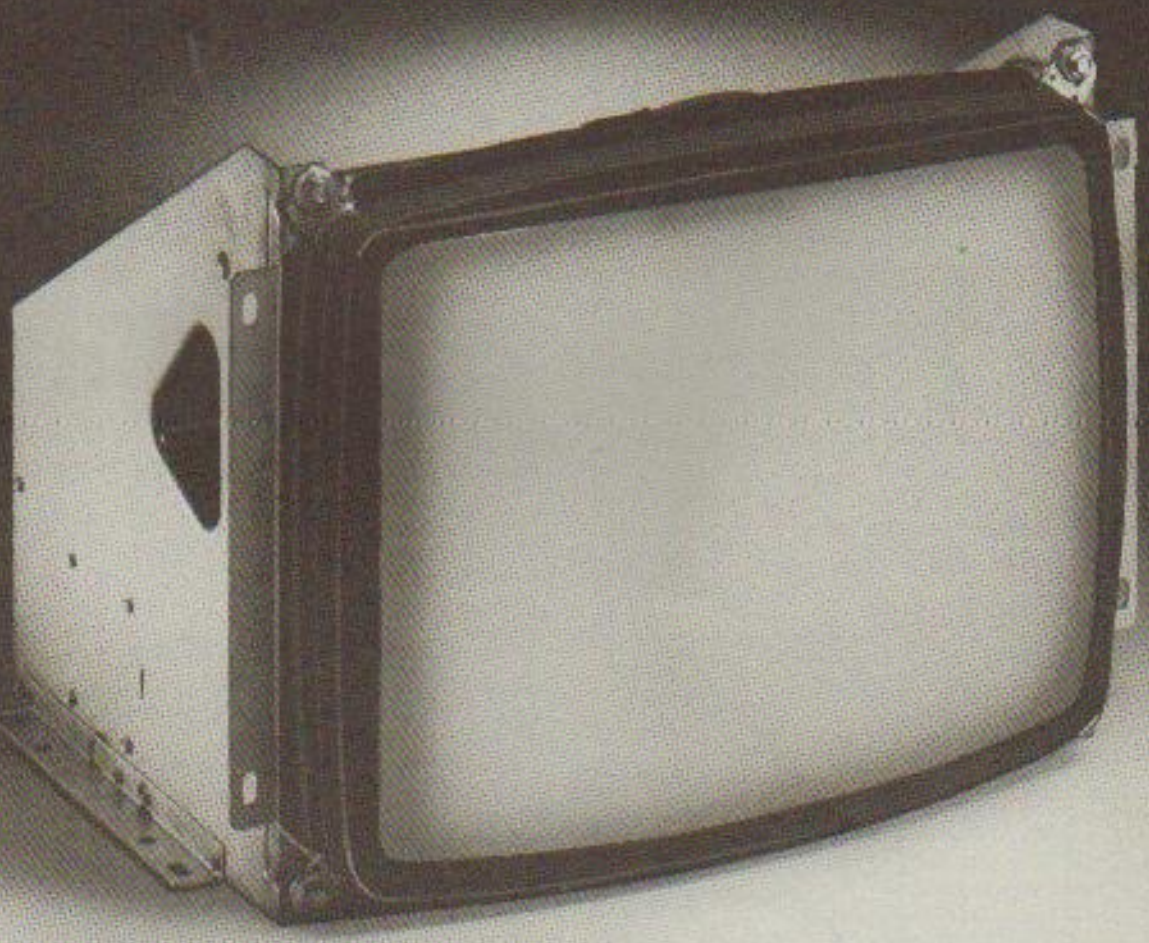
ELECTROHOME
G08 COLOR
X-Y MONITOR



Electrohome's G08 High Speed color X-Y Monitor is designed to meet the high reliability and performance standards common to the games industry.

