

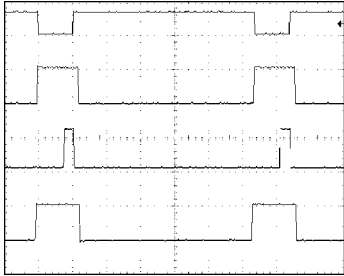
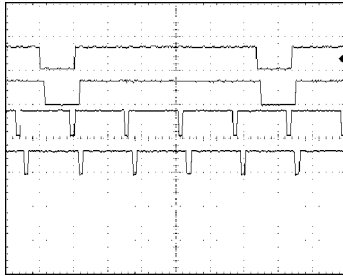
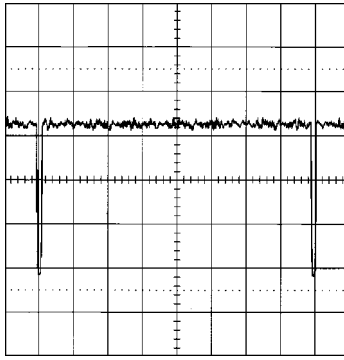
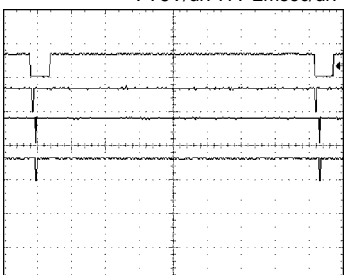
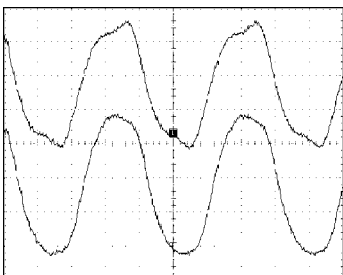
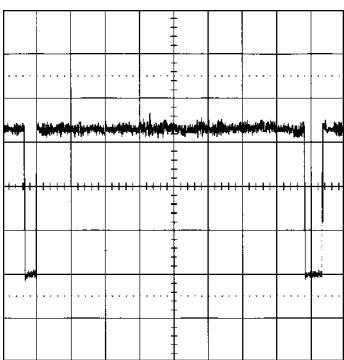
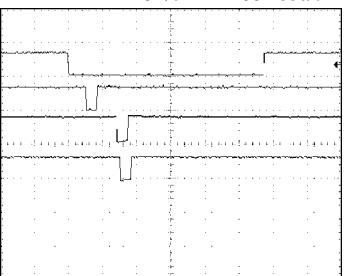
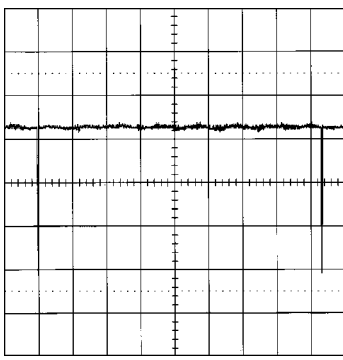
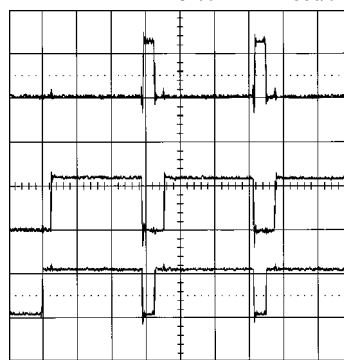
A

