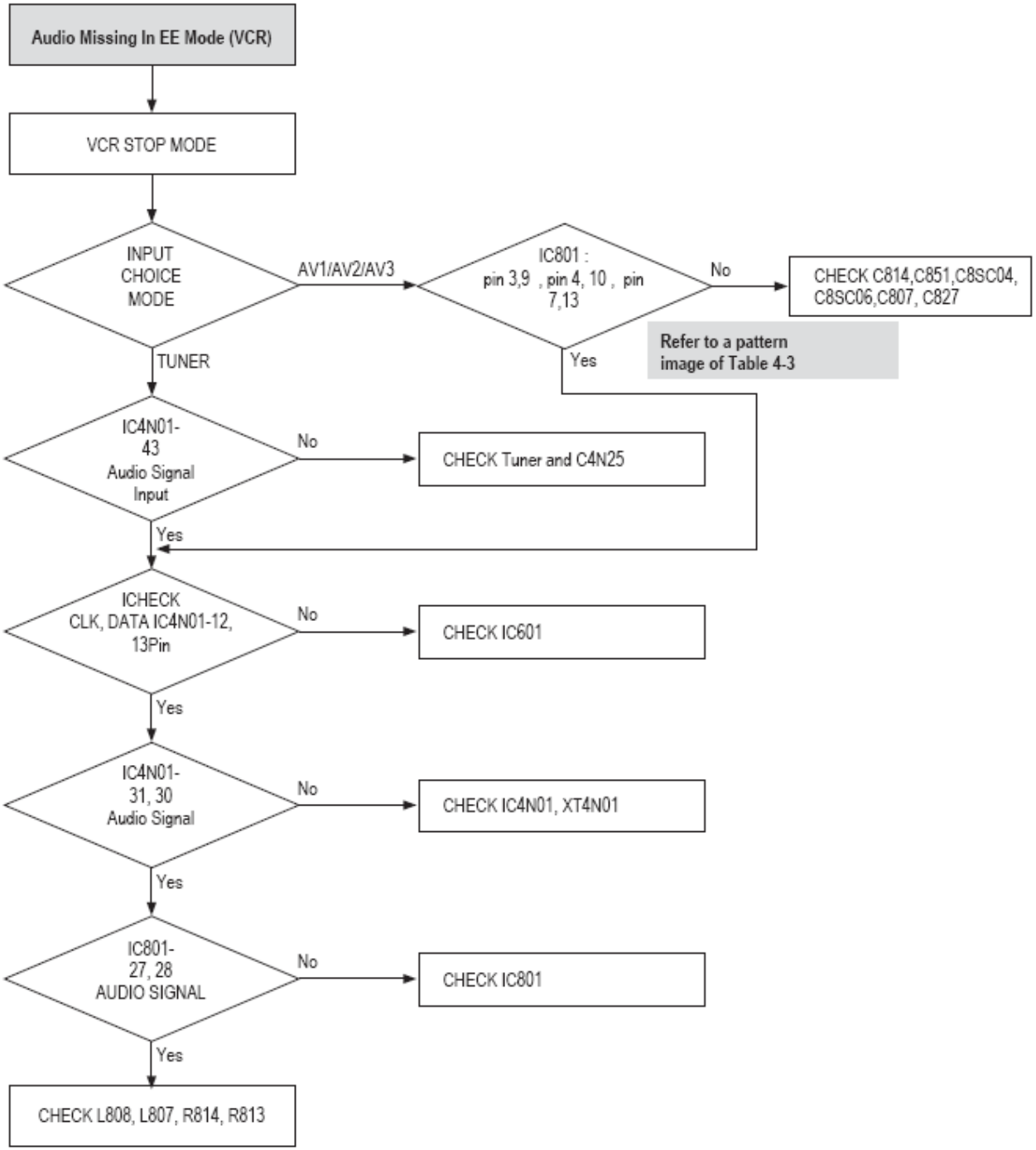

Video Missing In Play Mode (VCR)
VIDEO EE MODE OPERATION
No
SEE PAGE 9-5 (VIDEO MISSING IN EE MODE)
Yes
PLACE THE VCR PLAY MODE
VIDEO FM IC301-21
No
H'D SW IC301-70
No
CHECK IC601-24
Yes
CHECK VIDEO HEAD
Yes
VIDEO IC301-78
No
CHECK C392
Yes
VIDEO IC301-65
No
VIDEO IN IC801-10
No
VIDEO OUT IC801-18
Yes
Yes
Yes
CHANGE IC301
CHECK IC801
CHECK Q810, R900, L901

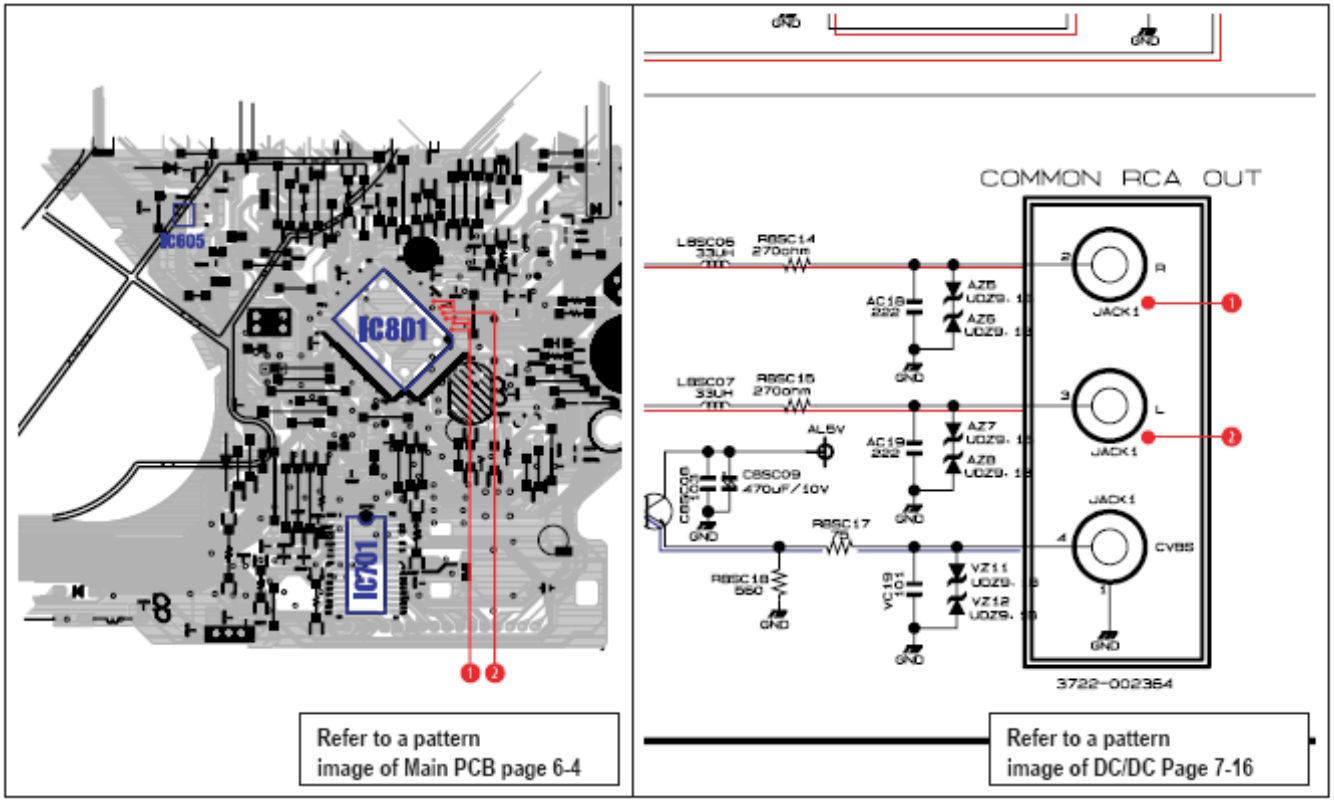

Color Missing In Record Mode (VCR)
(VIDEO IN)
RECORD MODE
No
SEE PAGE 9-6
(VIDEO MISSINGIN RECORD MODE)
Yes
COLOR
signal
IC301-58
No
CHECK XT301
No
CHANGE XT301
NOTE: XT301 - Always
(3.579545MHz)
Yes
Yes
CHECK THE REC LINE
COLOR
KILLER
IC301-33 (2V)
No
CHECK THE REC LINE
Yes
CHANGE IC301

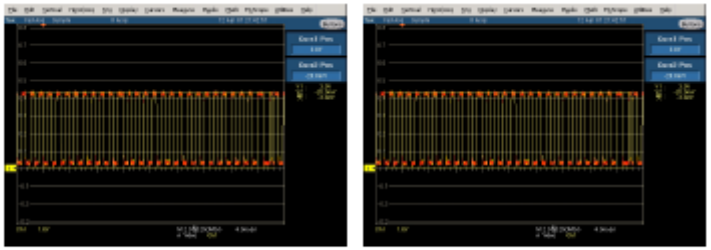

Color Missing In Play Mode (VCR)
FM-
ENV
IC301-25
No
SEE PAGE 9-7
(VIDEO MISSING IN PLAY MODE)
Yes
COLOR-MONITOR
IC301-58
No
COLOR-
KILLER
IC301-33(2V)
No
Yes
Yes
COLOR
ROTERY
IC301-57
No
CHECK IC601-29
CHECK IC801-10
Yes
Yes
CHECK IC301-27, 34, XT301
Yes
NOTE: XT301 - Always
(3.579545MHz)
CHANGE IC301
CHANGE IC301


OSD Picture Missing (VCR)
2FSC-IN
IC6P01-2
No
CHECK IC6P01
Yes
OSC IN
IC6P01-6
No
CHECK L6P05, C6P04, C6P05
Yes
STB,
CLK, DATA
IC6P01-9, 10, 11
Yes
CHANGE IC6P01


Bule Missing In Stop Mode (VCR)
SELECT LINE MODE
WITHOUT INPUT SIGNAL
IC301-66 "H"
No
CHECK IC301
Yes
IC601-59 "H"
No
CHECK IC301-66 TO IC601-59
Yes
IC6P01-
9, 10, 11
(STB, CLK, DATA)
No
CHECK IC601 - 6, 7, 8
Yes
CHANGE IC601


Audio Missing In EE Mode (VCR)
VCR STOP MODE
INPUT CHOICE MODE
AV1/AV2/AV3
IC801 : pin 3,9 , pin 4, 10 , pin 7,13
No
CHECK C814,C851,C8SC04, C8SC06,C807, C827
Refer to a pattern image of Table 4-3
Yes
TUNER
IC4N01-43 Audio Signal Input
No
CHECK Tuner and C4N25
Yes
ICHECK CLK, DATA IC4N01-12, 13Pin
No
CHECK IC601
Yes
IC4N01-31, 30 Audio Signal
No
CHECK IC4N01, XT4N01
Yes
IC801-27, 28 AUDIO SIGNAL
No
CHECK IC801
Yes
CHECK L808, L807, R814, R813

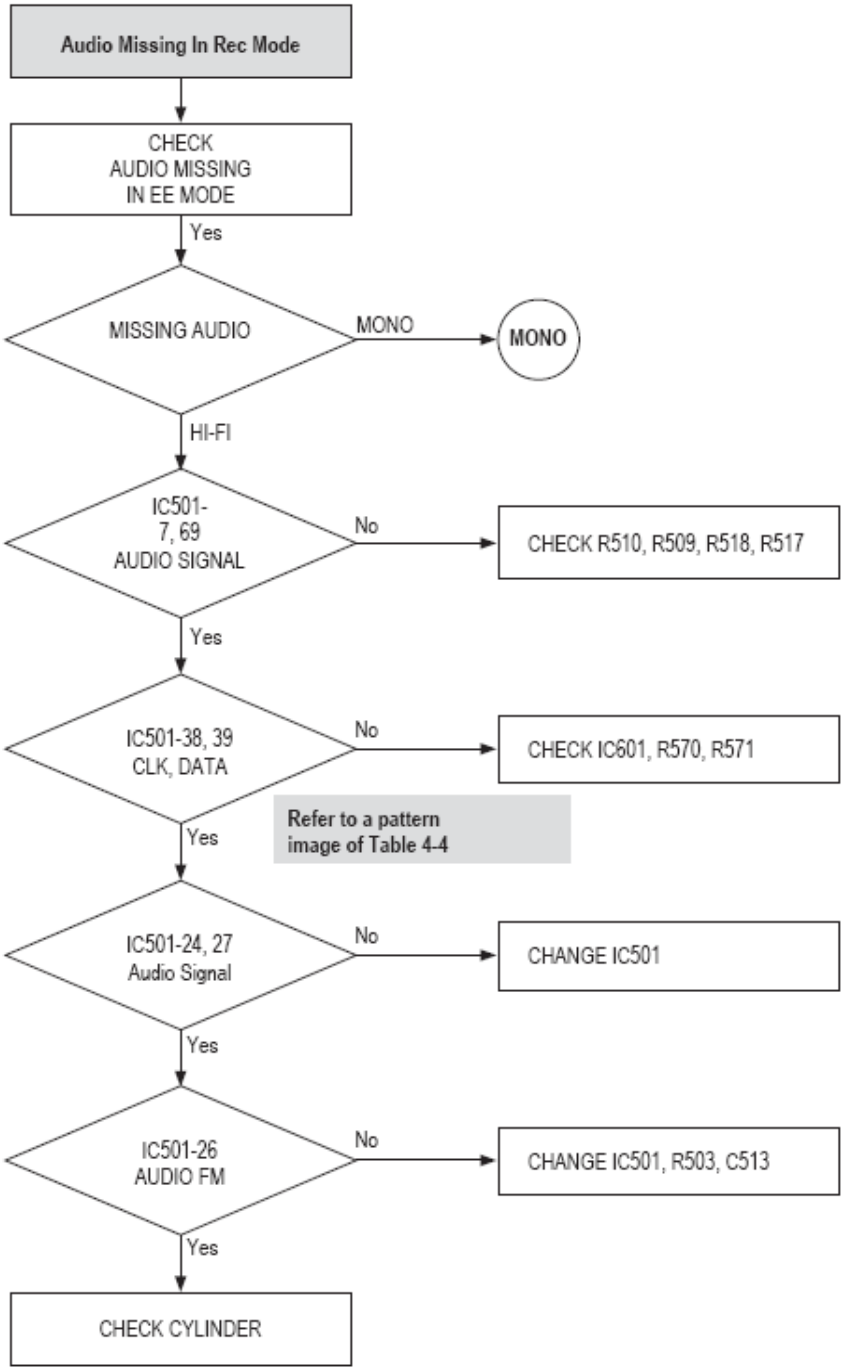


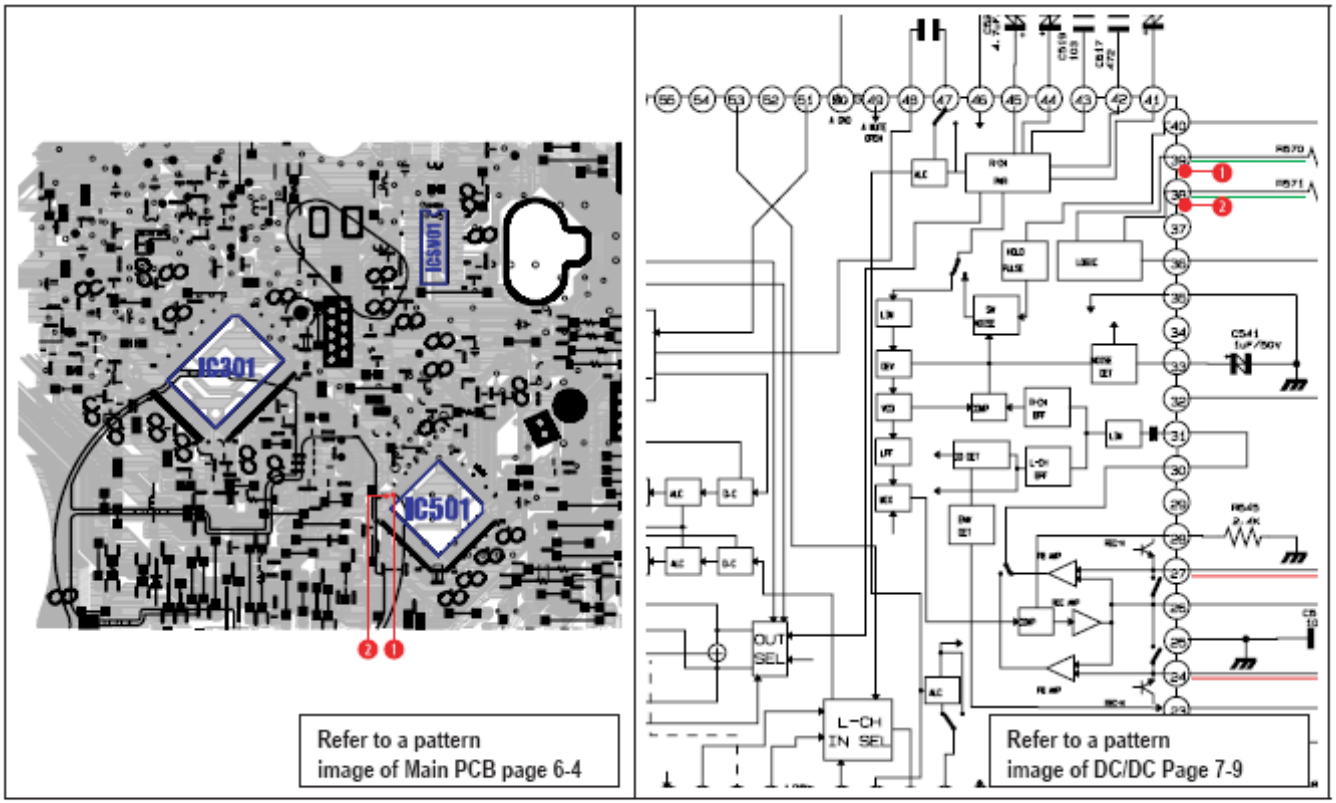


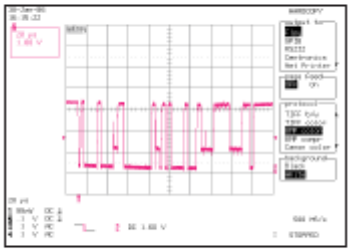
❶ AUDIO-R
IC801(3,4,7)

❷ AUDIO-L
IC801(9,10,13)

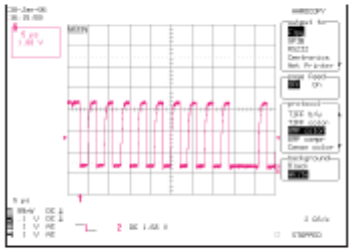
Fig. 4-3


Audio Missing In Rec Mode
CHECK
AUDIO MISSING
IN EE MODE
Yes
MISSING AUDIO
MONO
MONO
HI-FI
IC501-
7, 69
AUDIO SIGNAL
No
CHECK R510, R509, R518, R517
Yes
IC501-38, 39
CLK, DATA
No
CHECK IC601, R570, R571
Refer to a pattern
image of Table 4-4
Yes
IC501-24, 27
Audio Signal
No
CHANGE IC501
Yes
IC501-26
AUDIO FM
No
CHANGE IC501, R503, C513
Yes
CHECK CYLINDER



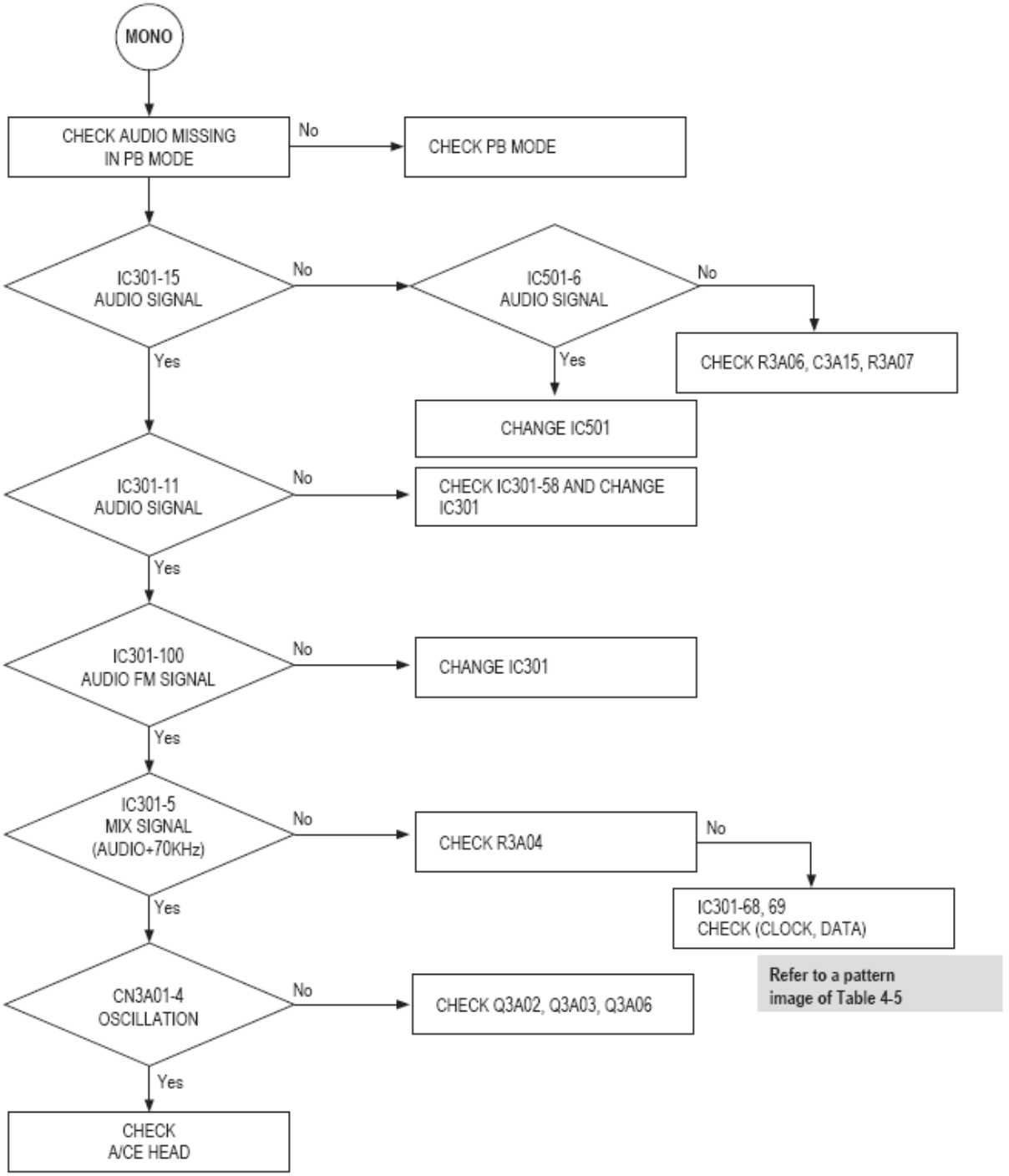


❶ IIC_CLOCK
IC501(Pin39)

