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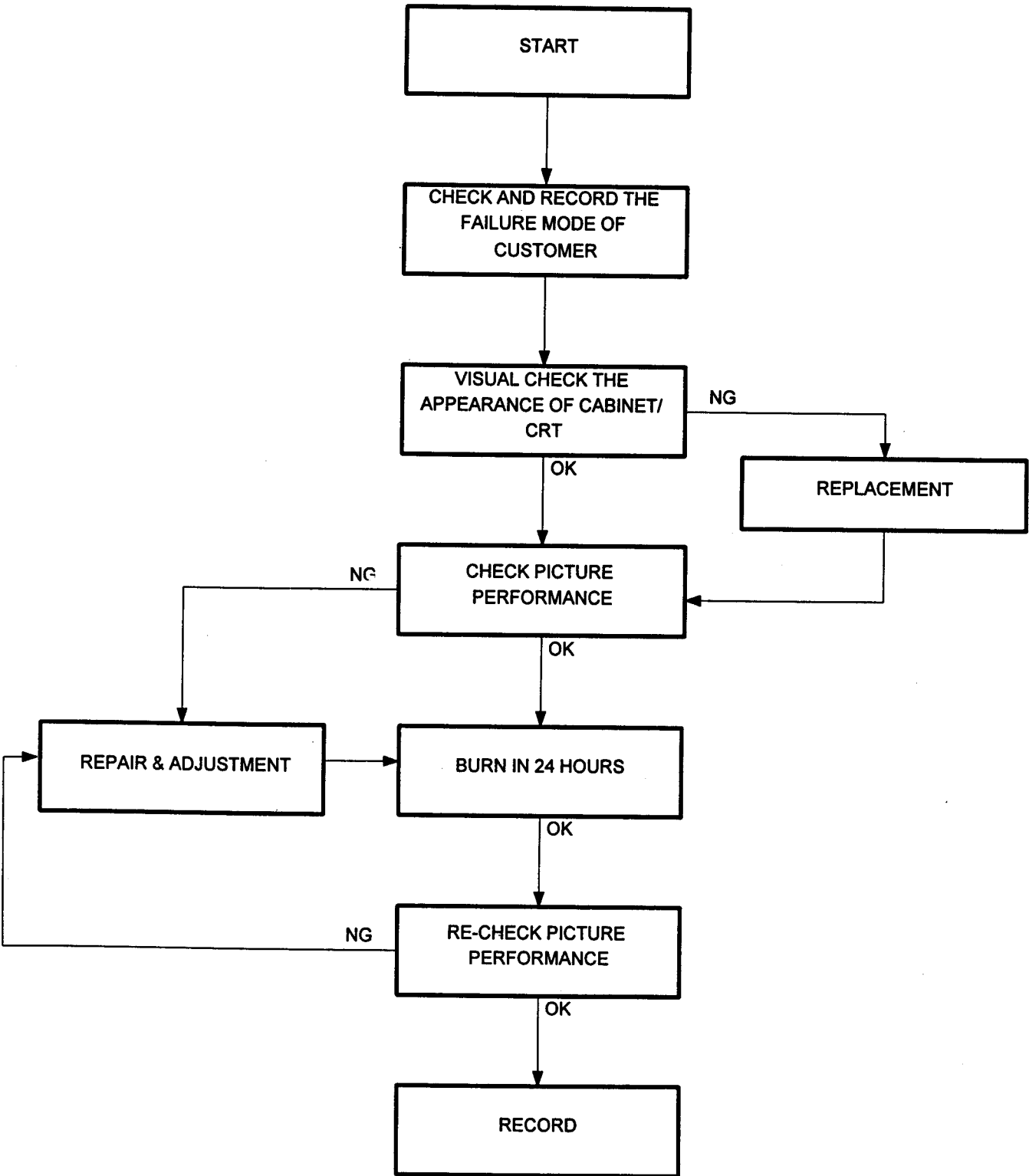
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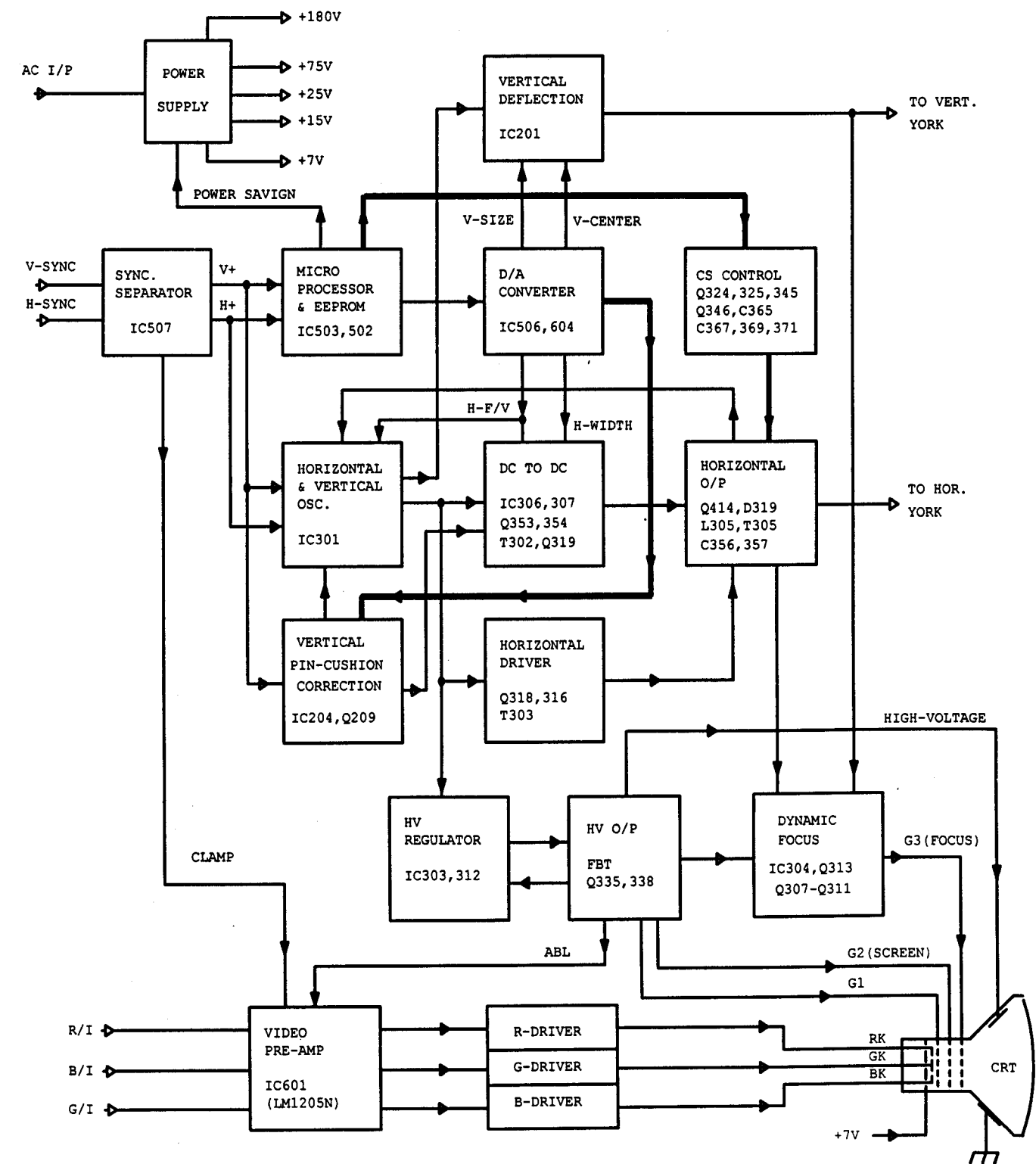
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2.0 GENERAL MAINTENANCE PROCEDURE



3.0 FUNCTION BLOCK DIAGRAM



4.0 TIMING MODE (CTX presetting Timing)

NAME	VGA-400		VGA-480		VESA-480		SVGA II		SVGA III		8514NI	
PIXEL RATE	25.2 MHZ		25.2 MHZ		31.5 MHZ		40 MHZ		50 MHZ		65 MHZ	
Fh	31.5 KHZ		31.5 KHZ		37.860 KHZ		37.879 KHZ		48.077 KHZ		48.363 KHZ	
Fv	70 HZ		60 HZ		72.809 HZ		60.3165 HZ		72.187 HZ		60 HZ	
INTERLACE MODE	NO		NO		NO		NO		NO		NO	
OUTPUT	ANALOG		ANALOG		ANALOG		ANALOG		ANALOG		ANALOG	
FULL SCALE Vpp	1,000		1,000		1,000		1,000		1,000		1,000	
SYNC ON R/G/B	NO		NO		NO		NO		NO		NO	
CONTROL BITS	0000 0000		0000 0000		0000 0000		0000 0000		0000 0000		0000 0000	
UNIT	PIXEL	ms/us	PIXEL	ms/us	PIXEL	ms/us	PIXEL	ms/us	PIXEL	ms/us	PIXEL	ms/us
FRAME BORDER-H	0	0 us	0	0 us	0	0 us	0	0 us	0	0 us	0	0 us
FRAME BORDER-V	0	0 ms	0	0 ms	0	0 ms	0	0 ms	0	0 ms	0	0 ms
H TOTAL	800	31.78 us	800	31.78 us	832	26.413 us	1056	26.4 us	1040	20.80 us	1344	20.677 us
H DISPLAY	641	25.42 us	641	25.42 us	640	20.317 us	800	20.0 us	800	16.0 us	1024	15.754 us
H REAR PORCH	48	1.91 us	48	1.91 us	128	4.063 us	88	2.2 us	64	1.28 us	160	2.462 us
H SYNC WIDTH	96	3.81 us	96	3.81 us	40	1.270 us	128	3.2 us	120	2.40 us	136	2.092 us
H SYNC POLARITY	-		-		-		+		+		-	
VTOTAL	450	14.27 ms	525	16.68ms	520	13.735 ms	628	16.579ms	666	13.853ms	806	16.667ms
V DISPLAY	400	12.71 ms	480	15.25 ms	480	12.678 ms	600	15.840ms	600	12.480ms	768	15.880ms
V REAR PORCH	35	1.11 ms	33	1.05 ms	28	0.740 ms	23	0.607 ms	23	0.478 ms	29	0.600 ms
V SYNC WIDTH	2	0.06 ms	2	0.06 ms	3	0.079 ms	4	0.106 ms	6	0.125 ms	6	0.124 ms
V SYNC POLARITY	+		-		-		+		+		-	
EQUALIZATION ?	NO		NO		NO		NO		NO		NO	
SERRATION ?	NO		NO		NO		NO		NO		NO	
COMP SYNC POLARITY	-		-		-		-		-		-	
FIT MODEL	1769XE/1785XE		1769XE/1785XE		1769XE/1785XE		1769XE/1785XE		1769XE/1785XE		1769XE/1785XE	

NAME	VESA 47K		VESA 56K		VESA 60K		VESA 64K		VESA 78K		VESA 80K	
PIXEL RATE	49.517 MHZ		75 MHZ		78.75 MHZ		110.0 MHZ		135.0 MHZ		135.0 MHZ	
Fh	46.89KHZ		56.476 KHZ		60.023 KHZ		63.679 KHZ		77.907 KHZ		79.976 KHZ	
Fv	75.03 HZ		70.069 HZ		75.029 HZ		59.849 HZ		69.888 HZ		75.025 HZ	
INTERLACE MODE	NO		NO		NO		NO		NO		NO	
OUTPUT	ANALOG		ANALOG		ANALOG		ANALOG		ANALOG		ANALOG	
FULL SCALE Vpp	1,000		1,000		1,000		1,000		1,000		1,000	
SYNC ON R/G/B	NO		NO		NO		NO		NO		NO	
CONTROL BITS	0000 0000		0000 0000		0000 0000		0000 0000		0000 0000		0000 0000	
UNIT	PIXEL	ms/us	PIXEL	ms/us	PIXEL	ms/us	PIXEL	ms/us	PIXEL	ms/us	PIXEL	ms/us
FRAME BORDER-H	0	0 us	0	0 us	0	0 us	0	0 us	0	0 us	0	0 us
FRAME BORDER-V	0	0 ms	0	0 ms	0	0 ms	0	0 ms	0	0 ms	0	0 ms
H TOTAL	1056	21.33 us	1328	17.707 us	1312	16.66 us	1696	15.700 us	1709	12.661 us	1688	12.504 us
H DISPLAY	800	16.16 us	1024	13.653 us	1024	13.003 us	1280	11.852 us	1280	9.481 us	1280	9.481 us
H REAR PORCH	160	3.232 us	144	1.920 us	176	2.235 us	234	2.222 us	266	1.970 us	187	1.383 us
H SYNC WIDTH	80	1.62 us	136	1.813 us	96	1.219 us	144	1.333 us	145	1.075 us	144	1.067 us
H SYNC POLARITY	+		-		+		-		+		-	
VTOTAL	625	13.33 ms	806	14.272ms	800	13.328ms	1063	16.70 ms	1088	13.80 ms	1066	13.329ms
V DISPLAY	600	12.80 ms	768	13.599ms	768	12.795ms	1024	16.081ms	1024	12.985ms	1024	12.804ms
V REAR PORCH	21	0.448 ms	29	0.513 ms	28	0.466 ms	34	0.534 ms	39	0.496 ms	38	0.475 ms
V SYNC WIDTH	3	0.064 ms	6	0.106 ms	3	0.05 ms	3	0.047 ms	8	0.103 ms	3	0.038 ms
V SYNC POLARITY	+		-		+		+		-		+	
EQUALIZATION ?	NO		NO		NO		NO		NO		NO	
SERRATION ?	NO		NO		NO		NO		NO		NO	
COMP SYNC POLARITY	-		-		-		-		-		-	
FIT MODEL	1769XE/1785XE		1769XE/1785XE		1769XE/1785XE		1769XE/1785XE		1785XE		1785XE	

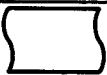
5.0 ADJUSTMENT

5.1 1769XE/1785XE ADJUSTMENT

REM:PRESET MODE DATA ADJUSTMENT:

- A. Turn off it.
- B. Insert service port or press the ⊕ and ⊖ at same time on the external control panel.
- C. Turn on it.

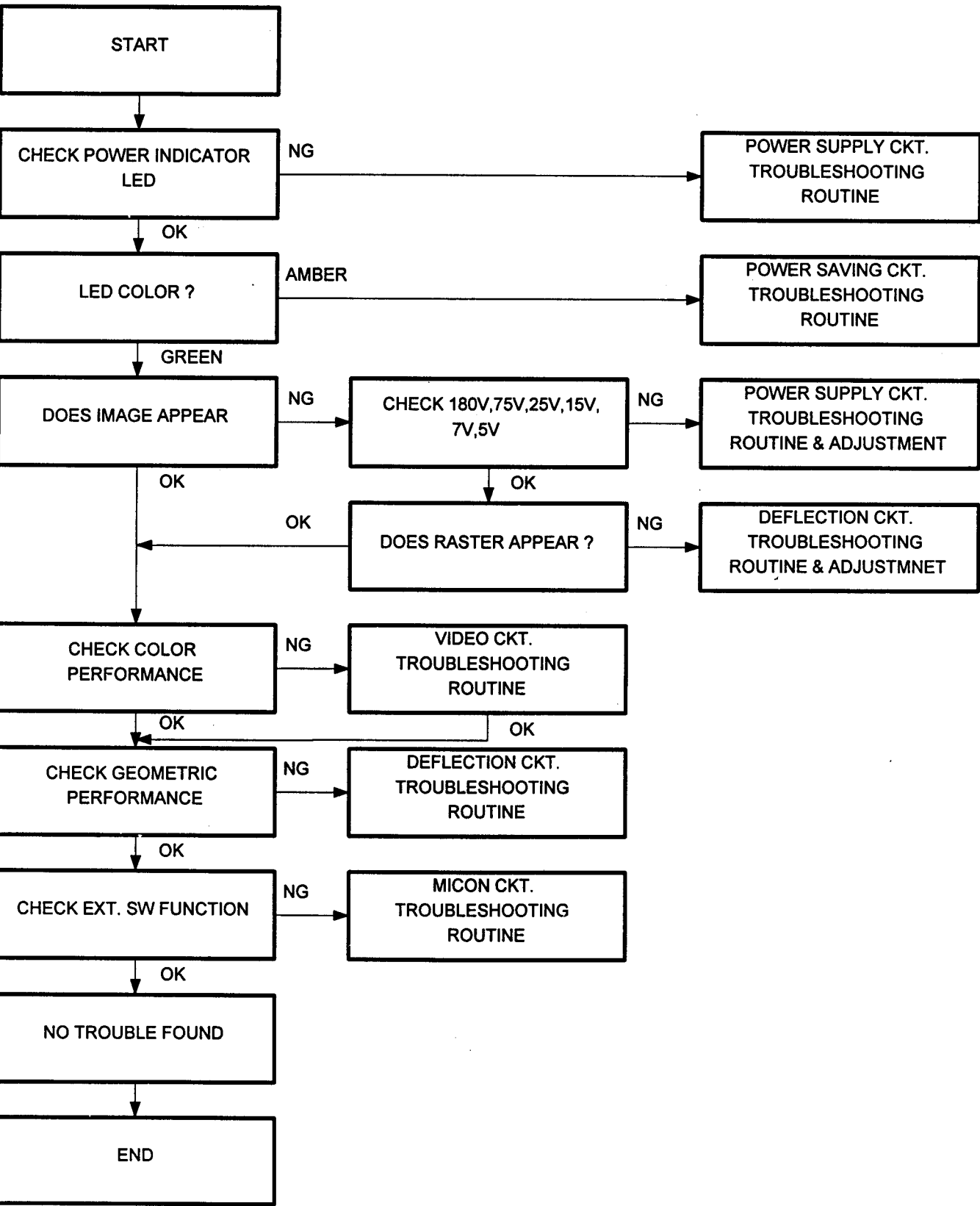
Remark: Before adjusting, monitor must warm up 10 minutes and CRT must be degaussed.

