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**A MAIOR COLEÇÃO DE ESQUEMAS E MANUAIS
DE MONITORES DE VIDEO EM CD-ROM**

Inf: robot@ieg.com.br

MONITORES

Manual de Serviço

PHILIPS 15" AUTO SCAN COLOUR

CM1800

Service Service Service

Service Manual



Horizontal frequencies
30 to 66 kHz

Contents

Page

1.	Technical data	2	
2.	Control locations and connections facilities	3	
3.	Warning and notes	5	
4.	Mechanical instructions	5	
5.	Wiring diagram	6	
	Block diagram	7	
6.	<i>Electrical diagrams and PWB layouts</i>	<i>Diagram</i>	<i>PWB</i>
	Video (Diagram A)	9	8
	Main panel PWB (Diagrams B1, B2, C)	10	
	Deflection and synchronisation (Diagram B1)	11	10
	Power supply (Diagram C)	12	10
	Power saving panel (Diagram D)	13	12
	Audio and digital controls (Diagram B2)	14	10
7.	Electrical instructions	15	
8.	Repair tips	17	
9.	Directions for use	18	
10.	Spare parts list and exploded view	18	



Service
Service
Service

3202

Product Survey

Product Survey's 1994-1 (4822 727 20334), 1994-2 (4822 727 20379) and 1994-3 (4822 727 21004) are herewith cancelled.

SURVEY OF MODEL NUMBERS

MODEL	CHASSIS MANUAL:	PRODUCT FAMILY:	MODEL:	CHASSIS MANUAL:	PRODUCT FAMILY:
2CM5909/64A	2CM5109/74A	CM0200	4CM8290/54I	4CM8290/94I	CM1800
2CM5909/94A	2CM5109/74A	CM0200			
3CM5689/89T	3CM5689/69T	CM0200	4CM8294/74T	CM1800(USA:6581)	CM1800
			4CM8294/97T	CM1800	CM1800
4BM2790/00T	4BM2790/00T	BM0200			
			7CM5209/20T	7CM5209/00T	CM0200
4CM2299/20T	CM5600	CM6000 IV 20"	7CM5209/64I	7CM5209/74I	CM0200
			7CM5279/20T	7CM5209/00T	CM0200
4CM4270/95T	4CM4270/00T	CM0800	7CM5279/45T	7CM5209/00T	CM0200
4CM4279/20T	4CM4270/00T	CM0800	7CM5289/89T	7CM5209/00T	CM0200
4CM4279/25T	4CM4270/00T	CM0800	7CM5289/95T	7CM5209/00T	CM0200
4CM4279/26T	4CM4270/00T	CM0800	7CM5299/95B	7CM5209/00T	CM0200
4CM4280/27T	4CM4270/00T	CM0800	7CM5299/89T	7CM5209/00T	CM0200
4CM4290/27T	4CM4270/00T	CM0800	7CM5689/89T	7CM5209/00T	CM0200
4CM4780/54I	4CM4780/74I	CM0800			
			15C04201/74C	15C04201/74C	CM0200
4CM5209/44I	4CM5209/74I	CM0200	15C0420S/74J	15C04201/74C	CM0200
			15C04204/75C	15C04201/74C	CM0200
4CM5279/00T	CM2000-TRI	CM0200	15C0420S/97C	15C04201/74C	CM0200
4CM5279/05T	CM2000-TRI	CM0200	15C0420V/97C	15C04201/74C	CM0200
4CM5279/06T	CM2000-TRI	CM0200			
4CM5279/75B	CM2000-TRI	CM0200	17B1821W/00C	CM2800	CM2800
4CM5279/75T	CM2000-TRI	CM0200	17B1822N/97C	CM2800	CM2800
4CM5289/69T	CM2000-TRI	CM0200	17B18202/74C	CM2800	CM2800
4CM5289/44I	CM2000-TRI	CM0200	17B1822N/74C	CM2800	CM2800
4CM5299/69T	CM2000-TRI	CM0200			
			21B0725E/74C	CM0700	CM0700
4CM6088/20T	4CM6088/00T	CM2600	21B0725E/97C	CM0700	CM0700
4CM6088/31T	4CM6088/00T	CM2600	21B0725E/75C	CM0700	CM0700
4CM6282/20T	4CM6282/00T	CM3600			
4CM6282/94T	4CM6282/74I	CM3600	17A280BQ/02C	CM3800	CM3800
4CM8203/74I	4CM8203/74I	CM1800			
4CM8274/00T	CM1800	CM1800			
4CM8274/05T	CM1800	CM1800			
4CM8274/06T	CM1800	CM1800			
4CM8274/75T	CM1800	CM1800			



PHILIPS

1. Technical data

General

- Mains voltage	: AC 100 - 264 V 15 %
- Mains frequency	: 47 - 63 Hz
- Power consumption	: see table 100 W (max)
- Operating temperature	: 10°C to 40°C
- Weight	: 15 kg
- Dimensions (WxHxD)	: 367x384x395 mm

Sync. signal

- Sync. level	: TTL level
- Sync. polarity	: positive or negative
- Vertical frequency	: 50 - 110 Hz
- Horizontal frequency	: 30 - 66 kHz

Picture tube

- Size	: 15 inch
- Light transmission	: 57% (dark glass)
- Deflection angle	: 90 degrees
- EHT voltage	: 24.5 kVolt
- Pitch	: 0.28 mm
- Phosphor	: P22 medium short

Image geometry

- Total geometrical distortion of the image (pincushion and barrel distance)	: 2.5 mm Max
- Horizontal tilt (rotation)	: ≤ 2 mm Max
- Image non linearity (according IEC 107-73.74)	: 5% Max horizontal 5% Max vertical

Video

- Dot rate	: 110 mHz
- Video signal	: 0.7 Vpp Linear / 75 Ω
- Image size	: 280x210 mm
- H-Shift range	: to raster edges
- V-Shift range	: 10 mm

Power Management

Power Management Definition					
VESA DPMS			POWER SAVING STATES		
MODE	VIDEO	H-SYNC	V-SYNC	POWER USED	POWER SAVING (%)
ON	Active	Yes	Yes	85 Watts	0%
Stand-by	Blanked	No	Yes	< 15 Watts	> 82%
Suspend	Blanked	Yes	No	< 15 Watts	> 82%
OFF	Blanked	No	No	< 5 Watts	> 94%

Note: The video will be blanked and the power LED color will change into following colors whenever the monitor goes into power management status.

Green LED light : "Normal" operation
Yellow LED light : "Stand by" or "Suspend" mode
Amber LED light : "OFF" mode

This monitor is Energy Star compliant when used with a computer equipped with DPMS.
PHILIPS is a partner in the EPA's Energy Star Computer Program.

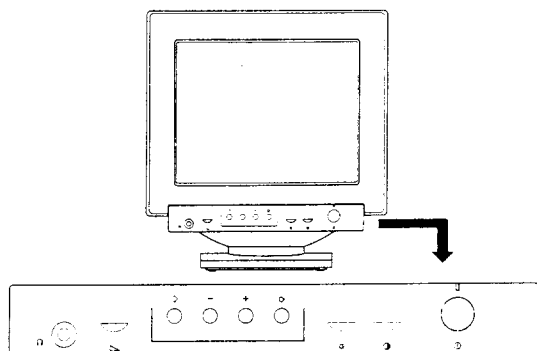


Resolution modes and sync. polarities

MODE	RESOLUTION	HORIZONTAL	VERTICAL	REMARK	SYNC.	POL.
	(dots x lines)	FREQ. (kHz)	FREQ. (Hz)		H	V
VGA	640x350	31.5	70	Non-interlaced	+	-
VGA	640x400	31.5	70	Non-interlaced	-	+
VGA	640x480	31.5	60	Non-interlaced	-	-
VESA/75	640x480	37.5	75	Non-interlaced	+/-	+/-
MAC	640x480	35.0	67	Non-interlaced	+/-	+/-
VESA/56	800x600	35.2	56	Non-interlaced	+/-	+/-
VESA/60	800x600	37.8	60	Non-interlaced	+/-	+/-
VESA/75	800x600	46.9	75	Non-interlaced	+/-	+/-
VESA/72	800x600	48.0	72	Non-interlaced	+/-	+/-
QUADRA	832x624	49.7	75	Non-interlaced	+/-	+/-
8514/XGA	1024x768	35.5	87	Interlaced	+/-	+/-
VESA/60	1024x768	48.3	60	Non-interlaced	+/-	+/-
VESA/70	1024x768	56.5	70	Non-interlaced	+/-	+/-
VESA/75	1024x768	60.0	75	Non-interlaced	+/-	+/-
/60*	1280x1024	64.0	60	Non-interlaced	+/-	+/-

* This resolution is applicable.

Front controls



For an optimized adjustment of the picture following controls are available at the front.

① POWER.

- Press this knob, the green LED lights and the power is ON.
- Press this knob again, the green LED disappears and the power is OFF.

② CONTR.

- Used to adjust contrast.

☀ BRIGHT.

- Used to adjust brightness.

➡ SAVE

- Used to save the result of the adjustment.

"+" or "-"

- Press "+" or "-" to select or adjust function.

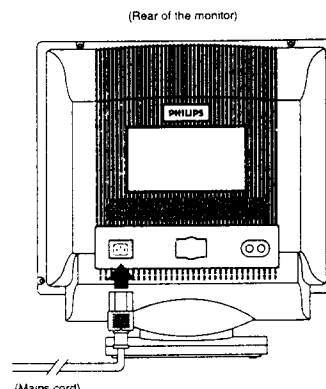
◇ FUNCTION

- Press this knob to display the manual.

▶ VOLUME (For 4CM8204/4CM8274/4CM8284/4CM8294)

- Used to adjust audio volume.

Connection to the mains



Connecting to the mains

This monitor is set to operate at a mains supply of 100-240 volts AC (for 4CM8283/4CM8293/4CM8284/4CM8294); 220-240 volts AC (for 4CM8203/4CM8273/4CM8204/4CM8274). If the mains voltage in your home is not between this, consult your dealer. Connect one end of the mains cord to the mains socket at the rear of monitor, and the other end to the mains supply.

Connection to the computer

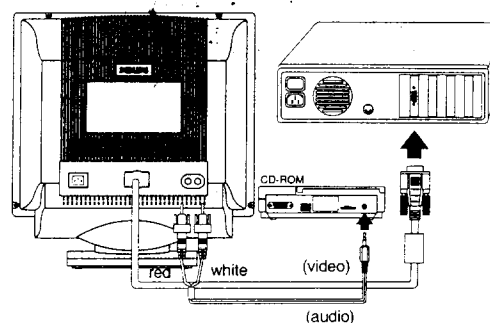
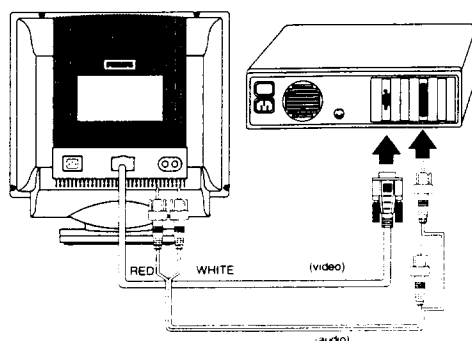
WARNING: Please be sure the AC power to your computer is "OFF" before connecting or disconnecting any display peripheral. Failure to do so may cause serious personal injury as well as permanent damage to your computer equipments.

1. IBM PC, PC/XT, PC/AT, PS/2, or the compatibles:

- Connect the fixed 15-pin D-sub connector of the video signal cable to the computer at the video connector on the video card, and fix it firmly with the screws on the plug.

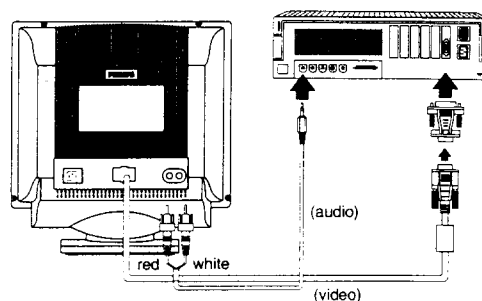
(For model 4CM8204/4CM8274/4CM8284/4CM8294:)

- Connect the audio cable to the input of audio connector, which located at the rear of monitor according to the following:
 - The red audio plug should be connected to the red audiophone connector.
 - The white audio plug should be connected to the white audiophone connector.
- Connect the other end of audio cable to the audio connector of media card at the rear of computer or CD-ROM according to the preceding description.

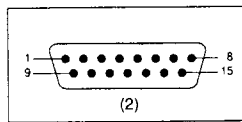
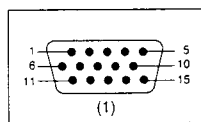


2. Apple Macintosh series:

- Connect the 15-pin D-sub adapter to the signal cable and secured by screws.
- Connect the 15-pin D-sub adapter to the computer.
- Fix both screws of connector firmly.
- (For model 4CM8204/4CM8274/4CM8284/4CM8294:)
- Connect one end of audio cable (plug with RCA type) to the audio connectors at the rear of monitor according to the preceding description.
- Connect the other end of audio cable (mini type of earphone plug) to the audio connector at the rear of computer.



Pin assignment 15p 'D' shell (3 rows)



(1) The 15-pin D-sub connector (male) of the signal cable (IBM systems):

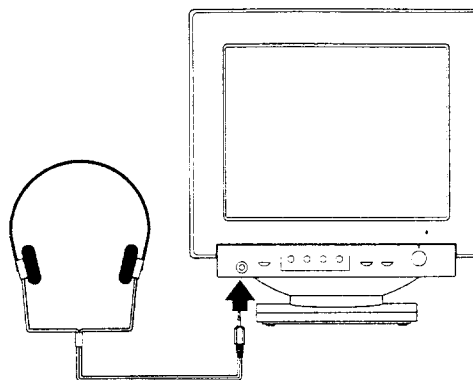
Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	No pin
2	Green video input	10	Logic ground
3	Blue video input	11	Identical output - connected to pin 10
4	Identical output - Connected to pin 10	12	No pin
5	Ground	13	H. Sync / H+V
6	Red video ground	14	V. Sync
7	Green video ground	15	No pin
8	Blue video ground		

(2) The 15-pin D-sub connector (male) of the adapter (Apple Macintosh systems):

Pin No.	Assignment	Pin No.	Assignment
1	Red ground	9	Blue video
2	Red video	10	Sense 2
3	Composite Sync, H+V	11	Composite Sync & V. Sync ground
4	Sense 0	12	V. Sync
5	Green video	13	Blue video ground
6	Green ground	14	H. Sync ground
7	Sense 1	15	H. Sync
8	Not connected		

3. Earphone Connection :

- Connect your earphone plug (must be minitype) to the earphone connector at the front panel of the monitor. (For model 4CM8204/4CM8274/4CM8284/4CM8294)



* Because of a policy of continuous product improvement, the above specifications are subject to change without notice.

4. Mechanical instructions

Location of the Panels (see Fig. 4.1)

1. Deflection + Supply panel
2. Video panel

General

To be able to perform measurements and repairs on the "circuit boards", these unit should be placed in the service position first:

Video panel

- Remove the rear cover (4 screws), see **Fig 4.2**.
- Remove the metal shielding by desolder 9 lags.

Main panel

- Remove the pedestal (click construction).
- Remove the rear cover (4 screws).
- Remove the video panel from CRT.
- Disconnect the desired cable trees.
- Slide the main panel out of bottom plate, first release plastic clamp, see **Fig. 4.1**.
- Place Main panel in service position as shown in **Fig.4.3**.

Remark:

3 extension cables are required for the service position of the Main panel.

- 4822 321 61698 2p to 2p cable to degaussing coil.
- 4822 321 61699 2p to 2p extension cable to speaker.

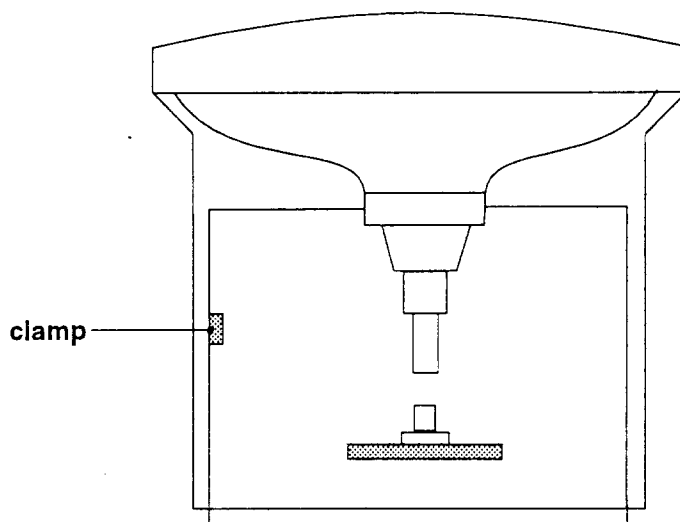


Fig. 4.1

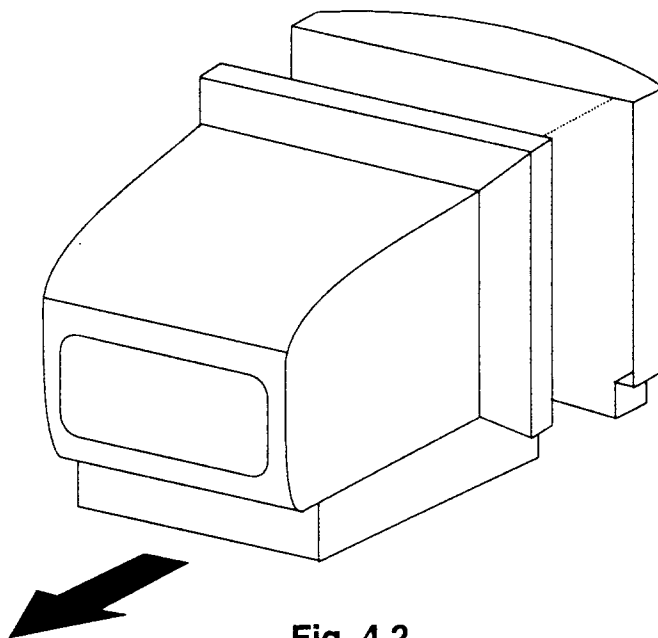


Fig. 4.2

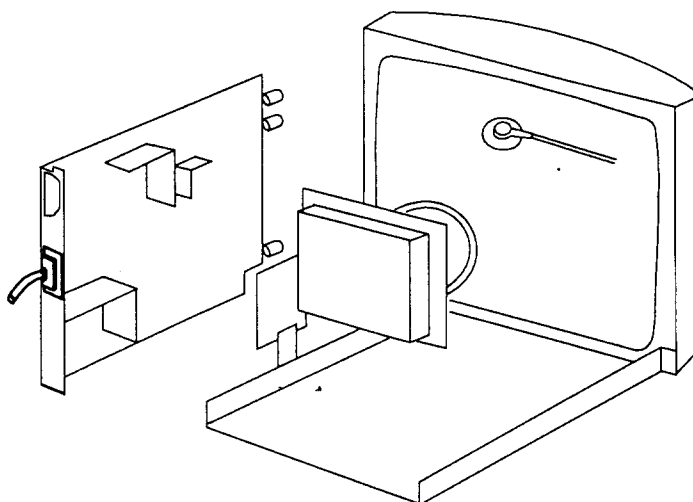


Fig. 4.3

Warnings

1. Safety regulations require that the unit should be returned in its original conditions and that components identical to the original components are used. The safety components are indicated by the symbol .
2. In order to prevent damage to ICs and transistors, all high-voltage flash-overs must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 3.1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0 V (after approx. 30s).
3. **ESD** 
All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten the life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the earth of the unit. Keep components and tools also at this same potential.
4. When repairing a unit, always connect it to the mains voltage via an isolating transformer.
5. Be careful when taking measurements in the high-voltage section and on the picture tube panel.
6. It is recommended that safety goggles are worn when replacing the picture tube.
7. When making settings, use plastic rather than metal tools. This will prevent any short-circuit and the danger of a circuit becomes unstable.
8. Never replace modules or other components while the unit is switched on.
9. Together with the deflection unit the picture tube is used as an integrated unit. Adjustment of this unit during repair is therefor not recommended.
10. After repair the wiring should be fastened once more in the cable clamps for this purpose.

Notes

1. The direct voltages and oscillograms are average voltages. They have been measured by using the Service testsoftware and under the following conditions:
 - Mode: 1024 * 768 (56.5kHz/70Hz)
 - Signal pattern: grey scale
 - Adjust brightness and contrast control for the mechanical mid-position (click position)
2. The picture tube panel has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
3. The semiconductors indicated in the circuit diagram(s) and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

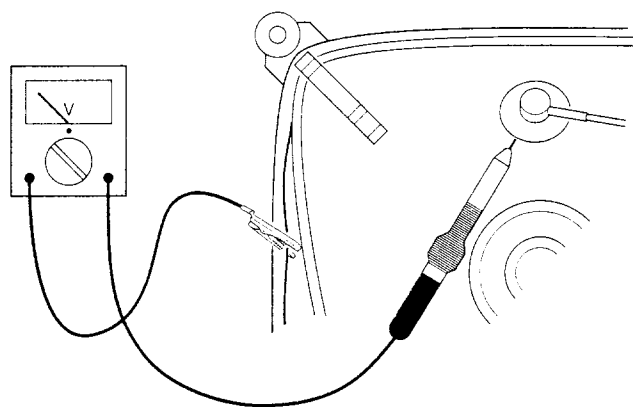
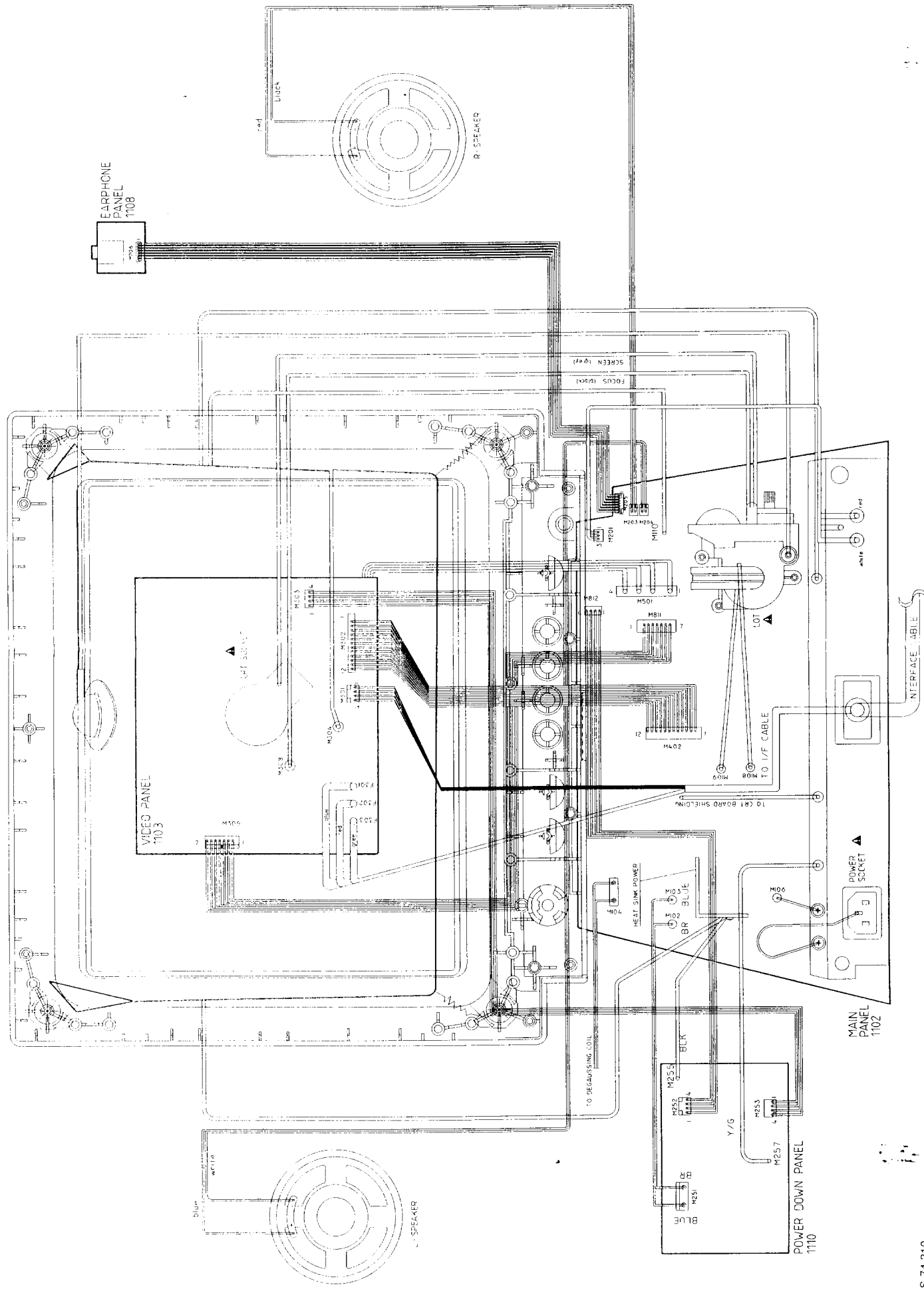


Fig. 3.1

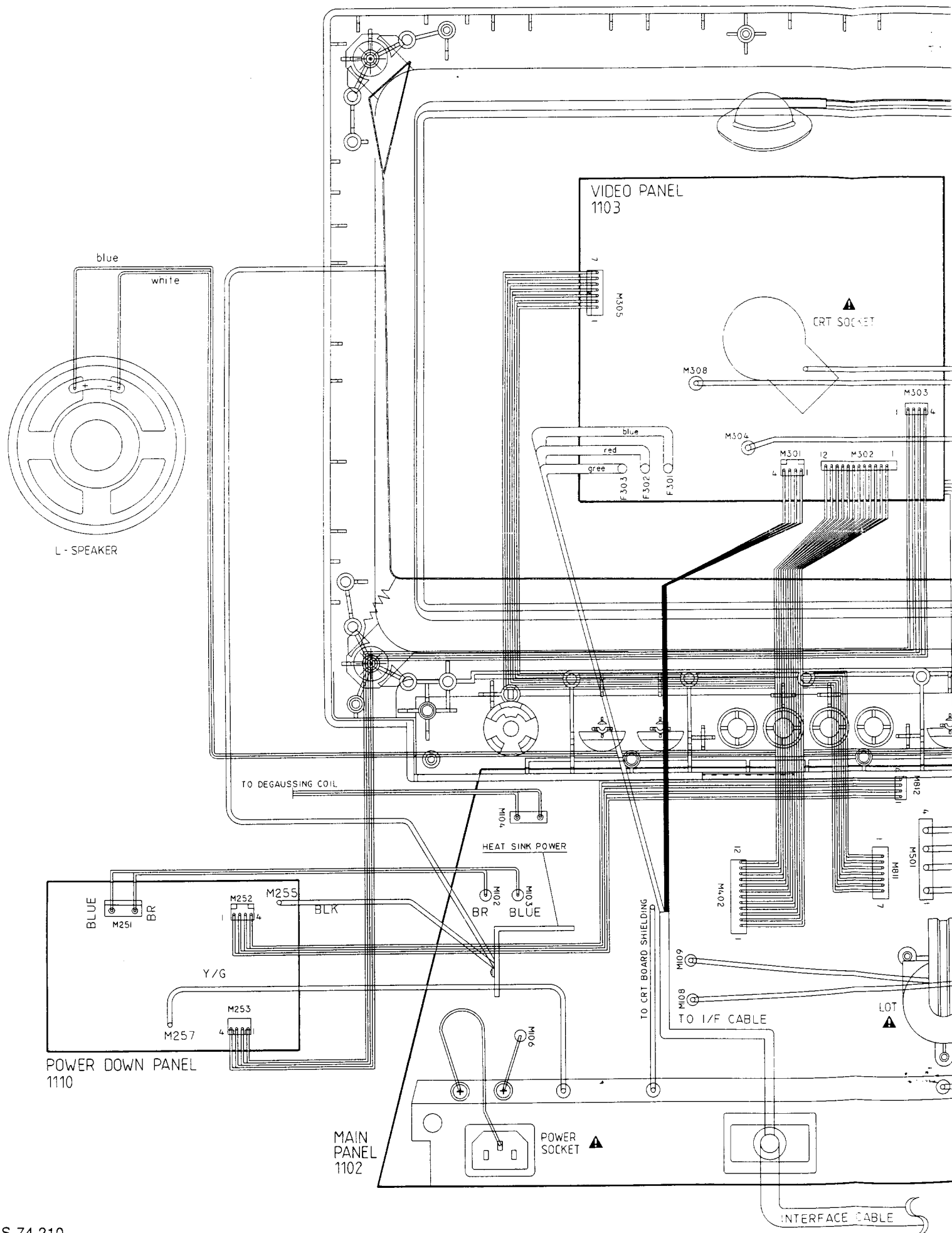
5. Wiring diagram



5. Wiring diagram

CM1800

6



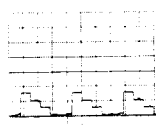
Wave forms for diagram A

CM1800

8

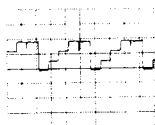
Vide

A1 Blue - in



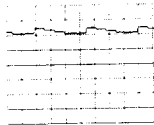
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5 μS / div