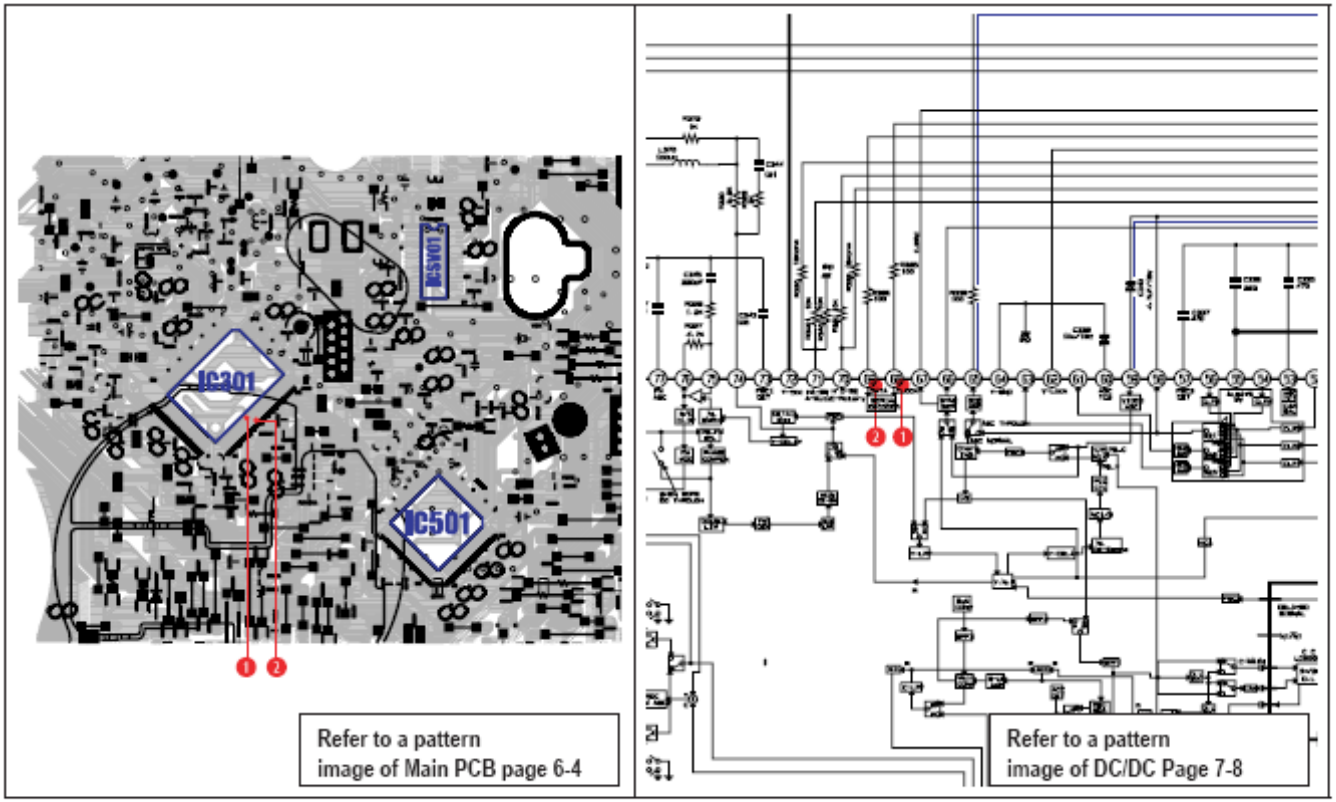


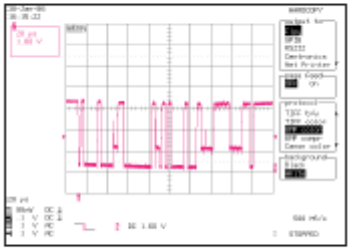
❷ IIC_DATA
IC501(Pin38)

Fig. 4-4

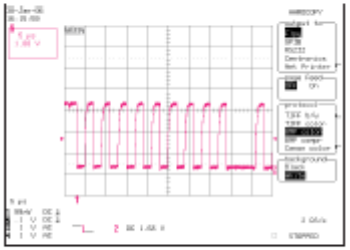


Refer to a pattern image of Table 4-5



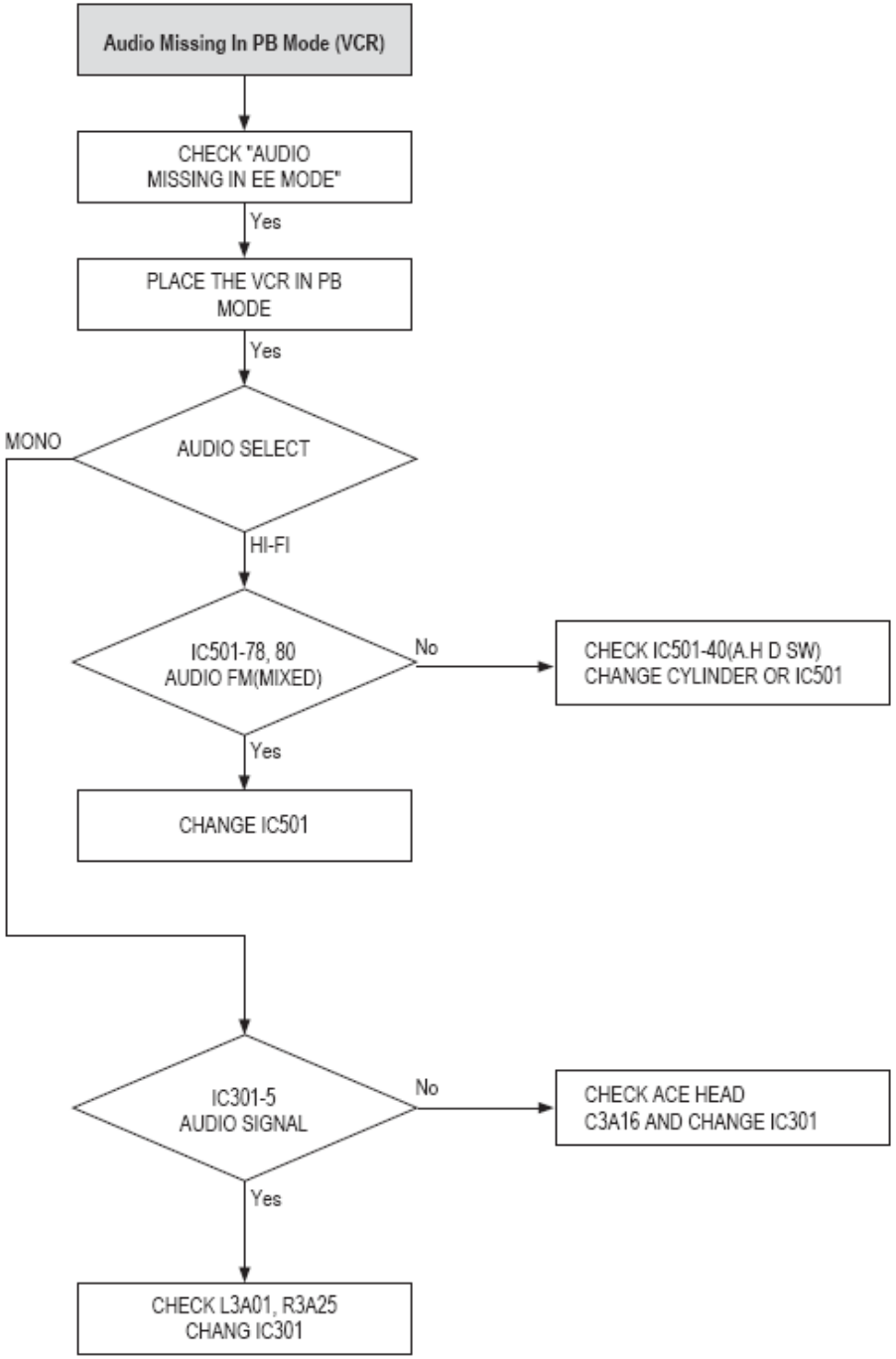


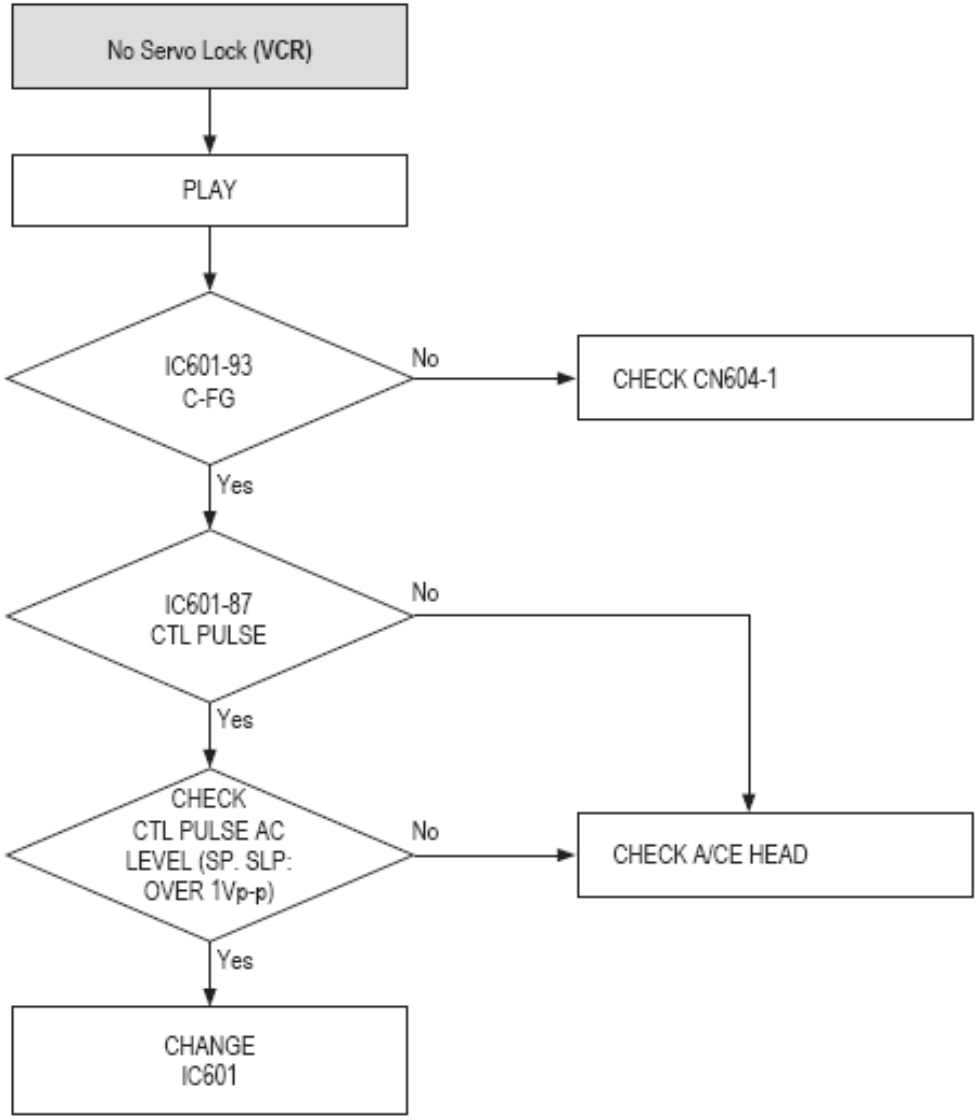
❶ IIC_CLOCK
IC301(Pin68)

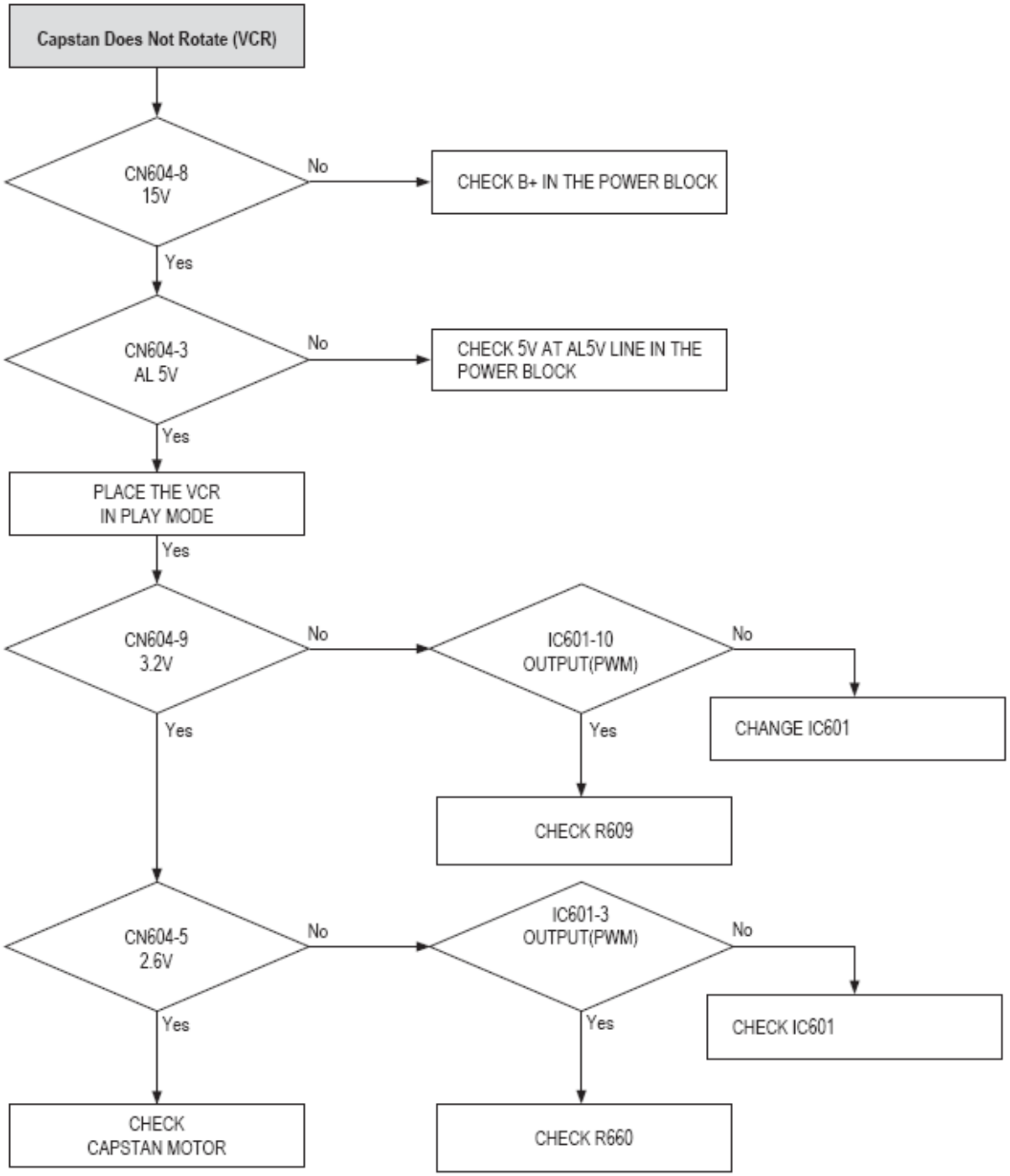


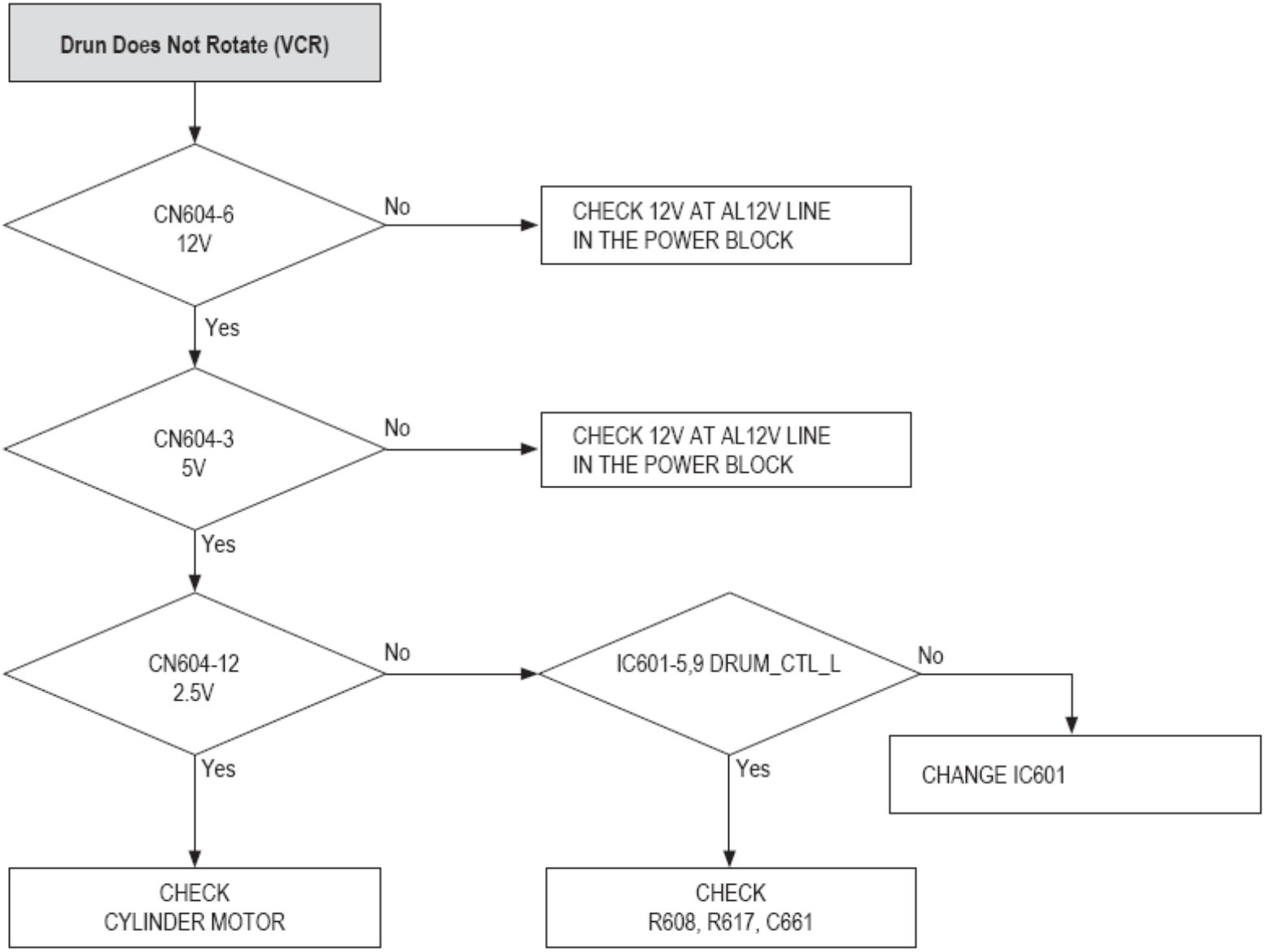
❷ IIC_DATA
IC301(Pin69)