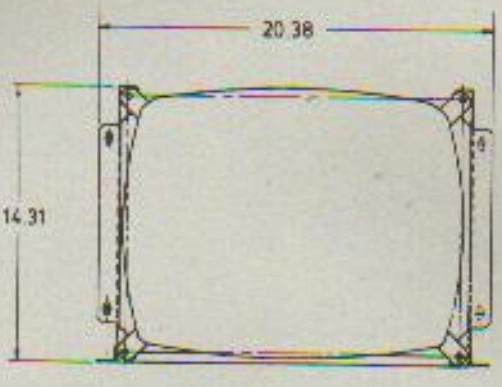
ELECTROHOME

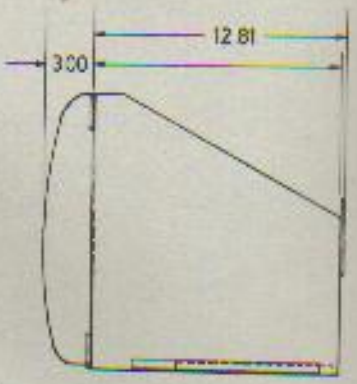
ELECTRONICS

809 Wellington St. N., Kitchener, Ontario Canada N2G 4J6 Telephone (519) 744-7111 Telex 069-55449

ELECTROHOME

G08 High Speed Color X-Y Video Monitor





PERFORMANCE SPECIFICATIONS

CRT: 19" (Visual) 90 PIL Color

Video:

Inputs		
- Red	Full Brightness	4V
- Green	Black Level	1V
- Blue	Blanking Level	0.5V

Resolution: 370 x 277 pixels

X-Y Amplifiers: X — Input + 4V Max.
Y — Input + 3V Max.

Writing Speed: At Nominal Line Voltage

X-Axis
55 usec. for 14.5"
30 usec. for 8 "
18 usec. for 4 "
10 usec. for 2 "
5 usec. for 1 "
3.5 usec. for 0.5"

Y-Axis
70 usec. for 10.5"
53 usec. for 8 "
25 usec. for 4 "
12 usec. for 2 "
7 usec. for 1 "
4 usec. for 0.5"

At 15% Low Line Voltage

X-Axis
65 usec. for 14.5"
38 usec. for 8 "
20 usec. for 4 "
12 usec. for 2 "
6 usec. for 1 "
4 usec. for 0.5"

Y-Axis
84 usec. for 10.5"
62 usec. for 8 "
30 usec. for 4 "
15 usec. for 2 "
8 usec. for 1 "
5 usec. for 0.5"

Geometric Distortion: Less than 1% NS, 3.5% EW

Linearity: 10% distortion overall worst case (crosshatch method)

X-Y Deflection Delay with respect to Z (Video): 1.4 usec.

Maximum Power Output Capability of X-Y Amplifiers: (for X-Y supply at 10% high line voltage)

The maximum duty cycle of the beam held at 50% deflection in any direction off center is 100% of the refresh rate.

The maximum duty cycle of the beam held at 60% deflection in any one direction off center is 83% of the refresh rate.

The maximum duty cycle of the beam held at 100% deflection in any one direction off center is 50% of the refresh rate.

Exceeding these specs will activate the protection circuits which will bring the beam back to the center of the screen.

Power Requirements: 91 VAC (with center tap) 50/60 Hz 3.7 Amp Max.

Safety: UL and CSA approved as a component

NOTE: **Above specifications may be altered to meet customer needs on an individual basis. Please contact Electrohome for details.**

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VIDEO DISPLAY MARKETING

Electrohome Limited
809 Wellington St. N., Kitchener, Ontario Canada N2G 4J8
Telephone (519) 744-7111 Telex 069-55449

Printed in Canada/7753-8C

1.a) Input Power Requirements

Voltage: 91 VAC C.T. nominal (adjust to comply with the x-y power supply requirements as shown in item 2.)

Current; 3.7 amps max.

Freq: 50 or 60 Hz

b) INPUT SIGNAL REQUIREMENT

X - Axis ± 4V

Y - Axis ± 3V

Z - Axis see item No. 8

2. Power Supply

X-Y Power Amp. Supply

- nominal + 63.5 VDC
  - 63.5 VDC

- Absolute max (under any condition)
  + 70 VDC
  - 70 VDC

- Absolute min. (under any condition)
  + 52 VDC
  - 52 VDC

Video amplifier supply (based on power x-y supply at ± 63.5 VDC)

+ 51 VDC ± 5%

EHT Supply

120 v nominal

EHT Voltage

21.5 KV ± 3%

CRT Filament (based on EHT voltage of 21.5 KV)

6.1 VRMS ± 5%

EHT Voltage regulation

1% change from 0 to 300μA beam current

Iss.	Date	REVISIONS	Sig.	Iss.	Date	REVISIONS	
4	Oct 8, 82	ITEM 1 91 VAC C.T.	Z.D.				
3	9-07-82	Item 1, a)	Z.D				
2	29-06-82	6. WRITTING SPEED	Z.D.	6	Nov 8, 82	Convergence AND EHT Voltage	Z.D
1	11-03-82	ORIGINAL		5	Oct 28, 82	ADDED MECHANICAL	Z.D.

