

# WELLS GARDNER CORP

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## WGR2500-U4TS21J

25" Color Monitor

This monitor is switchable between 15KHZ (CGA) and 25KHZ (EGA) and is set up to operate at 15KHZ. For operation at 25KHZ; turn off **AC POWER** to the monitor and remove two philips screws holding the chassis. Slide chassis back and move connector at CN540 (LOW) to CN541 (HIGH). Slide chassis back into place and reinstall the two philips screws. The monitor is now ready for operation at 25KHZ (EGA). Included with the monitor are specifications.

## 1. Input Unit

### 1.1 Power Input

1.1.1 Plug Cord	2-pin AC cord (UL Listed, polarized, 18AWG, SPT-2)
1.1.2 Input voltage	120V AC $\pm$ 10%, 60Hz
1.1.3 Power consumption	About 100W
1.1.4 Inrush Current	About 36A peak (Input voltage 120VAC)

### 1.2 Signal Input

1.2.1 Connector	AMP 2P, 3P parts code : 1-480698-0 (2P) parts code : 1-480700-0 (3P)
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#### 1.2.2 Pin Assignment:

Pin No. (Wire color)	Input signal	Input signal specification
1	Vertical sync signal	Negative polarity TTL level
2 (Blue / White)	Horizontal sync signal	Negative polarity or Positive polarity TTL level Negative polarity composite synchronization 1.0 ~ 5.0Vp-p
3 (White)	Ground	Ground
4 (Blue)	Blue video signal	Positive polarity White level : Lower than 5V DC Black level : Higher than 0V DC 2.5 ~ 5.0Vp-p
5 (Green)	Green video signal	↑ Same as specified.
6 (Red)	Red video signal	↑ Same as specified

\*1 Vertical synchronizing signal

Frequency 54Hz ~ 60Hz

Pulse width 190 $\mu$ S(=3H) ~ 500 $\mu$ S(=8H)

\*2 Horizontal synchronizing signal

Frequency 15.75kHz (MODE 1), 24.39kHz (MODE 2)

Pulse width 3 $\mu$ S ~ 7 $\mu$ S (MODE 1), 2 $\mu$ S ~ 5 $\mu$ S (MODE 2)

### 1.3 Degaussing Power Input

1.3.1 Connector	AMP 2P parts code : 1-480698-4
1.3.2 Current On Degauss Coil	In-rush Normal Operation

## 2. Display Unit

2.1 Display Tube	26" 100° deflection color CRT CRT type : A63LAV61X
2.2 Scanning	TV scanning system

## 3. Electrical Performance

### 3.1 Video Amplifier

3.1.1 Video amplification	More than 30dB
3.1.2 Video Bandwidth	More than 16MHz (at -3dB)

### 3.2 Deflection Unit

3.2.1 Horizontal Frequency Range	15.75kHz $\pm$ 300Hz (MODE 1) 24.39kHz $\pm$ 300Hz (MODE 2)
3.2.2 Vertical Frequency Range	54Hz - 60Hz

### 3.3 CRT Screen

3.3.1 Raster Linearity	
Horizontal	$\pm$ 8% max.
Vertical	$\pm$ 8% max.
3.3.2 Raster distortion	
Trapezoidal distortion	Less than 3%
Barrel / pincushion distortion	Less than 3%
Tilt	Less than 2%

**3.3.3 Misconvergence**

Within a circle having a diameter corresponding to 80% of vertical length of CRT	Less than 1.1mm
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Within a circle having a diameter equivalent to vertical length of CRT (excluding the above circle)	Less than 2.1mm
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Within CRT screen (excluding the above circles)	Less than 3.0mm
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**3.3.4 Color purity**

No trouble shall be appeared after demagnetization by using a bar demagnetizer.

Condition : Within USA terrestrial magnetism, set as TV style.

<b>3.3.5 Horizontal Resolution</b>	680 dots (center)
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**3.3.6 Display size / position**

Conform to TV specification. To be discussed.