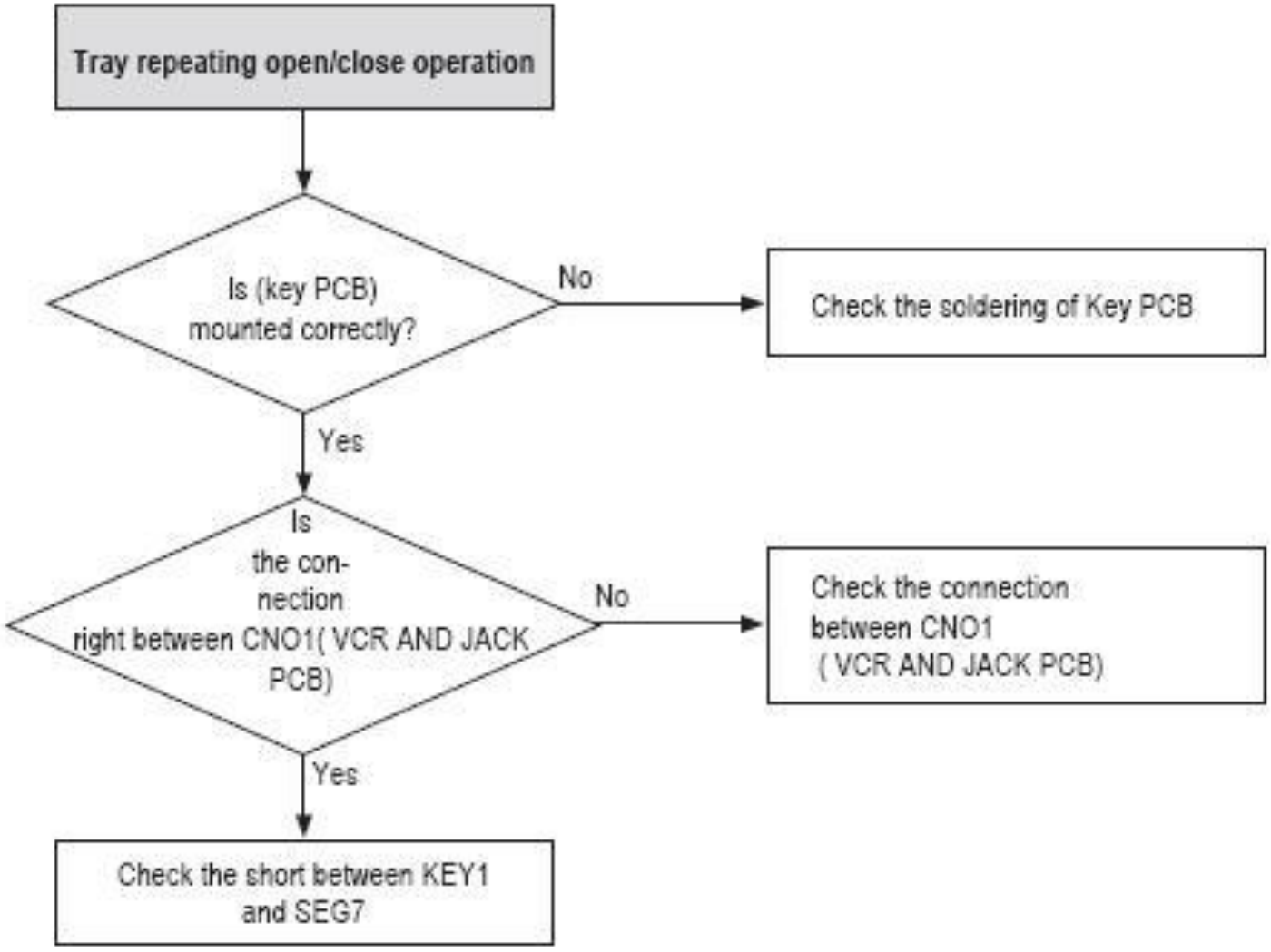
Fig. 4-5

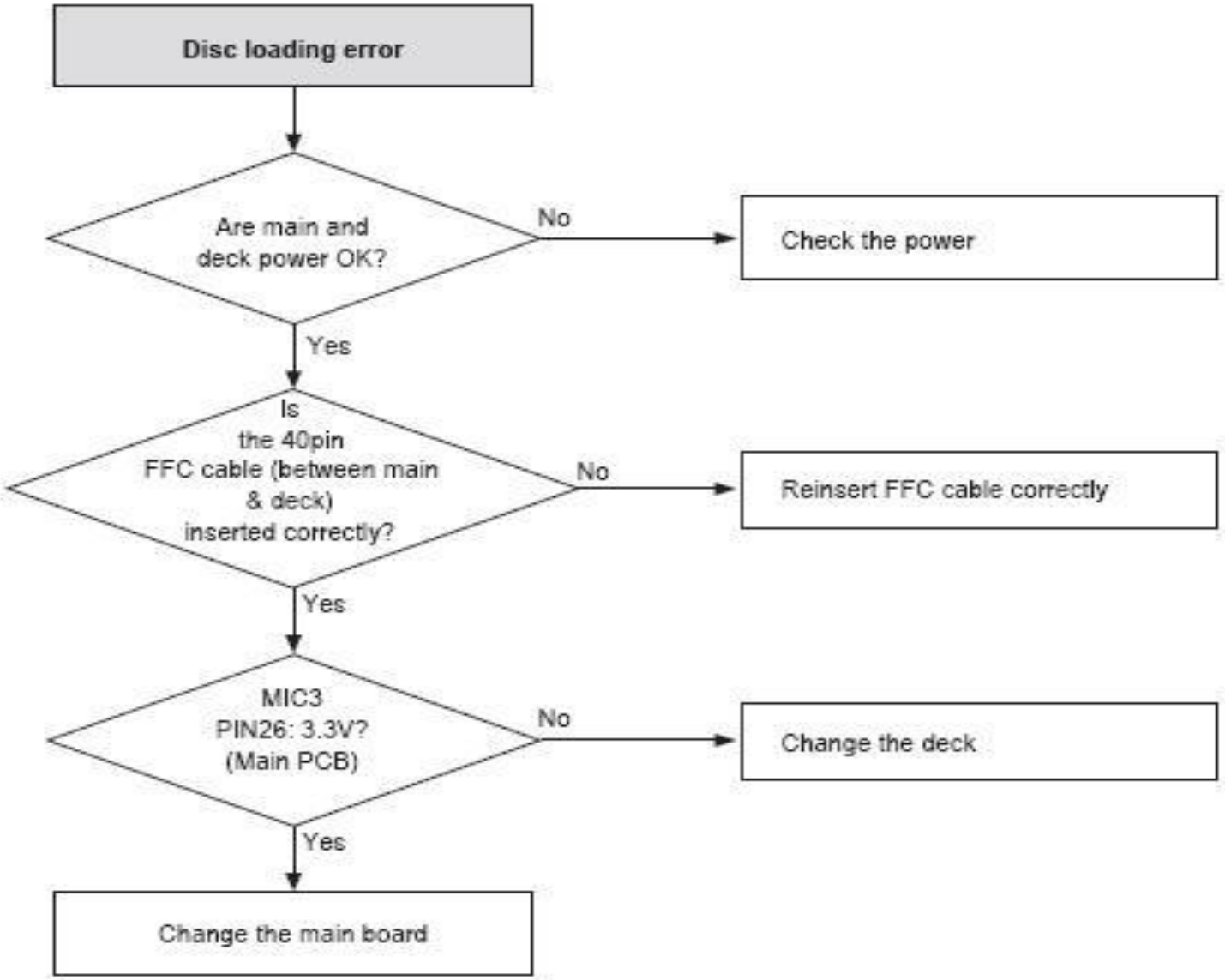

Audio Missing In PB Mode (VCR)
CHECK "AUDIO MISSING IN EE MODE"
Yes
PLACE THE VCR IN PB MODE
Yes
AUDIO SELECT
MONO
HI-FI
IC501-78, 80 AUDIO FM(MIXED)
No
CHECK IC501-40(A.H D SW) CHANGE CYLINDER OR IC501
Yes
CHANGE IC501
IC301-5 AUDIO SIGNAL
No
CHECK ACE HEAD C3A16 AND CHANGE IC301
Yes
CHECK L3A01, R3A25 CHANG IC301

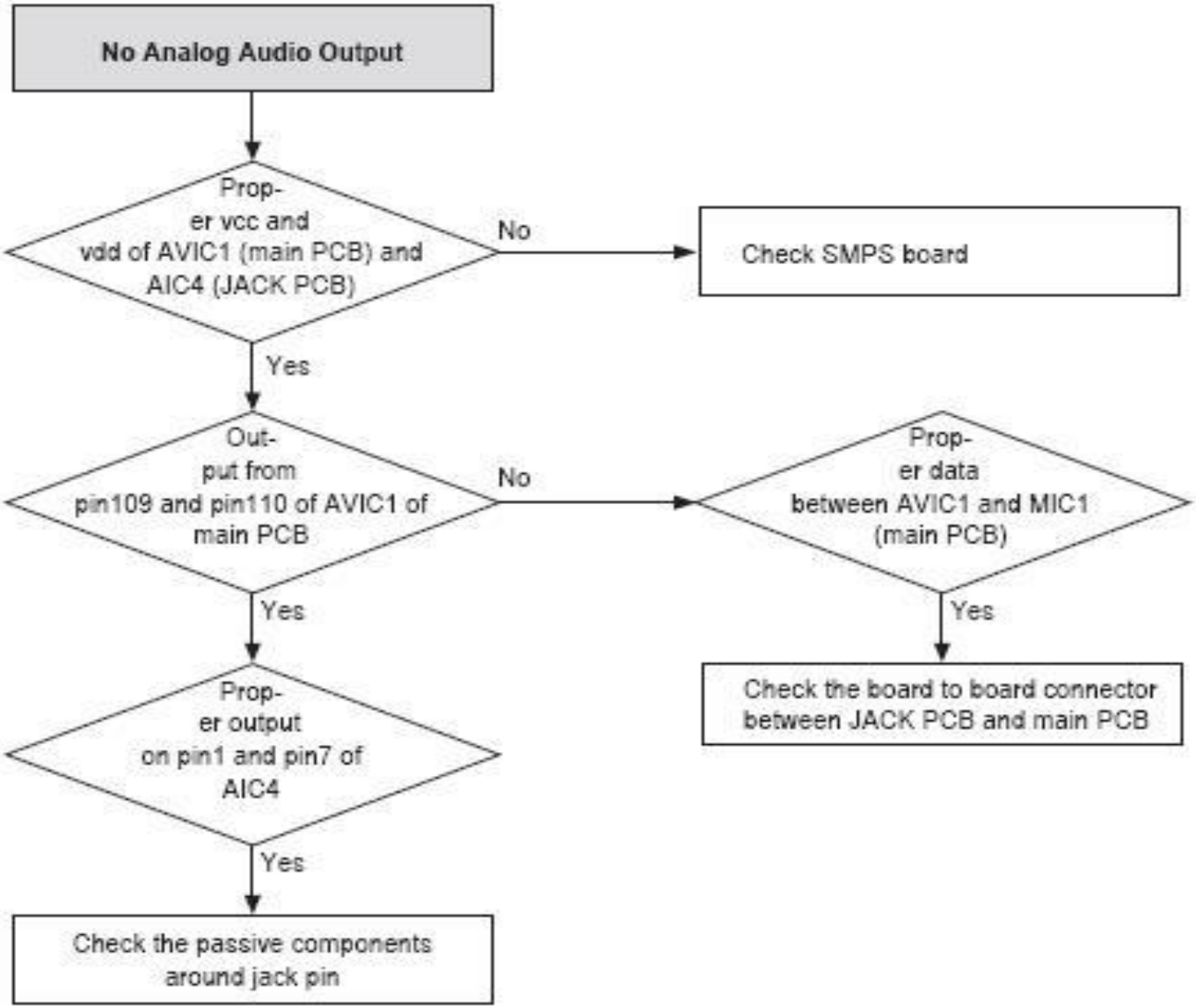

No Servo Lock (VCR)
PLAY
IC601-93
C-FG
No
CHECK CN604-1
Yes
IC601-87
CTL PULSE
No
Yes
CHECK
CTL PULSE AC
LEVEL (SP. SLP:
OVER 1Vp-p)
No
CHECK A/CE HEAD
Yes
CHANGE
IC601

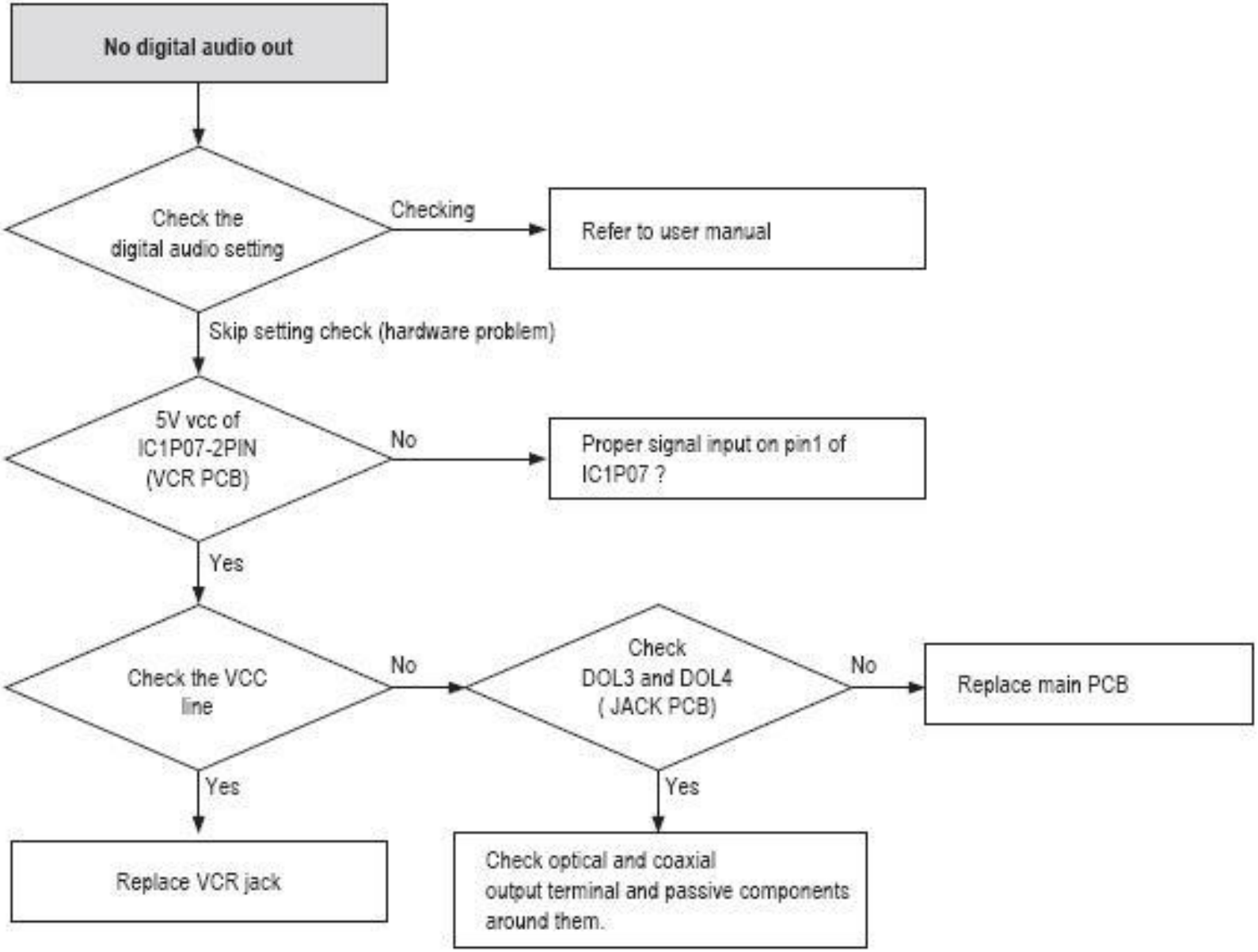

Capstan Does Not Rotate (VCR)
CN604-8
15V
No
CHECK B+ IN THE POWER BLOCK
Yes
CN604-3
AL 5V
No
CHECK 5V AT AL5V LINE IN THE
POWER BLOCK
Yes
PLACE THE VCR
IN PLAY MODE
Yes
CN604-9
3.2V
No
IC601-10
OUTPUT(PWM)
No
CHANGE IC601
Yes
Yes
CHECK R609
CN604-5
2.6V
No
IC601-3
OUTPUT(PWM)
No
CHECK IC601
Yes
Yes
CHECK
CAPSTAN MOTOR
CHECK R660

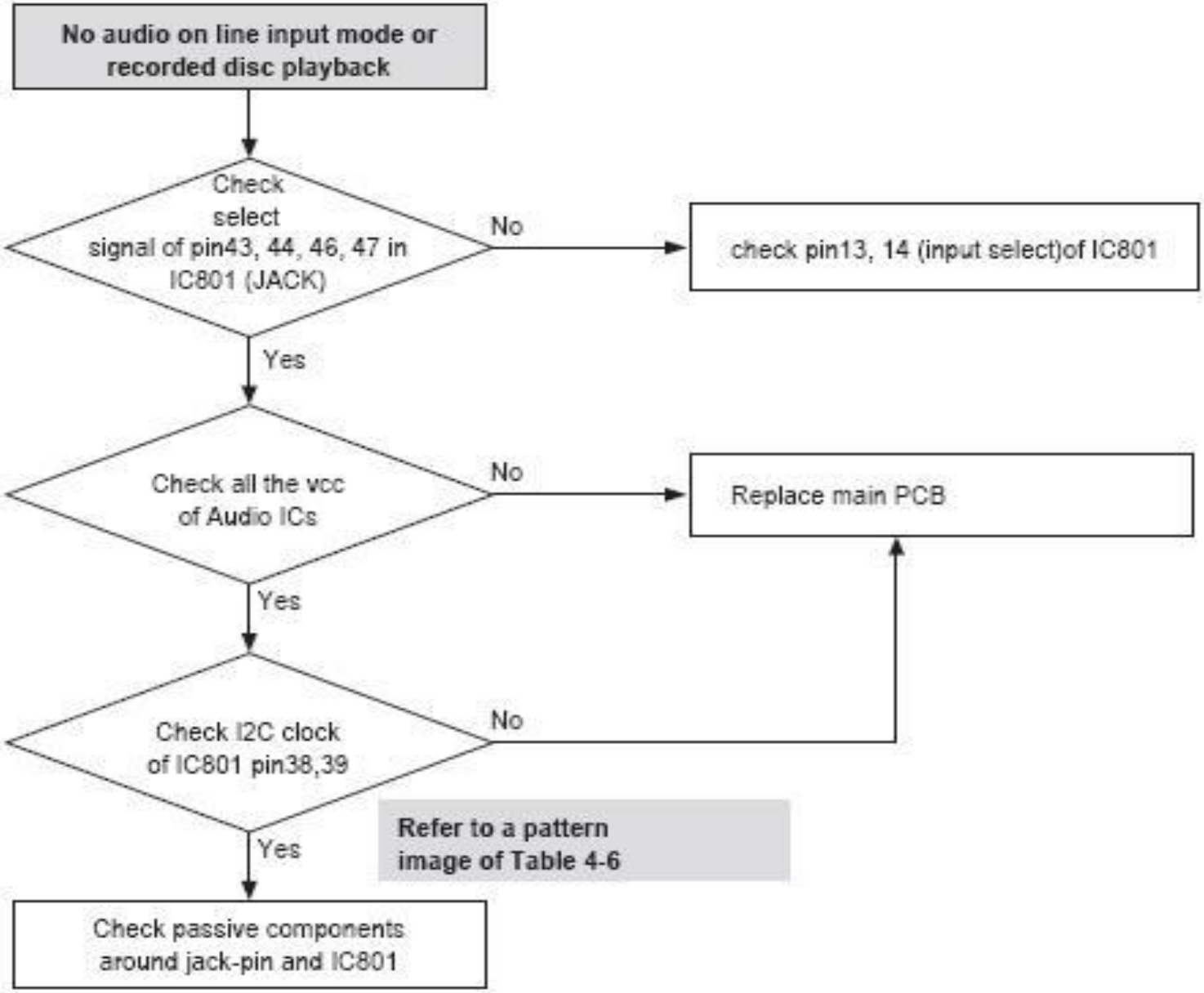

Drun Does Not Rotate (VCR)
CN604-6
12V
No
CHECK 12V AT AL12V LINE
IN THE POWER BLOCK
Yes
CN604-3
5V
No
CHECK 12V AT AL12V LINE
IN THE POWER BLOCK
Yes
CN604-12
2.5V
No
IC601-5,9 DRUM_CTL_L
No
CHANGE IC601
Yes
Yes
CHECK
CYLINDER MOTOR
CHECK
R608, R617, C661

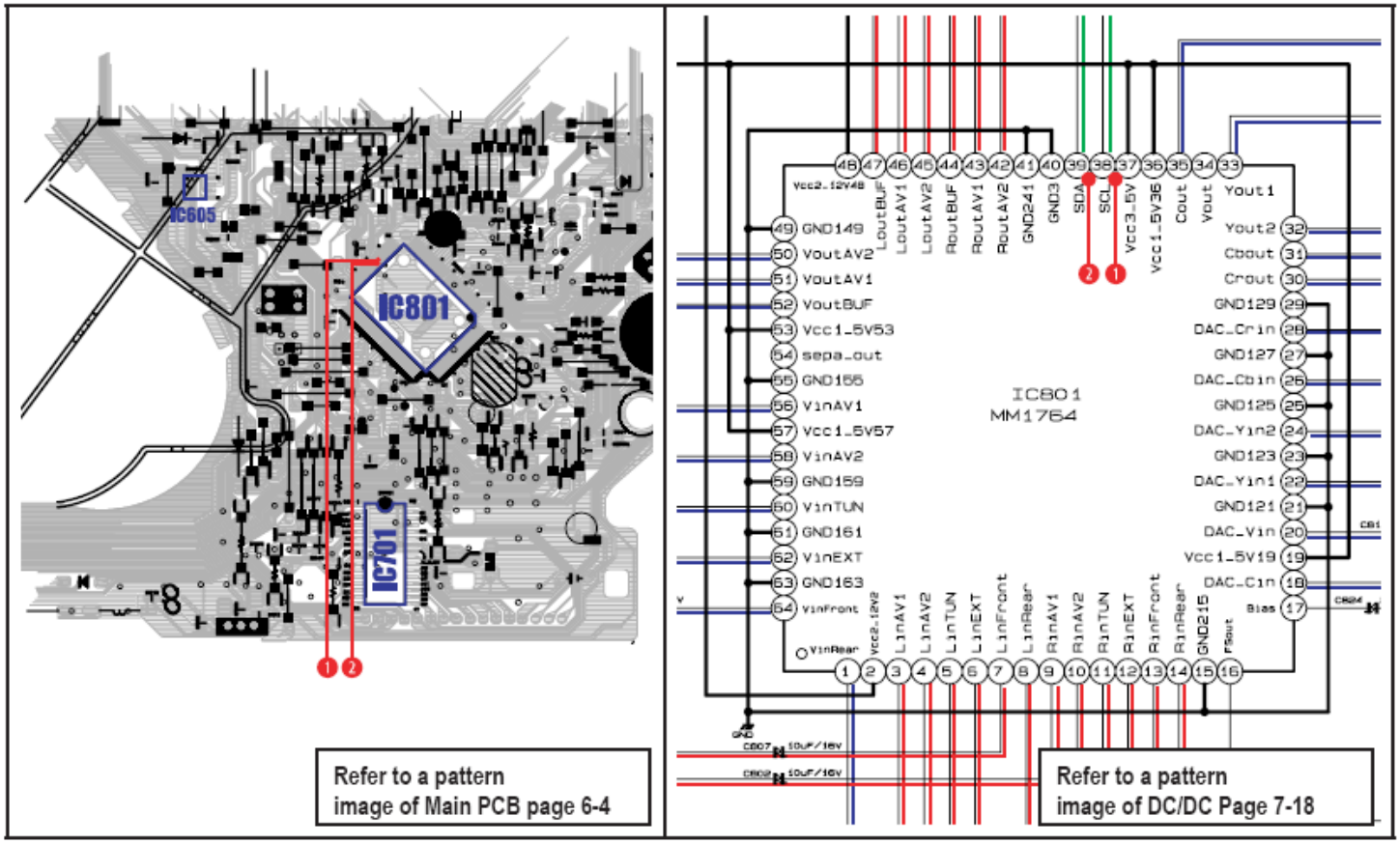

Tray repeating open/close operation
Is (key PCB) mounted correctly?
No
Check the soldering of Key PCB
Yes
Is the con-nection right between CNO1(VCR AND JACK PCB)
No
Check the connection between CNO1 (VCR AND JACK PCB)
Yes
Check the short between KEY1 and SEG7

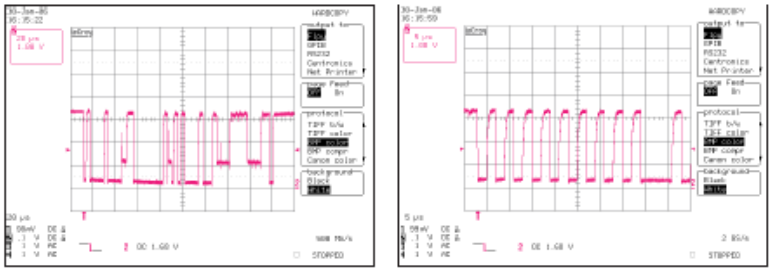

Disc loading error
Are main and deck power OK?
No
Check the power
Yes
Is the 40pin FFC cable (between main & deck) inserted correctly?
No
Reinsert FFC cable correctly
Yes
MIC3 PIN26: 3.3V? (Main PCB)
No
Change the deck
Yes
Change the main board


No Analog Audio Output
Prop-
er vcc and
vdd of AVIC1 (main PCB) and
AIC4 (JACK PCB)
No
Check SMPS board
Yes
Out-
put from
pin109 and pin110 of AVIC1 of
main PCB
No
Prop-
er data
between AVIC1 and MIC1
(main PCB)
Yes
Yes
Check the board to board connector
between JACK PCB and main PCB
Prop-
er output
on pin1 and pin7 of
AIC4
Yes
Check the passive components
around jack pin


No digital audio out
Check the digital audio setting
Checking
Refer to user manual
Skip setting check (hardware problem)
5V vcc of IC1P07-2PIN (VCR PCB)
No
Proper signal input on pin1 of IC1P07 ?
Yes
Check the VCC line
No
Check DOL3 and DOL4 (JACK PCB)
No
Replace main PCB
Yes
Yes
Replace VCR jack
Check optical and coaxial output terminal and passive components around them.


