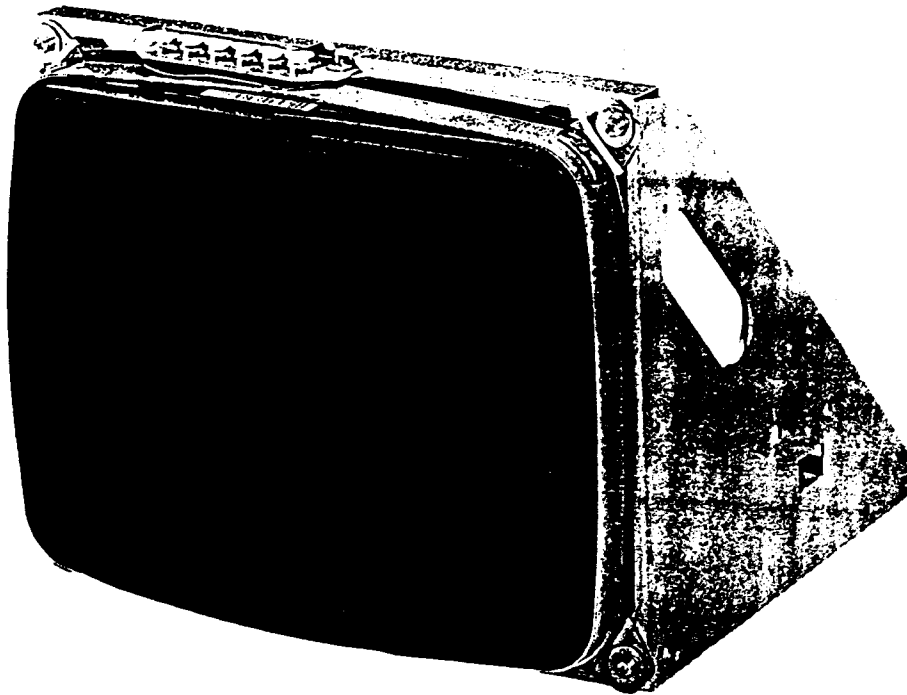


TelcoVISION[®]

VIDEO DISPLAY SYSTEMS

KTXX03V • 13"/19" VGA COLOR MONITOR

SERVICE MANUAL



TELCO INTERCONTINENTAL CORP • MONITOR PRODUCTS DIVSN
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1. SCOPE

THIS DOCUMENT IS THE SPECIFICATION OF 14" SUPER VGA MONITOR FOR MODEL, IBM PS/2 or COMPATIBLE COMPUTER(SUPER VGA CARD, 8514A) .

2. ELECTRICAL SPECIFICATIONS

2-1. POWER

FREQUENCY : 50/60Hz
CONSUMPTION : LESS THAN 120 WATTS.
VOLTAGE : 90V TO 240V AC
INRUSH CURRENT : 30 AMP. MAX.

2-2. VIDEO.

2-2-1 INPUT

SIGNAL : RED.
GREEN.
BLUE.

POLARITY : POSITIVE.

LEVEL : ANALOG 0.7Vp-p.

2-2-2 BAND WIDTH : 30MHz

2-2-3 RISE/FALL TIME

RISE : LESS THAN 20 ns.

FALL : LESS THAN 20ns.

RISE AND FALL TIME ARE MEASURED BETWEEN 10% TO 90% USING LESS THAN 5 pF PROBE.

2-3. HORIZONTAL

2-3-1 INPUT

POLARITY : POSITIVE OR NEGATIVE.

LEVEL : TTL COMPATIBLE.

HIGH : 2.2 TO 5.0 VOLT.

LOW : 0.0 TO 0.6 VOLT.

SCAN FREQUENCY : 31.46 / 35.2 / 35.5KHz.

2-3-2 RETRACE TIME : 5 us AMX.

2-3-3 HOLD IN RANGE : \pm 500Hz

2-4. VERTICAL

2-4-1 INPUT

POLARITY : POSITIVE OR NEGATIVE.