ADJUSTMENT	LOCATION	SPECIFICATION/DESCRIPTION	TIMING & PATTERN
75V	VR101	J87=75V ± 0.5V(for 1785XE)	31.5KHz X'HATCH
180V	VR101	J90=180V ± 1V(for 1769XE)	"
12V	VR308	TP301=12V ± 0.1V	"
H.V.	VR401	CRT ANODE=25KV ± 0.1KV (1785XE=26KV ± 0.1KV)	"
H-HOLD	VR309	Picture stand or flow shlowly when TP201 shorted to GND.	31KHz ,X'HATCH
	VR302	Ditto	64KHz , X'HATCH (80KHz for 1785XE)
FOCUS	1.FOCUS VR1 & VR2 ON FBT. 2.VR304	OPTIMUN	64KHz "m" patterm
V-LINE	VR201	$\frac{Y_{max}-Y_{min}}{Y_{max}+Y_{min}} \leq 7\%$	VGA-350
V-SIZE	1.EXT SW	MAX	VGA-350
	2.VR 202	FULL SCREEN	VGA-350
	3.EXT SW	V-SIZE=232mm ± 7mm	All of preset modes
H-CENTER	VR 307	ADJ. RASTER to center	64KHz ,X'HATCH (80KHz for 1785XE)
H-PHASE	EXT SW	$\frac{ R-L }{2} \leq 2.5mm$	All of PRESET modes , X'HATCH
V-CENTER	EXT SW	$\frac{ U-D }{2} \leq 2.5mm$	All of PRESET modes , X'HATCH
H-WIDTH	VR306	Just over scan when OSD. H-WIDTH SW. is Max.	MAC 832 , X'HATCH
	EXT SW	H-WIDTH=310 ± 7mm	All of PRESET modes , X'HATCH
PCC 	VR207	Let right side be straight	64KHz ,X'HATCH (80KHz for 1785XE)
HOLD DOWN TEST	P406	P406 short should be hold down	31.5KHz FULL WHITE

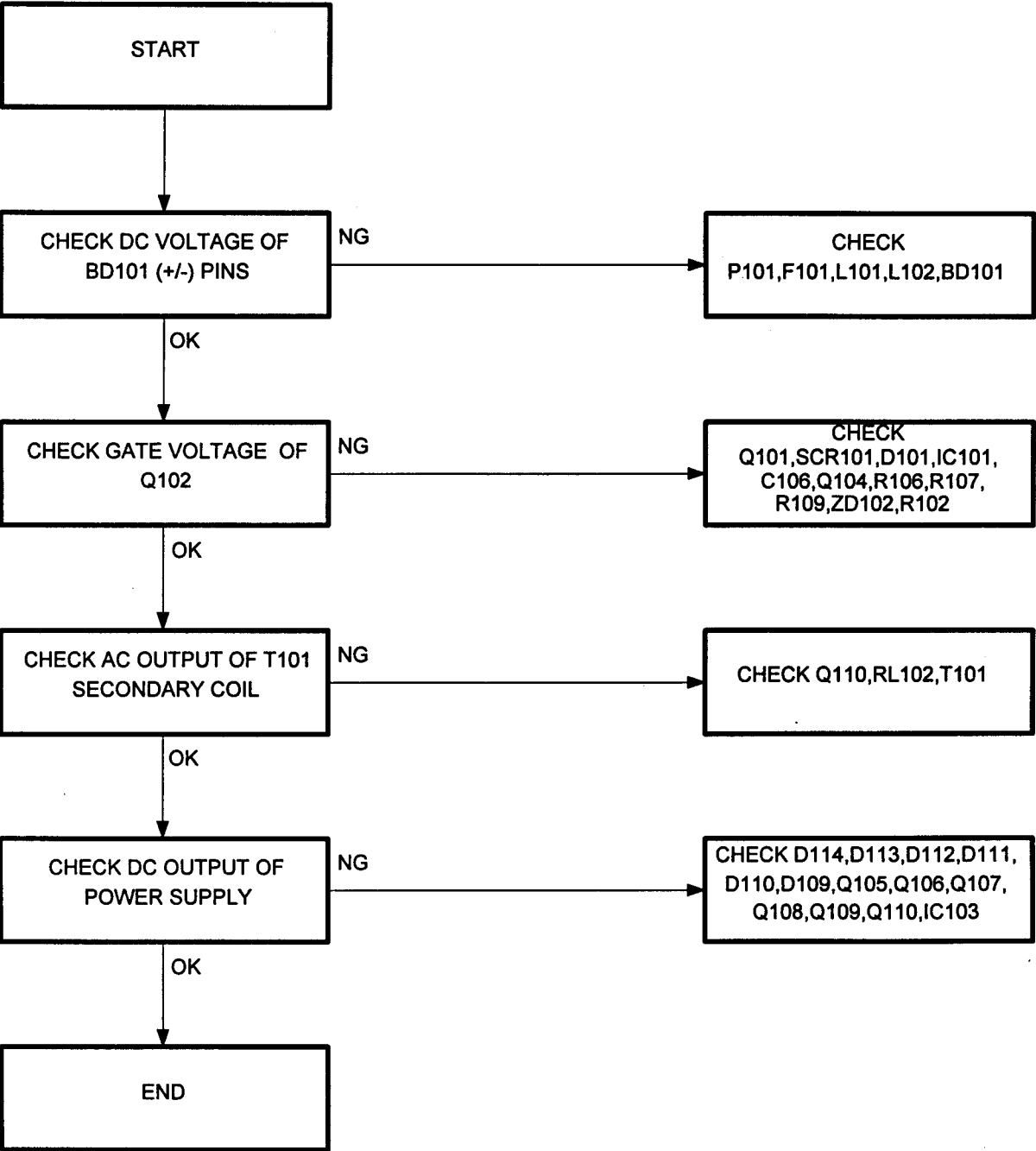
ADJUSTMENT	LOCATION	SPECIFICATION/DESCRIPTION	TIMING & PATTERN																																																																															
WHITE BALANCE PRE ADJ.	EXT. CONTRAST VR.	MAX.	VGA-480 , MOSAIC																																																																															
	EXT. BRIGHTNESS VR.	CLICK POINT	Ditto																																																																															
	EXT. G2 MANUAL SW.	RASTER Y=0.06FL	Ditto																																																																															
	EXT. R.G.B. BAIS SW	RASTER x=281 ± 10,y=311 ± 10	Ditto																																																																															
	EXT. CONTRAST SW.	MOSAIC=50FL.. (1785S: 43FL,Toshiba CRT 36FL)	Ditto																																																																															
WHITE BALANCE ADJ.	EXT. R.G.B. GAIN SW.	x=281 ± 10,y=311 ± 10	VGA-480,FULL WHITE																																																																															
	EXT. R.G.B. BIAS SW.	x=281 ± 10,y=311 ± 10 When CONTRAST VR. is in 2-3FL.	VGA-480,FULL WHITE																																																																															
BRIGHTNESS SETTING	EXT. G2 MANUAL SW	The "2" row of color bar pattern is just visible.	VGA-400,COLOR BAR																																																																															
	EXT. BRIGHTNESS VR.	CLICK POINT	Ditto																																																																															
	EXT. CONTRAST VR.	MAX.	Ditto																																																																															
	<table><tr><td rowspan="10">Brightness ↓ reduce</td><td colspan="2">R+B</td><td colspan="2">B+G</td><td colspan="2">R+G</td><td></td></tr><tr><td>BRIGHT BLUE</td><td>BRIGHT RED</td><td>BRIGHT PRUPLE</td><td>GREEN</td><td>BLUE + GREEN</td><td>RED + YELLOW</td><td>WHITE</td><td></td></tr><tr><td>15</td><td></td><td></td><td></td><td></td><td></td><td></td><td>7</td></tr><tr><td>14</td><td></td><td></td><td></td><td></td><td></td><td></td><td>6</td></tr><tr><td>13</td><td></td><td></td><td></td><td></td><td></td><td></td><td>5</td></tr><tr><td>12</td><td></td><td></td><td></td><td></td><td></td><td></td><td>4</td></tr><tr><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td>3</td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td>2 → visible</td></tr><tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1 → visible obscurely</td></tr><tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td></tr></table>			Brightness ↓ reduce	R+B		B+G		R+G			BRIGHT BLUE	BRIGHT RED	BRIGHT PRUPLE	GREEN	BLUE + GREEN	RED + YELLOW	WHITE		15							7	14							6	13							5	12							4	11							3	10							2 → visible	9							1 → visible obscurely	8						
Brightness ↓ reduce	R+B		B+G		R+G																																																																													
	BRIGHT BLUE	BRIGHT RED	BRIGHT PRUPLE		GREEN	BLUE + GREEN	RED + YELLOW	WHITE																																																																										
	15								7																																																																									
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	8							0																																																																										
CONVERGENCE ADJ.	4 POLE OF PCM	Vertical RED and BLUE lines are converged by varying the angle between the two tabs.	VGA-480 , MAGERTA X'HATCH																																																																															
	4 POLE OF PCM	Horizontal RED and BLUE lines are converged by moving the two tabs at the same time.	VGA-480 , MAGENTA X'HATCH																																																																															
	6 POLE OF PCM	Vertical GREEN and MAGENTA lines are converged by varying the angle between the two tabs.	VGA-480 , X'HATCH																																																																															
	6 POLE OF PCM	Horizontal GREEN and MAGENTA lines are converged by moving the two tabs at the smae time.	VGA-480 , X'HATCH																																																																															
	DEFLECTION YOKE 6-POLE CONVERGENCE MAGNETS 4-POLE CONVERGENCE MAGNETS PURITY MAGNETS PCM: PURITY CONVERGENCE MAGNET																																																																																	

6.0 TROUBLESHOOTING

6.1 MAIN TROUBLESHOOTING ROUTINE



6.2 POWER SUPPLY CIRCUIT TROUBLESHOOTING ROUTINE



TEST CONDITIONS: TIMING : VGA-480
PATTERN: CROSS HATCH

Unit: Volt

IC	IC101 (UC3842)							
PIN	1	2	3	4	5	6	7	8
AC IN								
110V	3.16	2.50	0.10	1.92	GND	3.71	15.47	4.99
220V	2.82	2.50	0.05	1.92	GND	1.55	15.39	4.99

IC	IC102 (PS2561)				IC103 (TL431)		
PIN	1	2	3	4	R	A	K
AC IN							
110V	12.87	11.79	1.83	4.99	2.48	GND	11.79
220V	12.56	11.47	2.17	4.99	2.48	GND	11.47

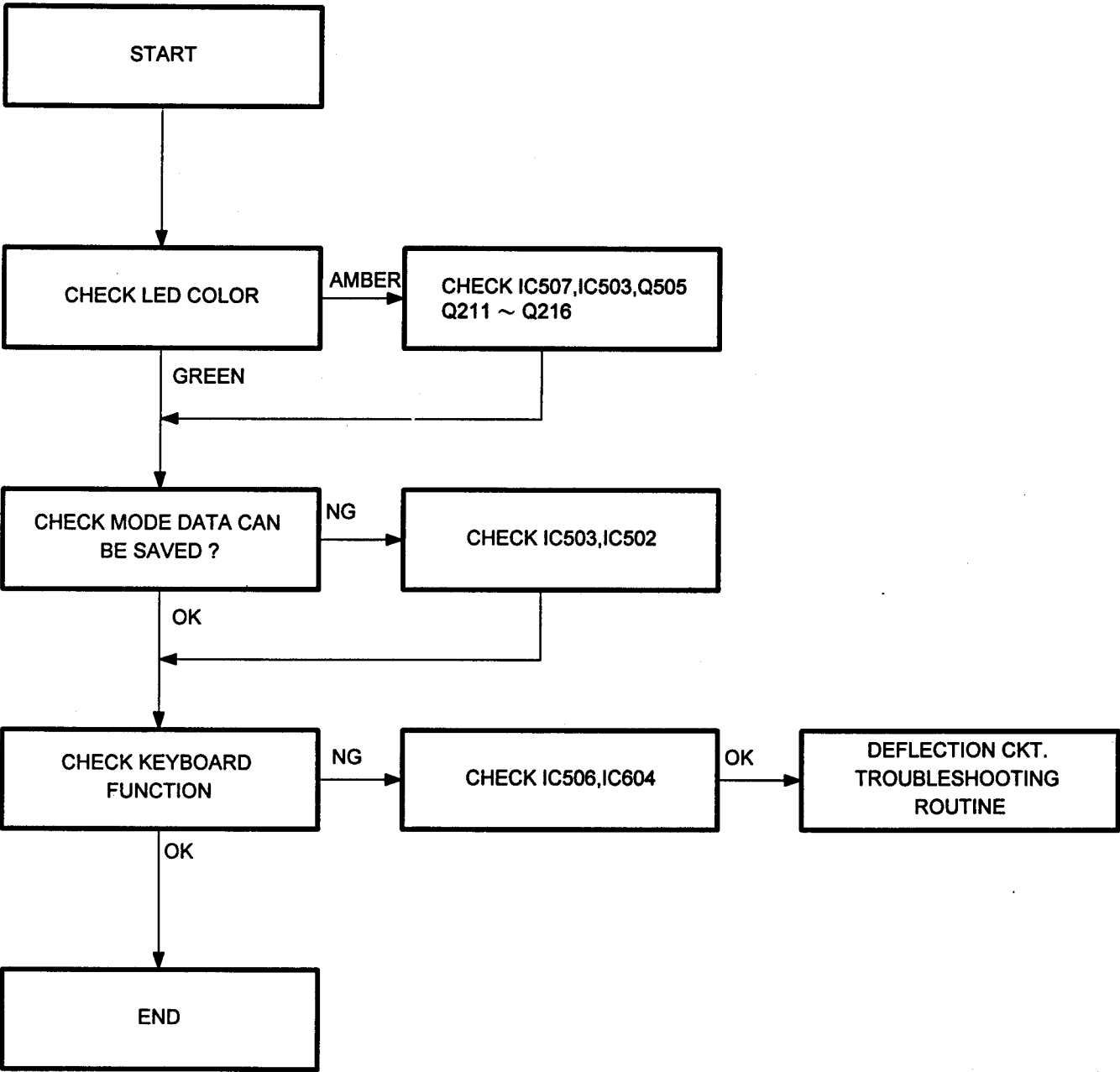
TR	Q101 (2SC945)			Q102 (2SK955)			SCR101 (BT169)		
PIN	E	C	B	S	D	G	K	G	A
AC IN									
110V	GND	0	0.70	0.11	139.43	3.80	0.06	0	139.44
220V	GND	0	0.69	0.05	303.25	1.55	0.44	0	302.63

TR	Q103 (2SC945)			Q104 (2SCC945)			Q105 (A733)		
PIN	E	C	B	E	C	B	E	C	B
STATUS									
NORMAL	0	1.13	0.22	0	0.02	0.70	14.82	2.48	14.75
STAND BY	0	1.09	0.22	0	0.03	0.64	15.03	2.48	14.97
SUSPAND	0	0	0.71	0	1.52	0.40	14.17	14.13	13.52
OFF	0	0	0.71	0	1.75	0.38	14.18	14.14	13.52

TR	Q106 (2SC945)			Q107 (BF488)			Q108 (BF483)		
PIN	E	C	B	E	C	B	B	C	E
STATUS									
NORMAL	0	14.72	0.03	2.70	2.48	2.06	0	0	0.68
STAND BY	0	14.89	0.03	2.70	2.48	2.06	0	0	0.69
SUSPAND	0	0	0.66	1.78	2.48	2.06	0	2.12	0
OFF	0	0	0.66	1.72	2.49	2.06	0	2.07	0

TR	Q109 (2SC945)			Q110 (2SC945)			Q111 (2SC945)		
PIN	E	C	B	E	C	B	E	C	B
STATUS									
NORMAL	0	0.68	0.03	0	14.85	0.02	0	14.86	0.03
STAND BY	0	0.69	0.03	0	15.02	0.02	0	15.02	0.04
SUSPAND	0	0.02	0.67	0	0.07	0.75	0	14.13	0.04
OFF	0	0.02	0.67	0	0	0.75	0	14.13	0.04

6.3 MICON CIRCUIT TROUBLESHOOTING ROUTINE



TEST CONDITIONS: AC LINE IN:110V/60Hz
PATTERN: CROSS HATCH
STATUS : NORMAL

Unit: Volt

IC		IC502 (24C04)							
MODEL	PIN MODE	1	2	3	4	5	6	7	8
1785XE	VGA 480	0	0	4.97	0	0.07	4.96	0	4.97
	8514NI	0	0	4.97	0	0.07	4.96	0	4.97
	VESA 64K	0	0	4.97	0	0.07	4.96	0	4.97
	VESA 80K	0	0	4.97	0	0.07	4.96	0	4.97
1769XE	VGA 480	0	0	5.00	0	0.10	5.00	0	5.00
	8514NI	0	0	5.00	0	0.10	5.00	0	5.00
	VESA 64K	0	0	5.00	0	0.10	5.00	0	5.00

IC		IC503 (80C52)									
MODEL	PIN MODE	1	2	3	4	5	6	7	8	9	10
1785XE	VGA 480	0.03	0.03	0.03	0.03	0.03	4.96	4.52	5.14	0.01	4.96
	8514NI	4.73	0.03	4.73	4.74	0.03	4.97	4.52	5.16	0.01	4.96
	VESA 64K	4.73	4.73	4.73	0.03	0.03	4.97	4.52	5.16	0.01	4.96
	VESA 80K	4.73	4.73	4.73	4.74	0.03	4.97	4.52	5.16	0.01	4.96
1769XE	VGA 480	0.06	0.06	0.06	0.06	0.06	5.00	4.49	5.20	0.01	5.00
	8514NI	0.06	4.74	0.06	4.74	0.06	5.00	4.49	5.21	0.01	4.99
	VESA 64K	0.06	4.74	4.74	4.74	0.06	5.00	4.49	5.22	0.01	4.99

IC		IC503 (80C52)									
MODEL	PIN MODE	11	12	13	14	15	16	17	18	19	20
1785XE	VGA 480	4.96	0.22	4.96	4.10	4.96	4.92	3.69	2.96	2.34	0
	8514NI	4.96	0.22	4.96	4.05	4.97	4.87	3.86	2.97	2.34	0
	VESA 64K	4.96	0.20	4.96	4.06	4.97	0.36	0.62	2.97	2.34	0
	VESA 80K	4.96	0.20	4.96	3.98	4.97	0.36	0.62	2.94	2.23	0
1769XE	VGA 480	4.99	0.22	4.99	4.03	5.00	4.95	3.70	2.65	2.05	0
	8514NI	4.99	0.23	4.99	3.98	5.00	4.90	3.87	2.65	2.05	0
	VESA 64K	4.99	0.21	4.99	3.97	5.00	0.35	0.62	2.65	2.07	0

IC		IC503 (80C52)									
MODEL	PIN MODE	21	22	23	24	25	26	27	28	29	30
1785XE	VGA 480	4.96	4.96	4.97	4.97	4.96	4.96	4.96	4.96	4.97	1.65
	8514NI	4.97	4.97	4.97	4.97	4.96	4.96	4.96	4.96	4.97	1.65
	VESA 64K	4.97	4.97	4.97	4.97	4.96	4.96	4.96	4.96	4.97	1.65
	VESA 80K	4.97	4.97	4.97	4.97	4.96	4.96	4.96	4.96	4.97	1.65
1769XE	VGA 480	5.00	5.00	5.00	5.00	4.99	4.99	4.99	4.99	5.00	1.70
	8514NI	5.00	5.00	5.00	5.00	4.99	4.99	4.99	4.99	5.00	1.70
	VESA 64K	5.00	5.00	5.00	5.00	4.99	4.99	4.99	4.99	5.00	1.70

IC		IC503 (80C52)									
MODE MODEL	PIN	31	32	33	34	35	36	37	38	39	40
1785XE	VGA 480	4.97	4.97	4.97	0.25	0.07	4.97	4.97	3.89	4.68	4.97
	8514NI	4.97	4.97	4.97	0.25	0.07	4.97	4.97	3.89	4.68	4.97
	VESA 64K	4.97	4.97	4.97	0.25	0.07	4.97	4.97	3.89	4.68	4.97
	VESA 80K	4.97	4.97	4.97	0.25	0.07	4.97	4.97	3.89	4.68	4.97
1769XE	VGA 480	5.00	5.00	5.00	0.37	0.10	5.00	5.00	3.91	4.71	5.00
	8514NI	5.00	5.00	5.00	0.37	0.10	5.00	5.00	3.91	4.71	5.00
	VESA 64K	5.00	5.00	5.00	0.37	0.10	5.00	5.00	3.91	4.71	5.00

IC		IC504 (7805)			IC505 (7812)		
MODE MODEL	PIN	O	G	I	O	G	I
1785XE	VGA 480	4.97	0	6.85	11.96	0	14.85
	8514NI	4.97	0	6.88	11.96	0	14.90
	VESA 64K	4.97	0	6.88	11.96	0	14.95
	VESA 80K	4.97	0	6.88	11.96	0	14.97
1769XE	VGA 480	5.00	0	6.92	11.73	0	14.75
	8514NI	5.00	0	6.96	11.73	0	14.82
	VESA 64K	5.00	0	6.96	11.73	0	14.94