A9 6302-A



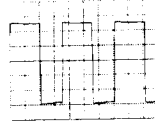
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5 μS / div

A17 7712-B



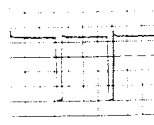
2V / div AC
5 μS / div

A25 7714-E



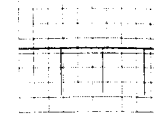
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5 μS / div

A33 7717-E



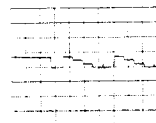
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5 μS / div

A41 M302-12



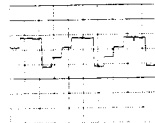
1V / div AC
5 mS / div

A2 7301-2



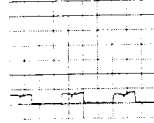
1V / div AC
5 μS / div

A10 F306-11



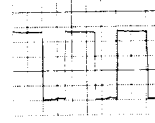
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5 μS / div

A18 7712-C



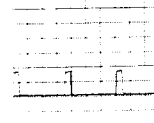
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5 μS / div

A26 7701-1



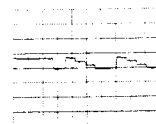
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A34 7721-B



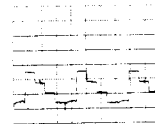
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5 μS / div

A3 7301-5



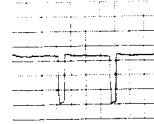
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A11 7301-19



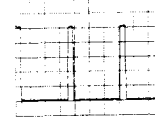
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5 μS / div

A19 M301-2



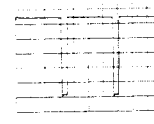
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A27 7701-13



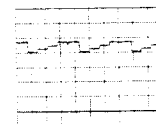
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A35 7721-C



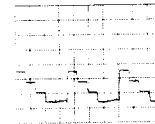
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A4 7301-20



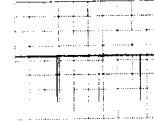
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5 μS / div

A12 2302



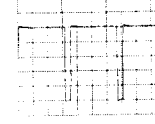
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5 μS / div

A20 M301-4



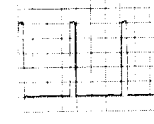
1V / div AC
5 mS / div

A28 7701-11



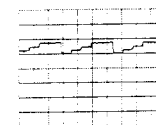
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A36 7702-6



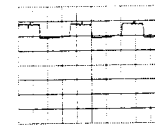
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5 μS / div

A5 7301-17



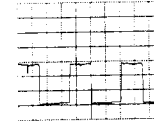
1V / div AC
5 μS / div

A13 7301-18



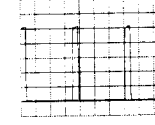
1V / div AC
5 μS / div

A21 7710-B



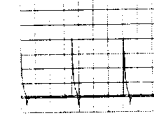
1V / div AC
5 μS / div

A29 7701-8



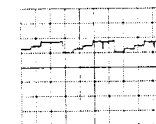
1V / div AC
5 μS / div

A37 7702-9



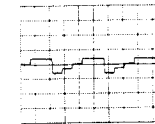
1V / div AC
5 μS / div

A6 7301-14



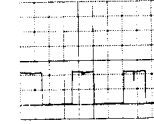
1V / div AC
5 μS / div

A14 3318,3321



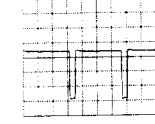
20V / div AC
5 μS / div

A22 7710-E



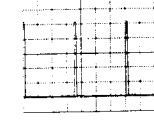
1V / div AC
5 μS / div

A30 7702-1



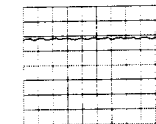
1V / div AC
5 μS / div

A38 7702-8



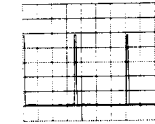
1V / div AC
5 μS / div

A7 7312-E



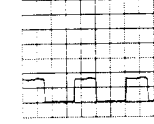
1V / div AC
20 μS / div

A15 7301-10



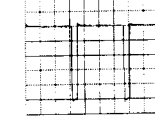
1V / div AC
5 μS / div

A23 7713-B



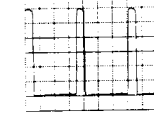
0,5V / div AC
5 μS / div

A31 7702-3



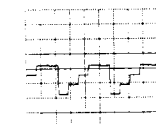
1V / div AC
5 μS / div

A39 M302-6



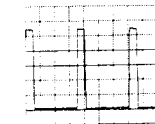
1V / div AC
5 μS / div

A8 7312-C



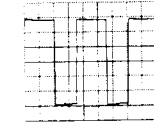
20V / div AC
5 μS / div

A16 7301-9



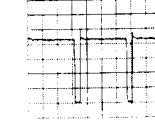
1V / div AC
5 μS / div

A24 7713-C



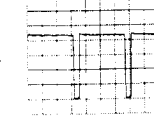
2V / div AC
5 μS / div

A32 7716-E



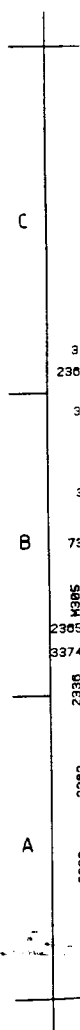
1V / div AC
5 μS / div

A40 M302-10



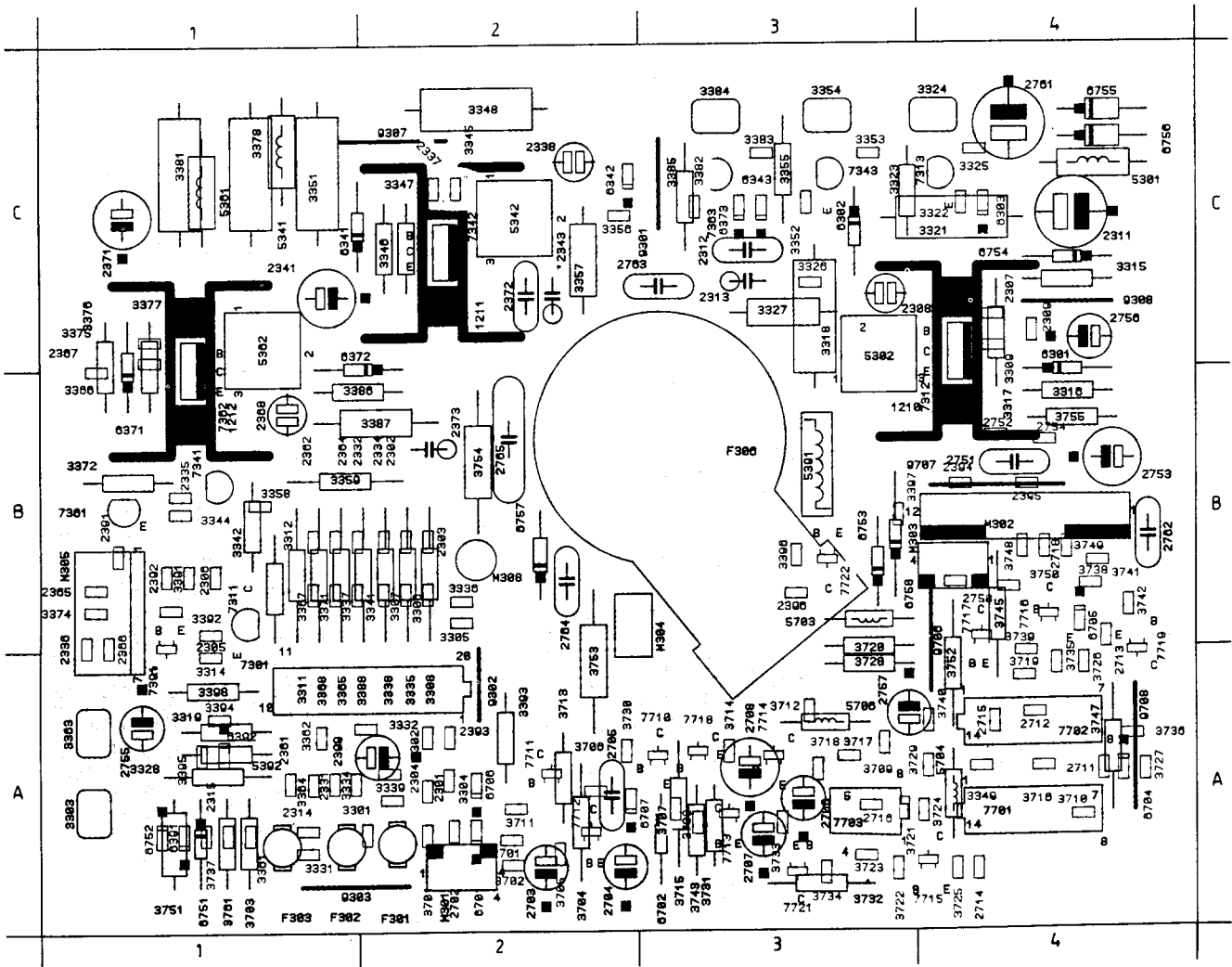
1V / div AC
5 μS / div

1210 C1
1211 C3
1212 C4
2301 A3
2302 B3
2303 B3
2304 A3
2305 B4
2306 B4
2307 C1
2308 C2
2309 C1
2311 C1
2312 C2
2313 C2
2314 A4
2315 A4
2331 A4
2332 B3
2334 B3
2335 B4
2336 A4
2337 C3
2338 C3
2341 C4
2343 C3
2361 A4
2362 B4
2364 B4
2365 B4
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2367 C4
2368 B4
2371 C4
2372 C3
2373 B3
2391 B4
2392 B4
2393 A3

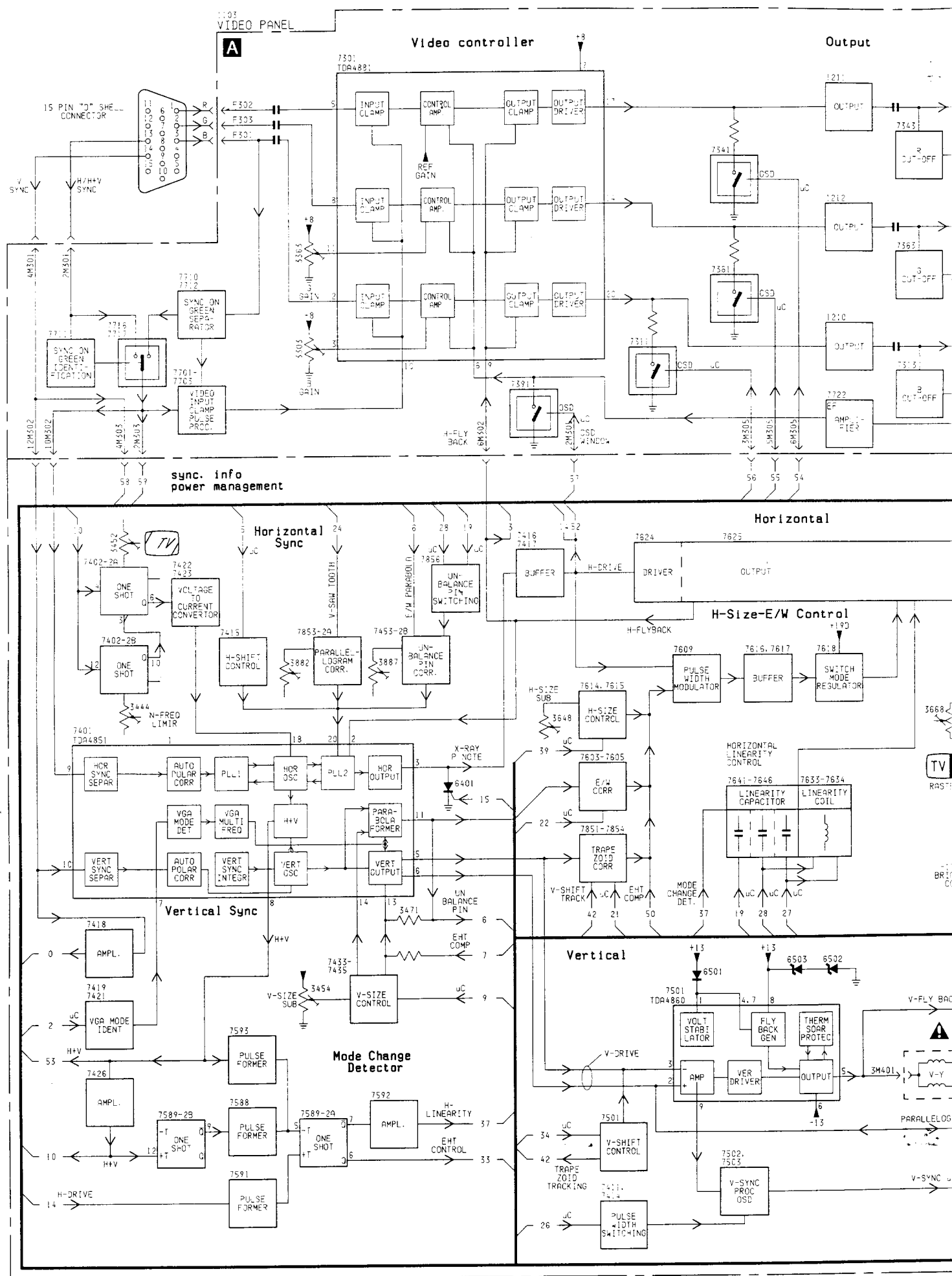


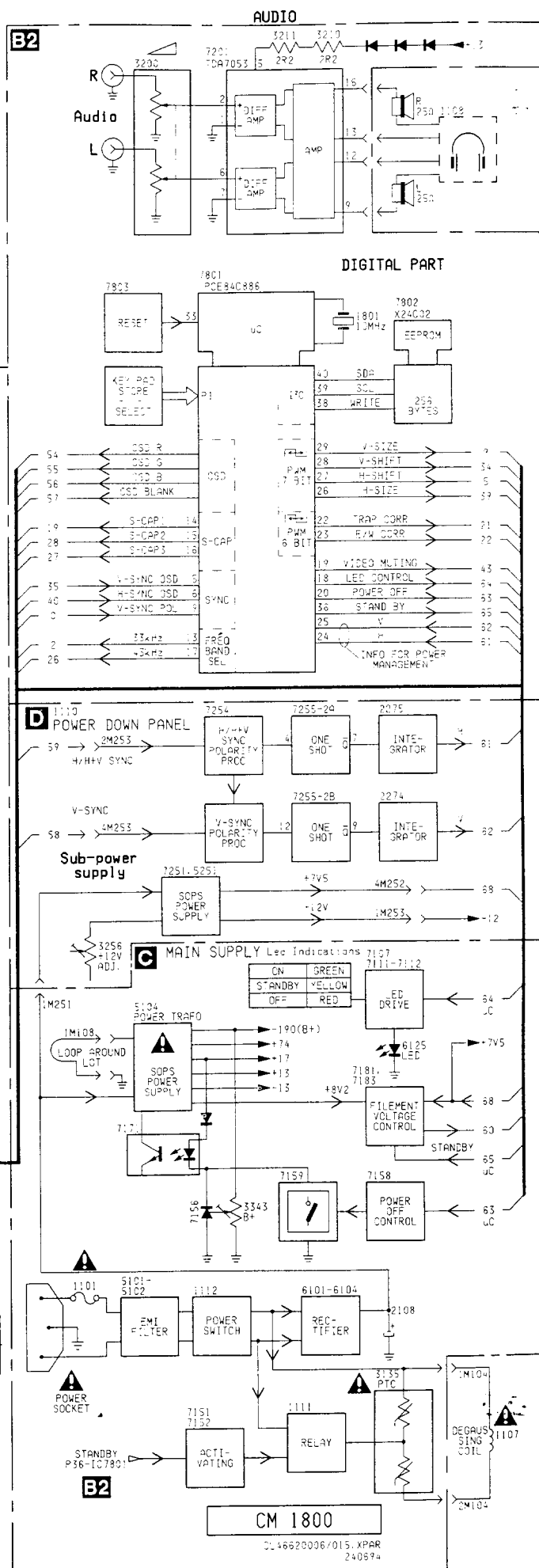
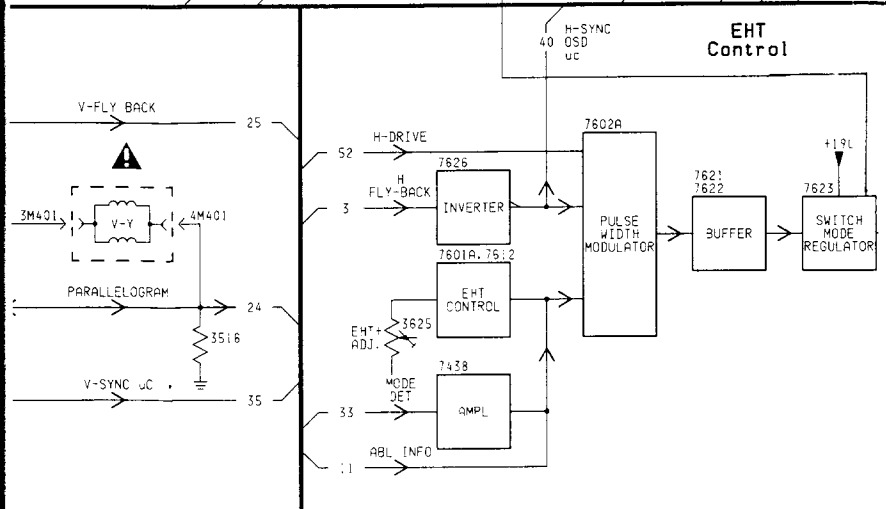
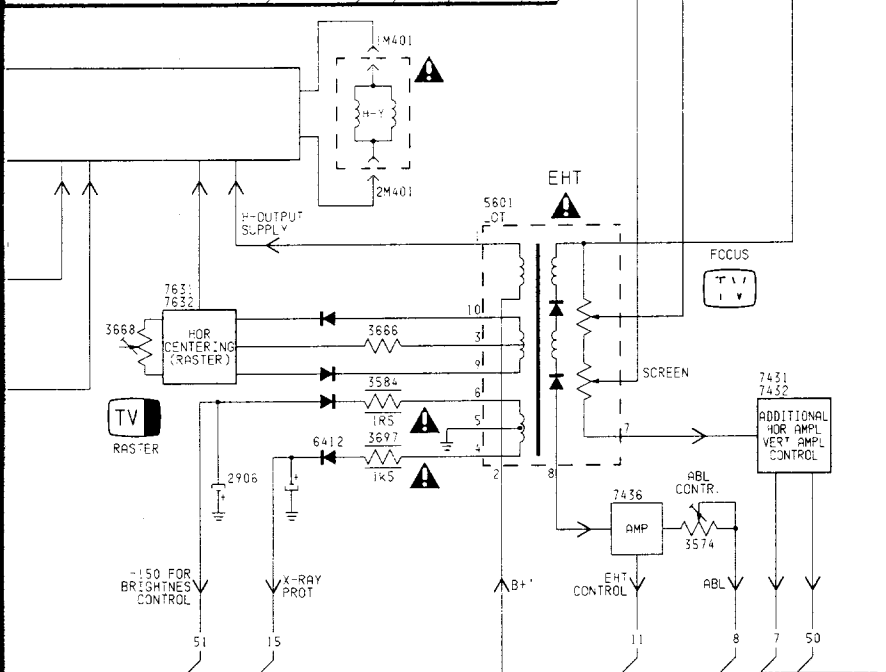
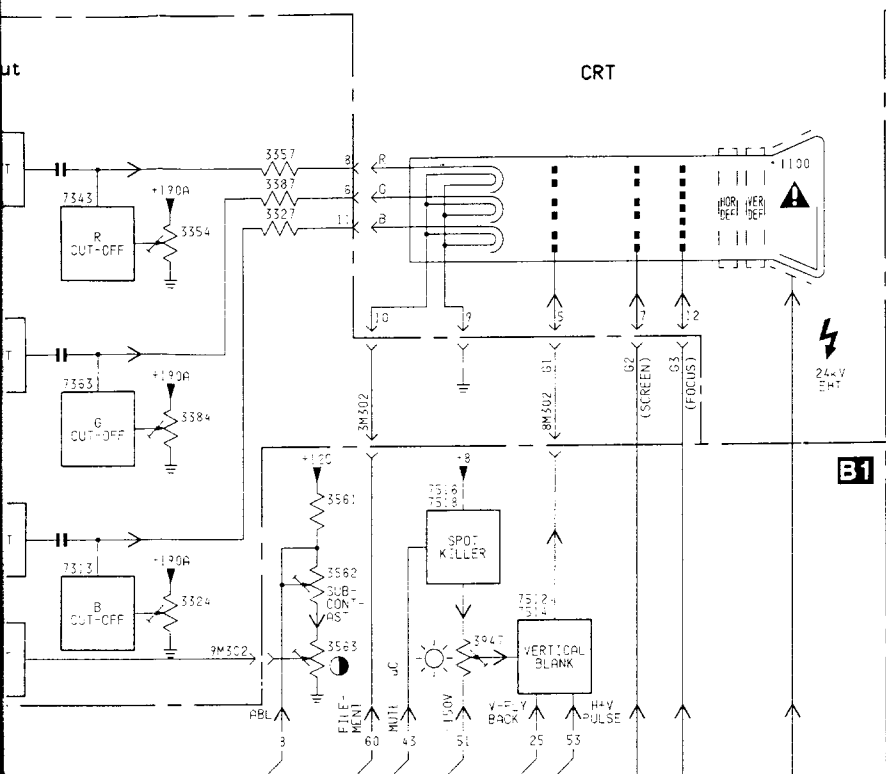
Video panel

1210 C1	2394 B1	3308 B3	3356 C3	3705 A3	3745 B1	6751 A4	F301 A3
1211 C3	2395 B1	3309 C1	3357 C3	3706 A3	3747 A1	6752 A4	F302 A4
1212 C4	2396 B2	3311 B4	3358 B4	3707 A2	3748 B1	6753 B2	F303 A4
2301 A3	2399 A3	3312 B4	3359 B4	3708 A2	3749 B1	6754 C1	F306 B2
2302 B3	2701 A3	3314 A4	3361 A4	3709 A2	3750 B1	6755 C1	M301 A3
2303 B3	2702 A3	3315 C1	3362 A4	3710 A1	3751 A4	6756 C1	M302 B1
2304 A3	2703 A3	3316 B1	3363 A4	3711 A3	3752 A1	6757 B3	M303 B1
2305 B4	2704 A3	3317 C1	3364 A4	3712 A2	3753 A3	6758 B2	M304 B3
2306 B4	2705 A3	3318 C2	3365 B4	3713 A3	3754 B3	7301 B4	M305 B4
2307 C1	2706 A2	3319 A4	3366 B4	3714 A2	3755 B1	7311 B4	M308 B3
2308 C2	2707 A2	3321 C1	3367 B4	3715 A2	3761 A4	7313 C1	
2309 C1	2708 A2	3322 C1	3368 B4	3716 A1	5301 C1	7341 B4	
2311 C1	2711 A1	3323 C2	3371 B4	3717 A2	5302 C2	7343 C2	
2312 C2	2712 A1	3324 C1	3372 B4	3718 A2	5341 C4	7361 B4	
2313 C2	2713 B1	3325 C1	3374 B4	3719 A1	5342 C3	7363 C2	
2314 A4	2714 A1	3326 C2	3375 C4	3720 B2	5361 C4	7391 A4	
2315 A4	2715 A1	3327 C2	3376 C4	3721 A2	5362 C4	7701 A1	
2331 A4	2716 A2	3328 A4	3377 C4	3722 A2	5391 B2	7702 A1	
2332 B3	2718 B1	3331 A4	3378 C4	3723 A2	5392 A4	7703 A2	
2334 B3	2751 B1	3332 A3	3381 C4	3724 A1	5703 B2	7710 A2	
2335 B4	2752 B1	3334 A3	3382 C2	3725 A1	5704 A1	7711 A3	
2336 A4	2753 B1	3335 B3	3383 C2	3726 A1	5706 A2	7712 A3	
2337 C3	2754 B1	3336 B3	3384 C2	3727 A1	6301 B1	7713 A2	
2338 C3	2755 A4	3337 B3	3385 C2	3728 A2	6302 C2	7714 A2	
2341 C4	2756 C1	3338 B3	3386 B3	3729 A1	6303 C1	7715 A1	
2343 C3	2757 A2	3339 A3	3387 B3	3730 A3	6341 C3	7716 B1	
2361 A4	2758 B1	3341 B3	3388 B3	3731 A2	6342 C3	7717 B1	
2362 B4	2761 C1	3342 B4	3391 B4	3732 A2	6343 C2	7718 A2	
2364 B4	2762 B1	3344 B4	3392 B4	3733 A2	6371 C4	7719 A1	
2365 B4	2763 C2	3345 C3	3393 A3	3734 A2	6372 C3	7721 A2	
2366 A4	2764 B3	3346 C3	3394 A4	3735 A1	6373 C2	7722 B2	
2367 C4	2765 B3	3347 C3	3395 A4	3736 A1	6391 A4	9301 C2	
2368 B4	3301 A3	3348 C3	3396 B2	3737 A4	6392 A4	9302 A3	
2371 C4	3302 A3	3349 A1	3397 B2	3738 B1	6701 A3	9303 A4	
2372 C3	3303 A4	3351 C4	3398 A4	3739 A1	6702 A2	9307 C3	
2373 B3	3304 A3	3352 C2	3701 A3	3740 A1	6704 A1	9308 C1	
2391 B4	3305 B3	3353 C2	3702 A3	3741 B1	6705 B1	9706 B1	
2392 B4	3306 B3	3354 C2	3703 A4	3742 B1	6706 A3	9707 B1	
2393 A3	3307 B3	3355 C2	3704 A3	3743 A2	6707 A3	9708 A1	

