Amstrad



MEGAPC3H40
WITH GAMES CARD
PC14DSM

14" DUAL SYNCH COLOUR MONITOR
SERVICE MANUAL

Amstrad MegaPC 386SX

Specification

Processor and	PC Mode	25MHz 80386sx				
Clock Speed	Mega Mode	8MHz 68000				
Main on-board Memory		1Mb RAM on-board				
Memory Expansion		Up to 16Mb via 4 SIMM sockets				
Hard Drive - fitted as standard		40Mb Fast Access (28ms)				
Floppy Disk Drive - fitted	as standard	3.5" 1.44Mb				
Disk Drive Bays		1 x 3.5" third height FDD bay				
The second second		1 x 3.5" half height HDD bay				
Expansion Slots		2 x 16 bit, ² / ₃ length ISA slots - one populated and one free				
Graphics		Super VGA** (VGA, EGA, CGA, MDA and				
The Property of the Park of th		Hercules Compatible)				
Video Memory		256Kb (user expandable up to 512Kb)				
Maximum Resolution	**PC Mode:	1024 x 768 pixels				
	Mega Mode:	2001 A. C.				
On-screen Colours	PC Mode:	Up to 256 (max) from a total palette of 262,144				
		Up to 64 (max) out of total palette of 512				
Sound Capability		Full Ad-Lib sound				
38 - V	Mega Mode:	Full Megadrive Stereo Sound				
External Interfaces		Parallel Port, Twin RS232C Serial Ports, PS/2 type Keyboard Socket, PS/2 type Mouse Socket, External VGA Monitor Port, External VGA Monitor Power Socket, PC analogue Joystick port, 2 Sega compatible Games Paddie ports, Megadrivi compatible catridge slot, MegaCD compatible connector, Stereo Headphones socket				
Power Supply		50W 110/220-240V Auto-Switching				
System Unit Dimensions		325mm (W) x 78mm (H) x 292mm (D)				
Keyboard		102 key high quality PS/2 type				
Supplied Accessories		Two button PS/2 type PC Mouse, precision analogue PC Joystick, Sega compatible Games Paddle				
Supplied Software		MS-DOS 5.0, Amstrad Desktop User-friendly Graphical Interface with on-screen interactive Tutorial				
Colour Monitor		14" Hi-Res Dual Sync Colour				
		with in-built stereo speakers				
Monitor Compatibility		Full VGA with Ad-Lib sound, full Megadrive wit				
		stereo sound				
Monitor Graphics Resolution PC Mode:		640 x 480				
		320 x 224				

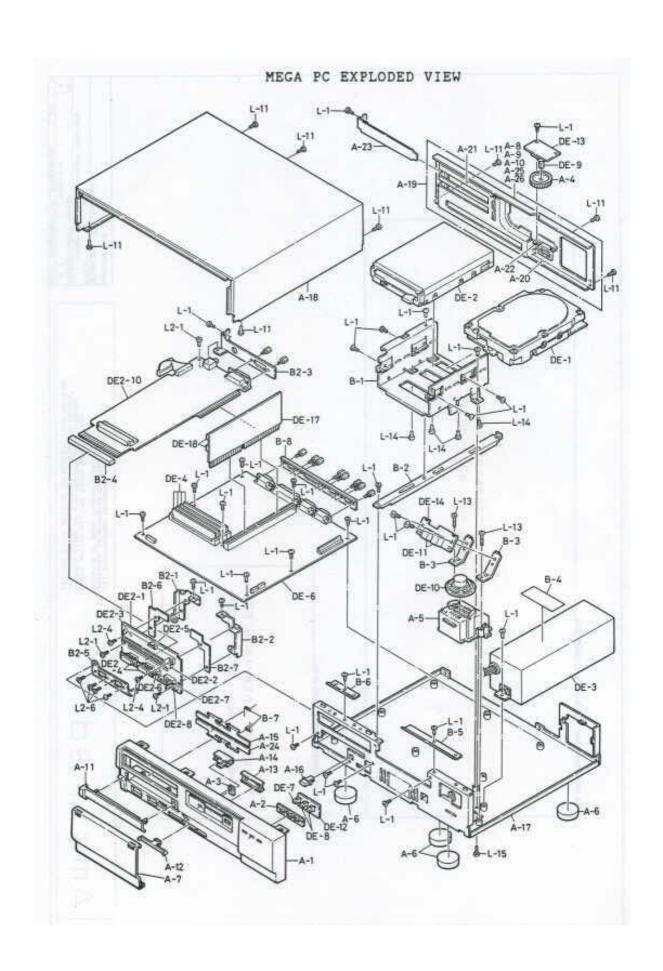
NOTE FOR ENGINEERS

THIS SERVICE MANUAL COVERS MEGAPC3H40 GAMES CARD ONLY

PLEASE NOTE, THE MAIN CPU UNIT IS SAME AS PC7386SX, ANY REPAIRS TO THIS SECTION, REFER TO PC7386SX SERVICE MANUAL PT. NO. 273930

MEGAPC3H40 MANUFACTURED UNDER LICENCE FROM SEGA

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EF, NO.	DESCRIPTION,	PT. NO.
-1X	*CABINET PARTS IST* FRONT PANEL ASSY COMPLETE	274026
-2	LED LENS A	214026
-3	LED LENS B	F-3/03/8524-0
-4 -5	VR KNOB KBD MOUSE COVER	273892
-6	FOOT	27403H
-7	FRONT SLIDE DOOR	273955
-8 -9	RATING LABEL HDD SETUP LABEL	
-9 -10	SERIAL NO. LABEL	
-11	SLOT COVER	273956
-12	SL VR KNOB	274027
-13 -14	SL ENOB GUIDE DOOR SWITCH GUIDE	274028 274029
-15	CARTRIDGE DOOR A	273957
-16	RESET BUTTON	274030
-17 -18	BOTTOM COVER	972075
-19	REAR CHASSIS ASSY	273893
-20	REAR CHASSIS	
-21	RESR CHASSIS BRACKET	
22	VR BRACKET EXPANSION SLOT COVER	273914
24	CARTRIDGE DOOR B	274037
25	LICENSE LABEL	200000
26	JOYSTICK LABEL	
1	FDD BRACKET	
2	BAR	
3	JACK HOLDER	
4 5	BRAND LABEL SHIELD PLATE A	
6	SHIELD PLATE B	
7	DOOR SPRING	273958
В	JACK COVER	Serbinido. A
-1	PCB HOLDER L	
-2	PCB HOLDER E	
-3	EXPANSION BRACKET	
-4	EDGE CAP	
-5 -6	D-SUB HOLDER INSULATION SHEET L	
7	INSULATION SHEET R	
	ICS IC FM OPERATOR YM3812-F	22222
and the same of th	IC SEGA 315-5487	273964 273963
1.4	IC NESSECN TIMER	174042
1,32	IC NJM2070M AMP	273968
,22	IC LM324 SFM	273967
8	IC DAC YM3014B-F IC CPU MC68HC000FN8	273965 273966
21	IC 280 Z0840004PSC DII	40080
5 6,17	IC HM534612P-12 VRAM	274039
9,20	IC 65256BLFP-10 DRAW CLOCK	274040
	MISCELLANEOUS	
	SET POLY PACKING	273972
	PADDLE PAD MOUSE MSPS2	274031
	PADDLE SP-7	272710
	JOYSTICK AJ-8	273991 273990
	COMPLETE KEYBOARD ASSY UK	273895
	COMPLETE KEYBOARD ASSY AU	273901
	MAINS LEAD UK MAINS LEAD AU	270053
	USER INSTRUCTIONS	274032
1	HDD 40MB SEAGATE	273908
3	FDD 3.5" SONY	273723
4	POWER SUPPLY UNIT 256K SIMM MODULE	273888
5	IC 80386SX-25	272201 273932
6	CPU PCB MAIN	273894
7	LED GREEN ST-2553YG	35000 BREEN
8	VED AMBER RT-2553A	
10	SPRAKER	273922 273923
11	6P-MINI DIN JACK	210923
18	98P CABD-EDGE CONNECTOR	274035
-4	D-SUB CONNECTOR SP MICRO SWITCH KB001	<u> </u>
-6	PUSH SWITCH ALOUI	273959
2-7	SLIDE SWITCH ALOOS	273960 273961
-8	SLIDE VR 10KO	274036
	34P FDD CABLE	273925
	40P HDD CABLE	273926
	CRYSTAL 53 2034HU2	(A. W
	CRYSTAL 53,2034MHZ COMPLETE KEYBOARD UK	274041
	COMPLETE KEYBOARD UK COMPLETE KEYBOARD AUSTRALIA	274041 273895 273901
	COMPLETE KEYBOARD UK	273895