IC		IC506 (M62358)										
MODE MODEL	PIN	1	2	3	4	5	6	7	8	9	10	11
1785XE	VGA 480	4.97	4.97	0.07	2.20	2.04	2.31	4.97	4.62	1.63	0	0
	8514NI	4.97	4.97	0.07	2.31	2.10	6.72	4.97	3.92	1.38	0	0
	VESA 64K	4.97	4.97	0.07	2.27	2.00	6.72	4.97	3.74	1.29	0	0
	VESA 80K	4.97	4.97	0.07	2.06	2.04	6.72	4.97	6.44	1.34	0	0
1769XE	VGA 480	5.00	5.00	0.10	2.75	2.00	6.11	5.00	3.96	1.04	0	0
	8514NI	5.00	5.00	0.10	2.68	2.04	6.11	5.00	3.35	0.96	0	0
	VESA 64K	5.00	5.00	0.10	2.66	2.02	6.11	5.00	3.11	0.90	0	0

IC		IC506 (M62358)										
MODE MODEL	PIN	12	13	14	15	16	17	18	19	20	21	22
1785XE	VGA 480	4.97	11.96	8.63	5.44	0.46	9.07	4.86	2.49	4.97	4.97	4.97
	8514NI	4.97	11.96	8.12	5.07	3.89	8.11	5.10	2.49	4.97	4.97	4.97
	VESA 64K	4.97	11.96	7.60	4.36	6.87	6.99	5.05	2.39	4.97	4.97	4.97
	VESA 80K	4.97	11.96	7.84	3.57	10.12	6.43	5.19	2.36	4.97	4.97	4.97
1769XE	VGA 480	5.00	11.72	7.76	6.35	0.47	8.66	6.71	2.52	5.00	5.00	5.00
	8514NI	5.00	11.72	7.34	6.03	3.87	7.86	7.04	2.51	5.00	5.00	5.00
	VESA 64K	5.00	11.72	6.92	5.65	6.97	6.92	7.18	2.51	5.00	5.00	5.00

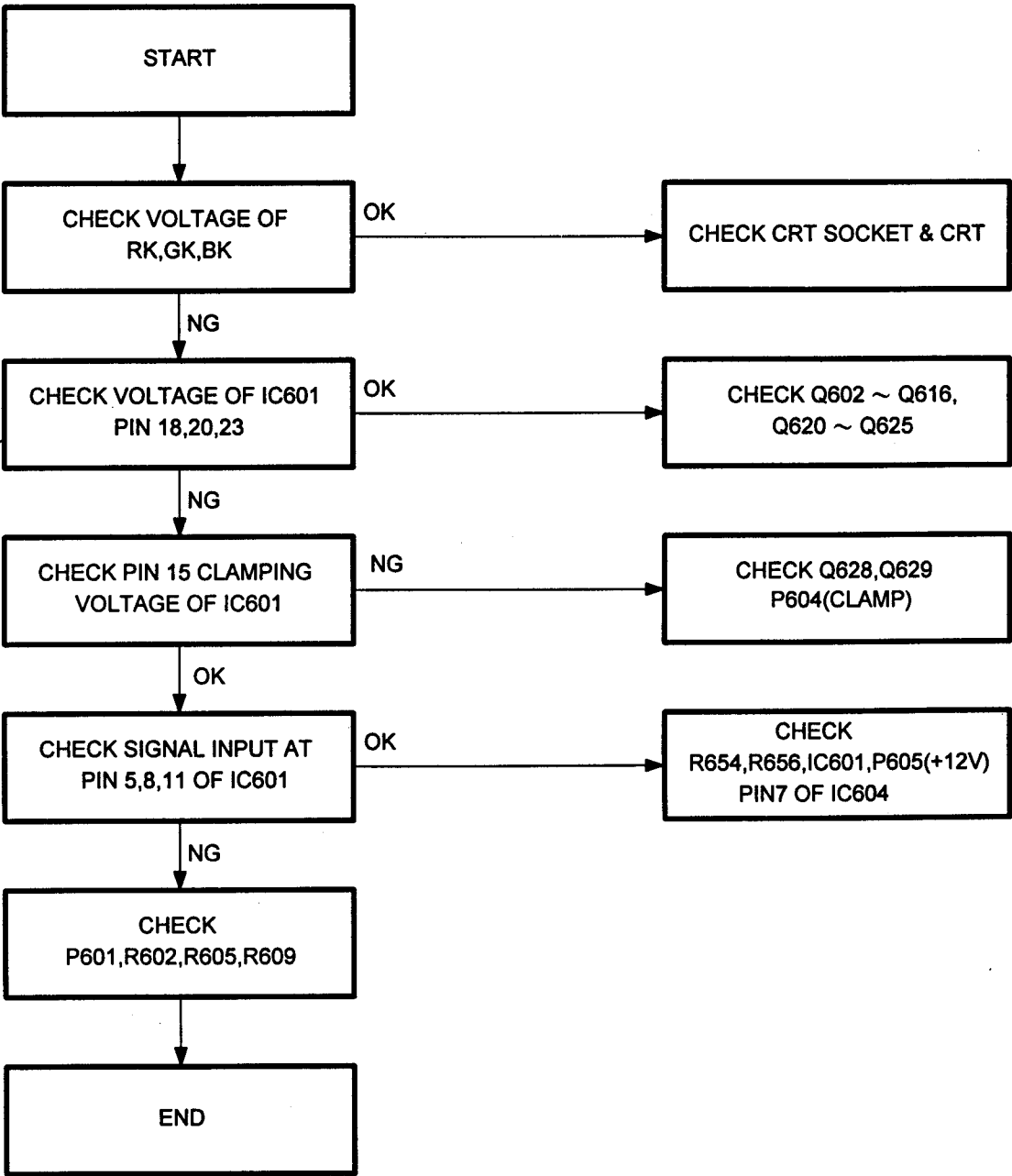
IC		IC507 (74LS86)													
MODEL	MODE PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1785XE	VGA 480	3.39	0	3.63	3.69	3.63	0.73	0	0.22	4.92	4.92	4.92	0	4.26	4.97
	8514NI	3.46	0	3.80	3.85	3.80	0.66	0	0.22	4.87	4.87	4.87	0	4.25	4.97
	VESA 64K	0.40	0	0.55	0.62	0.55	0.58	0	0.20	0.29	0.36	0.29	0	0.21	4.97
	VESA 80K	0.40	0	0.55	0.62	0.55	0.58	0	0.20	0.29	0.36	0.29	0	0.21	4.97
1769XE	VGA 480	3.84	0	3.65	3.70	3.65	0.73	0	0.22	4.95	4.95	4.95	0	4.70	5.00
	8514NI	3.91	0	3.82	3.87	3.82	0.65	0	0.23	4.90	4.90	4.90	0	4.68	5.00
	VESA 64K	0.50	0	0.56	0.62	0.56	0.59	0	0.21	0.29	0.35	0.29	0	0.03	5.00

TR		Q501 (2SC945)			Q502 (2SC945)			Q503 (2SC945)		
MODEL	MODE PIN	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	0	2.95	0.01	0	0.01	0.70	0	0.07	0.69
	8514NI	0	2.77	0.01	0	0.01	0.70	0	0.07	0.69
	VESA 64K	0	2.70	0.01	0	0.01	0.70	0	0.07	0.69
	VESA 80K	0	2.74	0.01	0	0.01	0.70	0	0.07	0.69
1769XE	VGA 480	0	2.52	0.01	0	0.01	0.65	0	0.08	0.66
	8514NI	0	2.46	0.01	0	0.01	0.65	0	0.08	0.66
	VESA 64K	0	2.42	0.01	0	0.01	0.65	0	0.08	0.66

TR		Q504 (2SC945)			Q505 (2SC945)			Q506 (2SC945)		
MODEL	MODE PIN	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	0	4.95	0.20	0	4.09	0.30	0	0.01	0.66
	8514NI	0	4.93	0.21	0	4.05	0.30	0	0.01	0.66
	VESA 64K	0	4.95	0.19	0	4.07	0.29	0	0.01	0.66
	VESA 80K	0	4.95	0.19	0	3.98	0.30	0	0.01	0.66
1769XE	VGA 480	0	4.98	0.21	0	4.03	0.30	0	0.01	0.62
	8514NI	0	4.96	0.21	0	3.97	0.30	0	0.01	0.62
	VESA 64K	0	4.96	0.20	0	3.96	0.30	0	0.01	0.62

TR		Q507 (A733)			Q508 (2SC945)		
MODEL	MODE PIN	E	C	B	E	C	B
1785XE	VGA 480	4.97	0.16	4.98	4.26	4.97	0.74
	8514NI	4.97	0.25	4.98	4.23	4.97	0.66
	VESA 64K	4.97	0.32	4.98	0.21	4.97	0.58
	VESA 80K	4.97	0.37	4.98	0.21	4.97	0.58
1769XE	VGA 480	5.00	0.17	5.01	4.70	5.00	0.73
	8514NI	5.00	0.26	5.02	4.68	5.00	0.65
	VESA 64K	5.00	0.32	5.01	0.03	5.00	0.58

6.4 VIDEO CIRCUIT TROUBLESHOOTING ROUTINE



TEST CONDITIONS: TIMING: VGA480
PATTERN: (A) CROSS-HATCH , (B) FULL WHITE

Unit: Volt

IC	IC601 (LM1282)													
PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Cross-hatch	0	0	0	0	2.05	11.96	0	2.05	11.96	0	2.05	2.00	2.95	2.13
Full-white	0	0	0	0	2.40	11.95	0	2.40	11.95	0	2.40	2.00	2.79	2.13

IC	IC601 (LM1282)													
PIN	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Cross-hatch	3.68	3.62	7.35	2.64	7.22	2.68	0	11.96	2.66	7.43	2.40	2.36	2.48	2.00
Full-white	3.68	3.62	7.34	4.47	7.21	4.56	0	11.95	4.32	7.42	2.40	2.36	2.48	2.00

IC	IC603 (M35043)									
PIN	1	2	3	4	5	6	7	8	9	10
Cross-hatch	4.97	0	4.96	4.96	4.96	0.07	0	4.97	NC	NC
Full-white	4.97	0	4.96	4.97	4.97	0.07	0	4.97	NC	NC

IC	IC603 (M35043)									
PIN	11	12	13	14	15	16	17	18	19	20
Cross-hatch	0	0	0	NC	0.01	NC	0.01	4.68	4.95	4.89
Full-white	0	0	0	NC	0.0	NC	0	4.68	4.95	4.97

IC	IC604 (M62359)								
PIN	1	2	3	4	5	6	7	8	9
Cross-hatch	4.97	4.97	0.07	2.37	2.49	2.01	2.65	0	0
Full-white	4.97	4.97	0.07	2.37	2.49	2.01	2.65	0	0

IC	IC604 (M62359)								
PIN	10	11	12	13	14	15	16	17	18
Cross-hatch	4.97	4.97	2.18	2.49	2.78	2.90	0	4.97	4.97
Full-white	4.97	4.97	2.18	2.49	2.78	2.90	0	4.97	4.97

TR	Q602,Q607,Q612 (BFQ232)			Q603,Q608,Q613 (BFQ252)			Q604,Q609,Q614 (BFQ262)		
PIN	E	C	B	E	C	B	E	C	B
Cross-hatch	65.91	75.15	66.43	65.46	0	65.01	8.63	65.01	9.32
Full-white	45.38	74.97	46.01	45.14	0	44.48	8.54	44.51	9.29

TR	Q605,Q610,Q615 (2SC1906)			Q606,Q611,Q616 (BFQ162)			Q619 (2SC945)		
MODE ^{PIN}	E	C	B	E	C	B	E	C	B
Cross-hatch	1.97	11.97	2.60	0.65	8.63	1.29	0	3.59	0
Full-white	3.62	11.96	4.27	2.25	8.54	2.90	0	3.62	0

TR	Q620,Q622,Q624 (F488)			Q621,Q623,Q625 (F483)			Q627 (2SC945)		
MODE ^{PIN}	E	C	B	E	C	B	E	C	B
Cross-hatch	104.97	0	104.25	2.20	104.25	2.78	0	4.62	-0.02
Full-white	104.07	0	104.77	2.21	104.09	2.78	0	4.68	-0.01

TR	Q628 (2SC945)			Q629 (2SC945)					
MODE ^{PIN}	E	C	B	E	C	B			
Cross-hatch	0	3.67	0	0	0	0			
Full-white	0	3.68	0	0	0	0			

※ only for 1769XE

IC	IC602 (24LC21)							
MODE ^{PIN}	1	2	3	4	5	6	7	8
Cross-hatch	NC	NC	NC	0	0	4.99	4.70	4.99
Full-white	NC	NC	NC	0	0	4.99	4.70	4.99

TR	Q801 (2SC945)			Q802 (2SC945)			Q803 (C1906)		
MODE ^{PIN}	E	C	B	E	C	B	E	C	B
VGA 480	0.74	9.36	1.37	8.71	11.71	9.36	0	0.06	0.24
MAC 832	0.81	9.16	1.44	8.50	11.72	9.16	0	4.42	0.01

TR	Q804 (A733)			Q805 (2SC945)			Q806 (2SC945)		
MODE ^{PIN}	E	C	B	E	C	B	E	C	B
VGA 480	0.70	0	0.06	3.81	11.73	0.71	3.81	11.73	4.37
MAC 832	5.05	0	4.42	4.40	11.72	5.05	4.40	11.72	0

TR	Q807 (2SC945)			Q808 (2SC945)					
MODE ^{PIN}	E	C	B	E	C	B			
VGA 480	0	0	0.70	3.63	11.73	4.13			
MAC 832	0	4.42	0	0	11.72	0			

※ only for 1785XE

TR	IC801 (24LC21)							
PIN	1	2	3	4	5	6	7	8
MODE								
VGA 480	NC	NC	NC	0	0	5.18	4.38	5.18

TR	Q801 (A733)			Q802 (A733)			Q803 (A733)		
PIN	E	C	B	E	C	B	E	C	B
MODE									
VGA 480	0	4.09	5.20	4.05	4.09	3.52	0	4.34	5.21

TR	Q804 (A733)			Q805 (A733)			Q806 (2SC945)		
PIN	E	C	B	E	C	B	E	C	B
MODE									
VGA 480	4.38	4.34	3.68	5.26	0.64	5.25	0	5.25	0.25

TR	Q807 (A733)			Q808 (2SC945)			Q809 (2SC945)		
PIN	E	C	B	E	C	B	E	C	B
MODE									
VGA 480	5.26	5.21	4.57	0	0.68	0.25	0.70	9.79	1.34

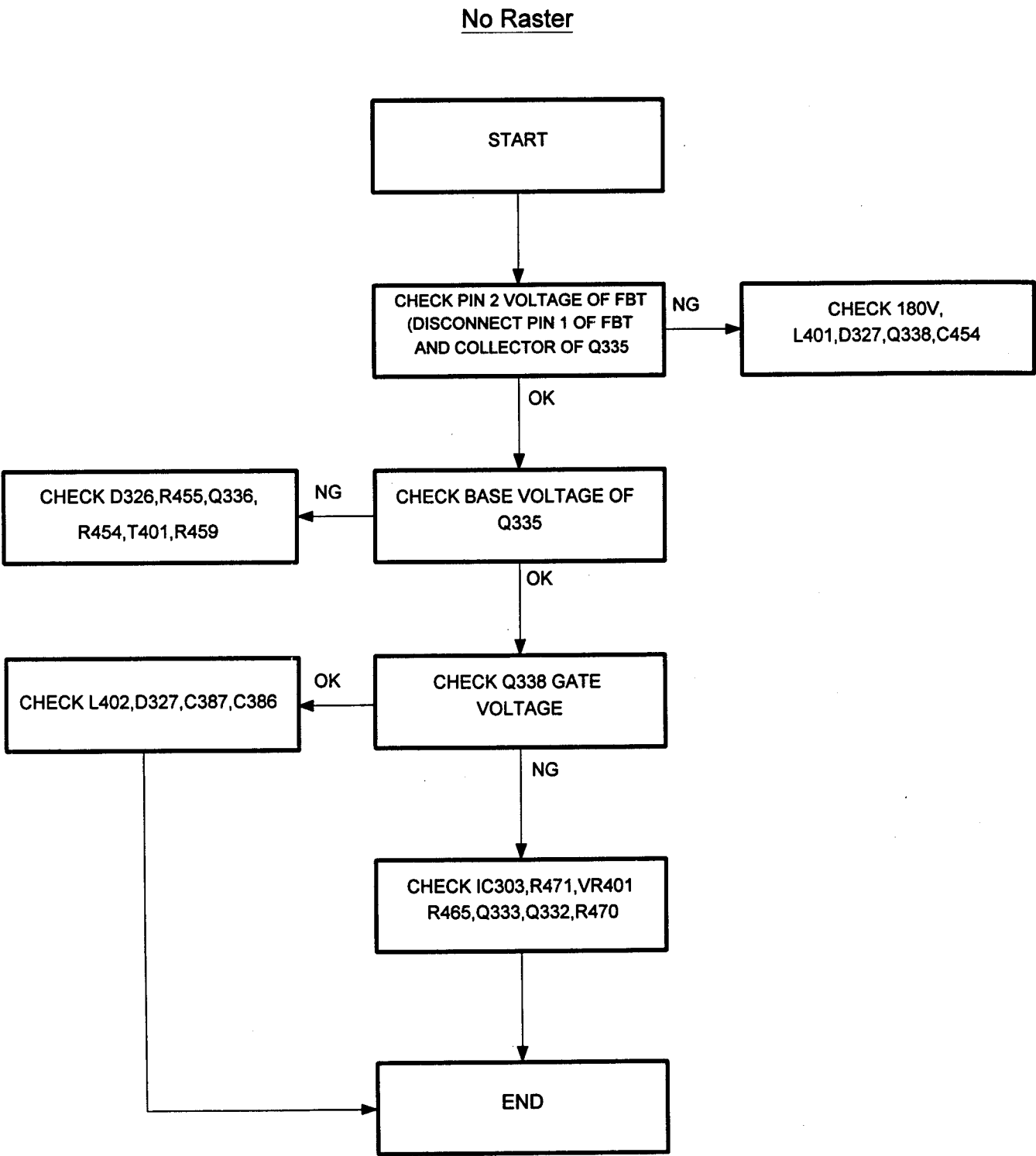
TR	Q810 (2SC945)			Q811 (C1906)			Q812 (C1906)		
PIN	E	C	B	E	C	B	E	C	B
MODE									
VGA 480	9.12	11.96	9.79	0	0.01	0.24	0	11.96	0.01

TR	Q813 (2SC945)			Q814 (2SC945)			Q815 (2SC945)		
PIN	E	C	B	E	C	B	E	C	B
MODE									
VGA 480	4.09	11.96	4.60	3.39	11.95	0	0	0.01	0.66