PREPARED BY: [illegible] DATE: 11-03-82 MECHANICAL APPR. DATE ELECTRICAL APPR. DATE

3. Geometric Distortion

N-S pincushion/Trapezoid (each top & bottom) 1% max.
E-W " " (each side) 3.5% max.

4. Linearity Distortion

Vertical 10% max.
Horizontal 10% max.

5. Hysterisis and Closure

Any vector or number of vectors drawn from any direction or sequence and drawn to the same end point shall terminate within ± 0.2% of the horizontal width of the actual end point.

6. Writing Speed

At Nominal line Voltage

X - AXIS

55 µsec. for 14.5"
30 µsec. for 8"
18 µsec. for 4"
10 µsec. for 2"
5 µsec. for 1"
3.5 µsec. for .5"

Y - AXIS

70 µsec. for 10.5"
53 µsec. for 8"
25 µsec. for 4"
12 µsec. for 2"
7 µsec. for 1"
4 µsec. for .5"

Iss.	Date	REVISIONS	Sig.	Iss.	Date	REVISIONS	
4	Oct 8, 82	ITEM 3 GIVEN C.T	2.0.				
3	7-9-82						
2	29-01-82	6. WRITING SPEED	2.0.	6	Nov 8, 82		2.0.
1	11-03-82	ORIGINAL		5	Oct 28/82		2.0.

PREPARED BY	DATE	MECHANICAL APPR.	DATE	ELECTRICAL APPR.	DATE
J. Pasquadibisceglie	11-03-82				Nov 8/82

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At 15% low line voltage

X - AXIS

65 µsec. for 14.5"
38 µsec. for 8"
20 µsec. for 4"
12 µsec. for 2"
6 µsec. for 1"
4 µsec. for .5"

Y - AXIS

84 µsec. for 10.5"
62 µsec. for 8"
30 µsec. for 4"
15 µsec. for 2"
8 µsec. for 1"
5 µsec. for .5"

Settling time under overdrive condition

X - AXIS 9 µsec.
Y - AXIS 10 µsec.

7. Max. Power Output Capability of the x-y Amplifiers

(for x-y supply voltage of ± 70 VDC)

(a) The max. duty cycle of the beam held at 50% deflection in any one direction off centre is 100% of the refresh rate.

Iss.	Date	REVISIONS	Sig.	Iss.	Date	REVISIONS	
4	Oct 8/82	ITEM 1	J.D.				
3	7-9-82						
2	29-06-82	6. WRITTING SPEED	J.D.	6	Nov 8/82		J.D
1	11-03-82	ORIGINAL		5	Oct 28/82		J.D.

PREPARED BY: Francois Desjardins | DATE: 11-03-82 | MECHANICAL APPR. | DATE | ELECTRICAL APPR. | DATE: Jan 30/83

E351-R3

(b) The max. duty cycle of the beam held at 60% deflection in any one direction off centre is 83% of the refresh rate.

(c) The max. duty cycle of the beam held at 100% deflection in any one direction off centre is 50% of the refresh rate.

Exceeding these specs. will activate the protection circuits which will bring the beam back to the center of the screen.

8. Beam Modulation: for each Z-input (red, green, blue).

Blanking level	0.5V or less
Beam cut-off (black level)	1.0V
Beam full on	4.0V

Video amp. Freq. response 6 meg Hz -3 dB

9. X-Y Deflection Delay with Respect to Z

1.4 µsec

10. Resolution

370 x 277 pixels max.

11. Centering

within 0.187" radius of geometric centre of CRT.