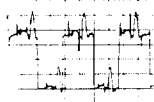


CM1800



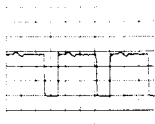


B25 7435-B



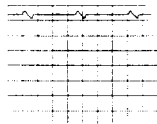
0,2V / div AC
10 μ S / div

B33 5602-2



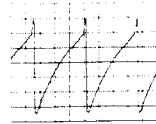
5V / div AC
5 μ S / div

B41 7436-C



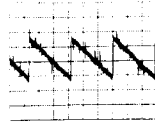
2V / div AC
5 μ S / div

B49 7402-14



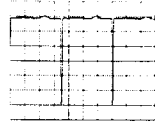
2V / div AC
5 μ S / div

B57 M501-4



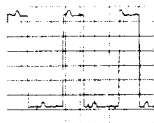
0,5V / div AC
5 mS / div

B65 7588-C



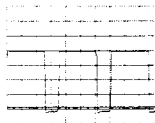
2V / div AC
5 μ S / div

B26 7435-C



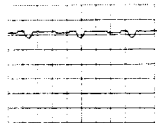
1V / div AC
10 μ S / div

B34 5602-3



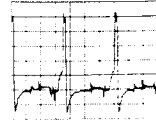
50V / div AC
5 μ S / div

B42 7436-E



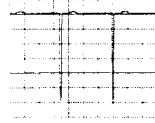
2V / div AC
5 μ S / div

B50 7426-B



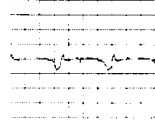
0,2V / div AC
5 μ S / div

B58 7589-4



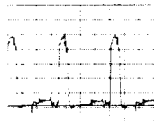
2V / div AC
5 μ S / div

B66 7592-C



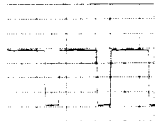
0,5V / div AC
5 μ S / div

B27 7626-B



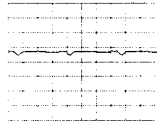
0,2V / div AC
5 μ S / div

B35 5602-4



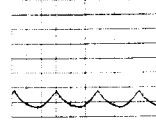
50V / div AC
5 μ S / div

B43 7437-B



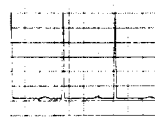
2V / div AC
5 μ S / div

B51 7501-6



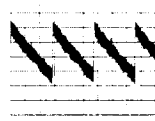
2V / div AC
5 mS / div

B59 7589-5



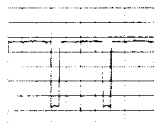
2V / div AC
5 μ S / div

B67 7853-3



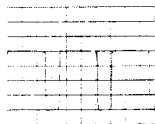
0,2V / div AC
5 mS / div

B28 7626-C



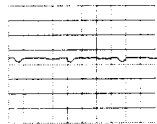
1V / div AC
5 μ S / div

B36 7623-G



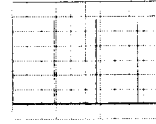
50V / div AC
5 μ S / div

B44 7437-E



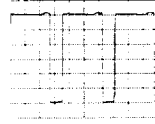
2V / div AC
5 μ S / div

B52 7501-9



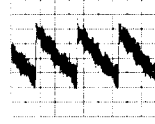
2V / div AC
5 mS / div

B60 7589-9



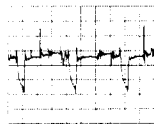
2V / div AC
5 μ S / div

B68 7583-2



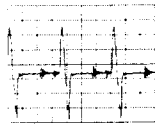
0,2V / div AC
5 mS / div

B29 7608-B



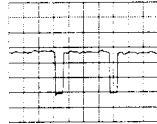
0,2V / div AC
5 μ S / div

B37 7431-C



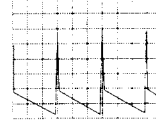
1V / div AC
5 μ S / div

B45 7402-10



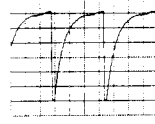
5V / div AC
5 μ S / div

B53 7501-5



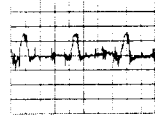
10V / div AC
5 mS / div

B61 7589-14



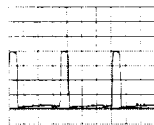
2V / div AC
5 μ S / div

B69 7583-1



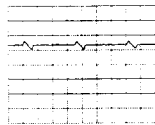
0,2V / div AC
5 μ S / div

B30 7608-C



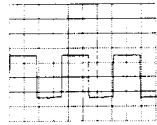
1V / div AC
5 μ S / div

B38 7431-B



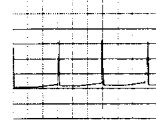
2V / div AC
5 μ S / div

B46 7402-6



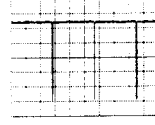
5V / div AC
5 μ S / div

B54 7501-4



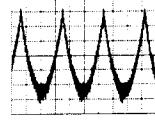
10V / div AC
5 mS / div

B62 7589-13



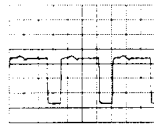
2V / div AC
5 mS / div

B70 7583-5



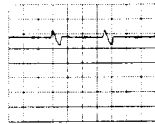
0,2V / div AC
5 mS / div

B31 7602-1



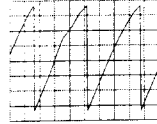
5V / div AC
5 μ S / div

B39 7431-E



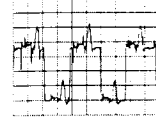
2V / div AC
5 μ S / div

B47 7402-2



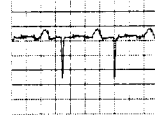
2V / div AC
5 μ S / div

B55 7504-B



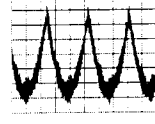
0,2V / div AC
10 μ S / div

B63 7587-B



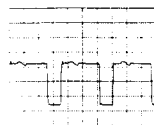
0,5V / div AC
5 μ S / div

B71 7583-6



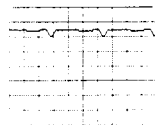
0,2V / div AC
5 mS / div

B32 7621-E



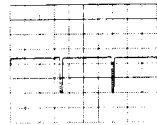
5V / div AC
5 μ S / div

B40 7436-B



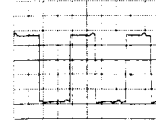
2V / div AC
5 μ S / div

B48 7402-4



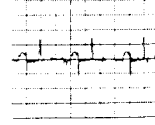
5V / div AC
5 μ S / div

B56 7504-C



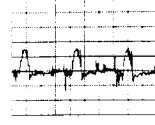
2V / div AC
10 μ S / div

B64 7588-B



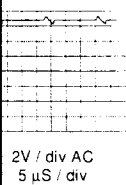
0,5V / div AC
5 μ S / div

B72 7583-7

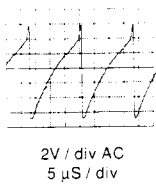


0,2V / div AC
5 μ S / div

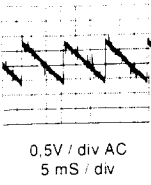
41 7436-C



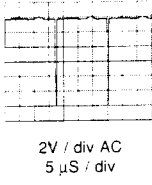
B49 7402-14



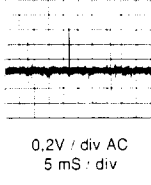
B57 M501-4



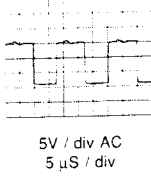
B65 7588-C



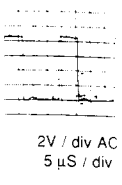
B73 7502-B



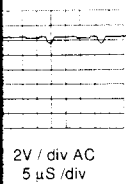
B81 7617-E



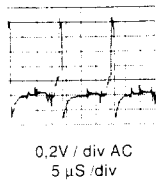
B89 7604



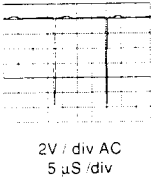
42 7436-E



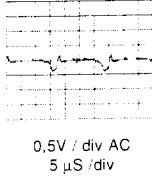
B50 7426-B



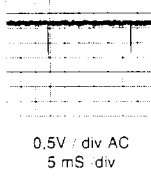
B58 7589-4



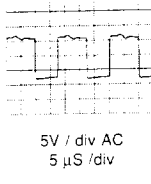
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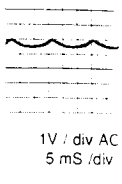
B74 7502-C



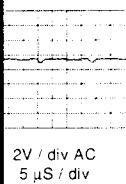
B82 5604-1



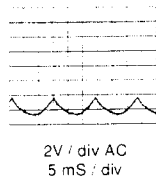
B90 7603



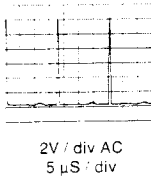
43 7437-B



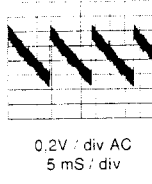
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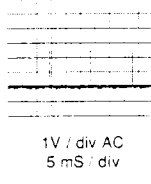
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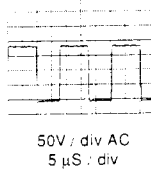
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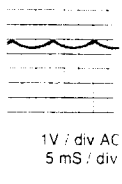
B75 7503-C



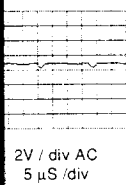
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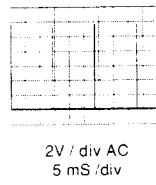
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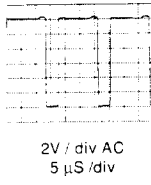
44 7437-E



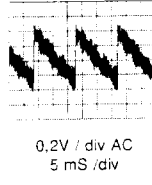
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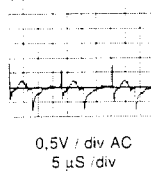
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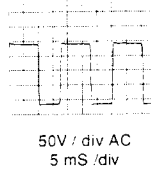
B68 7583-2



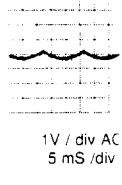
B76 7613-B



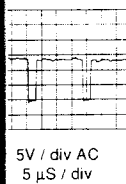
B84 5604-4



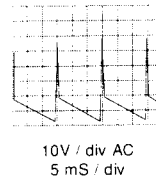
B92 7605



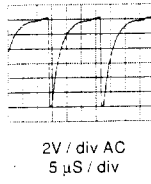
45 7402-10



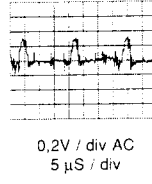
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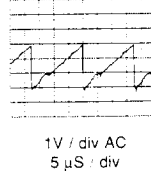
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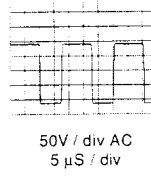
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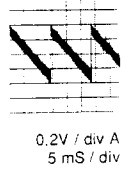
B77 7613-C



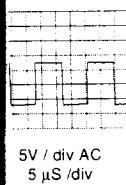
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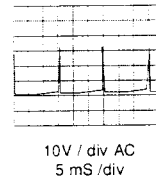
B93 7855



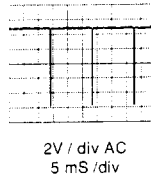
46 7402-6



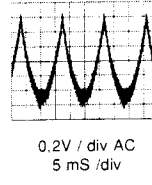
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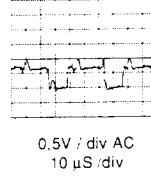
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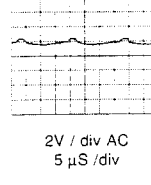
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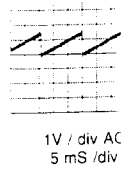
B78 7614-B



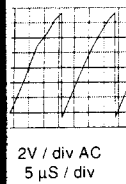
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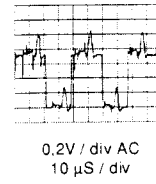
B94 7855



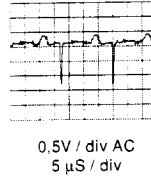
47 7402-2



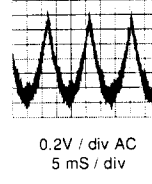
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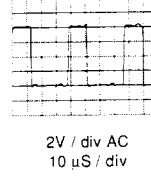
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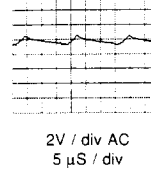
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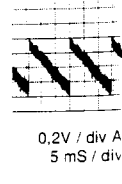
B79 7614-C



B87 5604-4



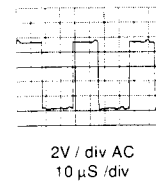
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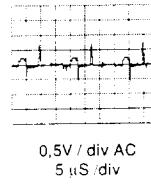
48 7402-4



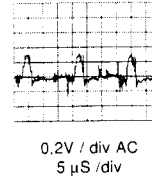
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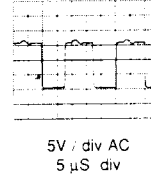
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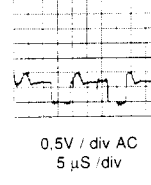
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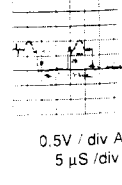
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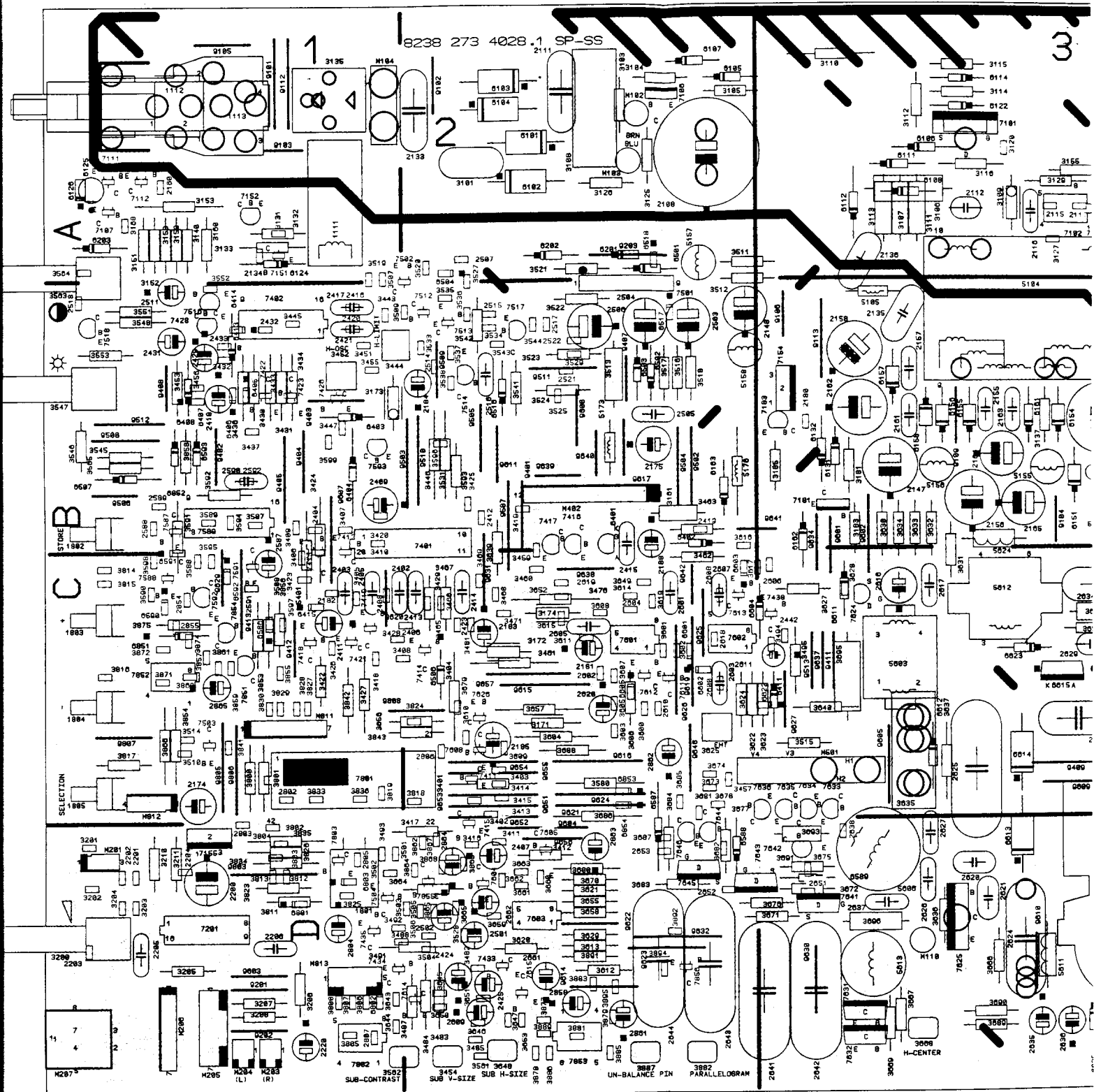


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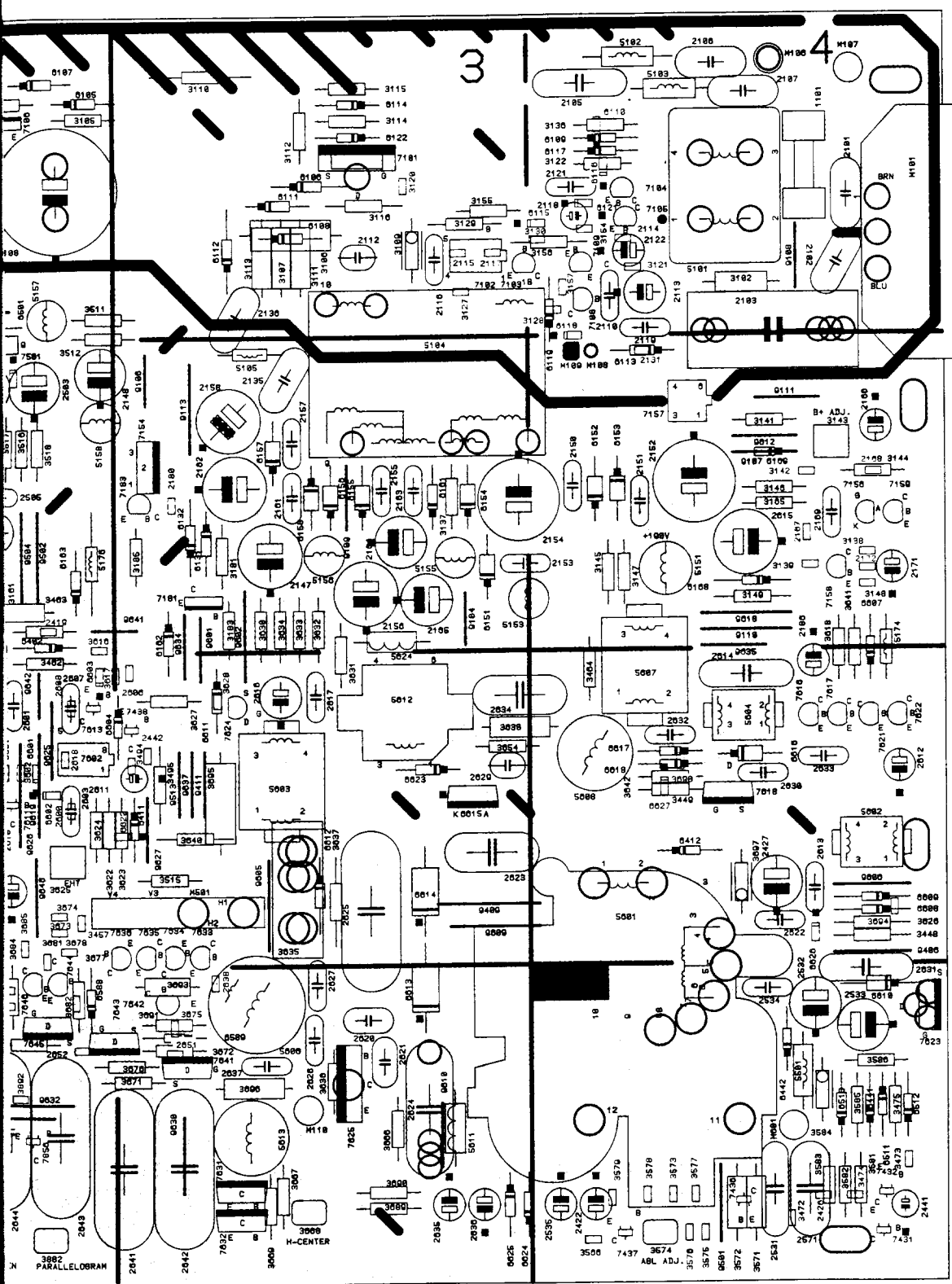
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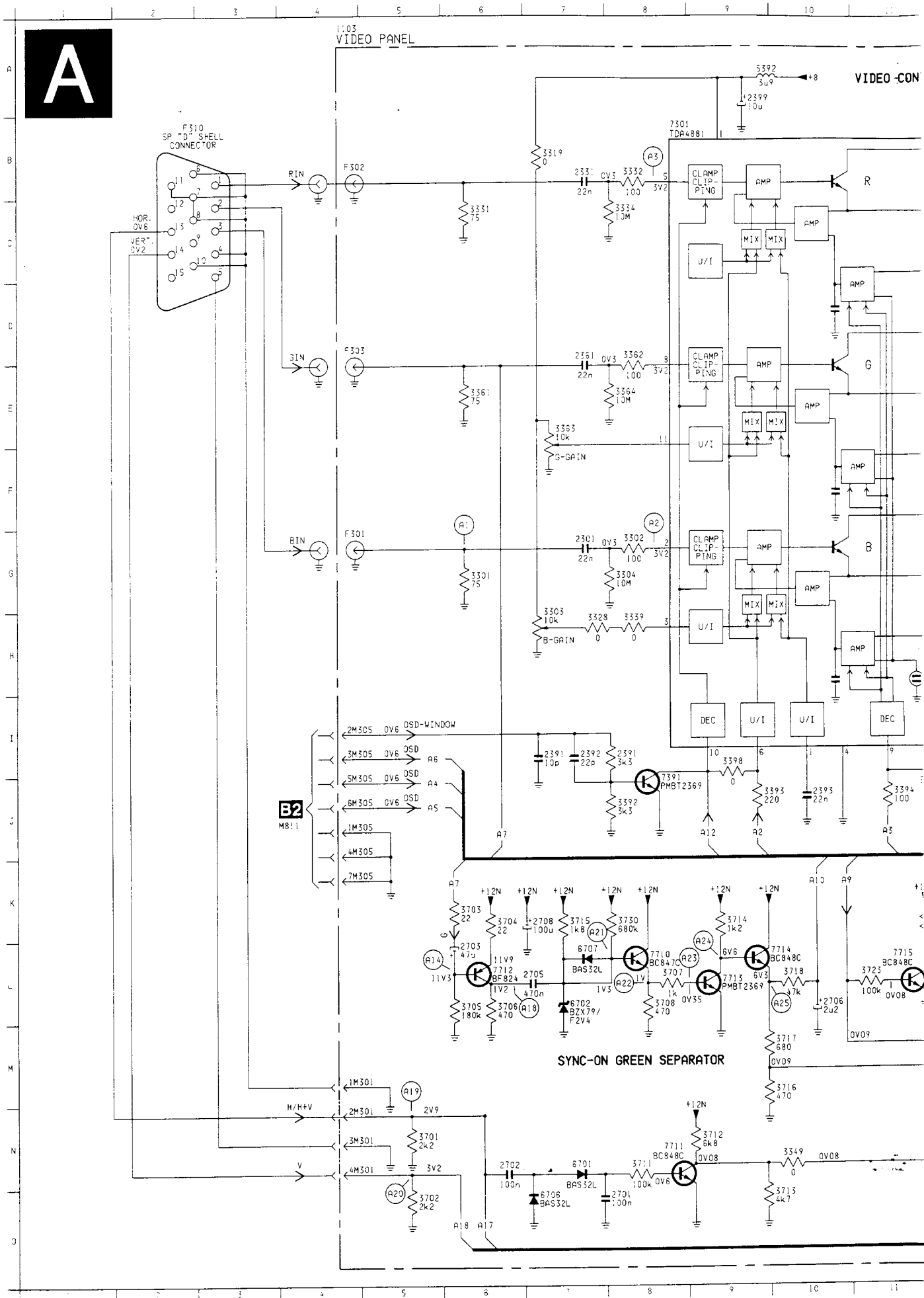
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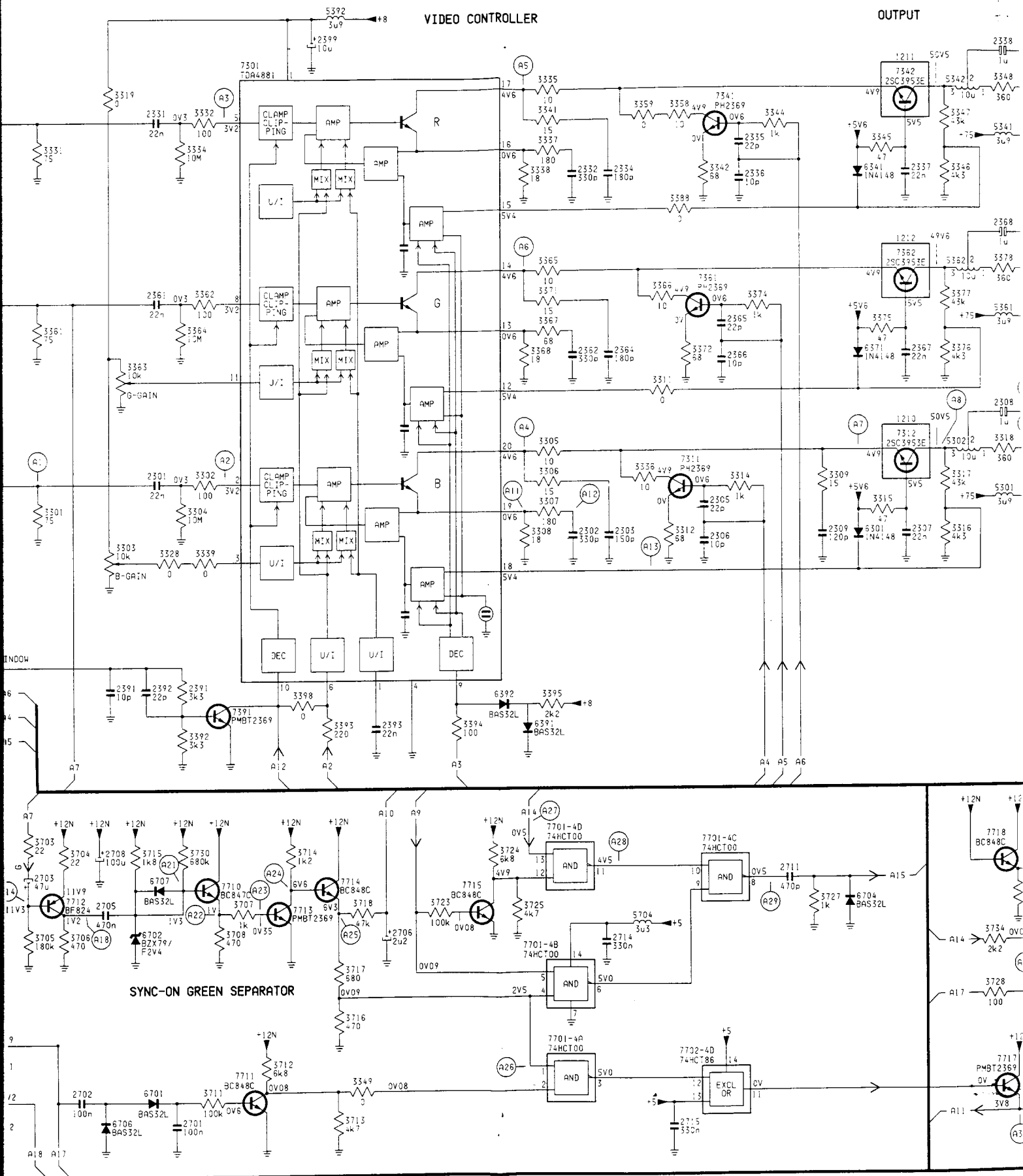
Main panel