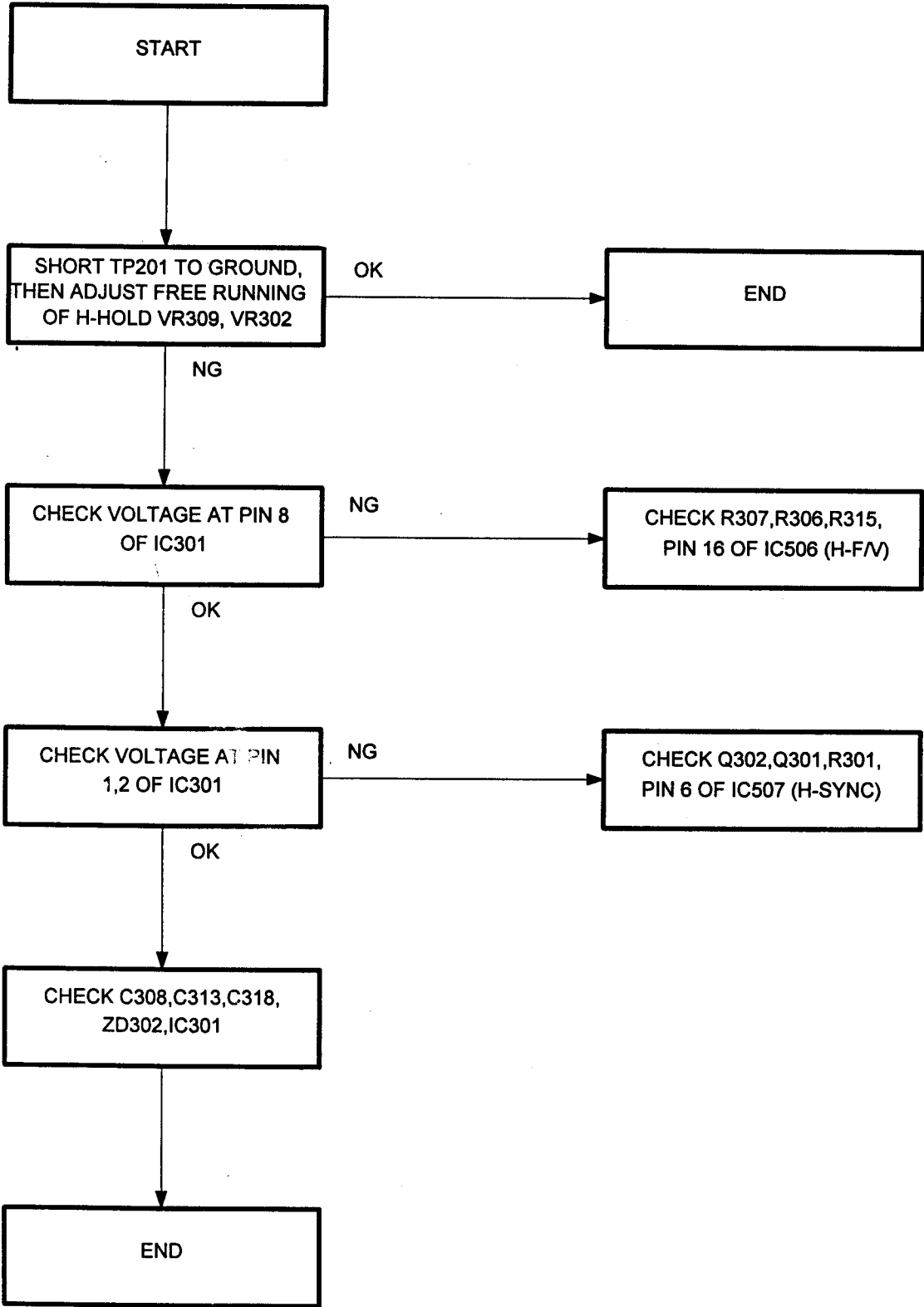
TR	Q816 (2SC945)			Q817 (A733)					
PIN	E	C	B	E	C	B			
MODE									
VGA 480	0	0.01	0.68	4.60	0	4.09			

6.5 DEFLECTION CIRCUIT TROUBLESHOOTING ROUTINE

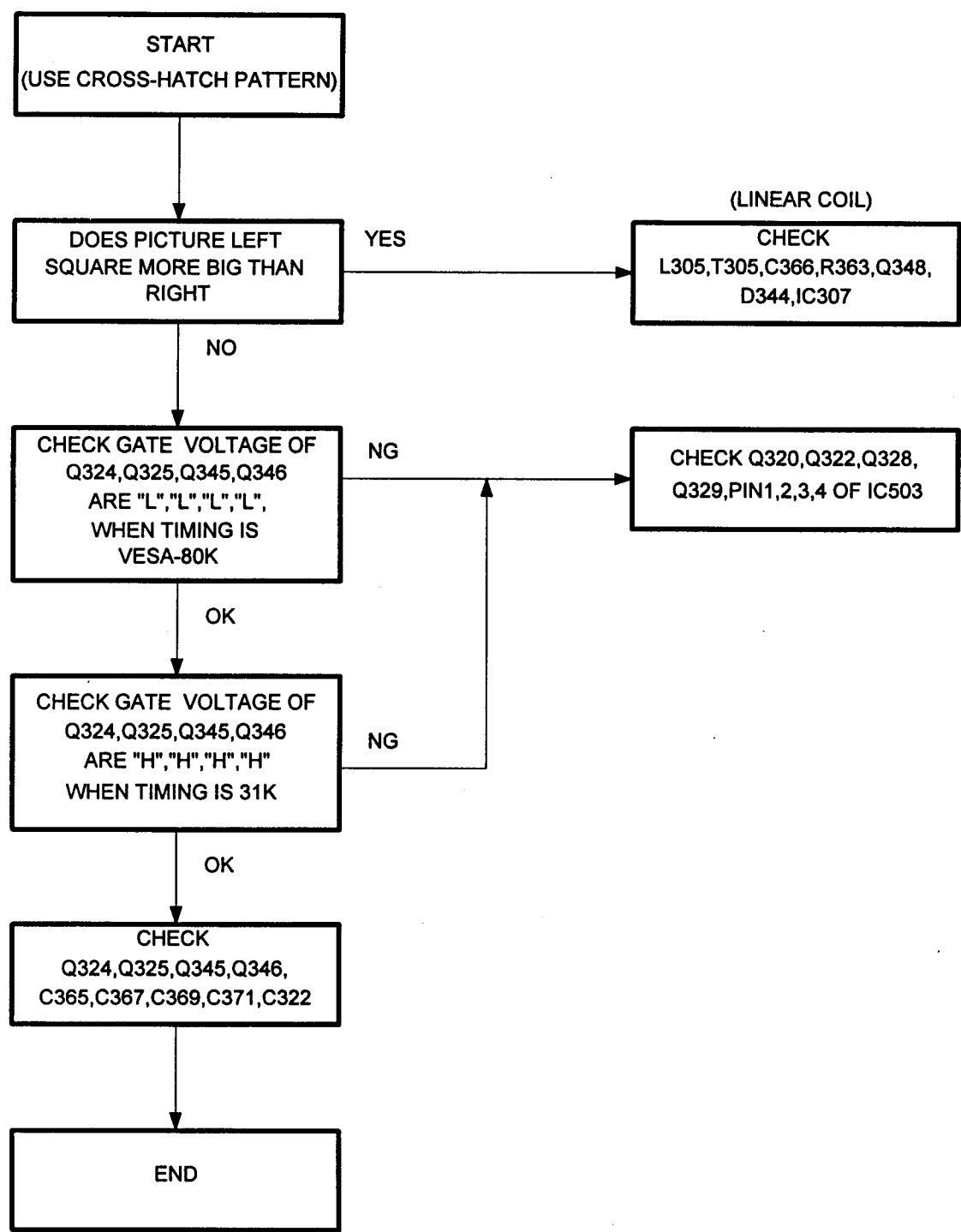
6.5.1 Horizontal Deflection Circuit



H-Asynchronous

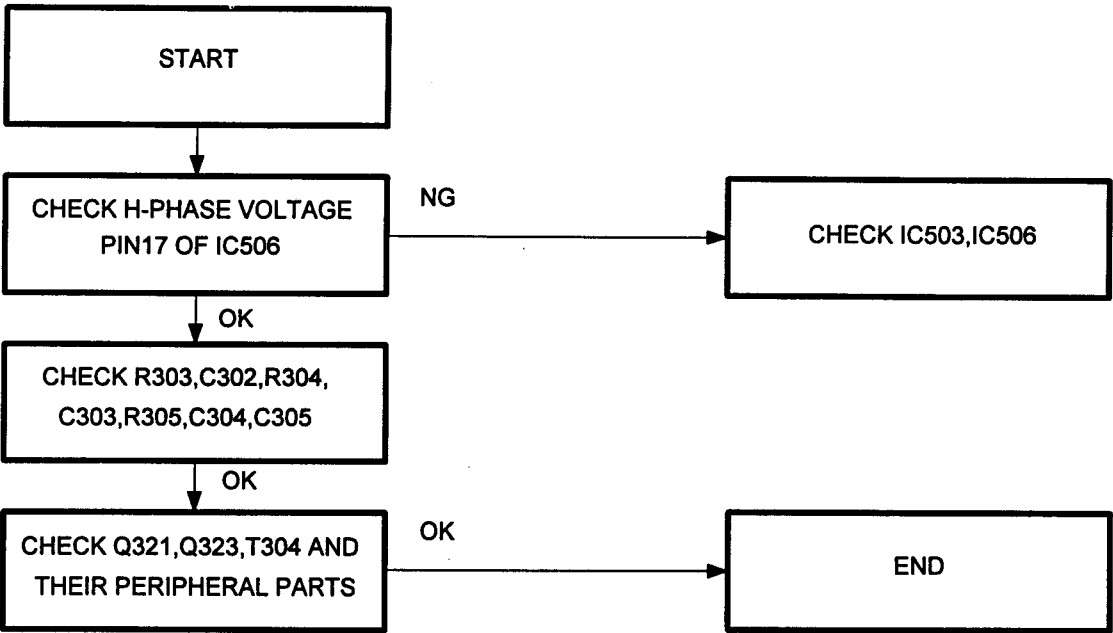


Linearity

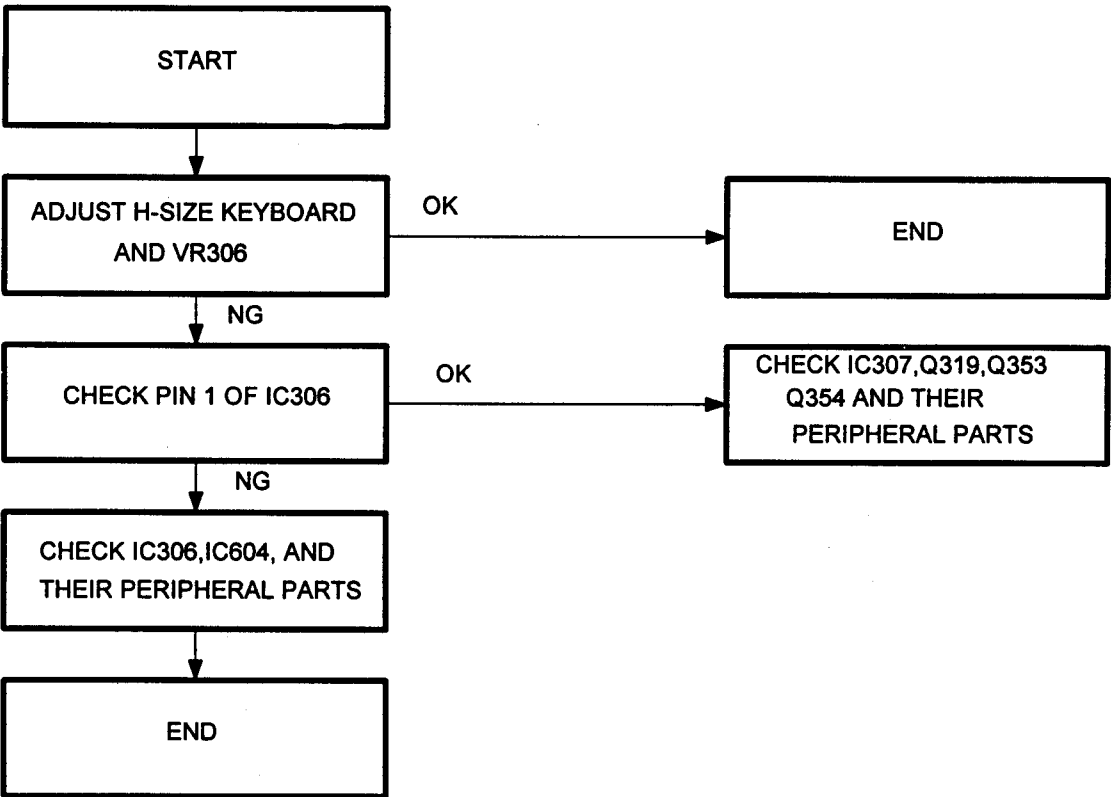


REMARK: 1. "L" means the voltage between gate and source is $< 4V$ which can't turn on the MOSFET.
2. "H" means the voltage between gate and source is $\geq 4V$ which can turn on the MOSFET.