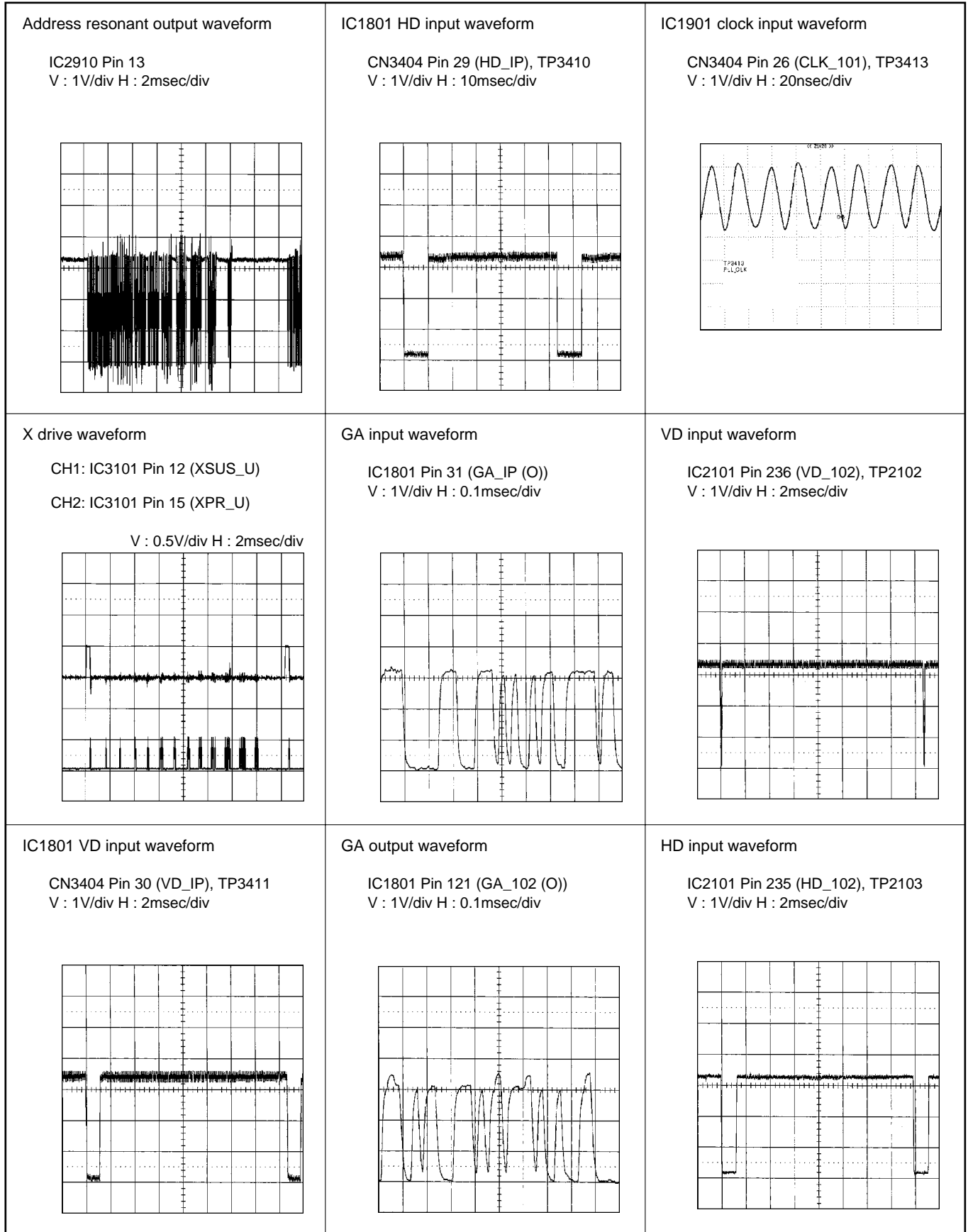
B

C

D

## Waveforms of X DIGITAL VIDEO ASSY

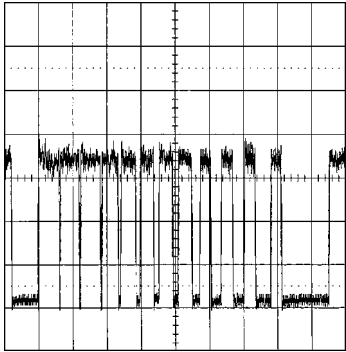
<p>Blanking waveform for analog use</p> <p>CH1: TP3410 (HDIP)</p> <p>CH2: TP3405 (CLP1)</p> <p>CH3: TP3406 (CLP2)</p> <p>CH4: TP3407 (HBLK1)</p> <p>V : 5V/div H : 10msec/div</p> 	<p>I-P H synchronous waveform</p> <p>CH1: TP3410 (HD_IP)</p> <p>CH2: IC1801 Pin 168 (Hi) — IC1901 Pin 57</p> <p>CH3: IC1901 Pin 55 (Hp) — IC1801 Pin 170</p> <p>CH4: IC1801 Pin 98 (HD_102)</p> <p>V : 5V/div H : 10msec/div</p> 	<p>H synchronous waveform</p> <p>TP2155</p> <p>V : 1V/div H : 2msec/div</p> 
<p>I-P V synchronous waveform</p> <p>CH1: TP3411 (VD_IP)</p> <p>CH2: IC1801 Pin 167 (Vi) — IC1901 Pin 58</p> <p>CH3: IC1901 Pin 56 (Vp) — IC1801 Pin 169</p> <p>CH4: IC1801 Pin 97 (VD_102)</p> <p>V : 5V/div H : 2msec/div</p> 	<p>I-P clock waveform</p> <p>CH1: IC1801 Pin 3 (CLK_102)</p> <p>CH2: IC1901 Pin 239 (CLK_101)</p> <p>V : 1V/div H : 5nsec/div</p> 	<p>STOP B waveform</p> <p>TP2205</p> <p>V : 1V/div H : 2msec/div</p> 
<p>I-P V synchronous waveform (enlarged)</p> <p>CH1: TP3411 (VD_IP)</p> <p>CH2: IC1801 Pin 167 (Vi) — IC1901 Pin 58</p> <p>CH3: IC1901 Pin 56 (Vp) — IC1801 Pin 169</p> <p>CH4: IC1801 Pin 97 (VD_102)</p> <p>V : 5V/div H : 200msec/div</p> 	<p>V synchronous waveform</p> <p>TP2154</p> <p>V : 1V/div H : 2msec/div</p> 	<p>ADR resonant control signal waveform</p> <p>CH1: IC3303 Pin11 (ADR_U)</p> <p>CH2: IC3303 Pin12 (ADR_B)</p> <p>CH3: IC3303 Pin13 (ADR_D)</p> <p>V : 5V/div H : 1msec/div</p> 