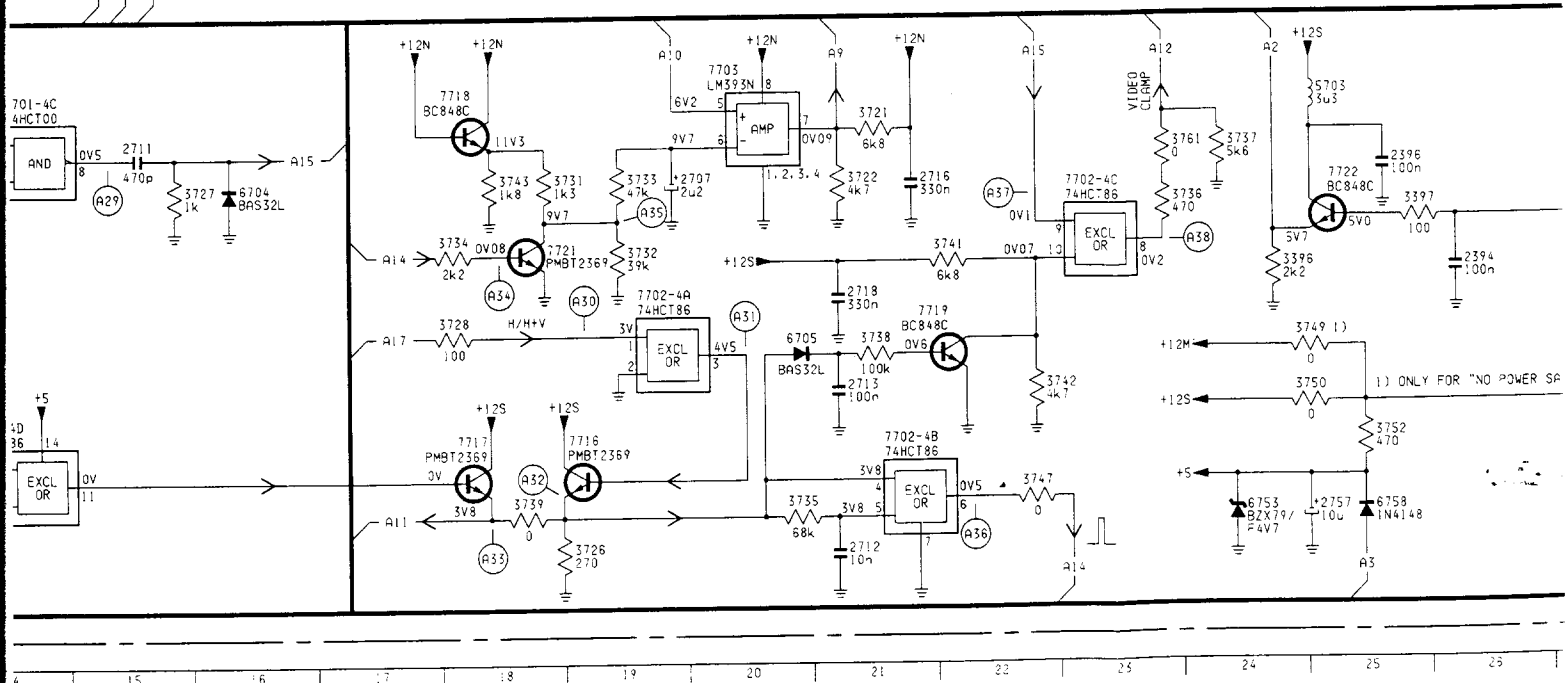
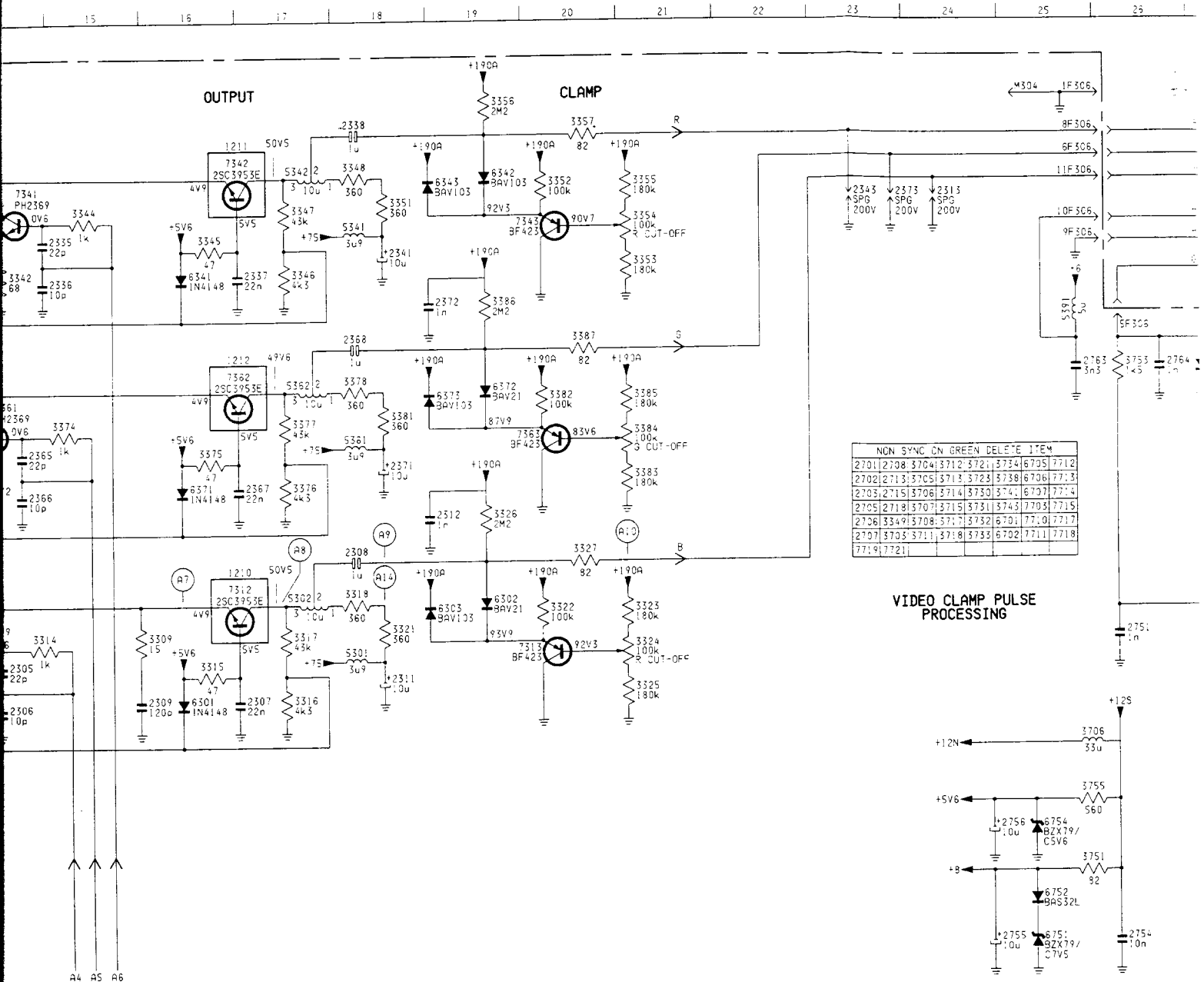
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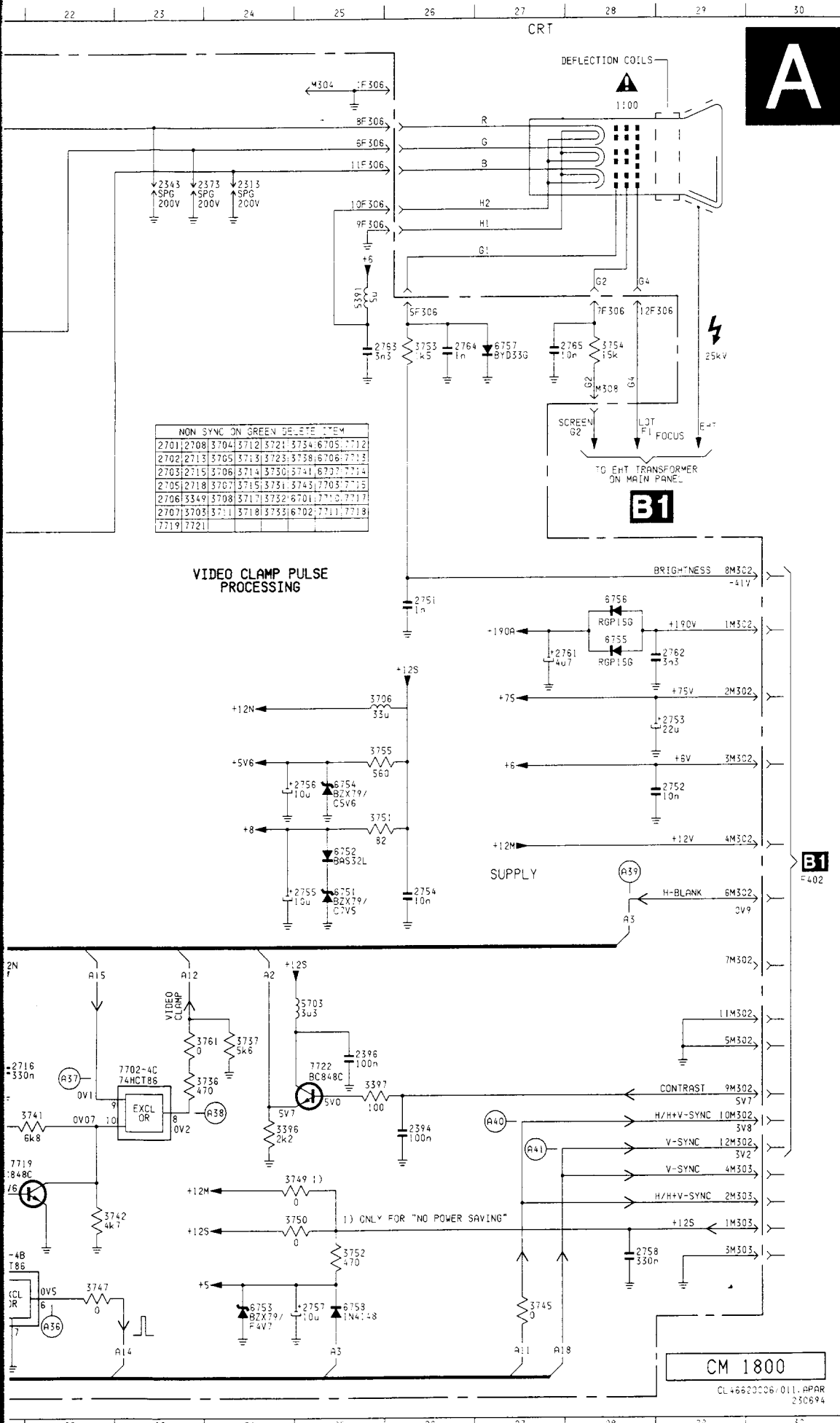




Video

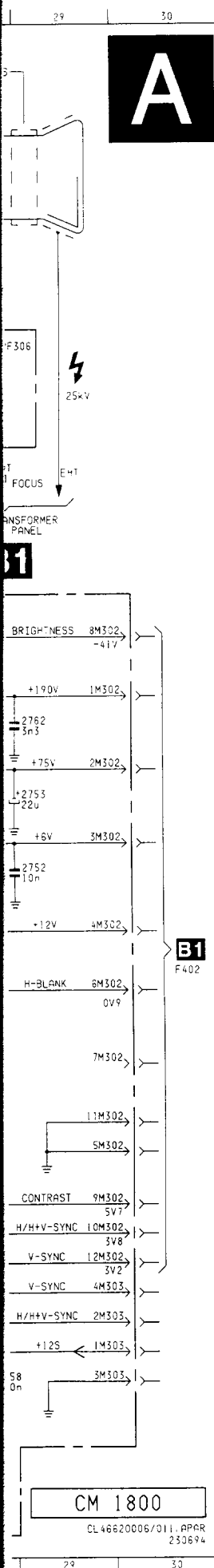


Video



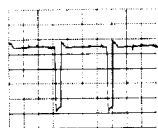
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2311	G18	3374	E15	7701	L12
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2313	G24	3376	E17	7702	L23
2331	G 7	3377	E17	7702	M19
2332	C12	3378	D18	7702	N14
2334	C13	3381	D18	7702	N21
2335	C15	3382	D20	7703	K20
2336	C15	3383	E21	7710	L 8
2337	C17	3384	E21	7711	N 8
2338	A18	3385	D21	7712	L 6
2341	C18	3386	C19	7713	L 9
2343	B23	3387	D20	7714	L 9
2361	D 7	3388	C14	7715	L11
2362	E12	3392	J 8	7716	N19
2364	E13	3393	J 9	7717	N18
2365	E14	3394	J11	7718	K19
2366	E14	3395	I12	7719	M22
2367	E17	3396	M24	7721	L18
2368	D18	3397	L25	7722	L25
2371	E18	3398	I 9		
2372	C19	3701	N 5		
2373	B23	3702	C 5		
2391	I 7	3703	K 6		
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2392	I 7	3705	L 6		
2393	J10	3706	H25		
2394	M25	3706	L 6		
2396	L25	3707	L 8		
2399	A 9	3708	L 8		
2701	C 8	3711	N 8		
2702	N 6	3712	N 9		
2703	L 6	3713	O10		
2705	L 7	3714	K 7		
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2707	L19	3716	M10		
2708	K 7	3717	M10		
2711	L15	3718	L10		
2712	O21	3721	K21		
2713	N21	3722	L21		
2714	L13	3723	L11		
2715	O14	3724	K11		
2716	L21	3725	L12		
2718	M21	3726	O19		
2751	G26	3727	L15		
2752	I29	3728	M18		
2753	H29	3730	K 8		
2754	J25	3731	L18		
2755	J24	3732	L19		
2756	J24	3733	L19		
2757	O25	3734	L18		
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2762	G29	3737	L24		
2763	D25	3738	M21		
2764	D26	3739	N18		
2765	D27	3741	L22		
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3303	H 7	3745	O27		
3304	G 8	3747	N22		
3305	F12	3749	M25		
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3307	G12	3751	I25		
3308	G12	3752	N25		
3309	G16	3753	D26		
3311	F14	3754	D28		
3312	G14	3755	H25		
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3316	G17	5302	F17		
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3318	F18	5342	B17		
3319	B 7	5361	E18		
3321	G18	5362	D17		
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3325	G21	5704	L13		
3326	E19	6301	G16		
3327	F20	6302	F19		
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3331	C 6	6341	C16		
3332	B 8	6342	B19		
3334	C 8	6343	B19		
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3338	C12	6391	J12		
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3341	B12	6701	N 7		
3342	C14	6702	L 7		
3344	B15	6704	L16		
3345	C16	6705	M20		
3346	C17	6706	O 7		
3347	B17	6707	L 7		
3348	B18	6751	J25		
3349	V10	6752	J25		
3351	B18	6753	O24		
3352	G20	6754	I25		
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Wave forms for diagram B1



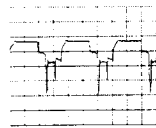
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2301	G 7	3363	E 7	7342	B17
2302	G12	3364	E 8	7343	B20
2303	G13	3365	D12	7361	D14
2305	G14	3366	D14	7362	D17
2306	G14	3367	E12	7363	E20
2307	G17	3368	E12	7391	J 8
2308	F18	3371	D12	7701	K12
2309	G16	3372	E14	7701	K14
2311	G19	3374	E15	7701	L12
2312	E19	3375	E16	7701	N12
2313	B24	3376	E17	7702	L23
2331	B 7	3377	E17	7702	M19
2332	C12	3378	D18	7702	N14
2334	C13	3381	D18	7702	N21
2335	C15	3382	D20	7703	K20
2336	C15	3383	E21	7710	L 8
2337	C17	3384	E21	7711	N 8
2338	A18	3385	D21	7712	L 6
2341	C18	3386	C19	7713	L 9
2343	B23	3387	D20	7714	L 9
2361	D 7	3388	C14	7715	L11
2362	E12	3392	J 8	7716	N19
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2365	E14	3394	J11	7718	K18
2366	E14	3395	I12	7719	M22
2367	E17	3396	M24	7721	L18
2368	D18	3397	L25	7722	L25
2371	E18	3398	I 9		
2372	C19	3701	N 5		
2373	B25	3702	O 5		
2391	I 7	3703	K 6		
2391	I 8	3704	K 6		
2392	I 7	3705	L 6		
2393	C10	3706	H25		
2394	M26	3706	L 6		
2396	L25	3707	L 8		
2399	A 9	3708	L 8		
2701	C 8	3711	N 8		
2702	N 6	3712	N 9		
2703	L 6	3713	C10		
2705	L 7	3714	K 9		
2706	L10	3715	K 7		
2707	L19	3716	M10		
2708	K 7	3717	M10		
2711	L15	3718	L10		
2712	O21	3721	K21		
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2716	L21	3725	L12		
2718	M21	3726	D19		
2751	G26	3727	L15		
2752	I29	3728	M18		
2753	H29	3730	K 8		
2754	J26	3731	L18		
2755	J24	3732	L19		
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2757	O25	3734	L18		
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3325	G21	5704	L13		
3326	E19	6301	G16		
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3351	B18	6753	O24		
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3353	C21	6755	G28		
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B1 7401-9



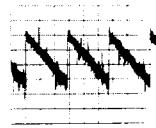
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B9 5603-2



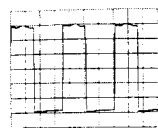
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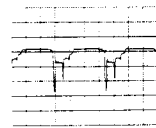
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B2 7401-3



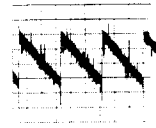
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5 μS / div

B10 7625-E



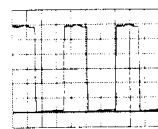
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5 μS / div

B18 7401-6



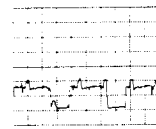
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B3 7416-B



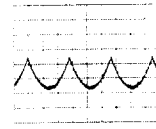
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B11 7415-B



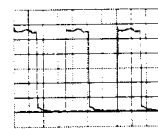
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B19 7401-11



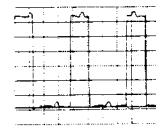
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B4 7416-E



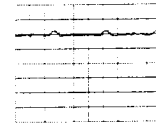
2V / div AC
5 μS / div

B12 7415-C



1V / div AC
10 μS / div

B20 7401-14



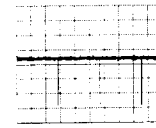
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5 μS / div

B5 7611-B



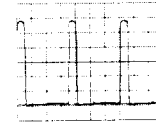
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B13 7401-10



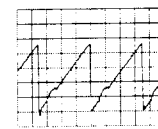
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B21 7401-2



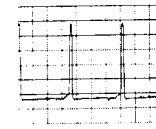
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5 μS / div

B6 7611-C



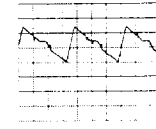
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B14 7401-8



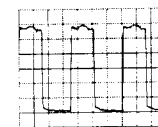
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B22 7401-19



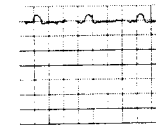
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5 μS / div

B7 7624-G



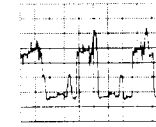
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B15 7401-15



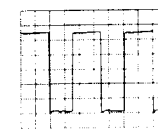
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5 μS / div

B23 7434-B



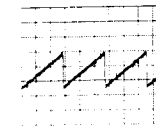
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10 μS / div

B8 7624-D



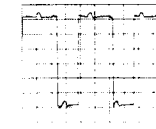
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B16 7401-16

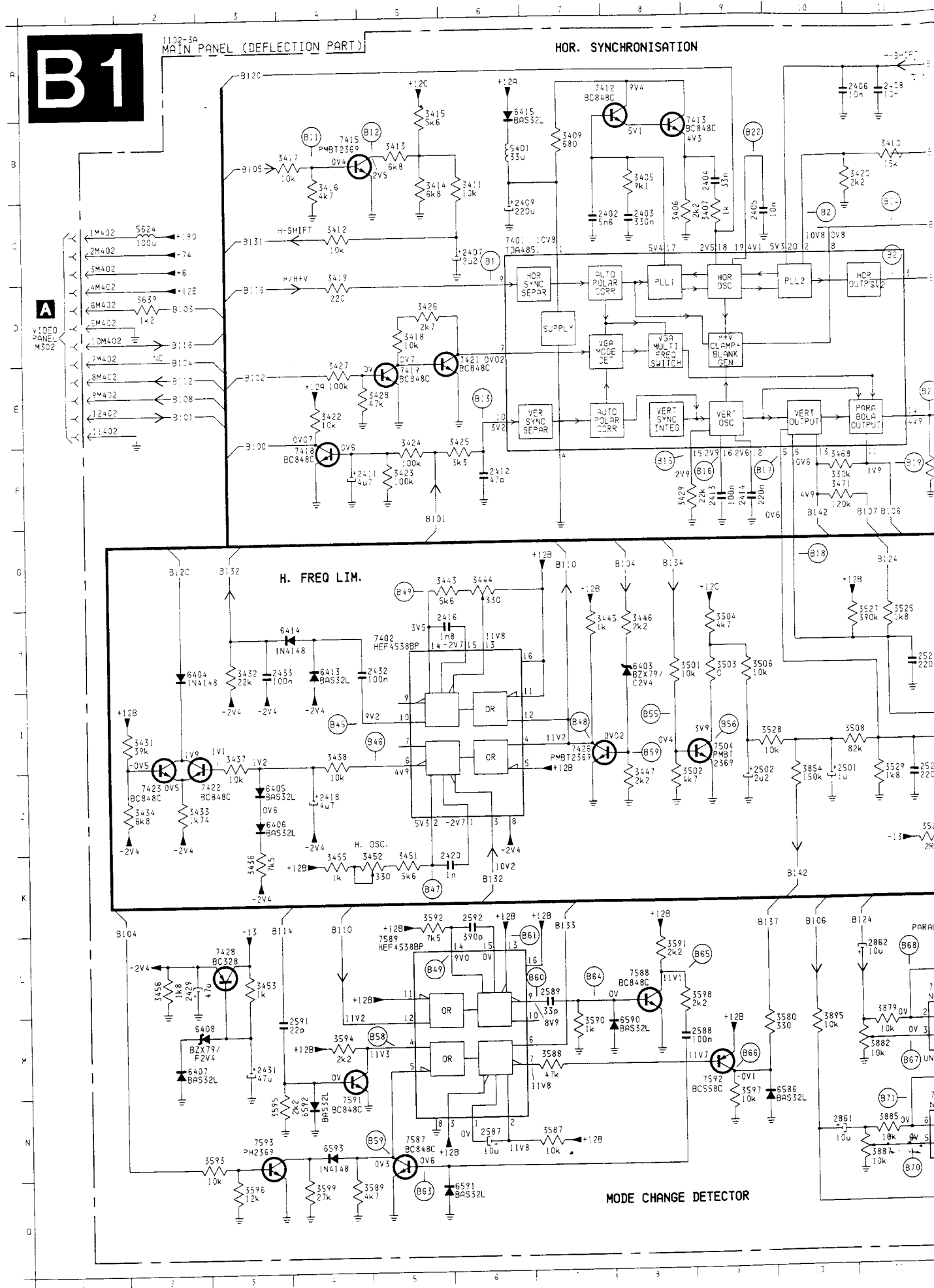


1V / div AC
5 mS / div

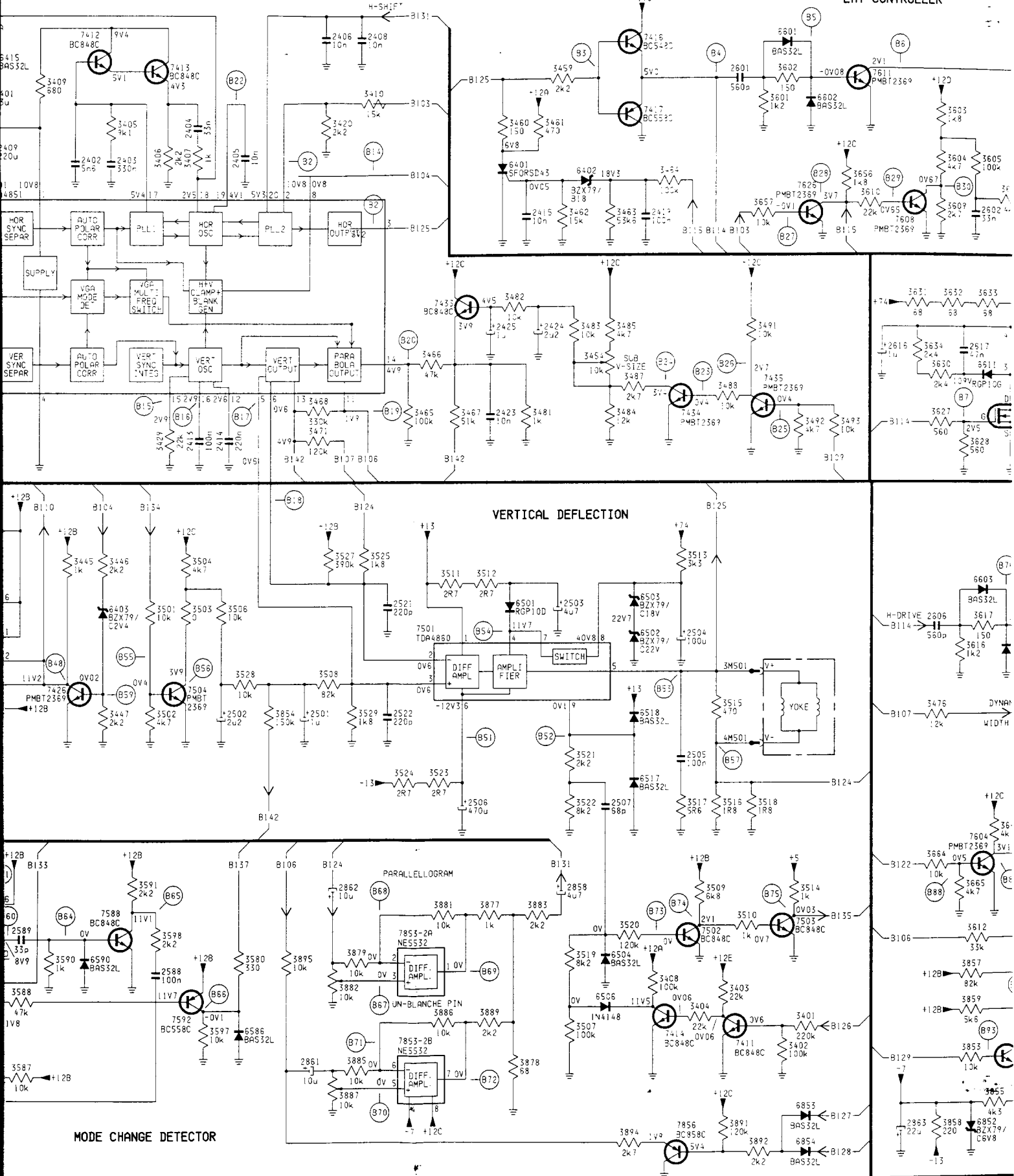
B24 7434-C



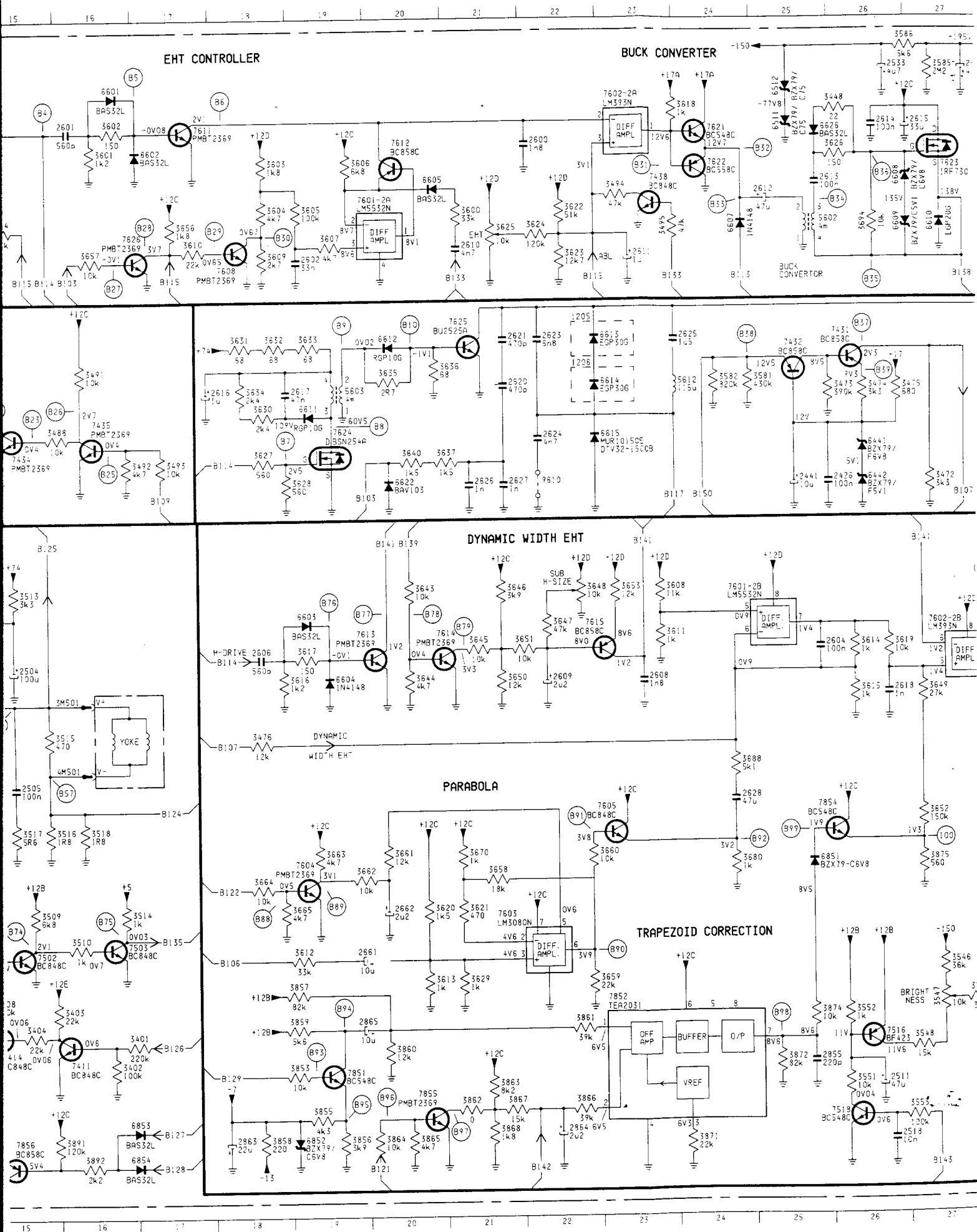
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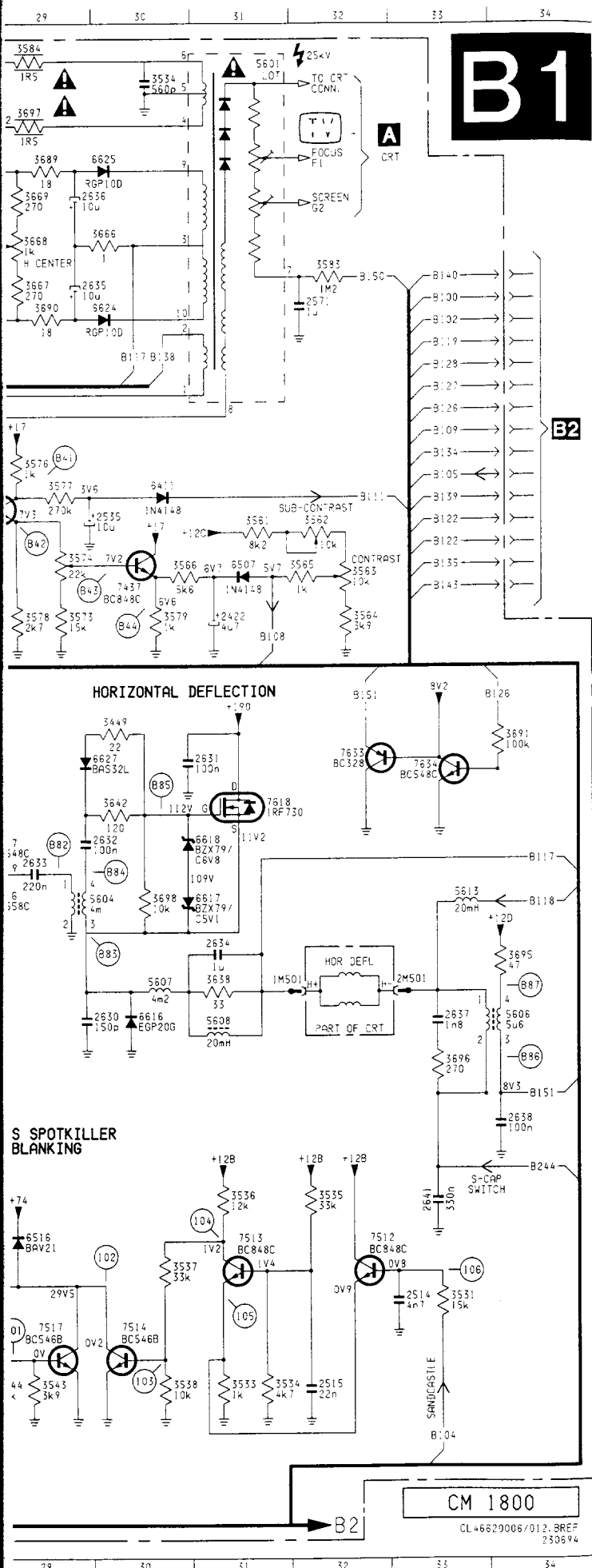
EHT CONTROLLER