No audio on line input mode or recorded disc playback
Check select signal of pin43, 44, 46, 47 in IC801 (JACK)
No
check pin13, 14 (input select)of IC801
Yes
Check all the vcc of Audio ICs
No
Replace main PCB
Yes
Check I2C clock of IC801 pin38,39
No
Yes
Refer to a pattern image of Table 4-6
Check passive components around jack-pin and IC801

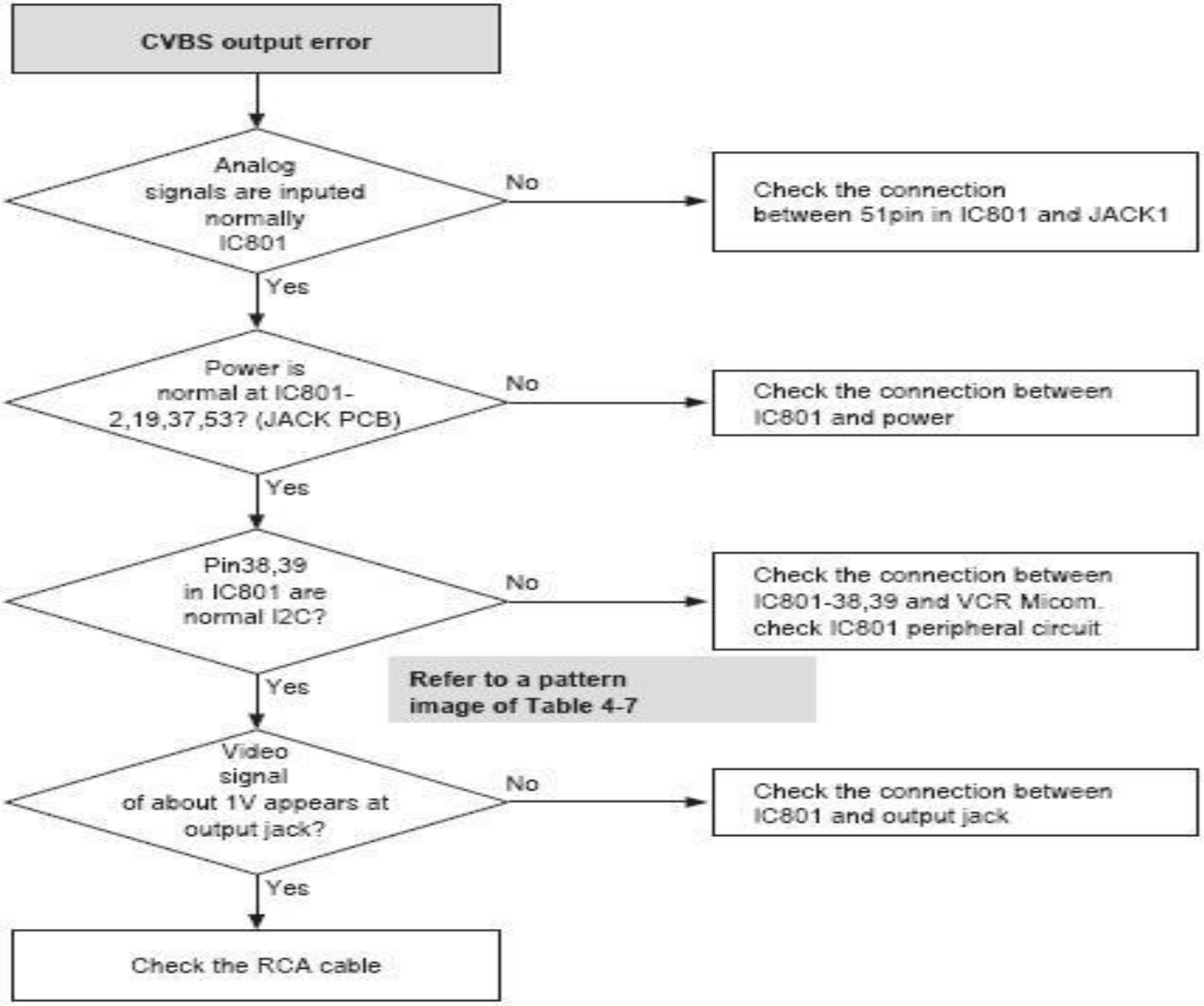


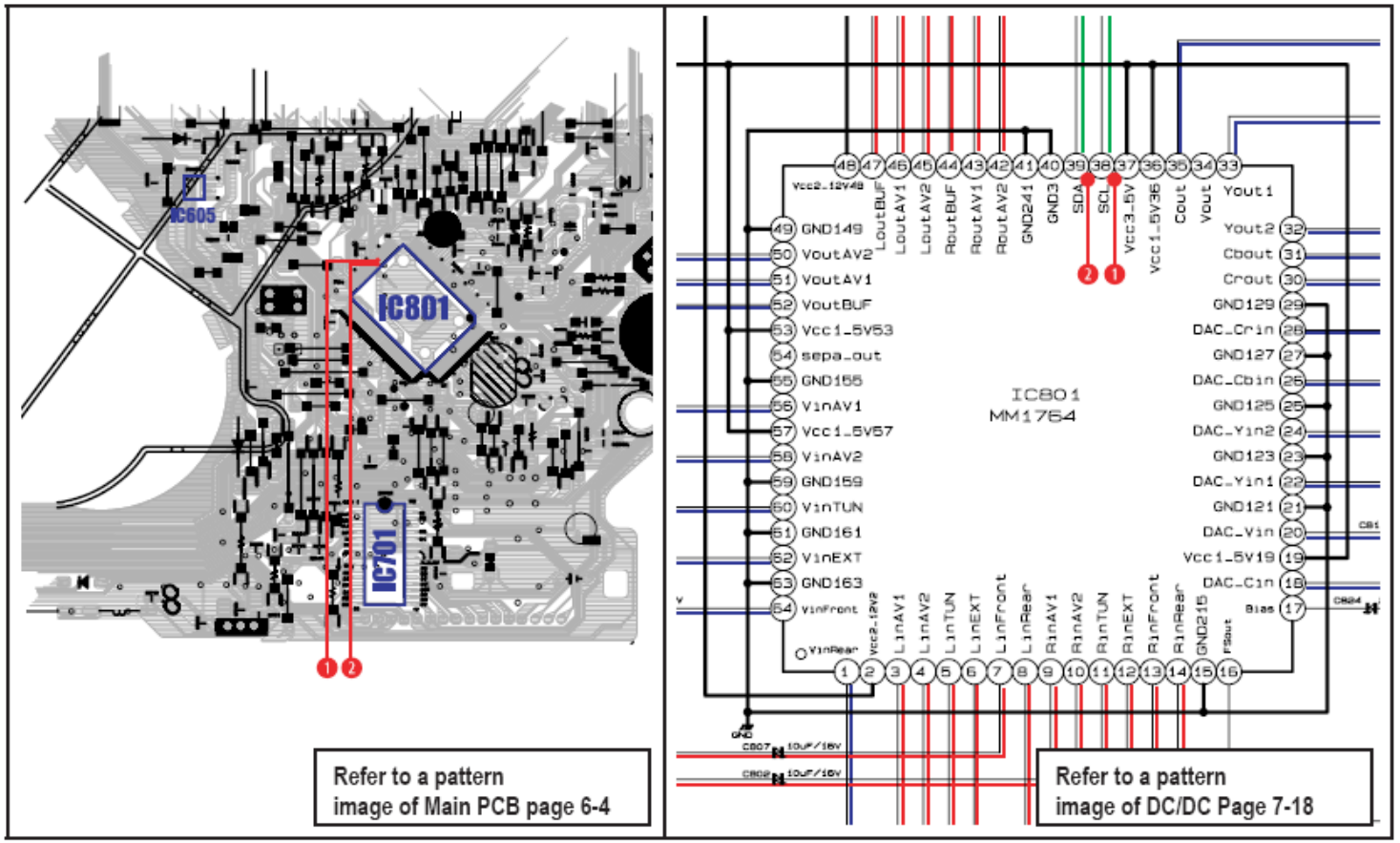


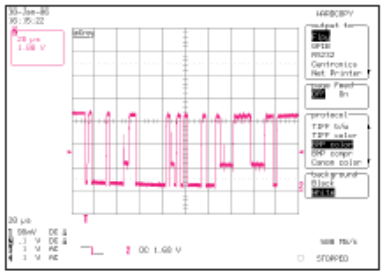
❶ IIC_CLOCK
IC801(Pin38)

❷ IIC_DATA
IC801(Pin39)

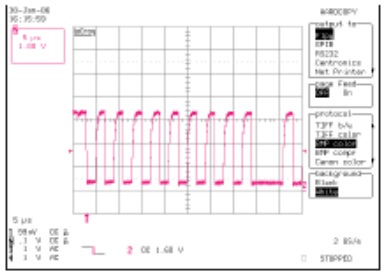
Fig. 4-6


CVBS output error
Analog signals are inputed normally IC801
No
Check the connection between 51pin in IC801 and JACK1
Yes
Power is normal at IC801-2,19,37,53? (JACK PCB)
No
Check the connection between IC801 and power
Yes
Pin38,39 in IC801 are normal I2C?
No
Check the connection between IC801-38,39 and VCR Micom. check IC801 peripheral circuit
Yes
Refer to a pattern image of Table 4-7
Video signal of about 1V appears at output jack?
No
Check the connection between IC801 and output jack
Yes
Check the RCA cable



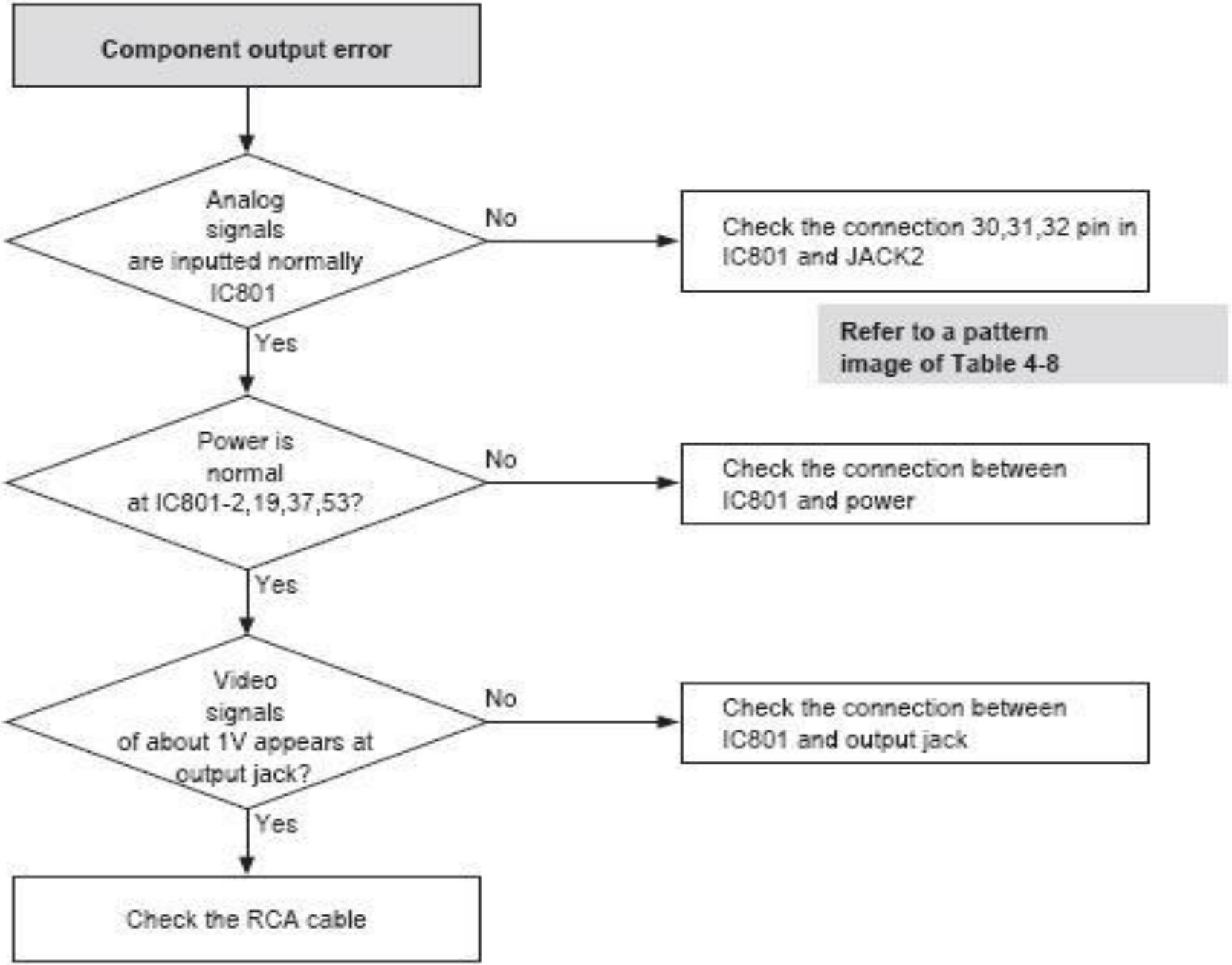


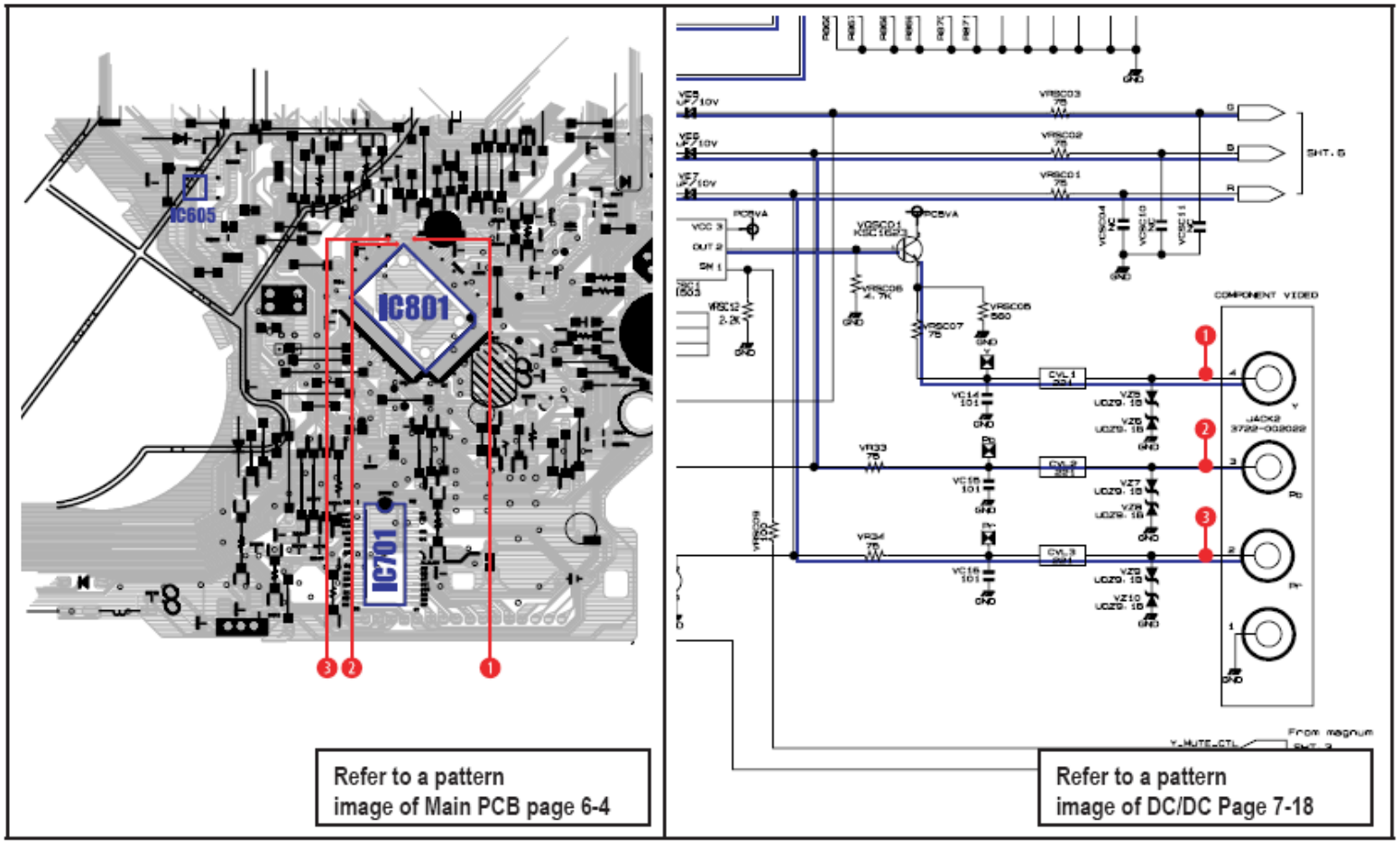
❶ IIC_CLOCK
IC801(Pin38)

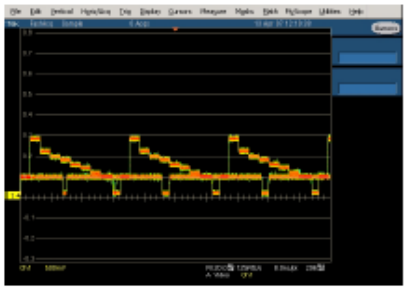


❷ IIC_DATA
IC801(Pin39)

Fig. 4-7

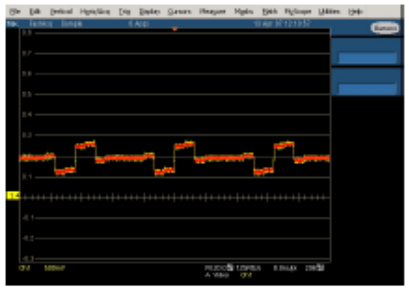

Component output error
Analog signals are inputted normally IC801
No
Check the connection 30,31,32 pin in IC801 and JACK2
Yes
Refer to a pattern image of Table 4-8
Power is normal at IC801-2,19,37,53?
No
Check the connection between IC801 and power
Yes
Video signals of about 1V appears at output jack?
No
Check the connection between IC801 and output jack
Yes
Check the RCA cable





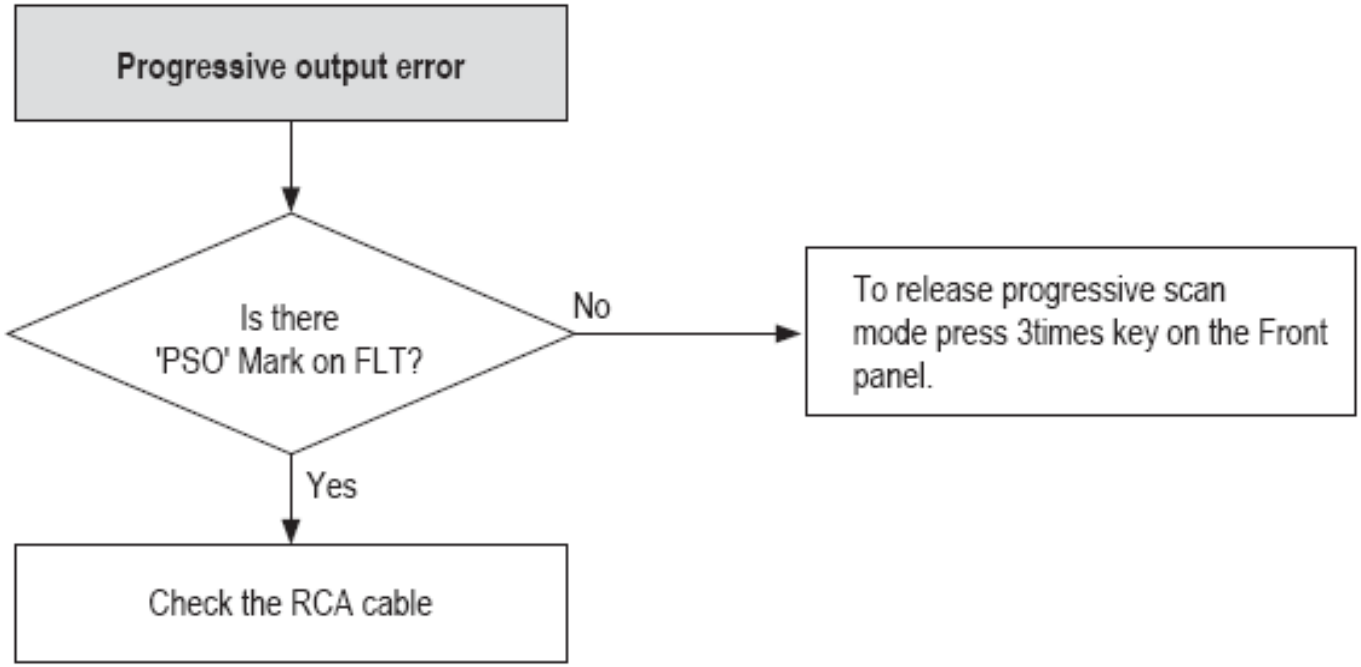
❶ Y(Color-bar)
IC801(Pin30)