# PDP-502MX, PDP-502MXE

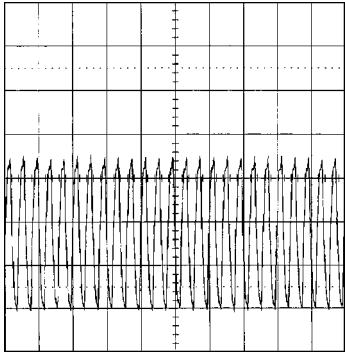
Address control signal

IC3304 Pin 11 (LBLK)  
V : 1V/div H : 2msec/div



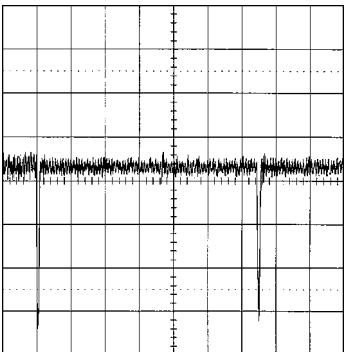
Address control signal

IC3308 Pin 15 (CLKDUI)  
V : 1V/div H : 0.1msec/div

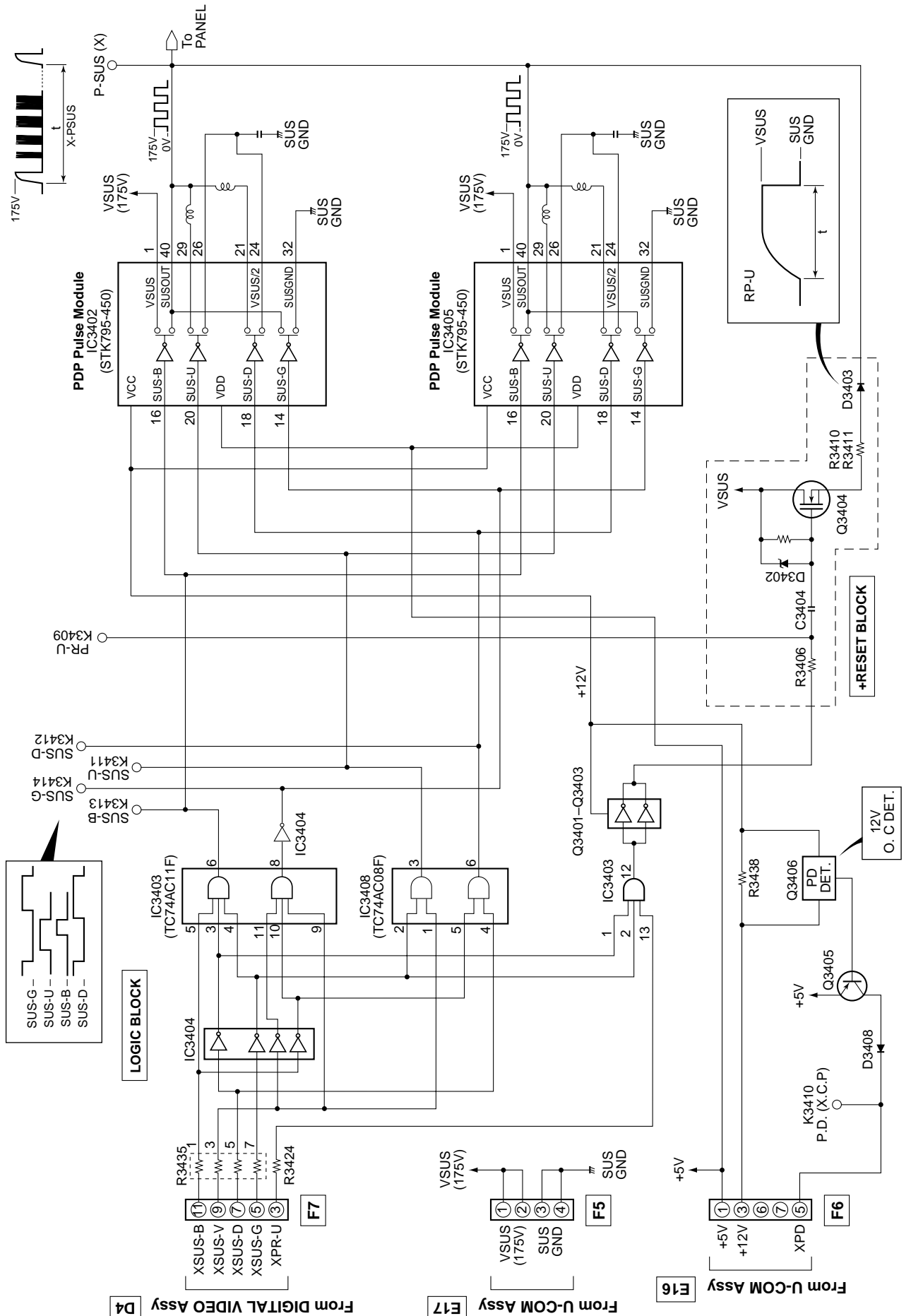


Address control signal

CN3275 Pin 26 (LEDUI)  
V : 1V/div H : 0.5msec/div

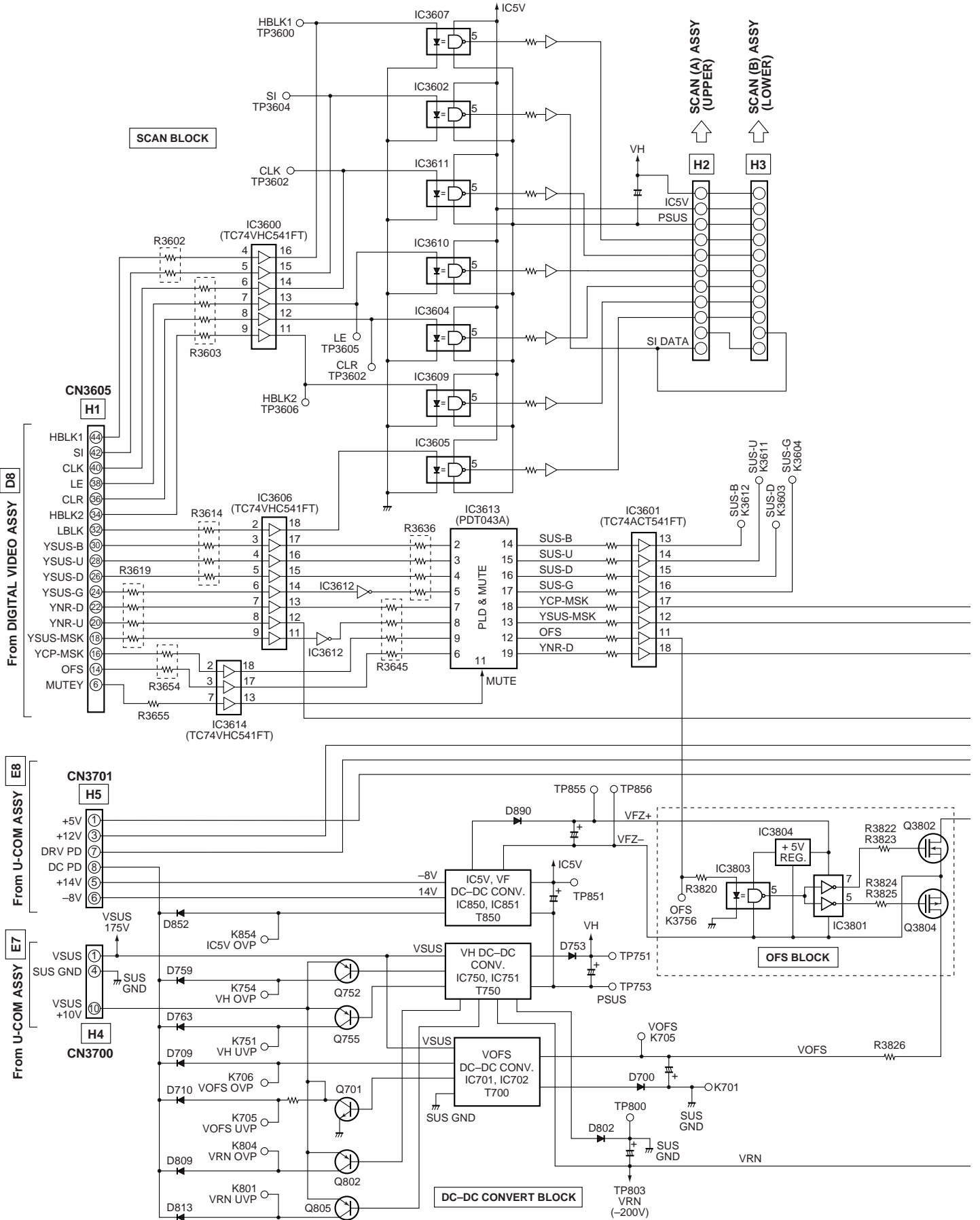


### 3.6 X DRIVE ASSY SECTION

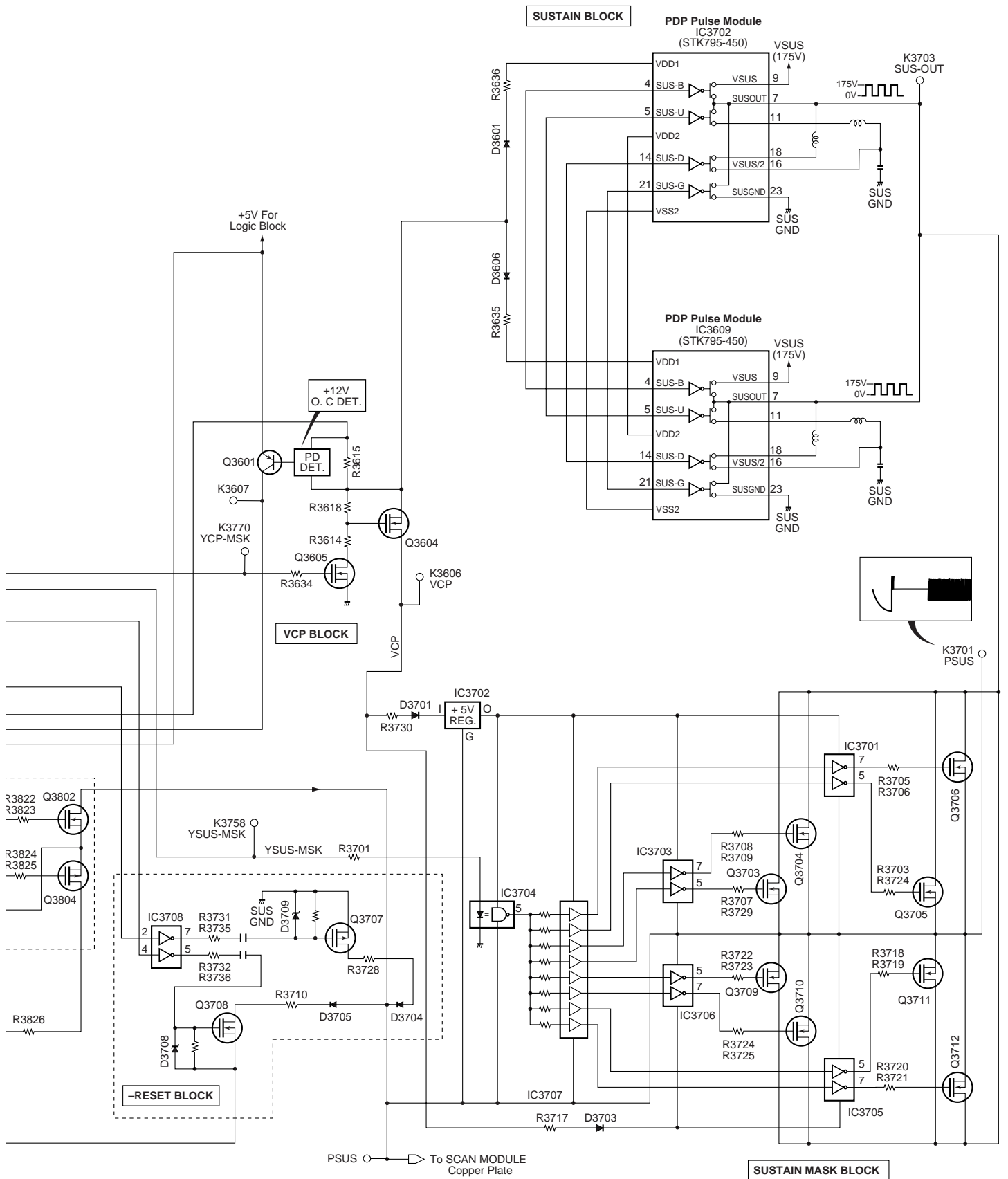


A  
B  
C  
D

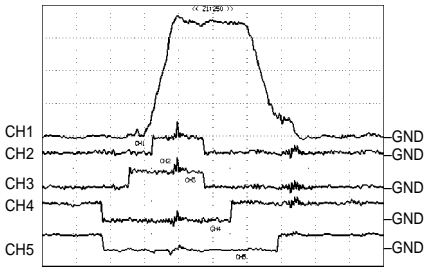
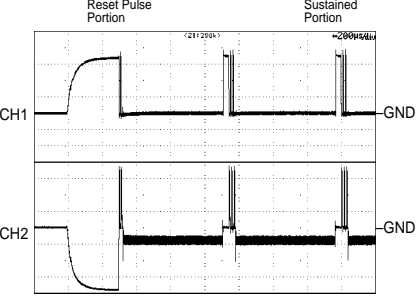

