

DVP-NS36/NS37/NS45P/NS55P/NS61P/NS63P

RMT-D175A/RMT-D175P/RMT-D175C

SERVICE MANUAL



Photo : DVP-NS36
RMT-D175P



Notes: Australia/NZ model only

AEP Model
DVP-NS36/NS37

Russian Model

UK Model

DVP-NS36

Canadian Model

US Model

DVP-NS45P/NS55P

Argentina Model

Brazilian Model

E Model

DVP-NS63P

PX Model

DVP-NS55P

Australia/New Zealand Model

Chinese Model

Middle East Model

Singapore Model

DVP-NS61P

SPECIFICATIONS

System

Laser: Semiconductor laser

Signal format system: PAL/NTSC:
(Except DVP-NS45P/NS55P)

Signal format system: NTSC:
(DVP-NS45P/NS55P/NS63P)

Audio characteristics

Frequency response: DVD VIDEO

(PCM 96 kHz): 2 Hz to 44 kHz
(± 1.0 dB)/DVD VIDEO (PCM 48 kHz):
2 Hz to 22 kHz (± 0.5 dB)/CD: 2 Hz to
20 kHz (± 0.5 dB)

Signal-to-noise ratio (S/N ratio): 115 dB
(LINE OUT L/R (AUDIO) jacks only)

Harmonic distortion: 0.003%

Dynamic range: DVD VIDEO:
103 dB/CD: 99 dB

Wow and flutter: Less than detected value
($\pm 0.001\%$ W PEAK)

Outputs

**(Jack name: Jack type/Output level/
Load impedance)**

LINE OUT (AUDIO): Phono jack/
2 Vrms/ 10 kilohms

DIGITAL OUT (OPTICAL):

Optical output jack/-18 dBm
(wave length 660 nm) (DVP-NS61P)

DIGITAL OUT (COAXIAL): Phono jack/
0.5 Vp-p/75 ohms

COMPONENT VIDEO OUT:

(Y, Pb/Cb, Pr/Cr)

Phono jack/Y: 1.0 Vp-p,
Pb/Cb, Pr/Cr: 0.7 Vp-p/75 ohms
(DVP-NS61P only)

COMPONENT VIDEO OUT: (Y, Pb, Pr)

Phono jack/Y: 1.0 Vp-p/Pb,Pr:
interlace*1 = 0.648 Vp-p, progressive or
interlace*2 = 0.7 Vp-p/75 ohms

*1 BLACK LEVEL

(COMPONENT OUT) is ON

*2 BLACK LEVEL

(COMPONENT OUT) is OFF
(DVP-NS45P/NS55P/NS63P)

S VIDEO OUT:

4-pin mini DIN/Y: 1.0 Vp-p,
C: 0.286 Vp-p/75 ohms
(DVP-NS45P/NS55P/NS63P)

S VIDEO OUT:

4-pin mini DIN/Y: 1.0 Vp-p,
C: 0.3 Vp-p (PAL),
0.286 Vp-p (NTSC)/75 ohms
(DVP-NS61P only)

LINE (RGB)-TV:

(AUDIO): SCART jack/2 Vrms/10 kilohms
(VIDEO): SCART jack/1.0 Vp-p/75 ohms
(S VIDEO): SCART jack/Y: 1.0 Vp-p,
C: 0.3 Vp-p (PAL),
0.286 Vp-p (NTSC)/75 ohms
(RGB): SCART jack/0.7 Vp-p/75 ohms
(DVP-NS36 Except RUS/NS37 only)

LINE OUT (VIDEO): Phono jack/
1.0 Vp-p/75 ohms

General

Power requirements:

220 - 240 V AC, 50/60 Hz
(DVP-NS36/NS37)
120 V AC, 60 Hz
(DVP-NS45P:US,CND/NS55P:US,CND)
110 - 240 V AC, 50/60 Hz
(DVP-NS61P/NS55P:PX/NS63P)

Power consumption:

9W (Except DVP-NS45P:US,CND/
NS55P:US,CND)
10W (DVP-NS45P:US,CND/
NS55P:US,CND)

Dimensions (approx.):

430 × 43 × 207.6 mm
(DVP-NS63P: E only)
430 × 43 × 208 mm
(17 × 11 11/16 × 8 1/5 in.)
(width/height/depth) incl. projecting parts

Mass (approx.):

1.75 kg (DVP-NS36/NS37)
1.72 kg (3 5/4 lb)
(DVP-NS45P/NS55P/NS61P)
1.74 kg (DVP-NS63P)

Operating temperature: 5°C to 35°C
(41°F to 95°F)

Operating humidity: 25% to 80%

Specifications and design are subject to
change without notice.

ENERGY STAR® is a U.S. registered mark.
As an ENERGY STAR® Partner, Sony
Corporation has determined that this
product meets the ENERGY STAR®
guidelines for energy efficiency.
(DVP-NS61P: AUS only)



CD/DVD PLAYER

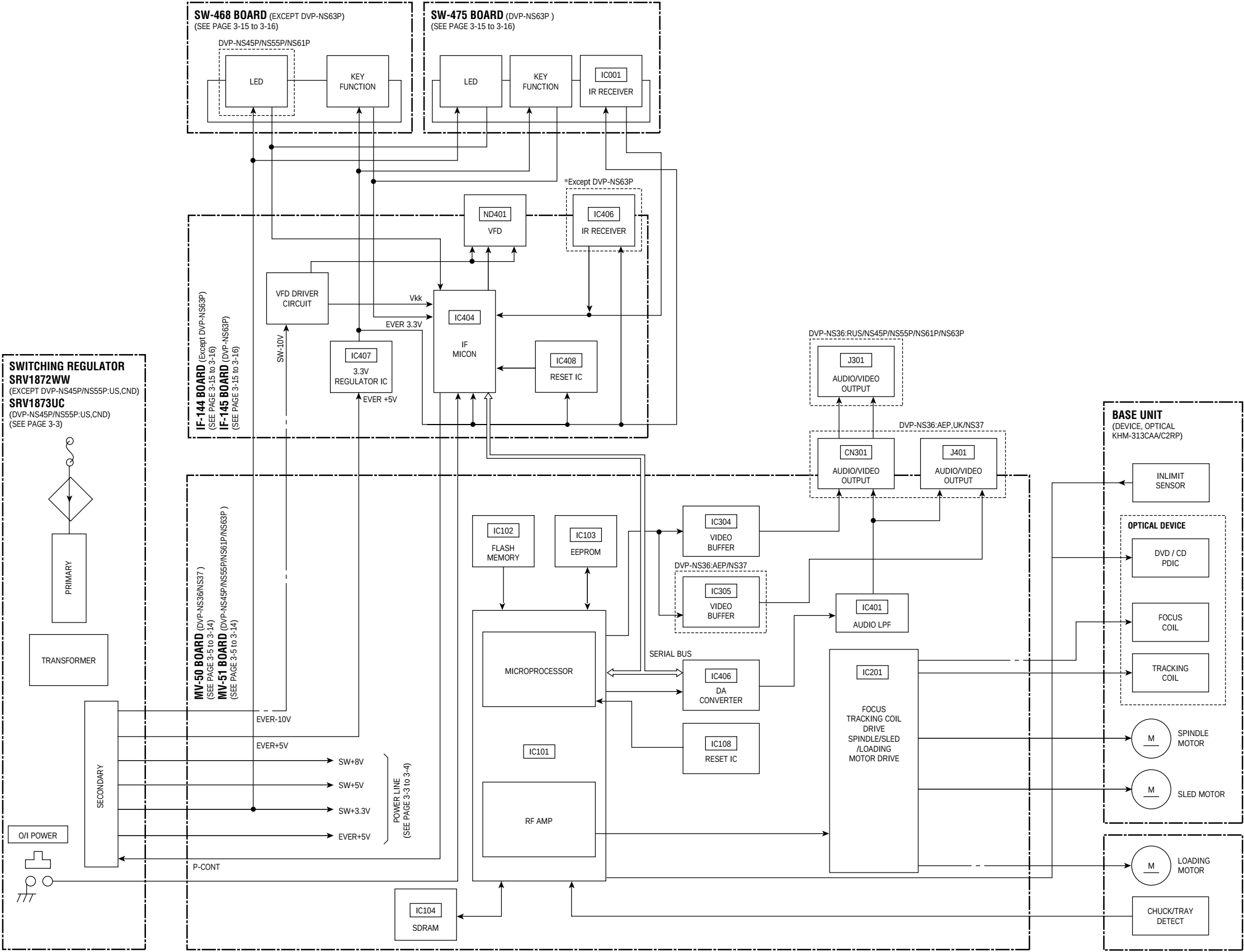
SONY®

SECTION 3
BLOCK DIAGRAMS

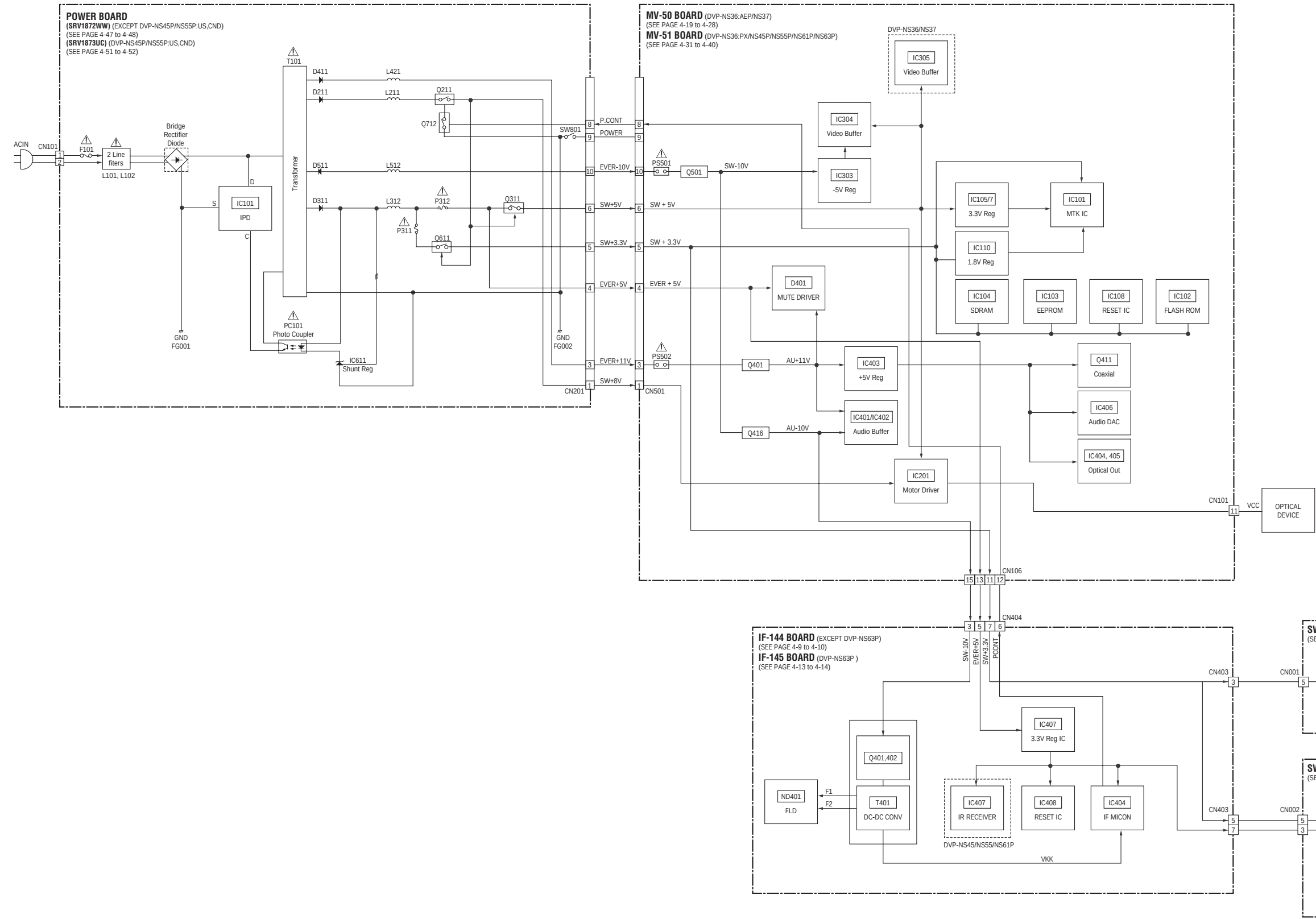
3-1. OVERALL BLOCK DIAGRAM

- Abbreviation
AEP : AEP Model
RUS : Russian Model
UK : UK Model
CND : Canadian Model
US : USA Model
AR : Argentina Model
BR : Brazilian Model
E : Latin America Model
PX : PX Model
AUS : Australia/New Zealand Model
CH : Chinese Model
ME : Middle East
SP : Singapore Model

Notes:
MV-50/MV-51 mounted PWB must be replaced if IC103 (EEPROM IC) is damaged or not functioning.
The old MV-50/MV-51 mounted PWB must be completely disposed.

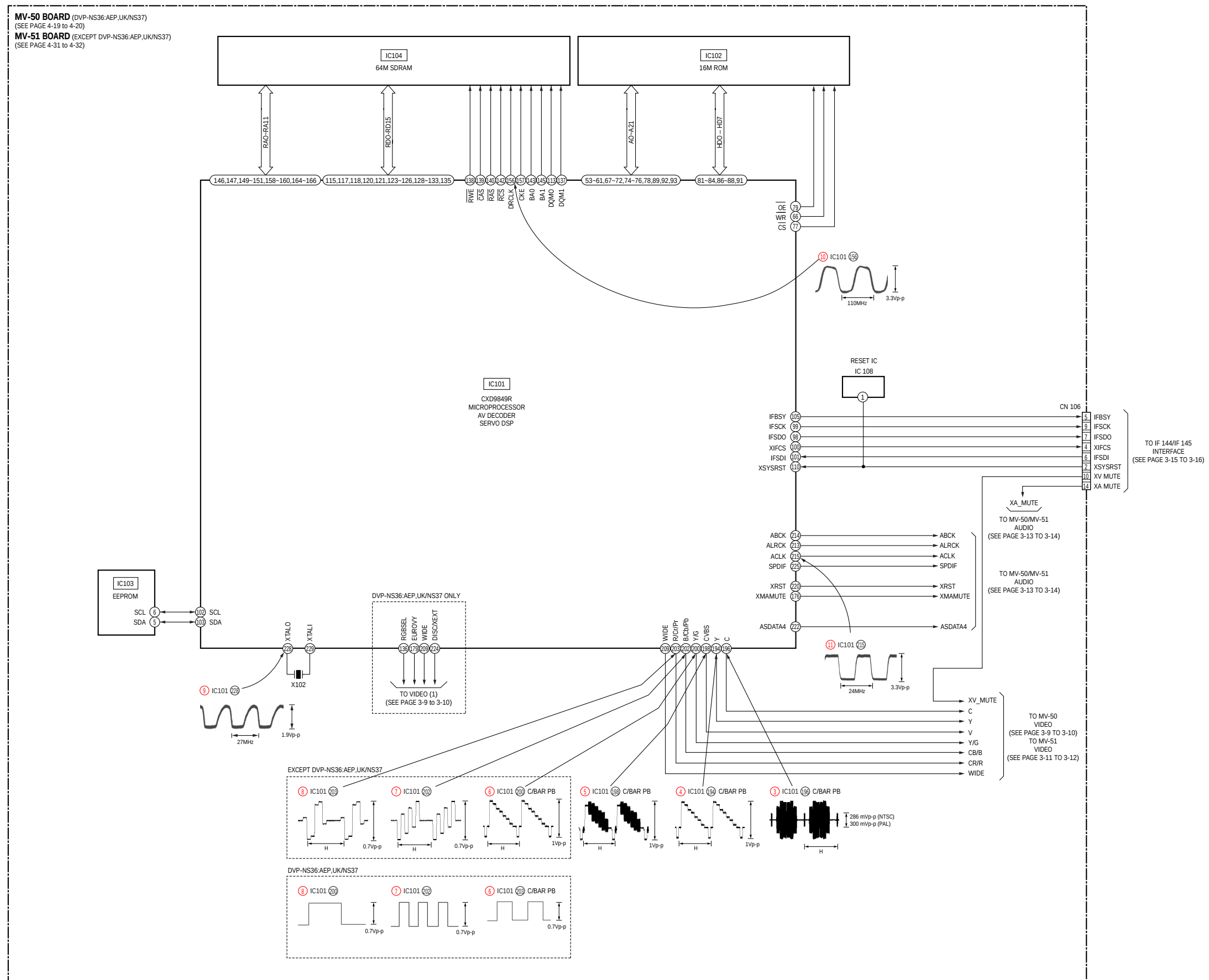


3-2. POWER LINE BLOCK DIAGRAM

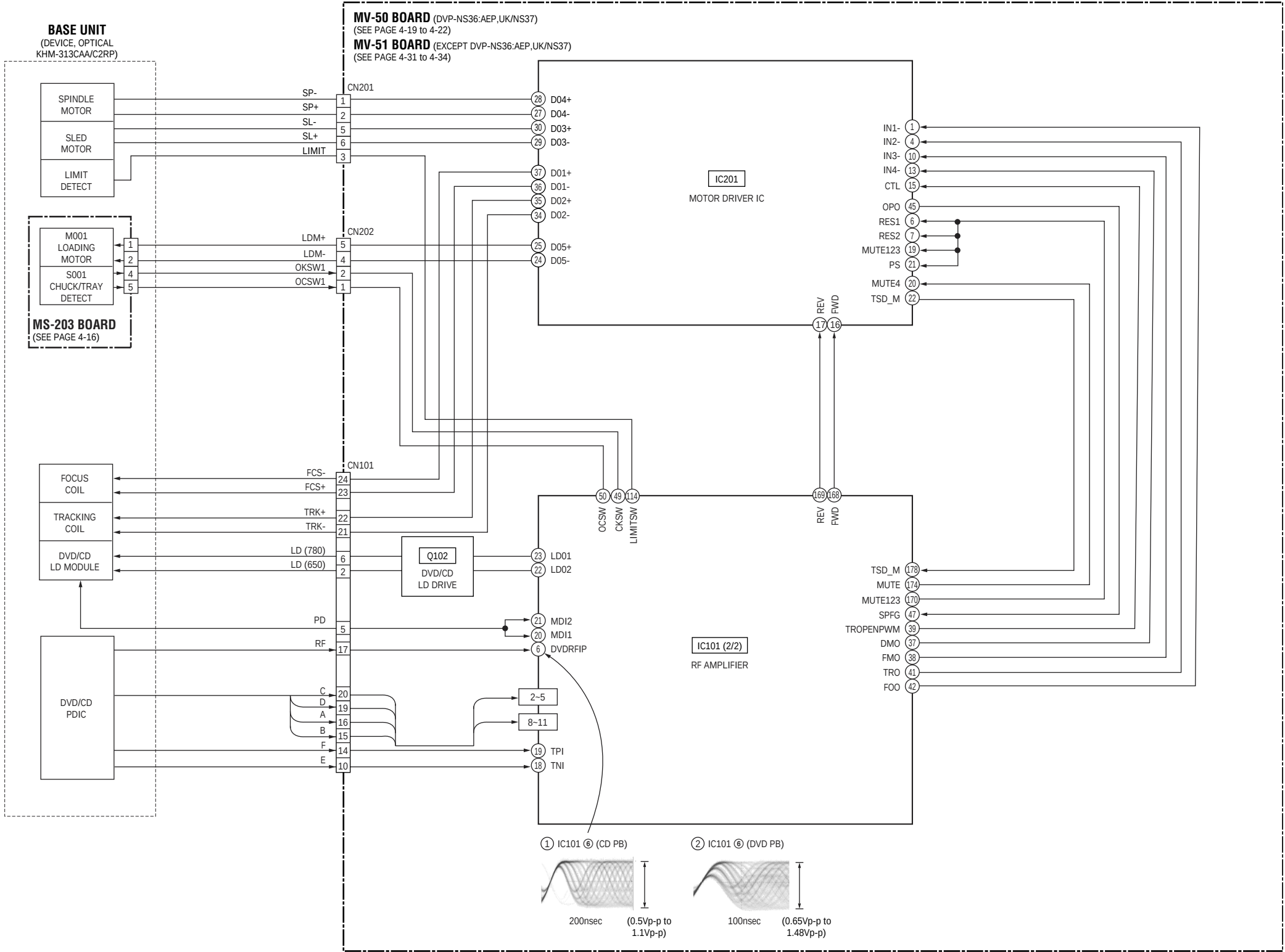


The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.