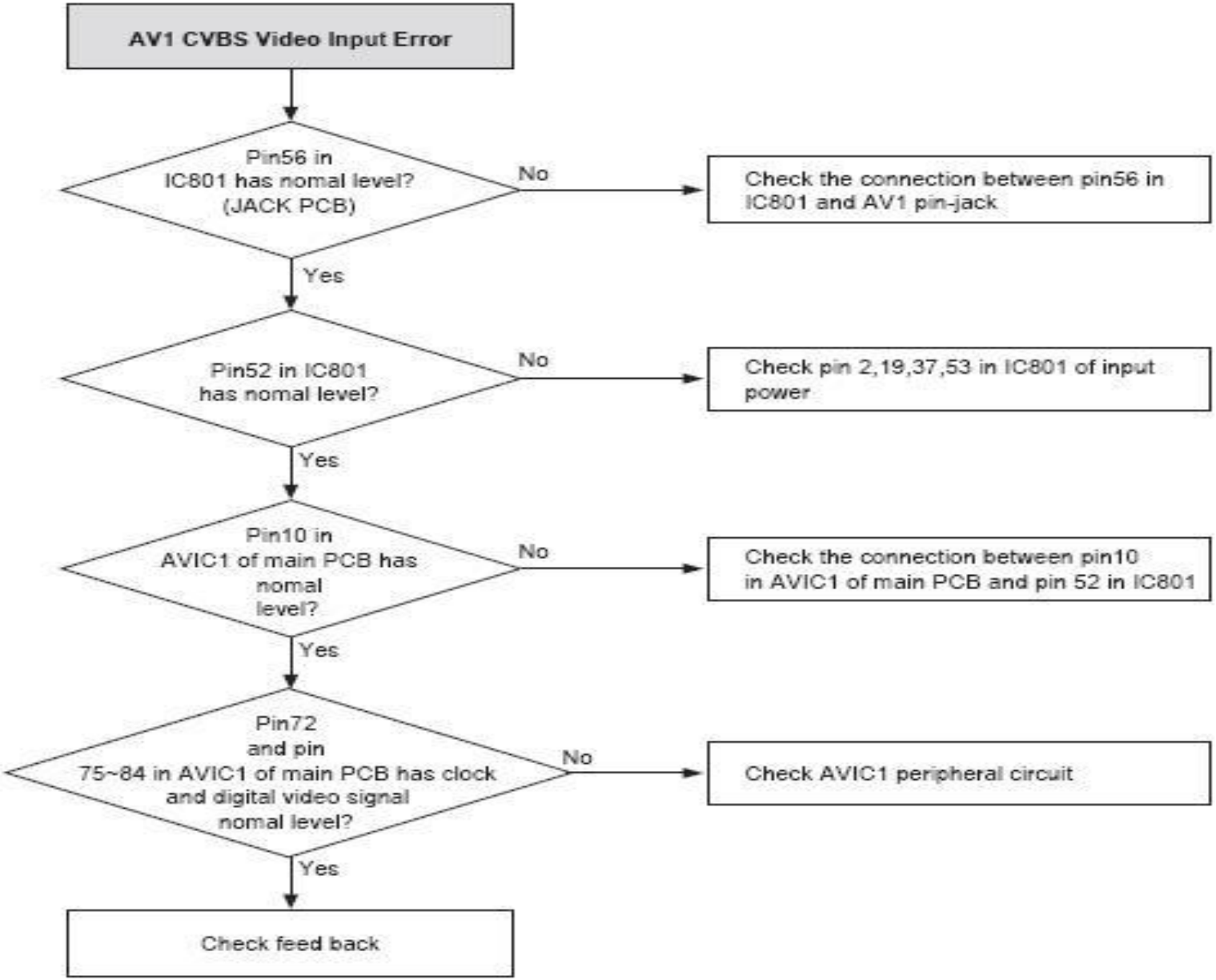
❷ Pb(Color-bar)
IC801(Pin31)

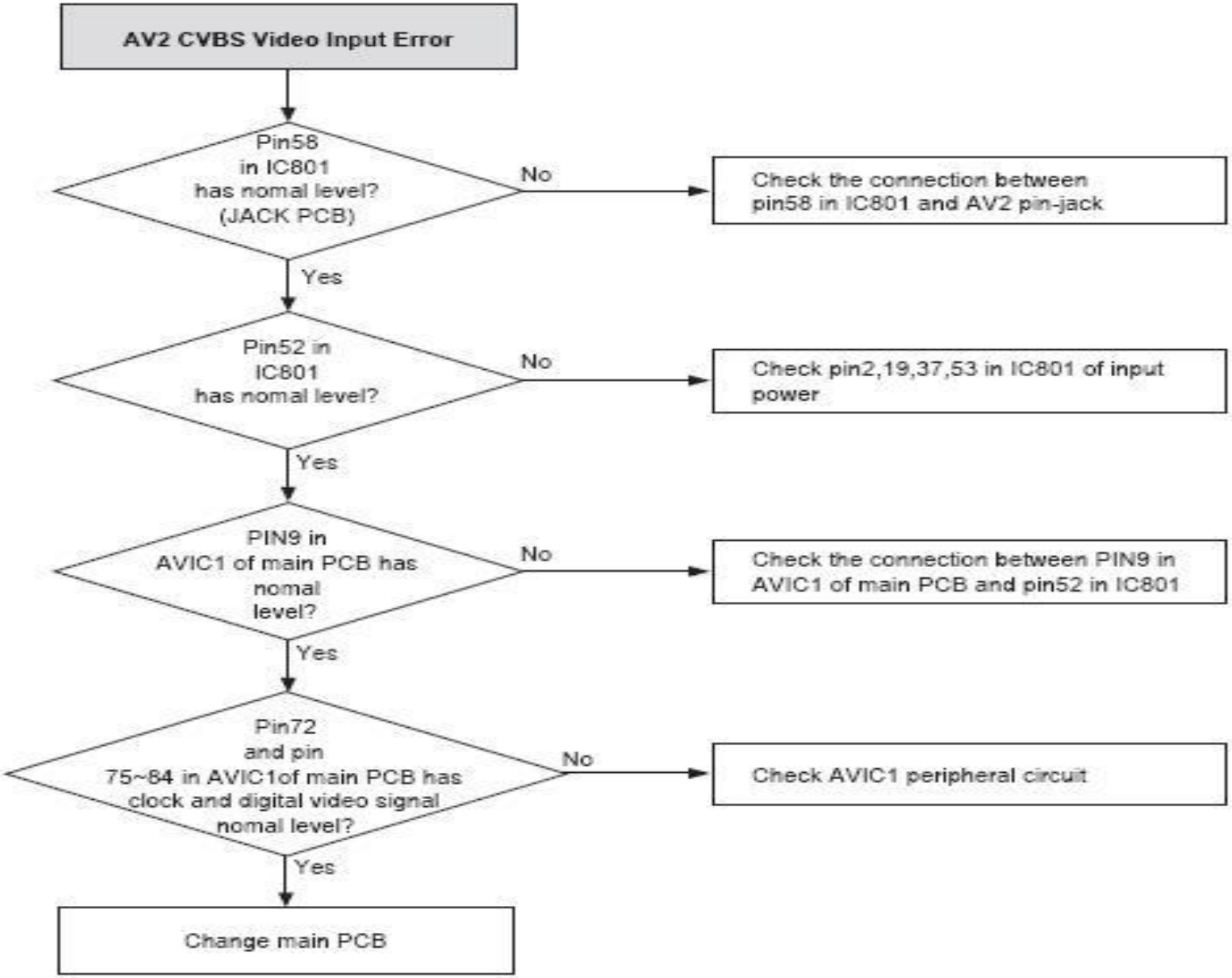


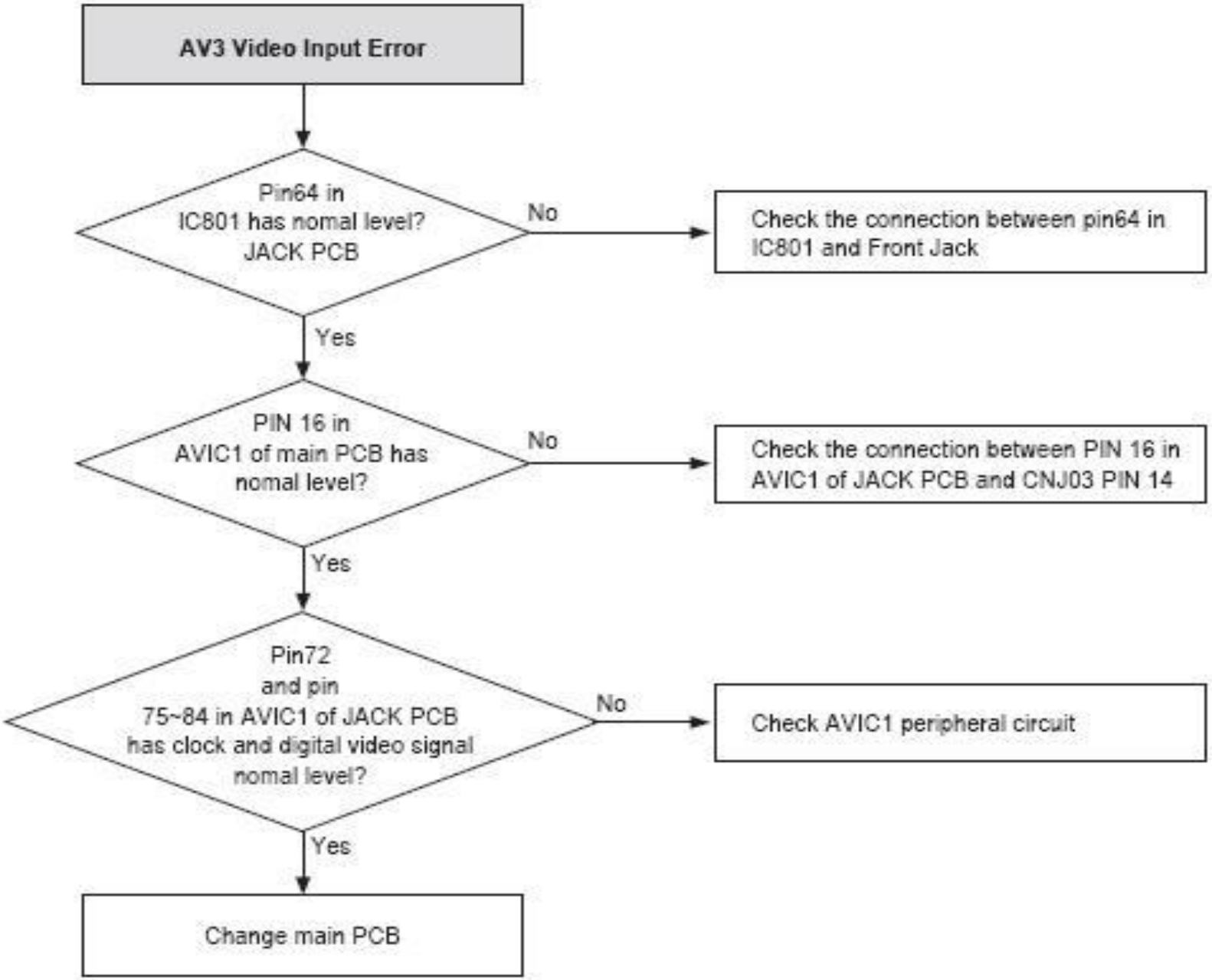
❸ Pr(Color-bar)
IC801(Pin32)

Fig. 4-9

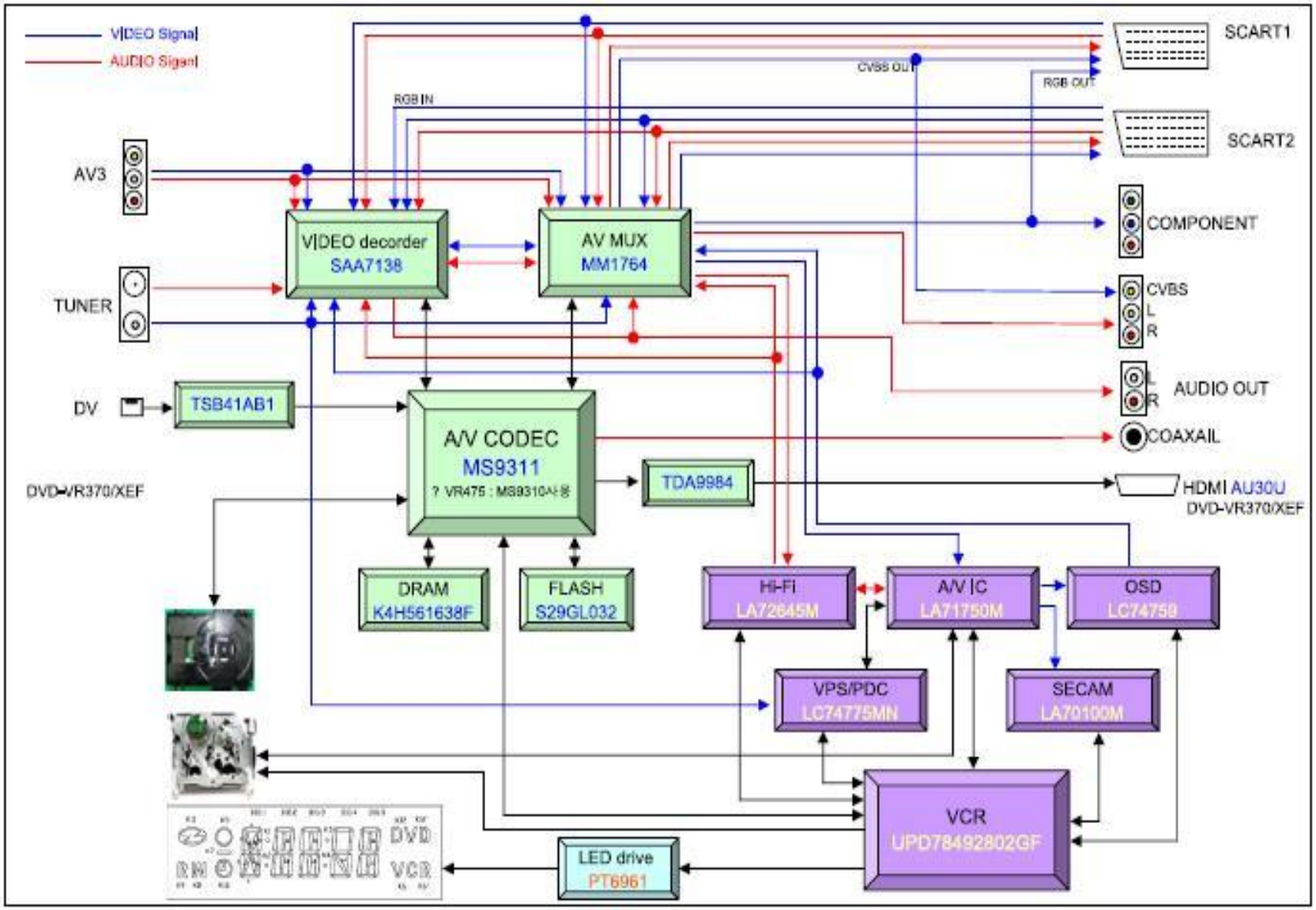

Progressive output error
Is there
'PSO' Mark on FLT?
No
To release progressive scan mode press 3times key on the Front panel.
Yes
Check the RCA cable


AV1 CVBS Video Input Error
Pin56 in IC801 has nomal level? (JACK PCB)
No
Check the connection between pin56 in IC801 and AV1 pin-jack
Yes
Pin52 in IC801 has nomal level?
No
Check pin 2,19,37,53 in IC801 of input power
Yes
Pin10 in AVIC1 of main PCB has nomal level?
No
Check the connection between pin10 in AVIC1 of main PCB and pin 52 in IC801
Yes
Pin72 and pin 75~84 in AVIC1 of main PCB has clock and digital video signal nomal level?
No
Check AVIC1 peripheral circuit
Yes
Check feed back


AV2 CVBS Video Input Error
Pin58 in IC801 has nomal level? (JACK PCB)
No
Check the connection between pin58 in IC801 and AV2 pin-jack
Yes
Pin52 in IC801 has nomal level?
No
Check pin2,19,37,53 in IC801 of input power
Yes
PIN9 in AVIC1 of main PCB has nomal level?
No
Check the connection between PIN9 in AVIC1 of main PCB and pin52 in IC801
Yes
Pin72 and pin 75~84 in AVIC1of main PCB has clock and digital video signal nomal level?
No
Check AVIC1 peripheral circuit
Yes
Change main PCB

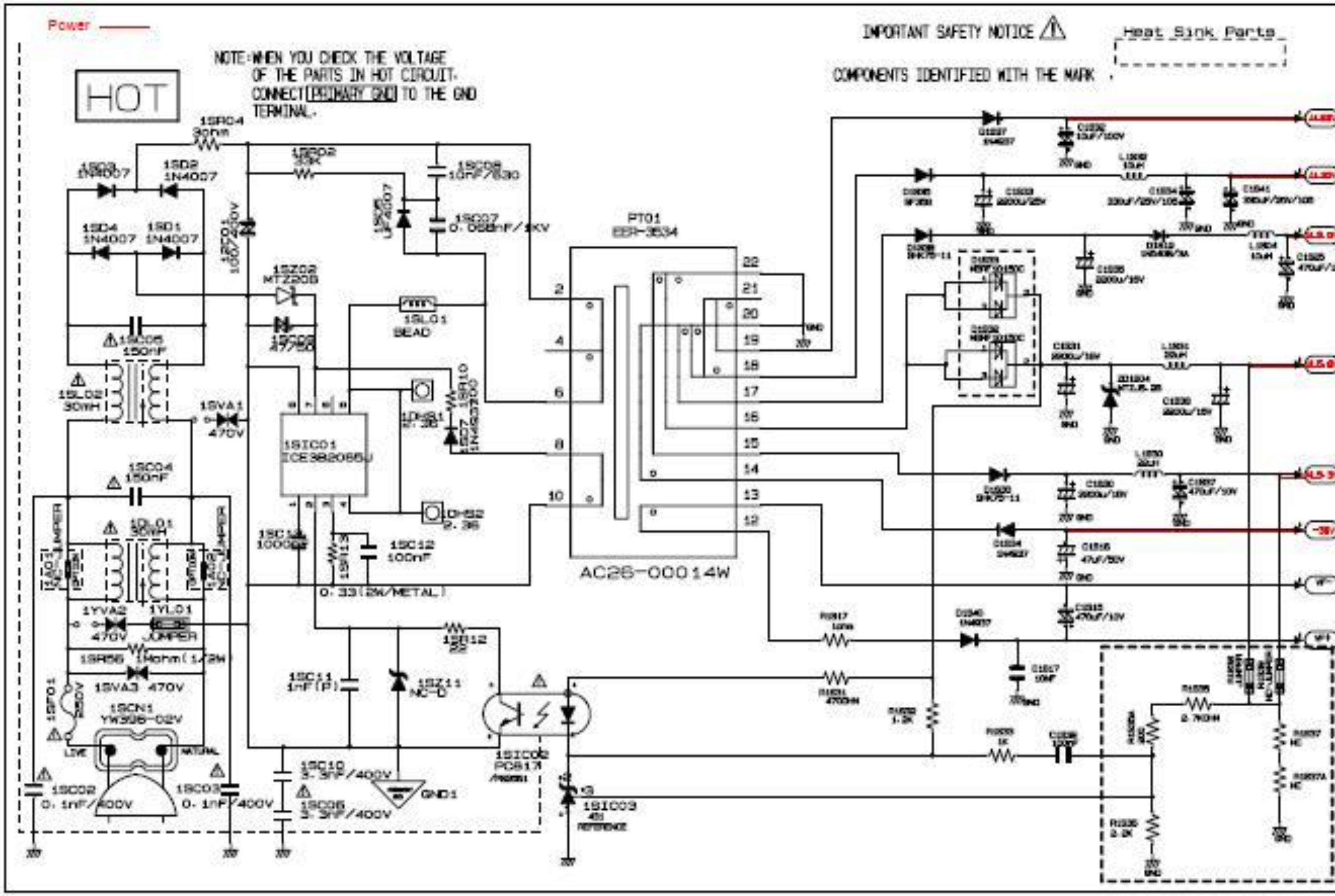

AV3 Video Input Error
Pin64 in IC801 has nomal level? JACK PCB
No
Check the connection between pin64 in IC801 and Front Jack
Yes
PIN 16 in AVIC1 of main PCB has nomal level?
No
Check the connection between PIN 16 in AVIC1 of JACK PCB and CNJ03 PIN 14
Yes
Pin72 and pin 75~84 in AVIC1 of JACK PCB has clock and digital video signal nomal level?
No
Check AVIC1 peripheral circuit
Yes
Change main PCB