LEVEL : TTL COMPATIBLE.

HIGH : 2.2 TO 5.0 VOLT.

LOW : 0.0 TO 0.6 VOLT.

SCAN FREQUENCY. : 50~90Hz

2-4-2 RETRACE TIME : 900us MAX.

2-4-3 SCANNING MODE. : INTERLACED.

2-4-4 HOLD IN RANGE : 50~87Hz

2-5. HIGH VOLTAGE : 24KV \pm 0.5KV.

2-6. DISPLAY COLOR : UNLIMITED.

3. CRT SPECIFICATIONS (STANDARD, 14/20 INCH)

- 3-1. TUBE TYPE- COLOR. IN-LINE GUN, HYBRID BLOCK MATRIX.
 - 3-1-1 MANUFACTURE - ORION CO. LTD.
 - 3-1-2 MODEL NUMBER - 14INCH - M34KXG30X**/M34JZT30X**
- 20INCH - M34JRV90X**
 - 3-1-3 SIZE - 14(13V)/ 20(19)INCH
 - 3-1-4 DEFLECTION ANGLE - 90°
 - 3-1-5 NECK DIAMETER - 29.1mm
 - 3-1-6 PHOSPHOR TYPE - P22 SHORT PERSISTENCE, PIGMENTED NEW RARE, EARTH RED, SULPHIDE BLUE AND GREEN, DOT TYPE ARRANGED IN VERTICAL LINE TRIOS.
 - 3-1-7 DOT PICTCH - 14(13)INCH .28mm/ .39mm
- 20(19)INCH .82mm
 - 3-1-8 FACE PLATE - POLISHED
 - 3-1-9 TRANSMISSIVITY - 57% (APPROX. AT CENTER OF SCREEN)
 - 3-1-10 RASTER TILT - THE DY SHALL BE ALIGNED AND PERMANENTLY AFFIXED TO THE BELL OF THE CRT SUCH THAT RASTER TILT DOES NOT EXCEED 0.5 DEGREES IN EITHER THE X OR Y AXIS OF THE ACTIVE AREA OF THE SCREEN FACE.
 - 3-1-11 IMPLOSION PROTECTION - BANDED, WITH MOUNTIG LUGS.
 - 3-1-12 MAGNETIC SHIELD - INTERNAL
 - 3-1-13 DEGAUSSING - AN AUTOMATIC DEGAUSSING CIRCUIT IS PROVIDED THAT WILL SUFFICIENTLY PURIFY (DEMAGENTIZE) THE CRT IN ANY AXIS OR ANY ANGLE OF OPERATION. THE DEGAUSSING CIRCUIT WILL OPERATE AT DISPLAY POWER-UP GIVEN A 20 MINUTE POWER-DOWN IS PROVIDED(ENOUGH TIME FOR THE RMISTOR THAT CONTROLS THE CIRCUIT TO SUFFICIENTLY COOL DOWN).