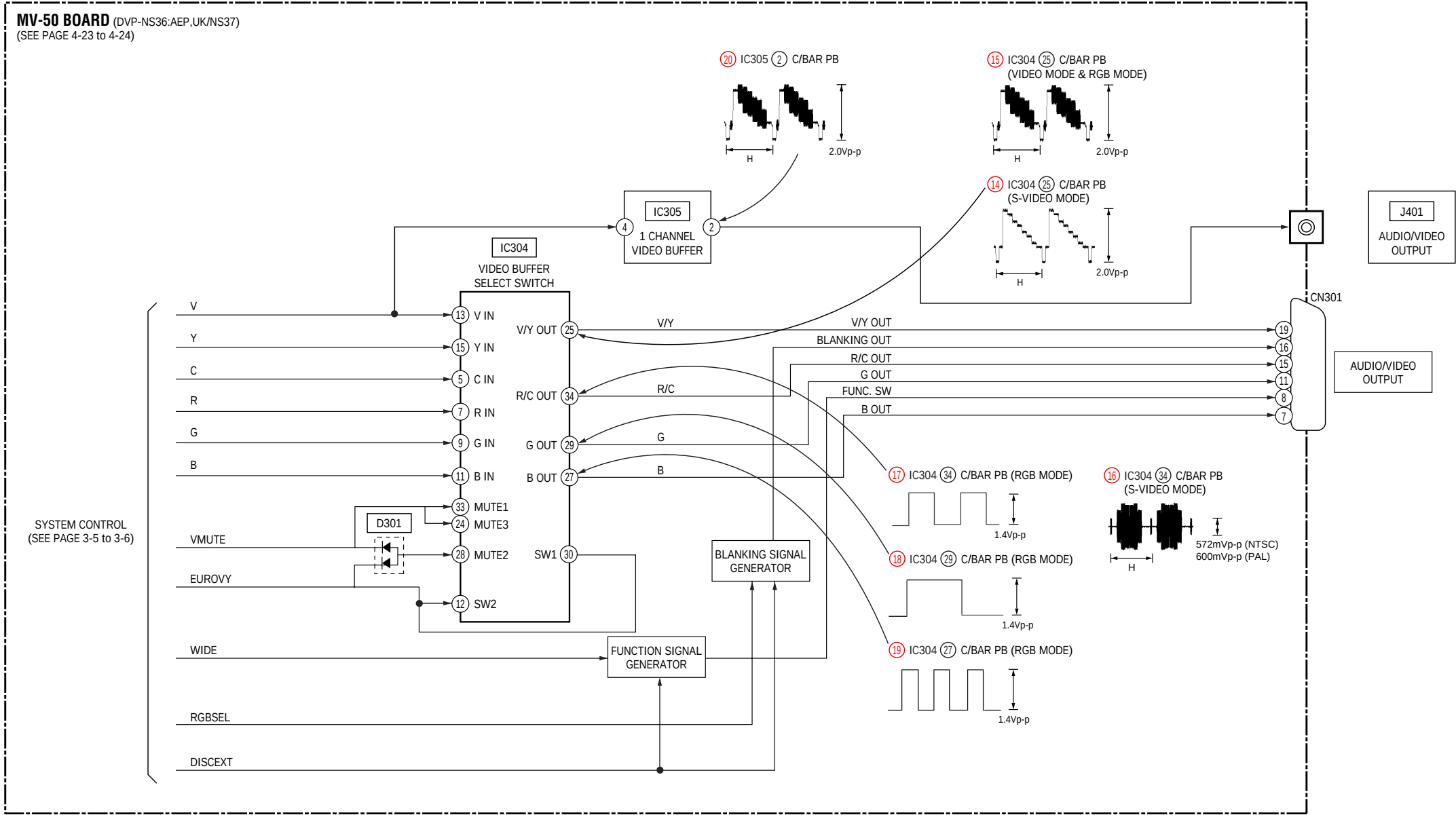
3-3. SYSTEM CONTROL/SIGNAL PROCESSOR BLOCK DIAGRAM



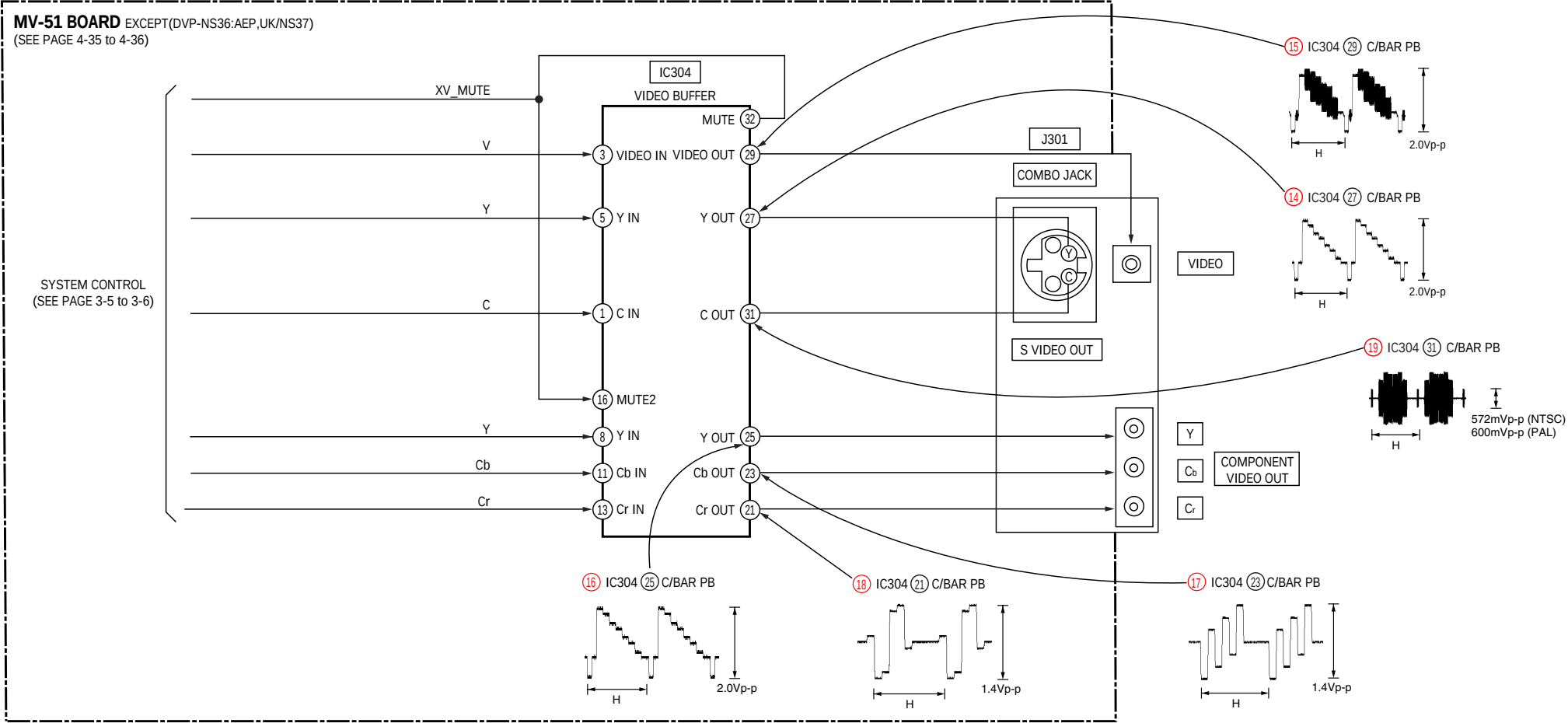
3-4. RF/SERVO BLOCK DIAGRAM



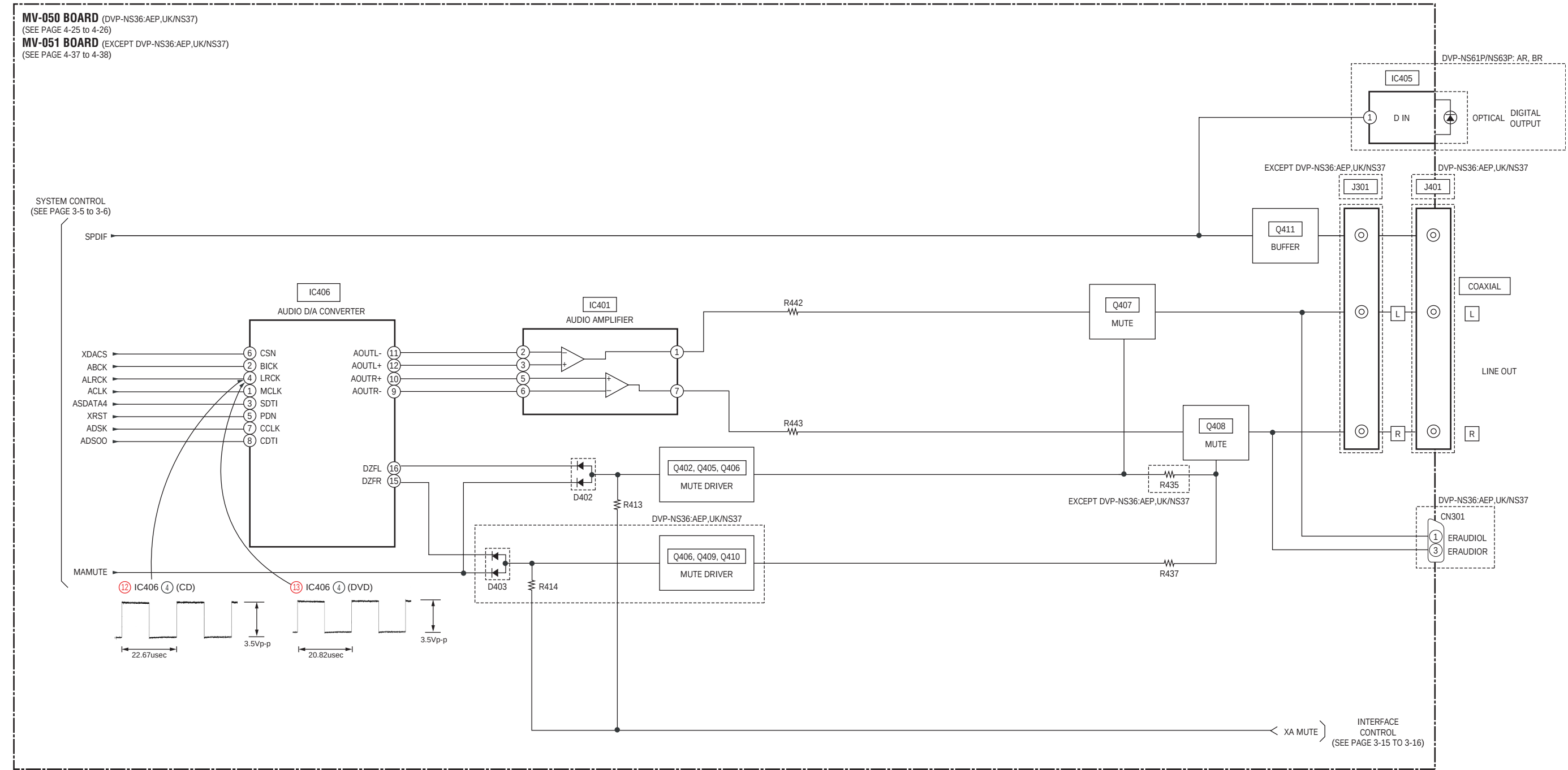
3-5. VIDEO (1) BLOCK DIAGRAM



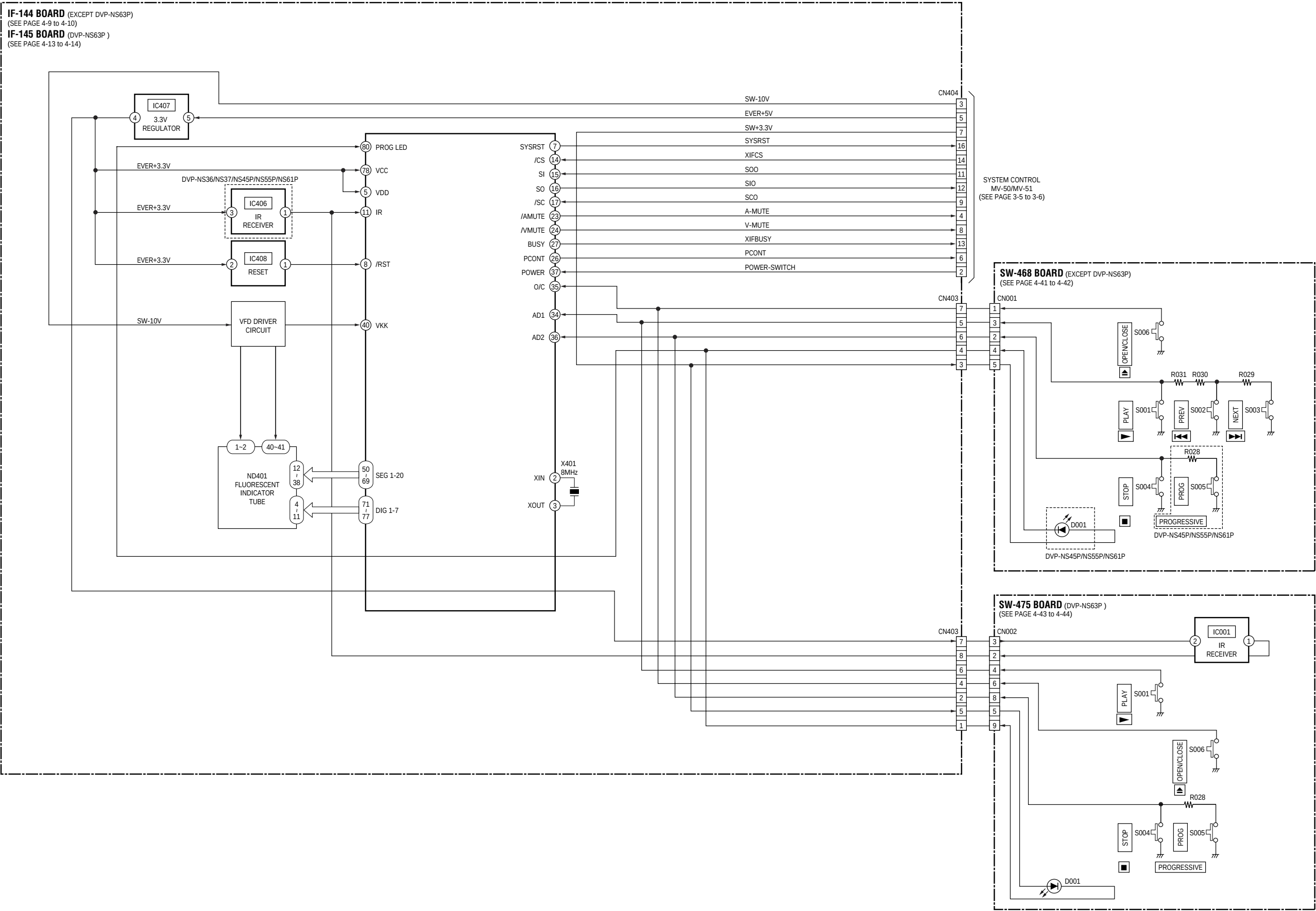
3-6. VIDEO (2) BLOCK DIAGRAM



3-7. AUDIO BLOCK DIAGRAM

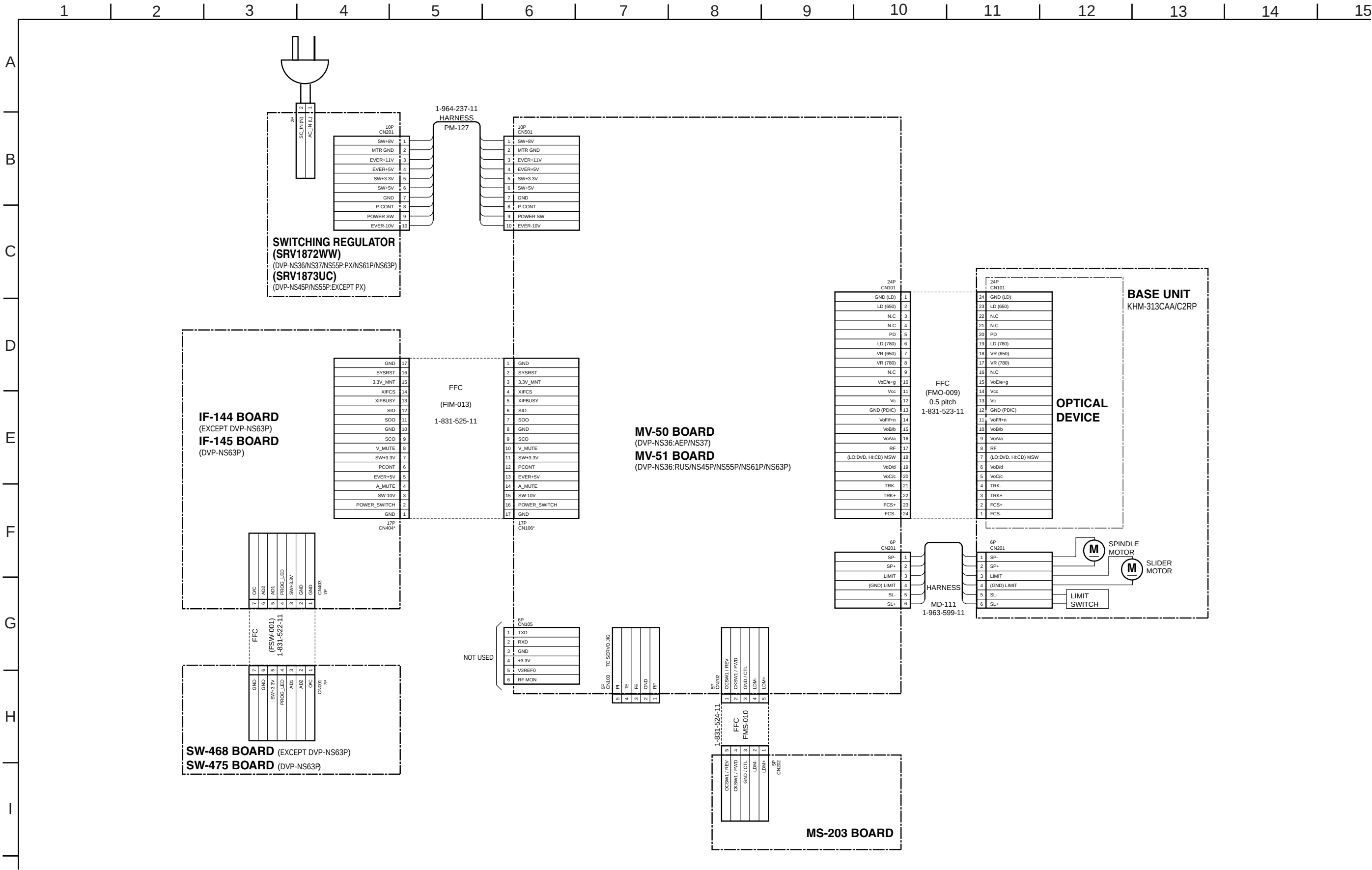


3-8. INTERFACE CONTROL BLOCK DIAGRAM



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

For printed wiring boards:

- — : indicates a lead wire mounted on the component side.
- — : indicates a lead wire mounted on the printed side.
- : Through hole.
- : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

Caution:
Pattern face side: Parts on the pattern face side seen from
(Side A) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from
(Side B) the parts face are indicated.

- Abbreviation
AEP : AEP Model
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US : USA Model
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BR : Brazilian Model
E : Latin America Model
PX : PX Model
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For schematic diagrams:

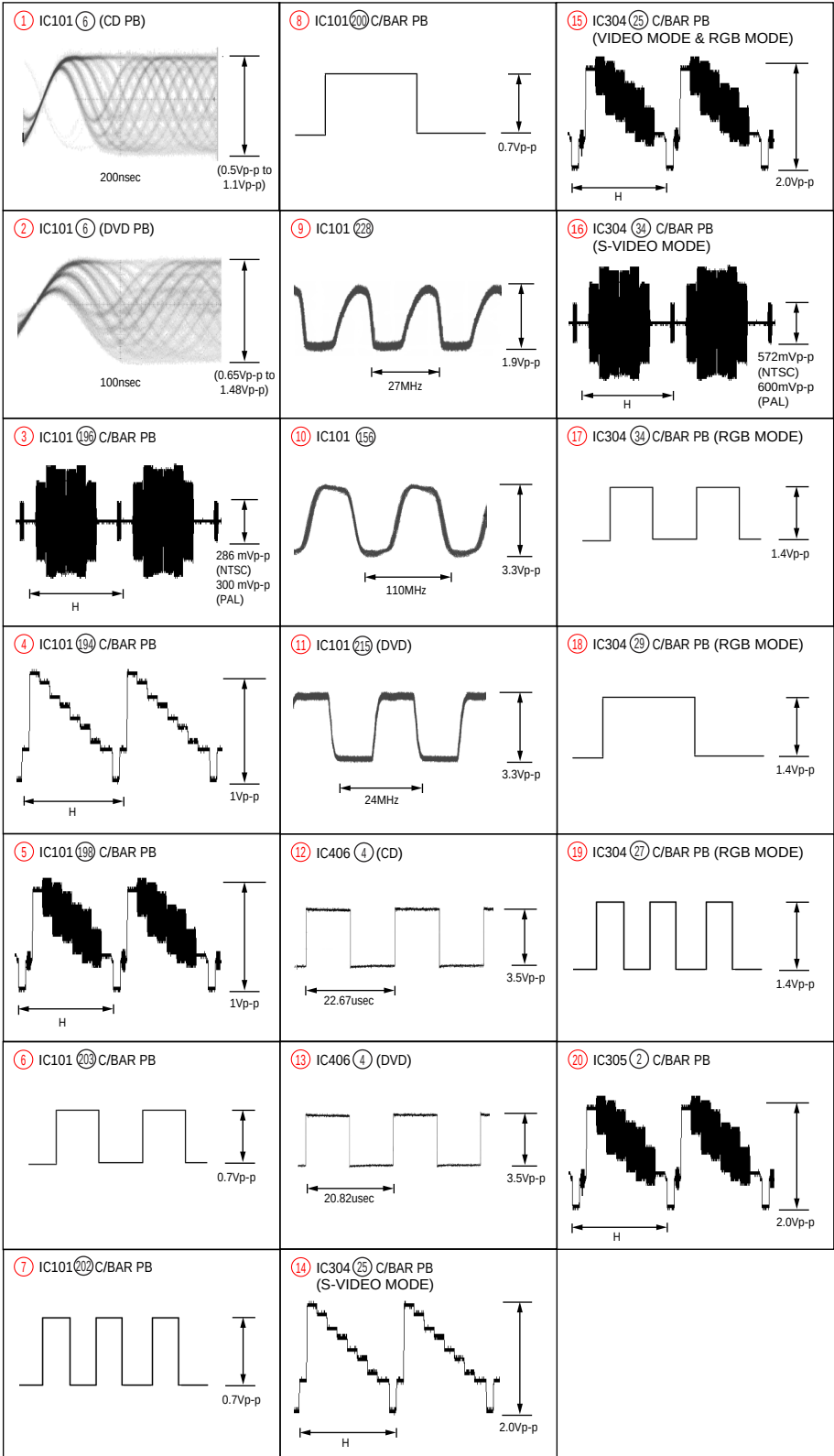
- All capacitors are in μF unless otherwise noted. pF : μF .
- 50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W (Chip resistors : 1/10W) unless otherwise specified.
 $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$.
- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⎓ : non flammable resistor.
- ⎓ : fusible resistor.
- : panel designation.
- △ : internal component.
- : adjustment for repair.
- Circled numbers refer to waveforms.
- Voltages are dc between measurement point.
- Readings are taken with a color-bar signal on DVD reference disc and when playing CD reference disc.
- Readings are taken with a digital multimeter (DC 10M Ω).
- Voltage variations may be noted due to normal production tolerances.

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

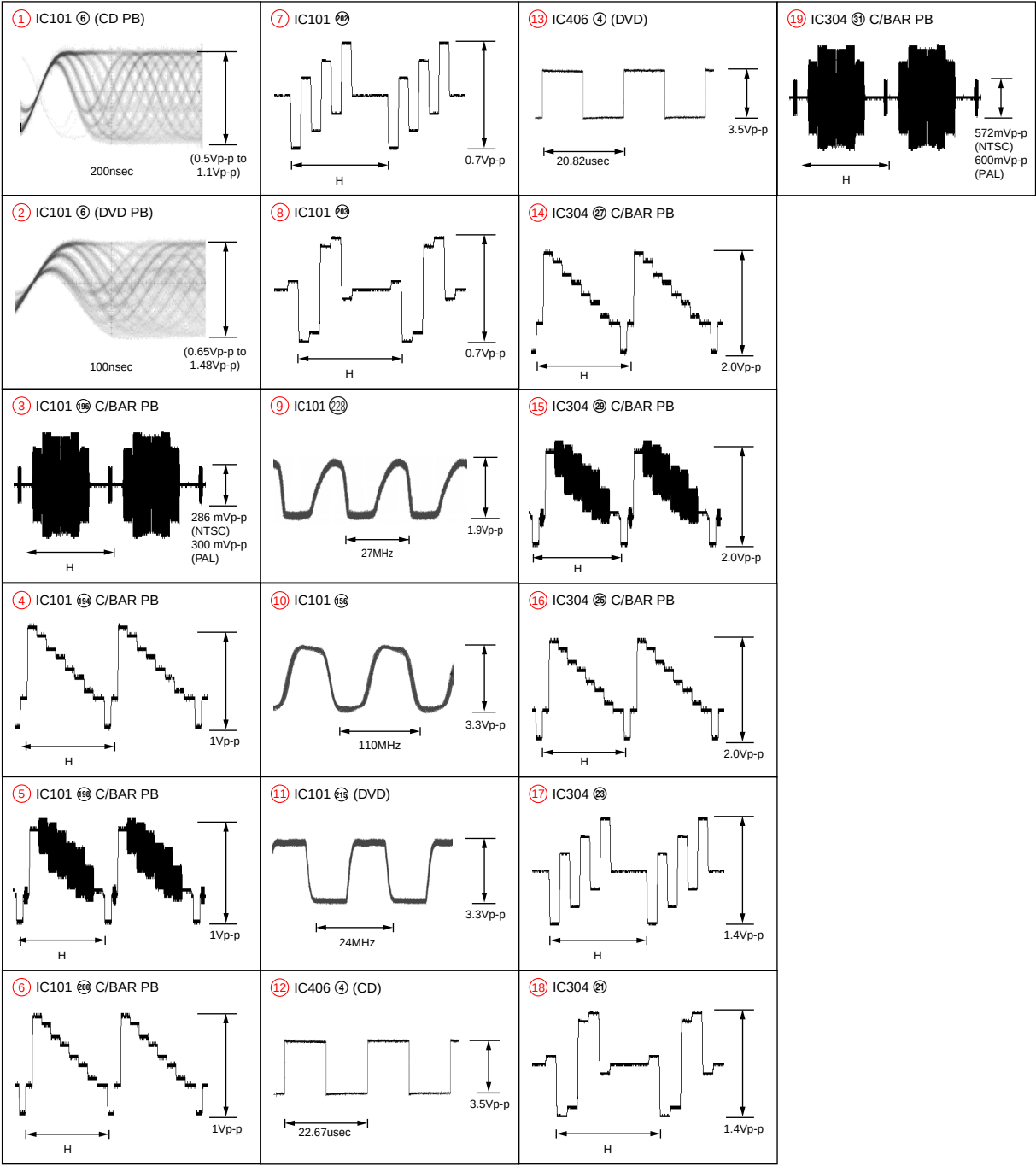
When indicating parts by reference number, please include the board name.

4-3. WAVEFORMS

MV-50 BOARD (DVP-NS36/NS37)

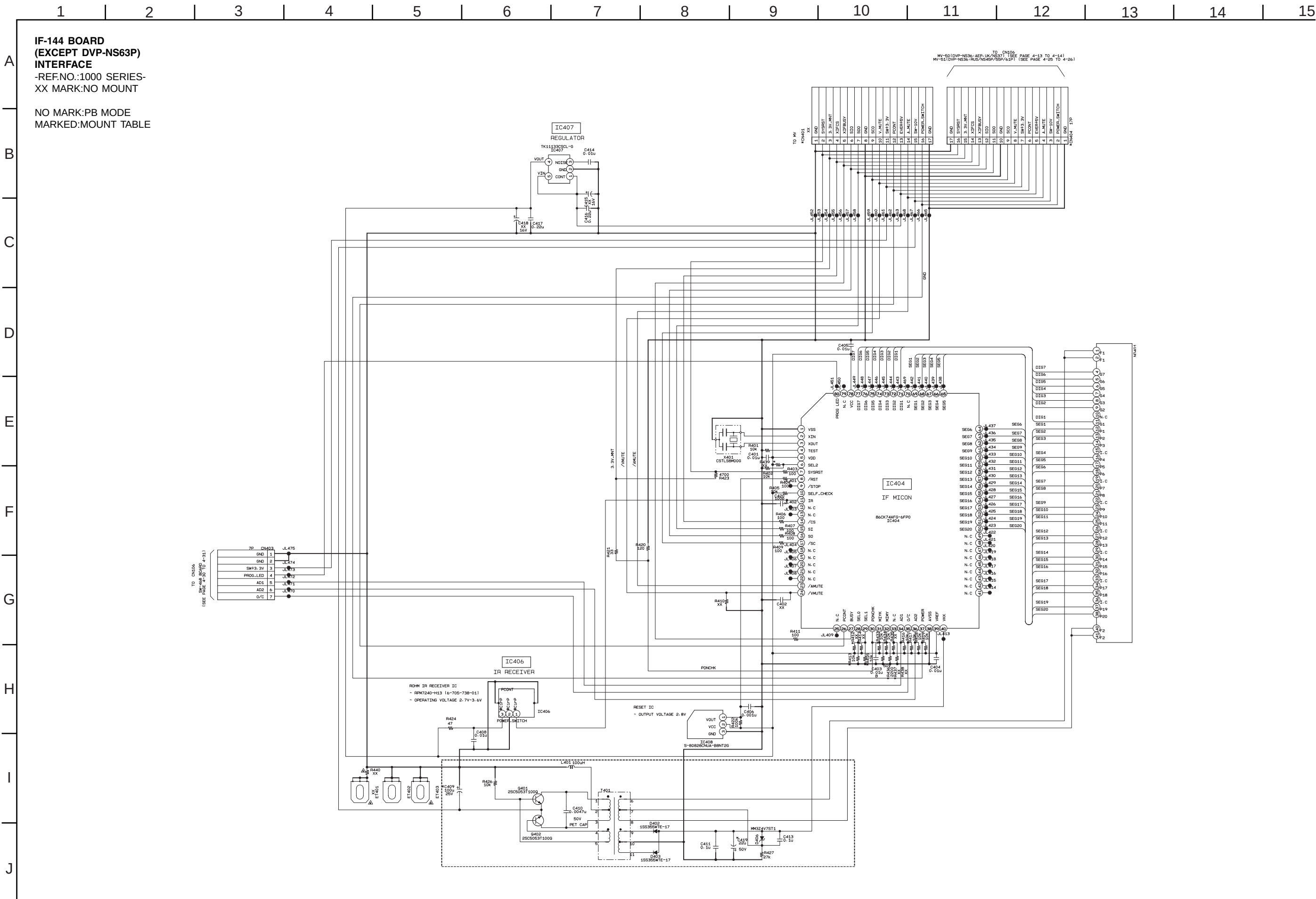


MV-51 BOARD (DVP-NS45P/55P/61P/63P)



For Schematic Diagram

- Refer to page 4-7 for printed wiring board of IF-144 board.