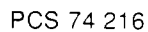
Deflection



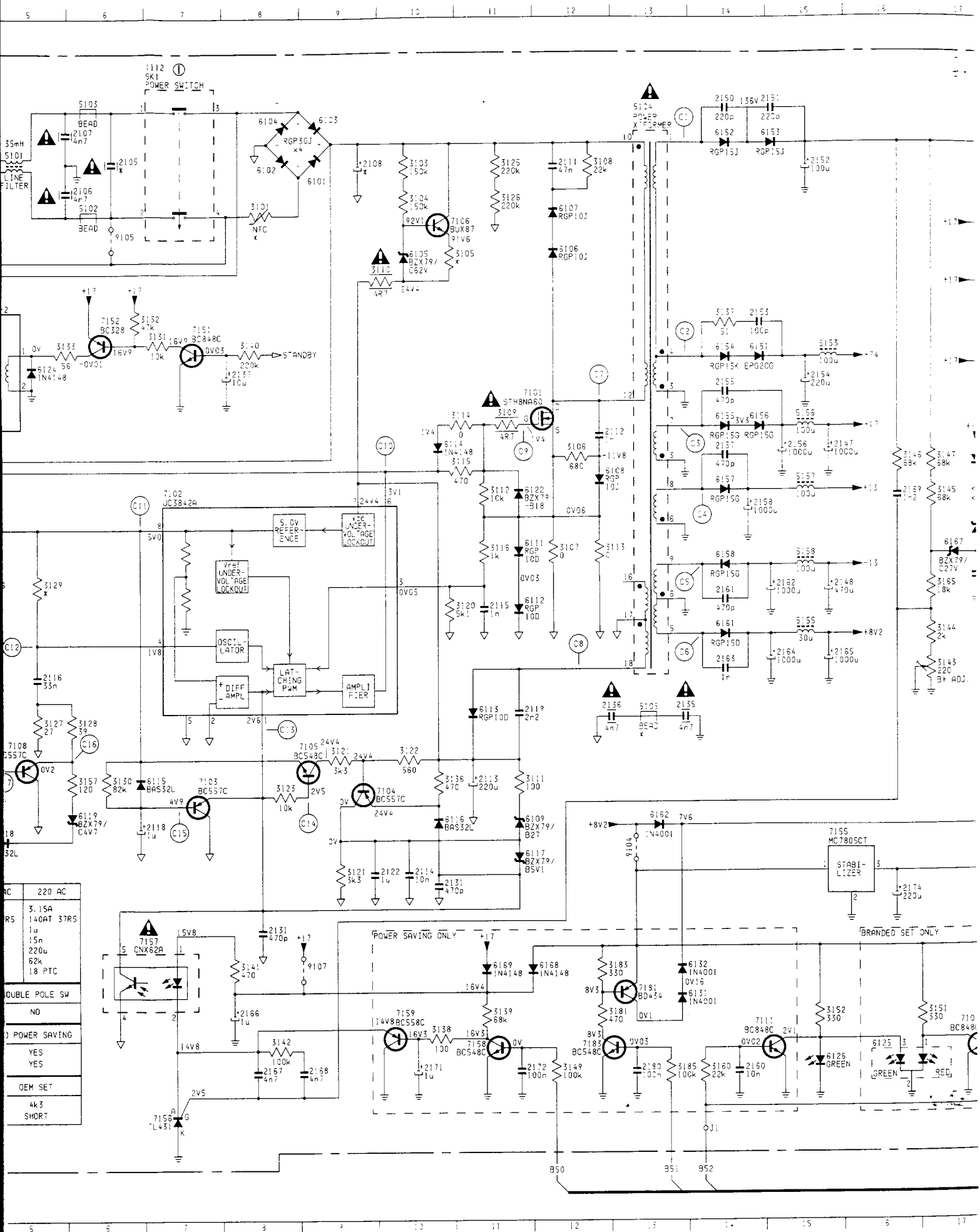
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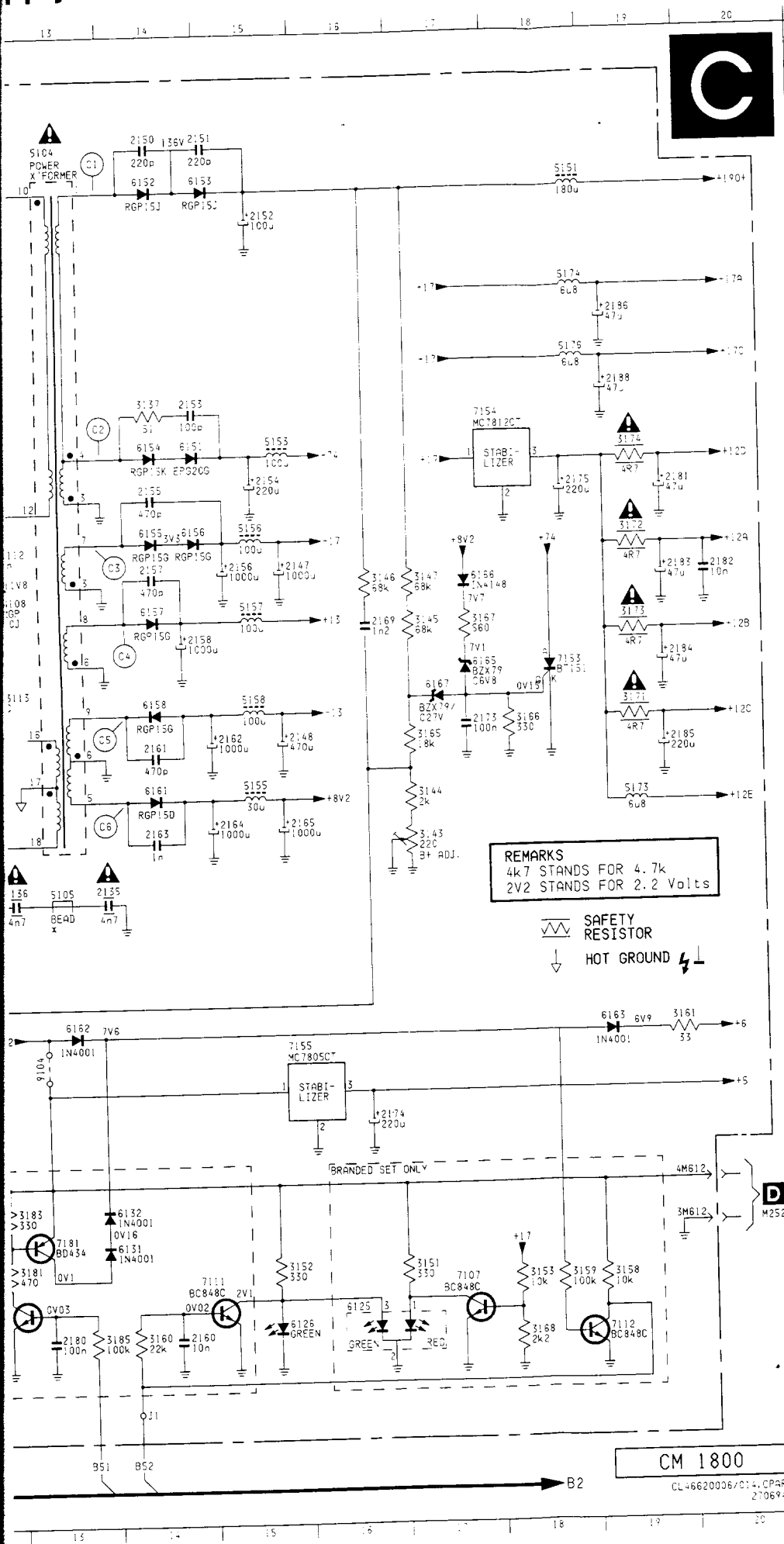


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2402	C 7	3422	E 4	3579	F30	3871	O24	7516	M26
2403	C 8	3423	F 5	3580	M10	3872	M25	7517	M29
2404	B 9	3424	F 5	3581	E25	3874	M25	7518	M26
2405	C 9	3425	F 6	3582	E24	3875	K27	7587	N 5
2406	A11	3426	D 5	3583	C32	3877	L13	7588	L 8
2407	C 6	3427	E 4	3584	A29	3878	N13	7589	L 5
2408	A11	3428	E 5	3585	A27	3879	M11	7591	M 4
2409	C 6	3429	F 8	3586	A27	3881	L12	7592	M 9
2411	F 4	3431	I 2	3587	N 7	3882	M11	7593	N 3
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2431	M 3	3453	L 3	3603	B18	3607	J30	7618	H31
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2608	I23	3503	H 9	3637	F21	3619	N 4		
2609	I22	3504	H 9	3638	J31	3619	N 4		
2610	C21	3506	H 9	3639	D 2	3601	A16		
2611	C23	3507	N14	3640	F20	3602	B17		
2612	C25	3508	I11	3642	H30	3603	H19		
2613	B25	3509	L15	3643	H20	3604	I19		
2614	B26	3510	L16	3644	I20	3605	B20		
2615	B27	3511	H12	3645	H21	3607	C24		
2616	E18	3512	H13	3646	H21	3608	B26		
2617	E19	3513	H15	3647	H22	3609	C26		
2618	I26	3514	L16	3648	H22	3610	C27		
2620	E21	3515	J15	3649	I27	3611	E19		
2621	D21	3516	K15	3650	I21	3612	D20		
2623	D22	3517	K15	3651	H22	3613	D23		
2624	F22	3518	K16	3652	K27	3614	E23		
2625	D24	3519	M14	3653	H23	3615	F23		
2626	F21	3520	L14	3656	C17	3616	J30		
2627	F21	3521	J14	3657	C16	3617	I31		
2628	J24	3522	K14	3658	K21	3618	I31		
2630	J29	3523	J12	3659	M22	3622	F20		
2631	H31	3524	J11	3660	K22	3624	C30		
2632	I29	3525	H11	3661	K20	3625	B30		
2633	I29	3527	H11	3662	K19	3626	B25		
2634	J31	3528	I10	3663	K19	3651	K25		
2635	C29	3529	J11	3664	K18	3652	O19		
2636	B29	3531	M33	3665	L19	3653	O17		
2637	J33	3533	N31	3666	B30	3654	O17		
2638	K15	3534	A30	3667	C29	7401	C 6		
2641	L33	3534	N31	3668	C29	7402	H 5		
2661	L19	3535	L32	3669	B29	7411	N16		
2662	L20	3536	L31	3670	K21	7412	A 8		
2855	N25	3537	M30	3680	K24	7413	B 9		
2858	L14	3538	N30	3688	J24	7414	N15		
2861	N10	3541	M28	3689	B29	7415	B 5		
2862	L11	3542	M28	3690	C29	7416	A14		
2863	O18	3543	N29	3691	G15	7417	B14		
2864	O22	3544	N29	3694	C26	7418	F 4		
2865	M19	3545	M27	3695	J15	7419	E 5		
3401	M17	3546	M27	3696	K33	7421	E 6		
3402	N16	3547	M27	3697	A29	7422	J 2		
3403	M16	3548	M27	3698	I30	7423	J 2		
3404	M15	3551	N26	3841	H28	7426	I 7		
3405	B 8	3552	M26	3853	N19	7428	L 3		
3406	C 8	3553	N27	3854	J10	7431	D26		
3407	C 9	3561	E31	3855	N19	7432	E25		
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3409	B 7	3563	F32	3857	M19	7434	F15		
3410	B11	3564	F32	3858	O18	7435	F16		
3411	B 6	3565	F32	3859	M19	7436	E29		
3412	C 4	3566	F30	3860	N20	7437	F30		
3413	B 5	3571	F28	3861	M22	7438	B23		
3414	B 5	3572	E28	3862	N21	7501	I12		
3415	B 5	3573	F29	3863	N21	7502	L15		
3416	B 4	3574	F29	3864	O20	7503	L16		
3417	B 4	3575	E28	3865	O20	7504	I 9		



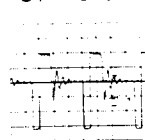
Power supply





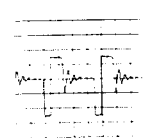
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1102	A 2	3160	N14
1107	D 1	3181	K19
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1112	A 7	3166	G18
2101	B 3	3167	F17
2102	B 3	3168	N18
2103	B 4	3171	G19
2105	B 6	3172	F19
2106	C 6	3173	F19
2107	B 6	3174	E19
2108	B 9	3181	M12
2110	J 4	3183	L12
2111	B12	3185	N13
2112	F12	35mH	B 5
2113	J11	3101	B 5
2114	K10	3102	C 6
2115	H11	3103	A 6
2116	I 5	3104	B13
2117	H 4	3105	L13
2118	K 7	3151	B18
2119	I11	3153	E15
2121	I 3	3155	H15
2122	K10	3156	E15
2131	K10	3157	F15
2131	L 8	3158	G15
2133	E 2	3173	H19
2135	I13	3174	C18
2136	I13	3176	D18
2137	E 8	3101	B 9
2147	F15	3102	B 8
2149	H15	3103	B 8
2150	A14	3104	B 8
2151	A15	3125	C10
2152	B15	3106	C12
2153	D14	3107	C12
2154	E15	3108	F12
2155	E14	3109	K11
2156	F15	3111	G11
2157	F14	3112	H11
2158	G14	3113	I11
2160	H14	3114	F10
2161	H14	3115	J 7
2162	H15	3116	K10
2163	I14	3117	K11
2164	H15	3118	K 5
2165	H15	3119	K 6
2168	M 8	3121	J 4
2167	N 8	3122	F11
2168	N 9	3124	E 5
2169	F18	3125	N16
2171	N10	3126	N15
2172	N11	3131	M13
2173	G17	3132	L13
2174	L16	3151	E14
2175	E18	3152	G14
2180	N13	3153	B15
2181	E19	3154	E14
2182	F15	3155	E14
2183	F19	3156	E14
2184	G19	3157	F14
2185	H19	3158	G14
2186	C19	3161	H14
2188	D19	3162	K13
3101	C 8	3163	K19
3102	B 3	3165	G17
3103	B10	3166	F17
3104	C10	3167	G17
3105	C11	3168	L12
3106	F12	3169	L11
3107	G12	3170	E12
3108	B12	3172	F 7
3109	E11	3173	J 7
3110	D10	3174	J 9
3111	J11	3175	J 9
3112	F11	3176	C10
3113	G12	3177	M17
3114	E11	3178	J 5
3115	F11	3179	J 4
3116	G11	3181	M15
3120	H11	3182	N19
3121	J 9	3183	D 7
3121	K 9	3184	D 6
3122	J10	3185	G18
3123	J 8	3186	D17
3125	B11	3187	K15
3126	C11	3188	N 7
3127	I 5	3189	L 7
3128	I 6	3190	M11
3129	H 5	3191	M10
3130	J 6	3192	M13
3131	D 7	3193	M12
3132	D 6	3194	E 3
3133	E 5	3195	E 4
3135	D 3	3196	K13
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3137	D14	3198	L 9
3138	M10		
3139	M11		
3140	E 8		
3141	L 8		
3142	M 8		
3143	I17		
3144	H17		
3145	F17		
3146	F16		
3147	F17		
3149	N12		
3151	M17		
3152	M15		
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3155	L 3		
3156	H 4		
3157	J 6		
3158	M19		

C1 5104-1



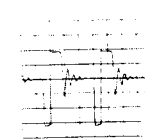
100V / div AC
10 μS / div

C2 5104-2



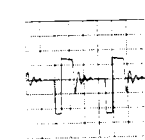
50V / div AC
10 μS / div

C3 5104-



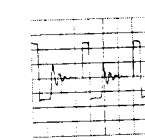
10V / div AC
10 μS / div

C4 5104-



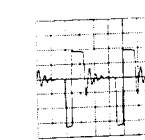
10V / div AC
10 μS / div

C5 5104



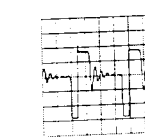
10V / div AC
10 μS / div

C6 5104



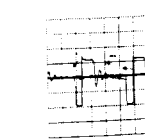
5V / div AC
10 μS / div

C7 5104



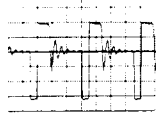
100V / div AC
10 μS / div

C8 5104

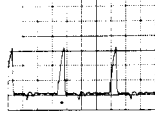


20V / div AC
10 μS / div

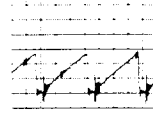
C1 5104-1

100V / div AC
10 μ S / div

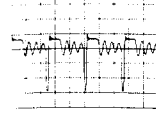
C9 7101-G

5V / div AC
10 μ S / div

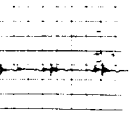
C17 7108-B

0.5V / div AC
10 μ S / div

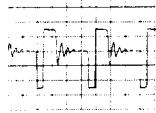
D1 5251-4

100V / div AC
10 μ S / div

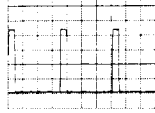
D6 7251-

1V / div AC
10 μ S / div

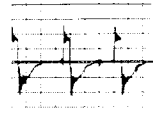
C2 5104-4

50V / div AC
10 μ S / div

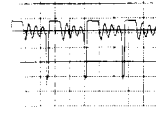
C10 7102-6

5V / div AC
10 μ S / div

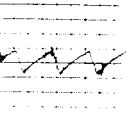
C18 7109-B

0.5V / div AC
10 μ S / div

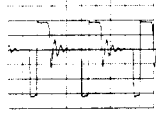
D2 5251-2

20V / div AC
10 μ S / div

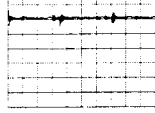
D7 7251-

1V / div AC
10 μ S / div

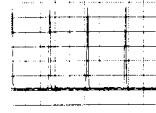
C3 5104-7

10V / div AC
10 μ S / div

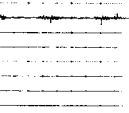
C11 7102-8

1V / div AC
10 μ S / div

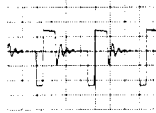
D3 7252-S

2V / div AC
10 μ S / div

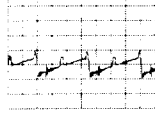
D8 7251-

1V / div AC
10 μ S / div

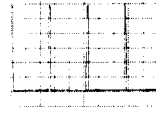
C4 5104-8

10V / div AC
10 μ S / div

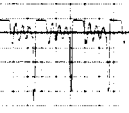
C12 7102-4

1V / div AC
10 μ S / div

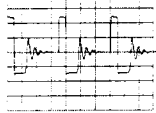
D4 7251-6

2V / div AC
10 μ S / div

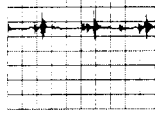
D9 5251-

10V / div AC
10 μ S / div

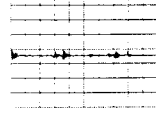
C5 5104-9

10V / div AC
10 μ S / div

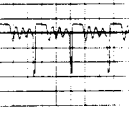
C13 7102-1

0.5V / div AC
10 μ S / div

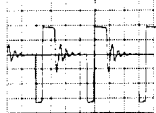
D5 7251-2

1V / div AC
10 μ S / div

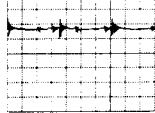
D10 5251-

20V / div AC
10 μ S / div

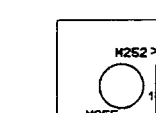
C6 5104-5

5V / div AC
10 μ S / div

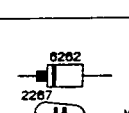
C14 7105-B

0.5V / div AC
10 μ S / div

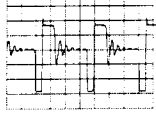
D6 7251-

1V / div AC
10 μ S / div

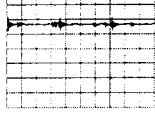
D7 7251-

20V / div AC
10 μ S / div

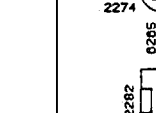
C7 5104-12

100V / div AC
10 μ S / div

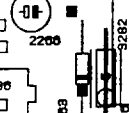
C15 7103-B

1V / div AC
10 μ S / div

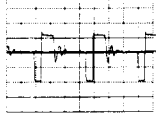
D8 7251-

1V / div AC
10 μ S / div

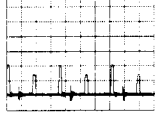
D9 7251-

20V / div AC
10 μ S / div

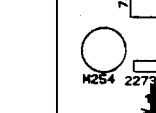
C8 5104-18

20V / div AC
10 μ S / div

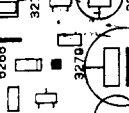
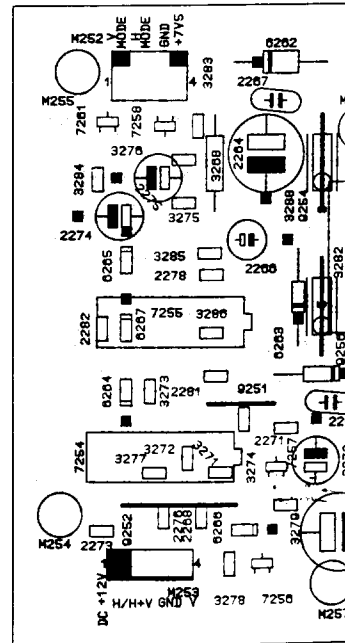
C16 7108-E

1V / div AC
10 μ S / div

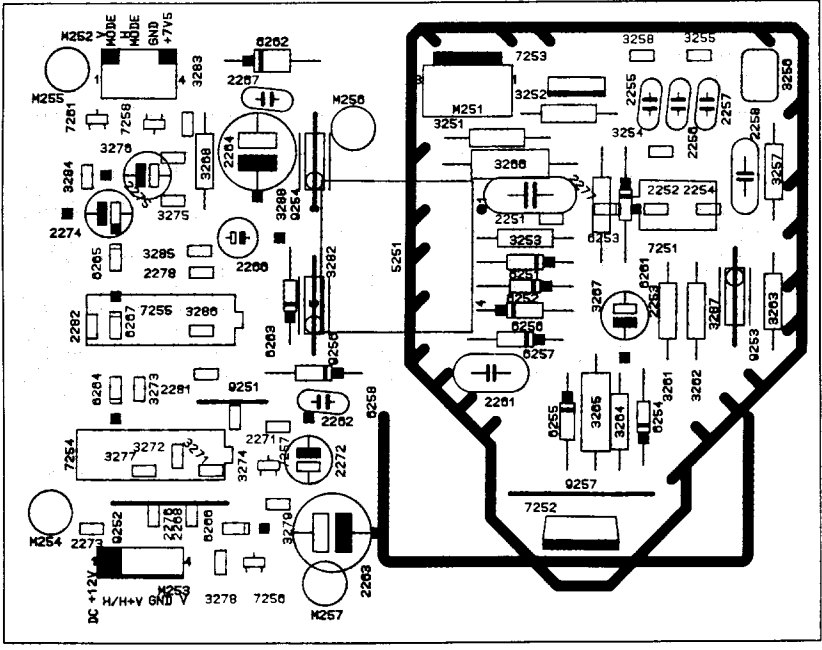
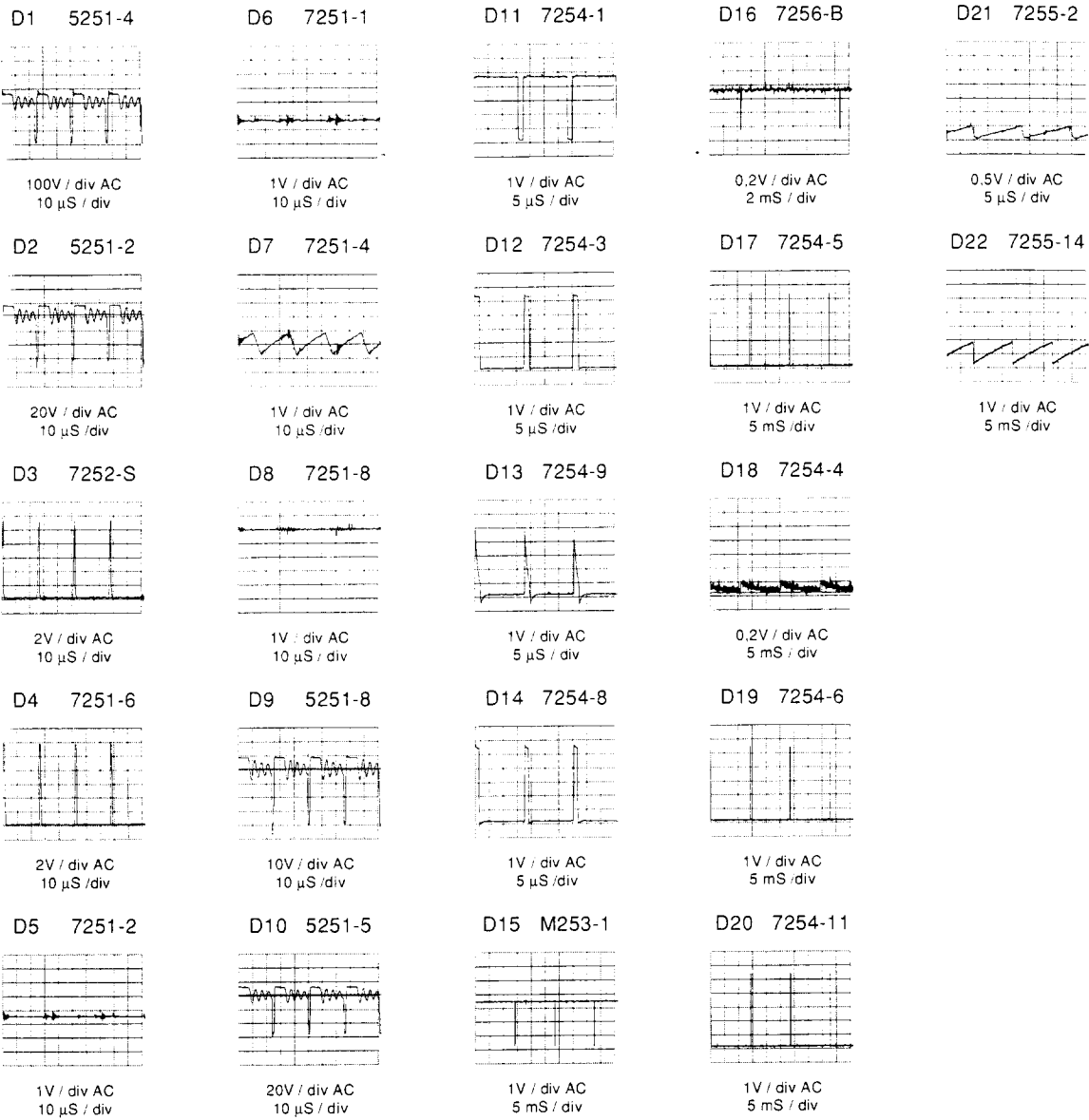
D10 7251-

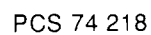
1V / div AC
10 μ S / div

D11 7251-

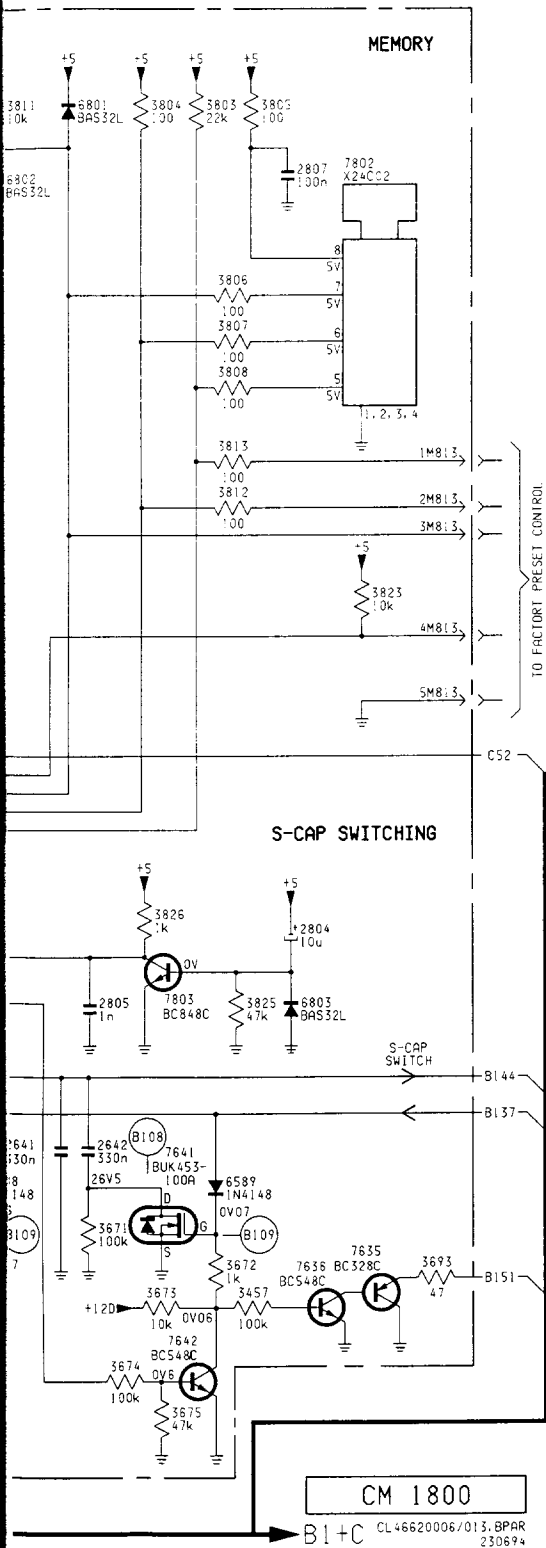
1V / div AC
10 μ S / div

Power saving panel (1110)