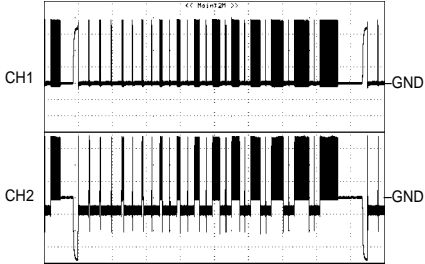
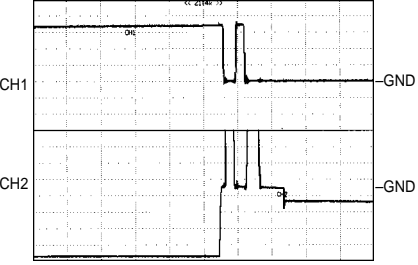
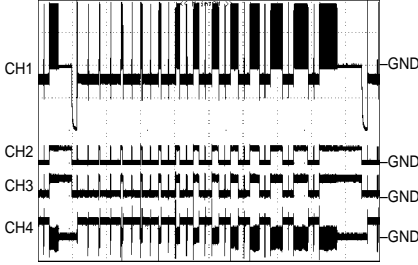
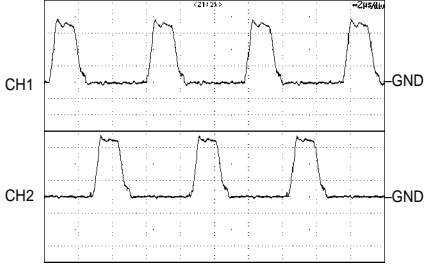
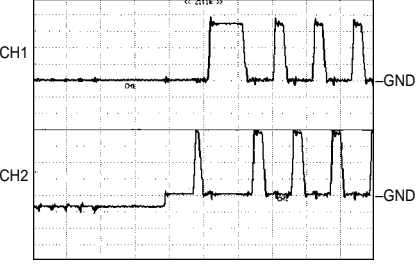
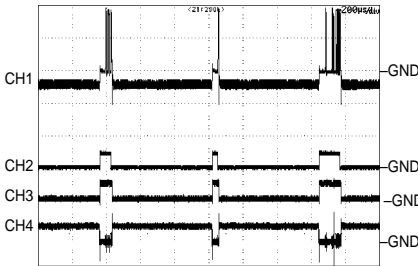
### 3.7 Y DRIVE ASSY SECTION



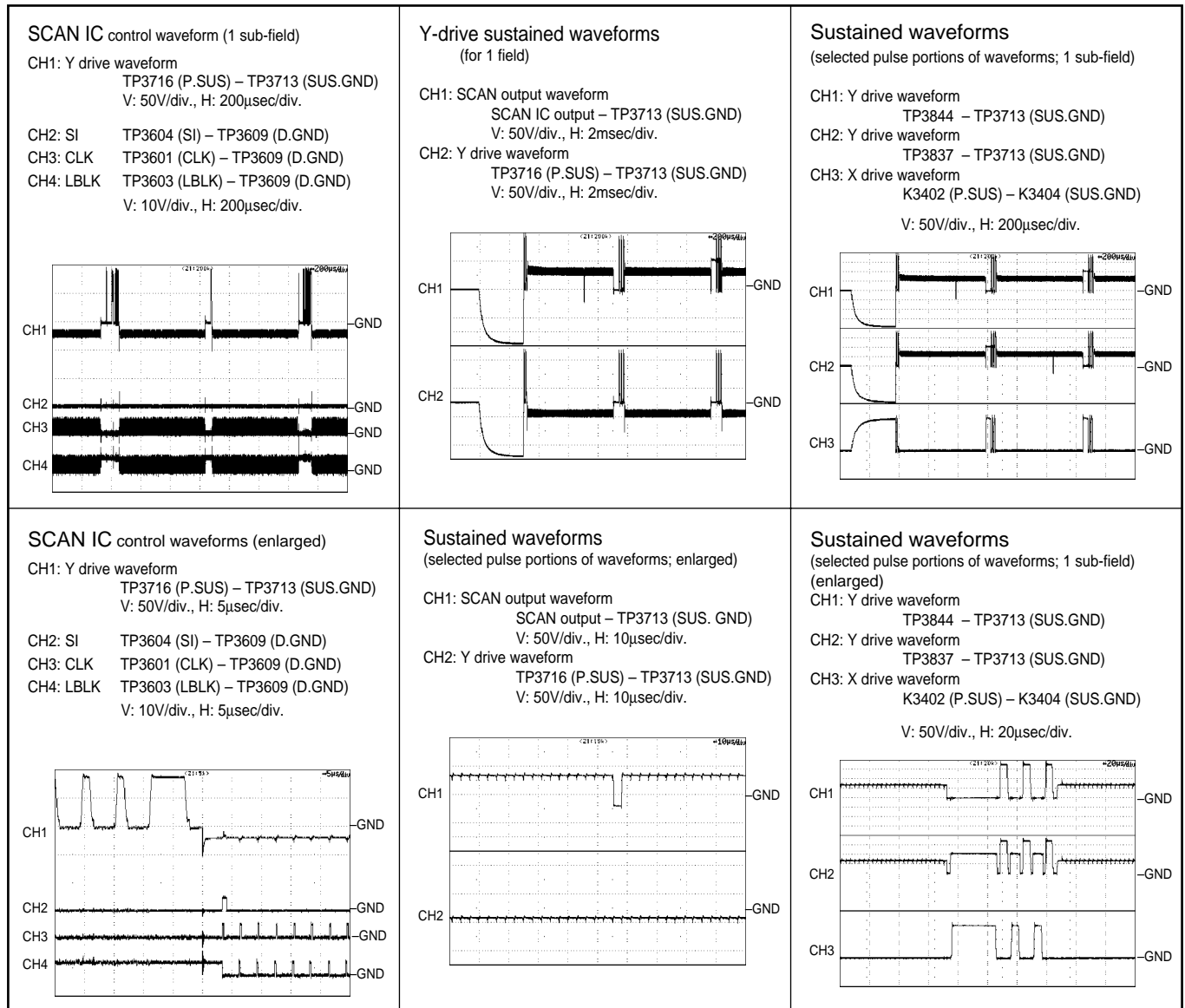
# PDP-502MX, PDP-502MXE



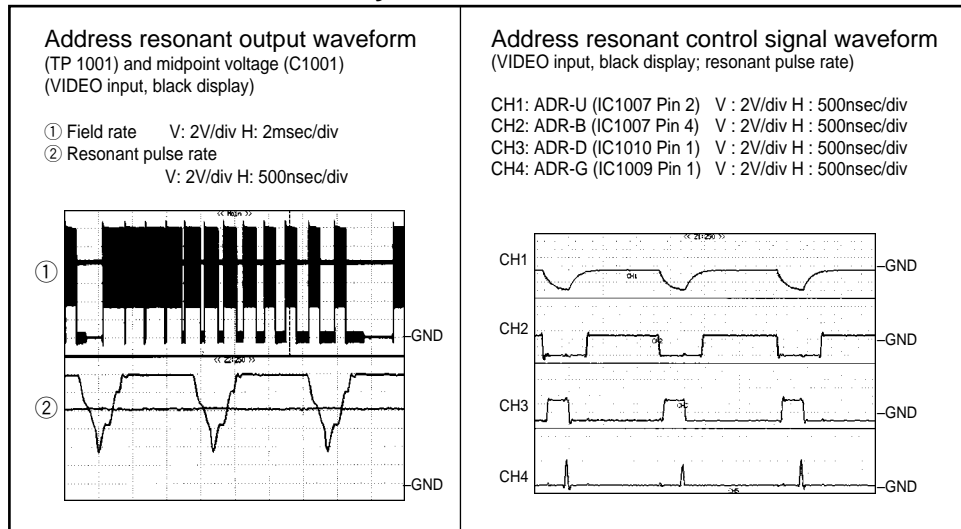
## Waveforms of X DRIVE Assy, Y DRIVE Assy and SCAN MODULE