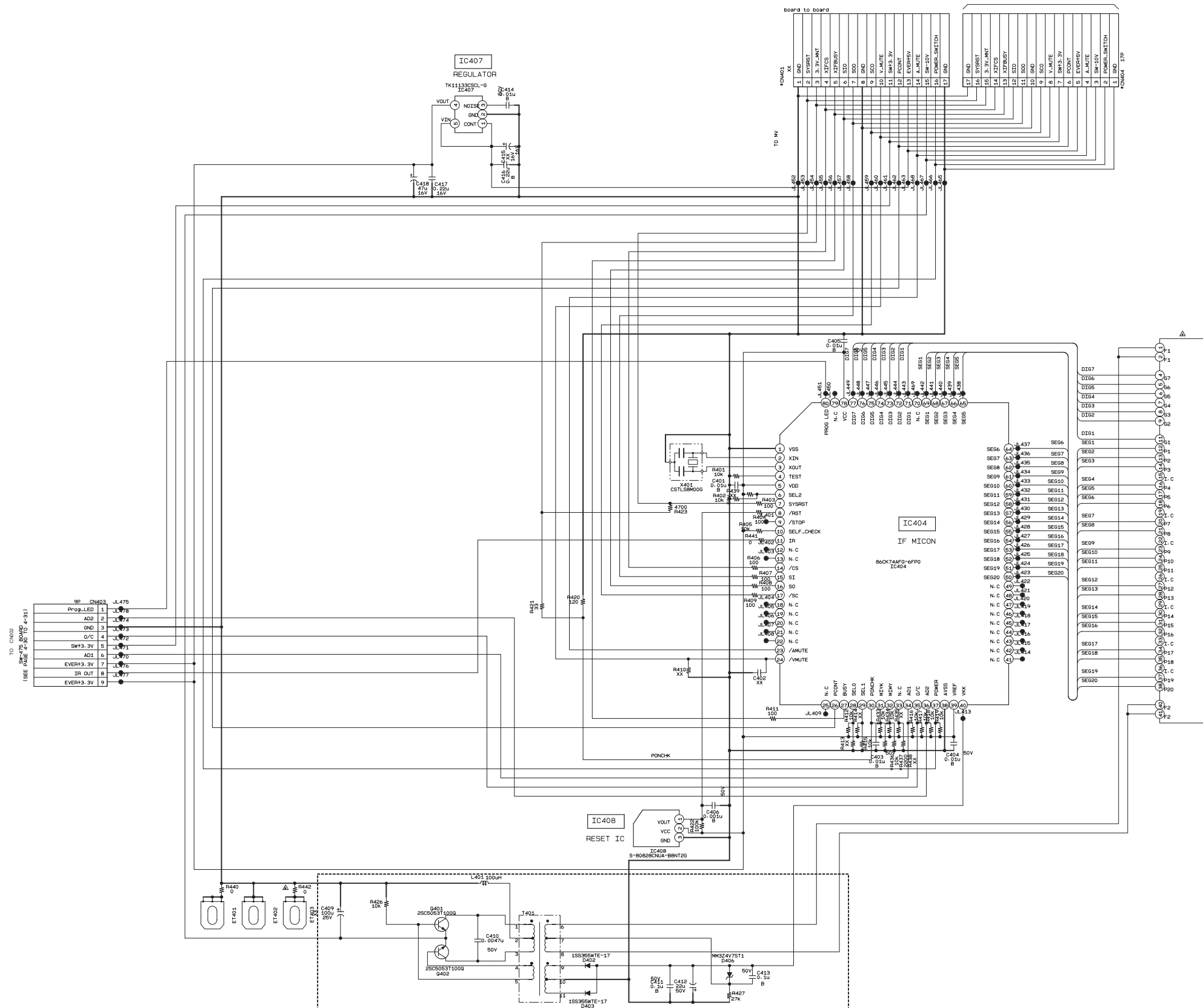


For Schematic Diagram

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----

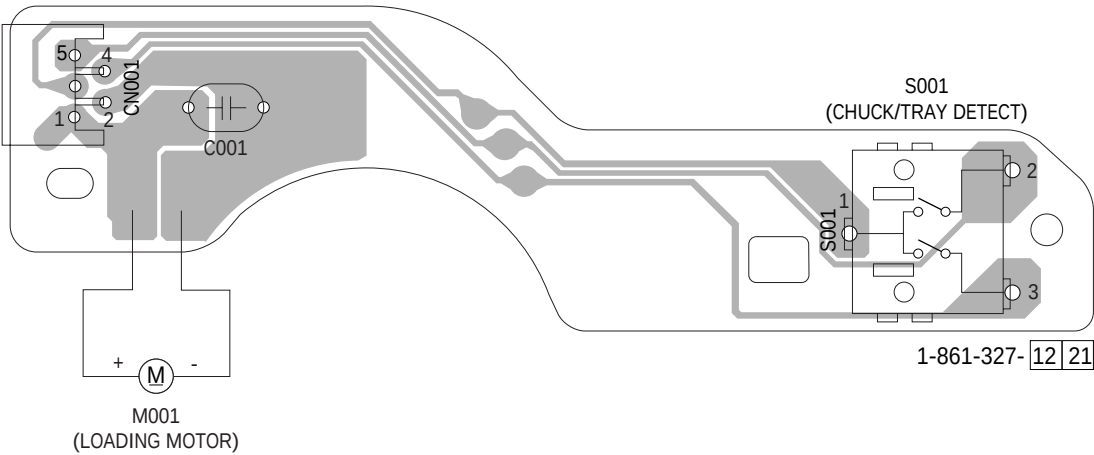
**IF-145 BOARD
(DVP-NS63P)
INTERFACE**
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

NO MARK:PB MODE
MARKED:MOUNT TABLE



MS-203 (LOADING MOTOR) PRINTED WIRING BOARD

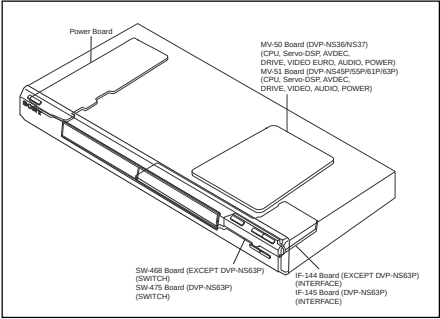
MS-203 BOARD



-  : Uses unleaded solder.

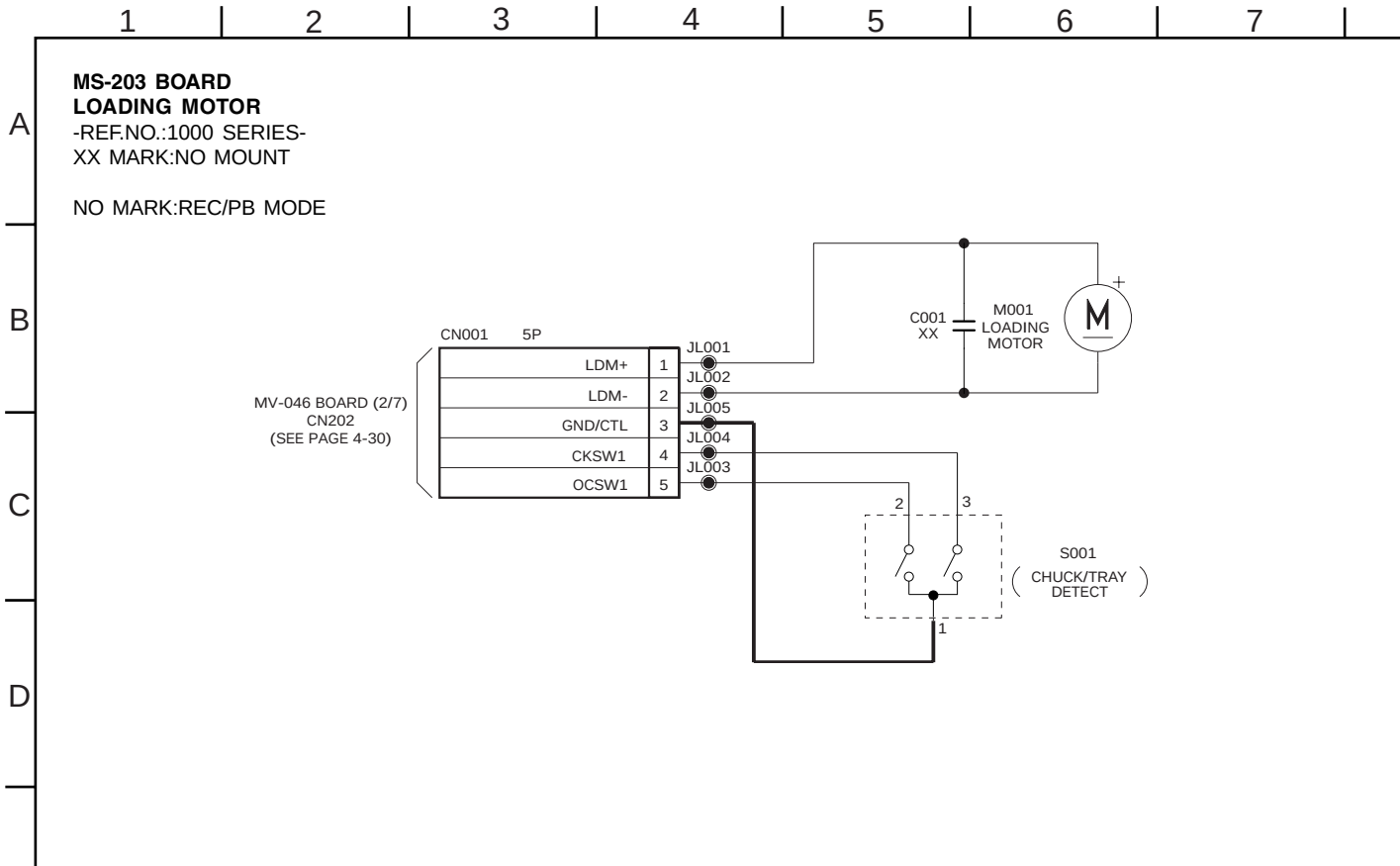
For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

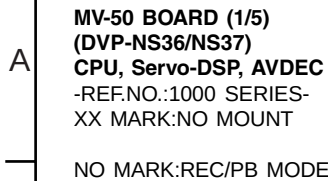


For Schematic Diagram

- Refer to page 4-15 for printed wiring board of MS-203 board.

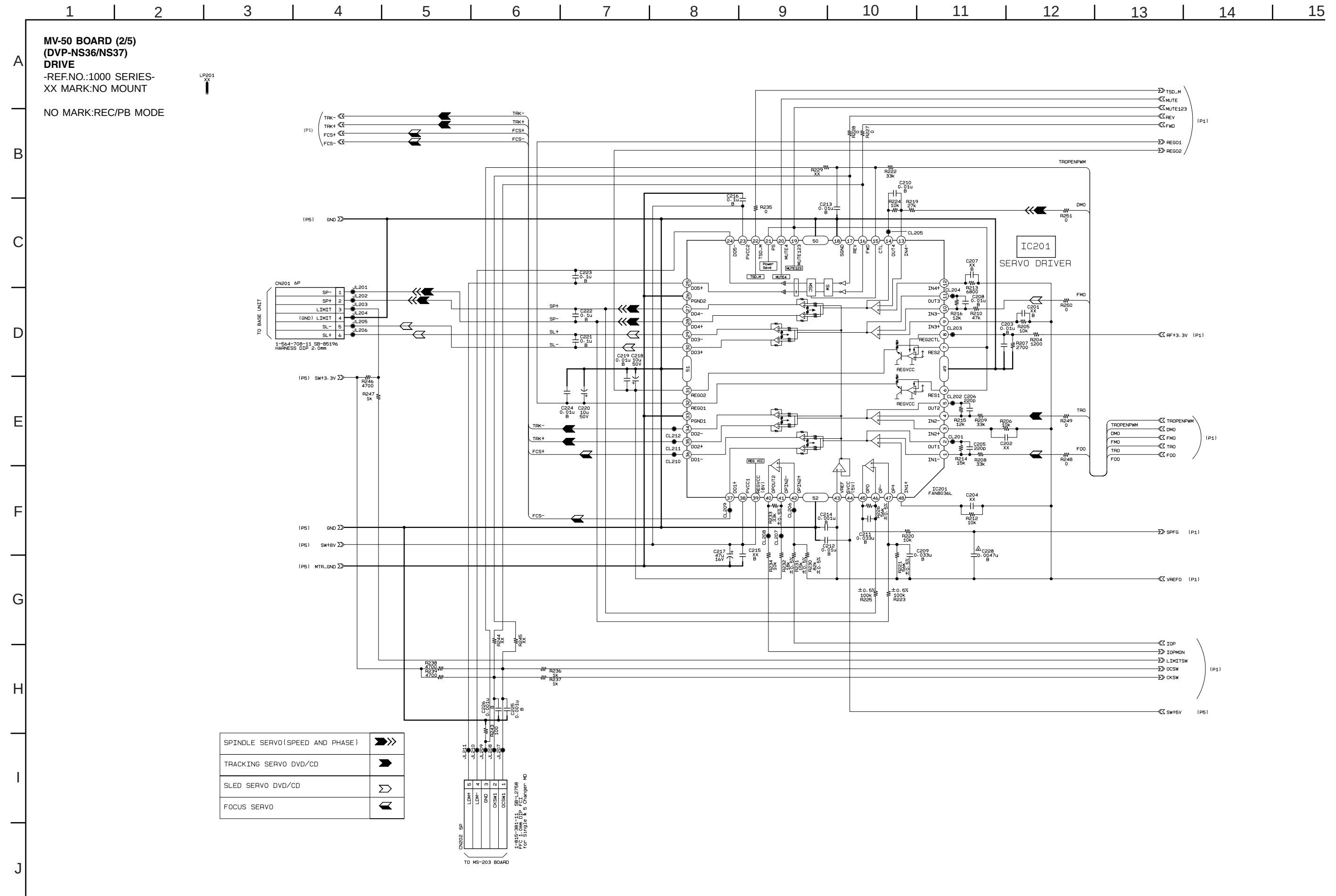


- Refer to page 4-17 for printed wiring board of MV-50 board.
- Refer to page 4-4 for waveform



For Schematic Diagram

- Refer to page 4-17 for printed wiring board of MV-50 board.
- Refer to page 4-4 for waveform

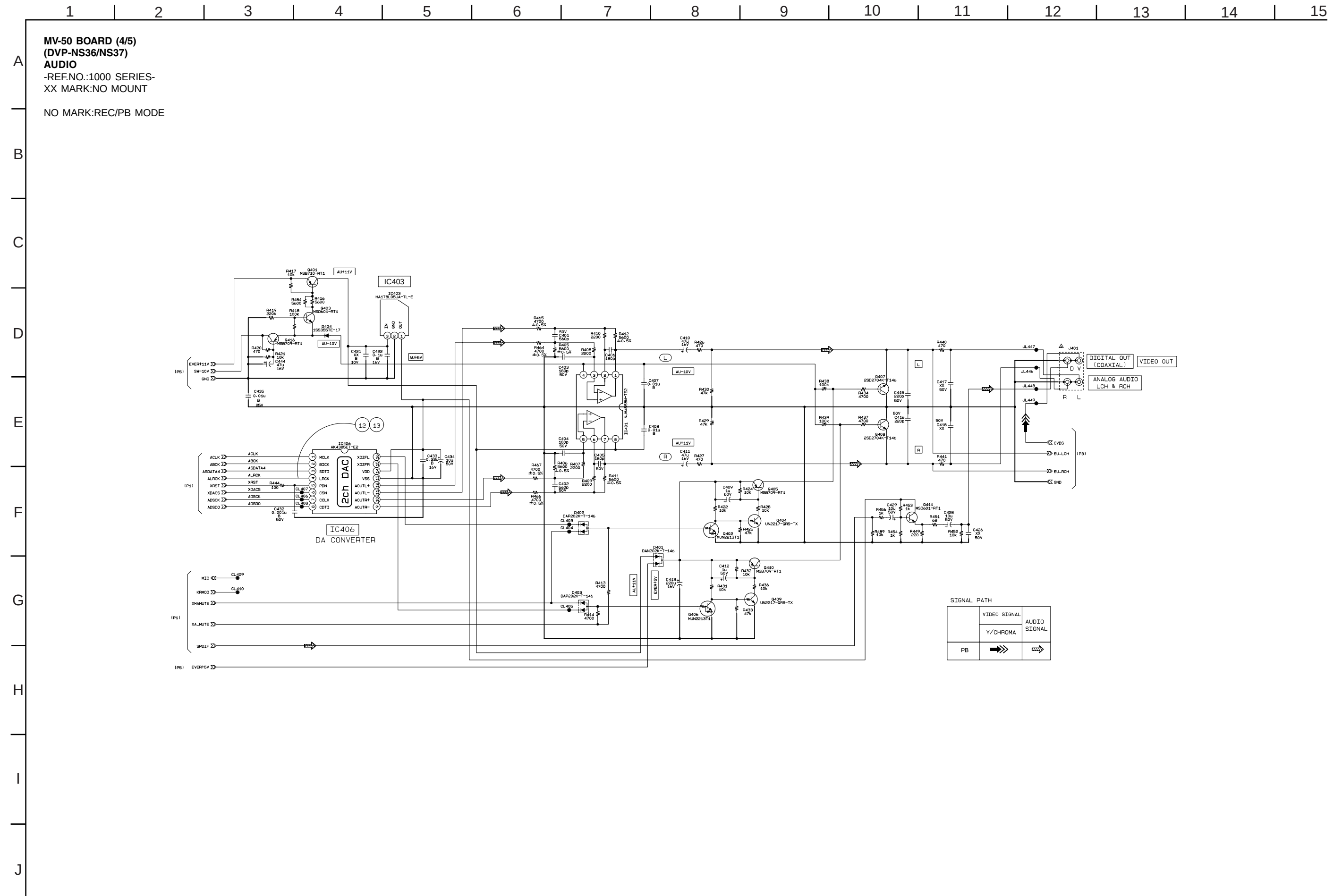


- Refer to page 4-17 for printed wiring board of MV-50 board.
- Refer to page 4-4 for waveform

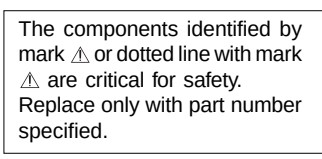


For Schematic Diagram

- Refer to page 4-17 for printed wiring board of MV-50 board.
- Refer to page 4-4 for waveform