Out of phase

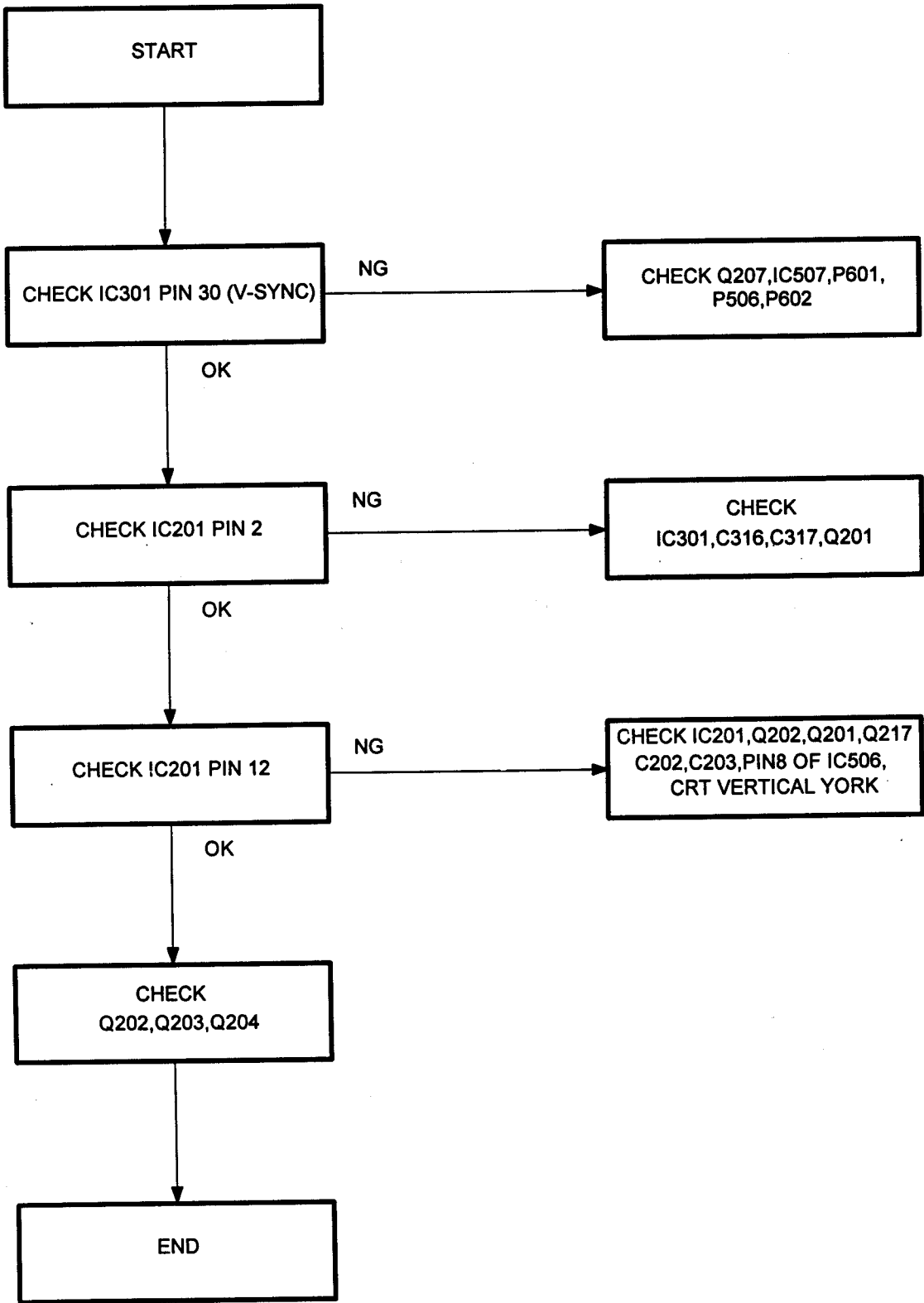


Width Abnormal

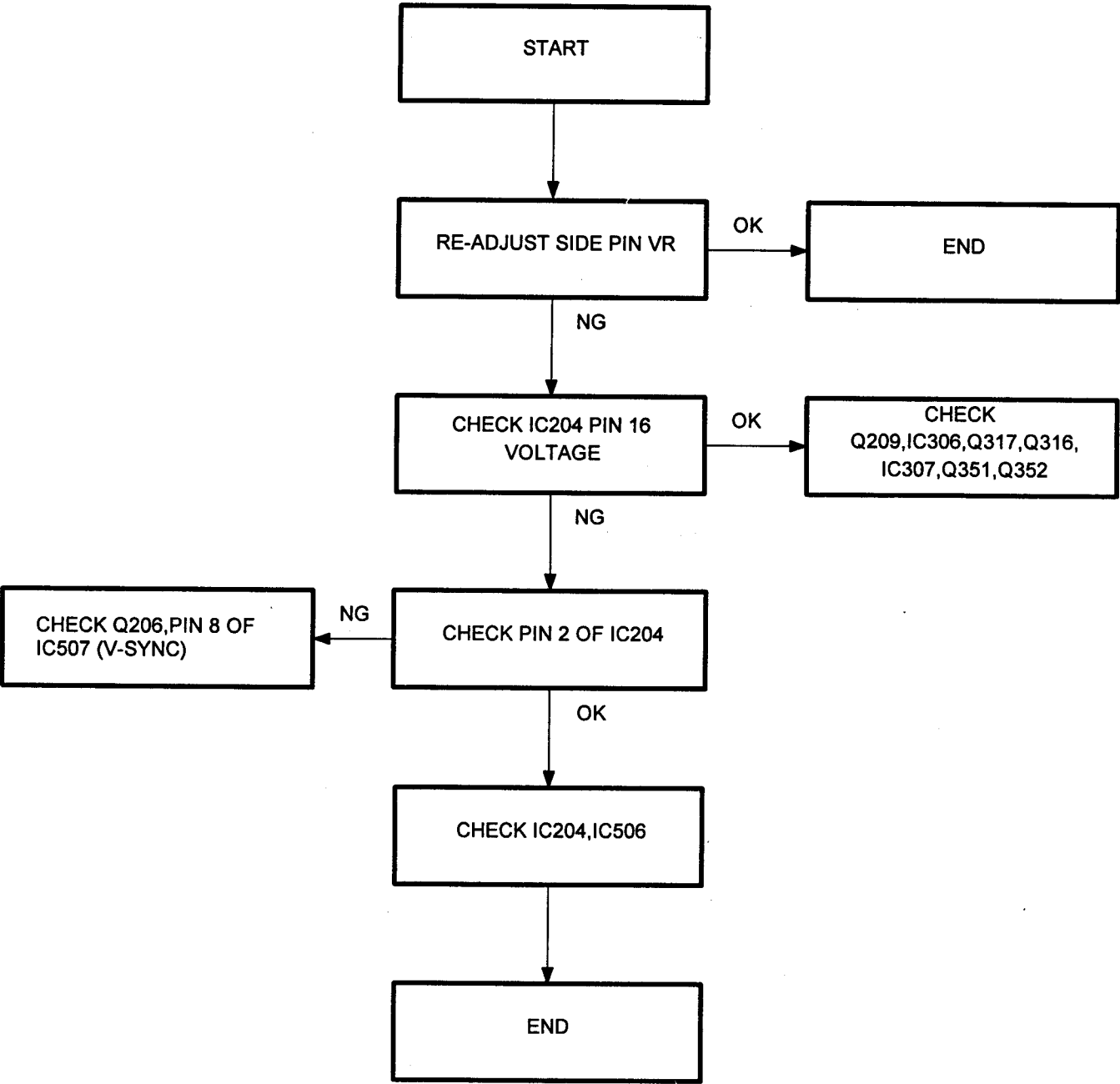


6.5.2 Vertical Deflection Circuit

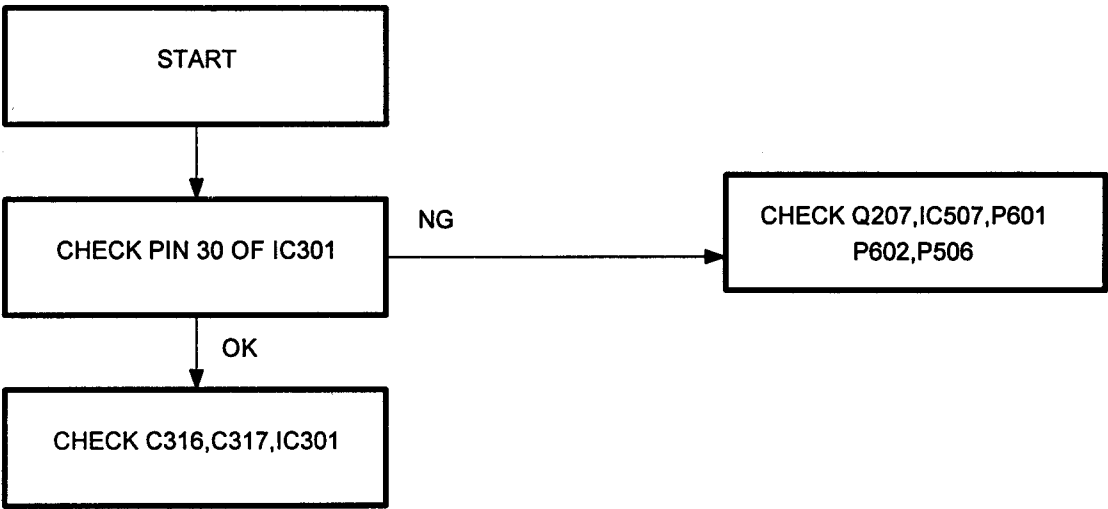
No vertical scan



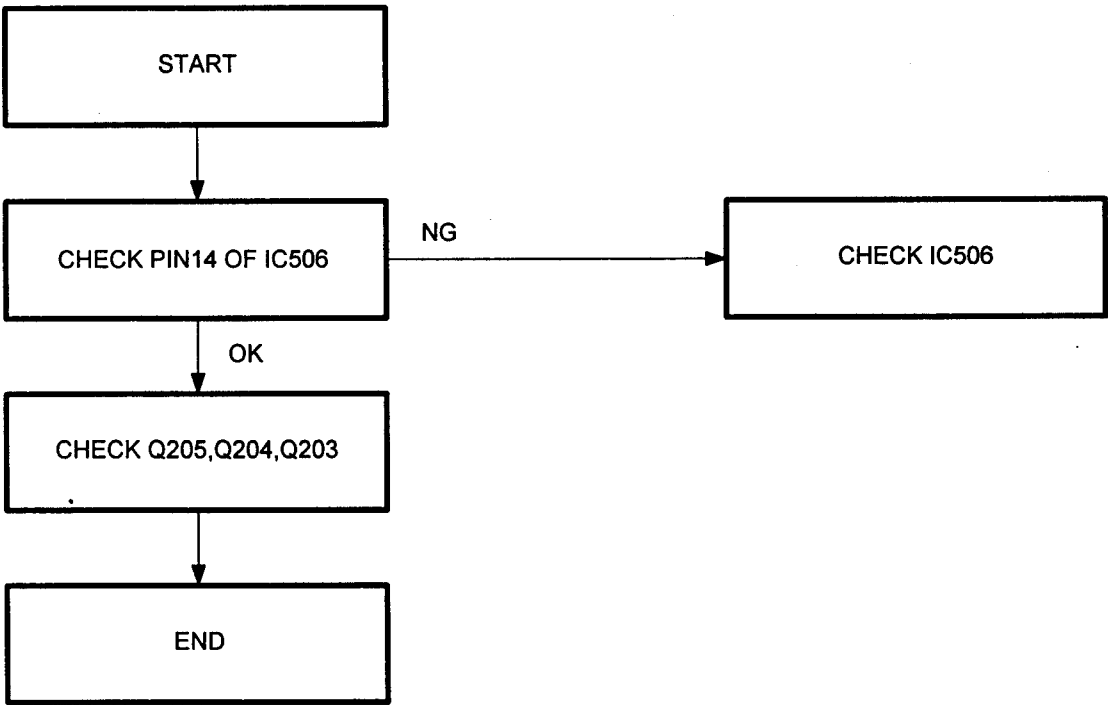
Side pin distortion



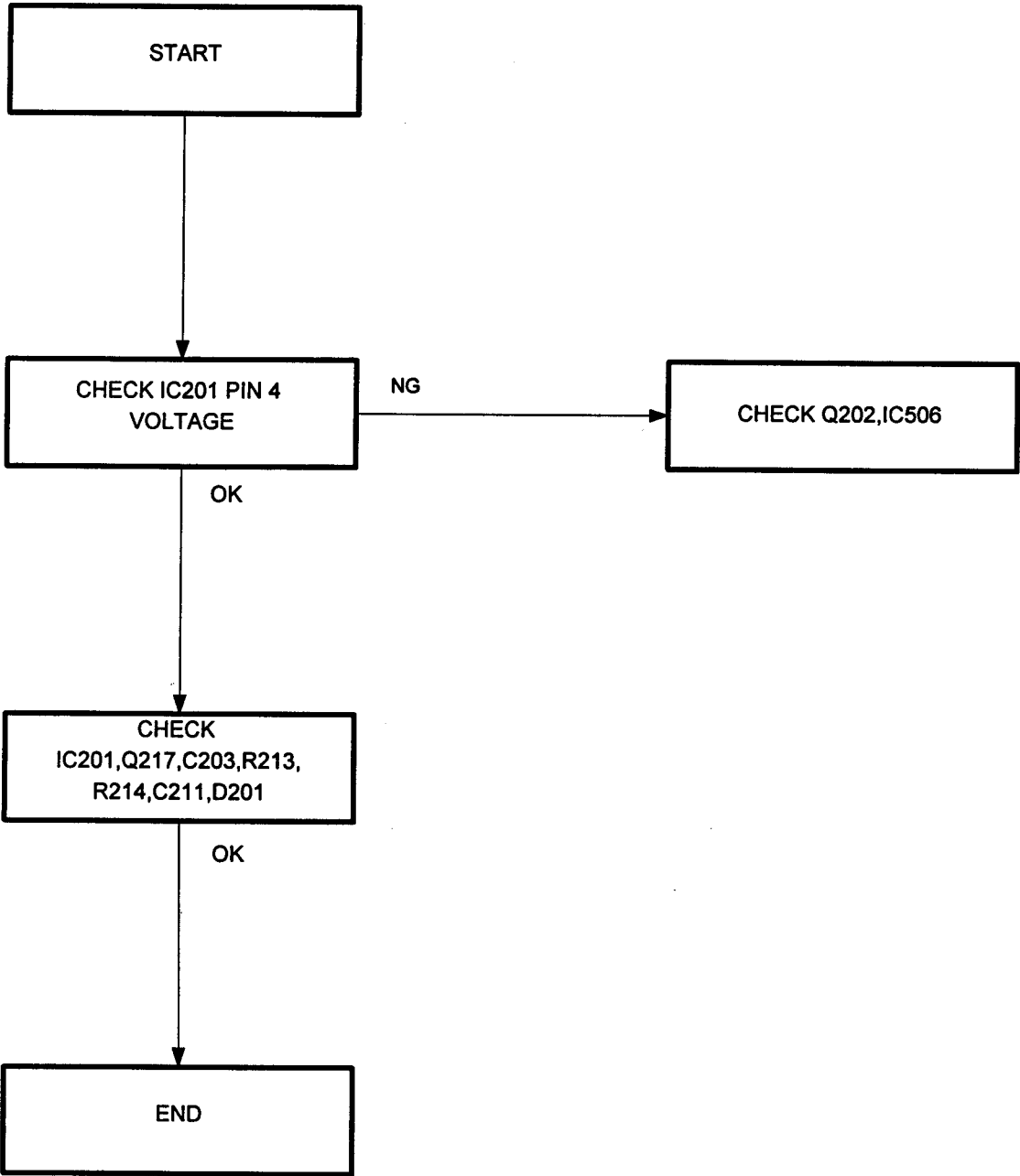
V-Asynchronous



Vertical position



Vertical Size



TEST CONDITIONS: AC LINE IN:110V/60Hz
PATTERN: CROSS HATCH
STATUS : NORMAL

Unit: Volt

IC		IC201 (LA7838)												
MODEL	PIN MODE	1	2	3	4	5	6	7	8	9	10	11	12	13
1785XE	VGA 480	11.66	4.66	5.82	5.98	0	5.65	5.75	26.12	0.63	1.41	0	13.25	25.73
	8514NI	11.66	4.66	5.82	5.99	0	5.62	5.78	26.20	0.59	1.41	0	13.25	25.79
	VESA 64K	11.66	4.66	5.82	5.99	0	5.61	5.79	26.23	0.57	1.41	0	13.20	25.82
	VESA 80K	11.66	4.64	5.82	5.98	0	5.62	5.79	26.24	0.70	1.41	0	13.26	25.94
1769XE	VGA 480	11.77	4.75	5.88	6.04	0	5.51	5.93	26.20	0.59	1.40	0	13.68	25.85
	8514NI	11.77	4.75	5.88	6.04	0	5.49	5.95	26.29	0.55	1.40	0	13.68	25.93
	VESA 64K	11.77	4.75	5.88	6.04	0	5.48	5.96	26.35	0.54	1.40	0	13.62	25.99

IC		IC202 (AN614)						
MODEL	PIN MODE	1	2	3	4	5	6	7
1785XE	VGA 480	3.67	3.95	3.95	0	3.67	11.74	8.04
	8514NI	3.68	3.95	3.95	0	3.67	11.74	8.04
	VESA 64K	3.67	3.95	3.95	0	3.67	11.74	8.04
	VESA 80K	3.67	3.95	3.95	0	3.67	11.74	8.04
1769XE	VGA 480	3.77	3.97	3.96	0	3.77	11.86	8.11
	8514NI	3.77	3.97	3.96	0	3.77	11.86	8.11
	VESA 64K	3.77	3.97	3.96	0	3.77	11.86	8.11

IC		IC204 (AN5766)										
MODEL	PIN MODE	1	2	3	4	5	6	7	8	9	10	11
1785XE	VGA 480	0	4.86	4.02	5.91	6.01	5.31	6.40	11.82	5.95	2.56	0
	8514NI	0	4.85	4.02	5.91	6.01	5.31	6.40	11.82	5.95	2.56	0
	VESA 64K	0	4.86	4.02	5.91	6.01	5.31	6.40	11.82	5.95	2.56	0
	VESA 80K	0	4.86	4.02	5.91	6.35	5.60	6.38	11.82	5.95	2.56	0
1769XE	VGA 480	0	4.98	4.02	5.93	5.79	5.13	6.37	11.94	5.95	2.55	0
	8514NI	0	4.98	4.02	5.93	5.79	5.13	6.37	11.94	5.95	2.55	0
	VESA 64K	0	4.98	4.02	5.93	5.78	5.13	6.37	11.94	5.95	2.55	0

IC		IC204 (AN5766)										
MODEL	PIN MODE	12	13	14	15	16	17	18	19	20	21	22
1785XE	VGA 480	0	5.66	5.64	3.73	3.80	2.49	2.70	2.20	2.05	2.41	2.34
	8514NI	0	5.66	5.64	3.73	3.86	2.49	2.78	2.32	2.11	2.41	2.34
	VESA 64K	0	5.66	5.59	3.73	3.89	2.40	2.84	2.28	2.01	2.42	2.34
	VESA 80K	0	5.66	5.56	3.73	3.93	2.36	2.88	2.07	2.05	2.42	2.34
1769XE	VGA 480	0	5.76	5.67	3.81	4.06	2.52	2.76	2.75	2.01	2.44	1.99
	8514NI	0	5.76	5.66	3.81	4.11	2.51	2.85	2.67	2.04	2.44	1.99
	VESA 64K	0	5.76	5.66	3.81	4.16	2.51	2.94	2.65	2.02	2.44	1.99

IC		IC301 (LA7860)									
MODEL	PIN MODE	1	2	3	4	5	6	7	8	9	10
1785XE	VGA 480	4.81	0	1.87	7.34	0	8.41	4.37	0.16	1.12	6.68
	8514NI	4.80	0	1.67	7.25	0	8.35	4.35	0.78	1.73	6.68
	VESA 64K	4.79	0	1.44	7.22	0	8.29	4.36	1.35	2.29	6.68
	VESA 80K	4.77	0	1.33	7.16	0	8.23	4.36	1.94	2.87	6.68
1769XE	VGA 480	4.73	0	1.78	7.27	0	8.29	4.30	0.15	1.11	6.52
	8514NI	4.74	0	1.62	7.18	0	8.22	4.29	0.78	1.73	6.50
	VESA 64K	4.73	0	1.43	7.13	0	8.16	4.30	1.35	2.29	6.48

IC		IC301 (LA7860)									
MODEL	PIN MODE	11	12	13	14	15	16	17	18	19	20
1785XE	VGA 480	6.06	0	8.47	9.27	8.44	4.62	NC	0.91	NC	7.16
	8514NI	6.04	0	8.45	9.24	8.53	4.91	NC	1.25	NC	6.88
	VESA 64K	6.04	0	8.43	9.22	8.62	5.17	NC	1.54	NC	6.66
	VESA 80K	6.03	0	8.40	9.20	8.71	5.44	NC	1.85	NC	6.42
1769XE	VGA 480	5.94	0	8.39	9.17	8.35	4.53	NC	0.96	NC	7.06
	8514NI	5.94	0	8.39	9.15	8.37	4.61	NC	1.33	NC	6.79
	VESA 64K	5.93	0	8.39	9.13	8.40	4.68	NC	1.65	NC	6.55

IC		IC301 (LA7860)									
MODEL	PIN MODE	21	22	23	24	25	26	27	28	29	30
1785XE	VGA 480	12.36	5.02	0	0	0	0	0.96	6.28	5.98	6.25
	8514NI	12.35	5.00	0	0	0	0	0.96	6.28	5.98	6.25
	VESA 64K	12.35	5.01	0	0	0	0	0.96	6.28	5.98	6.25
	VESA 80K	12.35	5.00	0	0	0.01	0	1.00	6.28	5.68	6.25
1769XE	VGA 480	12.07	4.97	0	0	0	0	0.96	6.14	5.82	6.00
	8514NI	12.07	4.96	0	0	0	0	0.96	6.14	5.82	6.00
	VESA 64K	12.07	4.96	0	0	0	0	0.96	6.13	5.82	6.00

IC		IC303 (3843)							
MODEL	PIN MODE	1	2	3	4	5	6	7	8
1785XE	VGA 480	1.58	2.48	0.06	0.39	0	2.40	10.45	4.99
	8514NI	1.54	2.48	0.06	0.35	0	3.85	10.42	4.99
	VESA 64K	1.55	2.48	0.06	0.39	0	5.37	10.39	4.99
	VESA 80K	1.59	2.48	0.06	0.42	0	7.26	10.36	4.99
1769XE	VGA 480	1.64	2.47	0.07	0.38	0	2.87	10.45	4.98
	8514NI	1.59	2.47	0.07	0.37	0	4.64	10.48	4.98
	VESA 64K	1.61	2.47	0.08	0.39	0	6.52	10.45	4.98

TR		IC304 (BA6110)								
MODEL	PIN MODE	1	2	3	4	5	6	7	8	9
1785XE	VGA 480	5.97	5.97	1.09	1.07	0	6.02	6.02	6.10	11.86
	8514NI	5.97	5.97	1.10	1.05	0	6.07	6.07	6.14	11.86
	VESA 64K	5.97	5.97	1.10	1.02	0	6.09	6.09	6.16	11.86
	VESA 80K	5.97	5.97	1.10	0.98	0	6.11	6.11	6.17	11.86
1769XE	VGA 480	5.94	5.95	1.06	1.05	0	5.95	5.95	6.07	11.97
	8514NI	5.94	5.95	1.06	1.03	0	6.00	6.00	6.13	11.97
	VESA 64K	5.94	5.95	1.06	1.00	0	6.05	6.05	6.16	11.97

IC		IC305 (TL431)			IC306 (LM358)							
MODEL	PIN MODE	R	A	K	1	2	3	4	5	6	7	8
1785XE	VGA 480	2.50	0	8.11	7.87	5.92	5.93	0	7.76	7.77	7.77	11.86
	8514NI	2.51	0	5.43	8.56	5.93	5.93	0	7.74	7.74	7.74	11.86
	VESA 64K	2.51	0	4.04	8.43	5.94	5.93	0	7.39	7.39	7.39	11.86
	VESA 80K	2.51	0	3.20	8.17	5.95	5.93	0	6.99	6.99	6.99	11.86
1769XE	VGA 480	2.50	0	8.77	7.20	5.94	5.95	0	7.83	7.83	7.83	11.97
	8514NI	2.50	0	6.22	8.05	5.94	5.95	0	7.81	7.81	7.81	11.97
	VESA 64K	2.50	0	4.53	8.10	5.95	5.95	0	7.47	7.47	7.47	11.97

IC		IC307 (2903)							
MODEL	PIN MODE	1	2	3	4	5	6	7	8
1785XE	VGA 480	0.47	9.77	4.33	0	8.09	9.77	7.02	26.40
	8514NI	0.85	8.46	4.33	0	8.62	8.46	11.08	26.46
	VESA 64K	1.27	7.24	4.33	0	8.48	7.24	14.83	26.49
	VESA 80K	1.82	5.76	4.33	0	8.19	5.76	18.15	26.50
1769XE	VGA 480	0.33	8.99	2.56	0	7.38	9.00	8.14	26.44
	8514NI	0.56	7.36	2.56	0	8.07	7.37	13.56	26.52
	VESA 64K	0.84	5.70	2.56	0	8.08	5.72	17.81	26.57

IC		IC310 (LM317)			IC311 (LM317)		
MODEL	PIN MODE	R	O	I	R	O	I
1785XE	VGA 480	10.62	11.86	19.75	10.75	11.98	14.88
	8514NI	10.62	11.86	19.53	10.75	11.98	14.92
	VESA 64K	10.62	11.86	19.41	10.75	11.98	14.97
	VESA 80K	10.62	11.86	19.31	10.75	11.98	14.99
1769XE	VGA 480	10.71	11.97	19.66	10.92	12.17	14.76
	8514NI	10.71	11.97	19.48	10.92	12.17	14.83
	VESA 64K	10.71	11.97	19.36	10.92	12.17	14.95

TR		Q201 (2SC945)			Q202 (2SC945)			Q203 (D882)		
MODEL	MODE PIN	B	C	E	E	C	B	B	C	E
1785XE	VGA 480	0	4.66	0	2.42	5.99	3.09	9.61	26.44	9.58
	8514NI	0	4.66	0	2.24	6.00	2.99	10.52	26.49	10.50
	VESA 64K	0	4.66	0	2.15	6.00	2.96	11.38	26.52	11.35
	VESA 80K	0	4.64	0	2.82	5.99	3.60	11.03	26.53	11.02
1769XE	VGA 480	0	4.75	0	2.21	6.05	2.77	10.94	26.46	10.90
	8514NI	0	4.75	0	2.07	6.05	2.69	11.76	26.54	11.71
	VESA 64K	0	4.75	0	2.02	6.05	2.65	12.56	26.59	12.50