<p><b>Sustained waveform</b></p> <p>CH1: P.SUS TP3716 (P.SUS) – TP3713 (SUS.GND) V: 50V/div., H: 500nsec/div.</p> <p>CH2: YSUS-B TP3703 (YSUS-B) – TP3609 (D.GND) V: 10V/div., H: 500nsec/div.</p> <p>CH3: YSUS-U TP3704 (YSUS_U) – TP3609 (D.GND) V: 10V/div., H: 500nsec/div.</p> <p>CH4: YSUS-D TP3705 (YSUS_D) – TP3609 (D.GND) V: 10V/div., H: 500nsec/div.</p> <p>CH5: YSUS-G TP3706 (YSUS-G) – TP3609 (D.GND) V: 10V/div., H: 500nsec/div.</p> 	<p><b>Sustained waveform (1st sub-field)</b></p> <p>CH1: X drive waveform K3402 (P. SUS) – K3404 (SUS. GND) V: 50V/div., H: 200µsec/div.</p> <p>CH2: Y drive waveform TP3716 (P.SUS) – TP3713 (SUS.GND) V: 50V/div., H: 200µsec/div.</p> 	<p><b>Sustained waveform</b> (portion where sustaining was ended; enlarged)</p> <p>CH1: X drive waveform K3402 (P. SUS) – K3404 (SUS. GND) V: 50V/div., H: 5µsec/div.</p> <p>CH2: Y drive waveform TP3716 (P. SUS) – TP3713 (SUS. GND) V: 50V/div., H: 5µsec/div.</p> 
<p><b>Sustained waveform (1 field)</b></p> <p>CH1: X drive waveform K3402 (P. SUS) – K3404 (SUS. GND) V: 50V/div., H: 2msec/div.</p> <p>CH2: Y drive waveform TP3716 (P. SUS) – TP3713 (SUS. GND) V: 50V/div., H: 2msec/div.</p> 	<p><b>Sustained waveform</b> (reset pulse portion; enlarged)</p> <p>CH1: X drive waveform K3402 (P. SUS) – K3404 (SUS. GND) V: 50V/div., H: 20µsec/div.</p> <p>CH2: Y drive waveform TP3716 (P. SUS) – TP3713 (SUS. GND) V: 50V/div., H: 20µsec/div.</p> 	<p><b>Control waveforms for additional pulses (1 field)</b></p> <p>CH1: Y drive waveform TP3716 (P.SUS) – TP3713 (SUS.GND) V: 100V/div., H: 2msec/div.</p> <p>CH2: CP_MSK IC3601 Pin17 (CP_MSK) – TP3609 (D.GND) V: 10V/div., H: 2msec/div.</p> <p>CH3: SUS_MSK IC3601 Pin12 (YSUS_MSK) – TP3609 (D.GND) V: 10V/div., H: 2msec/div.</p> <p>CH4: OFS TP3707 (OFS) – TP3609 (D.GND) V: 10V/div., H: 2msec/div.</p> 
<p><b>Sustained waveform (1 field; enlarged)</b></p> <p>CH1: X drive waveform K3402 (P. SUS) – K3404 (SUS. GND) V: 50V/div., H: 2µsec/div.</p> <p>CH2: Y drive waveform TP3716 (P. SUS) – TP3713 (SUS. GND) V: 50V/div., H: 2µsec/div.</p> 	<p><b>Sustained waveform</b> (portion where sustaining was started; enlarged)</p> <p>CH1: X drive waveform K3402 (P. SUS) – K3404 (SUS. GND) V: 50V/div., H: 5µsec/div.</p> <p>CH2: Y drive waveform TP3716 (P. SUS) – TP3713 (SUS. GND) V: 50V/div., H: 5µsec/div.</p> 	<p><b>Control waveforms for additional pulses</b> (1 sub-field; enlarged)</p> <p>CH1: Y drive waveform TP3716 (P.SUS) – TP3713 (SUS.GND) V: 50V/div., H: 200µsec/div.</p> <p>CH2: CP_MSK IC3601 Pin17 (CP_MSK) – TP3609 (D.GND) V: 10V/div., H: 200µsec/div.</p> <p>CH3: SUS_MSK IC3601 Pin12 (YSUS_MSK) – TP3609 (D.GND) V: 10V/div., H: 200µsec/div.</p> <p>CH4: OFS TP3707 (OFS) – TP3609 (D.GND) V: 10V/div., H: 200µsec/div.</p> 