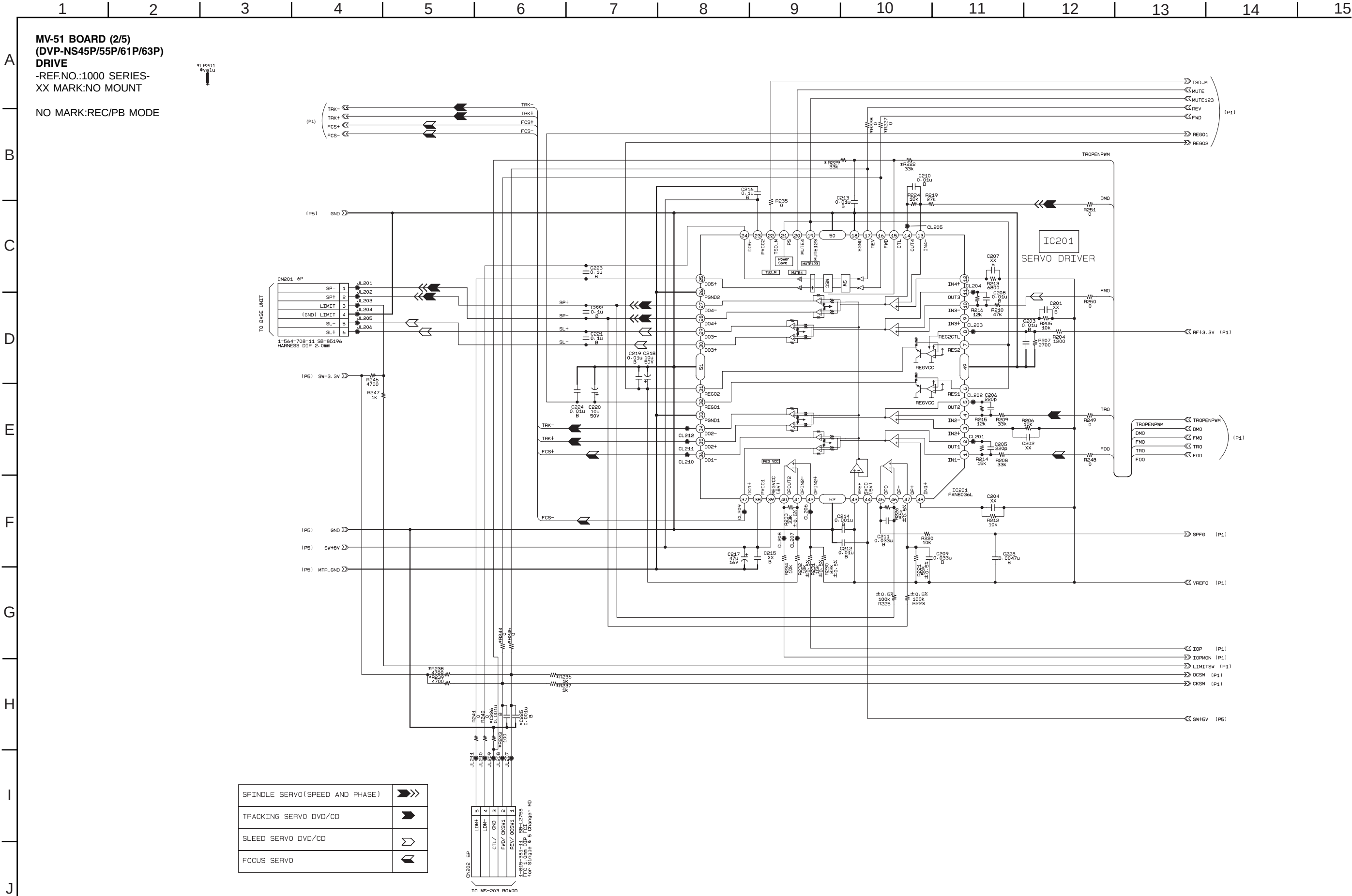
- Refer to page 4-17 for printed wiring board of MV-50 board.
- Refer to page 4-4 for waveform





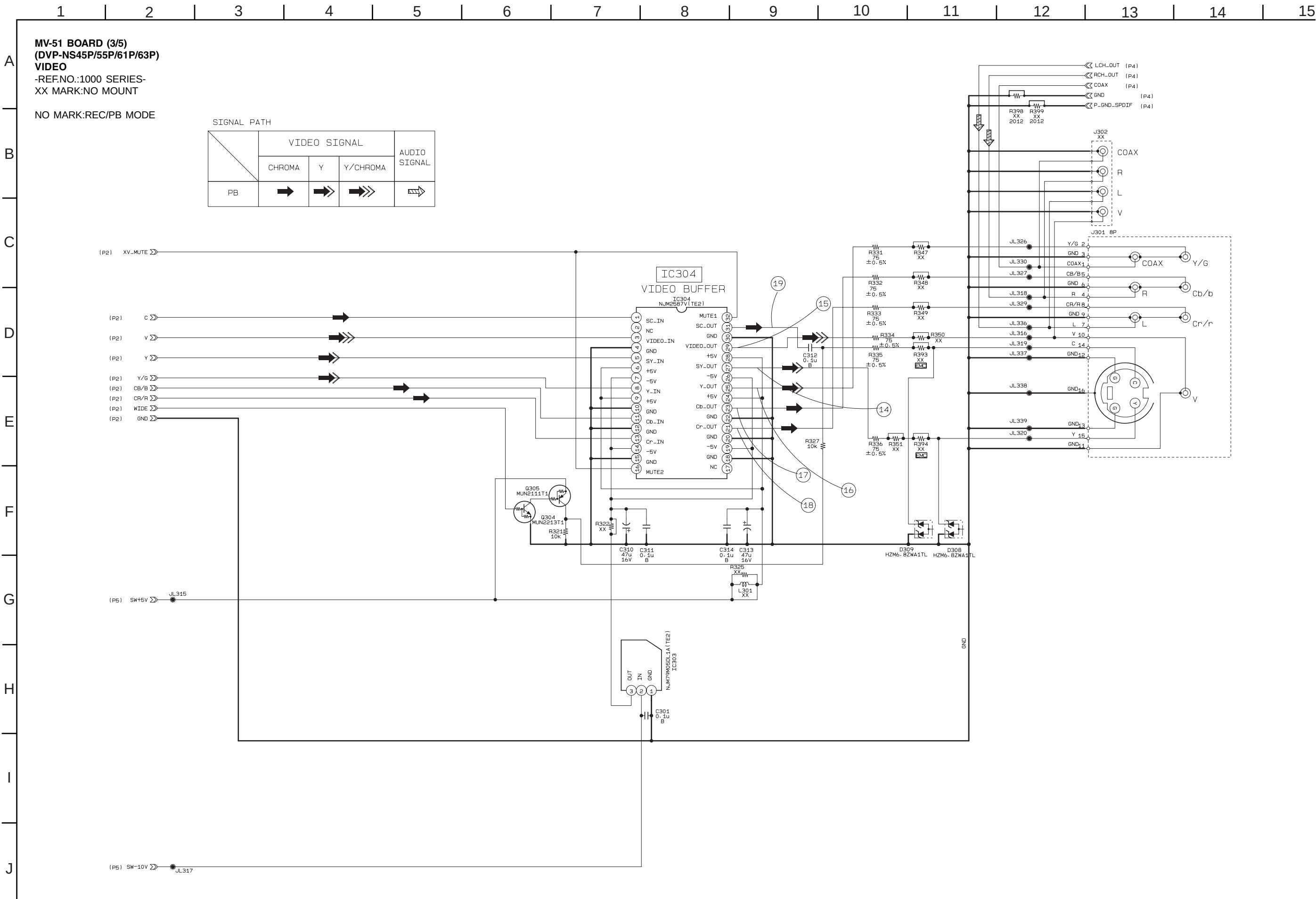
For Schematic Diagram

- Refer to page 4-29 for printed wiring board of MV-51 board.
- Refer to page 4-5 for waveform

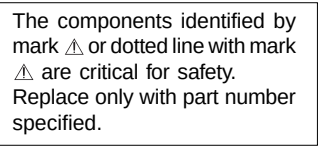


For Schematic Diagram

- Refer to page 4-29 for printed wiring board of MV-51 board.
- Refer to page 4-5 for waveform

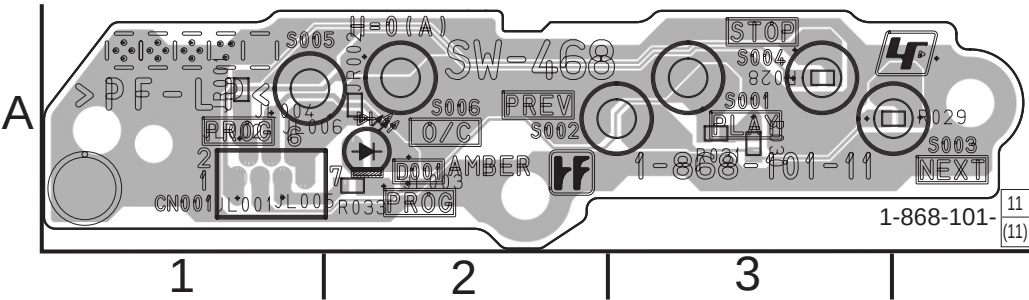


- Refer to page 4-29 for printed wiring board of MV-51 board.
- Refer to page 4-5 for waveform



SW-468 (SWITCH) PRINTED WIRING BOARD

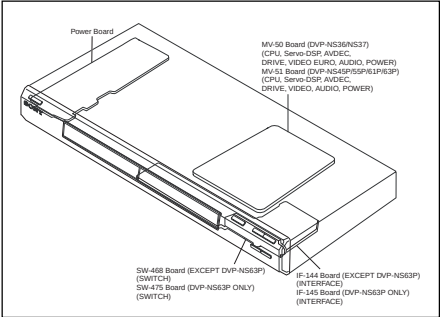
SW-468 BOARD (EXCEPT DVP-NS63P)



-  : Uses unleaded solder.

For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

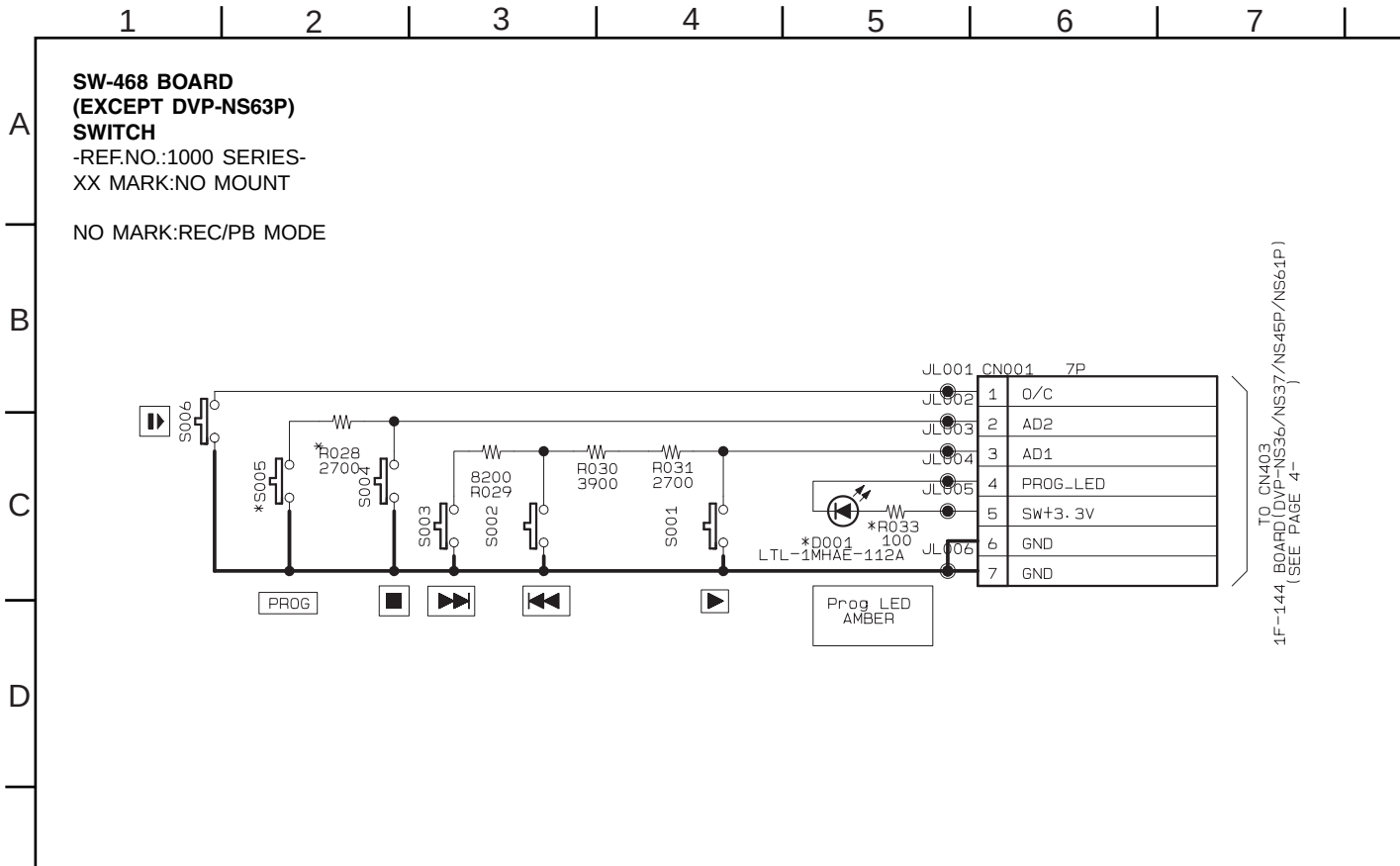


SW-468 BOARD

D001 A-2

For Schematic Diagram

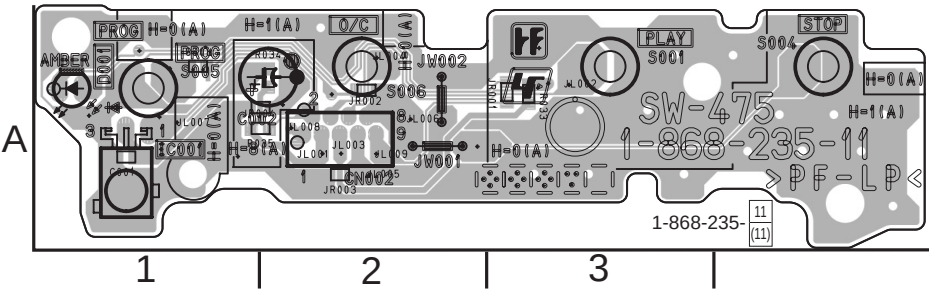
- Refer to page 4-41 for printed wiring board of SW-468 board.



TO CN403
1F-144 BOARD (DVP-NS36/NS37/NS45P/NS61P)
(SEE PAGE 4-41)

SW-475 (SWITCH) PRINTED WIRING BOARD

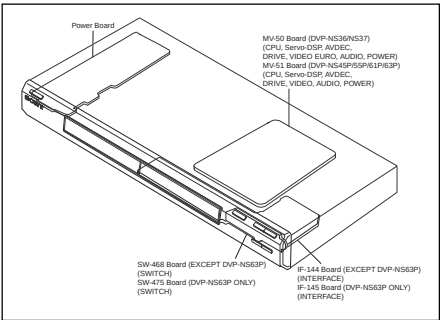
SW-475 BOARD (DVP-NS63P)



- : Uses unleaded solder.

For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



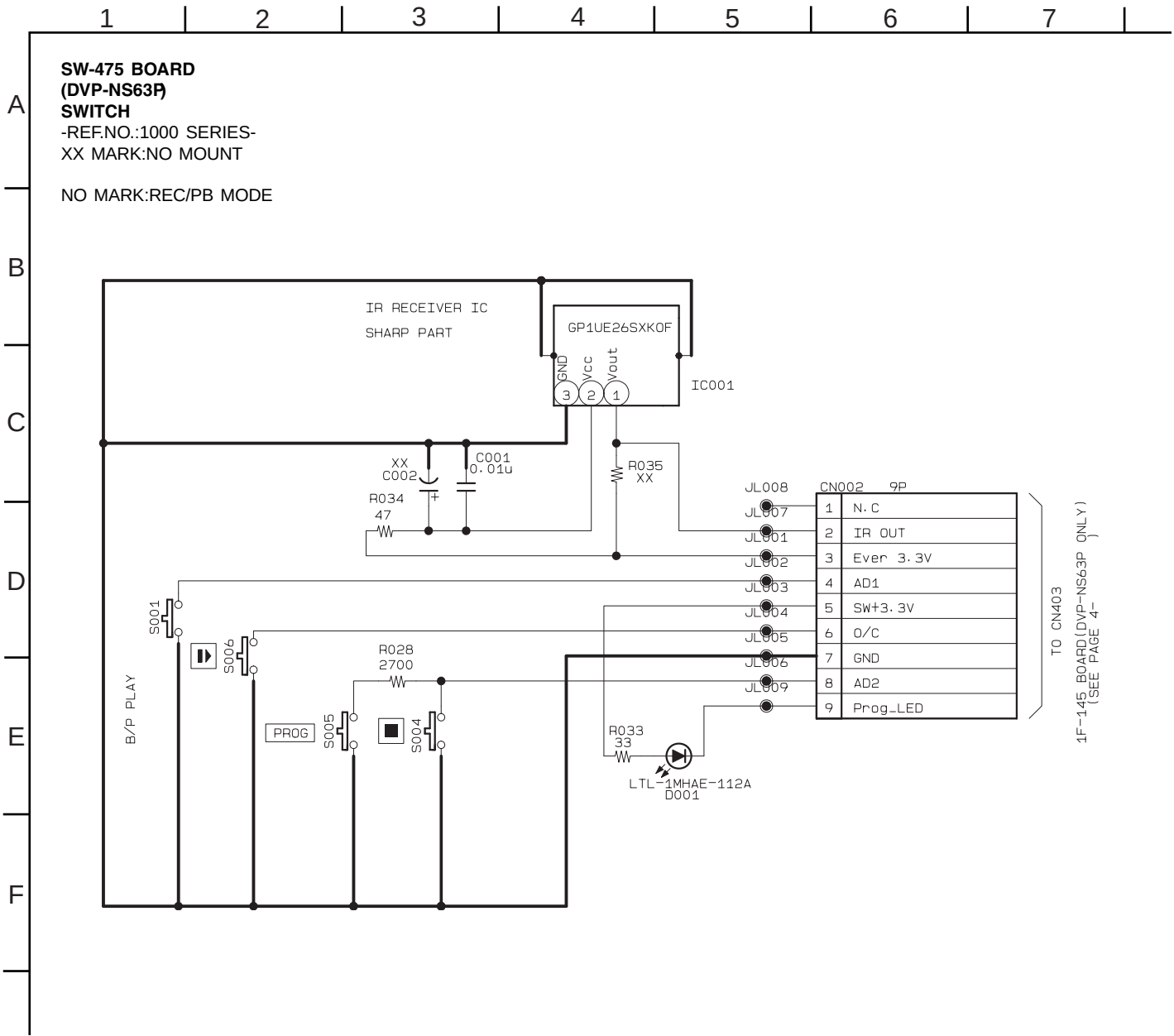
SW-475 BOARD

IC001 A-1

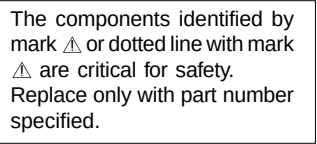
D001 A-1

For Schematic Diagram

- Refer to page 4-43 for printed wiring board of SW-475 board.