Schematic Diagram

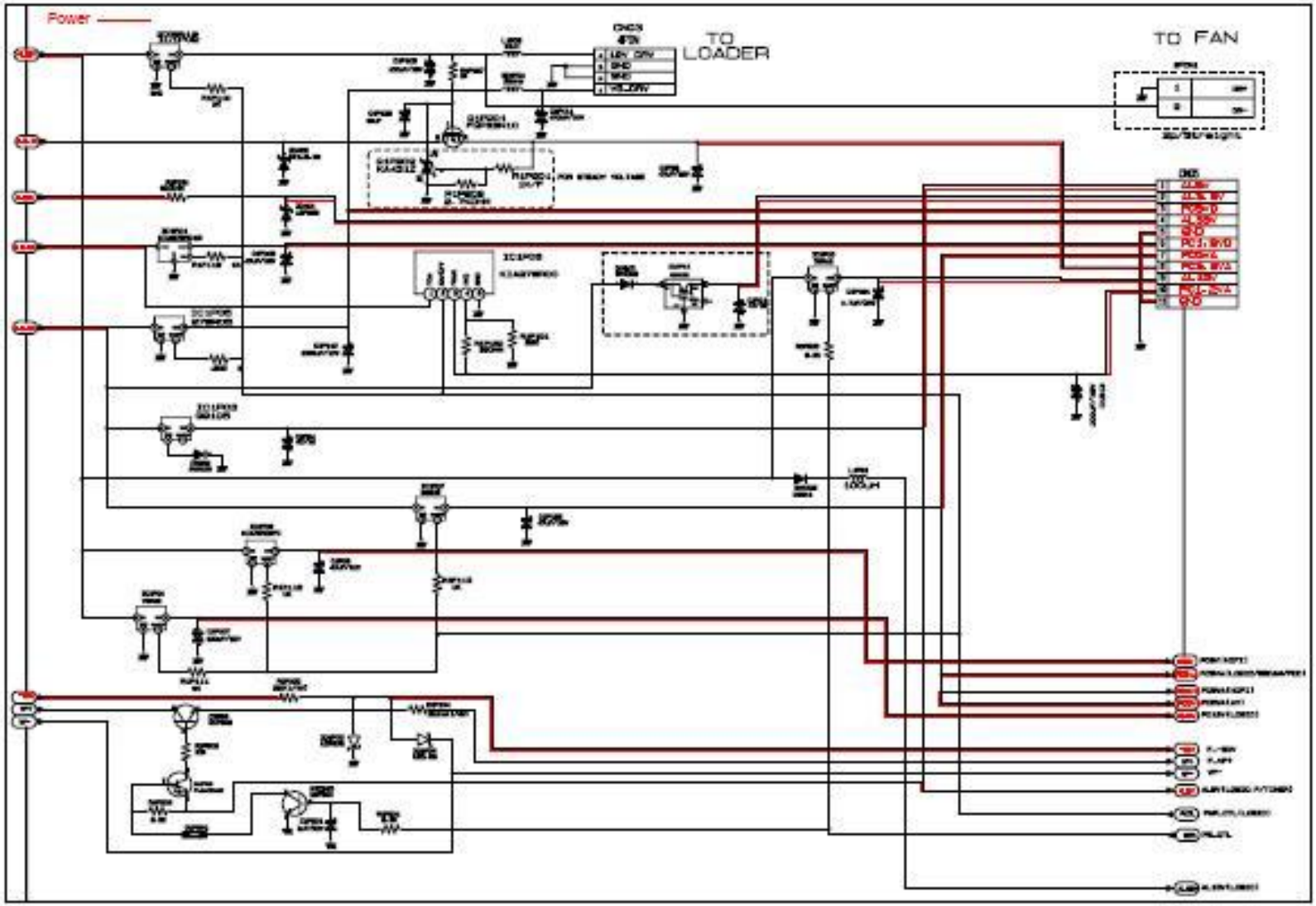


All Block Diagram

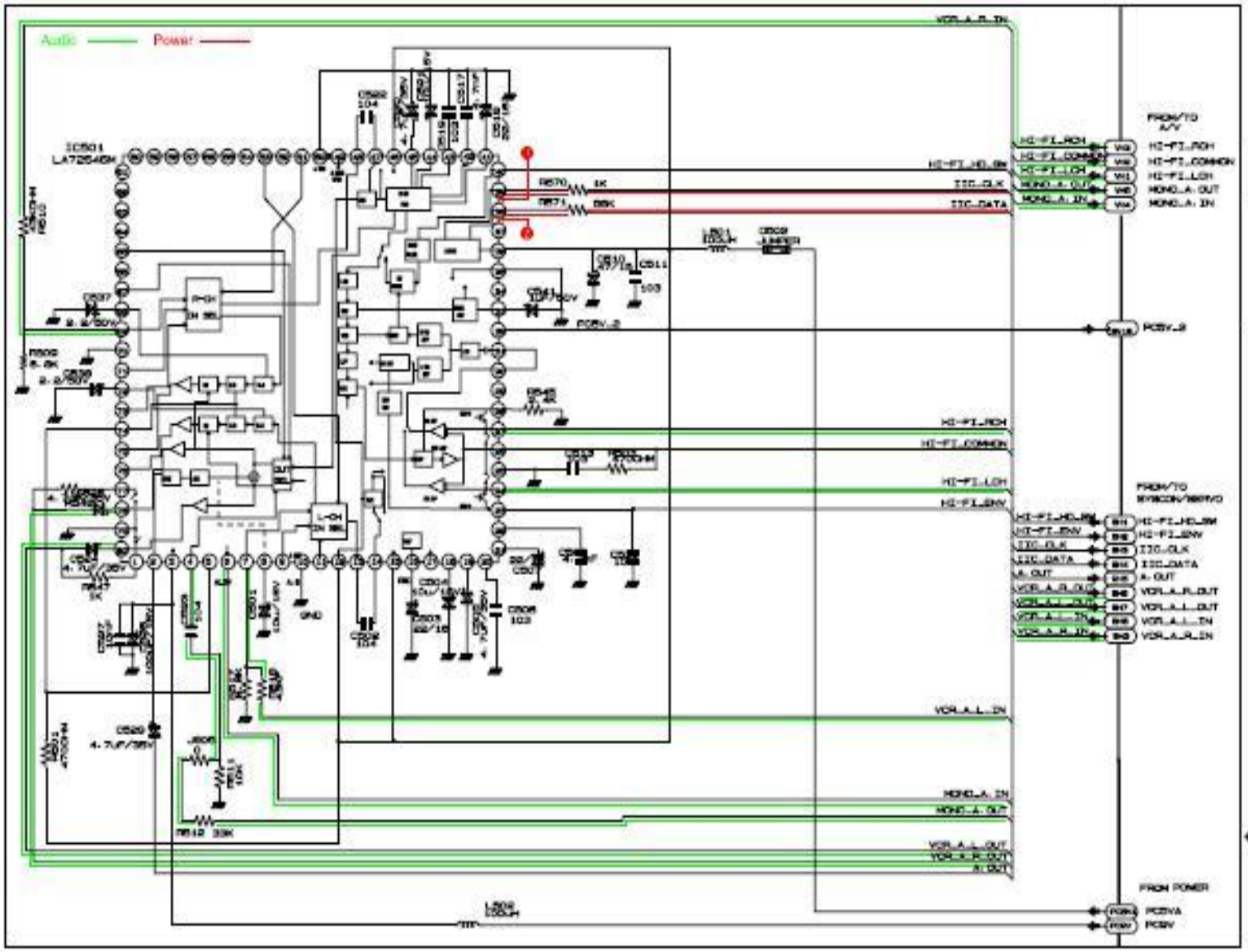
7-3 S.M.P.S (VCR PCB)

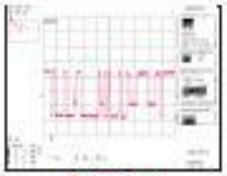


7-4 Power (VCR PCB)

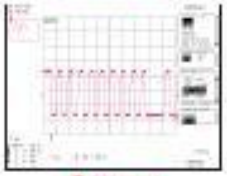


7-5 Hi_Fi (VCR PCB)





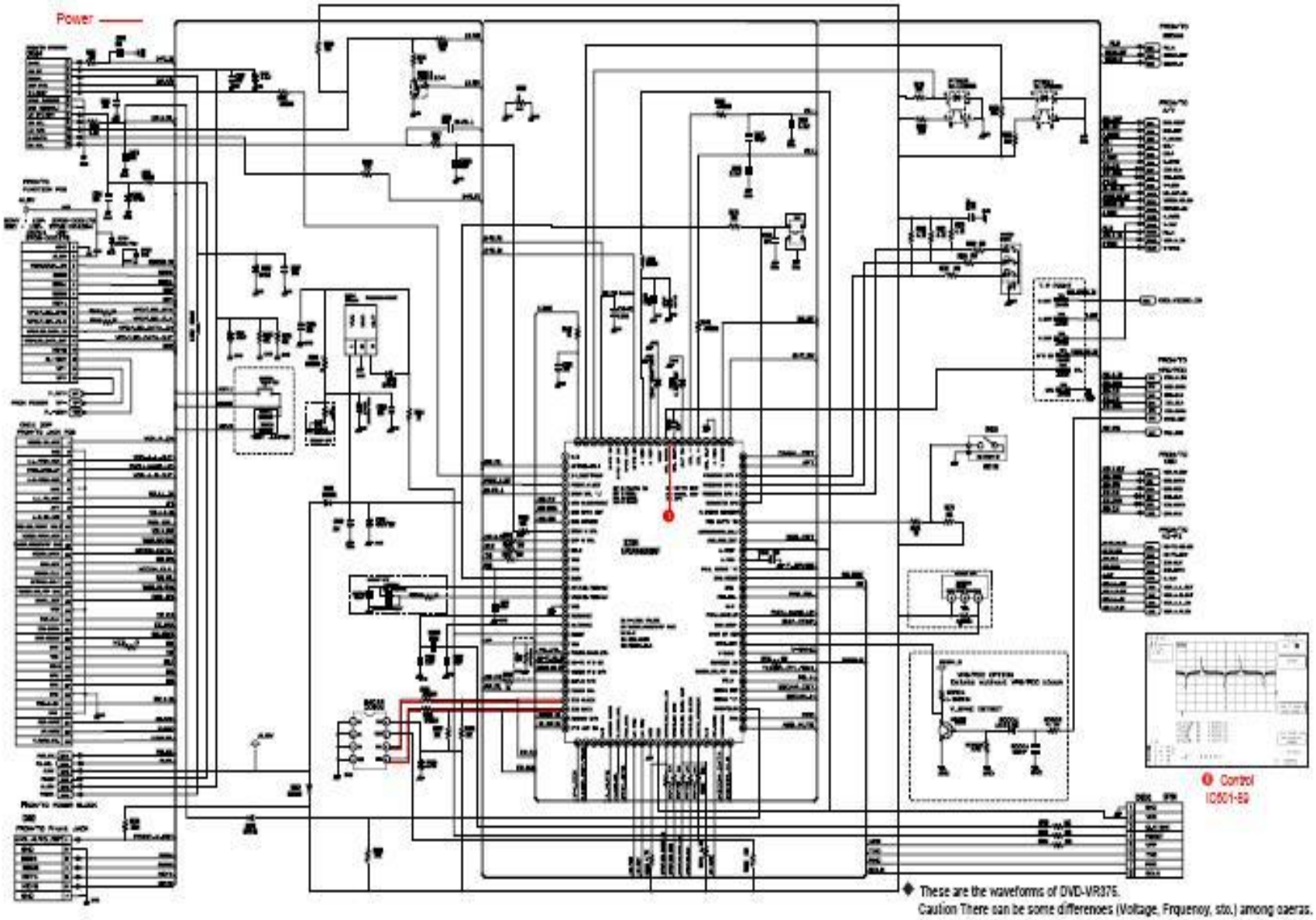
❶ IIC_CLOCK
IC501(Pin39)

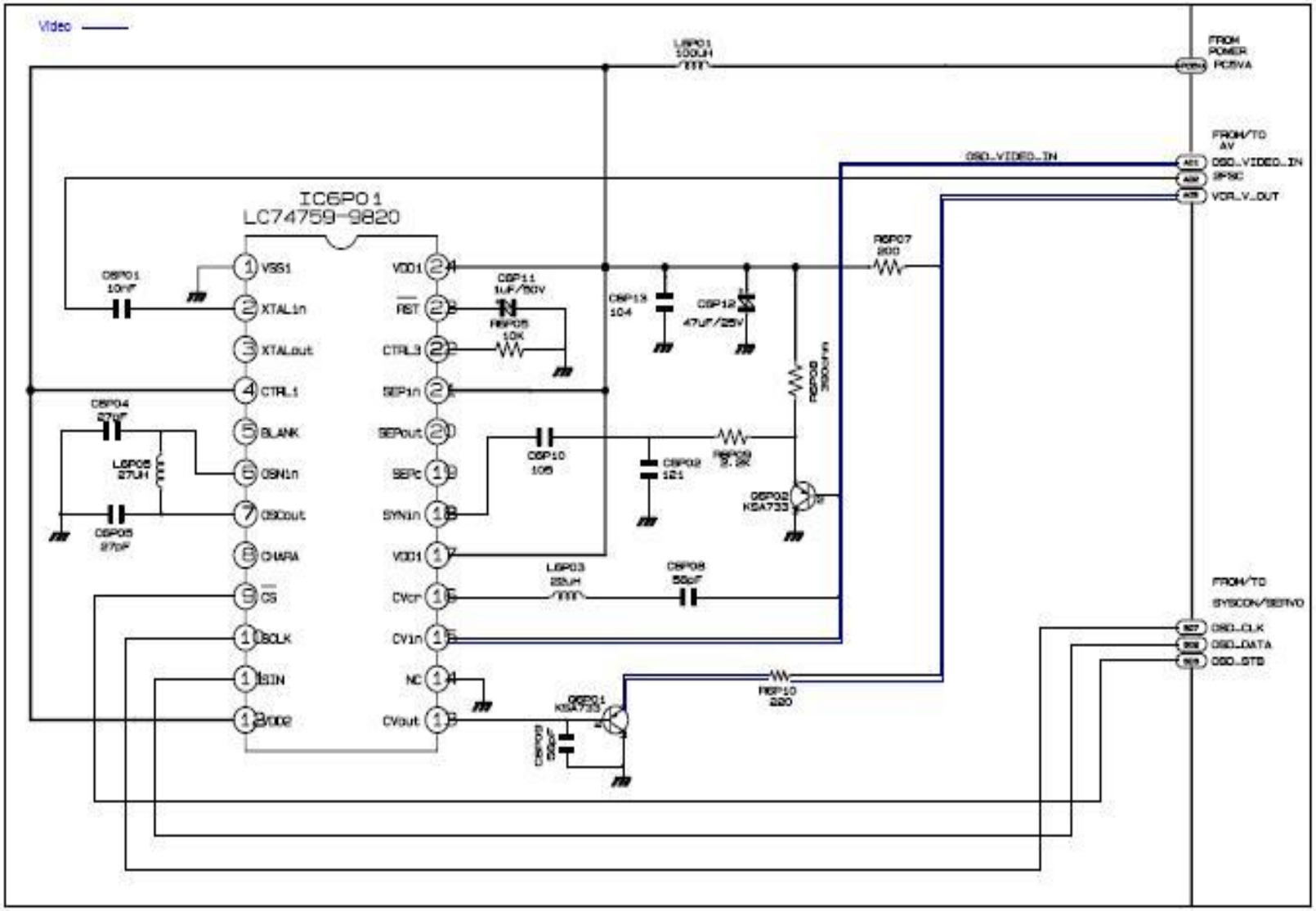


❶ IIC_DATA
IC501(Pin38)

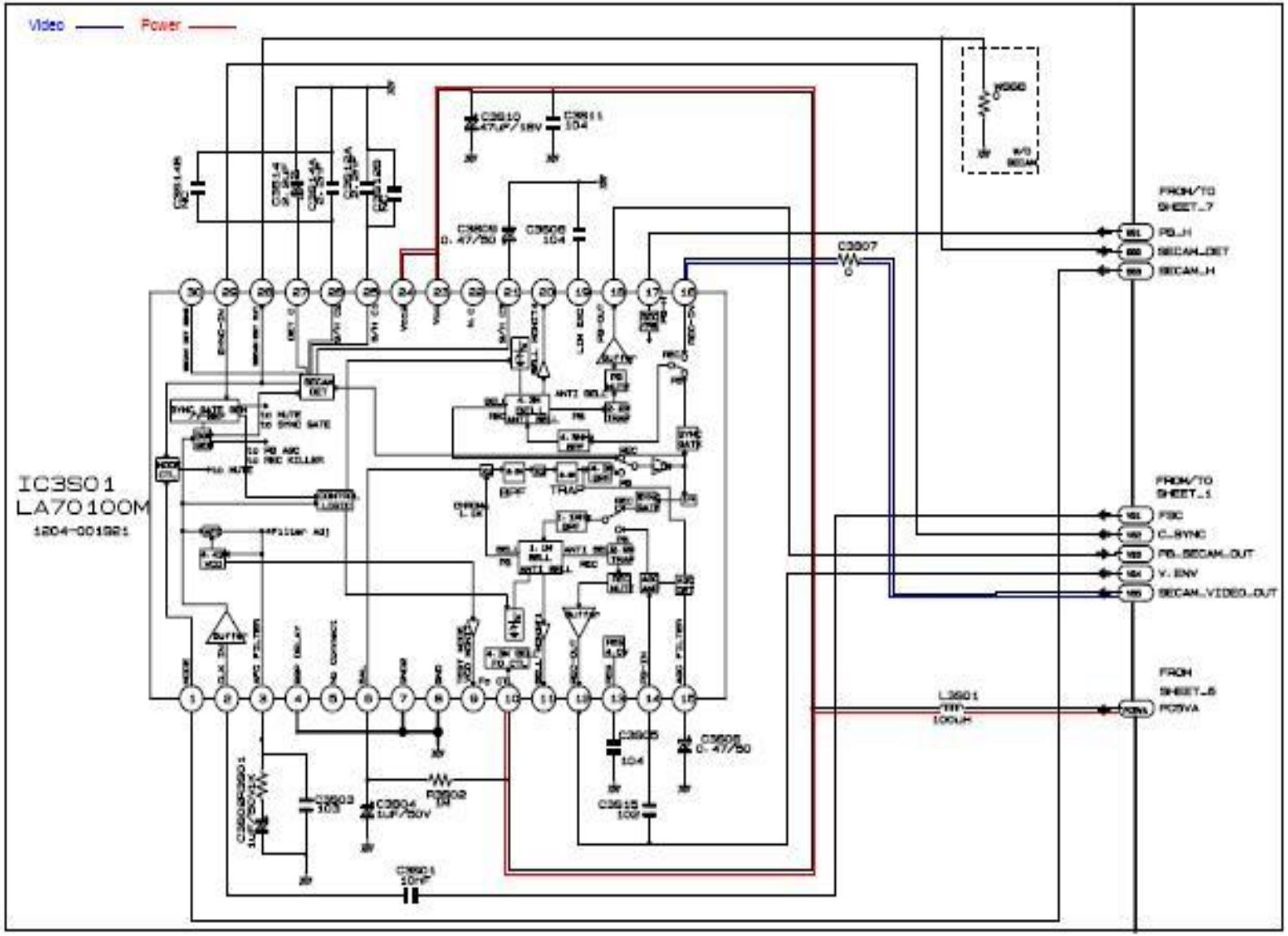
◆ These are the waveforms of DVD-VR376.
Caution There can be some differences (Voltage, Frquency, etc.) among oaeras.

7-6 LOGIC (VCR PCB)

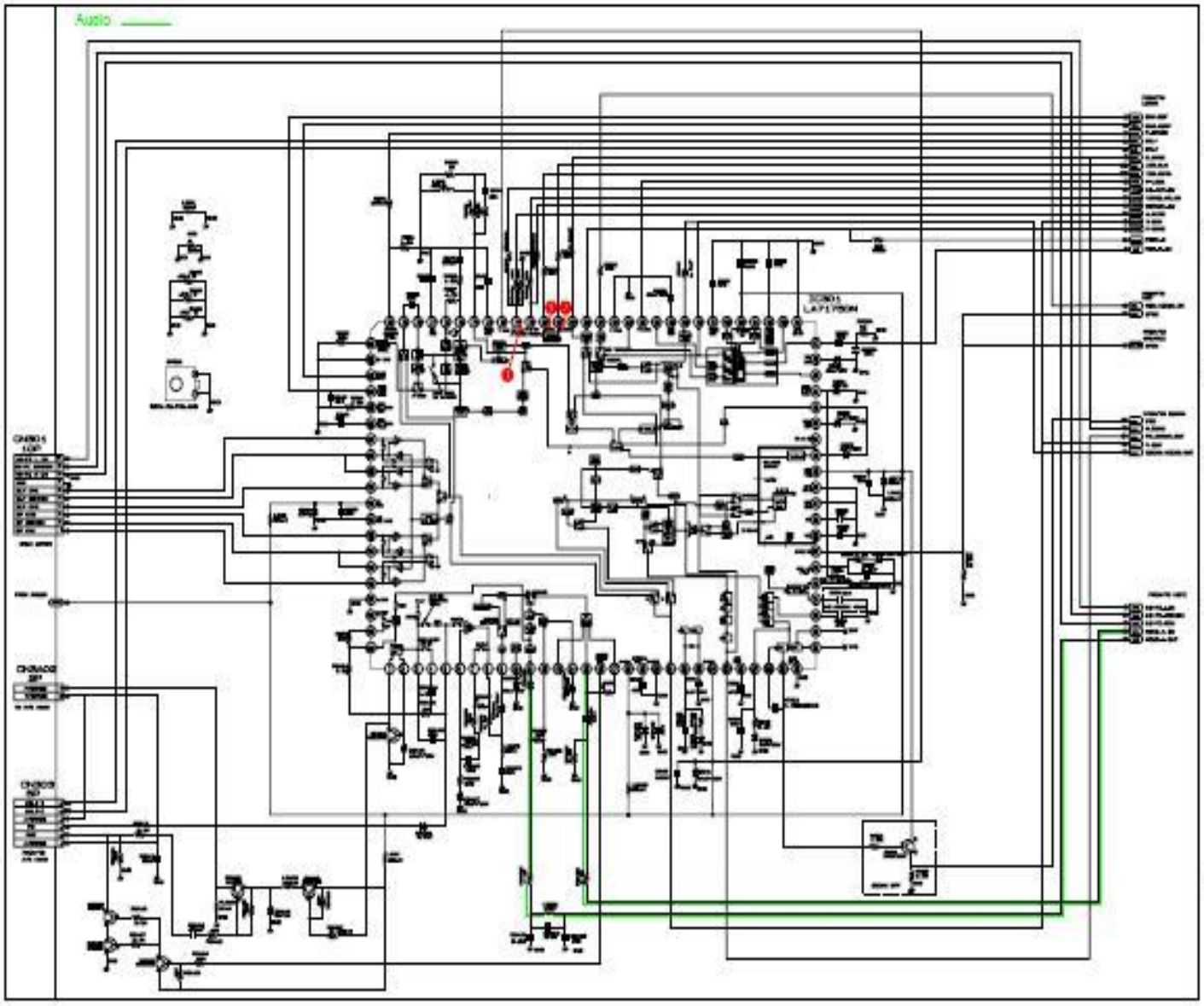


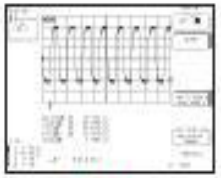


7-8 SECAM (VCR PCB)