**4. Environmental Conditions****4.1 Operating conditions**

Temperature	0°C - 40°C
Relative humidity	Less than 70%

**4.2 Storage conditions**

Temperature	-10°C - 60°C
Relative humidity	Less than 80%

**4.3 AC line noise resistance**

No synchronized condition shall be detected when applying 500Vp-p pulse by using a noise simulator.

**4.4 Drop Test**

40cm (except top direction)

**4.5 Vibration Test**

No abnormal symptom shall appear when applying vibrations having the maximum acceleration of 1G for 30 minutes.

**4.6 Weight**

34.2kg (Net)
39.7kg (Gross)

## 5. Adjustment Functions

Arrangement	control knobs	
Front face of the Main PCB	Brightness (BRIGHT)	Red signal gain (R-GAIN)
	Vertical position (V.POSI)	Green signal gain (G-GAIN)
	Vertical size (V.SIZE)	Blue signal gain (B-GAIN)
	Vertical hold (V.HOLD)	Red signal bias (R-BIAS)
	Horizontal size (H.SIZE)	Green signal bias (G-BIAS)
	Horizontal hold (H.HOLD)	Blue signal bias (B-BIAS)
	Horizontal phase (H.PHASE)	Sharpness Selection Switch (SS.SW)
Inside of the Main PCB	Horizontal frequency selector (HIGH ↔ LOW)	
	Horizontal size selector (NARROW ↔ WIDE)	
	Deflection yoke polarity selector (NORMAL ↔ REVERSE)	
	Horizontal position (H.POSI) Vertical linearity (V.LIN)	
On the FBT	Focus (FOCUS)	
	Screen (SCREEN)	

## 6. Safety Standards

according to   UL 1410  
                   CSA C22.2 #1  
                   DHHS

## REVISION TRACE

This is to inform that we will make alterations on the captioned model specifications.  
The details of alteration are marked here and should be referred to for the updates.

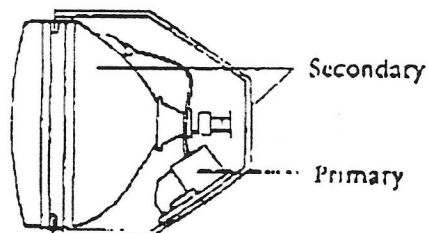
<u>SS-No.</u>	<u>Alteration</u>	<u>Remark</u>
5585B	Page 4 2.1 Display Tube CRT type changed. (A63LCC61X ← A63JHF81X)	Revised in Apr. 1995
5585C	Page 4 2.1 Display Tube CRT type changed. (A63LAV61X ← A63LCC61X) Page 6 5. Adjustment Functions Side pin spec (S.P.C) deleted. Page 7 7. Block Diagram Revised. Page 8 8. Timing Chart mis-type corrected. Page 9 9. Outline Tolerance added. ( $\pm 3$ mm) Page 12 10.5 mis-type corrected. Page 15 12. Schematic Diagram Changed. Page 18 15. Packing Drawing Revised. Page 19 16. Parts Change List Added.	Revised in Nov. 1995
5585D	Page 5 4.6 Weight Changed. (Net: 34.2kg ← 33.0kg, 39.7kg ← 38.5kg)	Revised in Mar. 1996



## 10. Cautions

### 10.1 Primary and Secondary Circuit

To avoid a severe electric shock, never touch the primary parts. When you make adjustments in this monitor, use the dielectric tuning tool. Do not short anything otherwise they may cause a trouble.

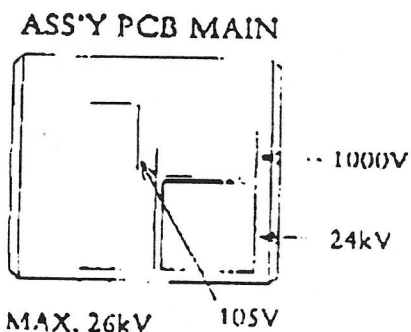


### 10.2 Impact

- Do not give any impact to the CRT. If you give the impact to the CRT when using the monitor on face top style, there are more internal sparks of CRT than TV style. The internal spark is caused by the coating inside the CRT that comes off and drops to the guns. Therefore, the impact to the CRT on face top style causes frequent internal sparks and improper Cut Off adjustment of the CRT that makes the screen invisible and loses the white balance. Also, the screen disappears for a moment when the spark occurs.
- Do not give any impact to the color monitor during transportation, otherwise a trouble may result. The shipping package is durable against a drop of 400mm. However, if the package drops from a height of exceeding 400mm, it may be damaged.