TR		Q204 (B772)			Q205 (2SC945)			Q206 (2SC945)		
MODEL	MODE PIN	B	C	E	E	C	B	E	C	B
1785XE	VGA 480	9.07	0	9.58	1.80	9.07	2.39	0.01	11.82	0.21
	8514NI	9.99	0	10.50	1.68	9.99	2.28	0.01	11.82	0.22
	VESA 64K	10.86	0	11.35	1.56	10.86	2.16	0.01	11.82	0.20
	VESA 80K	10.50	0	11.02	1.62	10.50	2.21	0.01	11.82	0.20
1769XE	VGA 480	10.94	0	10.90	1.61	10.94	2.20	0.01	11.94	0.22
	8514NI	11.76	0	11.71	1.52	11.76	2.11	0.01	11.94	0.23
	VESA 64K	12.56	0	12.50	1.42	12.56	2.01	0.01	11.94	0.21

TR		Q207 (2SC945)			Q208 (2SC945)			Q209 (2SC945)		
MODEL	MODE PIN	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	0	12.34	0.21	0	22.94	0	3.22	11.82	3.81
	8514NI	0	12.34	0.22	0	22.11	0	3.27	11.82	3.86
	VESA 64K	0	12.34	0.20	0	21.34	0	3.30	11.82	3.86
	VESA 80K	0	12.34	0.20	0	20.42	0	3.34	11.82	3.89
1769XE	VGA 480	0	12.07	0.23	0	22.66	0	3.46	11.94	4.04
	8514NI	0	12.07	0.23	0	21.66	0	3.52	11.94	4.10
	VESA 64K	0	12.07	0.21	0	20.75	0	3.68	11.94	4.16

TR		Q210 (2SC945)			Q211 (2SC945)			Q212 (2SC945)		
MODEL	MODE PIN	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	0.88	7.69	1.48	0	10.75	0.01	0	0.01	0.64
	8514NI	0.88	7.69	1.48	0	10.75	0.01	0	0.01	0.64
	VESA 64K	0.88	7.70	1.48	0	10.75	0.01	0	0.01	0.64
	VESA 80K	0.88	7.72	1.49	0	10.75	0.01	0	0.01	0.64
1769XE	VGA 480	1.16	8.92	1.75	0	10.92	0.01	0	0.01	0.60
	8514NI	1.17	8.90	1.75	0	10.92	0.01	0	0.01	0.60
	VESA 64K	1.16	8.91	1.75	0	10.92	0.01	0	0.01	0.60

TR		Q213 (B562)			Q214 (2SC945)			Q215 (2SC945)		
MODEL	PIN MODE	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	7.10	6.90	6.24	0	0.61	0.71	4.83	6.98	5.16
	8514NI	7.12	6.92	6.26	0	0.61	0.71	4.86	6.98	5.16
	VESA 64K	7.13	6.93	6.36	0	0.62	0.71	4.87	7.01	5.17
	VESA 80K	7.13	6.94	6.28	0	0.62	0.71	4.88	7.01	5.17
1769XE	VGA 480	7.14	6.97	6.30	0	0.63	0.68	4.85	7.02	5.21
	8514NI	7.17	7.01	6.33	0	0.64	0.68	4.87	7.05	5.21
	VESA 64K	7.18	7.02	6.34	0	0.65	0.68	4.88	7.06	5.21

TR		Q216 (2SA733)			Q217 (2SA733)			Q218 (2SC945)		
MODEL	PIN MODE	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	6.98	6.97	6.37	5.64	0	5.65	0.08	10.59	0.60
	8514NI	6.98	6.99	6.39	5.61	0	5.62	0.08	10.62	0.60
	VESA 64K	7.01	7.00	6.40	5.61	0	5.61	0.21	10.62	0.60
	VESA 80K	7.01	7.01	6.40	5.62	0	5.62	0.21	10.63	0.60
1769XE	VGA 480	7.02	7.01	6.40	5.51	0	5.51	0.08	10.80	0.59
	8514NI	7.05	7.04	6.43	5.48	0	5.49	0.18	10.82	0.59
	VESA 64K	7.06	7.05	6.44	5.47	0	5.48	0.18	10.83	0.59

TR		Q219 (2SA733)			Q220 (2SA952)			Q221 (2SC2001)		
MODEL	PIN MODE	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	11.34	2.70	10.80	6.38	0	6.72	6.38	11.98	6.72
	8514NI	11.36	2.79	10.82	6.39	0	6.72	6.39	11.98	6.72
	VESA 64K	11.37	2.84	10.83	6.39	0	6.72	6.39	11.98	6.72
	VESA 80K	11.37	2.89	10.83	6.39	0	6.72	6.39	11.98	6.72
1769XE	VGA 480	11.52	2.75	10.99	5.80	0	6.11	5.79	12.17	6.11
	8514NI	11.53	2.85	11.01	5.80	0	6.11	5.79	12.17	6.11
	VESA 64K	11.54	2.93	11.01	5.80	0	6.11	5.79	12.17	6.11

TR		Q222 (A733)			Q223 (2SC945)			Q301 (2SC945)		
MODEL	PIN MODE	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	11.20	4.50	10.59	0.87	3.10	1.43	0.54	12.35	0.73
	8514NI	11.23	4.32	10.62	0.81	3.00	1.37	0.47	12.35	0.66
	VESA 64K	11.23	4.27	10.62	0.80	2.97	1.36	0.43	12.35	0.58
	VESA 80K	11.24	4.22	10.63	0.79	3.61	1.34	0.45	12.34	0.58
1769XE	VGA 480	11.40	3.95	10.80	0.72	2.78	1.26	0.73	12.07	0.73
	8514NI	11.42	3.81	10.82	0.67	2.70	1.21	0.65	12.07	0.65
	VESA 64K	11.42	3.76	10.83	0.66	2.66	1.20	0.59	12.07	0.59

TR		Q302 (2SC945)			Q303 (2SA733)			Q304 (2SC945)		
MODEL	PIN	E	C	B	E	C	B	E	C	B
	MODE									
1785XE	VGA 480	0	0	0.67	4.62	0.29	4.55	0	4.55	0.29
	8514NI	0	0	0.68	4.91	0.29	4.80	0	4.80	0.29
	VESA 64K	0	0	0.68	5.17	0.29	5.03	0	5.03	0.29
	VESA 80K	0	0	0.68	5.43	0.29	5.26	0	5.26	0.29
1769XE	VGA 480	0	0	0.64	4.52	0.24	4.45	0	4.45	0.24
	8514NI	0	0	0.64	4.61	0.24	4.49	0	4.48	0.24
	VESA 64K	0	0	0.64	4.68	0.24	4.53	0	4.48	0.24

TR		Q305 (C630)			Q306 (2SA733)			Q307 (2SC945)		
MODEL	PIN	E	C	B	E	C	B	E	C	B
	MODE									
1785XE	VGA 480	4.26	26.41	4.60	4.26	0	4.60	1.16	5.53	1.73
	8514NI	4.54	26.47	4.89	4.54	0	4.89	1.18	5.42	1.75
	VESA 64K	4.79	26.50	5.15	4.79	0	5.15	1.17	5.52	1.74
	VESA 80K	5.08	26.51	5.42	5.08	0	5.42	1.15	5.63	1.72
1769XE	VGA 480	4.17	26.44	4.51	4.16	0	4.51	1.26	5.14	1.82
	8514NI	4.26	26.52	4.59	4.25	0	4.59	1.27	5.10	1.83
	VESA 64K	4.34	26.57	4.66	4.34	0	4.66	1.26	5.15	1.82

TR		Q308 (2SA733)			Q309 (2SC945)			Q310 (2SC4632)		
MODEL	PIN	E	C	B	E	C	B	E	C	B
	MODE									
1785XE	VGA 480	13.90	0.64	13.20	0.05	11.28	0.64	11.28	280.57	11.85
	8514NI	14.00	0.66	13.25	0.06	12.28	0.65	11.28	268.6	11.85
	VESA 64K	14.07	0.66	13.33	0.07	11.30	0.66	11.30	263.4	11.85
	VESA 80K	14.02	0.66	13.25	0.07	11.39	0.66	11.40	259.5	11.85
1769XE	VGA 480	14.30	0.64	13.60	0.06	11.39	0.65	11.39	278.4	11.97
	8514NI	14.48	0.66	13.76	0.07	11.39	0.66	11.39	267.3	11.97
	VESA 64K	14.46	0.67	13.74	0.09	11.40	0.67	11.40	259.8	11.97

TR		Q311 (2SC4632)			Q313 (2SC945)			Q314 (2SC4924)		
MODEL	PIN	E	C	B	E	C	B	E	C	B
	MODE									
1785XE	VGA 480	339.90	797.89	280.57	1.13	3.92	1.73	0	23.77	-0.52
	8514NI	350.58	797.36	268.6	1.16	3.72	1.75	0	37.61	-0.51
	VESA 64K	355.31	797.66	263.4	1.14	3.82	1.74	0	49.75	-0.51
	VESA 80K	365.75	797.82	259.5	1.12	3.96	1.72	0	63.25	-0.51
1769XE	VGA 480	343.00	869.29	278.4	1.24	3.47	1.82	0	26.83	-0.71
	8514NI	355.32	870.34	267.3	1.25	3.49	1.83	0	42.82	-0.73
	VESA 64K	361.07	869.95	259.8	1.23	3.51	1.82	0	57.55	-0.75

TR		Q316 (2SC945)			Q317 (2SA733)			Q318 (2SK357)		
MODEL	MODE PIN	E	C	B	E	C	B	G	D	S
1785XE	VGA 480	10.54	26.42	11.16	8.26	0	10.55	4.26	16.78	0
	8514NI	10.50	26.48	11.12	8.51	0	10.51	4.55	15.10	0
	VESA 64K	10.44	26.51	11.05	8.30	0	10.44	4.80	13.80	0
	VESA 80K	9.72	26.51	10.32	8.03	0	9.72	5.09	12.62	0
1769XE	VGA 480	10.30	26.44	10.92	7.65	0	10.29	4.17	19.51	0
	8514NI	10.23	26.52	10.85	7.96	0	10.22	4.26	18.66	0
	VESA 64K	9.69	26.57	10.29	7.94	0	9.69	4.34	17.94	0

TR		Q319 (K1377)			Q320 (2SC945)			Q321 (D669)		
MODEL	MODE PIN	S	D	G	E	C	B	E	C	B
1785XE	VGA 480	51.31	179.38	56.89	0	15.68	0.04	51.07	58.94	51.45
	8514NI	81.50	179.34	90.63	0	15.58	0.03	81.05	89.21	81.40
	VESA 64K	112.83	179.31	110.25	0	0.01	0.62	104.78	112.60	105.09
	VESA 80K	128.64	179.31	134.81	0	0	0.61	128.53	135.95	128.89
1769XE	VGA 480	59.86	179.55	69.30	0	15.47	0.06	58.97	69.96	58.87
	8514NI	96.40	179.51	112.28	0	0.02	0.60	94.90	106.19	94.74
	VESA 64K	126.10	179.48	133.01	0	0.02	0.60	125.20	136.05	125.09

TR		Q322 (2SC945)			Q323 (B649)			Q324 (IRF630)		
MODEL	MODE PIN	E	C	B	E	C	B	G	D	S
1785XE	VGA 480	0	15.68	0.03	51.07	40.15	51.45	15.71	0	0
	8514NI	0	0.01	0.62	81.05	69.76	81.40	0.02	29.53	0
	VESA 64K	0	15.56	0.03	104.78	93.92	105.09	0.01	40.75	0
	VESA 80K	0	0	0.60	128.53	118.18	128.89	0	52.77	0
1769XE	VGA 480	0	15.47	0.06	58.97	49.47	58.87	15.44	0	0
	8514NI	0	0.02	0.60	94.90	85.07	94.74	15.41	0	0
	VESA 64K	0	0.02	0.60	125.20	115.69	125.09	15.37	0	0

TR		Q325 (IRF630)			Q328 (2SC945)			Q329 (2SC945)		
MODEL	MODE PIN	G	D	S	E	C	B	E	C	B
1785XE	VGA 480	15.71	0	0	0	15.71	0.04	0	15.71	0.03
	8514NI	0.02	29.39	0	0	0.02	0.63	0	0.02	0.63
	VESA 64K	0.01	40.64	0	0	0.01	0.62	0	0.01	0.63
	VESA 80K	0.01	52.70	0	0	0	0.61	0	0.01	0.62
1769XE	VGA 480	15.49	0	0	0	15.49	0.06	0	15.48	0.06
	8514NI	15.42	0	0	0	15.44	0.06	0	15.40	0.06
	VESA 64K	0.02	41.48	0	0	15.39	0.06	0	0.02	0.60

TR		Q332 (2SC945)			Q333 (2SA733)			Q335 (2SC4769)		
MODEL	PIN MODE	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	2.48	10.40	3.05	3.05	0	2.46	133.03	179.34	132.74
	8514NI	2.48	10.37	3.05	3.05	0	2.46	103.58	179.26	103.33
	VESA 64K	2.48	10.34	3.05	3.05	0	2.46	72.69	179.16	72.45
	VESA 80K	2.48	10.32	3.05	3.05	0	2.46	34.62	179.02	34.33
1769XE	VGA 480	2.49	10.45	3.04	3.04	0	2.46	123.92	179.26	123.65
	8514NI	2.49	10.42	3.04	3.04	0	2.46	88.31	178.96	88.09
	VESA 64K	2.49	10.40	3.04	3.04	0	2.46	50.80	178.52	50.55

TR		Q336 (D669)			Q338 (2SK1377)			Q339 (2SC945)		
MODEL	PIN MODE	E	C	B	S	D	G	E	C	B
1785XE	VGA 480	0	12.78	-0.74	0.02	132.47	2.40	0	22.94	-0.10
	8514NI	0	10.50	-0.92	0.03	103.21	3.86	0	22.11	-0.16
	VESA 64K	0	9.15	-0.94	0.03	64.71	5.39	0	21.34	-0.20
	VESA 80K	0	7.41	-0.95	0.04	26.59	7.29	0	20.42	-0.23
1769XE	VGA 480	0	12.91	-1.57	0.02	123.43	2.87	0	22.66	-0.10
	8514NI	0	11.08	-1.93	0.03	89.13	4.65	0	21.66	-0.16
	VESA 64K	0	9.95	-2.04	0.04	40.23	6.53	0	20.75	-0.19

TR		Q340 (2SC945)			Q341 (2SC945)			Q342 (2SA733)		
MODEL	PIN MODE	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	0	24.49	0.01	22.82	26.49	22.94	22.82	0	22.94
	8514NI	0	24.55	0.01	22.07	26.56	22.11	20.07	0	22.11
	VESA 64K	0	24.58	0.01	21.34	26.58	21.35	21.34	0	21.35
	VESA 80K	0	24.59	0.01	20.45	26.59	20.46	20.45	0	20.46
1769XE	VGA 480	0	24.49	0.01	22.30	26.52	22.66	22.30	0	22.66
	8514NI	0	24.58	0.01	21.34	26.60	21.66	21.34	0	21.66
	VESA 64K	0	24.63	0.01	20.44	26.65	20.75	20.44	0	20.75

TR		Q344 (2SA733)			Q345 (IRF630)			Q346 (IRF630)		
MODEL	PIN MODE	E	C	B	G	D	S	G	D	S
1785XE	VGA 480	11.86	0	11.73	15.68	0	0	15.68	0	0
	8514NI	11.86	0	11.79	15.58	0	0	0.01	29.29	0
	VESA 64K	11.86	0	11.75	0.01	40.72	0	15.56	0	0
	VESA 80K	11.86	0	11.79	0	52.76	0	0	52.55	0
1769XE	VGA 480	11.97	0	11.86	15.47	0	0	15.50	0	0
	8514NI	11.97	0	11.87	0.02	30.01	0	0.02	29.70	0
	VESA 64K	11.97	0	11.87	0.02	41.53	0	0.02	41.19	0

TR		Q348 (2SC2001)			Q350 (2SC945)			Q351 (2SA733)		
MODEL	MODE PIN	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	0	6.76	-1.48	0	2.82	0	20.18	9.77	19.59
	8514NI	0	6.29	-1.84	0	2.70	0	20.24	8.46	19.64
	VESA 64K	0	5.88	-2.04	0	2.57	0	20.27	7.23	19.68
	VESA 80K	0	5.56	-2.15	0	2.62	0	20.28	5.75	19.68
1769XE	VGA 480	0	6.99	-1.16	0	2.41	0	20.21	9.00	19.62
	8514NI	0	6.66	-1.52	0	2.39	0	20.29	7.37	19.71
	VESA 64K	0	6.31	-1.77	0	2.30	0	20.34	5.73	19.75

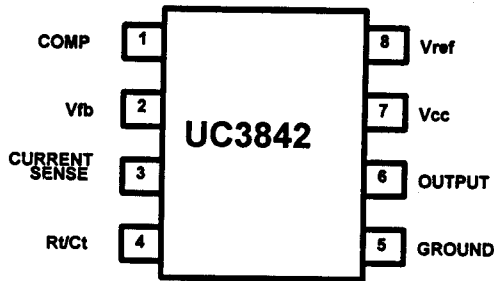
TR		Q352 (2SC945)			Q353 (2SC945)			Q354 (2SA733)		
MODEL	MODE PIN	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	0	9.77	0	7.63	26.41	7.05	7.63	0	7.05
	8514NI	0	8.48	-0.01	11.85	26.47	11.10	11.85	0	11.10
	VESA 64K	0	7.25	-0.02	15.10	26.50	14.85	15.10	0	14.85
	VESA 80K	0	5.78	-0.02	18.35	26.51	18.15	18.35	0	18.15
1769XE	VGA 480	0	9.00	0	8.79	26.44	8.12	8.79	0	8.12
	8514NI	0	7.38	-0.01	13.87	26.52	13.52	13.87	0	13.52
	VESA 64K	0	5.72	-0.01	18.05	26.57	17.76	18.05	0	17.76

TR		Q401 (F483)			Q403 (2SC3675)			Q404 (2SC945)		
MODEL	MODE PIN	E	C	B	E	C	B	E	C	B
1785XE	VGA 480	-139.50	-22.44	-148.18	11.86	568.27	11.36	5.02	11.36	5.61
	8514NI	-139.28	-23.10	-147.98	11.86	568.05	11.37	5.02	11.36	5.61
	VESA 64K	-139.16	-23.64	-147.88	11.86	567.85	11.37	5.03	11.37	5.62
	VESA 80K	-139.13	-24.37	-147.80	11.86	566.92	11.39	5.03	11.39	5.62
1769XE	VGA 480	-139.81	-22.85	-148.45	11.97	650.11	11.49	5.10	11.49	5.68
	8514NI	-139.15	-23.57	-147.77	11.97	649.92	11.49	5.10	11.49	5.68
	VESA 64K	-138.96	-24.17	-147.59	11.97	649.28	11.49	5.10	11.49	5.68

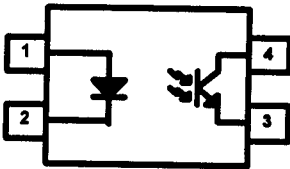
TR		Q405 (2SC945)								
MODEL	MODE PIN	E	C	B						
1785XE	VGA 480	5.02	11.86	5.59						
	8514NI	5.02	11.86	5.59						
	VESA 64K	5.02	11.86	5.59						
	VESA 80K	5.02	11.86	5.59						
1769XE	VGA 480	5.09	11.97	5.65						
	8514NI	5.09	11.97	5.65						
	VESA 64K	5.09	11.97	5.65						