Drawing No. 4700-001P Games Processor PCB Main Same Princhess PCB Circuits (7500-100)

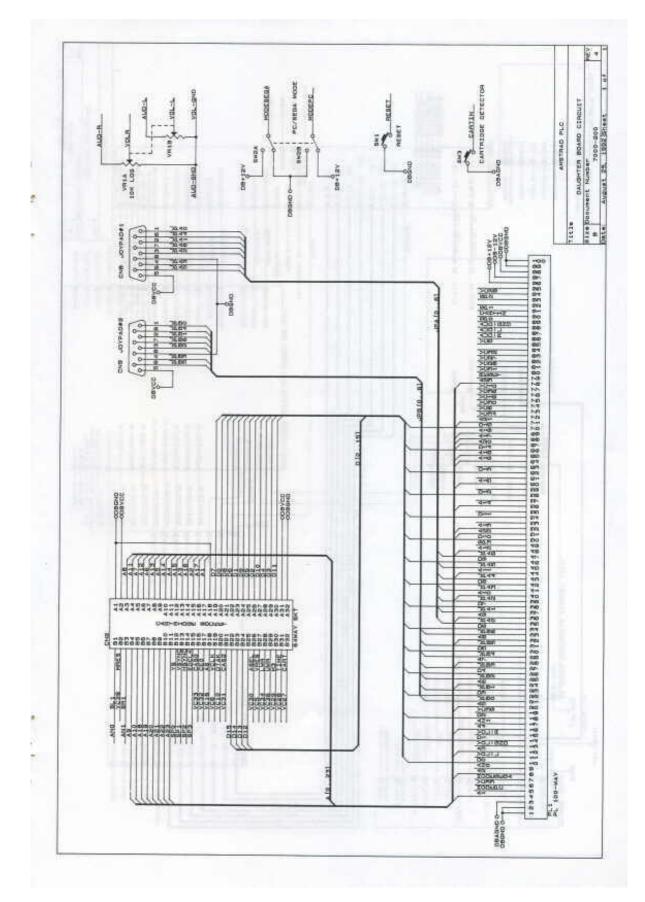
Vactical Interfess SCS (7999-899)

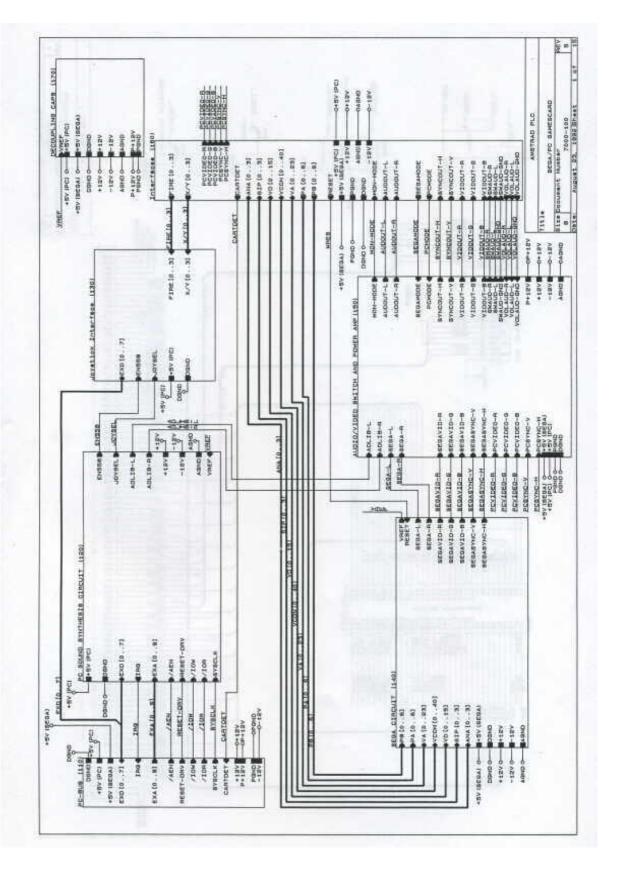
Vertical Interface PCB Drawing No. 4700-002P