### 10.3 High Voltage

Never touch the interior of the color monitor carelessly, since a very dangerous high voltage exceeding 20,000V is produced inside the monitor. Disconnect the AC plug from the socket before touching the interior.





### 10.8 Control knobs

Don't manipulate control knobs uselessly. Entrust a skilled technician with their adjustments. If these control knobs are adjusted at random, the instrument may malfunction after a long-time use. For detailed adjustments, refer to the separate adjustment and check procedures.

### 10.9 Connecting CRT and PCB

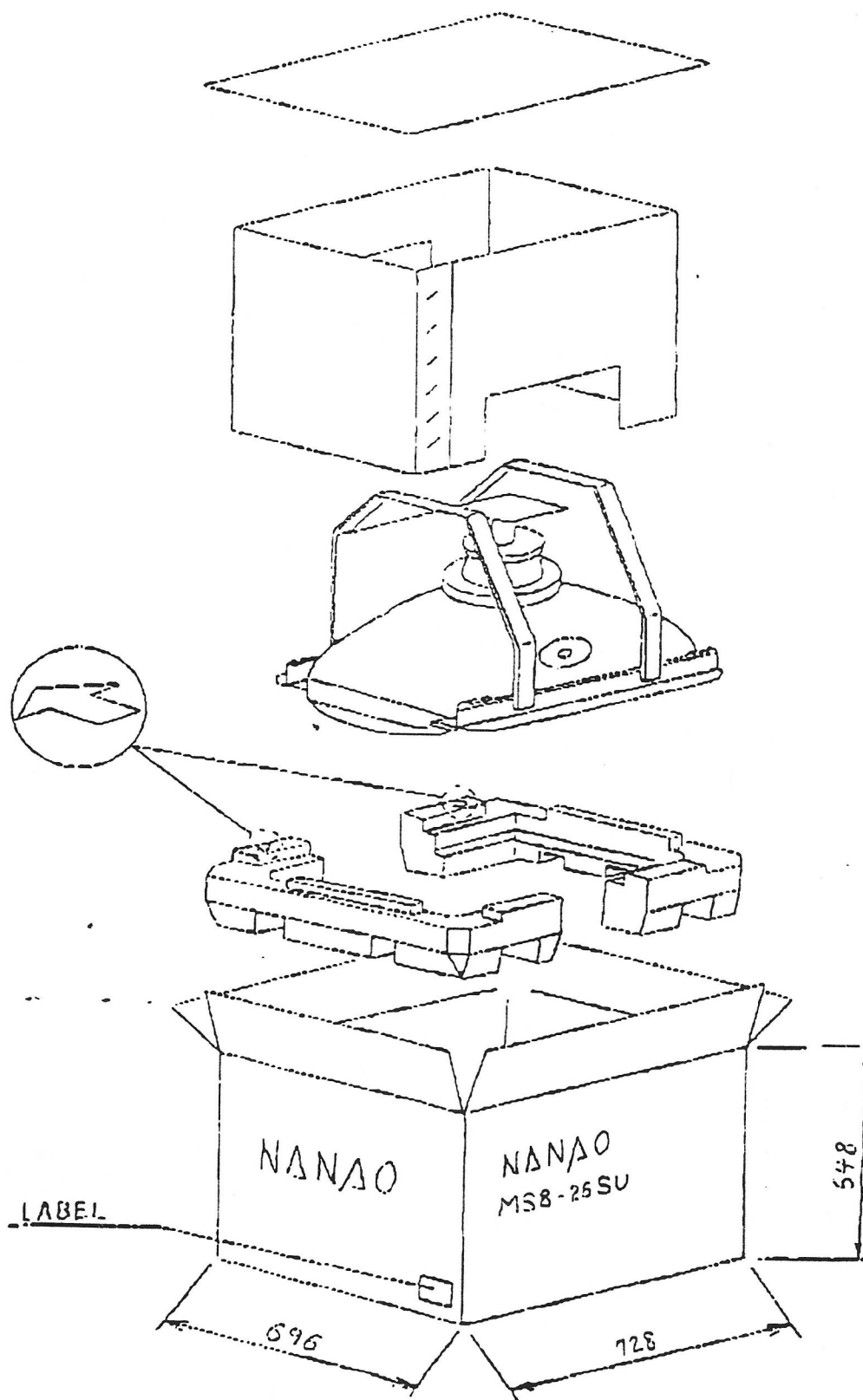
Use only CRT and PCB cording the same serial number. Apply silicon grease around anode button when putting anode cap on. Please make sure that only other material is not attached around contact area.