12. Power Up X-Y Signal Detection Threshold

A negative pulse of ½-full screen level deflection on either the x or y channel will maintain the EHT supply operative for a duration of -25 mS min.
50 mS max.

Iss.	Date	REVISIONS	Sig.	Iss.	Date	REVISIONS	
4	Oct 1.82	ITEM 1	J.C.				
3	7-9-82						
2	29-06-82	6. WRITTING SPEED	J.D.	6	Nov 8,82		J.D.
1	11-03-82	ORIGINAL		5	Oct 28/82		J.D.

PREPARED BY: L. Duinedins | DATE: 11-03-82 | MECHANICAL APPR. | DATE | ELECTRICAL APPR. | DATE: 11-03-82

13. Product Quality

AQL (a) major deflects 1.5% max.
(b) minor deflects 4% max.

14. Reliability, MTBF

Target 20,000 hours.

15. Environmental

Operating Temperature range 0 to +55 C
Storage Temperature range -40° to +65 C
Operating Humidity to 90% (non condensing)
Storage Humidity to 80% (non condensing)

Vibration: The monitor shall withstand a vibrational input of 0.5 g with a logarithmic sweep rate of 1 octave per minut for 30 minutes between 10 Hz and 100 Hz and a vibrational input of 0.5 g at 28 Hz for 30 minutes.

16. Safety: (a) CSA & UL approved as a component.

(b) X-ray Radiation:

For a worst case chassis under worst single fault condition 0.5 mr/hr max.

17. Convergence

1.5 mm worst case in corners

.5 mm worst case in center

Iss.	Date	REVISIONS	Sig.	Iss.	Date	REVISIONS	
4	Oct 1/82	ITEM 9	J.D.				
3	7-10-82						
2	29-06-82	C. WRITTING SPEC	J.B.	6	Nov 8, 82		7.0
1	11-03-82	ORIGINAL		5	Oct 28/82		2.0

PREPARED BY | DATE | MECHANICAL APPR. | DATE | ELECTRICAL APPR. | DATE

TORQUE REQUIREMENTS

- C.R.T. MOUNTING: 50 in. lbs ±10
- YOKE CLAMP: 15 in. lbs. ±3
- MTG. CLAMP - PURITY RINGS: 8 in. lbs. ±2
- TRANSISTOR MTG - Q705, Q706, Q605, Q606 ON BLOWER ASSY: 8 in. lbs. ±1
- TRANSISTOR MTG. - Q900 ON EHT HOUSING: 8 in. lbs. ±1
- TRANSISTOR MTG. - 1C901 ON EHT HOUSING: 6 in. lbs. ±1
- TRANSISTOR MTG - Q401, Q603, Q604, Q703, Q704 ON MAIN PCB: 6 in. lbs. ±1
- MOTOR TO EXTRUSION ON BLOWER ASSY: 30 in. lbs. ±5

MOTOR MOUNTING

- Maximum Permissible space between face of motor and end of extrusion: .03
- Motor mounting flange distortion may not exceed .010.
- Motor to be mounted to extrusion with air flow in direction of extrusion.

YOKE MOUNTING

- Apply 3" of cloth tape to neck of CRT - Lengthwise along axis of tube neck beginning ¼" into JEDEC Radius.
- Assemble yoke and tighten clamp as specified under "Torque Requirements".
- Three convergence adjusting points must be in intimate contact with the C.R.T. glass - 2 in. lbs. max. Lock nuts on convergence adjustments to be torqued to 10 in. lbs max.

Iss.	Date	REVISIONS	Sig.	Iss.	Date	REVISIONS	Sig.
6	Nov 8, 82		Z.D.				
5	Oct 28, 82		Z.D.				

PREPARED BY	DATE	MECHANICAL APPR.	DATE	ELECTRICAL APPR.	DATE
R. PFANNER	10-22-82	R. Hyman	10-26-82	Z. Dziadyk	Oct 27-/.

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C.R.T. MOUNTING

- Refer to mechanical specification for dimensional data.

- Permissible mechanical tilt on C.R.T.
  - Horizontal Axis - 2.5 mm .100 in. total
  - Vertical Axis - 2.5 mm .100 in. total

PACKAGING

- Unit must withstand standard N.S.T. shipping tests.