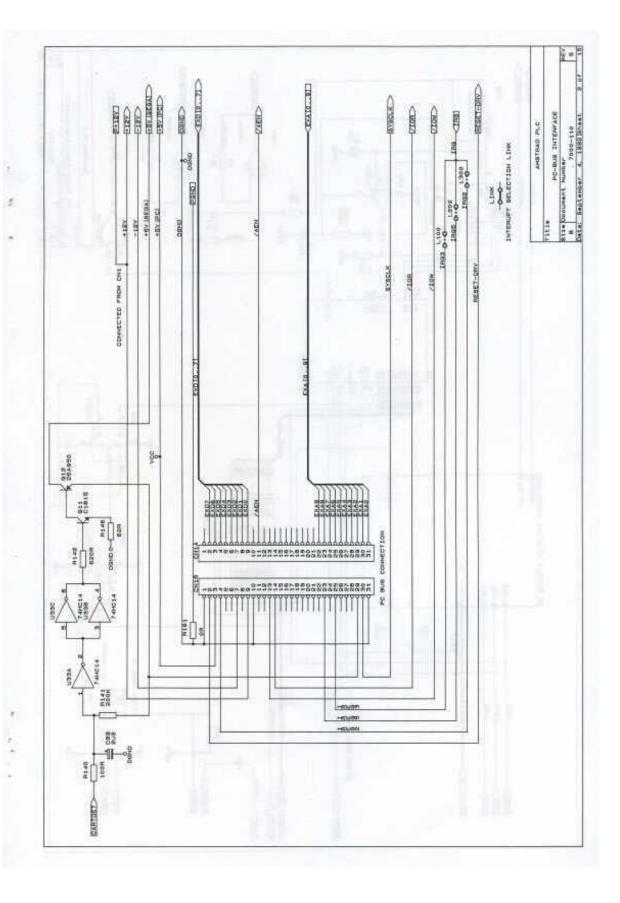
Amstrad

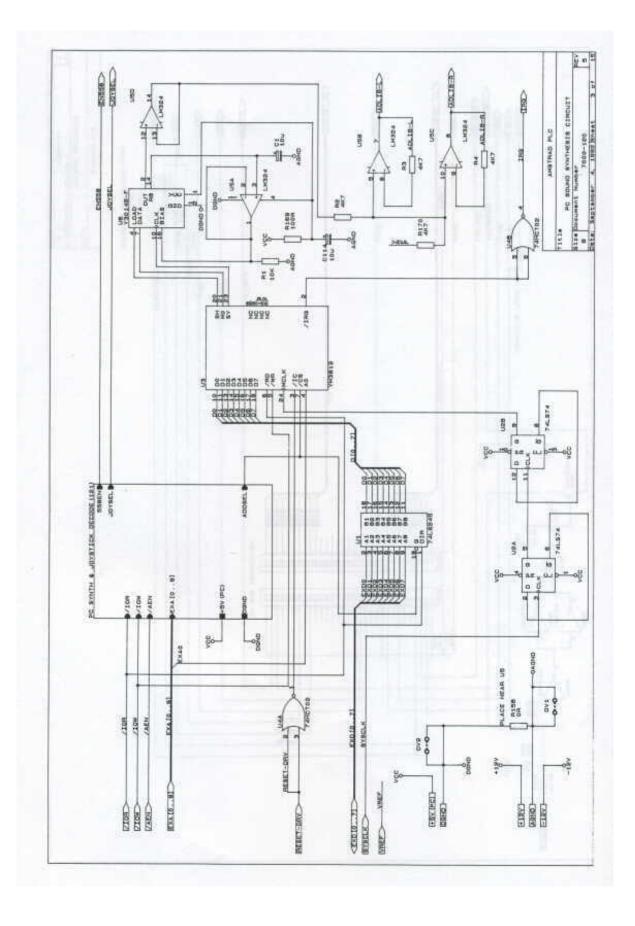
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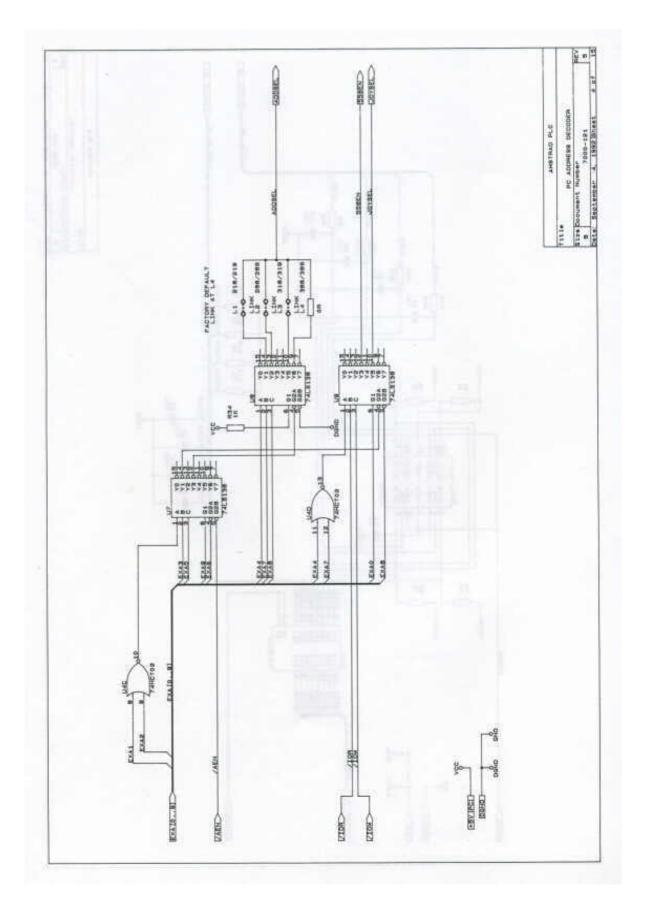
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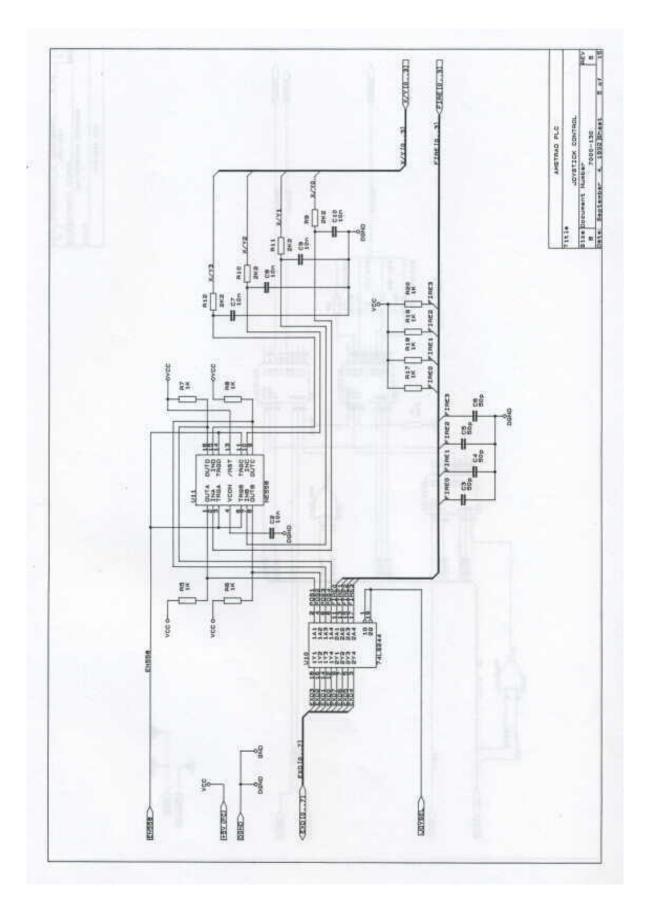