### 10.10 Modification

Never modify any part of the equipment without permission by authorized party. NANAQ corporation will not be responsible for any damage or incident caused by an unauthorized modification.

# 15. Packing Drawing

DIM IN mm



## 16. Parts Change List

Parts / Symbol	SPECIFICATIONS No.		Parts / Symbol	SPECIFICATIONS No.	
	SS-5585C	SS-5585B		SS-5585C	SS-5585B
CRT Transmission Rate Focus	A63LAV61X	A63LCC61X	R457	deleted	2.2k $\Omega$
	39%	39%	R458	deleted	22k $\Omega$
	28%	33%	R459	deleted	390 $\Omega$
DY Distortion Compensation	DAJ5048M	YS-56241	R460	deleted	10k $\Omega$
	Pin Free	Non Pin Free	VR451	deleted	200 $\Omega$
			C451	deleted	100 $\mu$ F
TS31 (FBT) #3 Boost Voltage #4 Boost Voltage Focus Voltage	MSU1FDQ509	MSU1FDQ504	C452	deleted	1 $\mu$ F
	108V	119.8V	C455	deleted	0.01 $\mu$ F
	114V	126.5V	D451	deleted	1SS133
CS39	DKR 1.6kV	2700PF-J	D452	deleted	1SS133
	3600PF-G		Q451	deleted	25C1740
CS48	DKR 1.6kV	2400PF-J	Q452	deleted	25C1740
	3300PF-J		Q453	deleted	25C1740
CS51	DTW 200V	0.15 $\mu$ F-J	J106	deleted	5mm
	0.22 $\mu$ F-J		J107	deleted	5mm
LS33	2.7mH-K	3.0mH-K	C910	KMF 50V	KME 50V
RS65	KRDS	11k $\Omega$ -J		220 $\mu$ F-M	220 $\mu$ F
	20k $\Omega$ -J		R570	RF 1S1 4.7 $\Omega$ -J	RF 50S1 4.7 $\Omega$
TS32	deleted		C545	DKR 1.6kV	3600PF-J
J128	added	-		3600PF-G	
J129	added	-	C546	DKR 1.6kV	3300PF-J
R451	deleted	4.7k $\Omega$		3600PF-G	
R452	deleted	6.8k $\Omega$	R442	SN14L2H	KRDS 4.7 $\Omega$ -J
R453	deleted	820 $\Omega$		4.7 $\Omega$ -J	
R454	deleted	2.2k $\Omega$	ZD903	HZS5.6NB1	HZS6.2NB2
R455	deleted	39 $\Omega$	ZD904	HZS5.6NB1	HZS6.2NB2
R456	deleted	82 $\Omega$	D906	1SS133	-
			D907	1SS133	-

### **WILLIAMS GAMES NOTE:**

To use this monitor in a Williams game such as the Cruiz'n series or Blitz, move the cable assembly from location CN540 (LOW) to CN541 (HIGH). Move the orange jumper from the "normal" position to the "wide" position.