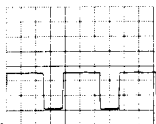


B2



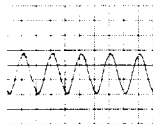
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1804 L 3
1805 L 4
2200 A 6
2201 B 3
2202 D 3
2203 C 4
2204 C 4
2205 C 7
2206 F 7
2220 F 8
2641 L 11
2642 L 12
2643 L 10
2644 L 8
2802 H 5
2803 I 7
2804 K 14
2805 K 12
2806 M 3
2807 E 14
3200 B 4
3201 C 3
3202 E 3
3203 B 3
3204 D 3
3205 C 7
3206 C 7
3207 C 8
3208 D 8
3210 A 5
3211 A 5
3457 N 13
3671 M 12
3672 M 13
3673 N 12
3674 N 12
3675 C 13
3676 M 10
3677 M 11
3678 N 11
3681 N 10
3682 C 11
3683 M 8
3684 M 7
3685 N 7
3686 N 8
3687 C 9
3693 M 15
3800 H 8
3801 H 7
3802 H 7
3803 D 13
3804 D 12
3805 D 13
3806 E 13
3807 F 13
3808 F 13
3811 D 11
3812 G 13
3813 G 13
3814 J 3
3815 J 3
3816 J 3
3817 J 4
3818 L 2
3819 L 2
3822 N 4
3824 M 4
3825 K 13
3826 K 12
3827 H 4
3828 H 3
3829 H 3
3830 H 3
3833 J 10
3836 J 11
3841 N 5
3842 N 5
3843 N 3
6201 A 4
6202 A 4
6203 A 4
6587 M 9
6588 M 11
6589 M 13
6801 D 12
6802 E 11
6803 K 14
7201 B 5
7635 M 14
7636 M 14
7641 L 13
7642 N 13
7643 L 11
7644 N 11
7645 L 9
7646 N 9
7801 I 4
7802 E 14
7803 K 12
9201 B 7
9202 E 7
9203 A 3

B111 7801-22



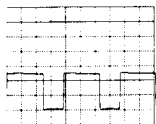
2V / div AC
5 μ S / div

B119 7801-31



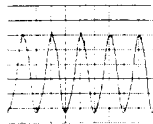
1V / div AC
50 nS / div

B112 7801-23



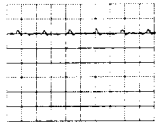
2V / div AC
5 μ S / div

B120 7801-32



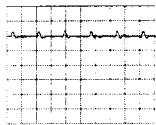
1V / div AC
50 nS / div

B113 7801-24



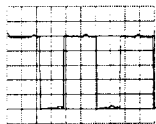
1V / div AC
10 μ S / div

B114 7801-25



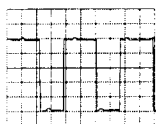
1V / div AC
10 μ S / div

B115 7801-26



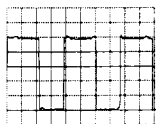
1V / div AC
10 μ S / div

B116 7801-27



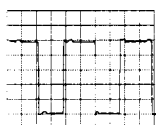
1V / div AC
10 μ S / div

B117 7801-28

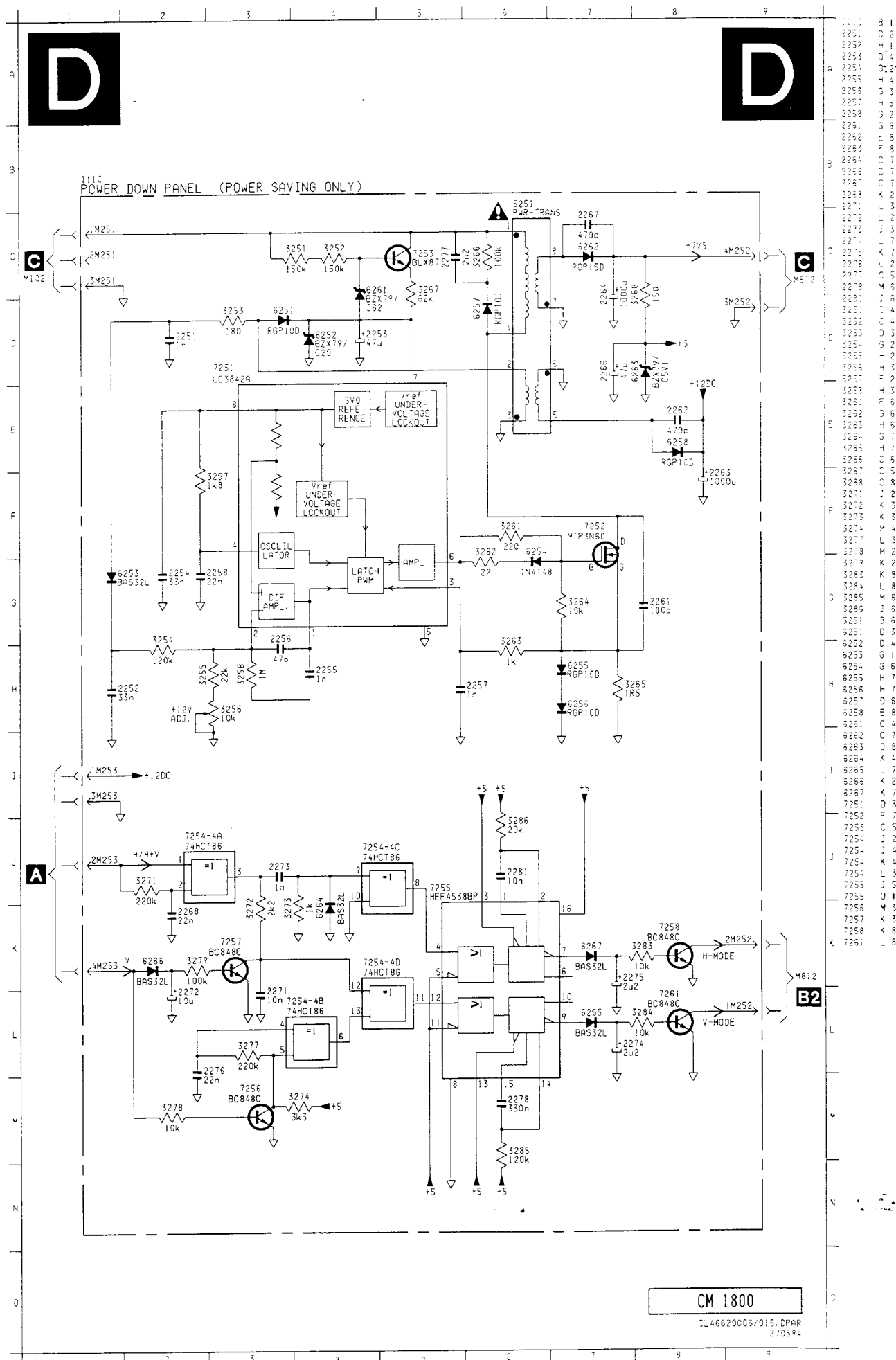


1V / div AC
10 μ S / div

B118 7801-29



1V / div AC
10 μ S / div



00. General :

When carry-out the electrical settings in many cases a video signal must be applied to the monitor. A computer with :

- ATI VGA 1024 V6-1.04/PH BETA 4" interface card
- PGA1024 (4822 212 30916)
- PGA1280 (4822 212 30917)

are used as the video signal source. The signal patterns are selected from the "service test software" package (see user guide 4822 727 19896).

01. With ATI card :

- Installation instruction for the ATI interface card :
- Place the monitor (if possible) in east-west direction.
- Place the ATI interface card into the computer.
- Select the "vsetup" file from the "utility disk" belonging to the card.
- Select "8 bits" or "16 bits" rom operation depending on your computer type.
- Select "analog monitor"
- Select the monitor type from video ROM BIOS.
- Select "MAGNAVOX CM5000" for the resolutions:

640 * 350 31.5 kHz/70 Hz
 640 * 400 31.5 kHz/70 Hz
 640 * 480 31.5 kHz/60 Hz
 640 * 480 37.8 kHz/60 Hz
 800 * 600 35.2 kHz/56 Hz
 800 * 600 37.8 kHz/60 Hz
 800 * 600 48.0 kHz/72 Hz
 1024 * 768 35.5 kHz/87 Hz
 1024 * 768 48.4 kHz/60 Hz
 1024 * 768 56.0 kHz/70 Hz

- Reboot your computer again.
- Put the floppy disk containing the service test software package in the computer and select the test pattern indicated for the service setting.

02. With normal VGA card :

If not using the ATI card during repair or alignment, The service engineer also can use this service test software adapting with normal standard VGA adaptor and using standard VGA mode 640 * 480, 31.5 kHz/60 Hz (only) as signal source.

03. AC/DC Measurement:

The measurements for AC waveform and DC figure is based on 1024 * 768, 56 kHz/70 Hz resolution mode with test pattern "gray scale".

1.0. B+ supply voltage (3143), Power saving (3256,+12V ADJ), EHT (3625).

- Apply a video signal in the 640 * 480 with 31.5 kHz/60Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness front control 3547 and the contrast front control 3563 to the minimum position.
- Pre-set trimming potentiometer 3143,3625 and 3256 in mid-position.
- Connect a dc voltmeter between the "+" pole of capacitor 2152 (on power supply) and ground (common ground).
- Set the B+ trimming potentiometer 3143 so that the reading on the dc voltmeter is 190 V +/- 0.5 Vdc.
- Connect a dc voltmeter between the "+" pole of capacitor 2263 (on power down panel) and ground (common ground).
- Set the trimming potentiometer 3256 so that the reading on the dc voltmeter is 12.0 +/- 0.1 Vdc.

2.0. Line frequency limit adjustment (3444)

- Set the brightness front control 3547 at center-click position and the contrast front control 3563 to the maximum position.

METHOD 1.

- Apply a video signal in the 1024 * 768 with 56 kHz/70 Hz mode
- Select the "cross-hatch" pattern.
- Connect a dc voltmeter between pin 10 of IC7402 and ground.
- Set the trimming potentiometer 3444 until the reading of dc voltmeter is 9.5 vdc.

METHOD 2.

- Apply a video signal in the 1280 * 1024 with 64 kHz/60 Hz mode. (with CHROMA 2000)
- Select the "cross-hatch" pattern.
- Connect an oscilloscope to pin 10 of IC7402
- Using pot-meter 3444, set the timing (duty-off pulse width) of pulse at pin 10 of IC 7402 to 1 uS.

CHROMA 2000 timing chart for 1280 * 1024 with 64 kHz/60 Hz

63.75 kHz/59.747 Hz PIXEL = 110.160 MHz

HORIZONTAL

VERTICAL

FRAME BORDER = 0.0000 us	FRAME BORDER = 0.0000 us
TOTAL SIZE = 15.686 us	TOTAL SIZE = 16.737 us
DISPLAY SIZE = 11.620 us	DISPLAY SIZE = 16.062 us
REAR PORCH = 1.997 us	REAR PORCH = 0.596 ms
SYNC WIDTH = 1.489 us	SYNC WIDTH = 0.047 ms
SYNC POLARITY = +/-	SYNC POLARITY = +/-

3.0. Horizontal synchronisation (3452)

- Set the brightness front control 3547 and the contrast front control 3563 to the maximum position.
- Set H-phase control at center position (OSD scale reach to 50).
- Apply a video signal in the 1024 * 768 with 56 kHz/70 Hz mode.
- Select the "cross-hatch" pattern.
- Turn off the power
- To connect pin 9 of IC 7401 (TDA4851) to ground.
- Apply the positive polarity H-SYNC through a 2k2 ohm resistor to the base of transistor 7426 (To connect a 2k2 ohm resistor between M402 pin 10 and the base of transistor 7426)
- Turn on the power.
- Adjust trimming potentiometer 3452 until the picture stands straight.
- Turn off the power.
- Remove the grounding from pin 9 of IC 7401.
- Remove the 2k2 resistor.
- Turn on the power.
- Adjust the raster centering by potmeter 3668 until raster located in the bazzle center (screen center).

4.0. High-voltage EHT (3625)

- Apply a video signal in the 1024 * 768 with 56 kHz/70 Hz mode.
- Select the "cross-hatch" pattern.
- Set the H-width control at minimum position (OSD scale reach to 0).
- Set the brightness front control 3547 and the contrast front control 3563 to the minimum position.
- Turn off the power.
- Connect a "high-voltage voltmeter" between the high-voltage connection of the picture tube and earth.
- Turn on the power.
- Set the EHT trimming potentiometer 3625 so that the "high-voltage voltmeter" reads 24.5KV +/- 0.2 KV.
- Turn off the power.
- Remove the "high-voltage voltmeter" from the picture tube.
- Turn on the power again.

5.0. Adjustment of pre-size (3648-H,3454-V)

5.1. Pre-sizing for H-Width (3648)

- Apply a video signal in the 640 * 480 with 35.0 kHz/67 Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness front control 3547 and contrast front control 3563 in the mechanical mid-position.
- Adjust the H-Width to maximum (OSD scale indicator reach to 100) by press key '+'.
- Adjust the sub H-Width control by potmeter 3648 untill the horizontal width reach to bezel (edge).

5.2. Pre-sizing for V-Size (3454)

- Apply a video signal in the 800 * 600 with 48 kHz/72 Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness front control 3547 and contrast front control 3563 in the mechanical mid-position.
- Adjust the V-Size to maximum (OSD scale indicator reach to 100) by press key '+'.
- Adjust the sub V-Size control by potmeter 3454 untill the vertical height reach to bezel (edge).

6.0. Focus setting

- Apply a video signal in the 800 * 600 with 48 kHz/72Hz mode.
- Select the "@" pattern.
- Set the brightness front control 3547 to mid-position and contrast front control 3563 to maximum position.
- Adjust focus potentiometer (top knob on the line output transformer) so that the picture at 2/3 of the diagonal lines (from center to four corners) of the displayed screen is as sharp as possible.

7.0. Adjustment of cut - off

- * VG2 (bottom knob on the line output transformer)
- * Cut-off points of the picture tube (3324, 3354, 3384)
- * White "D" (3303, 3363)
- Pre-set trimming potentiometers 3324, 3354, 3384 and 3303, 3363 to the mechanical mid-position.
- Apply a video signal in the 640 * 480 with 31.5 kHz/60 Hz mode.
- Select the full white pattern.
- Set the brightness front control 3547 to the center click position and contrast front control 3563 to the mechanical minimum position.
- Set VG2 potentiometer on the line output transformer to minimum position.
- Using the VG2 setting key, increase the VG2 voltage until a color is just visible (the colour may be red, green or blue).
- Then set the cut-off points trimming pot-meter belonging to the two colours not yet visible (3324, 3354 or 3384) so that an optimum white background (raster) color is obtained.
- Set the contrast front control 3563 to maximum in order to check that the background (raster) color remains the same even at maximum contrast.
- Then set the contrast front control 3563 to the central position again.

7.1. White "D" (3303, 3363)

- Set the contrast front control 3563 to maximum position.
- Set the brightness front control 3547 at center click position.
- Adjust potentiometer 3303, 3363 to the same light output level so that an optimal display color (White "D") is obtained.
- If necessary, adjust sub-contrast potentiometer 3562 for the optimal light output of the video display (until the brightness no longer increases).

8.0. Picture geometry setting (factory pre-set modes)

- Set brightness front control 3547 and the contrast front control 3563 in the mechanical central position.
- Apply a video signal with cross-hatch pattern.
- Turn off the power.

- To short M813 pin 3 and pin 5.
- Turn on the power.

8.1. Horizontal geometry (OSD control)

- Adjust the H-width to 260 mm.
- Adjust the H-phase to center position.

8.2. Vertical geometry (OSD control)

- Adjust vertical size to 195 mm.
- Adjust V-phase to center position.

8.3. Parallelo distortion (3882)

- Apply a video signal in the 1024 * 768 with 60 kHz/ 75Hz mode.
- Select the "cross-hatch" pattern.
- Adjust pot-meter 3882 to get optimum vertical line.

8.4. Unbalance-pincushion distortion (3887)

- Apply a video signal in the 1024 * 768 with 60 kHz/ 75 Hz mode.
- Select the "cross-hatch" pattern.
- Adjust pot-meter 3887 to get optimum vertical line.

8.5. Pincushion (OSD control)

- Adjust the pincushion to straight vertical lines of the left and right edge.

8.6. Trapezium (OSD control)

- Adjust the trapezium to get optimum vertical line.

8.7. Store the preset result by pressing the store key "I↵".

- Repeat procedure 8.1-8.2 and 8.5-8.7 until all the pre-set timing has been adjusted completely.
- Turn off the power.
- Remove the connection between M813 pin 3 and pin 5.
- Turn on the power.

8. Repair tips

Warning

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the unit via a wrist wrap with resistance.



Keep components and tools also at the same potential !

1. Servicing of SMDs (Surface Mounted Devices)

1.1 General cautions on handling and storage

- Oxidation on the terminals of SMDs results in poor soldering. Do not handle SMDs with bare hands.
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity.
The capacitance or resistance value of the SMDs may be affected by this.
- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

1.2 Removal of SMDs

- Heat the solder (for 2-3 seconds) at each terminal of the chip. By means of litz wire and a slight horizontal force, small components can be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 8.1A) or:
- While holding the SMD with a pair of tweezers, take it off gently using the soldering iron's heat applied to each terminal (see Fig. 8.1B).
- Remove the excess solder on the solder lands by means of litz wire or a solder sucker (see Fig. 8.1C).

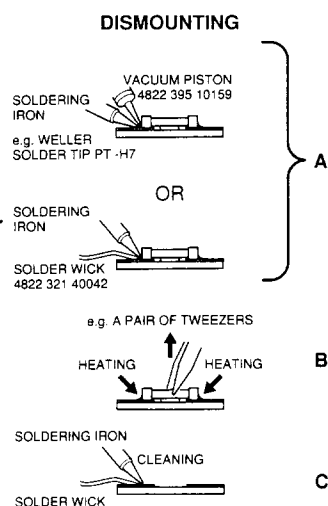


Fig. 8.1

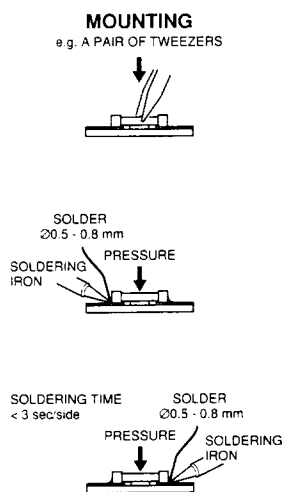


Fig. 8.2

Caution on removal:

- When handling the soldering iron, use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250°C).
- The chip, once removed, must **never** be reused.

1.3 Attachment of SMDs

- Locate the SMD on the solder lands by means of tweezers and solder the component on one side. Ensure that the component is positioned correctly on the solder lands (see Fig. 8.2A).
- Next complete the soldering of the terminals of the component (see Fig. 8.2B).

Caution when attaching SMDs:

- When soldering the SMD terminals, do not touch the directly with the soldering iron. The soldering should be done as quickly as possible; care must be taken to avoid damage to the terminals of the SMDs themselves.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250°C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used, but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional to the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 8.3).

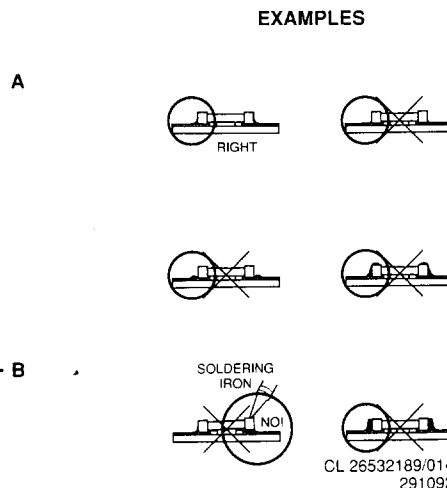
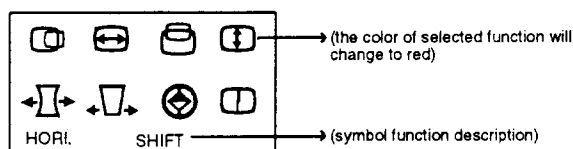


Fig. 8.3

The monitor is factory pre-set for the 7 video timings/mode.
(ref. Technical data)
In addition this monitor provides the ability to store 7
additional video timing/modes and related adjustments.

A) User Adjustments (for Factory pre-set modes and new modes)

- * Press knob ① to switch the monitor on.
- * Press $\triangleright$ and the following picture will be displayed :

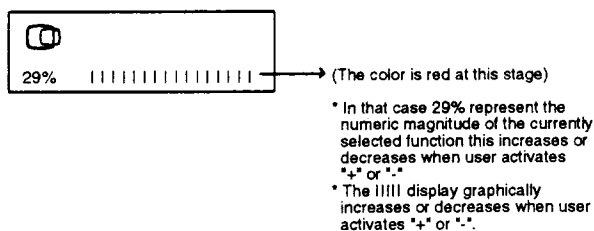


- * This picture will disappear after 20 seconds if no adjustment is performed.
- * Press "+" or "-" to select the item in the following order or backwards:

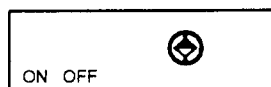
H-SHIFT<---->H-SIZE<---->V-SHIFT<---->V-SIZE<---->
PINCUSHION<---->TRAPEZOID<---->POWER SAVING
<---->DEGAUSSING

To perform adjustment:

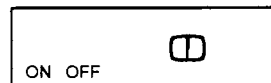
- * Press $\triangleright$ to confirm the selected item. After selection is done, only selected item remains visible together with magnitude indicators as shown below:



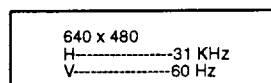
- * Press "+" or "-" to adjust the magnitude of the change.
- * Press $\triangleright$ the whole function symbols will show again, then you may perform other function adjustment.
- * If you select and confirm the "●" (power saving) item, then the following picture will be displayed.



- * Press "+" or "-" to select "ON" or "OFF". (the color of selected item is red)
- * If you select and confirm the "□" (Degauss) item, it will show Degaussing (active status) for 5 seconds then the following picture will be displayed:



- * After all the adjustments have been done, press $\triangleright$ to store the completed adjustment, then the following example picture will appear:



- * Above display will disappear automatically after about 2 seconds (standard time out).

B) Power Saver

- * In normal working conditions, Input signal is complete with its two synchronizations.
- * LED Light is Green, this is the **ON MODE**.
- * This monitor incorporates an energy saver feature which is activated by default, If one of the two following conditions is true:
 - One of the two synchronization signals is missing. Display is shut down after 5 seconds. LED Light blinks quickly, 0.25 second ON and 0.25 second OFF. This is the **SUSPEND** or **STAND-BY MODE**.
 - Both synchronization signals are missing. LED Light blinks slowly, 0.25 second ON and 1.75 second OFF. This is the **OFF MODE**.

- * When both synchronization signals are detected again display is activated back in **ON MODE**.
- * You may override the "Power Saving" function by pressing "+" and $\triangleright$.

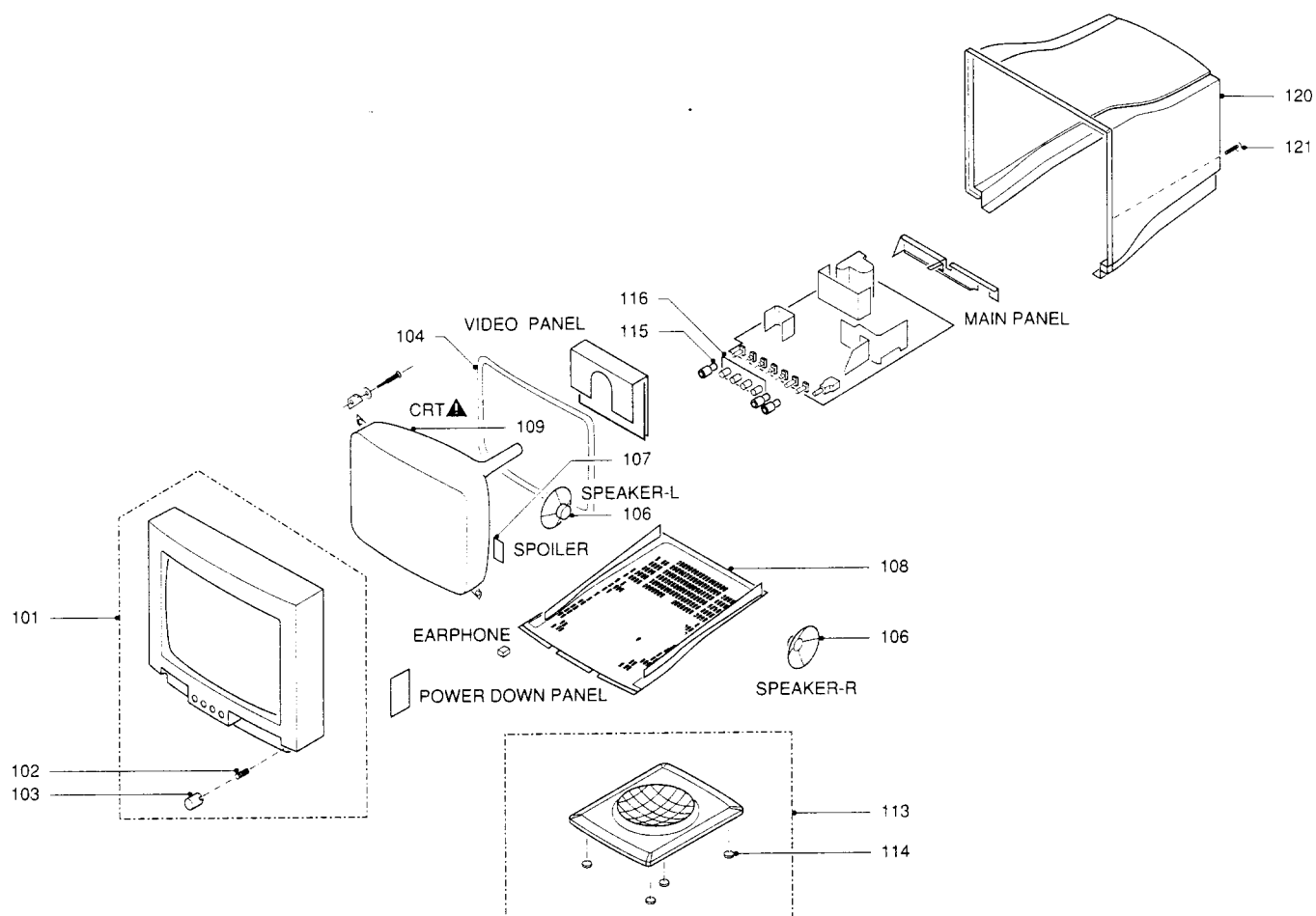
101

C) Other Features

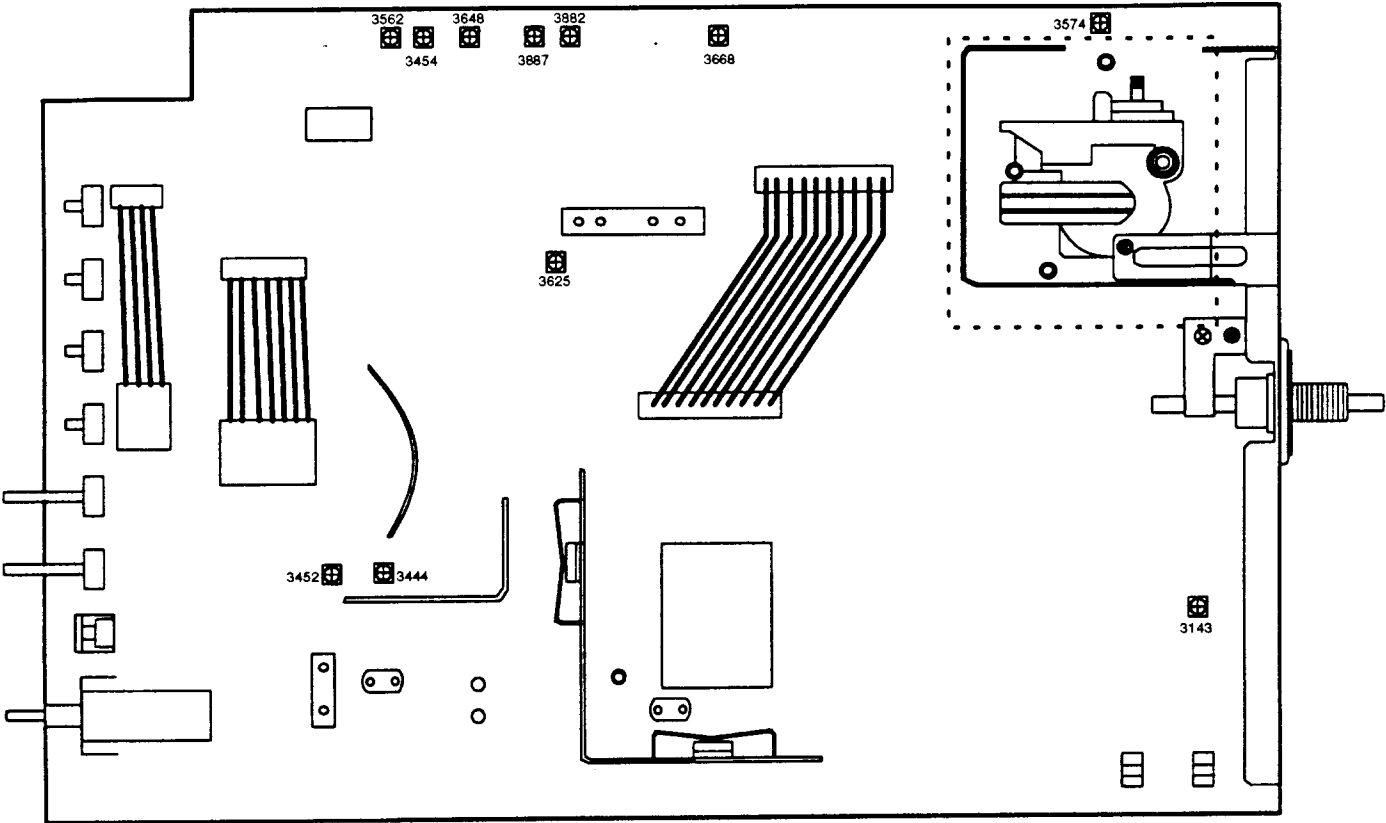
- * When using one of the video signals, You may recall factory pre-set adjustments by pressing "-" and $\triangleright$.
- * You also may want to keep the OSD menu active beyond its standard time-out of 2 seconds. To do this press "+" and "-" simultaneously instead of $\triangleright$.
- * To press "+" and "-" simultaneously again, it will show resolution and frequency pattern, but it will only show frequencies pattern if the timing is not a factory pre-set mode.
- * To stop OSD press "+" and "-" simultaneously again.