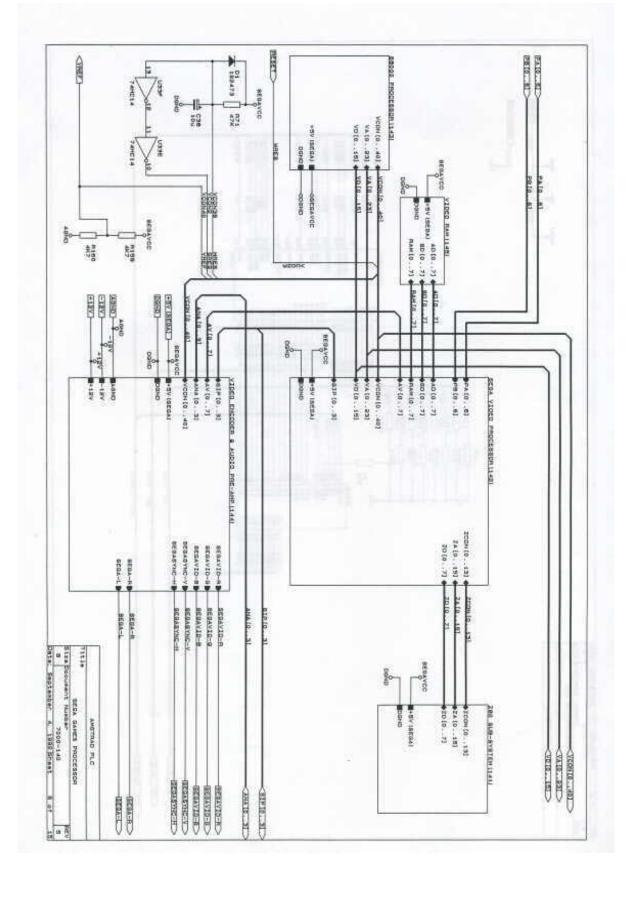


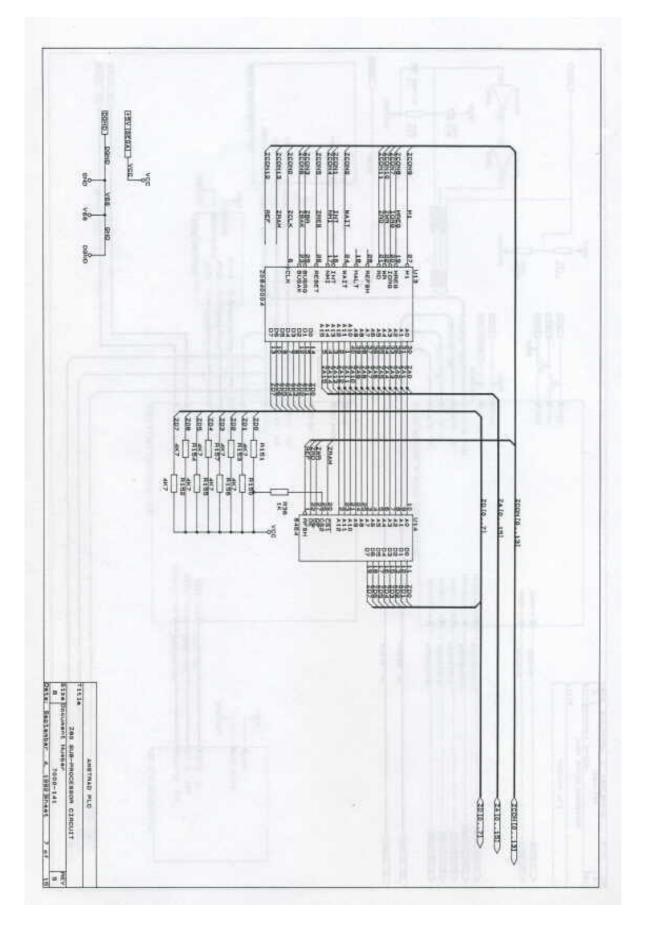


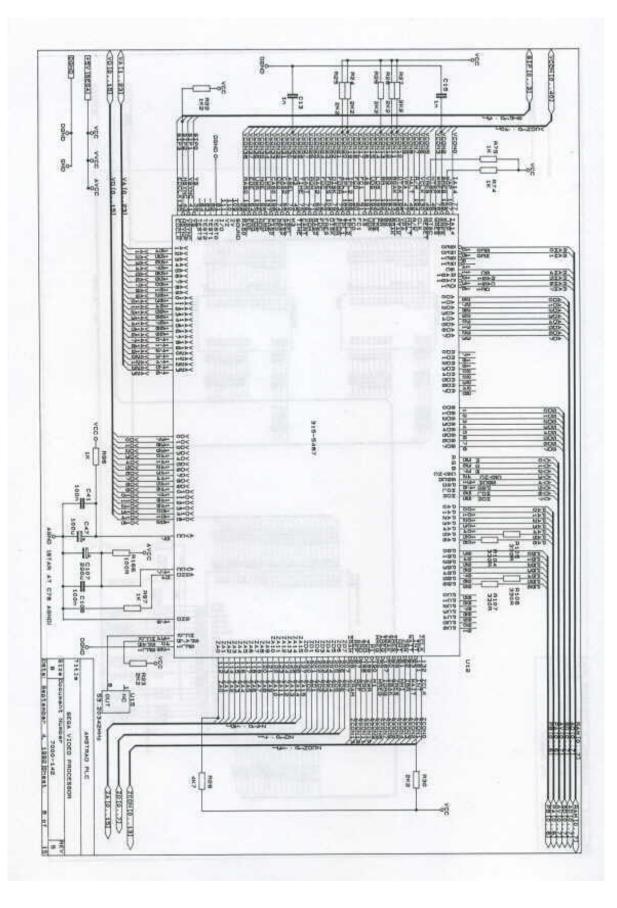


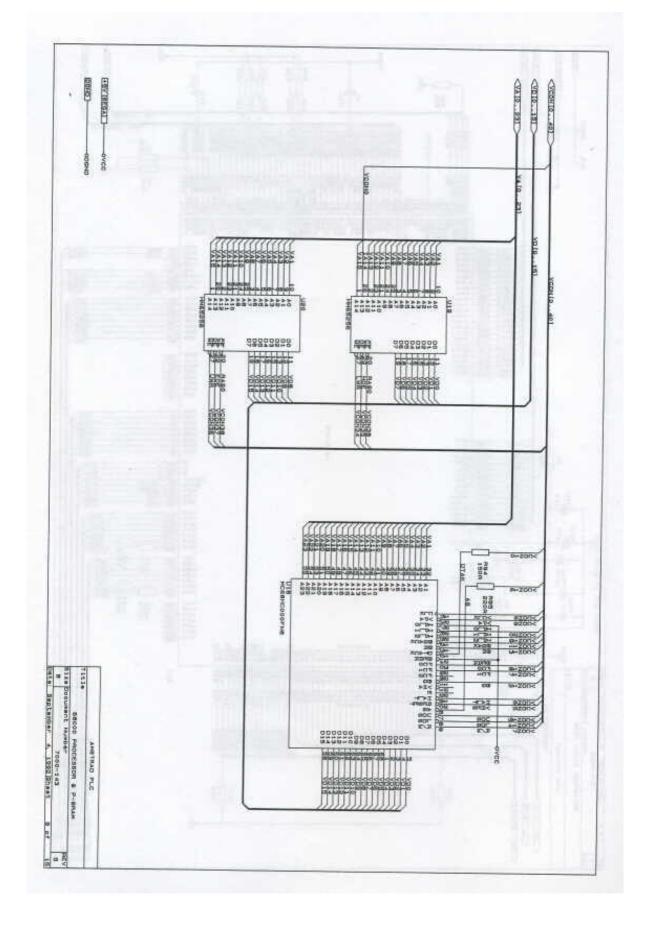


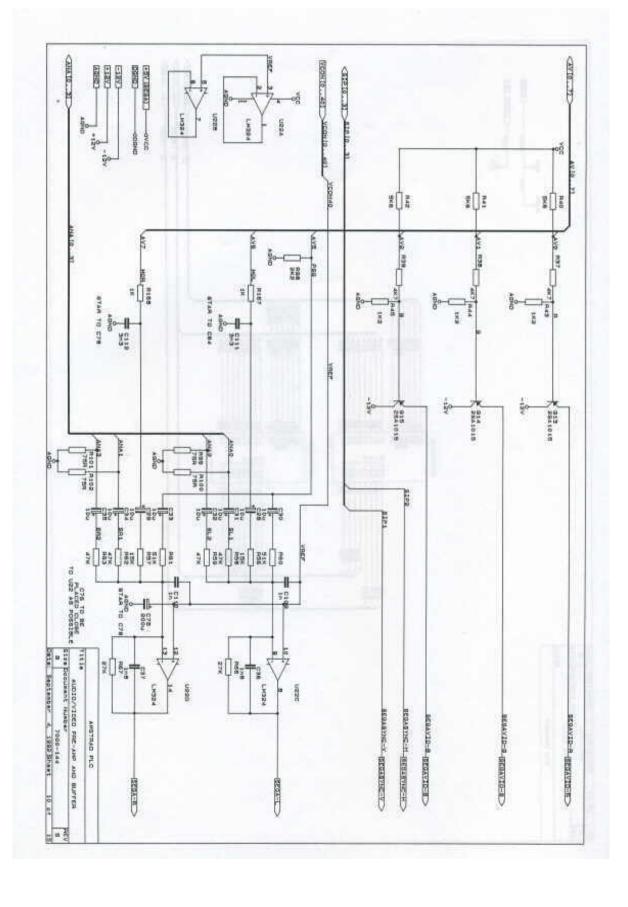


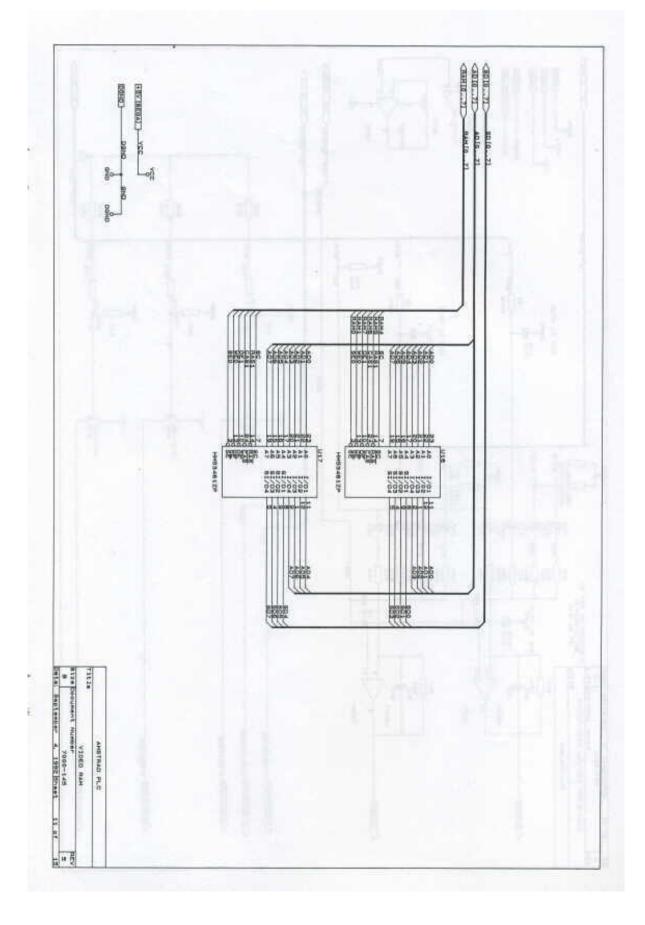


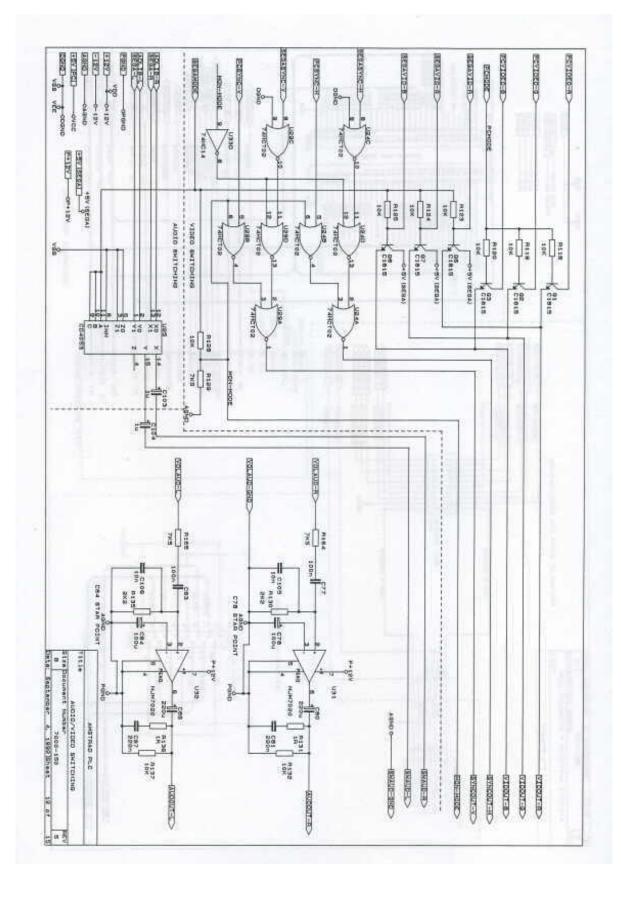


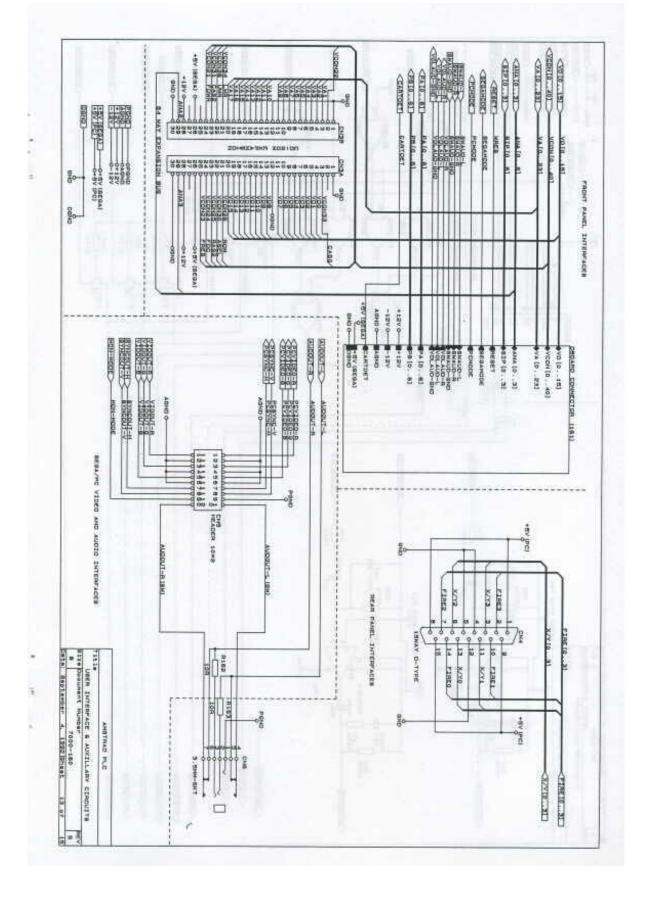


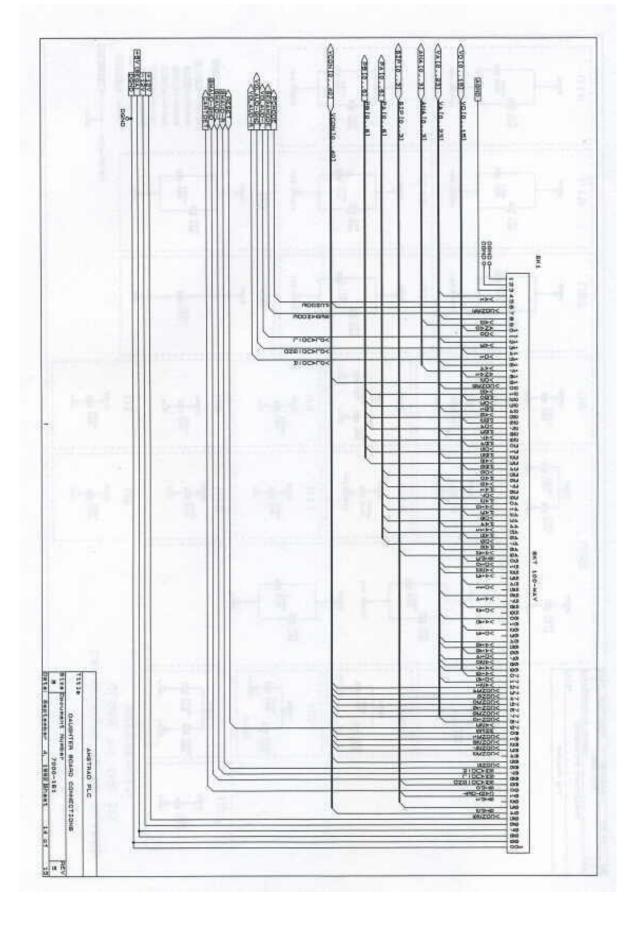


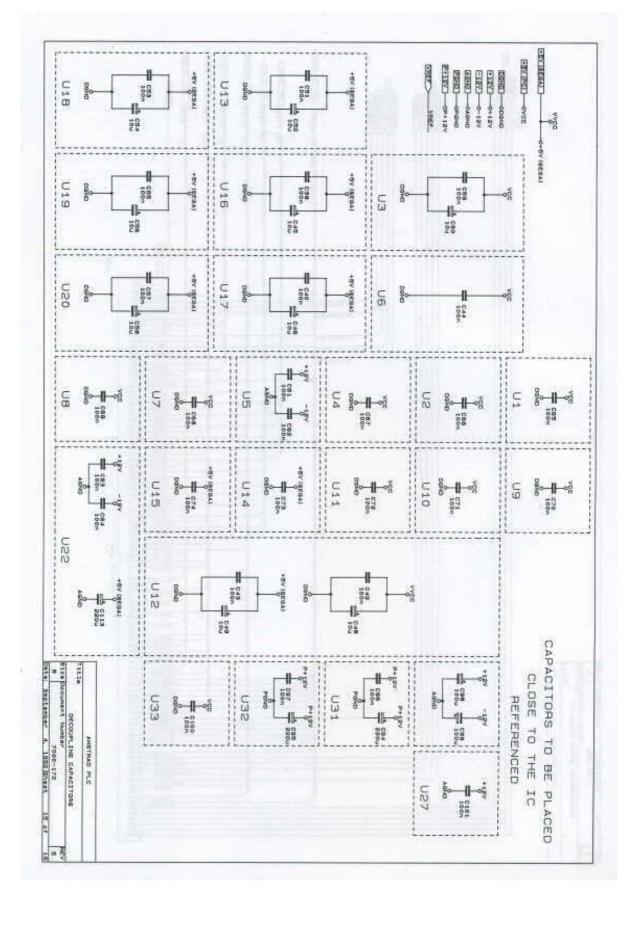


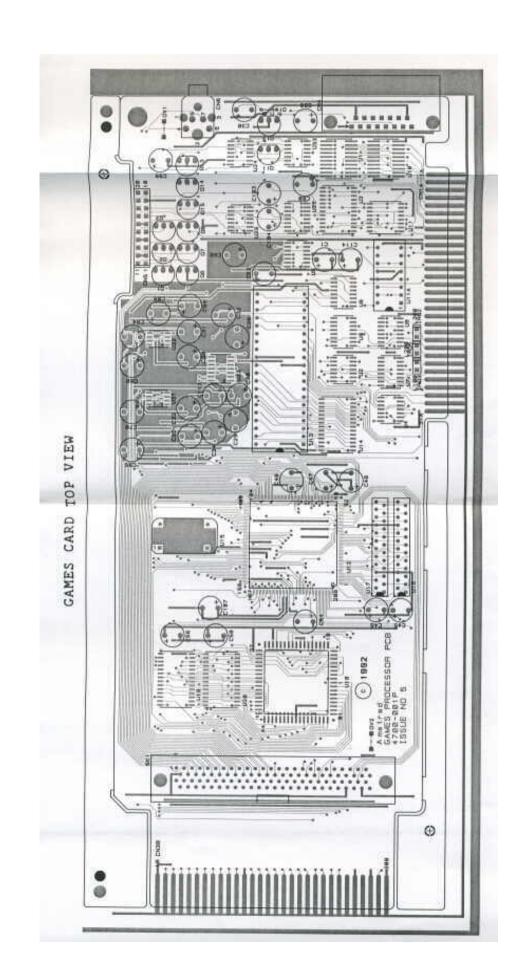


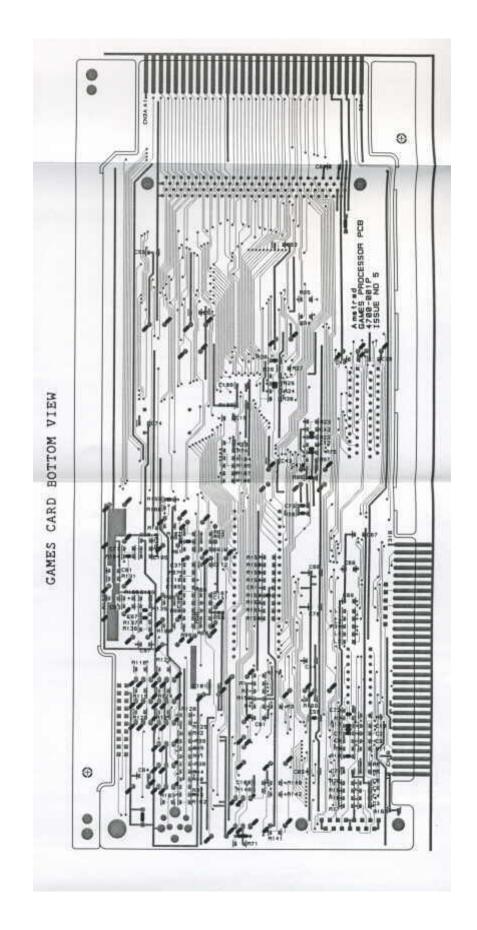












Alignment Procedure

Model: 14" Dual Sync Monitor PC14DSM

1. Preparation

1) Testing Equipment

Amstrad Mega PC & Test Program (KENVGA.EXE)

- 2) Set monitor so that CRT faces to East and to be safe from abnormal
- 3) Position of Volume before adjustment

Screen volume : at center

Brightness volume(VR902): at center Contrast VR (VR901): at maximum

Sub contrast VR (VR103): 1/4 from Minimum

R Bias VR (R817), G Bias VR (R827), B Bias (R807): 1/4 from