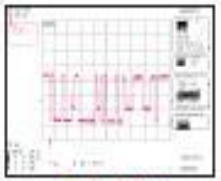


7-9 VCR A_V (VCR PCB)

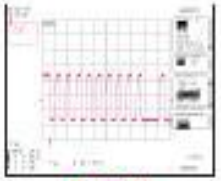




❶ FG
IC301 PIN 71



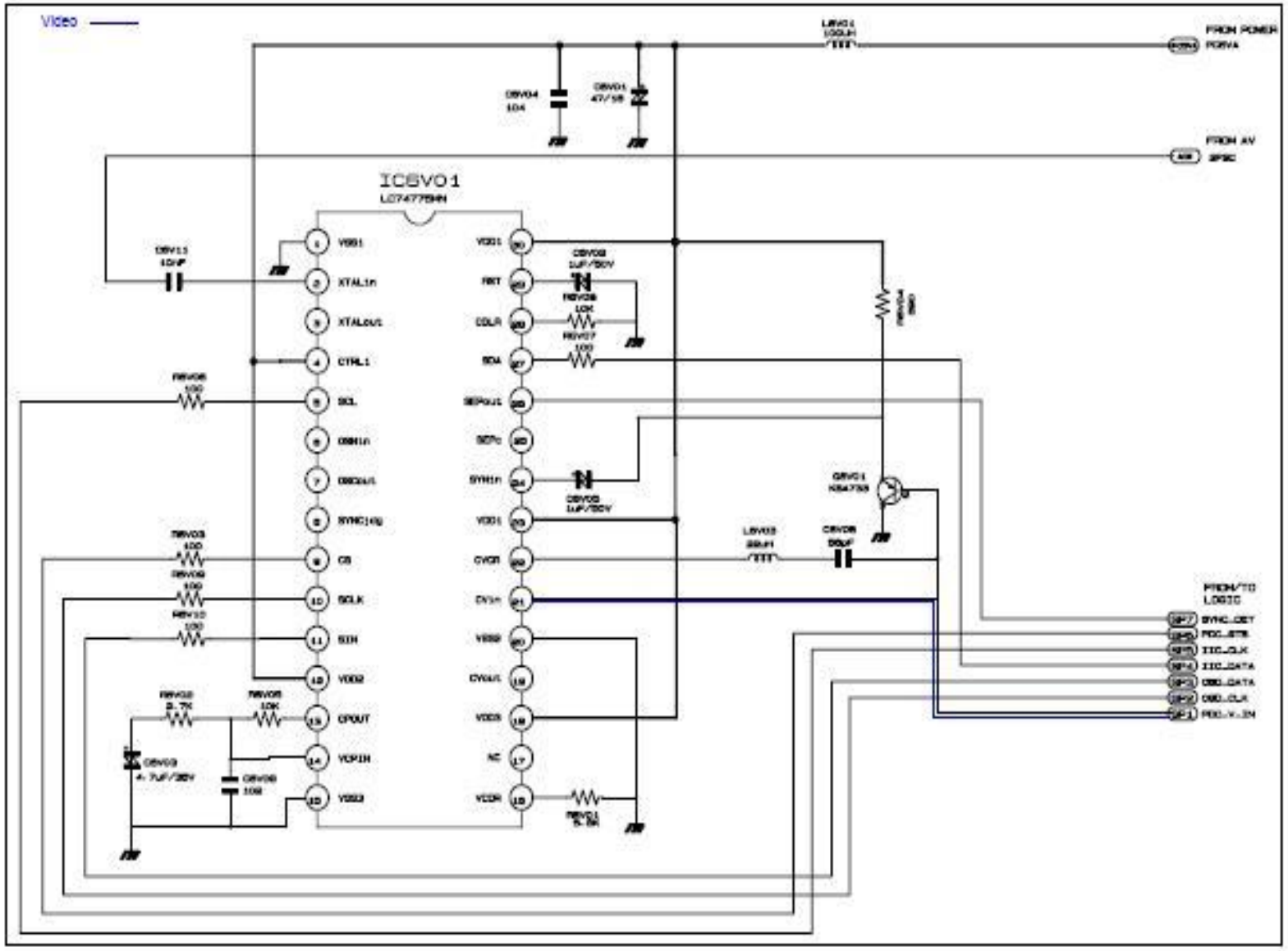
❷ IIC_CLOCK
IC301(Pin69)

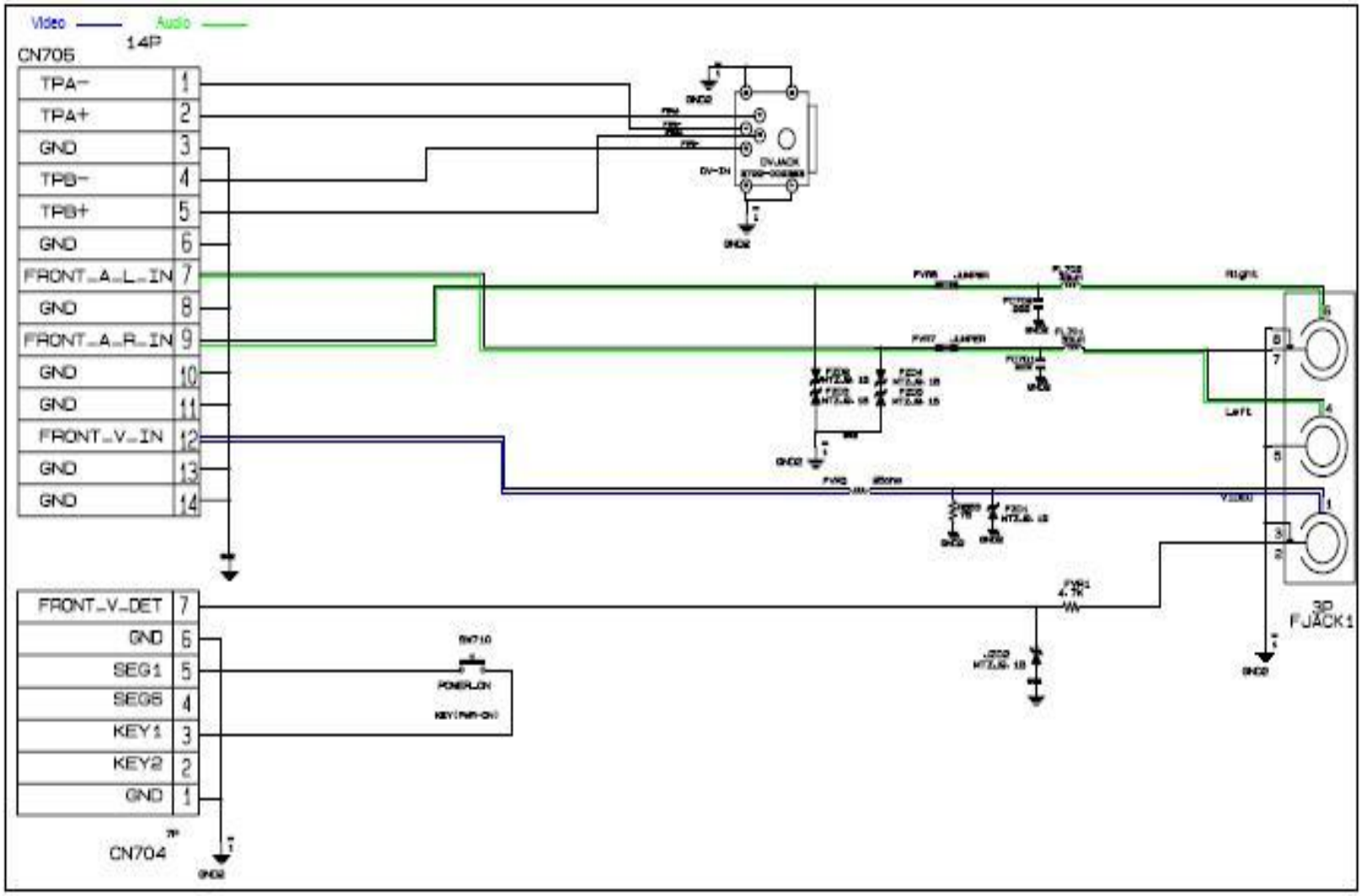


❸ IIC_DATA
IC301(Pin68)

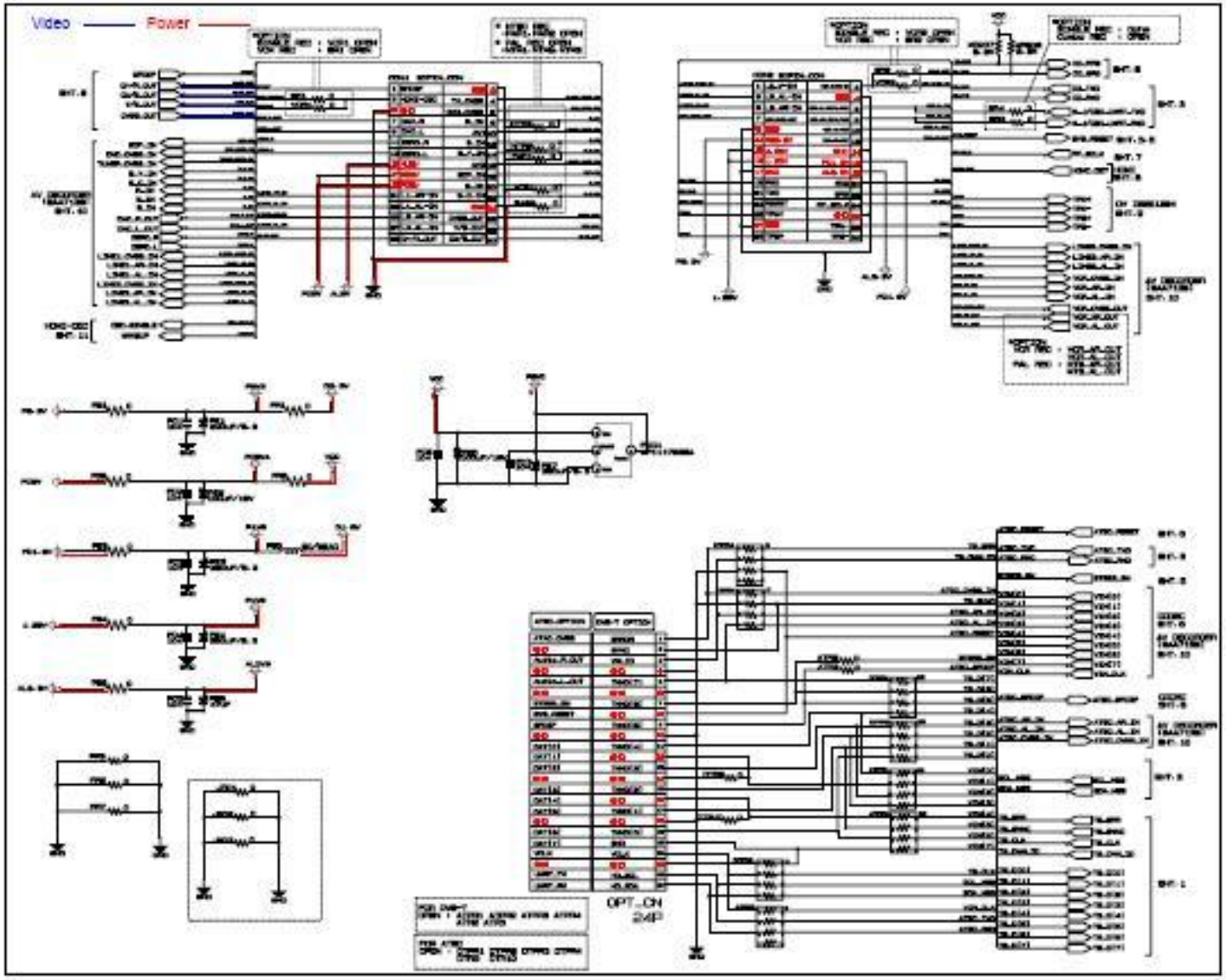
♦ These are the waveforms of DVD-VR876.
Caution There can be some differenses (Voltage, Frquency, sto.) among oaeras.

7-10 VPS_PDC (VCR PCB)

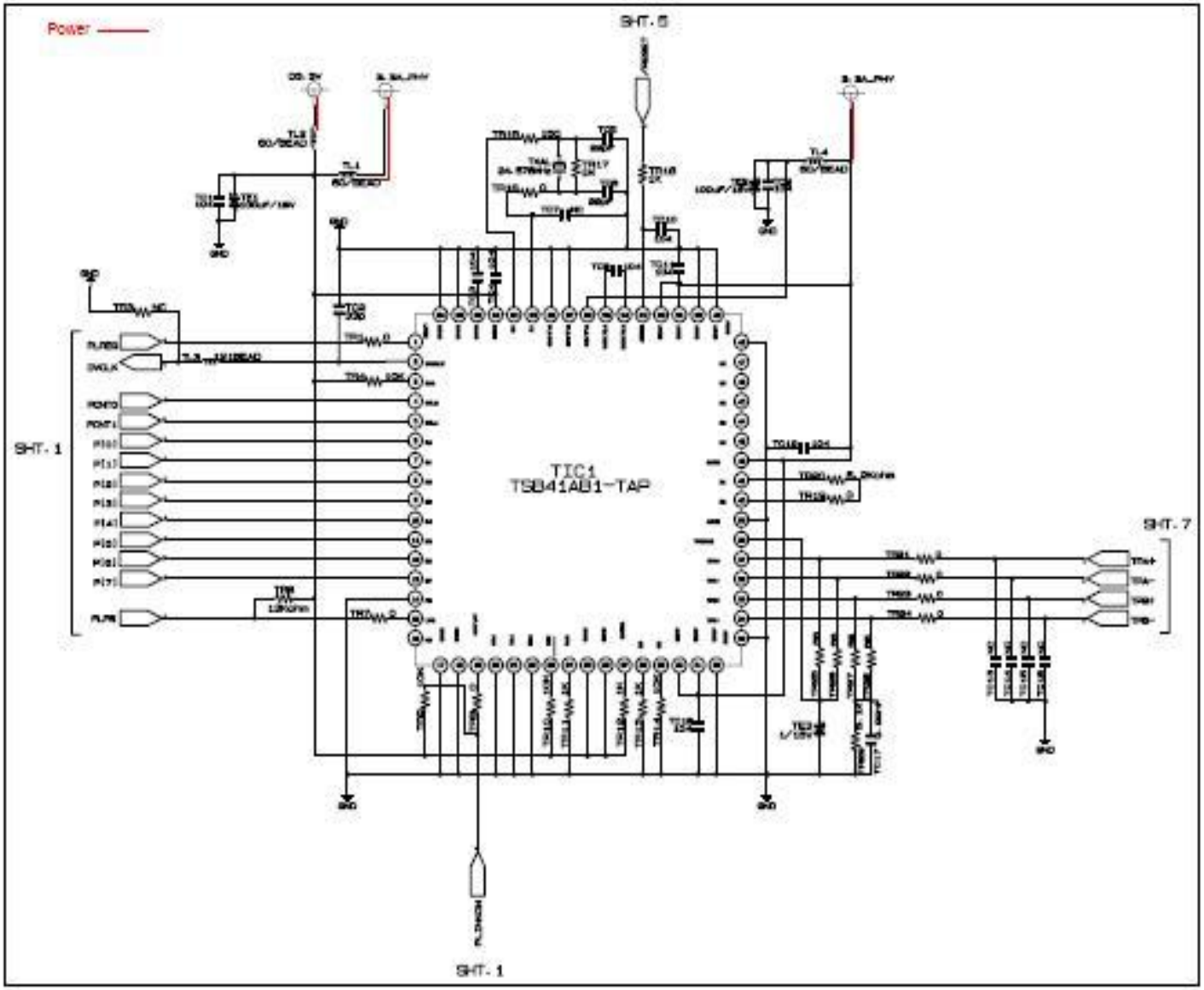



Video
Audio
14P
CN705
TPA-
TPA+
GND
TPB-
TPB+
GND
FRONT_A_L_IN
GND
FRONT_A_R_IN
GND
GND
FRONT_V_IN
GND
FRONT_V_DET
GND
SEG1
SEG6
KEY1
KEY2
GND
7P
CN704
Right
Left
3P
FJACK1

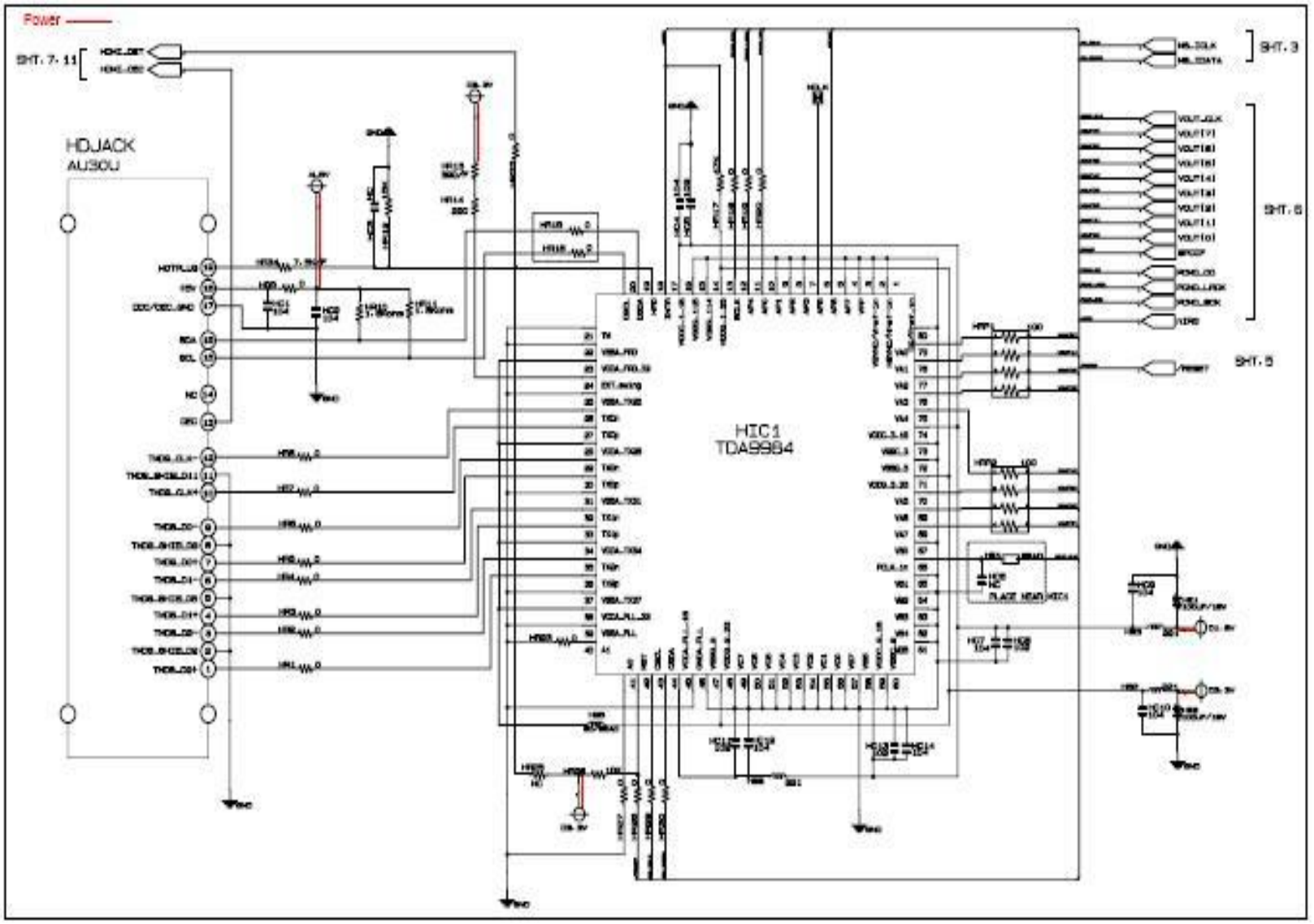
7-12 Connector & Power (Main PCB)



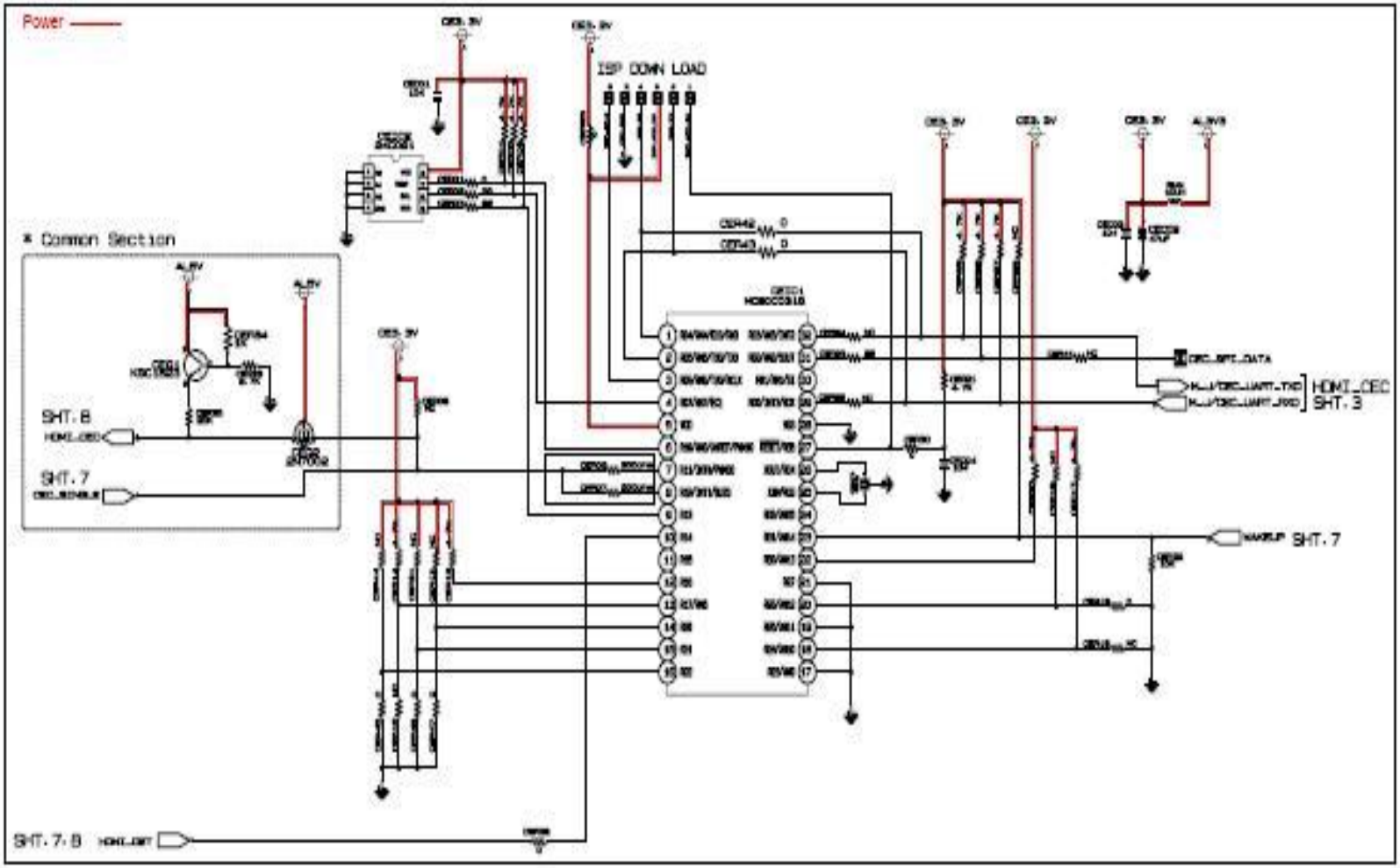
7-13 DV Interface(IEEE1394) (Main PCB)