7.0 IC CONFIGURATION

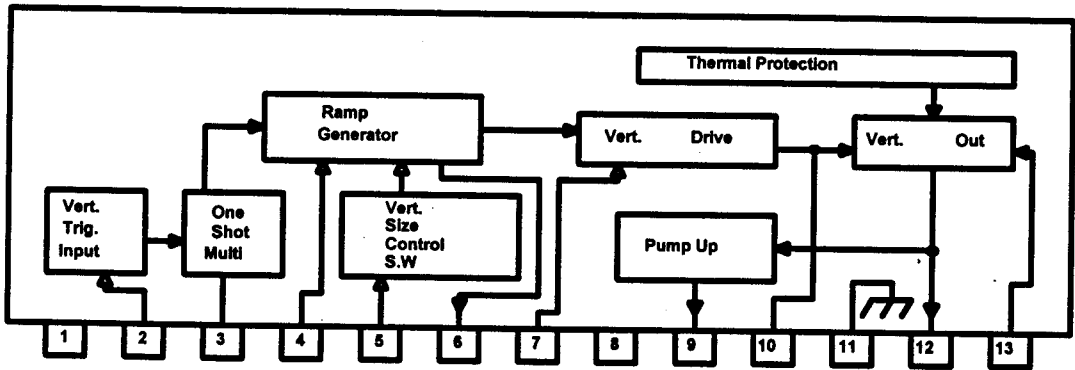
(1) 3842,3843
(IC101,IC303)



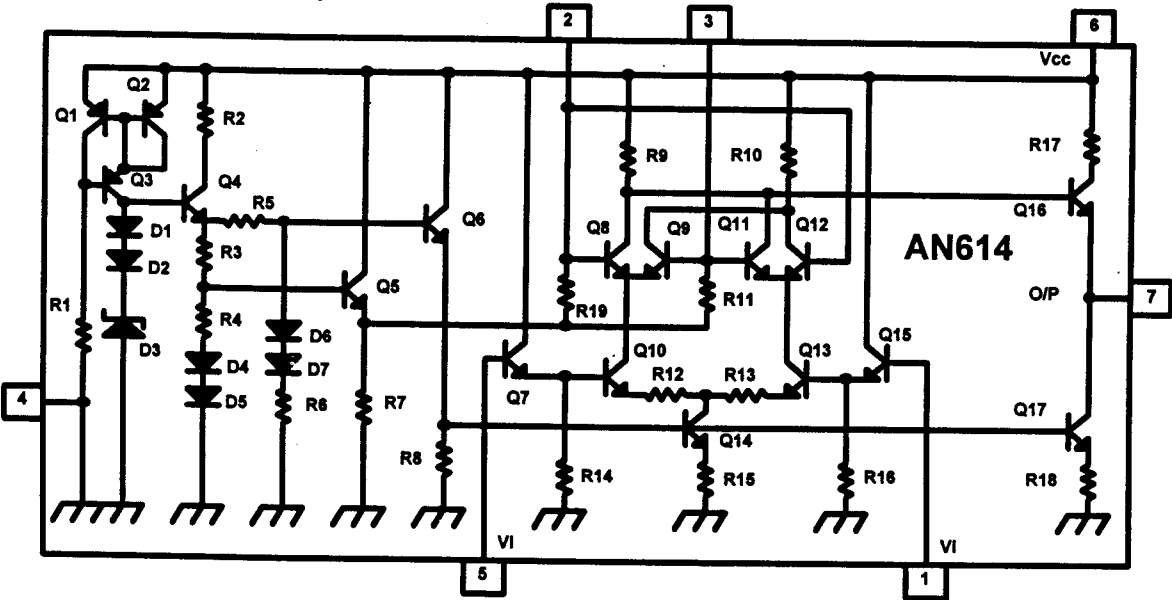
(2) 2561 (IC102)



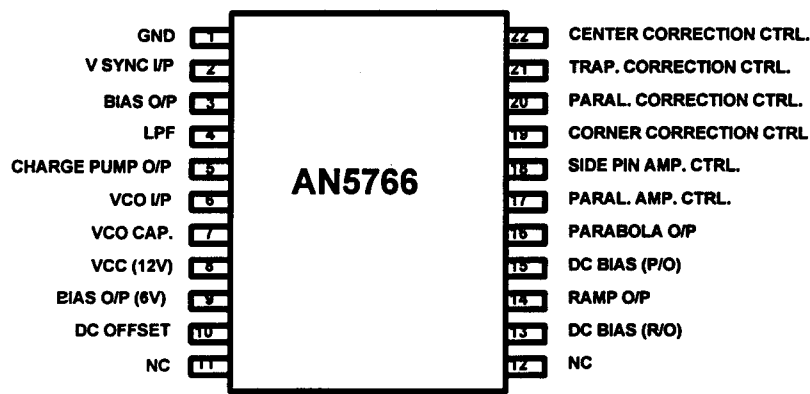
(3) LA7838 (IC201)



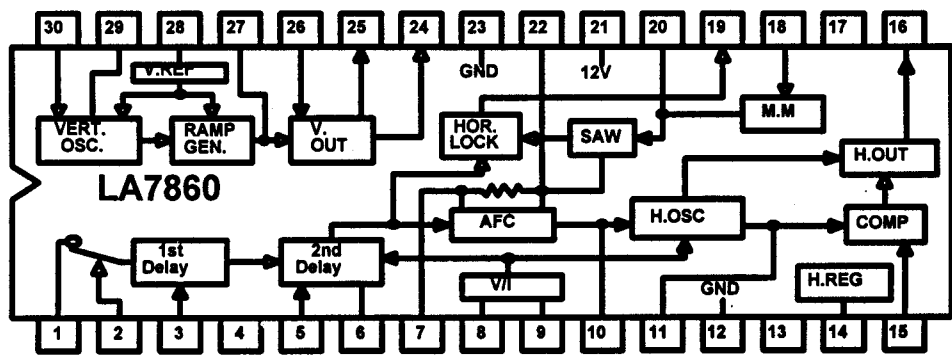
(4) AN614 (IC202)



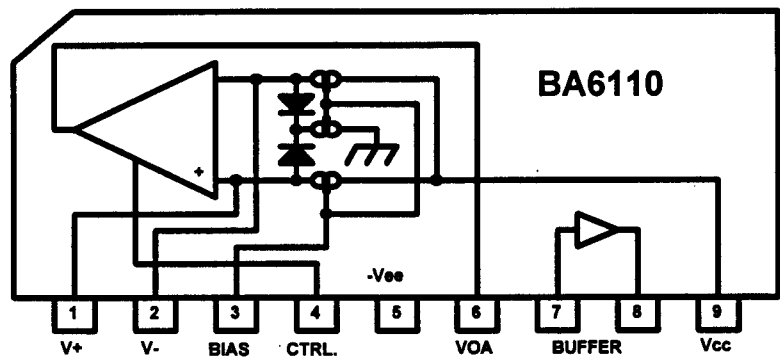
(5) AN5766 (IC204)



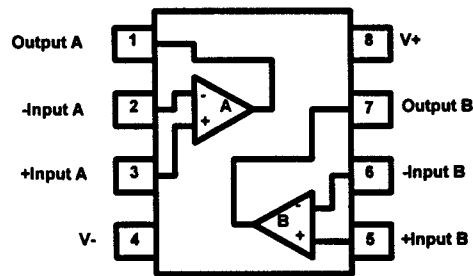
(6) LA7860 (IC301)



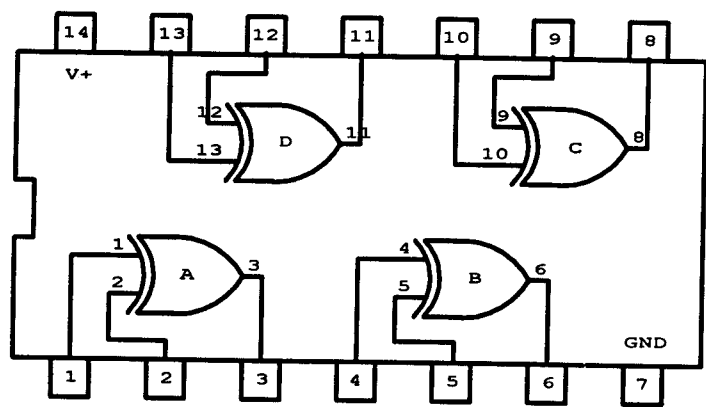
(7) BA6110 (IC304)



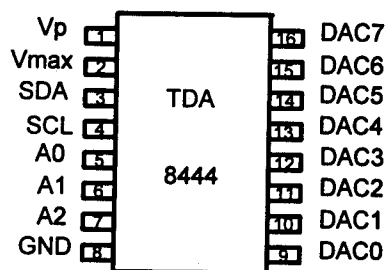
(8) LM358,2903D (IC306,IC307)



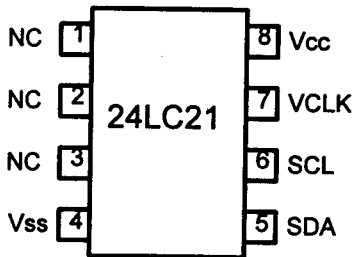
(9) 74LS86 (IC507)



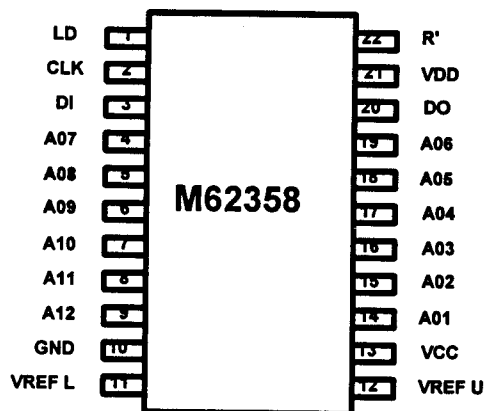
(10) TDA8444 (IC603)



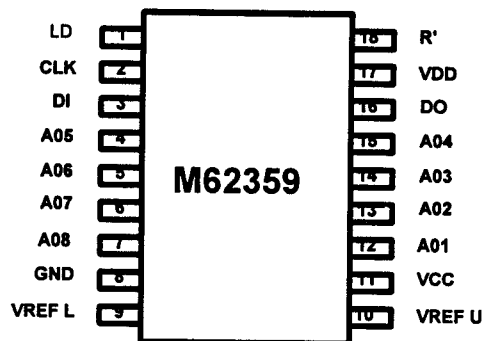
(11) 24LC21 (IC602)



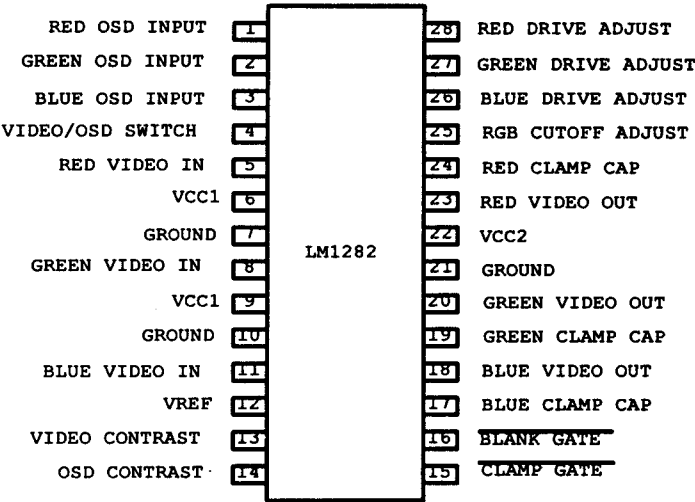
(12) M62358 (IC506)



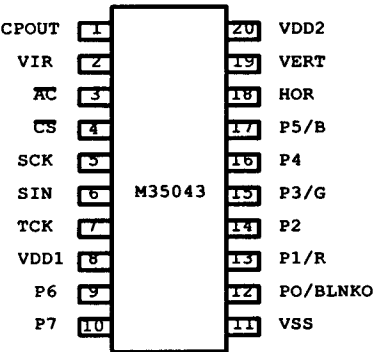
(13) M62359 (IC604)



(14)(LM1282) IC601



(15) (M35043) IC603



8.0 LAYOUT FOR MAIN COMPONENTS AND ADJUSTED

9.0 CIRCUIT DIAGRAM

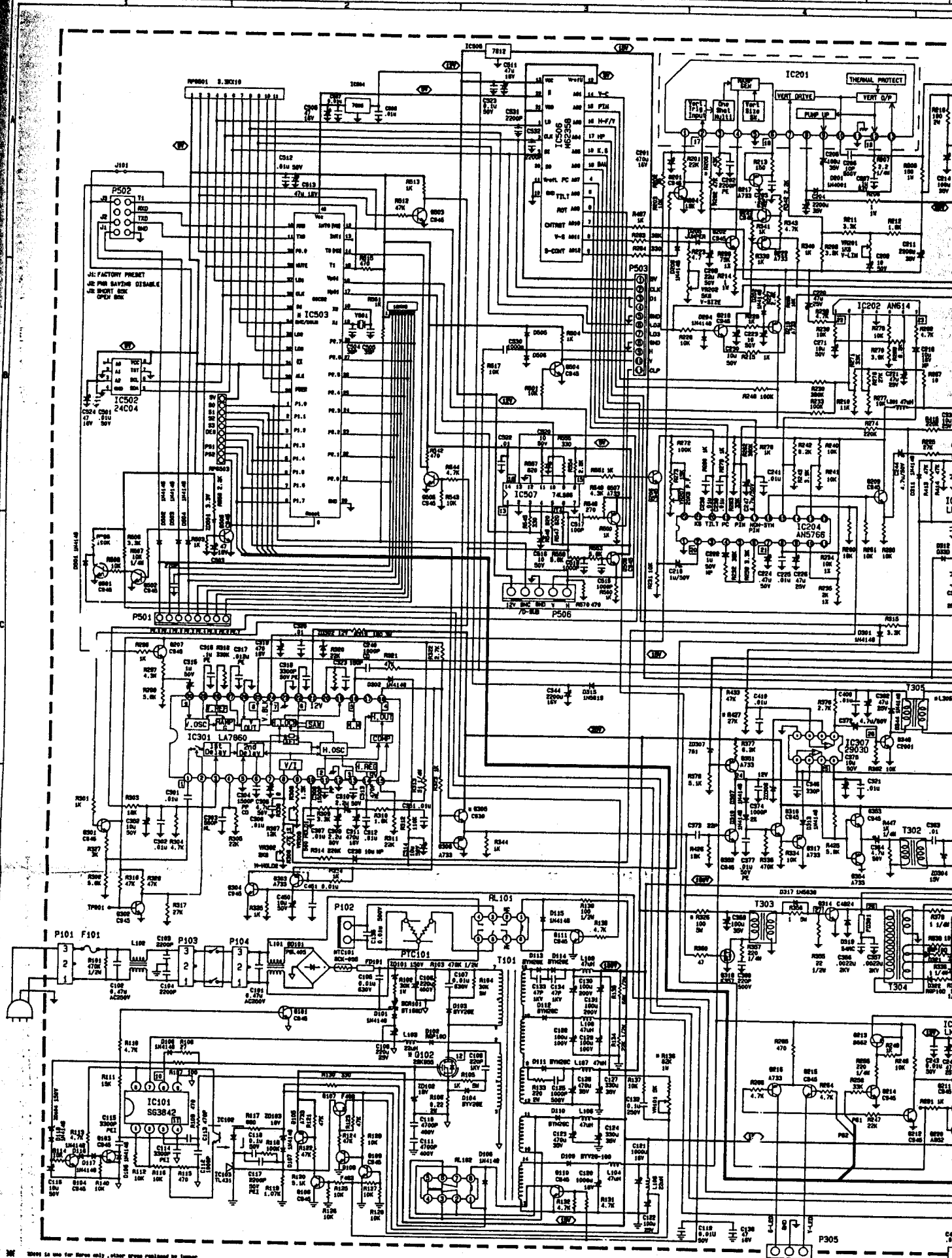
10.0 RECOMMENDED SPARE PARTS LIST

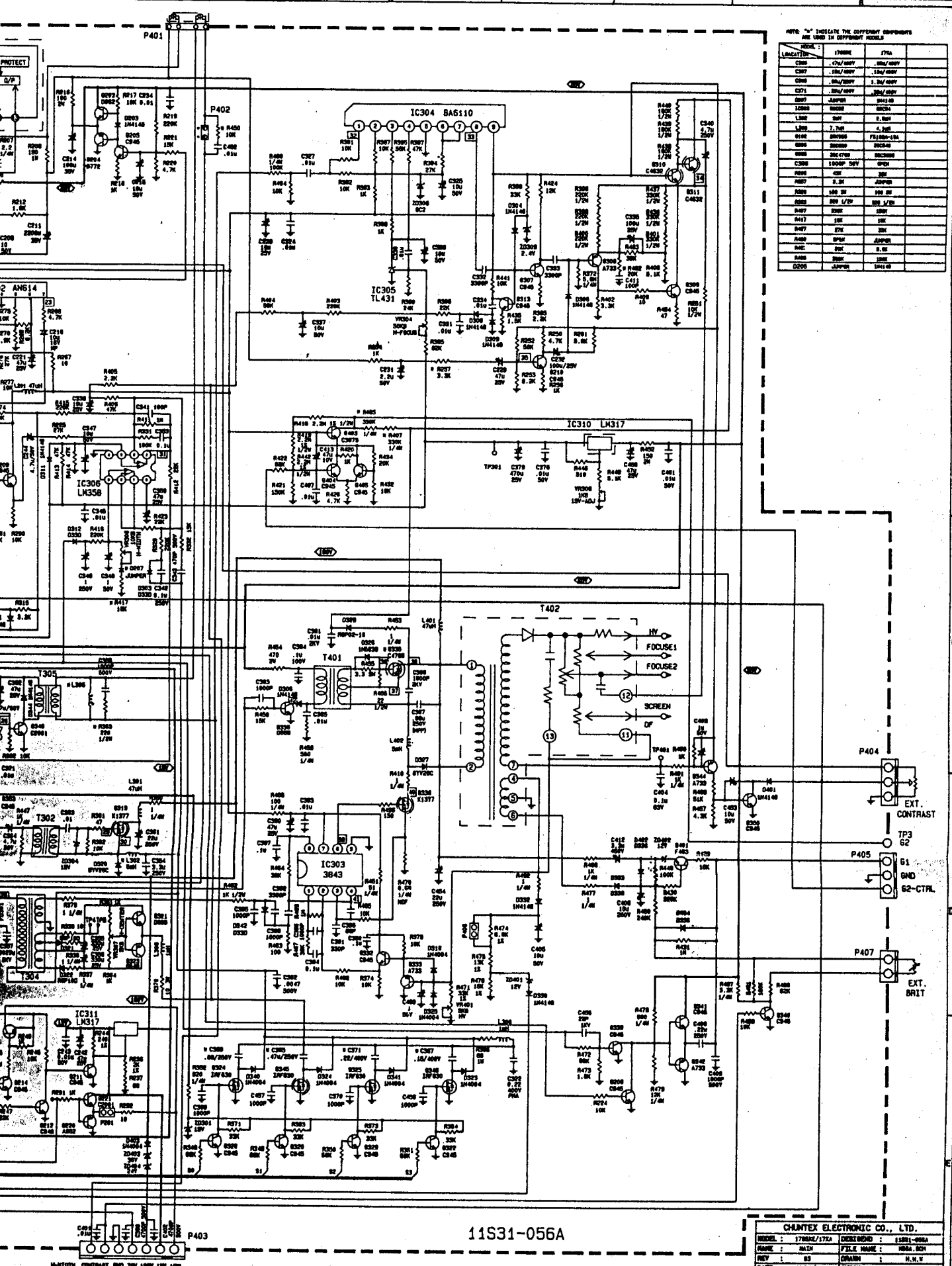
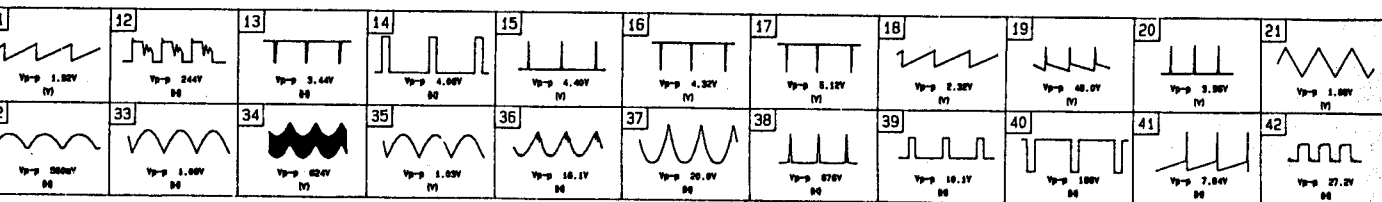
MAIN BOARD REV.A						
ITEM	PRIORITY	NEW PARTS	PART NO.	DESCRIPTION	LOCATION	REMARK
1			15D68-F000	PBL406	BD101	
2			28CD7-2217	220 μ F 400V	C106	
3			15S33T201F	RGP10D	D102	
4			15S49T200F	BYV26E	D103	
5	◎		15S11M001F	1N4148	D204,D344	
6			15S3C-702F	DD54RC	D319	
7			15S47T201F	BYV26C	D320	
8			15S65M201F	1N4004	D323	
9			15S3LM100F	RGP02	D328	
10			15S35T201F	RGP10G/BYD33G	D333	
11	●		49FB2-0A0B	FUSE 3.15A 250V	F101	
12	●		17A06-150H	3842	IC101	
13			17B21-090B	PS2561	IC102	
14			17A06-130H	LA7838	IC201	
15			17A11-090H	AN614	IC202	
16			17A06-220H	AN5766	IC204	
17	◎		17A06-240H	LA7860	IC301	
18	◎		17A06-190H	3843	IC303	
19			17A12-070H	BA6110	IC304	
20	◎		17A07-031H	TL431	IC305	
21	◎		17A11-040H	LM358	IC306	
22			17A11-030H	2903	IC307	
23	◎		17A07-100H	LM317	IC310	
24			16M08-005R	AT24C04 EEPROM	IC502	
25			16P40-019W	80C52	IC503	
26			17A07-040H	7805	IC504	
27			17A23-003H	M62358	IC506	
28			16T14-012R	74LS86	IC507	
29	●		14K3P-040S	2SK955	Q102	
30			14A92-141E	BF488	Q107	
31	◎		14C92-111B	2SC945	Q201,Q301	
32			14B26-030B	2SB772	Q204	
33			14B92-011P	2SB562	Q213	
34	◎		14A92-021B	2SA733	Q219	
35			14A92-071B	2SA952	Q220	
36			14C22-230C	2SC4256	Q310	
37	●		14C3P-150C	2SC4924	Q314	