minimum

Other volumes : at center

2.Adjustment

2-1.H Centering

1) Without connecting signal cable

2) Adjust screen VR so that RASTER can be seen slightly.

3) Adjust S002 (H.RASTER CENT SWITCH) so that Raster can be at center of the screen.

2-2.H.Hold & H.PHASE

1) Connect signal cable

- Get game mode screen from Mega PC (Mode select signal (PIN15) :High)
- 3) Short each side of R502 by 1 F 50V Condenser to break H.Sync.
- 4) Adjust VR508 (H.Hold 1) and position on the point where flow of screen stops.
- 5) Get VGA mode (Mode select Signal(PIN15): Low)
- 6) Adjust VR509 (H.Hold 2) and position on the point where flow of the screen stops.
- Remove Condenser which is connected to R502.
- 8) Adjust V904 (H Phase) so that data area is at center horizontally
- 9) Adjust V508 (H Hold1) so that screen is at the center after getting Game mode.

 10) Check if screen is at center after getting VGA mode.

2-3 FOCUS

1) Get "H" character screen

2) Adjust Focus volume of FBT so that Focus is optimum at B zone.



2-4 SIDE PINCUSHION

1) Get cross hatch screen of 480 mode.

2) Adjust VR434 (Side pincushion) so that left & right of screen is straight.

2-5 V.Linearity

1) Get cross hatch pattern at 480 mode

2) Adjust VR422 so that vertical cross hatch intervals are same.

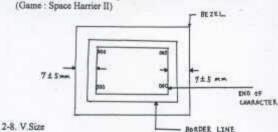
1) Get cross hatch pattern at VGA 480 mode.

Adjust VR903(V.Center) so that screen is at center vertically.

2-7. H.Size

1) Get cross hatch pattern at VGA 480 mode.

- 2) Adjust H. Width soil (L504) so that borizontal size is 240 +/-9(mm)
- 3) Adjust VR906(H.size) to get screen as follow in Game mode.



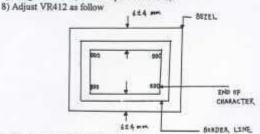
- 1) Get cross hatch screen at VGA 480 mode.
- Adjust VR905 (V.Size 1) so that vertical size is 180 +/-9(mm).

3) Get cross hatch screen at VGA 400 mode.

Adjust VR410 (V.size 2) to get vertical size 180 +/-9 (mm).

5) Get cross hatch screen at VGA 350 mode.