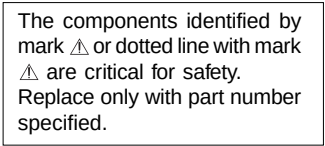


SWITCH
SW-475



- Refer to page 4-49 for printed wiring board of Power board.

- Refer to page 4-49 for printed wiring board of Power board.



SECTION 5

IC PIN FUNCTION DESCRIPTION

5-1. SYSTEM CONTROL PIN FUNCTION (MV-50/51 BOARDS IC101)

Pin No.	Pin name	Type	Function
1	AGND		Ground pin for analog circuitry
2	DVDA	Analog Input	AC coupled input path A
3	DVDB	Analog Input	AC coupled input path B
4	DVDC	Analog Input	AC coupled input path C
5	DVDD	Analog Input	AC coupled input path D
6	DVDRFIP	Analog Input	AC coupled DVD RF signal input RFIP
7	DVDRFIN	Analog Input	AC coupled DVD RF signal input RFIN
8	MA	Analog Input	DC coupled main-beam RF signal input A
9	MB	Analog Input	DC coupled main-beam RF signal input B
10	MC	Analog Input	DC coupled main-beam RF signal input C
11	MD	Analog Input	DC coupled main-beam RF signal input D
12	SA	Analog Input	DC coupled sub-beam RF signal input A
13	SB	Analog Input	DC coupled sub-beam RF signal input B
14	SC	Analog Input	DC coupled sub-beam RF signal inputC
15	SD	Analog Input	DC coupled sub-beam RF signal input D
16	SDFON	Analog Input	CD focusing error negative input
17	SDFOP	Analog Input	CD focusing error positive input
18	TNI	Analog Input	3 beam satellite PD signal negative input
19	TPI	Analog Input	3 beam satellite PD signal positive input
20	MDI1	Analog Input	Laser power monitor input
21	MDI2	Analog Input	Laser power monitor input
22	LDO2	Analog Output	Laser driver output
23	LDO1	Analog Output	Laser driver output
24	SVDD3	Power	Analog 3.3V power
25	CSO	Analog Output	Central servo
26	RFLVL	Analog Output	RFRP low pass output
27	SGND	Ground	Ground pin for analog circuitry
28	V2REFO	Analog Output	Reference voltage 2.8V
29	V20	Analog Output	Reference voltage 2.0V
30	VREFO	Analog Output	Reference voltage 1.4V
31	FEO	Analog Output	Focus error monitor output
32	TEO	Analog Output	Tracking error monitor output
33	TEZISLV	Analog Output	TE Slicing Level
34	OP_OUT	Analog Output	OP amp output
35	OP_INN	Analog Input	OP amp negative input
36	OP_INP	Analog Input	OP amp positive input
37	DMO	Analog Output	Disc motor control output.PWM output
38	FMO	Analog Output	Feed motor control. PWM output
39	TROPENPWM	Analog Output	Tray PWM output/Tray open output
40	V_ADIN9	Analog Input	General A/D input -> Iop Monitor
41	TRO	Analog Output	PDM output of tracking servo compensator
42	FOO	Analog Output	PDM output of focus servo compensator
43	DVSS	Ground	Ground pin for internal digital circuitry
44	NC		Not used
45	NC		Not used
46	DVDD3	Power Input LVTTL	3.3V power pin for internal digital circuitry
47	SPFG	3.3 V, SMT,PU	General A/D input -> Brake for Tray open/close

DVP-NS36/NS37/NS45P/NS55P/NS61P/NS63P

Pin No.	Pin name	Type	Function
48	MSW	Analog Output	Laser Mode SW (H:DVD, L:CD)
49	CKSW	Analog Input	Disc chucking SW sensor
50	OCSW	Input	Servo GPIO 1
51	EEWP	Output	EEPROM write Protect Control (L:write allowed)
52	DVDD18	Power	1.8V power pin for internal digital circuitry
53	HA2	Output PU	Host address bit2
54	HA3	Output PU	Host address bit3
55	HA4	Output PU	Host address bit4
56	HA5	Output PU	Host address bit5
57	HA6	Output PU	Host address bit6
58	HA7	Output PU	Host address bit7
59	HA8	Output PU	Host address bit8
60	HA18	Output SMT	Host address bit18
61	HA19	Output SMT	Host address bit19
62	DVSS	Ground	Ground pin for internal digital circuitry
63	APLLCAP	Analog Input	APLL External Capacitance connection
64	APLLVSS	Ground	Ground pin for audio clock circuitry
65	APLLVDD3	Power	3.3V power for audio clock circuitry
66	xWR	Output SMT	Write enable, active Low
67	HA16	Output	Host address bit16
68	HA15	Output PU	Host address bit15
69	HA14	Output PU	Host address bit14
70	HA13	Output PU	Host address bit13
71	HA12	Output PU	Host address bit12
72	HA11	Output PU	Host address bit11
73	DVDD3	Power	3.3V power pin for internal digital circuitry
74	HA10	Output PU	Host address bit10
75	HA9	Output PU	Host address bit9
76	HA20	Output SMT	Host address bit20
77	xROMCS	Output PU, SMT	Chip select, active Low
78	HA1	Output PU	Host address bit1
79	xRD	Output SMT	Read enable, active Low
80	DVDD3	Power	3.3V power pin for internal digital circuitry
81	HD0	Output	Host data bit0
82	HD1	Output	Host data bit1
83	HD2	Output	Host data bit2
84	HD3	Output	Host data bit3
85	DVSS	Ground	Ground pin for internal digital circuitry
86	HD4	Output	Host data bit4
87	HD5	Output	Host data bit5
88	HD6	Output	Host data bit6
89	HA21	Output SMT	Host data bit21
90	ALE	Output PU,SMT	Address latch enable
91	HD7	Output	Host data bit7
92	HA17	Output	Host address bit17
93	HA0	Output PU	Host address bit0
94	DVSS	Ground	Ground pin for internal digital circuitry
95	UWR	Output PU,SMT	8032 write strobe
96	URD	Output PU,SMT	8032 read strobe
97	DVDD18	Power Output PU,SMT	1.8V power pin for internal digital circuitry
98	IFSDO	Default High Output PU,SMT	Ext. CPU Serial data output (H/W method)
99	IFCK	Default High Output PU,SMT	Ext. CPU Serial clock (H/W method)

Pin No.	Pin name	Type	Function
100	xIFCS	Default High	Chip select for Ext.CPU (Low Active, H/W method)
101	IFSDI	Input PU, SMT	Ext. CPU Serial data Input
102	SCL	Default High-Z Output PU, SMT	Hardware IIC clock (use 52.5/105 kHz)
103	SDA	Default High-Z Output PU, SMT	Hardware IIC data
104	GPIO		Not used
105	IFBSY	Int PU, SMT	Ext. CPU Ready/Busy interrupt signal (H: Busy, L: Ready)
106	RXD	Input PU, SMT	Hardwared RS232C RXD
107	TXD	Default High Output PU, SMT	Hardwared RS232C TXD
108	DVDD3	Power	3.3V power pin for internal digital circuitry
109	ICE	Output PU,SMT	ICE mode enable
110	xsYSRST	Input PU,SMT	MT1389 reset input, active Low
111	IR	Input SMT	IR control signal input
112	INT0	Input PU,SMT	8032 external interrupt 0 (for ICE)
113	DQM0	Output Output Default	Mask for DRAM input/output byte 0
114	LIMIT SW	Low	Inlimit SW sensor input signal
115	RD7	Output	DRAM data bit7
116	DVSS	Ground	Ground pin for internal digital circuitry
117	RD6	Output	DRAM data bit6
118	RD5	Output	DRAM data bit5
119	DVSS	Ground	Ground pin for internal digital circuitry
120	RD4	Output	DRAM data bit4
121	RD3	Output	DRAM data bit3
122	DVDD18	Power	1.8V power pin for internal digital circuitry
123	RD2	Output	DRAM data bit2
124	RD1	Output	DRAM data bit1
125	RD0	Output	DRAM data bit0
126	RD15	Output	DRAM data bit15
127	DVDD3	Power	3.3V power pin for internal digital circuitry
128	RD14	Output	DRAM data bit14
129	RD13	Output	DRAM data bit13
130	RD12	Output	DRAM data bit12
131	RD11	Output	DRAM data bit11
132	RD10	Output	DRAM data bit10
133	RD9	Output	DRAM data bit9
134	DVSS	Ground	Ground pin for internal circuitry
135	RD8	Output Output Default	DRAM data bit8
136	RGBSEL (MV-50 only)	Low	RGB/YCbCr select output signal (H:RGB Disable, L:RGB)
	GPIO (MV-51 only)		Not Used
137	DQM1	Output	Mask for DRAM input/output byte 1
138	RWE#	Output	DRAM write enable
139	CAS#	Output	DRAM column address strobe
140	RAS#	Output	DRAM row address strobe
141	DVDD3	Power	3.3V power pin for internal digital circuitry
142	RCS#	Output	DRAM chip select
143	BA0	Output	DRAM bank address 0
144	DVSS	Ground	Ground pin for internal digital circuitry
145	BA1	Output	DRAM bank address 1
146	RA10	Output	DRAM address bit10
147	RA0	Output	DRAM address bit0
148	DVSS	Ground	Ground pin for internal digital circuitry

DVP-NS36/NS37/NS45P/NS55P/NS61P/NS63P

Pin No.	Pin name	Type	Function
149	RA1	Output	DRAM address bit1
150	RA2	Output	DRAM address bit2
151	RA3	Output	DRAM address bit3
152	DVDD18	Power	1.8V power pin for internal digital circuitry
153	NC		Not used
154	NC		Not used
155	DVDD3	Power	3.3V power pin for internal digital circuitry
156	DRCLK	Output	DRAM clock
157	CKE	Output	DRAM clock enable
158	RA11	Output PD	DRAM address bit11
159	RA9	Output	DRAM address bit9
160	RA8	Output	DRAM address bit8
161	DVSS	Ground	Ground pin for internal digital circuitry
162	RA7	Output	DRAM address bit7
163	DVSS	Ground	Ground pin for internal digital circuitry
164	RA6	Output	DRAM address bit6
165	RA5	Output	DRAM address bit5
166	RA4	Output	DRAM address bit4
167	DVDD3	Power	3.3V power pin for internal digital circuitry
168	FWD	Output PU	Roading control signal (Forward)
169	REV	Output PU	Roading control signal (Reverse)
170	MUTE123	Output PU	Servo driver MUTE signal
171	NC		Not used
172	NC		Not used
173	DVDD18	Power Output Default	1.8V power pin for internal digital circuitry
174	MUTE	Output PD	Servo driver MUTE signal
175	NC		Not used
176	xMAMUTE	Default LOW	Main Audio Mute Signal (H: Unmute, L: Mute)
177	DSEL (MV-50 only)	Output	Interlace/Prog select output signal (H: 480i, L:480P)
	GPIO (MV-51 only)		Not used
178	TSD_M	Input PU	SERVO GPIO 3
179	EUROVY (MV-50 only)	Output PU	CVBS/S terminal select output signal (H: CBVS, L: S-Terminal)
	GPIO (MV-51 only)		Not used
180	NC		Not used
181	NC		Not used
182	DVDD3	Power	3.3V power pin for internal digital circuitry
183	NC		Not used
184	NC		Not used
185	NC		Not used
186	NC		Not used
187	NC		Not used
188	NC		Not used
189	DACVDDC	Power	3.3V power for Video DAC circuitry
190	VREF	Analog Input	Bandgap Ref Voltage (No connect)
191	FS	Analog Input	Full Scale Adjustment
192	CIN	Output	Compensation Capacitor
193	DACVSSC	Ground	Ground pin for Video DAC circuitry
194	Y	Output	Analog Y output
195	DACVddb	Power	3.3V power for Video DAC circuitry
196	C	Output	Analog chroma output
197	DACVSSB	Ground	Ground pin for Video DAC circuitry
198	CVBS	Output	Analog composit output
199	DACVDDA	Power	3.3V power for Video DAC circuitry

Pin No.	Pin name	Type	Function
200	Y/G	Output	Green signal or Y signal output
201	DACVSSA	Ground	Ground pin for Video DAC circuitry
202	B/Cb/Pb	Output	Blue signal or Cb signal output
203	R/Cr/Pr	Output	Red signal or Cr signal output
204	DVDD3	Power	3.3V power pin for Video DAC digital circuitry
205	MIC	Input SMT	Karaoke Microphone detect signal
206	VOICE (MV-50 only)	Output SMT	Karaoke voice function (not used)
	SCORE (MV-51 only) (Full Karaoke model only)	LOW	Karaoke score function
	ECHO_ON OFF (MV-51 only) (5 Karaoke model only)	LOW	Karaoke Echo function status output (H: Echo on; L: Echo off)
207	KRMOD	Output SMT Output Default	Karaoke Mode Status Output (H: Normal, L: Karaoke)
208	SCK	Output	ADAC Serial Clock (S/W method by 8032)
209	WIDE	Output Output Default	Video aspect ratio control SW
210	SDO	Output	ADAC Serial data output (S/W method by 8032)
211	xSCS	Output	Chip select for ADAC (Low active, SW method by 8032)
212	DVDD3	Power	3.3V power pin for internal digital circuitry
213	ALRCK	Output PD,SMT	Audio left/right channel clock (ADAC LRCK output)
214	ABCK	Output	Audio Bit Clock output (ADAC BCK output)
215	ACLK	Output	Master clock output for Audio DAC (ADAC CLK Master clock output)
216	DVSS	Ground	Ground pin for internal digital circuitry
217	ASDATA0	Output	Not used
218	ASDATA1	Output	Not used
219	ASDATA2	Output	Not used
220	xRST	Default Low	Reset output signal for ADAC (Low Active)
221	DVDD18	Power	1.8V power pin for intenal digital circuitry
222	ASDATA4	Output PD,SMT	Audio serial data 4: Down-mixed L/R
223	DVSS	Ground	Ground pin for internal digital circuitry
224	Disc/XEXT (MV-50 only)	Output	Disc/External input select output signal (H: Disc, L: External)
	XVOICE (MV-51 only)	Input	Karaoke Voice function
225	SPDIF	Output	SPDIF output
226	RFGND18	Ground	Ground pin for internal analog circuitry
227	RFVDD18	Power	1.8V power pin for internal analog circuitry
228	XTALO	Output	27M crystal output
229	XTALI	Input	27M crystal input
230	JITFO	Analog Output	The output terminal of RF jitter
231	JITFN	Analog Input	The input terminal of RF jitter
232	PLLSS	Ground	Ground pin for data PLL and related analog circuitry
233	IDACEXP	Analog Output	Data PLL DAC Low-pass filter
234	PLLVD3	Power	3.3V power pin for data PLL and related analog circuitry
235	LPFON	Analog Output	The negative output terminal of loop filter amplifier
236	LPFIP	Analog Input	The positive input terminal of loop filter amplifier
237	LPFIN	Analog Input	The negative input of loop filter amplifier
238	LPFOP	Analog Output	The positive output of loop filter amplifier
239	ADCVD3	Power	Power pin for ADC circuitry
240	NC		Not used
241	ADCVSS	Ground	Ground pin for ADC circuitry
242	NC		Not used
243	NC		Not used
244	RFVDD3	Power	3.3V power pin for RF digital circuitry
245	RFRPDC	Analog Output	RF ripple detect output
246	RFRPAC	Analog Input	RF ripple detect input (through AC-coupling)

DVP-NS36/NS37/NS45P/NS55P/NS61P/NS63P

Pin No.	Pin name	Type	Function
247	HRFZC	Analog Input	High frequency RF ripple zero crossing capasitor connecting
248	CRTPLP	Analog Output	Defect level filter capacitor connecting
249	RFGND	Ground	Ground pin for RF digital circuitry
250	NC		Not used
251	NC		Not used
252	OSP	Analog Output	RF Offset cancellation capacitor connecting
253	OSN	Analog Output	RF Offset cancellation capacitor connecting
254	RFGC	Analog Output	RF AGC loop capacitor conecting for DVD-ROM
255	IREF	Analog Input	Input reference current input
256	AVDD3	Power	3.3V power pin for analog circuirtry

SECTION 6 TEST MODE

6-1. EXECUTING IOP MEASUREMENT

In order to execute IOP measurement, the following standard procedures must be followed.

- (1) In standby mode, press **[TOP MENU]**, **[CLEAR]**, **[POWER]** to enter Remocon Diagnosis Mode.

Remocon Diagnosis Menu	
0. External Chip Check	
1. Servo Parameter Check	
2. Drive Manual Operation	
3. Emergency History	
4. Version information	
5. Video Level Adjustment	
Model : xxx xxx xxx	
IF-con Ver : xxx	
Syscon Ver : xxx	

- (2) Select “2. Drive Manual Operation” by pressing the **[2]** key on the remote commander. The screen will appear as below.

Drive Manual Operation	
1. Servo Control	
2. Track/Layer Jump	
3. Manual Adjustment	
4. Tray Aging Mode	
0. Return to top Menu	

- (3) Select “3. Manual Adjustment” by pressing the **[3]** key on the remote commander. The screen will appear as below.