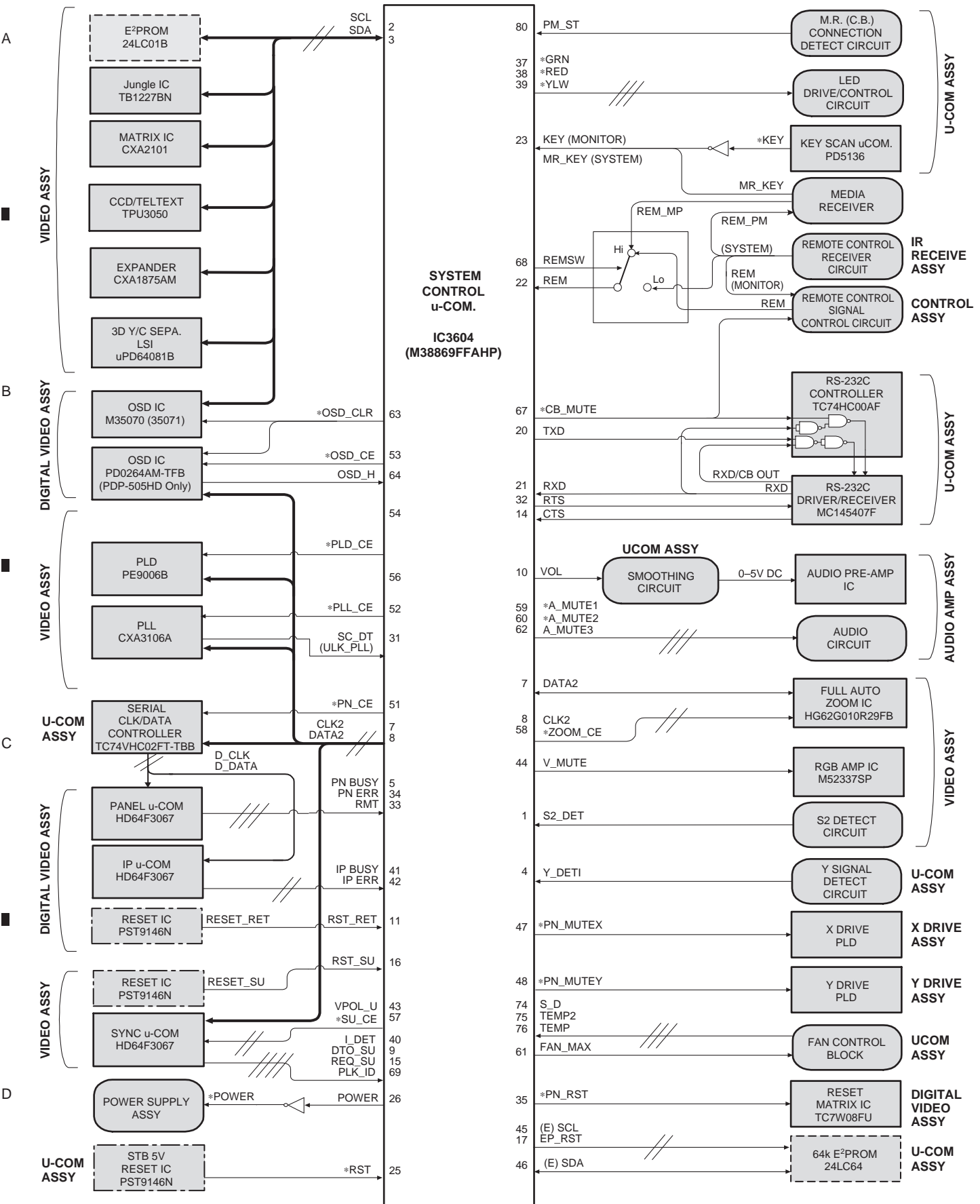




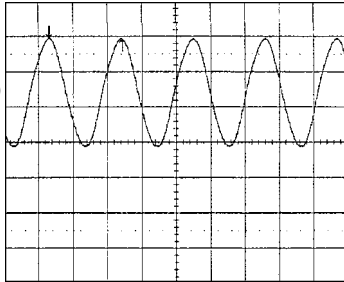
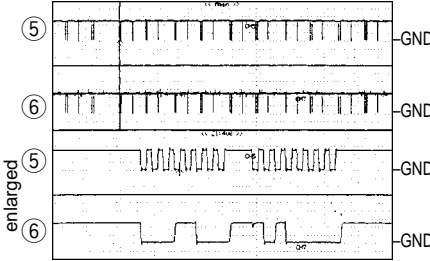
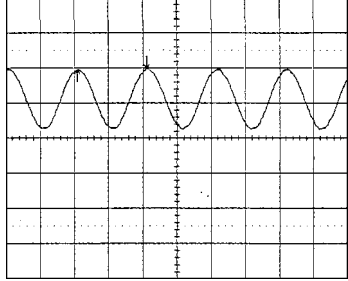
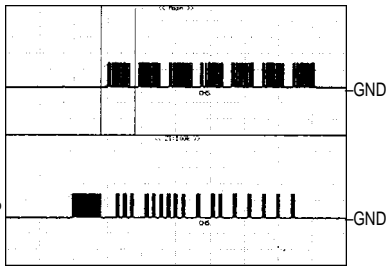
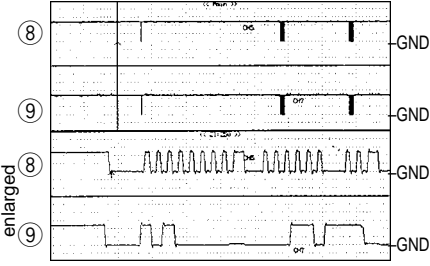
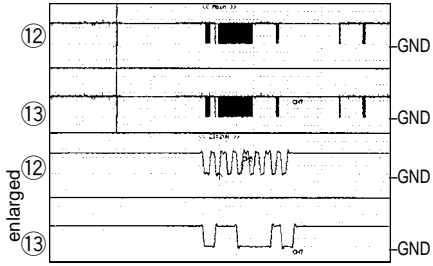
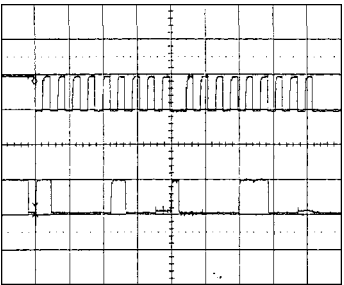
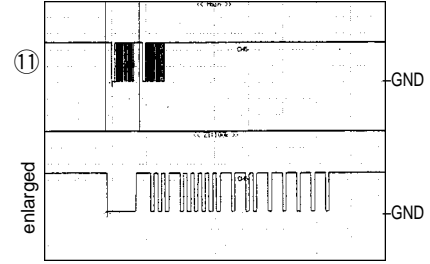
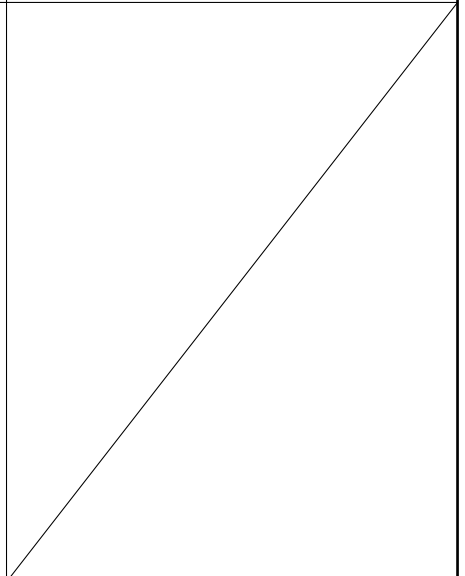
**Waveforms of CABLE Assy**



### 3.8 UCOM ASSY SECTION



Waveforms of U-COM ASSY

<p>① IC3602-pin4 (Clock input: X3602) V : 1V/div H : 1msec/div</p> 	<p>⑤ IC3604-pin7 (CLK2) V : 2V/div H : 50msec/div IC3604-pin7 (CLK2)(enlarged) V : 2V/div H : 20msec/div</p> <p>⑥ IC3604-pin8 (DATA2) V : 2V/div H : 50msec/div IC3604-pin8 (CLK2)(enlarged) V : 2V/div H : 20msec/div</p> 	<p>⑪ IC3604-pin28 (Clock input: X3601) V : 2V/div H : 50nsec/div</p>  <p>10MHz</p>
<p>② IC3602-pin19 (Key code output) V : 2V/div H : 100msec/div IC3602-pin19 (enlarged) (Key code output) V : 2V/div H : 10msec/div</p> 	<p>⑧ IC3604-pin45 ((E)SCL) V : 2V/div H : 200msec/div IC3604-pin45 ((E)SCL)(enlarged) V : 2V/div H : 50msec/div</p> <p>⑨ IC3604-pin46 ((E)SDA) V : 2V/div H : 200msec/div IC3604-pin46 ((E)SDA)(enlarged) V : 2V/div H : 50msec/div</p> 	<p>⑬ IC3612-pin10 (D_CLK) V : 2V/div H : 100msec/div IC3612-pin10 (D_CLK)(enlarged) V : 2V/div H : 20msec/div</p> <p>⑬ IC3612-pin13 (D_DATA) V : 2V/div H : 100msec/div IC3612-pin13 (D_DATA)(enlarged) V : 2V/div H : 20msec/div</p> 
<p>③ IC3604-pin2 (SCL) V : 5V/div H : 50msec/div</p> <p>④ IC3604-pin3 (SDA) V : 5V/div H : 50msec/div</p> 	<p>⑩ IC3604-pin23 (KEY) V : 2V/div H : 100msec/div IC3604-pin23 (KEY)(enlarged) V : 2V/div H : 10msec/div</p> 	