- 6) Adjust VR411 (V.size 3) so that vertical size is 180+/-9 (mm).
- 7) Get game mode (Game : Space Harrier II).



9) Check vertical size at all modes again.

2-9 WHITE BALANCE

- I) Get all black screen at VGA 480 mode
- 2) turn screen VR clockwise until one of R,G,B colours appears.
- 3) Turn Bias volume until colour of screen becomes dark glay
- 4) Adjust screen VR until Raster disappears. 5) Get bright white screen at VGA 480 mode.
- 6) Position TV colour Analizer at center of white screen. Check the axis of X, Y.

Turn R gain VR (VR121) so that Axis X can be 0.313 +/- 0.03. Turn G gain VR (VR131) so that Axis Y can be 0.329 +/- 0.03

7) Adjust Contrast VR so that brightness can be 5.0 FT-L. Turn R Bias VR (R817) so that X axis can be 0.313 +/- 0.03. Turn G Bias VR (R827) so that Y axis can be 0.329 +/- 0.03.

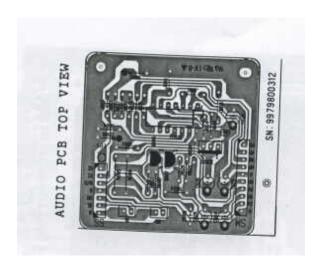
8) Turn contrast VR and check if Axis X,Y are within spec. If not, repeat 6),7).

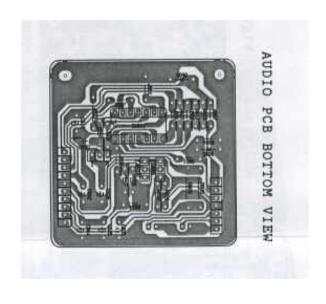
9) Get cross hatch screen at VGA 480 mode and turn contrast VR at maximum. Turn SUB Brightness VR(VR961) until Raster disappeurs.

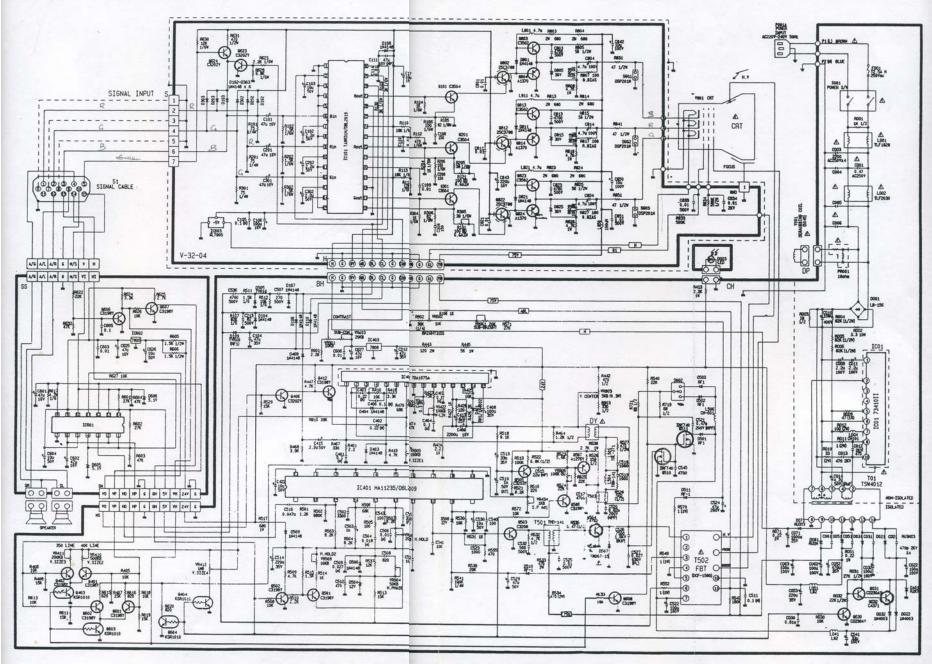
10) Get Bright white screen at VGA 480 mode, check if brightness is over 100 NIT (29Ft-L). If not, adjust Sub contrast VR (VR103).