102
103

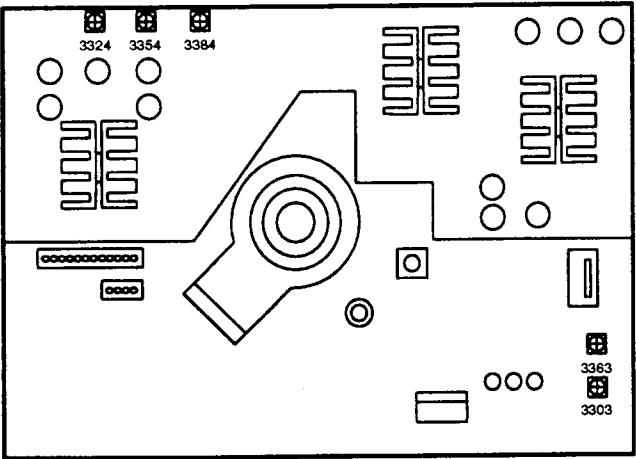
10. Spare parts list



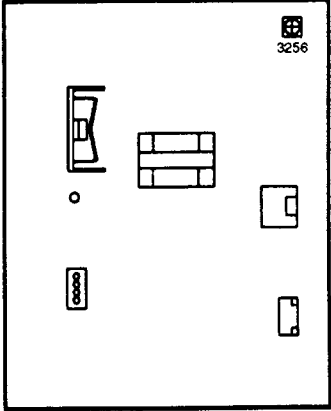
MAIN BOARD



VIDEO BOARD



POWER SAVING



6587 4822 130 30621 1N4148
6588 4822 130 30621 1N4148
6589 4822 130 30621 1N4148
6590 4822 130 80446 BAS32L
6591 4822 130 80446 BAS32L
6592 4822 130 80446 BAS32L
6593 4822 130 30621 1N4148
6601 4822 130 80446 BAS32L
6602 4822 130 80446 BAS32L
6603 4822 130 80446 BAS32L

6604 4822 130 30621 1N4148
6605 4822 130 80446 BAS32L
6607 4822 130 30621 1N4148
6608 4822 130 34278 BZX79-C6V8
6609 4822 130 34233 BZX79-C5V1
6610 4822 130 83539 EGP20G
6611 4822 130 42489 RGP10G
6612 4822 130 42489 RGP10G
6613 4822 130 83128 EGP30G
6614 4822 130 83128 EGP30G

6615 4822 130 82584 DTV32-1500B
6616 4822 130 83539 EGP20G
6617 4822 130 34233 BZX79-C5V1
6618 4822 130 34278 BZX79-C6V8
6622 4822 130 80877 BAV103
6624 4822 130 31607 RGP10D
6625 4822 130 31607 RGP10D
6626 4822 130 80446 BAS32L
6627 4822 130 80446 BAS32L
6801 4822 130 80446 BAS32L

6802 4822 130 80446 BAS32L
6803 4822 130 80446 BAS32L
6851 4822 130 34278 BZX79-C6V8
6852 4822 130 34278 BZX79-C6V8
6853 4822 130 80446 BAS32L
6854 4822 130 80446 BAS32L



7101 4822 130 63631 STH8NA60
7101 4822 130 63631 STH8NA60
7101 4822 130 63625 STP7NA60
7102 4822 209 83909 UC3842AN
7103 4822 130 42231 BC557C
7104 4822 130 42231 BC557C
7105 4822 130 44196 BC548C
7106 5322 130 44918 BUX87
7107 5322 130 42136 BC848C
7108 4822 130 42231 BC557C

7109 4822 130 44196 BC548C
7111 5322 130 42136 BC848C
7112 5322 130 42136 BC848C
7151 5322 130 42136 BC848C
7152 4822 130 44104 BC328
7154 4822 209 81726 MC7812CT
7155 4822 209 80891 MC7805CT
7156 4822 209 81397 TL431CLP
7157▲ 4822 130 80908 CNX62A
7158 4822 130 44196 BC548C

7159 5322 130 60068 BC558C
7181 4822 130 40995 BD434
7183 4822 130 44196 BC548C
7201 4822 209 31668 TD4A053
7401 4822 209 32284 TA84851V1E
7402 5322 209 10422 HEF4538BP
7411 5322 130 42136 BC848C
7412 5322 130 42136 BC848C
7413 5322 130 42136 BC848C
7414 5322 130 42136 BC848C

7415 4822 209 73852 PMBT2369
7416 4822 130 44196 BC548C
7417 5322 130 60068 BC558C
7418 5322 130 42136 BC848C
7419 5322 130 42136 BC848C
7421 5322 130 42136 BC848C
7422 5322 130 42136 BC848C
7423 5322 130 42136 BC848C
7426 4822 209 73852 PMBT2369
7428 4822 130 44104 BC328

7431 4822 130 42513 BC858C
7432 4822 130 42513 BC858C
7433 5322 130 42136 BC848C
7434 4822 209 73852 PMBT2369
7435 4822 209 73852 PMBT2369
7436 5322 130 42136 BC848C
7437 5322 130 42136 BC848C
7438 5322 130 42136 BC848C
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7502 5322 130 42136 BC848C

7503 5322 130 42136 BC848C
7504 4822 209 73852 PMBT2369
7512 5322 130 42136 BC848C
7513 5322 130 42136 BC848C

7514 4822 130 44461 BC546B
7516 4822 130 41646 BF423
7517 4822 130 44461 BC546B
7518 4822 130 44196 BC548C
7587 5322 130 42136 BC848C
7588 5322 130 42136 BC848C

7589 5322 209 10422 HEF4538BP
7591 5322 130 42136 BC848C
7592 5322 130 60068 BC558C
7593 4822 130 41594 PH2369
7601 5322 209 86234 NE5532N
7602 4822 209 80797 LM393N
7603 4822 209 80723 LM3080N
7604 4822 209 73852 PMBT2369
7605 5322 130 42136 BC848C
7608 4822 209 73852 PMBT2369

7611 4822 209 73852 PMBT2369
7612 4822 130 42513 BC858C
7613 4822 209 73852 PMBT2369
7614 4822 209 73852 PMBT2369
7615 4822 130 42513 BC858C
7616 5322 130 60068 BC558C
7617 4822 130 44196 BC548C
7618 5322 130 62262 IRF730
7621 4822 130 44196 BC548C
7622 5322 130 60068 BC558C

7623 5322 130 62262 IRF730
7624 4822 130 63081 BSN254A
7625 4822 130 63329 BU2525A
7626 4822 209 73852 PMBT2369
7631 4822 130 63274 2SC2344E
7632 4822 130 63275 2SA1011E
7633 4822 130 44104 BC328
7634 4822 130 44196 BC548C
7635 4822 130 44104 BC328
7636 4822 130 44196 BC548C

7641 4822 130 63131 BUK453-100A
7642 4822 130 44196 BC548C
7643 4822 130 63131 BUK453-100A
7644 4822 130 44196 BC548C
7645 4822 130 63131 BUK453-100A
7646 4822 130 44196 BC548C
7801 4822 209 33553 PCE84C886P/029
7802 4822 209 30976 ST24C02A
7802 4822 209 33643 ST24C02CB6 (ST)8P
7803 5322 130 42136 BC848C

7851 4822 130 44196 BC548C
7852 4822 209 31125 TEA2031A
7853 5322 209 86234 NE5532N
7854 4822 130 44196 BC548C
7855 4822 209 73852 PMBT2369
7856 4822 130 42513 BC858C

1103 Video Panel A

Various

4822 265 10274 F301; F302; F303
4822 265 41418 12P (M302)
4822 265 31206 4P (M303/M301)
4822 265 41416 7P (M305)
4822 255 70292 Socket for crt

1103▲ 4822 212 31451 Video panel

1106▲ 4822 526 20183 Spoiler



2301 4822 122 31797 22nF 10% 63V
2302 5322 122 31842 330pF 2% 63V
2303 4822 122 31767 150pF 2% 63V
2305 4822 122 32482 22pF 2% 63V
2306 4822 122 31971 10pF 2% 63V
2307 4822 122 31797 22nF 10% 63V
2308 4822 124 80606 1μF 20% 160V
2309 4822 122 31766 120pF 2% 63V
2311 4822 124 22499 10μF 160V
2312 4822 122 33968 1nF 5% 500V

2313 4822 252 60127 DSP201M
2331 4822 122 31797 22nF 10% 63V
2332 5322 122 31842 330pF 2% 63V
2334 4822 122 31768 180pF 2% 63V
2335 4822 122 32482 22pF 2% 63V
2336 4822 122 31971 10pF 2% 63V
2337 4822 122 31797 22nF 10% 63V
2338 4822 124 80606 1μF 20% 160V
2341 4822 124 22499 10μF 160V
2343 4822 252 60127 DSP201M

2361 4822 122 31797 22nF 10% 63V
2362 5322 122 31842 330pF 2% 63V
2364 4822 122 31768 180pF 2% 63V

2365 4822 122 32482 22pF 2% 63V
2366 4822 122 31971 10pF 2% 63V
2367 4822 122 31797 22nF 10% 63V
2368 4822 124 80606 1μF 20% 160V
2371 4822 124 22499 10μF 160V
2372 4822 122 33968 1nF 5% 500V
2373 4822 252 60127 DSP201M

2391 4822 122 31971 10pF 2% 63V
2392 4822 122 32482 22pF 2% 63V
2393 4822 122 31797 22nF 10% 63V
2394 4822 122 33496 100nF 10% 63V
2396 4822 122 33496 100nF 10% 63V
2399 4822 124 22686 10μF 16V
2701 4822 122 33496 100nF 10% 63V
2702 4822 122 33496 100nF 10% 63V
2703 4822 124 22681 47μF 20% 16V
2705 4822 121 43698 470nF 100V

2706 4822 124 42031 2.2μF 20% 25V
2707 4822 124 42031 2.2μF 20% 25V
2708 4822 124 22678 100μF 20% 16V
2711 4822 122 31727 470pF 2% 63V
2712 4822 122 32442 10nF 50V
2713 4822 122 33496 100nF 10% 63V
2714 4822 126 11456 330nF 10% 63V
2715 4822 126 11456 330nF 10% 63V
2716 4822 126 11456 330nF 10% 63V
2718 4822 126 11456 330nF 10% 63V

2751 4822 122 33968 1nF 5% 500V
2752 4822 122 32442 10nF 50V
2753 4822 124 42148 22μF 20% 100V
2754 4822 122 32442 10nF 50V
2755 4822 124 22686 10μF 16V
2756 4822 124 22686 10μF 16V
2757 4822 124 22686 10μF 16V
2758 4822 126 11456 330nF 10% 63V
2761 4822 124 42155 4.7μF 250V
2762 4822 122 32707 3.3nF 10% B 500V

2763 4822 122 32707 3.3nF 10% B 500V
2764 4822 122 33968 1nF 5% 500V
2765 4822 126 12651 10nF 20% 2K



3301 4822 051 10759 75Ω 2% 0.25W
3302 4822 051 10101 100Ω 2% 0.25W
3303 4822 100 11141 10k 30%lin 0.1W
3304 4822 051 10106 10M 5% 0.25W
3305 4822 051 10109 10Ω 2% 0.25W
3306 4822 051 10159 15Ω 2% 0.25W
3307 4822 051 10181 180Ω 2% 0.25W
3308 4822 050 21809 18Ω 1% 0.6W
3309 4822 051 10159 15Ω 2% 0.25W
3311 5322 116 51882 0Ω

3312 4822 050 26809 68Ω 1% 0.6W
3314 4822 051 10102 1k 2% 0.25W
3315 4822 050 24709 47Ω 1% 0.6W
3316 4822 050 24302 4k3 1% 0.6W
3317 4822 050 24303 4k3 1% 0.6W
3318 4822 117 11332 360Ω 5% 3W
3319 5322 116 51882 0Ω
3321 4822 117 11332 360Ω 5% 3W
3322 4822 051 10104 100k 2% 0.25W
3323 4822 116 52252 180k 5% 0.5W

3324 5322 100 11539 100k 30%lin 0.1W
3325 4822 051 10184 180k 2% 0.25W
3326 4822 050 12403 24k 1% 0.4W
3327 4822 111 50618 82Ω 10% 0.5W
3328 5322 116 51882 0Ω
3331 4822 051 10759 75Ω 2% 0.25W
3332 4822 051 10101 100Ω 2% 0.25W
3334 4822 051 10106 10M 5% 0.25W
3335 4822 050 21009 10Ω 1% 0.6W
3336 4822 051 10109 10Ω 2% 0.25W

3337 4822 051 10181 180Ω 2% 0.25W
3338 4822 050 21809 18Ω 1% 0.6W
3339 4822 051 10008 0Ω 5% 0.25W
3341 4822 051 10159 15Ω 2% 0.25W
3342 4822 050 26809 68Ω 1% 0.6W
3344 4822 051 10102 1k 2% 0.25W
3345 4822 051 10479 47Ω 2% 0.25W
3346 4822 050 24302 4k3 1% 0.6W
3347 4822 050 24303 4k3 1% 0.6W
3348 4822 117 11332 360Ω 5% 3W

3349 4822 051 10008 0Ω 5% 0.25W
3351 4822 117 11332 360Ω 5% 3W
3352 4822 051 10104 100k 2% 0.25W
3353 4822 051 10184 180k 2% 0.25W
3354 5322 100 11539 100k 30%lin 0.1W
3355 4822 116 52252 180k 5% 0.5W
3356 4822 050 12403 24k 1% 0.4W
3357 4822 111 50618 82Ω 10% 0.5W
3358 4822 051 10109 10Ω 2% 0.25W
3359 5322 116 51882 0Ω

3361 4822 051 10759 75Ω 2% 0.25W
3362 4822 051 10101 100Ω 2% 0.25W
3363 4822 100 11141 10k 30%lin 0.1W
3364 4822 051 10106 10M 5% 0.25W
3365 4822 050 21009 10Ω 1% 0.6W
3366 4822 051 10109 10Ω 2% 0.25W
3367 4822 051 10689 68Ω 2% 0.25W
3368 4822 050 21809 18Ω 1% 0.6W
3371 4822 051 10159 15Ω 2% 0.25W
3372 4822 050 26809 68Ω 1% 0.6W

3374 4822 051 10102 1k 2% 0.25W
3375 4822 051 10479 47Ω 2% 0.25W
3376 4822 050 24302 4k3 1% 0.6W
3377 4822 050 24303 4k3 1% 0.6W
3378 4822 117 11332 360Ω 5% 3W
3381 4822 117 11332 360Ω 5% 3W
3382 4822 051 10104 100k 2% 0.25W
3383 4822 051 10184 180k 2% 0.25W
3384 5322 100 11539 100k 30%lin 0.1W
3385 4822 116 52252 180k 5% 0.5W

3386 4822 050 22205 2M 2 1% 0.6W
3387 4822 111 50618 82Ω 10% 0.5W
3388 5322 116 51882 0Ω
3391 4822 051 10332 3k3 2% 0.25W
3392 4822 051 10332 3k3 2% 0.25W
3393 4822 050 22201 220Ω 1% 0.6W
3394 4822 051 10101 100Ω 2% 0.25W
3395 4822 051 20222 2k2 5% 0.1W
3396 4822 051 20222 2k2 5% 0.1W
3397 4822 051 10101 100Ω 2% 0.25W

3398 5322 116 51882 0Ω
3701 4822 051 20222 2k2 5% 0.1W
3702 4822 051 20222 2k2 5% 0.1W
3703 4822 116 52186 22Ω 5% 0.5W
3704 4822 116 52186 22Ω 5% 0.5W
3705 4822 051 10184 180k 2% 0.25W
3706 4822 051 10471 47Ω 2% 0.25W
3707 4822 051 10102 1k 2% 0.25W
3708 4822 051 10471 47Ω 2% 0.25W
3711 4822 051 10104 100k 2% 0.25W

3712 4822 051 10682 6k8 2% 0.25W
3713 4822 050 24702 4k7 1% 0.6W
3714 4822 051 10122 1k2 2% 0.25W
3715 4822 050 21802 1k8 1% 0.6W
3716 4822 051 10471 47Ω 2% 0.25W
3717 4822 051 10681 680Ω 2% 0.25W
3718 4822 051 10473 47k 2% 0.25W
3721 4822 051 10682 6k8 2% 0.25W
3722 4822 051 10472 4k7 2% 0.25W
3723 4822 051 10104 100k 2% 0.25W

3724 4822 051 10682 6k8 2% 0.25W
3725 4822 051 10472 4k7 2% 0.25W
3726 4822 051 10271 270Ω 2% 0.25W
3727 4822 051 10102 1k 2% 0.25W
3728 4822 050 21001 100Ω 1% 0.6W
3728 4822 050 21001 100Ω 1% 0.6W
3730 4822 111 90368 680k 2% 0.125W
3731 4822 050 11302 1k3 1% 0.4W
3732 4822 116 82963 39k 1%
3733 4822 051 10473 47k 2% 0.25W

3734 4822 051 20222 2k2 5% 0.1W
3735 4822 051 10683 68k 2% 0.25W
3736 4822 051 10471 47Ω 2% 0.25W
3737 4822 051 10562 5k6 2% 0.25W
3739 4822 051 10008 0Ω 5% 0.25W
3741 4822 051 10682 6k8 2% 0.25W
3742 4822 051 10472 4k7 2% 0.25W
3743 4822 050 21802 1k8 1% 0.6W
3745 5322 116 51882 0Ω
3747 5322 116 51882 0Ω

3749 5322 116 51882 0Ω
3750 4822 051 10008 0Ω 5% 0.25W
3751 4822 116 80542 82Ω 1W
3752 4822 050 24701 47Ω 1% 0.6W
3753 4822 050 21502 1k5 1% 0.6W
3754 4822 116 80548 15k 5% 0.5W
3755 4822 050 25601 560Ω 1% 0.6W
3761 5322 116 51882 0Ω

5301 4822 157 63863 3.9μH 10%
5302 4822 157 71199 10Ω
5341 4822 157 63863 3.9μH 10%
5342 4822 157 71199 10Ω
5361 4822 157 63863 3.9μH 10%
5362 4822 157 71199 10Ω
5391 4822 157 53189 5μH
5392 4822 157 63863 3.9μH 10%
5703 4822 157 52493 3.3μH
5704 4822 157 52493 3.3μH

5706 4822 157 63211 33μH

Spare parts list

			
6301	4822 130 30621	1N4148	
6302	4822 130 30842	BAV21	
6303	4822 130 80877	BAV103	
6341	4822 130 30621	1N4148	
6342	4822 130 80877	BAV103	
6343	4822 130 80877	BAV103	
6371	4822 130 30621	1N4148	
6372	4822 130 30842	BAV21	
6373	4822 130 80877	BAV103	
6391	4822 130 80446	BAS32L	
6392	4822 130 80446	BAS32L	
6701	4822 130 80446	BAS32L	
6702	4822 130 80655	BZX79-F2V4	
6704	4822 130 80446	BAS32L	
6705	4822 130 80446	BAS32L	
6706	4822 130 80446	BAS32L	
6707	4822 130 80446	BAS32L	
6751	4822 130 30861	BZX79-C7V5	
6752	4822 130 80446	BAS32L	
6753	4822 130 34174	BZX79-F4V7	
6754	4822 130 34173	BZX79-C5V6	
6755	5322 130 31969	RGP15G	
6756	5322 130 31969	RGP15G	
6757	4822 130 42489	BYD33G	
6758	4822 130 30621	1N4148	

			
7301	4822 209 32285	TDA4881/V1	
7311	4822 130 41594	PH2369	
7312	4822 130 62279	2SC3953E	
7313	4822 130 41646	BF423	
7341	4822 130 41594	PH2369	
7342	4822 130 62279	2SC3953E	
7343	4822 130 41646	BF423	
7361	4822 130 41594	PH2369	
7362	4822 130 62279	2SC3953E	
7363	4822 130 41646	BF423	

7391	4822 209 73852	PMBT2369	
7701	5322 209 11105	74HCT00N	
7702	5322 209 11473	74HCT86N	
7710	5322 130 42755	BC847C	
7711	5322 130 42136	BC848C	
7712	4822 130 60383	BF824	
7713	4822 209 73852	PMBT2369	
7714	5322 130 42136	BC848C	
7715	5322 130 42136	BC848C	
7716	4822 209 73852	PMBT2369	
7717	4822 209 73852	PMBT2369	
7719	5322 130 42136	BC848C	
7721	4822 209 73852	PMBT2369	
7722	5322 130 42136	BC848C	

1108 Headphone PanelB2

Various			
4822 267 31526	Earphone jack		

1110 Power Down Panel



Various			
4822 265 31206	4P (M253)		
4822 492 62076	Spring for transistors		
1110▲	4822 212 31468	Power down panel	

			
2251	5322 122 31647	1nF 10% 63V	
2252	4822 122 31981	33nF +0.5pF 50V	
2253	4822 124 80524	47µF 20% 35V	
2254	4822 122 31981	33nF +0.5pF 50V	
2255	5322 122 32331	1nF 10% 100V	
2256	4822 126 12726	47pF 5% 50V	
2257	5322 122 32331	1nF 10% 100V	
2258	4822 121 41856	22nF 5% 250V	
2261	4822 122 33654	100pF 1KV	
2262	4822 122 33646	470pF 10% 500V	
2263	4822 124 42172	1000µF 16V	
2264	4822 124 42172	1000µF 16V	
2266	4822 124 22681	47µF 20% 16V	
2267	4822 122 33646	470pF 10% 500V	
2268	4822 122 31797	22nF 10% 63V	
2271	4822 122 32442	10nF 50V	
2272	4822 124 22686	10µF 16V	
2273	5322 122 31647	1nF 10% 63V	

2274	4822 124 40763	2.2µF 100 V	
2275	4822 124 40763	2.2µF 100 V	
2276	4822 122 31797	22nF 10% 63V	
2277	4822 121 70492	2.2nF 5% 630V	
2278	4822 126 11456	330nF 10% 63V	
2281	4822 122 32442	10nF 50V	

			
3251	4822 050 21504	150k 1% 0.6W	
3252	4822 050 21504	150k 1% 0.6W	
3253	4822 050 21801	180Ω 1% 0.6W	
3254	4822 051 10124	120k 2% 0.25W	
3255	4822 051 10223	22k 2% 0.25W	
3256	4822 100 11141	10k 30%lin 0.1W	
3257	4822 116 80941	1k8 1%	
3258	4822 051 10105	1M 5% 0.25W	
3261	4822 116 52215	220Ω 5% 0.5W	
3262	4822 116 52186	22Ω 5% 0.5W	
3263	4822 050 11002	1k 1% 0.4W	
3264	4822 050 21003	10k 1% 0.6W	
3265	4822 117 11331	1Ω 5 5% 1W	
3266	4822 117 11206	100k 5% 2W	
3267	4822 050 26203	62k 1% 0.6W	
3268	4822 050 21501	150Ω 1% 0.6W	
3271	4822 051 10224	220k 2% 0.25W	
3272	4822 051 20222	2k2 5% 0.1W	
3273	4822 051 10102	1k 2% 0.25W	
3274	4822 051 10332	3k3 2% 0.25W	
3277	4822 051 10224	220k 2% 0.25W	
3278	4822 051 10103	10k 2% 0.25W	
3279	4822 051 10104	100k 2% 0.25W	
3283	4822 051 10103	10k 2% 0.25W	
3284	4822 051 10103	10k 2% 0.25W	
3285	4822 051 10124	120k 2% 0.25W	
3286	4822 051 10203	20k 2% 0.25W	

			
5251▲	4822 148 81388	Transformer	

			
6251	4822 130 31607	RGP10D	
6252	4822 130 34499	BZX79-C20	
6253	4822 130 80446	BAS32L	
6254	4822 130 30621	1N4148	
6255	4822 130 31607	RGP10D	
6256	4822 130 31607	RGP10D	
6257	4822 130 31393	RGP10J	
6258	4822 130 31607	RGP10D	
6261	4822 130 34384	BZX79-C62	
6262	5322 130 31971	RGP15D	
6263	4822 130 34233	BZX79-C5V1	
6264	4822 130 80446	BAS32L	
6265	4822 130 80446	BAS32L	
6266	4822 130 80446	BAS32L	
6267	4822 130 80446	BAS32L	

			
7251	4822 209 83909	UC3842AN	
7252	4822 130 62753	MTP3N60	
7253	5322 130 44918	BUX87	
7254	5322 209 11473	74HCT86N	
7255	5322 209 10422	HEF4538BP	
7256	5322 130 42136	BC848C	
7257	5322 130 42136	BC848C	
7258	5322 130 42136	BC848C	
7261	5322 130 42136	BC848C	

Spare parts list

Parts indicated on exploded view

4822 381 11548	Lens of led
▲ 4822 265 31077	AC inlet
▲ 4822 462 71981	Cap for power switch
▲ 4822 466 93161	Isolation plate (item 6615,7618)
▲ 4822 276 12445	Power switch
101 4822 430 10488	Front cabinet for 00T/05T/06T
101 4822 430 10489	Front cabinet for 74T/75T/97T
102 4822 492 71454	Spring power knob
103 4822 410 62721	Power knob
104 ▲ 4822 157 70694	Degaussing coil /00T/05T/06T/75T
104 ▲ 4822 157 70729	Degaussing coil /74T/97T
106 4822 240 30642	Loudspeaker right/left
107 4822 526 20183	Spoiler
108 4822 432 11185	Bottom plate
109 ▲ 4822 131 20589	CRT, M36KPC030X01
109 ▲ 4822 131 20617	CRT, M36KPC030X01(S) for /75T
113 4822 462 10583	Pedestal complete
114 4822 462 42033	Pad for pedestal
115 4822 413 41868	Control knob
116 4822 413 41869	OSD control
120 4822 438 10429	Rear cover
121 4822 502 21238	Screw for rear cover

Accessoires

4822 263 50216	Adaptor 9-AVmac-000
4822 736 53922	Direction for use (multi language)
4822 736 53984	Direction for use 00T/05T/06T/75T
4822 736 53993	Direction for use 97T
4822 736 53992	Direction for use 74T
4822 321 62108	Interface cable audio
4822 321 62602	Interface cable
1109▲4822 321 10921	Power cord /97T
1109▲4822 321 22552	Power cord /74T
1109▲4822 321 10998	Power cord /75T
1109▲4822 321 11023	Power cord /05T
1109▲4822 321 10989	Power cord /06T
1109▲4822 701 13179	Power cord /00T

1102 Main Panel B1 B2 C

Various

4822 267 31525	2P Cinch
4822 265 10286	2P (M204)
4822 267 31527	2P (M203)
▲ 4822 265 20604	2P (M104)
▲ 4822 265 30375	4P (M501)
4822 265 41417	7P (M205)
4822 492 71345	Fixing Spring (Item 7623)
4822 492 62076	Fixing spring (Item 6615,7618,7625)
4822 276 13467	Switch 1802...1805
1101▲4822 253 50145	Fuse (3,15A)
1111▲4822 280 70378	Relay
1801 4822 242 81785	Crystal 10MHz