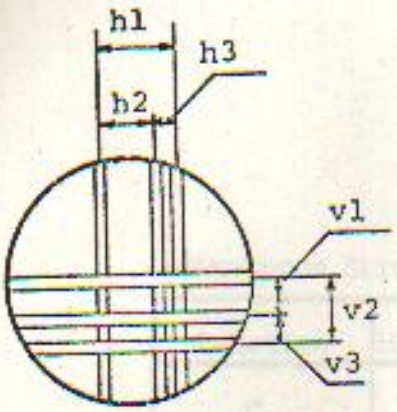
Iss.	Date	REVISIONS	Sig.	Iss.	Date	REVISIONS	Sig.
6	Nov 8, 82		Z.D.				
5	Oct 28, 82		Z.D.				

PREPARED BY	DATE	MECHANICAL APPR.	DATE	ELECTRICAL APPR.	DATE
D. PENNER	10-22-82	K. Hammond	10-26-82	I. Vojvodich	Oct 27-82

E351-R3

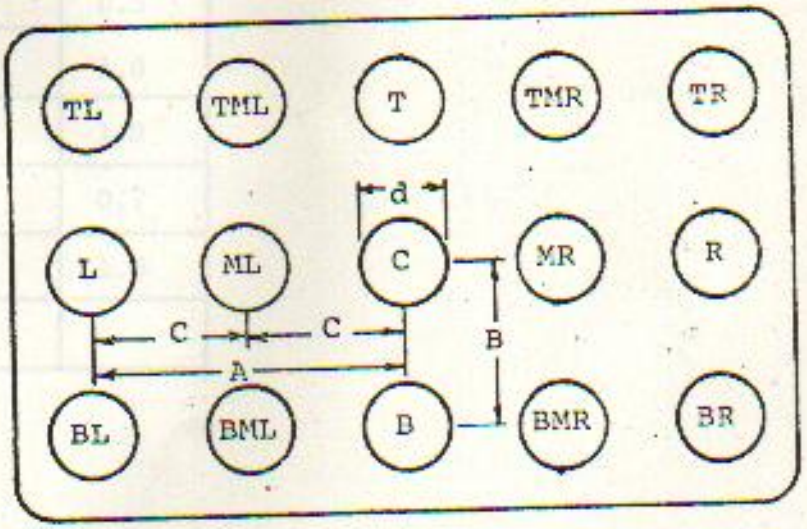
CONVERGENCE

The receiver shall be tuned to a channel displaying the Cross-hatch test pattern.
Convergence Error shall be determined by measurement of maximum distance among centers of Red, Green and Blue lines at the cross point of each measurement zone on the picture screen.



MAXIMUM CONVERGENCE ERROR
For Example
h1>v2>h2>v1>v3>h3
Maximum Convergence Error is h1

LOCATION OF MEASUREMENT ZONE
Circles dia = 15mm



Iss.	Date	REVISIONS	Sig.	Iss.	Date	REVISIONS
3	3-3-81	Circle dia. added/Corner ... revised	KBM			
2	2-3-81	Corner conv. specs changed	KBM			
1	1-22-81					

PREPARED BY	DATE	MECHANICAL APPR.	DATE	ELECTRICAL APPR.	DATE
				K.A. Mcnamara	Jan 27/81

E361-R3

ELECTROHOME Limited — ENGINEERING SPECIFICATION

DIVISION	Sheet	SPEC. NO.
ELECTRONICS	2 of 2	00-15077-02

SPEC. NO.

SPECIFICATION

G08 MINIMUM PERFORMANCE SPECIFICATIONS (CONVERGENCE)

Size(Inch)	19"V(510)
A	176
B	132
C	88

Convergence Error Limit

Location	19"V(510)
C	0.3
T,B,L,R	1.0
TML,TMR BML,BMR	1.0
ML,MR	0.7
TL,TR BL,BR	1.5
CORNER EDGES	

Iss	Date	REVISIONS	Sig.	Iss.	Date	REVISIONS
2	2-3-81	Corner convergence changed				
1	1-28-81					

PREPARED BY	DATE	MECHANICAL APPR.	DATE	ELECTRICAL APPR.	DATE
					Jan 27/81

L351-B3