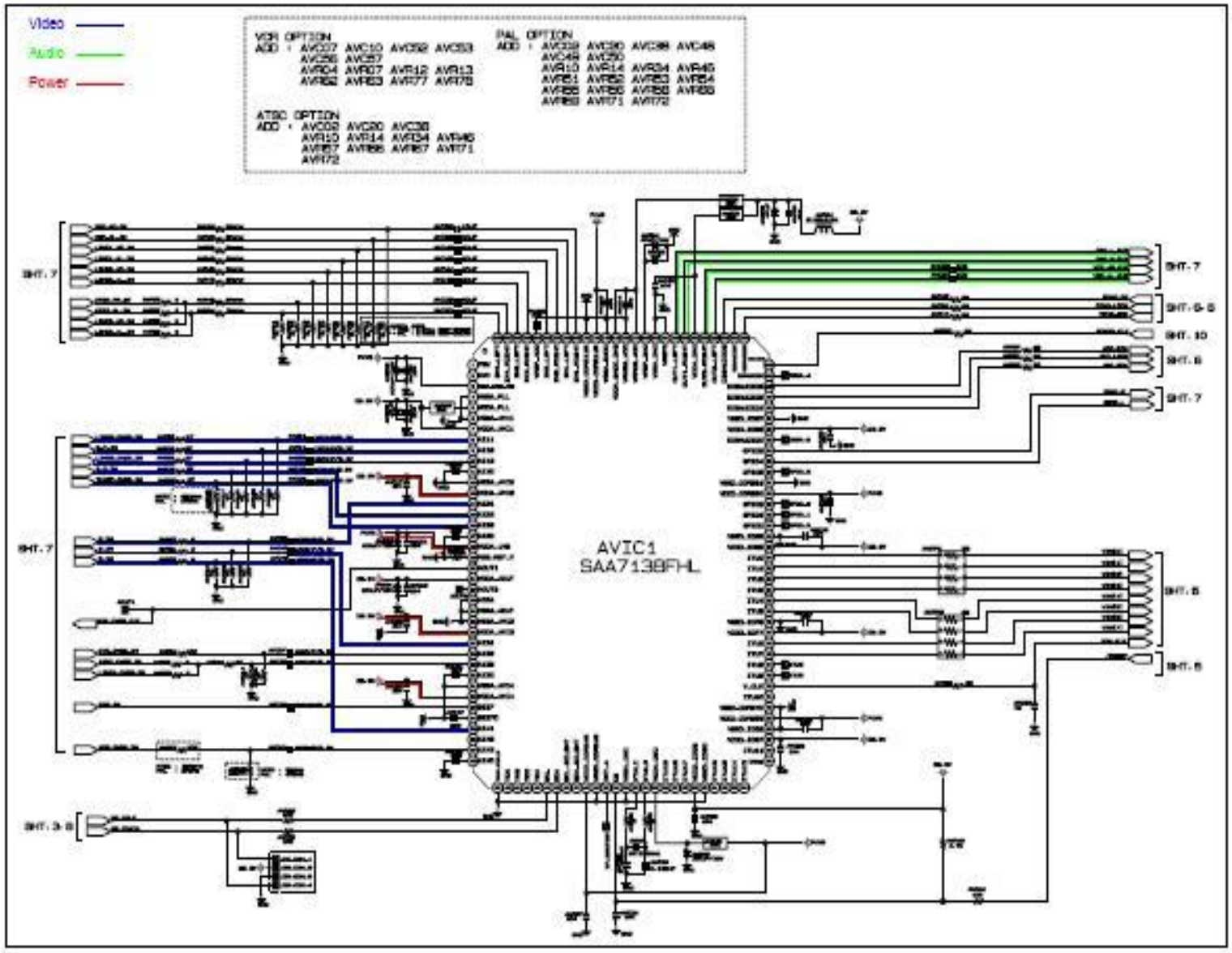
7-15 HDMI Interface (Main PCB)



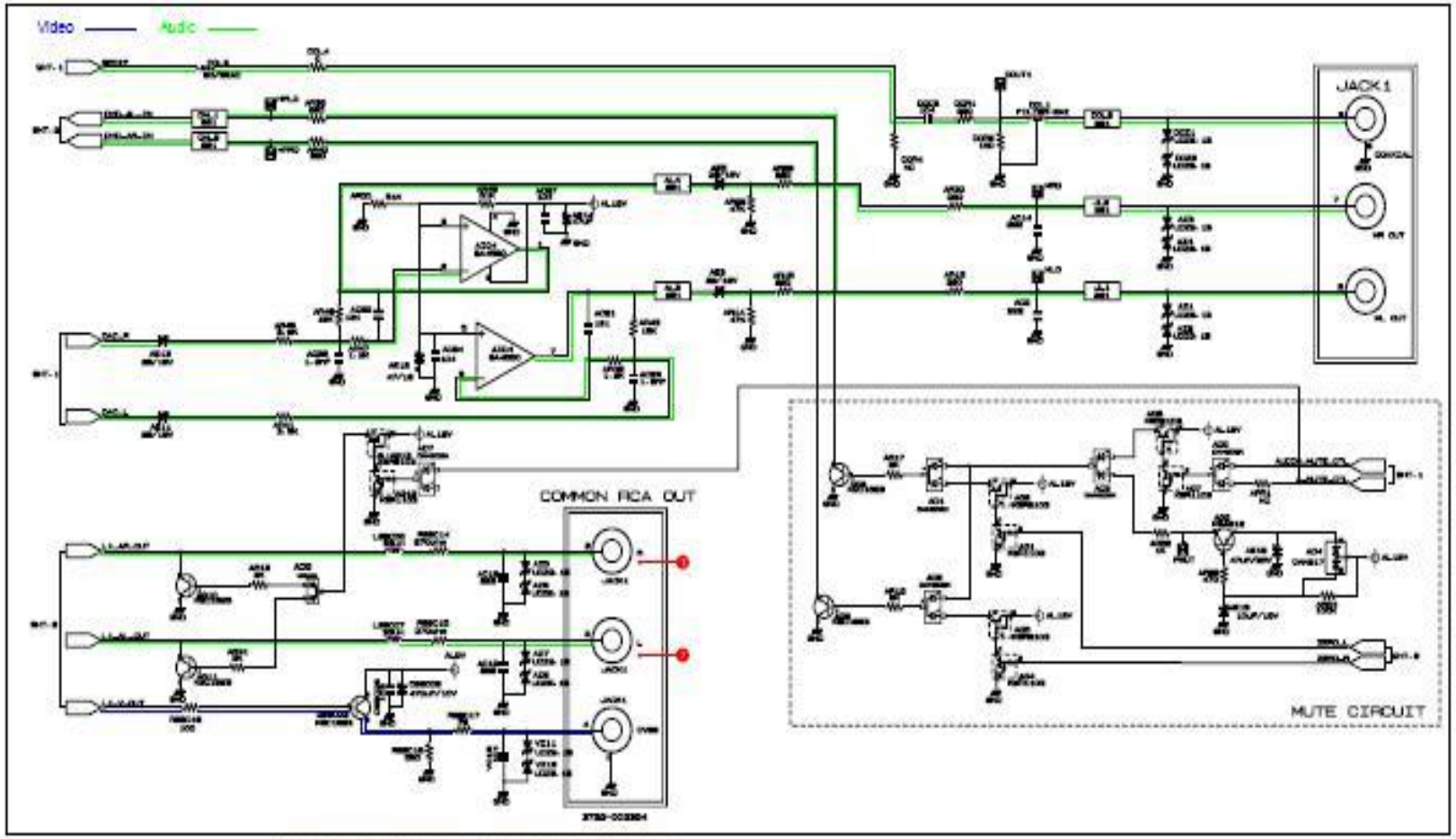
7-16 HDMI-CEC(ONLY COMBO) (Main PCB)



7-19 SAA7138 Video Decorder (Main PCB)



7-22 Audio Out (AV Jack PCB)

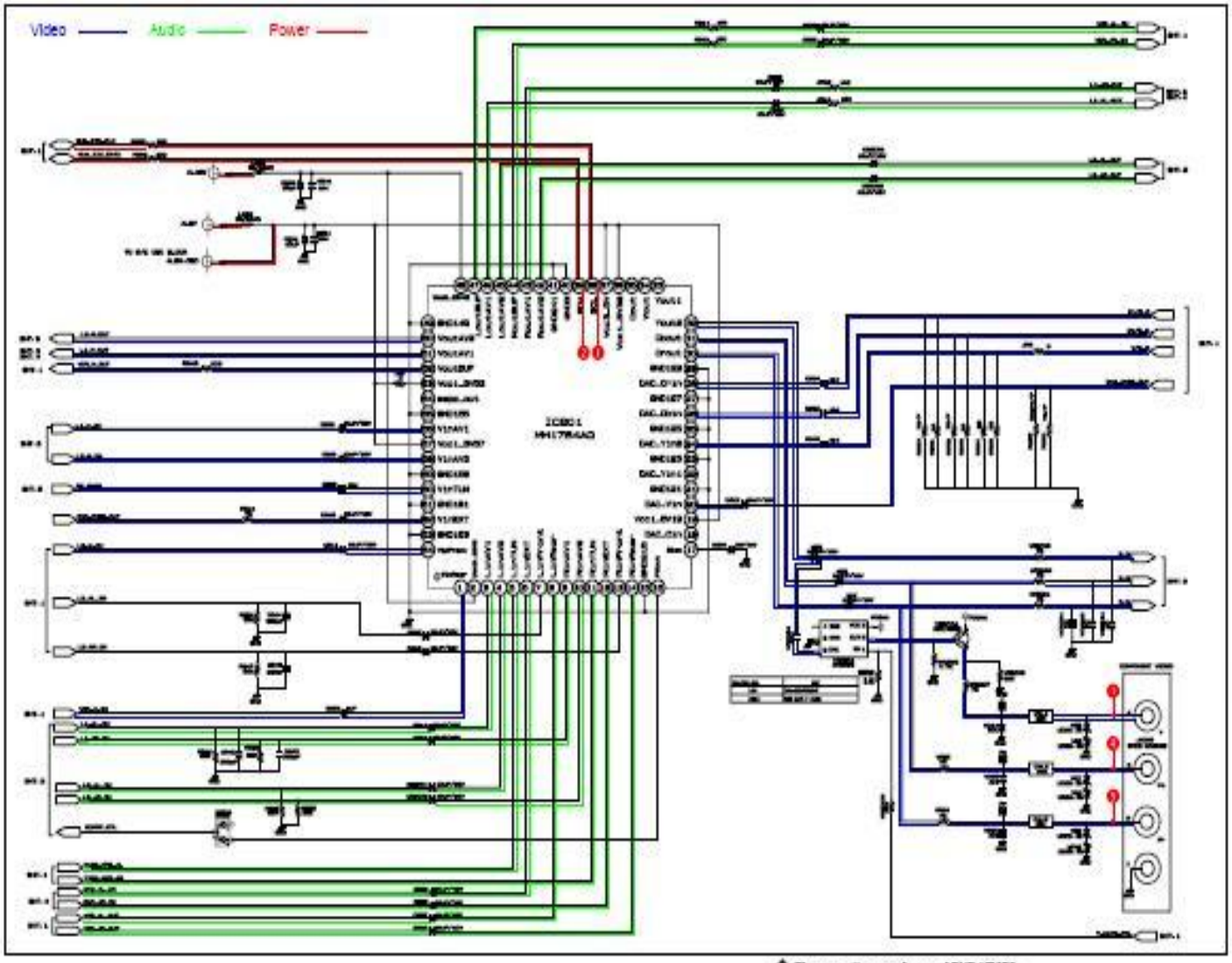


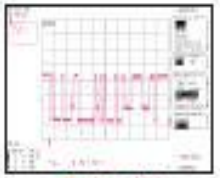
❶ AUDIO-R
IC801(3,4,7)

❶ AUDIO-L
IC801(9,10,13)

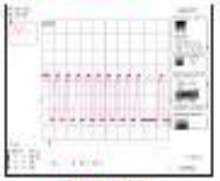
◆ These are the waveforms of DVD-VR376.
Caution There can be some differences (Voltage, Frquency, etc.) among oaeras.

7-23 AV Switch (AV Jack PCB)

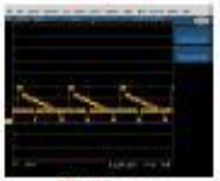




❶ IIC_CLOCK
IC801(Pin38)

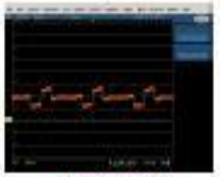


❶ IIC_DATA
IC801(Pin39)



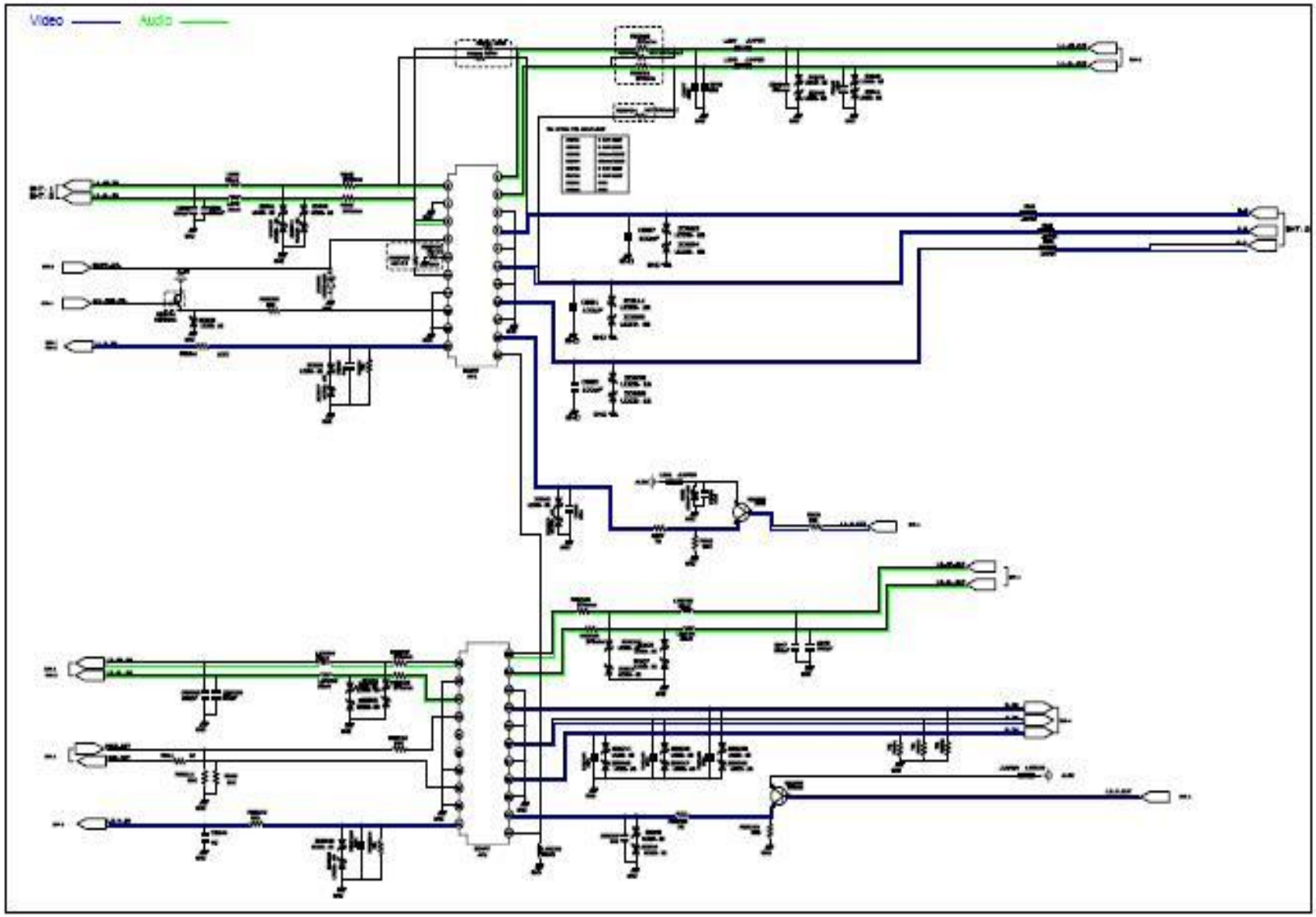
❶ Y(Color-bar)
IC801(Pin30)

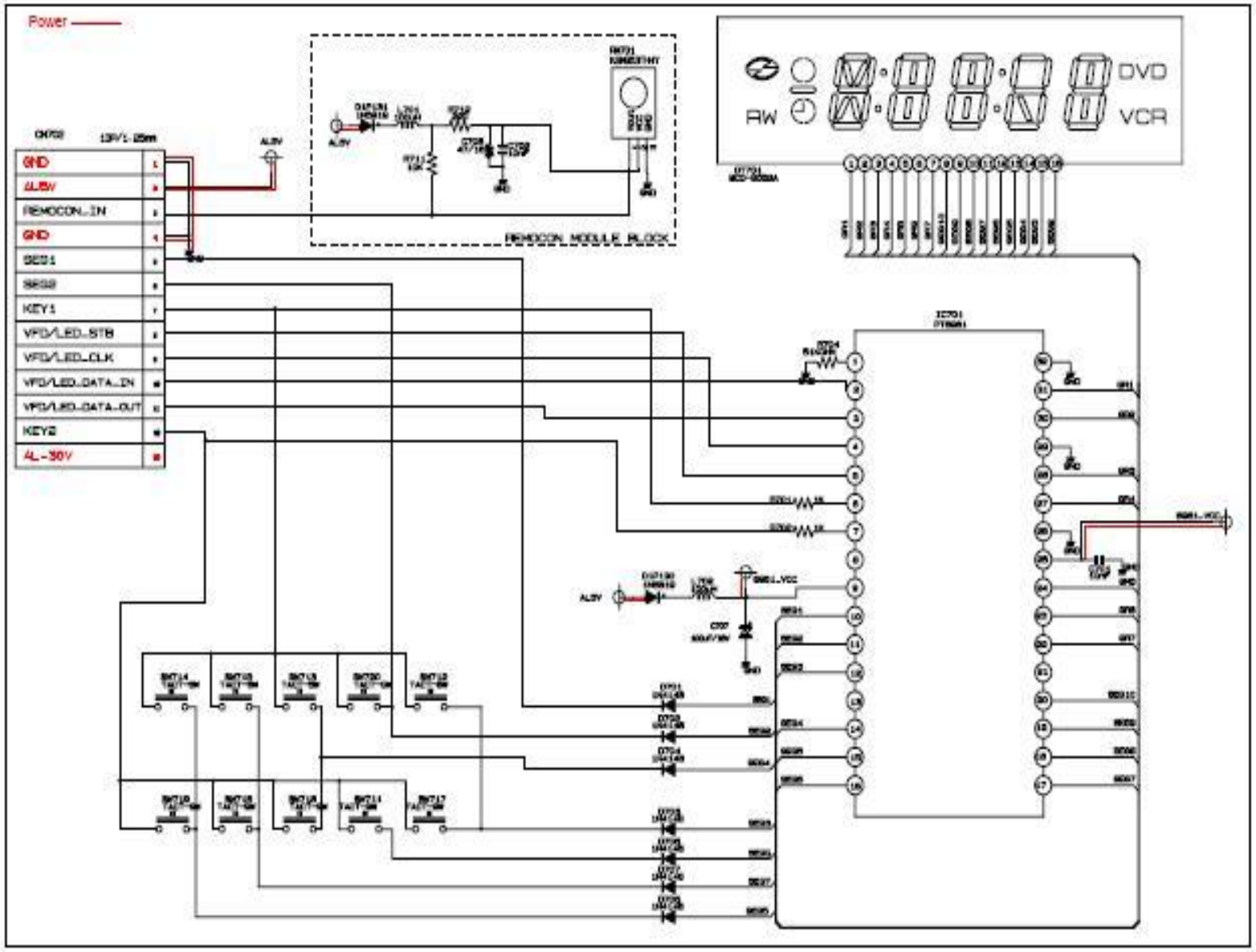
❶ Pb(Color-bar)
IC801(Pin31)



❶ Pr(Color-bar)
IC801(Pin32)

◆ These are the waveforms of DVD-VR876.
Caution There can be some differences (Voltage, Frquency, etc.) among caeras.


Video
Audio


Power
GND
ALSW
REMOCON_IN
GND
KEY1
VFD/LED_STB
VFD/LED_CLK
VFD/LED_DATA_IN
VFD/LED_DATA_OUT
KEY2
AL-30V
REMOCON MODULE BLOCK
DVD
VCR

ELECTRONICS