Manual Adjust	
1. Track Balance Adjust:	
2. Track Gain Adjust:	
3. Focus Balance Adjust:	
4. Focus Gain Adjust:	
5. Eg boost Adjust:	
6. Iop:	
7. TRV. Level:	
8. S curve(FE) Level:	
9. RFL(PI) Level:	
0. MIRR Time:	
[↑↓] Change Value	
[RETURN] Return to previous menu	

- (4) Select Iop by pressing **[6]** key on the remote commander.

- (5) Wait until a hexadecimal number appear.

Manual Adjust	
1. Track Balance Adjust:	
2. Track Gain Adjust:	
3. Focus Balance Adjust:	
4. Focus Gain Adjust:	
5. Eq Boost Adjust:	
6. Iop: [ED]	
7. TRV. Level:	
8. S curve(FE) Level:	
9. RFL(PI) Level:	
0. MIRR Time:	
[↑↓] Change Value	
[RETURN] Return to previous menu	

- (6) Convert data from hexadecimal to decimal.

- (7) Use the following formula to calculate IOP in mA

$$\text{IOP (mA)} = \text{IOP (decimal)} \times 0.622678.$$

- (8) Press **[RETURN]** to return back to previous menu.

- (9) Press **[0]** to return to Top Menu and power OFF the DVD Player.

6-2. EMERGENCY HISTORY CHECK

Information of Emergency History.

- (1) In standby mode, press **[TOP MENU]**, **[CLEAR]**, **[POWER]** to enter Remocon Diagnosis Mode.

- (2) Select “3. Emergency History”.

Emg. History Check				
Laser	Hours	CD	999h	59min
		DVD	999h	59min
1.	01 05 04 04		00 92 46 00	
	00 00 00 00		00 00 23 45	
2.	02 02 01 01		00 A9 4B 00	
	00 00 00 00		00 00 23 45	
[Next] Next Page [Prev] Prev Page				
[0] Return to Top Menu				

- (3) Laser Hours
 DVD Laser ON time. (Total ON time)
 CD Laser ON time. (Total ON time)

- (4) Emergency History
 The history information from last “1” to “10” can be scrolled with **[NEXT]** key or **[PREV]** key.

- (5) Error code

Example of Error code				
1.	[01] 05 04 04		00 92 46 00	
	00 00 00 00		00 00 23 45	

- (6) Error code list
- 01: Communication error (No reply from syscon)
 - 02: Syscon hung up
 - 03: Power OFF request when syscon hung up
 - 19: Thermal shutdown
 - 24: MoveSledHome error
 - 25: Mecha move error (5 Changer)
 - 26: Mecha move stack error
 - 30: DC Motor adjustment error
 - 31: DPD offset adjustment error
 - 32: TE Balance adjustment error
 - 33: TE Sensor adjustment error
 - 34: TE loop gain adjustment error
 - 35: FE loop gain adjustment error
 - 36: Bad jitter after adjustment
 - 40: Focus NG
 - 42: Focus Layer Jump NG
 - 52: Open kick spindle error
 - 51: Spindle stop error
 - 60: Focus on error
 - 61: Seek fail error
 - 62: read Qdata/ID error
 - 70: Lead In Data Read Fail
 - 71: TOC read time out (CD)
 - 80: Can't Buffering
 - 81: Unknown media type

- (7) Error code parameters

Example of Error code			
1.	01	05 04 04	00 92 46 00
		00 00 00 00	00 00 23 45

This is the detailed contents of error information

- (8) Laser hours at error happend.

Example of Error code			
1.	01	05 04 04	00 92 46 00
		00 00 00 00	00 00 23 45

This is Laser hours when an error happened.

- (9) How to Clear laser hours
- Press **[DISPLAY]**, **[CLEAR]** keys in this order.
- Both CD and DVD data are cleared.

Emg. History Check			
Laser Hours	CD	0h	0min
	DVD	0h	0min
1.	01	05 04 04	00 92 46 00
		00 00 00 00	00 00 23 45
2.	02	02 01 01	00 A9 4B 00
		00 00 00 00	00 00 23 45
[Next] Next Page [Prev] Prev Page			
[0] Return to Top Menu			

- (10) How to Clearing Emergency code
- Press **[TOPMENU]**, **[CLEAR]** keys in this order.
- All emergency code are cleared.

Emg. History Check			
Laser Hours	CD	999h	59min
	DVD	999h	59min
1.	00 00 00 00	00 00 00 00	00 00 00 00
	00 00 00 00	00 00 00 00	00 00 00 00
2.	00 00 00 00	00 00 00 00	00 00 00 00
	00 00 00 00	00 00 00 00	00 00 00 00
[Next] Next Page [Prev] Prev Page			

- (11) Press - key, return to TOP MENU.

6-3. INITIALIZING SETUP DATA

How to initializing setup data.

- (1) In standby mode, press **[TOP MENU]**, **[CLEAR]**, **[POWER]** to enter Remocon Diagnosis Mode.
- (2) Select “3. Emergency History”.

Emg. History Check			
Laser Hours	CD	999h	59min
	DVD	999h	59min
1.	01	05 04 04	00 92 46 00
		00 00 00 00	00 00 23 45
2.	02	02 01 01	00 A9 4B 00
		00 00 00 00	00 00 23 45
[Next] Next Page [Prev] Prev Page			
[0] Return to Top Menu			

- (3) Initializing setup data
- Press **[MENU]**, **[CLEAR]** keys in this order.
- The data have been initialized when “Initialize setup data...” mesage is displayed.

Emg. History Check			
Laser Hours	CD	999h	59min
	DVD	999h	59min
Initialize setup data ...			
[Next] Next Page [Prev] Prev Page			
[0] Return to Top Menu			

- (4) The Emergency history display screen will be restored soon.

Emg. History Check				
Laser	Hours	CD	999h	59min
		DVD	999h	59min
1.	01 05 04 04		00 92 46 00	
	00 00 00 00		00 00 23 45	
2.	02 02 01 01		00 A9 4B 00	
	00 00 00 00		00 00 23 45	
Next Next Page Prev Prev Page				

- (12) Press key, return to TOP MENU.

6-4. VERSION INFORMATION

Information of firmware version.

- (1) In standby mode, press , , to enter Remocon Diagnosis Mode.

- (2) Select "4. Version Information".

Version information	
Firm (Main)	: Ver. xxxxx
Firm (Sub)	: xxxxx
RISC	: xxxxx
8032	: xxxxx
Audio DSP	: xxxxx
Servo DSP	: xxxxx
0 Return to Top Menu	

- (3) Press key, return to TOP MENU.

6-5. IF CON SELF DIAGNOSTIC FUNCTION

1. IF-144/IF-145 BOARDS (IF CON) TEXT MODE

The IF-144/IF-145 boards (IF CON) test mode is the IF CON self-diagnosis mode. The IF CON can diagnose the functions of the IF-144/IF-145 boards that the IF CON controls. Normally, the IF CON makes a serial communication with the SYSTEM CONTROL and operates following the commands from the SYSTEM CONTROL, but in the Test mode, the IF CON operates independently from the SYSTEM CONTROL.

In the test mode, the following functions can be checked.

1. Button function
2. Remote commander receiving function
3. SYSTEM CONTROL-IF CON serial communication
4. Fluorescent display tube lighting check
 - Grid check
 - Anode check
5. LED control function

In the test mode, the main unit operates same as usual, except voltage monitoring, communication, display of fluorescent display tube, and LED control.

1. The routine that monitors +3.3V (PCONT) of MV-50/MV-51 boards is not provided.
2. The monitoring timer for serial communication with the SYSTEM CONTROL is not provided. The main unit is not placed in the Standby mode, even if the communication with SYSTEM CONTROL is normal.
3. Display of fluorescent display tube.
(Normally, display is mode following the commands from SYSTEM CONTROL).
4. LED control.
(Normally, control is mode made following the commands from SYSTEM CONTROL).

2. OPERATION OF SELF CHECK MODE

The Self Check mode is the function to conduct the basic test to the FL display and DVD panel section.

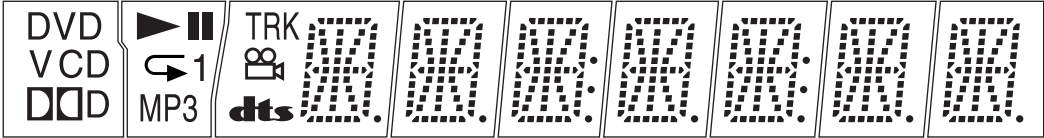
2-1. Self Check Mode Transition Processing

At the AC Power ON after reset of IF CON is released, while pressing with the MV-50/MV-51 boards are not connected to the IF-144/IF-145 boards, or while pressing the key on the main unit with the IF CON in STANDBY mode, enter → (or) on the remote commander, and the main unit transits to the Self Check Mode.

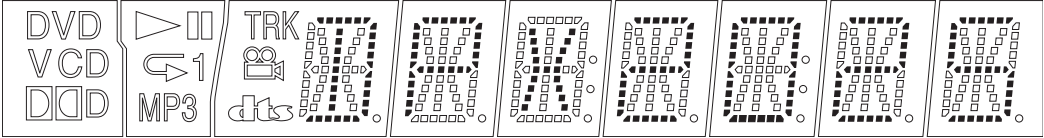
2-2. Operation of Auto Self Check

When the Self Check mode becomes active at the AC Power ON or by key input, the test display of the following steps (1) to (4) is repeated.

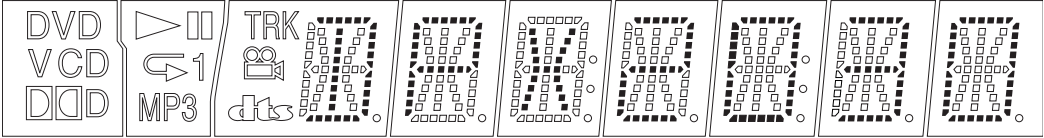
- (1) FLD and LED all ON (for 5 seconds)



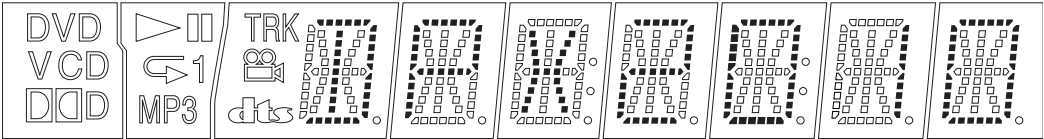
- (2) MODEL display (for 2 seconds) (NS36/NS37)



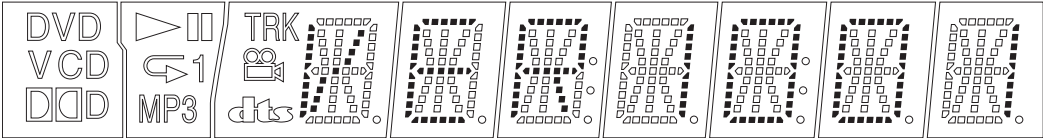
MODEL display (for 2 seconds) (NS45P/55P/61P)



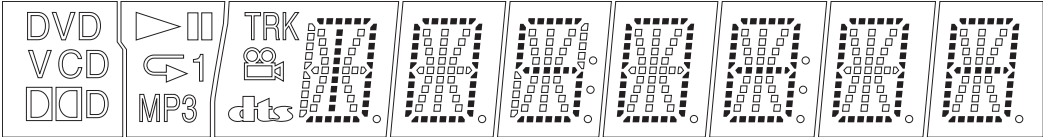
MODEL display (for 2 seconds) (NS63P)



- (3) Version display (for 2 seconds)



- (4) ROM creation date display (for 2 seconds)



2-3. Each Self Check Function

Each Self Check function tests the FLD display, LED display, and key input.

Input Voltage [V]	IC404: Pin No. (Signal)			
	PIN ③④ (AD1)	PIN ③⑤ (O/C)	PIN ③⑥ (STOP)	PIN ③⑦
0 - 0.20	PLAY	OPEN/CLOSE	STOP	POWER
0.60 - 0.82	-	-	PROGRESSIVE	-
1.16 - 1.47	PREVIOUS	-	-	-
1.80 - 2.12	NEXT	-	-	-
2.48 - 2.70	-	-	-	-

2-3-1. FLD and LED All ON

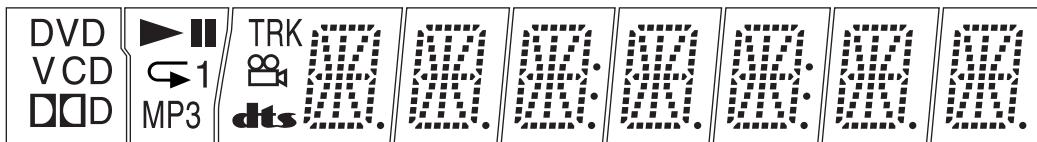
2-3-1-1. Transition Keys in Self Check Mode

-  key and  key on the main unit
-  key on the remote commander

2-3-1-2. Operation and display

In this mode, all LEDs and all segments of FLD turn ON.

- Example of FLD all ON



2-3-2. Main Unit Key Name Display and Key Code Display

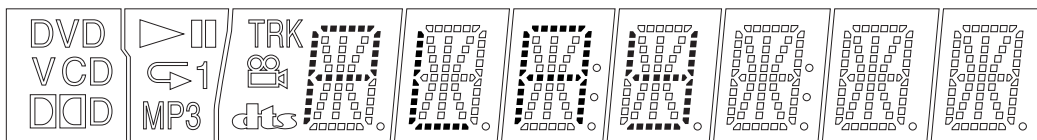
2-3-2-1. Transition Keys in Self Check Mode

- Keys on the main unit except keys transitioned in Self Check Mode

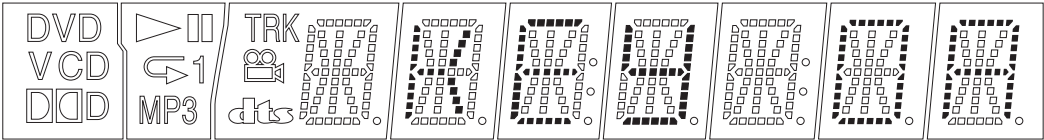
2-3-2-2. Operation and Display

When a key on the main unit is pressed in the Self Check mode, the name of that key is displayed on the FLD. Also, the key name display and the key code display can be switched with the **[DISPLAY]** key on the remote commander, "NOTHING" is displayed when nothing is entered. Also, DVD, V, CD segments turn on when a communication error occurred.

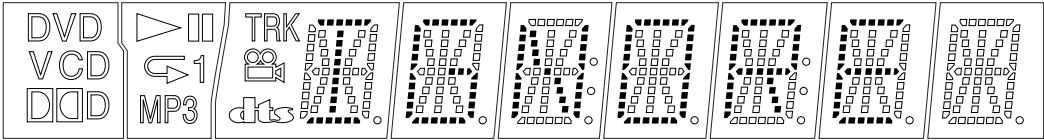
- FLD display (at input of  key on the main unit)



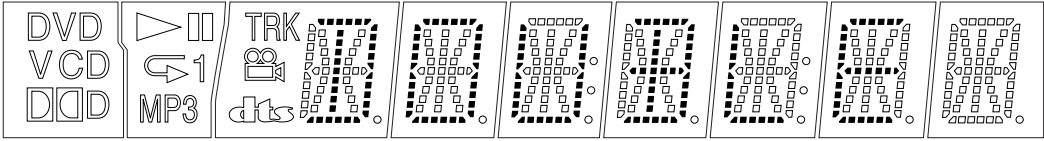
- Key code display
(at input of  key, key code: 0Ah)



- At input of faulty voltage



- When key is pressed double



2-3-3. Remote Commander Key Name Display and Key Code Display

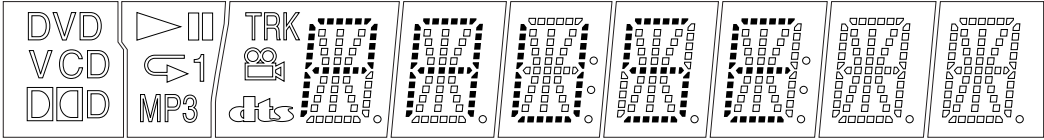
2-3-3-1. Transition Keys in Self Check Mode

- Remote commander keys except keys transited in Self Check Mode

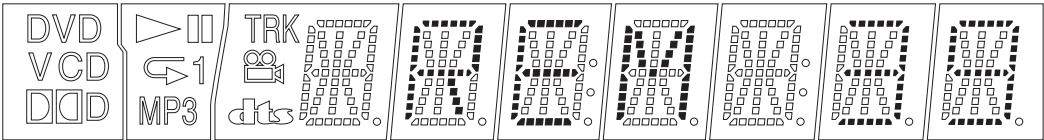
2-3-3-2. Operation and Display

When a key on the remote commander is pressed in the Self Check Mode, the name of that key is displayed on the FLD. Also, the key name display and the key code display can be switched with the DISPLAY key on the remote commander. “NOTHING” is displayed when nothing is entered. Also, VIDEO CD, DVD, and CD segments turn on when a communication error occurred.

- Remote commander key name display (at input of  key)



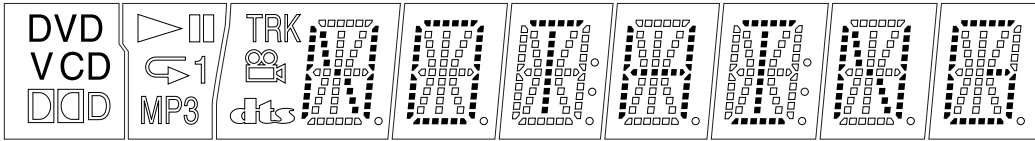
- Remote commander key code display (at input of  key, key code:39h)



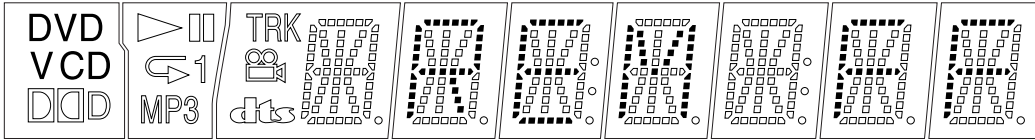
2-3-4. Communication Monitoring Display

The communication state is monitored and displayed while the key name on the main unit and the remote commander is displayed. When the communication to the System Controller failed, VIDEO CD, DVD, and CD segments turn on.