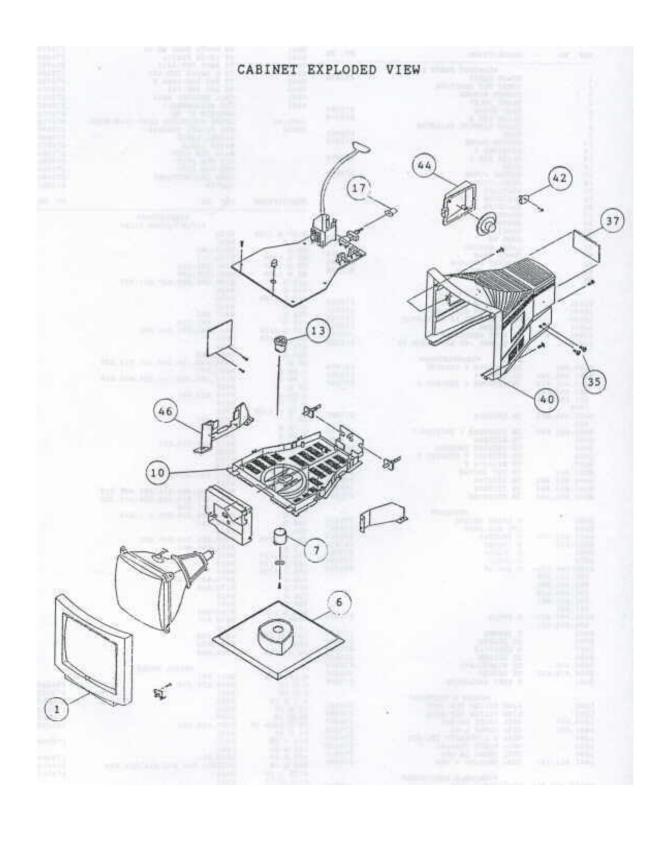








MAIN SCHEMATIC DIAGRAM



	PC14DSM.		F001 PR001 S001	FUSE TL 2.5A 250V POSISTOR PTH451C26 SW POWER PUSE ME-4A	202251 272993 273978
EF. NO.	DESCRIPTION.	PT. NO.	5002	SW LEVER PIETEI	272994
	CABINET PARTS LIST	2010/03/25 19/20	TOL	TX SMPS TSW-4012	273987 273988
	COVER FRONT	272973	T501 T502	TX H DRIVE THD-141	272593
	SCREW CRT WOUNTING		T503	TX FBT DCF-1580 E TX SPC TPC-141	274013
	BUBBER WASHER BRAND INLEY		Voct	COTT DECARRE SOAS	272985
	BASE STAND	272589	V801	CHT MINKHWEEKII SPEAKER I" 80	273982
	SLIDE PAD B	272978	8001-03		274015
	SCREW TAPTITE AKLAMPEN FOOT	272982	VBOIC	SUBGE PROTECTOR ODSP-101W-SOOR CRT SOCKET SOOREZE	272594
	BOTTOM COVER	273975		SIGNAL CABLE WAINS CABLE	273969 274018
	RETAINER R	1000		MAIN POR ASSY	273983
	SLIDE PAD A	272578		CRT PCB ASSY	273985
	BUTTON POWER	273977		SUB PCB ASSY	273984
Č.	INSULATION			USER INSTRUCTIONS CARTON	273980
	HEATSINK A				
	HEATSINE C FBT HEATSINE W		DESCRIPTION		PT. NO.
	HEATSINK		*************	*RESISTORS*	
	HEATSINK D			#1/GW CARRON FILM#	
	SHAFT KNOB VB	273978	0.47 G 1/29 2.2 G 39 G	8555	
	LABEL BATING		2.2 0	R401 R205,305	
	COVER REAR	273974	68 D 1/2W 75 D 1/4W 82 G 1/6W	R719,721	
	BRACKET SPEAKER SPEAKER HOLDER	273996	75 D 1/4W	R719,721 R101,201,301	
	SUPPORTER L	-0.7335	82 G 1/6W	R100.306.536	
			82 Q 1/6W 100 Q 120 Q	WT-00-500-300-001-001-01-1-05-1	
	ICS	175740	150 G 1/2W	B526	
101	IC TABSSIW DBL2019 IC DBL2009 HA11235	175346	220 D	8116	
403	IC GL7808 BV 1A REGULATOR	175323	470 Q	8112 442 555	
200	IC 74LSB6 TTL IC 780S REGULATOR	175935	470 G 1/2W	8527,631,831,841,851	
601 602 603	IC 7805 REGULATOR IC GL7905 -5V REGULATOR 1A	272124	200 D 1/5A	8428 8526 8816 8467,903 8112,442,555 8527,631,831,841,851 8528 8615 8616,520 8104,104,204,304,427,514,521	
		7.50	620 B	8616 670	
0.0000000	*THANSISTORS*	******	1E G	R615 820 H104.100,204.304.427.514.531 R604.501 R102.202.302,511.515.605.606 R426	
30.031	TR ETC1025 Y 25C2230 TR 25C3504	741678 175354	1.2K G	8404.501	
01.402.412	TR ETC3198 Y 25C1815 Y	170447	1.5K G	R102,202,302,511,515,605,606	
01,502,506			2 2K G	R426 R510,623,901 R625	
01,602,606			2.7K G	R625	
03.404.603	TR #581010	273997	2.7K G 1/2*	R522	
04			JR M	R109,130 R418,624	
	TR MTC32028 Y 25C1969 Y	272602	2.3K G 2.9K G 4.7K G 4.7K G 4.7K G 5.6K G	R458	
03	TH ETC3208 TH 25C4762 25C3882	273998	4.7K Q	R419,447,509.617	
04 05 07	TH KTC3203 Y 2802120 Y	272603	4.7E G 1/2*	B532 B523	
07	TR KTA1276 Y	274008	6.8K Q	R628	
10.511	TR FET IRF740	274001	8.2% D	R503,504,507,521	
03.813.823	TR 2503788 TR 2503502 TR 250370E	175353	9. IK G	R518 R030,405,406,416,425,508,512	
04,814,824	TR 28C1370E	27259T			
	DIODES		12K 0	530,572,613,610,626,627,633 R114,537,630 R407,408,313,529,611,618 R110,113 R538	
01	D LBISS BRIDGE	272610	18K D	8407,408,313,329,611,619 B110,113	
03	LED KLG-208E	175327	20K G	R538	
21,031,051 22.032		274003 157656	S. S	MANGET SEATAND TANK	
81	D 184002 D 181834	274002	928 O 1758	8571,601,602 8631	
71	D RUSYX	274004		R910	
02-104,106-	D 184148	270754	39K D 1/4W	R902	
08,110,203 03,302,303			47K D	8474,603,604,632	
03,404,468			68K O 75K O	8470,506 8423	
06,505,801			92K D	2107	
11.821	D TVB16	274005	82K D 1/2W	B004-008	
05,510,511			100K D	B519,541 B542	
11	D 1N4002	175543	560K D 1/4W	R833,834	
07	DZ DZ12MB D ERDO7-15	272605 272608	680K D	B420.502	
OH .	DZ DZ22BM	272606	1₩ Ω 1/2₩	R001,003	
05,606	DZ BZX83C-5V1	272004		*METAL OXINE*	
05.815.825 01	DZ DZ3GBM D R2KY AVALANCHE	272607 274006	0.22 Q 1V	R051,071	CONTRACTOR
71	D REAL AVALABORE	274000	1 0 19	R549,552,570 R011	175925 273003
	COILS & FILTERS		2.2 0 1V	H424	274018
51	LINE FILTER TLF-1828	272983 272984	33 G 29	R010	170411
12	LINE FILTER TLF-2030 COIL CHOKE CH-101	172984 174007	47 0 IV	R009	176548
1,051	COIL CHOKE L-82	274000	56 D 1/IW FP	8805.815.825 8445	193413
14	COIL H LINEARITY TRL-271	274009	100 G 2W	8012	176744
)5)6	COIL WIDTH TRW-141 COIL CHOKE CH-001	274010 274011	120 G 2*	r443	
1,011,021	COIL PEAKING 4.7UH	272991	470 C 2W 680 G 1W	R533,534 R517803,804,813,814,823,824	273004
PERSONAL PROPERTY.		2043356	2.2K Q 1W	R517803,804,813,814,823,824 R413	274010 274017
03,508,961	*VARIABLE BESISTORS*	272620	2.7K G IV	R538	
121,131	VRSF 20K G 1203 VRSF 100 G 1101	272613	4.7K G 1W	R600,010.028	273002
410	VRSF 500K Q 1504	272620		*CEMENT*	
411	VRSF 200R G 1204R	272617	3.3 G 10W	B002	274025
412 422,905,906	VRSF 18 D 1105 0.18 VRSF 100K G 1104	27401I 272615			WALL STORY OF
434	VRSF 18 0 1102	272621		*CAPACITORS*	
509	VRSF 108 G 1103	272622	82pF SOOV	*CERAMIC*	273005
901	VROT 10KB D 3016B	272624	100pF	C208,540-542,801	20307-0
902	VROT 10KB G 3017B VRSF 5K G 15023 0.3W	272624 272618	120pF	C308	
		272619	150pF	C106	
904	VRSF 50K D 5X2.5 1500	415614	270pF 500V	C507	176345

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470pF 2KV
560pF 500V
820pF
1000pF 500V
                                                                                                                                                       CO12,013,021,031,051,061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      176751
                                                                                                                                                       C532
C508
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            175981
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            0.47 F 250VAC 10001
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                                                                                                                                             *ELECTROLYTIC*
C503.510
C102.202.302.415
C009.011
C014
C004.814.824
C103.422.530.626
C842.850
C515
C0513
C061
C101.11.701.601.502.6
   1 bF 50V
2, 2 bF 50V
2, 2 bF 100V
4, 7 bF 50V
10 bF 50V
10 bF 50V
22 bF 16V
33 bF 35V
33 bF 160V
47 bF 16V
47 bF 25V
47 bF 25V
47 bF 20V
47 bF 20V
47 bF 16V
100 bF 16V
120 bF 16V
220 bF 16V
220 bF 35V
470 bF 3
                                                                                                                                             CO61
C101,111,201,501,,502,625,627
C412
C104,212
C528
C524
C106,117
C408
C022,062,063
C032,522
C010
C843
C953,514
                                                                                                                                                C053,514
C052
C071
                                                                                                                                                C409
3300pF
7500pF 1.6KV
0.51mF
0.018mF
0.027mF
0.027mF
0.047mF
0.1mF
0.22mF
0.47mF 200V
0.82mF 200V
                                                                                                                                                                                                                                                        *MYLAR*
                                                                                                                                           C502,505
C526
C806
C804
C609
C527
C516
C108401 4
                                                                                                                                           C105401,404-407,511
C4.2.4.3
C521
```

C520

CAUTIONI

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

ADVERSEL!

Lithiumbatteri – Eksplosionfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Lever det brugte batteri tilbage til leverandoren.

VAROITUSI

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laite-valmistajan suosittelemaan tyyppin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

ADVARSELI

Lithiumbatteri – Eksplosjonsfare. Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandoren.

VARNING!

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparalitillverkaren. Kassera använt batteri onligt fabrikantens instruktion.