-II-

2101▲4822 122 33441	1μF 20% B 400V
2102▲4822 122 33441	1μF 20% B 400V
2103 5322 121 44212	1μF 10% 275V
2105▲4822 121 70454	15nF 20% 250V
2106 4822 122 33535	4,7nF 20% 400V
2107▲4822 122 33535	4,7nF 20% 400V
2108 4822 124 80532	220μF 20% 400V
2108 4822 124 42168	330μF 400V
2110 4822 121 70495	10nF 2% 100V
2111 4822 121 43516	47nF 400V
2112 4822 122 33352	1nF 10% 1KV
2113 4822 124 42173	220μF 35V
2114 4822 122 32442	10nF 50V
2115 5322 122 31647	1nF 10% 63V
2116 4822 126 13316	33nF 100V
2117 4822 122 33496	100nF 10% 63V
2118 4822 124 22669	1μF 20% 50V
2119 4822 126 10206	2,2nF 10% 500V
2121 4822 122 30031	820pF 10% 500V

2122 4822 124 22669	1μF 20% 50V
2131 4822 122 31727	470pF 2% 63V
2133▲4822 121 51626	47nF 10% 250V
2134 4822 122 32442	10nF 50V
2135▲4822 122 33535	4,7nF 20% 400V
2136▲4822 122 33535	4,7nF 20% 400V
2147 4822 124 40214	1000μF 20% 25V
2148 4822 124 42144	470μF 63V
2150 4822 126 13202	220pF 10% 2KV
2151 4822 126 13202	220pF 10% 2KV
2152 4822 124 80834	100μF 20% 250V
2153 4822 122 33654	100pF 1KV
2154 4822 124 80538	220μF 20% 100V
2155 4822 122 33646	470pF 10% 500V
2156 4822 124 40214	1000μF 20% 25V
2157 4822 122 33646	470pF 10% 500V
2158 4822 124 40214	1000μF 20% 25V
2160 4822 122 32442	10nF 50V
2161 4822 122 33646	470pF 10% 500V
2162 4822 124 40214	1000μF 20% 25V
2163 5322 122 32331	1nF 10% 100V
2164 4822 124 42172	1000μF 16V
2165 4822 124 42172	1000μF 16V
2166 4822 124 22669	1μF 20% 50V
2167 4822 122 31784	4,7nF 10% 50V
2168 4822 122 31784	4,7nF 10% 50V
2169 4822 126 13247	1,2nF 10% 500V
2171 4822 124 22669	1μF 20% 50V
2172 4822 122 33496	100nF 10% 63V
2174 5322 124 41817	220μF 16V
2175 5322 124 41817	220μF 16V
2180 4822 122 33496	100nF 10% 63V
2181 4822 124 22681	47μF 20% 16V
2182 4822 122 32442	10nF 50V
2183 4822 124 22681	47μF 20% 16V
2184 4822 124 22681	47μF 20% 16V
2185 5322 124 41817	220μF 16V
2186 4822 124 80132	47μF 20% 25V
2188 4822 124 80132	47μF 20% 25V
2200 4822 124 42172	1000μF 16V
2201 4822 122 33496	100nF 10% 63V
2202 4822 122 33496	100nF 10% 63V
2203 5322 122 31647	1nF 10% 63V
2204 5322 122 31647	1nF 10% 63V
2205 4822 121 43696	100nF 100V
2206 4822 121 43696	100nF 100V
2220 4822 124 22681	47μF 20% 16V
2402 4822 121 70493	5,6nF 5% 100V
2403 4822 121 43713	330nF 100V
2404 4822 122 31981	33nF +0,5pF 50V
2405 4822 121 70495	10nF 2% 100V
2406 4822 122 32442	10nF 50V
2407 4822 124 42031	2,2μF 20% 25V
2408 4822 122 32442	10nF 50V
2409 5322 124 41817	220μF 16V
2411 4822 124 41659	4,7μF 20% 25V
2412 4822 122 31772	47pF 2% 63V
2413 4822 121 70106	100nF 5% 100V
2414 4822 121 43699	220nF 100V
2415 4822 121 43693	10nF 100V
2416 4822 122 33481	1800pF 2% 63V
2418 4822 124 41659	4,7μF 20% 25V
2419 4822 122 33496	100nF 10% 63V
2420 4822 122 31746	1000pF 2% 63V
2422 4822 124 41659	4,7μF 20% 25V
2423 4822 122 32442	10nF 50V
2424 4822 124 42031	2,2μF 20% 25V
2425 4822 124 22669	1μF 20% 50V
2426 4822 122 33496	100nF 10% 63V
2427 4822 124 42359	47μF 100V
2429 4822 124 22681	47μF 20% 16V
2431 4822 124 22681	47μF 20% 16V
2432 4822 122 33496	100nF 10% 63V
2433 4822 122 33496	100nF 10% 63V
2441 4822 124 22686	10μF 16V
2501 4822 124 22669	1μF 20% 50V
2502 4822 124 42031	2,2μF 20% 25V
2503 4822 124 40198	470μF 20% 16V
2504 4822 124 40255	100nF 20% 63V
2505 4822 121 43696	100nF 100V
2506 4822 124 40198	470μF 20% 16V
2507 4822 126 12038	68pF 2% 63V
2511 4822 124 22681	47μF 20% 16V
2514 4822 122 31784	4,7nF 10% 50V
2515 4822 122 31797	22nF 10% 63V
2516 4822 121 43697	330nF 10% 100V
2517 4822 126 12038	68pF 2% 63V
2518 4822 122 32442	10nF 50V
2521 4822 122 31965	220pF 2% 63V
2522 4822 122 31965	220pF 2% 63V
2531 4822 121 40336	47nF 10% 250V
2532 4822 124 42155	4,7μF 250V

2533 4822 124 42155	4,7μF 250V
2534 4822 126 11455	560pF 10% 2KV
2535 4822 124 42136	10μF 25V
2571 4822 121 47179	1μF 10% 100V
2587 4822 124 22686	10μF 16V
2588 4822 122 33496	100nF 10% 63V
2589 4822 126 10324	33pF 2% 63V
2591 4822 122 32482	22pF 2% 63V
2592 4822 122 31771	390pF 2% 63V
2600 4822 122 33481	1800pF 2% 63V
2601 5322 122 32336	560pF 10% 100V
2602 4822 122 31981	33nF +0,5pF 50V
2604 4822 122 33496	100nF 10% 63V
2605 4822 121 43693	10nF 100V
2606 4822 122 31773	560pF 2% 63V
2608 4822 122 33481	1800pF 2% 63V
2609 4822 124 42031	2,2μF 20% 25V
2610 4822 122 31784	4,7nF 10% 50V
2611 4822 124 22669	1μF 20% 50V
2612 4822 124 80132	47μF 20% 25V
2613 4822 121 43696	100nF 100V
2614 4822 121 43918	100nF 10% 400V
2615 4822 124 42161	33μF 20% 250V
2616 4822 124 41867	1μF 20% 250V
2617 4822 121 43695	47nF 10% 100V
2618 5322 122 31647	1nF 10% 63V
2620 4822 126 11454	470pF 2KV
2621 4822 126 11454	470pF 2KV
2623 4822 121 70491	6,8nF 5% 630V
2624 4822 126 12096	4,7nF 5% 1,6KV
2625 4822 121 70504	1,5μF 5% 250V
2626 4822 122 33968	1nF 5% 500V
2627 4822 122 33968	1nF 5% 500V
2628 4822 124 22681	47μF 20% 16V
2630 4822 126 13249	150pF 10% 500V
2631 4822 121 43918	100nF 10% 400V
2632 4822 121 43696	100nF 100V
2633 4822 121 43699	220nF 100V
2634 4822 121 70301	1μF 100V
2635 4822 124 22686	10μF 16V
2636 4822 124 22686	10μF 16V
2637 4822 126 13248	1,8nF 10% 500V
2638 4822 122 33496	100nF 10% 63V
2641 4822 121 70448	330nF 5% 250V
2642 4822 121 70448	330nF 5% 250V
2643 4822 121 70243	820nF 5% 250V
2644 4822 121 70489	5nF 5% 250V
2661 4822 124 22686	10μF 16V
2662 4822 124 42031	2,2μF 20% 25V
2802 4822 122 33496	100nF 10% 63V
2803 4822 122 33496	100nF 10% 63V
2804 4822 124 22686	10μF 16V
2805 5322 122 31647	1nF 10% 63V
2806 4822 122 32442	10nF 50V
2807 4822 122 33496	100nF 10% 63V
2855 4822 122 31965	220pF 2% 63V
2858 4822 124 41659	4,7μF 20% 25V
2861 4822 124 22686	10μF 16V
2862 4822 124 22686	10μF 16V
2863 4822 124 22679	22μF 20% 16V
2864 4822 124 42031	2,2μF 20% 25V
2865 4822 124 22686	10μF 16V
3101 4822 116 30425	7Ω 15%
3102▲4822 053 21334	330k 5% 0,5W
3103 4822 050 21504	150k 1% 0,6W
3104 4822 050 21504	150k 1% 0,6W
3105 4822 050 25603	56k 1% 0,6W
3105 4822 050 26203	62k 1% 0,6W
3106 4822 116 80572	680Ω 10% 3W
3107 4822 116 82453	0Ω 43,5%
3108 4822 113 80608	22k 5W
3109▲4822 052 10478	4Ω 7,5% 0,33W
3110▲4822 052 10478	4Ω 7,5% 0,33W
3111 4822 051 10101	100Ω 2% 0,25W
3112 4822 050 21003	10k 1% 0,6W
3113 4822 116 82453	0Ω 5%
3114 5322 116 51882	0Ω
3115 4822 050 24701	470Ω 1% 0,6W
3116 4822 050 11002	1k 1% 0,4W
3120 4822 051 10512	5k1 2% 0,25W
3121 4822 051 10332	3k3 2% 0,25W
3122 4822 050 15601	560Ω 1% 0,4W
3125 4822 050 22204	220k 1% 0,6W
3126 4822 050 22204	220k 1% 0,6W
3127 4822 051 10279	27Ω 2% 0,25W
3128 4822 051 10399	39Ω 2% 0,25W
3129 4822 050 23602	3k6 1% 0,6W
3130 4822 051 10823	82k 2% 0,25W
3131 4822 051 10103	10k 2% 0,25W
3132 4822 050 24703	47k 1% 0,6W

3133	4822 050 25609	56Ω 1% 0.6W
3135	4822 116 40265	12Ω PTC 25% 276V
3135	4822 116 40209	18Ω
3136	4822 050 24701	470Ω 1% 0.6W
3137	4822 050 15119	51Ω 1% 0.4W
3138	4822 051 10101	100Ω 2% 0.25W
3139	4822 051 10683	68k 2% 0.25W
3140	4822 116 81849	220k 5%
3141	4822 050 24701	470Ω 1% 0.6W
3142	4822 051 10104	100k 2% 0.25W
3143	4822 100 11562	220Ω 30%
3144	4822 050 12002	2k 1% 0.4W
3145	4822 116 82967	68k 0.125
3146	4822 050 26803	68k 1% 0.6W
3147	4822 116 82967	68k 0.125
3149	4822 116 52234	100k 5% 0.5W
3151	4822 050 23301	330Ω 1% 0.6W
3152	4822 050 23301	330Ω 1% 0.6W
3153	4822 050 21003	10k 1% 0.6W
3154	4822 051 10102	1k 2% 0.25W
3155	4822 050 11002	1k 1% 0.4W
3156	4822 050 28202	8k2 1% 0.6W
3157	4822 051 51201	120Ω 1% 0.125W
3158	4822 050 21003	10k 1% 0.6W
3159	4822 116 52234	100k 5% 0.5W
3161	4822 116 83004	33Ω 10% 0.5W
3165	4822 050 21803	18k 1% 0.6W
3168	4822 051 20222	2k2 5% 0.1W
3171▲	4822 052 10478	4Ω 7 5% 0.33W
3172▲	4822 052 10478	4Ω 7 5% 0.33W
3173▲	4822 052 10478	4Ω 7 5% 0.33W
3174▲	4822 052 10478	4Ω 7 5% 0.33W
3181	4822 050 24701	470Ω 1% 0.6W
3183	4822 050 23301	330Ω 1% 0.6W
3185	4822 116 52234	100k 5% 0.5W
3200	4822 100 90082	20k 20%
3201	4822 051 10223	22k 2% 0.25W
3202	4822 051 10223	22k 2% 0.25W
3203	4822 051 10273	27k 2% 0.25W
3204	4822 051 10273	27k 2% 0.25W
3205	4822 050 21009	10Ω 1% 0.6W
3206	4822 050 21009	10Ω 1% 0.6W
3207	4822 050 27509	75Ω 1% 0.6W
3208	4822 050 27509	75Ω 1% 0.6W
3210	4822 050 22208	2Ω 2 1% 0.6W
3211	4822 050 22208	2Ω 2 1% 0.6W
3401	4822 116 81849	220k 5%
3402	4822 051 10104	100k 2% 0.25W
3403	4822 051 10223	22k 2% 0.25W
3404	4822 050 22203	22k 1% 0.6W
3405	4822 051 10912	9k1 2% 0.25W
3406	4822 051 20222	2k2 5% 0.1W
3407	4822 051 10102	1k 2% 0.25W
3408	4822 051 10104	100k 2% 0.25W
3409	4822 051 10681	680Ω 2% 0.25W
3410	4822 051 10153	15k 2% 0.25W
3411	4822 051 10103	10k 2% 0.25W
3412	4822 050 21003	10k 1% 0.6W
3413	4822 051 10682	68k 2% 0.25W
3414	4822 051 10682	68k 2% 0.25W
3415	4822 051 10562	5k6 2% 0.25W
3416	4822 051 10472	4k7 2% 0.25W
3417	4822 050 21003	10k 1% 0.6W
3418	4822 051 10103	10k 2% 0.25W
3419	4822 051 10221	220Ω 2% 0.25W
3420	4822 051 20222	2k2 5% 0.1W
3422	4822 050 21003	10k 1% 0.6W
3423	4822 051 10104	100k 2% 0.25W
3424	4822 116 52234	100k 5% 0.5W
3425	4822 051 10332	3k3 2% 0.25W
3426	4822 051 10272	2k7 2% 0.25W
3427	4822 116 52234	100k 5% 0.5W
3428	4822 051 10473	47k 2% 0.25W
3429	4822 050 12203	22k 1% 0.4W
3431	4822 050 23903	39k 1% 0.6W
3432	4822 051 10223	22k 2% 0.25W
3433	4822 050 21742	1k 74 1% 0.6W
3434	4822 050 16802	68k 1% 0.4W
3436	4822 116 82455	7k5 0.25W
3437	4822 051 10103	10k 2% 0.25W
3438	4822 116 80678	10k 1%
3443	4822 051 10562	5k6 2% 0.25W
3444	4822 100 11391	330Ω 30%lin 0.1W
3445	4822 051 10102	1k 2% 0.25W
3446	4822 050 22202	2k2 1% 0.6W
3447	4822 051 20222	2k2 5% 0.1W
3448	4822 116 52186	22Ω 5% 0.5W
3449	4822 116 52186	22Ω 5% 0.5W
3451	4822 051 10562	5k6 2% 0.25W
3452	4822 100 11391	330Ω 30%lin 0.1W
3453	4822 050 21002	1k 1% 0.6W
3454	4822 100 11141	10k 30%lin 0.1W

19 Spare parts list

276V	3455	4822 051 10102	1k 2% 0.25W	3582	4822 117 11336	820k 1% 0.5W	3677	4822 050 11002	1k 1% 0.4W	5105	4822 158 10887	Bead coil
	3456	4822 051 10182	1k8 2% 0.25W	3583	4822 050 21205	1M 2.1% 0.6W	3678	4822 051 10103	10k 2% 0.25W	5151	4822 156 21399	180uH
	3457	4822 051 10104	100k 2% 0.25W	3584	4822 052 10158	105 5% 0.33W	3680	4822 050 11002	1k 1% 0.4W	5153	4822 157 52234	100uH
	3459	4822 051 20222	2k2 5% 0.1W	3585	4822 050 22205	2M 2.1% 0.6W	3681	4822 051 10104	100k 2% 0.25W	5155	4822 157 70076	30uH
	3460	4822 051 10151	150Ω 2% 0.25W	3586	4822 050 25602	5k6 1% 0.6W				5156	4822 157 52234	100uH
	3461	4822 050 24701	470Ω 1% 0.6W	3587	4822 051 10103	10k 2% 0.25W				5157	4822 157 52234	100uH
	3462	4822 116 51255	15k 0.5% 0.4W	3588	4822 051 10473	47k 2% 0.25W	3682	4822 051 10473	47k 2% 0.25W			
	3463	4822 050 25363	53k6 1% 0.6W				3683	4822 116 52234	100k 5% 0.5W	5158	4822 157 52234	100uH
	3464	4822 050 21004	100k 1% 0.6W	3589	4822 051 10472	4k7 2% 0.25W	3684	4822 050 11002	1k 1% 0.4W	5173	4822 157 52494	6.8uH
	3465	4822 051 10104	100k 2% 0.25W	3590	4822 051 10102	1k 2% 0.25W	3685	4822 051 10103	10k 2% 0.25W	5174	4822 157 52494	6.8uH
				3591	4822 050 22202	2k2 1% 0.6W	3686	4822 116 52234	100k 5% 0.5W	5176	4822 157 52494	6.8uH
	3466	4822 051 10473	47k 2% 0.25W	3592	4822 116 82455	7k5 0.25W	3687	4822 051 10473	47k 2% 0.25W	5401	4822 157 63211	33uH
	3467	4822 050 15103	51k 1% 0.4W	3593	4822 050 21003	10k 1% 0.6W	3688	4822 050 25102	5k1 1% 0.6W	5601	4822 140 10498	Line output trf
	3468	4822 051 10334	330k 2% 0.25W	3594	4822 051 20222	2k2 5% 0.1W	3689	4822 050 11809	18Ω 1% 0.4W	5602	4822 148 81272	Line driver trf
	3471	4822 051 10124	120k 2% 0.25W	3595	4822 051 20222	2k2 5% 0.1W	3690	4822 050 11809	18Ω 1% 0.4W	5603	4822 142 40336	H-AFC trf
	3472	4822 051 10332	3k3 2% 0.25W	3596	4822 051 10123	12k 2% 0.25W	3691	4822 116 52234	100k 5% 0.5W	5604	4822 148 81272	Buck conv. trf
	3473	4822 051 10394	390k 2% 0.25W	3597	4822 051 10103	10k 2% 0.25W				5606	4822 157 71201	5.6uH
	3474	4822 051 10332	3k3 2% 0.25W	3598	4822 051 20222	2k2 5% 0.1W	3693	4822 117 11411	47Ω 1W			
	3475	4822 050 26801	680Ω 1% 0.6W				3694	4822 051 10103	10k 2% 0.25W	5607	4822 157 70081	4.2uH
	3476	4822 050 21203	12k 1% 0.6W	3599	4822 051 10273	27k 2% 0.25W	3695	4822 116 83915	47Ω 5% 3W	5608	4822 157 71197	20mH
	3481	4822 051 10102	1k 2% 0.25W	3600	4822 051 10333	33k 2% 0.25W	3696	4822 117 11012	270Ω 5% 1W	5612	4822 157 70077	115uH
				3601	4822 051 10122	1k2 2% 0.25W	3697	4822 052 10158	105 5% 0.33W	5613	4822 157 71197	20mH
	3482	4822 051 10103	10k 2% 0.25W	3602	4822 051 10151	150Ω 2% 0.25W	3698	4822 051 10103	10k 2% 0.25W	5624	4822 157 53519	100uH
	3483	4822 050 21003	10k 1% 0.6W	3603	4822 051 10182	1k8 2% 0.25W	3800	4822 050 21006	10M 1% 0.6W			
	3484	4822 050 21203	12k 1% 0.6W	3604	4822 050 24702	4k7 1% 0.6W	3801	4822 050 21006	10M 1% 0.6W			
	3485	4822 051 10472	4k7 2% 0.25W	3605	4822 051 10104	100k 2% 0.25W	3802	4822 051 10153	15k 2% 0.25W			
	3487	4822 050 12702	2k7 1% 0.4W	3606	4822 050 16802	6k8 1% 0.4W	3803	4822 051 10223	22k 2% 0.25W			
	3488	4822 051 10103	10k 2% 0.25W	3607	4822 051 10472	4k7 2% 0.25W	3804	4822 051 10223	22k 2% 0.25W	6001	4822 130 83128	EGP30G
	3491	4822 050 21003	10k 1% 0.6W	3608	4822 051 10113	11k 2% 0.25W	3805	4822 051 10101	100Ω 2% 0.25W	6001	4822 130 83128	EGP30G
	3492	4822 051 10472	4k7 2% 0.25W	3609	4822 051 10272	2k7 2% 0.25W	3806	4822 051 10101	100Ω 2% 0.25W	6101	4822 130 80572	RGP30J
	3493	4822 051 10103	10k 2% 0.25W	3610	4822 051 10223	22k 2% 0.25W	3807	4822 051 10101	100Ω 2% 0.25W	6102	4822 130 80572	RGP30J
	3494	4822 051 10473	47k 2% 0.25W	3611	4822 051 10102	1k 2% 0.25W	3808	4822 051 10101	100Ω 2% 0.25W	6103	4822 130 80572	RGP30J
				3612	4822 116 52271	33k 5% 0.5W	3811	4822 050 21003	10k 1% 0.6W	6104	4822 130 80572	RGP30J
	3495	4822 050 24703	47k 1% 0.6W	3613	4822 116 80394	1k	3812	4822 051 10101	100Ω 2% 0.25W	6105	4822 130 34384	BZX79-C62
	3501	4822 051 10103	10k 2% 0.25W	3614	4822 051 10102	1k 2% 0.25W	3813	4822 051 10101	100Ω 2% 0.25W	6106	4822 130 31393	RGP10J
	3502	4822 051 10472	4k7 2% 0.25W	3615	4822 051 10102	1k 2% 0.25W	3814	4822 051 10103	10k 2% 0.25W	6107	4822 130 31393	RGP10J
	3503	4822 051 10008	0Ω 5% 0.25W	3616	4822 051 10122	1k2 2% 0.25W	3815	4822 051 10103	10k 2% 0.25W	6108	4822 130 31393	RGP10J
	3504	4822 051 10472	4k7 2% 0.25W	3617	4822 051 10151	150Ω 2% 0.25W				6109	4822 130 34379	BZX79-B27
	3506	4822 051 10103	10k 2% 0.25W	3618	4822 050 11002	1k 1% 0.4W	3816	4822 051 10103	10k 2% 0.25W	6111	4822 130 31607	RGP10D
	3507	4822 051 10104	100k 2% 0.25W	3619	4822 051 10103	10k 2% 0.25W	3817	4822 050 21003	10k 1% 0.6W	6112	4822 130 31607	RGP10D
	3508	4822 050 28203	82k 1% 0.6W	3620	4822 050 21502	1k5 1% 0.6W	3818	4822 051 10102	1k 2% 0.25W	6113	4822 130 31607	RGP10D
	3509	4822 051 10682	6k8 2% 0.25W	3621	4822 116 82376	470Ω 1% 0.25W	3819	4822 051 10102	1k 2% 0.25W	6114	4822 130 30621	1N4148
	3510	4822 051 10102	1k 2% 0.25W	3622	4822 050 25103	51k 1% 0.6W	3823	4822 050 21003	10k 1% 0.6W	6115	4822 130 80446	BAS32L
				3623	4822 116 30437	12.7k 1%	3824	4822 051 10103	10k 2% 0.25W	6116	4822 130 80446	BAS32L
	3511	4822 050 22708	2Ω 7 1% 0.6W	3624	4822 116 80556	120k	3825	4822 051 10473	47k 2% 0.25W	6117	4822 130 34233	BZX79-B5V1
	3512	4822 050 22708	8k2 1% 0.6W	3625	4822 100 20166	10k 30%LIN 0.1W	3826	4822 050 11002	1k 1% 0.4W	6118	4822 130 80446	BAS32L
	3513	4822 117 11205	3k3 5% 2W	3626	4822 116 52211	150Ω 5% 0.5W	3827	4822 051 10102	1k 2% 0.25W	6119	4822 130 34174	BZX79-C4V7
	3514	4822 051 10102	1k 2% 0.25W	3627	4822 050 15601	560Ω 1% 0.4W	3828	4822 051 10102	1k 2% 0.25W			
	3515	4822 050 24701	470Ω 1% 0.6W	3628	4822 051 10561	560Ω 2% 0.25W				6121	4822 130 80446	BAS32L
	3516	4822 050 21808	1Ω 8 1% 0.6W				3829	4822 051 10102	1k 2% 0.25W	6122	4822 130 31024	BZX79-B18
	3517	4822 050 15608	5Ω 6 1% 0.4W	3629	4822 116 80394	1k	3830	4822 051 10102	1k 2% 0.25W	6124	4822 130 30621	1N4148
	3518	4822 050 21808	1Ω 8 1% 0.6W	3630	4822 050 22402	2k4 1% 0.6W	3833	4822 051 10008	0Ω 5% 0.25W	6125	4822 130 83719	LT1542GK
	3519	4822 051 10822	8k2 2% 0.25W	3631	4822 050 26809	68Ω 1% 0.6W	3836	4822 051 10008	0Ω 5% 0.25W	6131	4822 130 31438	1N4001
	3520	4822 051 10124	120k 2% 0.25W	3632	4822 050 26809	68Ω 1% 0.6W	3841	4822 051 10102	1k 2% 0.25W	6132	4822 130 31438	1N4001
				3633	4822 050 26809	68Ω 1% 0.6W	3842	4822 050 11002	1k 1% 0.4W	6151	4822 130 83539	EGP20G
	3521	4822 050 22202	2k2 1% 0.6W	3634	4822 050 22402	2k4 1% 0.6W	3843	4822 050 11002	1k 1% 0.4W	6152	5322 130 33885	RGP15J
	3522	4822 050 28202	8k2 1% 0.6W	3635	4822 053 32278	21Ω 10k 4.7W	3853	4822 050 21003	10k 1% 0.6W	6153	5322 130 33885	RGP15J
	3523	4822 050 22708	2Ω 7 1% 0.6W	3636	4822 050 26809	68Ω 1% 0.6W	3854	4822 050 11504	150k 1% 0.4W	6154	5322 130 31969	RGP15K
	3524	4822 050 22708	2Ω 7 1% 0.6W	3637	4822 050 21542	1k 54 1% 0.6W	3855	4822 051 10432	4k3 2% 0.25W			
	3525	4822 051 10182	1k8 2% 0.25W	3638	4822 117 10032	33Ω 5% 2W				6155	5322 130 31969	RGP15G
	3527	4822 051 10394	390k 2% 0.25W				3856	4822 050 13902	3k9 1% 0.4W	6156	5322 130 31969	RGP15G
	3528	4822 051 10103	10k 2% 0.25W	3639	4822 050 21202	1k2 1% 0.6W	3857	4822 051 10823	82k 2% 0.25W	6157	5322 130 31969	RGP15G
	3529	4822 051 10182	1k8 2% 0.25W	3640	4822 050 21542	1k 54 1% 0.6W	3858	4822 116 52215	220Ω 5% 0.5W	6158	5322 130 31969	RGP15G
	3531	4822 050 11503	15k 1% 0.4W	3641	4822 050 11002	1k 1% 0.4W	3859	4822 051 10562	5k6 2% 0.25W	6161	5322 130 31971	RGP15D
	3533	4822 051 10102	1k 2% 0.25W	3642	4822 050 21201	120Ω 1% 0.6W	3860	4822 051 10123	12k 2% 0.25W	6162	4822 130 31438	1N4001
				3643	4822 051 10103	10k 2% 0.25W	3861	4822 051 10393	39k 2% 0.25W	6163	4822 130 31438	1N4001
	3534	4822 051 10472	4k7 2% 0.25W	3644	4822 051 10472	4k7 2% 0.25W	3862	4822 051 10008	0Ω 5% 0.25W	6168	4822 130 30621	1N4148
	3535	4822 051 10333	33k 2% 0.25W	3645	4822 051 10103	10k 2% 0.25W	3863	4822 051 10822	8k2 2% 0.25W	6169	4822 130 30621	1N4148
	3536	4822 051 10123	12k 2% 0.25W	3646	4822 051 10392	3k9 2% 0.25W	3864	4822 051 10103	10k 2% 0.25W	6202	4822 130 31438	1N4001
	3537	4822 051 10333	33k 2% 0.25W	3647	4822 051 10473	47k 2% 0.25W	3865	4822 051 10472	4k7 2% 0.25W			
	3538	4822 051 10103	10k 2% 0.25W	3648	4822 100 11141	10k 30%lin 0.1W				6203	4822 130 31438	1N4001
	3541	4822 050 22203	22k 1% 0.6W				3866	4822 050 23903	39k 1% 0.6W	6401	4822 130 20245	SF0R5D43
	3542	4822 050 11503	15k 1% 0.4W	3649	4822 051 10273							