- Communication error display (at no input of key and remote commander)



- Communication error display (at code display without input of the remote commander)



2-3-5. FLD Anode Test Display and SHUTTLE Click Operation Test

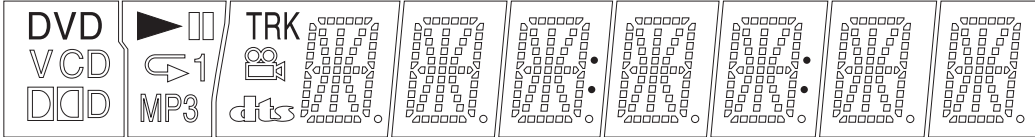
2-3-5-1. Transition Keys in Self Check Mode

- ➡ key on the remote commander
- SHUTTLE on the remote commander during Anode Test display (This unit does not provide JOG/SHUTTLE, and therefore use another DVD remote commander having the JOG/SHUTTLE)

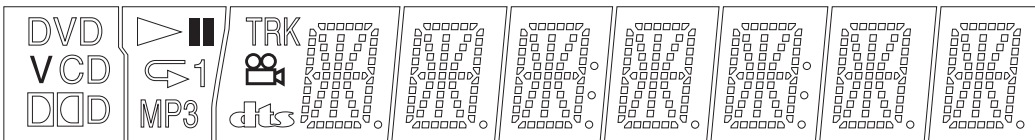
2-3-5-2. Operation and Display

The Self Check Mode transits to this mode when ➡ key is entered. This tests whether each segment turns on individually. Only the first segment of each grid of FLD turns on, and each time the SHUTTLE is entered, the segment of each grid switched in order. When SHUTTLE input is clockwise, the segment switches in 1 - 2 - 3 direction, or counterclockwise it switches in 3 - 2 - 1 direction.

- Display at the start of Anode Test



↓ (Input in CW direction)



2-3-6. FLD Grid Test Display and SHUTTLE Click Operation Test

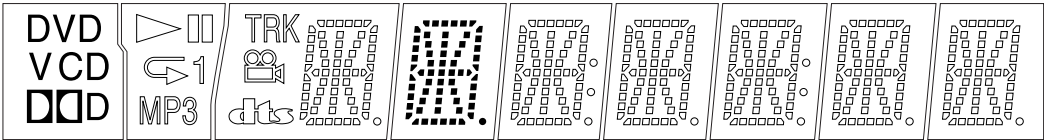
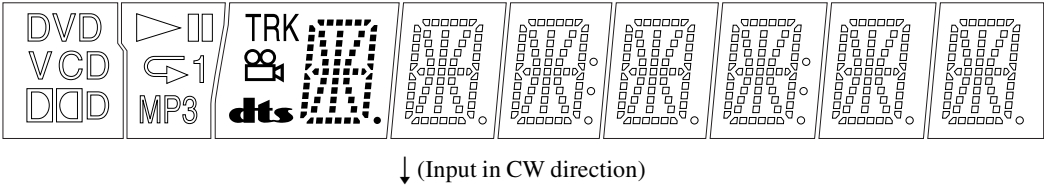
2-3-6-1. Transition Keys in Self Check Mode

-  key on the remote commander
- SHUTTLE on the remote commander during Grid Test display
(This unit does not provide JOG/SHUTTLE, and therefore use another DVD remote commander having the JOG/SHUTTLE)

2-3-6-2. Operation and Display

The Self Check Mode transits to this mode when  key is entered. This tests whether each grid turns on individually. The first grid only of FLD turns on and other grid turn off. Each time the SHUTTLE is entered, the grid is switched in order. When SHUTTLE input is clockwise, the grid switched in 1 - 2 - 3 direction, or counterclockwise it switches in 3 - 2 - 1 direction.

- Display at the start of Grid Test



2-3-7. LED Test Display

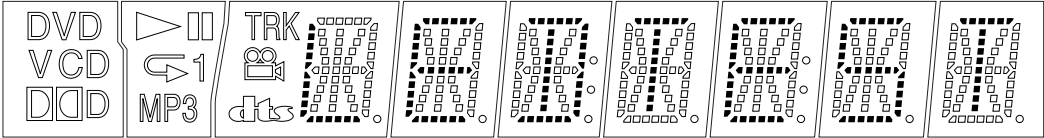
2-3-7-1. Transition Keys in Self Check Mode

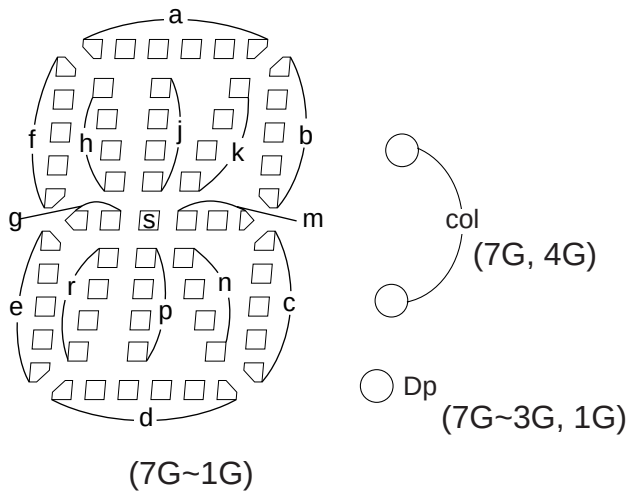
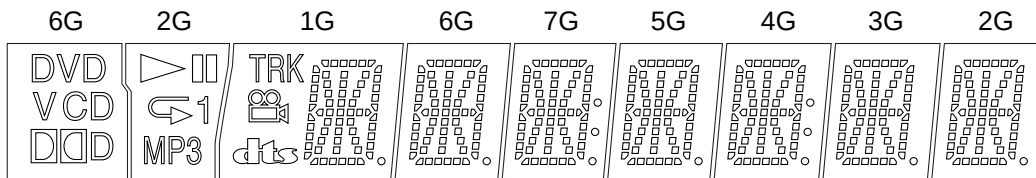
-  key on the remote commander
- SHUTTLE on the remote commander during Grid Test display
(This model does not provide JOG/SHUTTLE, and therefore use another DVD remote commander having the JOG/SHUTTLE)

2-3-7-2. Operation and Display

LED is switched in order by the input JOG/SHUTTLE on the remote commander. Also, LED ON/OFF is switched by the input of same key as the function that turns on the LED concerned.

- FLD display during LED Test





ANODE CONNECTION

	7G	6G	5G	4G	3G	2G	1G
P1	col	DVD	-	col	-	▷	TRK
P2	-	V	-	-	-		8
P3	-	CD	-	-	-	↶	dt
P4	-	DCD	-	-	-	1	-
P5	Dp	Dp	Dp	Dp	Dp	MP3	Dp
P6	a	a	a	a	a	a	a
P7	k	k	k	k	k	k	k
P8	j	j	j	j	j	j	j
P9	h	h	h	h	h	h	h
P10	b	b	b	b	b	b	b
P11	f	f	f	f	f	f	f
P12	m	m	m	m	m	m	m
P13	s	s	s	s	s	s	s
P14	g	g	g	g	g	g	g
P15	c	c	c	c	c	c	c
P16	d	d	d	d	d	d	d
P17	r	r	r	r	r	r	r
P18	p	p	p	p	p	p	p
P19	n	n	n	n	n	n	n
P20	e	e	e	e	e	e	e

SECTION 7

ELECTRICAL ADJUSTMENT

This section describes procedures and instructions necessary for adjusting electrical circuits in this unit.

Instruments required:

- (1) Color monitor TV
- (2) Oscilloscope 1 or 2 phenomena, band width over 100 MHz, with delay mode
- (3) Frequency counter (over 8 digits)
- (4) Digital multimeter
- (5) Standard commander
(RMT-D175A/RMT-D175P/RMT-D175C)
- (6) DVD reference disc
HLX-501 (J-6090-071-A) (dual layer) (NTSC)
HLX-503 (J-6090-069-A) (single layer) (NTSC)
HLX-504 (J-6090-088-A) (single layer) (NTSC)
HLX-505 (J-6090-089-A) (dual layer) (NTSC)

7-1. POWER SUPPLY OUTPUT VOLTAGE CHECK

Mode	Except standby
Instrument	Digital multimeter
EVER +5 V Check	
Test point	CN201 pin ④
Specification	5.0 ± 0.3 Vdc
SW +3.3 V Check	
Test point	CN201 pin ⑤
Specification	3.35 ± 0.2 Vdc
SW+5 V Check	
Test point	CN201 pin ⑥
Specification	$5.0^{+0.2}_{-0.3}$ Vdc
SW +8 V Check	
Test point	CN201 pin ①
Specification	8.0 ± 0.5 Vdc
EVER +11 V Check	
Test point	CN201 pin ③
Specification	$11.0^{+1.0}_{-0.5}$ Vdc
EVER -10 V Check	
Test point	CN201 pin ⑩
Specification	$-10.0^{+0.5}_{-1.0}$ Vdc

Checking method:

- (1) Confirm that each voltage satisfies the specification.

Caution!

Please do not touch any electrical parts at primary circuit to avoid electrical shock.

7-2. ADJUSTMENT OF VIDEO SYSTEM
(DVP-NS36:AEP,UK/NS37)

1. Checking Video Level

<Purpose>

Checking Video Level the NTSC/PAL standard, and if not correct, the brightness will be too large or small.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	LINE OUT (VIDEO) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.08 Vp-p

Adjusting method:

- (1) In the Video Signal menu “1” Color Bar 100% play back.
- (2) Confirm that the Video Level is 1.0 ± 0.08 Vp-p.

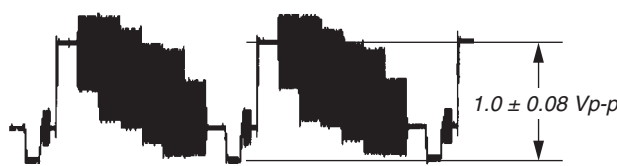


Fig. 7-1.

2. Checking Scart Video Output Level (Video Mode)

<Purpose>

Check scart video output level. If it is incorrect, correct brightness will be too large or small.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	VIDEO OUT (19p) connector (75 W terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.08 Vp-p

Adjusting method:

- (1) In the Video Signal menu “1” Color Bar 100% play back.
- (2) Confirm that the Y level is 1.0 ± 0.08 Vp-p.



Fig. 7-2.

3. Checking Scart S Video Output S-Y
(S-Video Mode)

<Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	S VIDEO OUT (S-Y) (19p) (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.08 Vp-p

Checking method:

- (1) In the Video Signal menu “1” Color Bar 100% play back.
- (2) Confirm that the S-Y level is 1.0 ± 0.08 Vp-p.

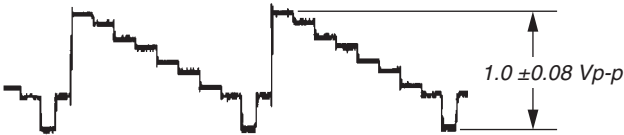


Fig. 7-3.

4. Checking Scart S Video Output S-C
(S-Video Mode)

<Purpose>

This checks whether the S-C satisfies the NTSC/PAL standard. If it is not correct, the colors will be too dark or light.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	S VIDEO OUT (S-C) (15p) (75 Ω terminated)
Instrument	Oscilloscope
Specification	A = 286 ± 50 mVp-p (NTSC) A = 300 ± 50 mVp-p (PAL)

Checking method:

- (1) In the Video Signal menu “1” Color Bar 100% play back.
- (2) Confirm that the S-C burst is “A”.

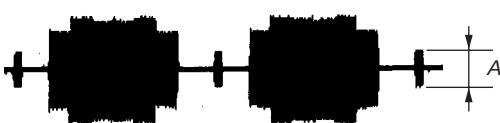


Fig. 7-4.

5. Checking RGB Output G (RGB Mode)

<Purpose>

This checks RGB video output G level. If it is incorrect, correct color will not be remain some.

Mode	HLX-504 play back
Signal	Color bars
Test point	Green Out (11p) (75 Ω terminated)
Instrument	Oscilloscope
Specification	$A = 700 \pm 70 \text{mVp-p}$

Checking method:

- (1) In the Video Signal menu "1" Color Bar 100% play back.
- (2) Confirm that the G level is $1.0 \pm 0.08 \text{ Vp-p}$.

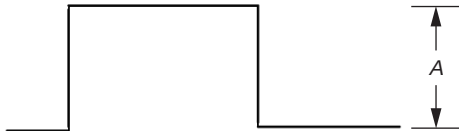


Fig. 7-5.

6. Checking RGB Output B (RGB Mode)

<Purpose>

This checks RGB video output B level. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	HLX-504 play back
Signal	Color bars
Test point	Blue Out, (7p) (75 Ω terminated)
Instrument	Oscilloscope
Specification	$B = 700 \pm 70 \text{ mVp-p}$

Checking method:

- (1) In the Video Signal menu "1" Color Bar 100% play back.
- (2) Confirm that the B level is A.

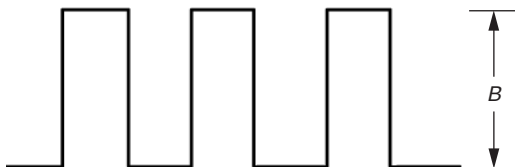


Fig. 7-6.

7. Checking RGB Output R (RGB Mode)

<Purpose>

This checks RGB video output R level. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	HLX-504 play back
Signal	Color bars
Test point	Red Out, (15p) (75 Ω terminated)
Instrument	Oscilloscope
Specification	$C = 700 \pm 70 \text{ mVp-p}$

Checking method:

- (1) In the Video Signal menu "1" Color Bar 100% play back.
- (2) Confirm that the R level is B.

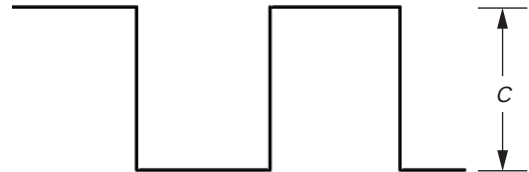


Fig. 7-7.

7-3. ADJUSTMENT OF VIDEO SYSTEM
(EXCEPT DVP-NS36:AEP,UK/NS37)

1. Checking Video Level

<Purpose>

Checking Video Level the NTSC/PAL standard, and if not correct, the brightness will be too large or small.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	LINE OUT (VIDEO) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.08 Vp-p

Adjusting method:

- (1) In the Video Signal menu “1” Color Bar 100% play back.
- (2) Confirm that the Video Level is 1.0 ± 0.08 Vp-p.



Fig. 7-1.

2. Checking Progressive Video Output Level

<Purpose>

Check progressive video output level. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	COMPONENT VIDEO OUT (Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.08 Vp-p

Adjusting method:

- (1) In the Video Signal menu “1” Color Bar 100% play back.
- (2) Confirm that the Y level is 1.0 ± 0.08 Vp-p.



Fig. 7-2.

3. Checking S Video Output S-Y

<Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	S VIDEO OUT (S-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.08 Vp-p

Checking method:

- (1) In the Video Signal menu “1” Color Bar 100% play back.
- (2) Confirm that the S-Y level is 1.0 ± 0.08 Vp-p.

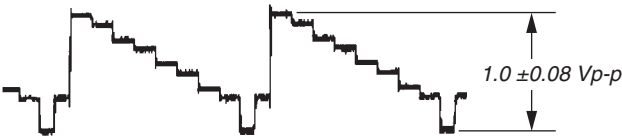


Fig. 7-3.

4. Checking S Video Output S-C

<Purpose>

This checks whether the S-C satisfies the NTSC/PAL standard. If it is not correct, the colors will be too dark or light.

Mode	HLX-504 play back
Signal	Color bars 100%
Test point	S VIDEO OUT (S-C) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	A = 286 ± 50 mVp-p (NTSC) A = 300 ± 50 mVp-p (PAL)

Checking method:

- (1) In the Video Signal menu “1” Color Bar 100% play back.
- (2) Confirm that the S-C burst is “A”.



Fig. 7-4.

5. Checking Component Video Output Y

<Purpose>

This checks component video output Y. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	HLX-504 play back
Signal	Color bars
Test point	COMPONENT VIDEO OUT (Y) connector, (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.08 Vp-p

Checking method:

- (1) In the Video Signal menu "1" Color Bar 100% play back.
- (2) Confirm that the Y level is 1.0 ± 0.08 Vp-p.



Fig. 7-5.

6. Checking Component Video Output B-Y

<Purpose>

This checks component video output B-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	HLX-504 play back
Signal	Color bars
Test point	COMPONENT VIDEO OUT (P _B) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	$A = 700 \pm 70$ mVp-p

Checking method:

- (1) In the Video Signal menu "1" Color Bar 100% play back.
- (2) Confirm that the B-Y level is A.

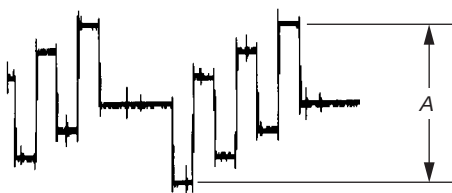


Fig. 7-6.

7. Checking Component Video Output R-Y

<Purpose>

This checks component video output R-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	HLX-504 play back
Signal	Color bars
Test point	COMPONENT VIDEO OUT (P _R) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	$B = 700 \pm 70$ mVp-p

Checking method:

- (1) In the Video Signal menu "1" Color Bar 100% play back.
- (2) Confirm that the R-Y level is B.

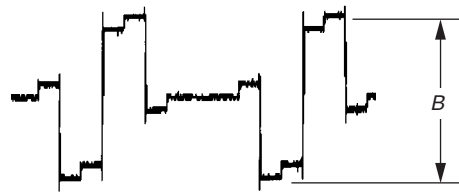


Fig. 7-7.