※ Remark: ● : 1st priority , Recommended Q'ty=(Location Number) x3
◎ : 2nd priority , Recommended Q'ty=(Location Number) x2

MAIN BOARD REV.A						
ITEM	PRIORITY	NEW PARTS	PART NO.	DESCRIPTION	LOCATION	REMARK
38	◎		14K93-021P	2SK941	Q318	
39	◎		14K22-210A	2SK1377	Q319	
40			14D17-010P	2SD669A	Q321	
41			14B17-010P	2SB649A	Q323	
42	●		14K22-110W	IRF630/890	Q325,Q346	
43	●		14C3P-080C	2SC4769	Q335	
44			14C3P-220C	2SC5296	Q335	ALTERATE
45			14D17-010P	2SD669A	Q336	
46		√	14K22-180Y	IRF640	Q345	
47			14C92-101B	2SC2001K	Q348	
48			14C92-201E	BF483	Q401	
49			14C92-220C	2SC3675	Q403	
50	●		23755-2284	0.22R 2W	R106	
51	●		49FRA-001M	FUSE RES 1R 1/4W	R380	
52			14T92-011E	BT169D	SCR101	
53		√	47S00-0710	X'FMR	T101	
54			47D10-0151	X'FMR	T302	
55			47F15-0030	X'FMR	T304	
56		√	47F13-0610	FBT	T402	1785XE
57		√	47F13-0620	FBT	T402	1769XE

VIDEO BOARD REV.A						
ITEM	PRIORITY	NEW PARTS	PART NO.	DESCRIPTION	LOCATION	REMARK
1			15S11M001F	1N4148	D606	
2			15S43M001F	BAV21	D607	
3			15Z33M9190	ZENER DIODE 9.1V	ZD601	
4	●	√	17A04-130H	LM1282	IC601	
5	◎		16M08-007R	AT24LC21 EEPROM	IC602	
6		√	16N20-002U	M35043	IC603	
7			17A23-002H	M62359P	IC604	
8	◎		14C26-170E	BFQ232	Q602	
9	●		14C26-180E	BFQ252	Q603	
10	●		14C26-110E	BFQ262	Q604	
11			14C92-281P	2SC1906	Q605	
12	◎		14C26-120P	BFQ162	Q606	
13	◎		14C92-111B	2SC945	Q619	
14	◎		14A92-141E	BF488	Q620	
15			14C92-201E	BF483	Q621	
16			23765-2715	270R 3W	R622	





NOTE: "X" INDICATE THE DIFFERENT COMPONENTS ARE USED IN DIFFERENT MODELS

LOCATION	17000E	170A
C305	100/400V	100/400V
C307	100/400V	100/400V
C308	100/400V	100/400V
C371	100/400V	100/400V
C372	100/400V	100/400V
C373	100/400V	100/400V
C374	100/400V	100/400V
C375	100/400V	100/400V
C376	100/400V	100/400V
C377	100/400V	100/400V
C378	100/400V	100/400V
C379	100/400V	100/400V
C380	100/400V	100/400V
C381	100/400V	100/400V
C382	100/400V	100/400V
C383	100/400V	100/400V
C384	100/400V	100/400V
C385	100/400V	100/400V
C386	100/400V	100/400V
C387	100/400V	100/400V
C388	100/400V	100/400V
C389	100/400V	100/400V
C390	100/400V	100/400V
C391	100/400V	100/400V
C392	100/400V	100/400V
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C400	100/400V	100/400V
C401	100/400V	100/400V
C402	100/400V	100/400V
C403	100/400V	100/400V
C404	100/400V	100/400V
C405	100/400V	100/400V
C406	100/400V	100/400V
C407	100/400V	100/400V
C408	100/400V	100/400V
C409	100/400V	100/400V
C410	100/400V	100/400V
C411	100/400V	100/400V
C412	100/400V	100/400V
C413	100/400V	100/400V
C414	100/400V	100/400V
C415	100/400V	100/400V
C416	100/400V	100/400V
C417	100/400V	100/400V
C418	100/400V	100/400V
C419	100/400V	100/400V
C420	100/400V	100/400V

11S31-056A

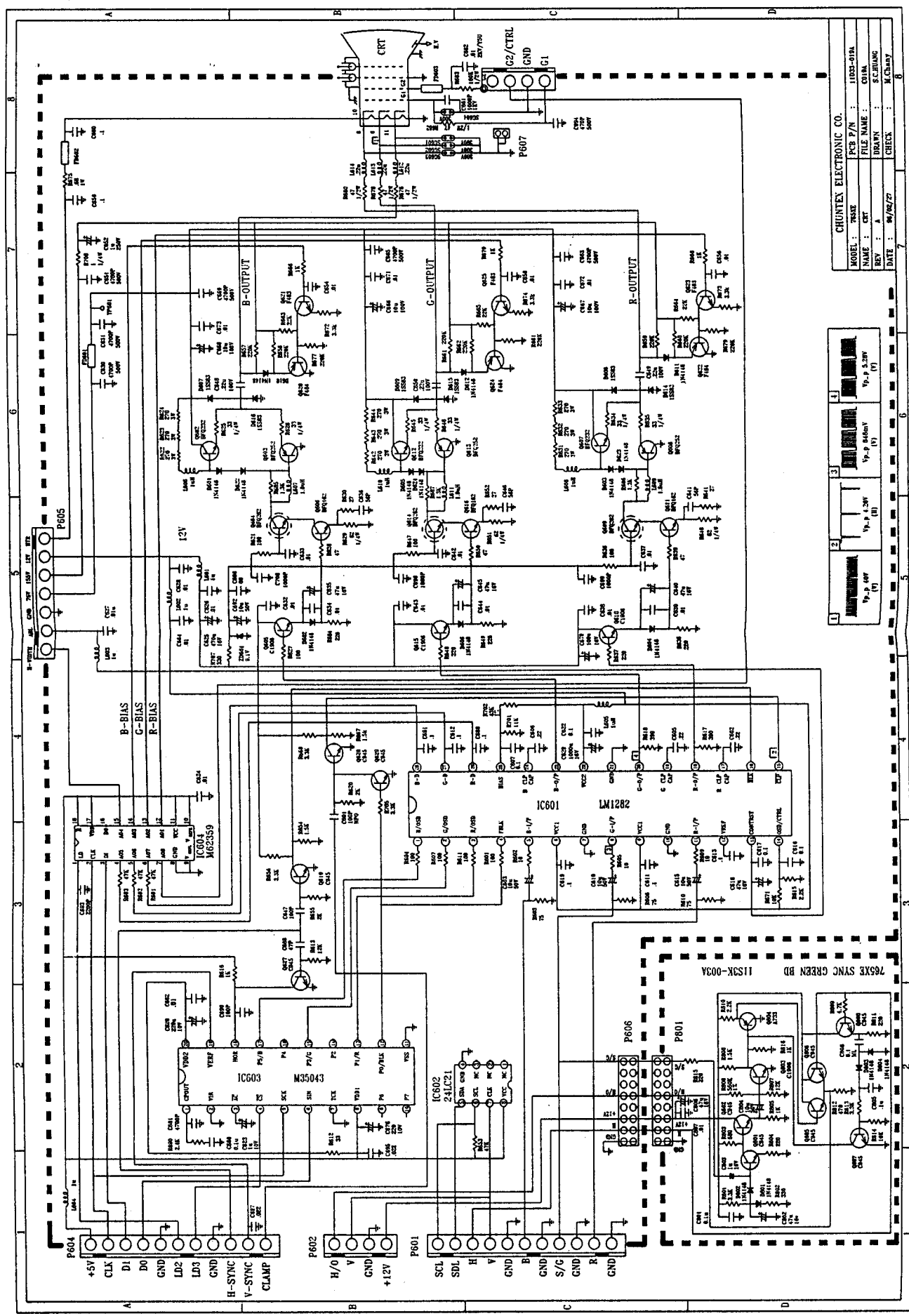
CHUNTEX ELECTRONIC CO., LTD.

MODEL : 17000E/170A DESIG NO : 11S31-056A

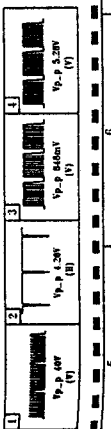
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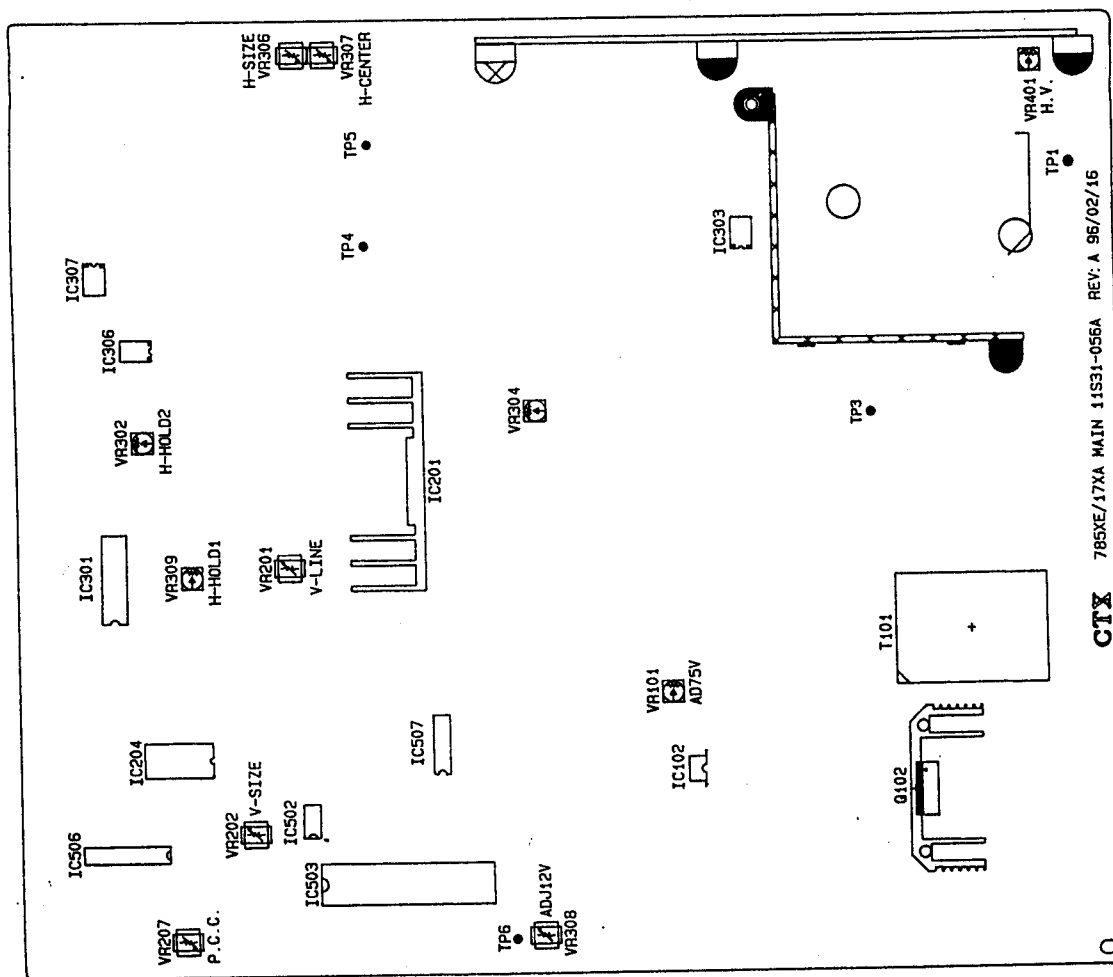
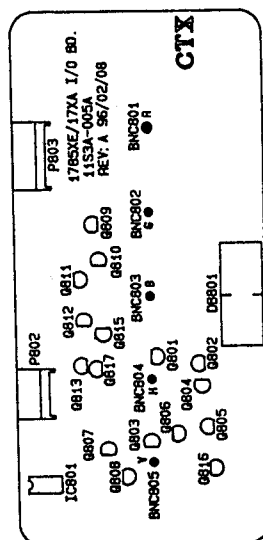
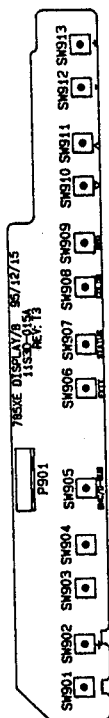
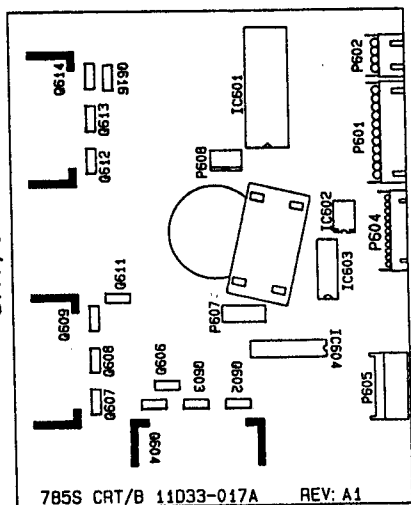
REV : 03 DRAWN : N.H.

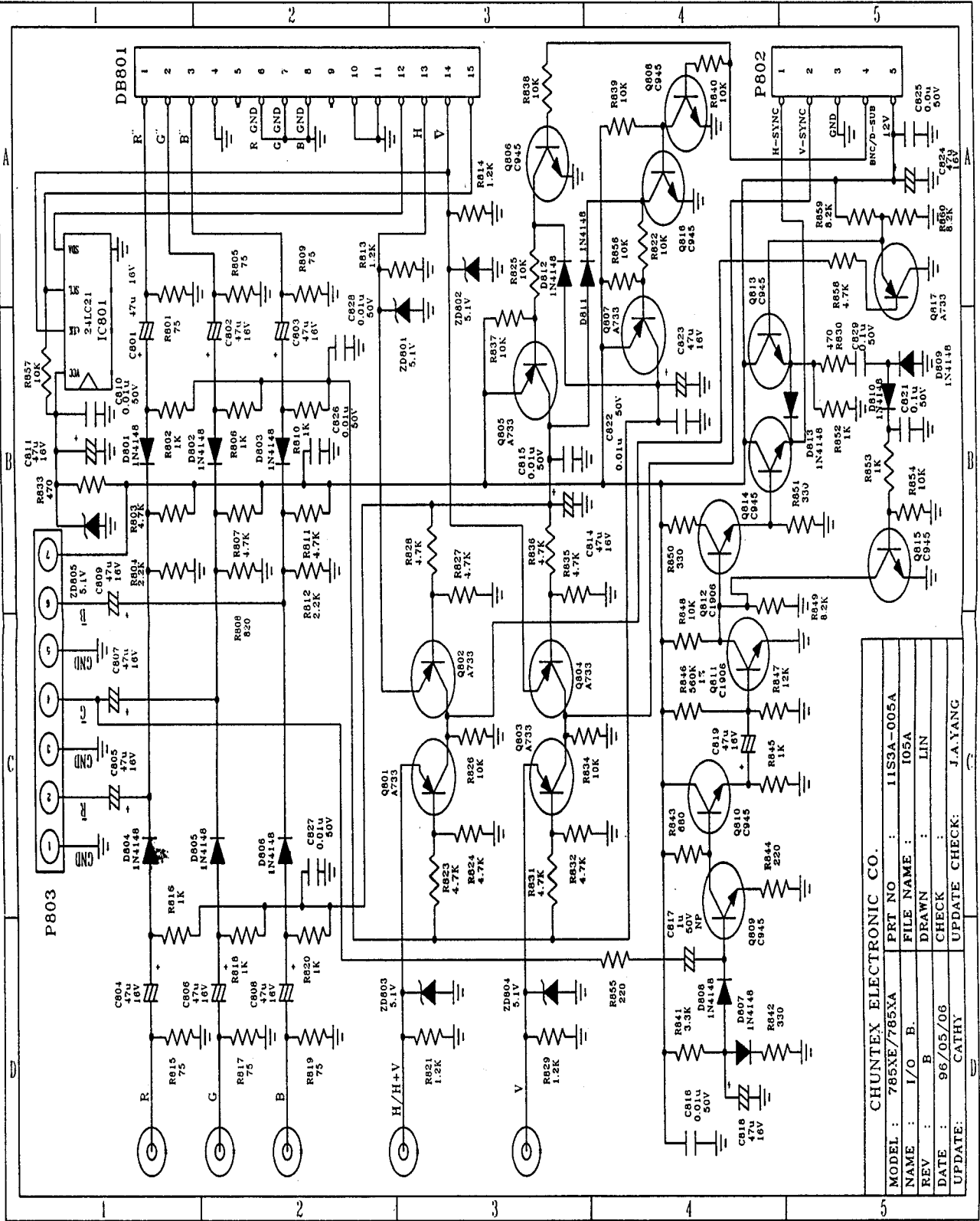
DATE : 06/09/99 C/PX



CHUNTEK ELECTRONIC CO.			
MODEL :	7653E	PCB P/N :	1153X-003A
NAME :	CRT	FILE NAME :	CRTA
REV :	A	DRAWN :	S. CHANG
DATE :	94/02/27	CHECK :	M. CHAN







CHUNTEX ELECTRONIC CO.				
MODEL :	785XE/785XA	PRT NO :	11S3A-005A	
NAME :	I/O B.	FILE NAME :	105A	
REV :	B	DRAWN :	LIN	
DATE :	96/05/06	CHECK :		
UPDATE :	CATHY	UPDATE CHECK :	J.A.YANG	