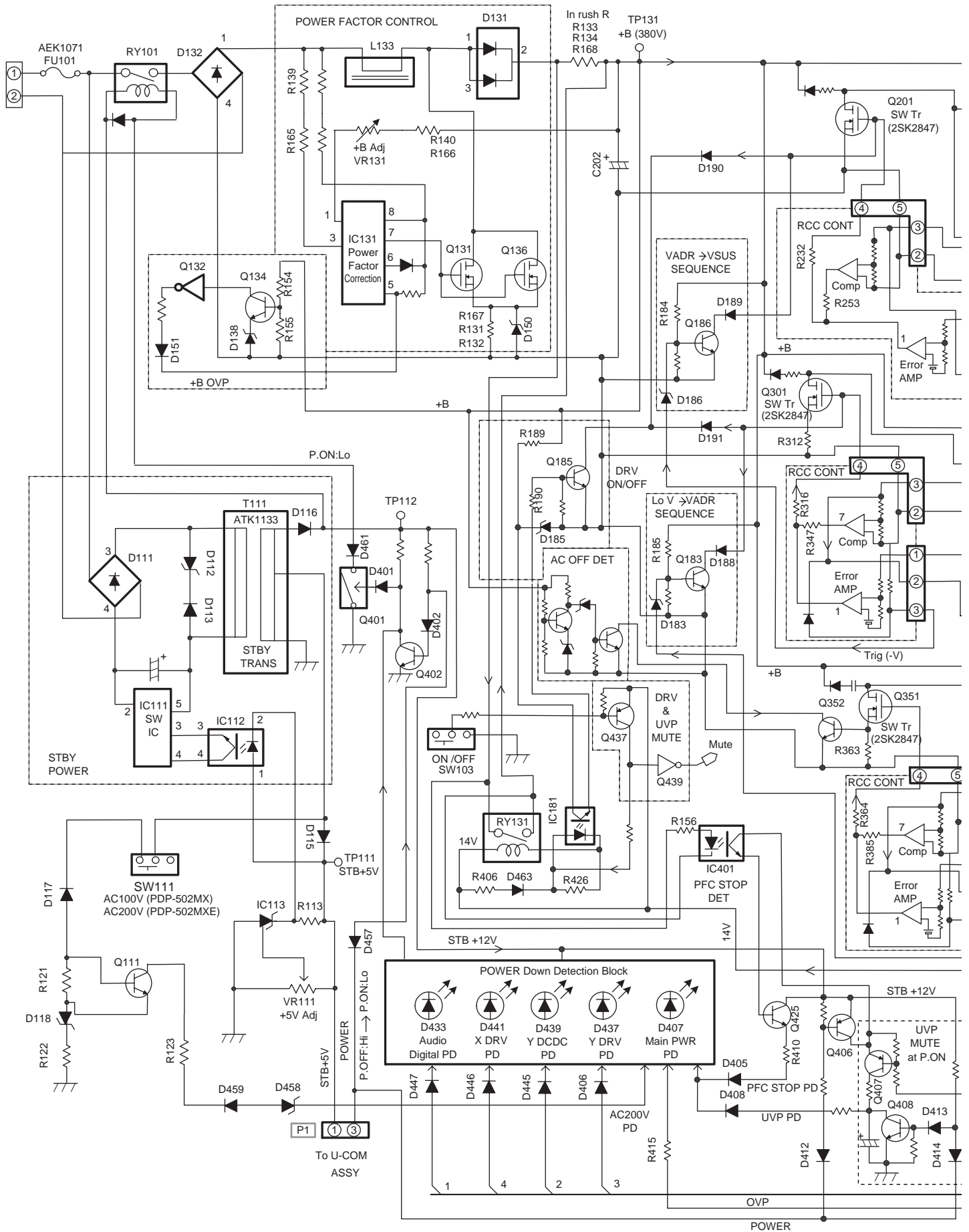
# PDP-502MX, PDP-502MXE

## ● Pin Function

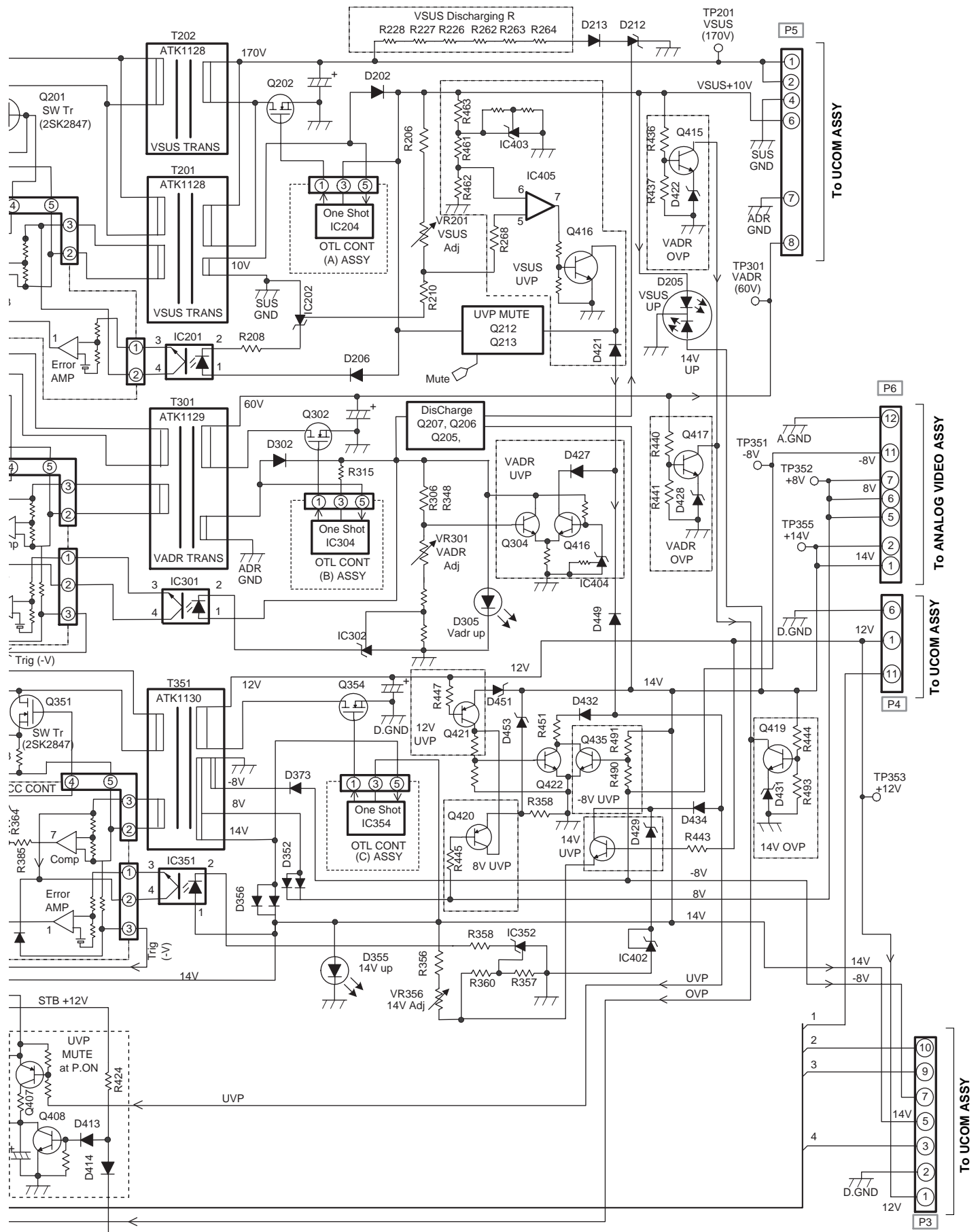
Pin No.	Name	Function	Operation of Terminals (during power on)	I/O	PDP-502MX	PDP-502MXE	PDP-505HD
1	S2_DET	S2 Signal detection	0–1.3V: Normal, 1.4–2.4V: Letter Box, 2.5–5V: Squeeze	I	○	—	○
	OPTION	Option Video Box detection	High: non existence, Low: existence of Video Box	I	—	○	—
2	SCL	I <sup>2</sup> C-BUS Clock	0–5V clock signal: always communicating when power on	O	○	○	○
3	SDA	I <sup>2</sup> C-BUS Data	0–5V clock signal: always communicating when power on	I/O	○	○	○
4	V_DETI	Result of Y signal detection	High: Y Signal detected, Low: Y Signal not detected	I	○	○	○
5	PN_BUSY	BUSY signal from Panel U-Com	High: In exchanging input functions, Low: Normal	I	○	○	○
6	—	No allocation(not used)					
7	CLK2	Clock output for Serial 3 lines	0–5V clock signal: always communicating when power on	O	○	○	○
8	DATA2	Data output for Serial 3 lines	0–5V serial signal: always communicating when power on (both-way communication with Full Auto Zoom IC )	O	○	○	○
9	DTO_SU	Serial data input from SYNC u-com	High: Normal, 0–5V serial signal: During communication	I	○	○	○
10	VOL	Audio volume output	PWM output	O	○	○	—
11	RST RET	Reset Signal from Digital Video Assy (Panel u-com and IP u-com)	High: Normal, Low: In Reset	I	○	○	○
12	—	No allocation (not used)					
13	—	No allocation (not used)					
14	CTS	Not used					
15	REQ_SU	Request to read detected frequency from SYNC u-com	High: Normal, Low: In requesting	I	○	○	○
16	RST_SU	Reset Signal from SYNC u-com	High: Normal, Low: In resetting	I	○	○	○
17	EP_RST	Reset output to E <sup>2</sup> PROM	High: In resetting, Low: Normal	O	○	○	○
18	BUSY2	Not used					
19	SCL2	Not used					
20	TXD	RS-232C sending data	0–5V serial signal	O	○	○	○
21	RXD	RS-232C receiving data	0–5V serial signal	I	○	○	○
22	REM	Remote Control unit signal input	High: Normal, 0–5V serial signal: In input from Remote Control unit	I	○	○	○
23	KEY	Key Matrix, Key of the unit input	High: Normal, 0–5V serial signal: In Key input	I	○	○	○
24	CNVSS	Controlling operation mode of u-com of the unit	Low: Normal	I	○	○	○
25	*RST	Reset input	High: Normal, Low: In Reset	I	○	○	○
26	POWER	Power on/off	High: When power on, Low: In Stand-by	O	○	○	○
27	—	No allocation (not used)					
28	X_IN	Clock input	10 MHz sine wave	I	○	○	○
29	X_OUT	Clock output	10 MHz sine wave	O	○	○	○
30	VSS	Power supply terminal	STB GND	I	○	○	○
31	SC_DT (ULK_PLL)	Detecting SYNC Signal output from Analog Assy to Digital Assy	High: existence of Sync signal, Low: non existence	I	○	○	○
32	RTS	Not used					
33	RMT	Signal of request to quit sending commands from Panel u-com	Low: Normal	I	○	○	○
34	PN_ERR	Communication error signal from Panel u-com	Low: Normal	I	○	○	○
35	*PN_RST	Reset signal output to Panel u-com & IP u-com	High: Normal, Low: In Reset	O	○	○	○
36	—	No allocation (not used)					
37	*GRN	Green LED lighting	Low: In lighting Green LED	O	○	○	○
38	*RED	Red LED lighting	Low: In lighting Red LED	O	○	○	○

Pin No.	Name	Function	Operation of Terminals (during power on)	I/O	PDP-502MX	PDP-502MXE	PDP-505HD
39	*YLW	Yellow LED lighting	Low: In lighting Yellow LED	O	O	O	O
40	I_DET	Not used					
41	IP_BUSY	BUSY signal from IP u-com	High: At the timing of VD SYNC	I	O	O	O
42	IP_ERR	Communication error signal from IP u-com	Low: Normal	I	O	O	O
43	VPOL_U	Not used					
44	V_MUTE	Analog video mute output	High: When muting, Low: Normal	O	O	O	O
45	(E) SCL	I <sup>2</sup> C-BUS Clock for E <sup>2</sup> PROM	High: Normal, 0–5V clock signal: During communication	I/O	O	O	O
46	(E) SDA	I <sup>2</sup> C-BUS Data for E <sup>2</sup> PROM	High: Normal, 0–5V serial signal: During communication	I/O	O	O	O
47	*PN_MUTEX	X Drive Panel mute output	High: Normal, Low: When muting	O	O	O	O
48	*PN_MUTEY	Y Drive Panel mute output	Fixed "High"	O	O	O	O
49	*V_STDO	Not used					
50	STDSW	Not used					
51	*PN_CE	Chip Enable for Panel u-com & IP u-com	High: Normal, Low: During communication	O	O	O	O
52	*PLL_CE	Chip Enable for PLL IC	High: Normal, Low: During communication (Approx.80ms interval)	O	O	O	O
53	*OSD_CE	Chip Enable for OSD IC	High: Normal, Low: During communication	O	—	—	O
54	HPOL_U	Not used					
55	PGM_OE	Not used					
56	*PLD_CE	Chip Enable for PLD (Analog Video Assy)	High: Normal, Low: During communication (Approx.80ms interval)	O	O	O	O
57	*SU_CE	Chip Enable for SYNC u-com	High: Normal, Low: During communication	O	O	O	O
58	*ZOOM_CE	Chip Enable for Full Auto Zoom IC	High: Normal, Low: During communication	O	—	—	O
59	*A_MUTE1	Audio Mute 1	High: Normal, Low: When muting	O	O	O	—
60	*A_MUTE2	Audio Mute 2 Muting audio out	High: Normal, Low: When muting	O	O	O	—
61	FAN_MAX	Command to rotate Fan with max. speed	High: In setting Fan max. speed, Low: Normal	O	O	O	O
62	A_MUTE3	Audio Mute 3 Mute in suspending	High: When muting, Low: Normal	O	O	O	—
63	*OSD_CLR	Reset signal output to OSD IC	High: Normal, Low: In resetting	O	O	O	—
64	OSD_H	OSD Timing Pulse for SYNC processing	Pulse input	I	—	—	O
65	——	No allocation (Not used)					
66	DRV_OFF	Not used					
67	*CB_MUTE	Combination Mute	High: When ID is set, Low: Normal	O	O	O	—
68	REMSW	Not used					
69	PLK_ID	Not used					
70	——	No allocation (not used)					
71	VCC	Power source input	STB +5V	I	O	O	O
72	VREF	Reference voltage input of AD/DA Converters	STB +5V	I	O	O	O
73	AVSS	Analog power input of AD/DA Converters	STBGND	I	O	O	O
74	S_D	Shut down detection for high temperature	High: In high temperature, Low: Normal	I	O	O	O
75	TEMP2	Not used					
76	TEMP	Temperature detection for On screen bar display	0–5V DC value	I	O	O	O
77	——	No allocation (Not used)					
78	——	No allocation (Not used)					
79	——	No allocation (Not used)					
80	PM_ST	Not used					

3.9 MAIN POWER ASSY SECTION



# PDP-502MX, PDP-502MXE



A

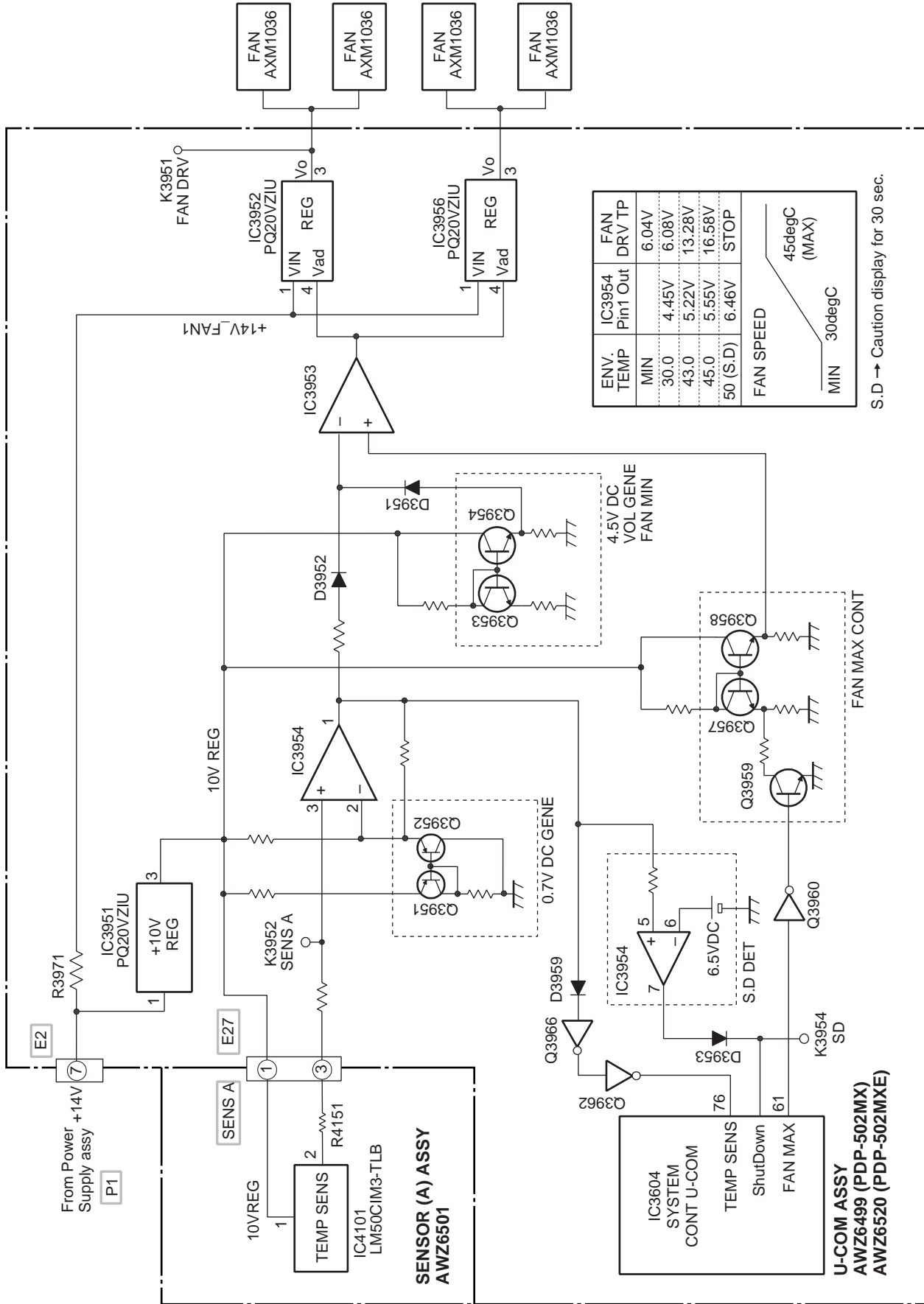
B

C

D



3.10 FAN CONTROL SECTION



ENV. TEMP	IC3954 Pin1 Out	FAN DRV TP
MIN 30.0	4.45V	6.04V
43.0	5.22V	6.08V
45.0	5.55V	13.28V
50 (S.D)	6.46V	16.58V
		STOP
FAN SPEED		45degC (MAX)
		MIN 30degC

S.D → Caution display for 30 sec.

A

B

C

D