4. PERFORMANCE CHARACTERISTICS

- 4-1. MEASUREMENT CONDITIONS - ALL SCREEN CHACACTERISTICS SHALL BE MEASURED WITH THE FOLLOWING MEASUREMENT CONDITIONS:
 - 4-1-1 INPUT VOLTAGE REGULATION - DUAL, JUMPER SELECTABLE ON THE SEPARATE POWER SUPPLY CHASSIS. AS FOLLOWS: (A) 120V = 98 - 132VAC, 50/60Hz
(B) 230V =198 - 264VAC, 50/60Hz
 - 4-1-2 WARM-UP PERIOD - 20 MINUTES MINIMUM
 - 4-1-3 PATTERN - FULL WHITE, CROSS HATCH, 80 CHARACTER "H" PATTERNS AS NECESSARY, VIDEO INFORMATION VOLTAGE LEVEL OF 0.7V_{p-p}.
 - 4-1-4 NOMINAL SCAN RATE - 31.5Hz
 - 4-1-5 NOMINAL SCAN TIME - 60Hz
 - 4-1-6 AMBIENT TEMPERATURE - 25°C. ±10°C
- 4-2. RASTER SIZE - MEASURED IN ACCORDANCE WITH ABOVE CONDITIONS, FIAT FIELD WHITE VIDEO SIGNAL.
 - 4-2-1 HORIZONTAL RASTER SIZE - 14" SHALL BE ADJUSTABLE FROM A MINIMUM SIZE OF 255mm TO A MAXIMUM SIZE OF 280mm. NOMINAL HORIZONTAL WIDTH SHALL BE FACTORY TO ADJUSTED 260mm, ±5mm. 20" SHALL BE ADJUSTABLE FROM A MINIMUM SIZE OF 370mm TO A MAXIMUM SIZE OF 410mm. NOMINAL HORIZONTAL WIDTH SHALL BE FACTORY ADJUSTED TO 390mm, ±5mm.
 - 4-2-2 VERTICAL RESTER SIZE - 14" SHALL BE ADJUSTABLE FROM A MINIMUM SIZE OF 175mm TO A MAXIMUM SIZE OF 210mm. NOMINAL VERTICAL HEIGHT SHALL BE FACTORY ADJUSTED TO 190mm, ±3mm. 20" SHALL BE ADJUSTABLE FROM A MINIMUM SIZE OF 260mm TO A MAXIMUM SIZE OF 305mm. NOMINAL VERTICAL HEIGHT SHALL BE FACTORY ADJUSTED TO 275mm, ±5mm.

4-3. RASTER CENTERING - MEASURED IN ACCORDANCE WITH ABOVE CONDITIONS, FLAT FIELD WHITE VIDEO SIGNAL.

4-3-1 HORIZONTAL CENTERING - SHALL HAVE A MINIMUM CONTROL RANGE OF 30mm. THE RASTER SHALL BE FACTORY CENTERED TO WITHIN 4mm OF TRUE HORIZONTAL CENTER.

4-3-2 VERTICAL CENTERING - SHALL HAVE A MINIMUM CONTROL RANGE OF 30mm. THE RASTER SHALL BE FACTORY CENTERED TO WITHIN 4mm OF TRUE HORIZONTAL CENTER.

4-4. PURITY - THE PURITY CONTROLS SHALL BE PRESET AND LOCKED AT THE FACTORY SUCH THAT A FULL RASTER FIELD OF ANY COLOR WILL NOT HAVE VISIBLE DEVIATIONS SUCH AS SPLOTTING, COLOR IMPURITIES, OR VERTICAL STRIPES.

4-5. CONVERGENCE - MEASURED IN ACCORDANCE WITH ABOVE CONDITIONS, USING A CROSS HATCH PATTERN. COLOR CENTER DETERMINED AS THE MID-POINT OF MAXIMUM BRIGHTNESS OF EACH LINE. MISCONVERGENCE WILL NOT EXCEED.

DOT PITCH	14"/ .28dp	14"/ .39dp	20"/ .82dp
CENTER AREA	0.3mm	0.3mm	1.2mm
CORNER AREA	0.5mm	0.6mm	1.6mm

* CENTER AREA DIFINED AS A CIRCULAR AREA, DIAMETER OF(14INCH) 7.70 INCHES (180mm). (20INCH) 11.25 INCHES(196mm), LOCATED AT THE EXACT CENTER OF THE CRT.

CORNER AREA DIFINED AS THE AREA OUTSIDE THE CENTER AREA.

4-6. LINEARITY - LINEARITY SHALL BE MEASURED AT NOMINAL RASTER SIZE UNDER THE FOLLOWING CONDITIONS:

4-6-1 VERICAL LINEARITY - USING A VERTICAL GRILL PRTTERN SPACED AT SINGLE CHARACTER WIDE INTERVALS. THE CELL TO CELL NON-LINEARITY SHALL BE : 14INCH < 5%
20INCH < 7%

4-6-2 HORIZONTAL LINEARITY - USING A HORIZONTAL GRILL PRTTERN SPACED AT SINGLE CHARACTER WIDE INTERVALS. THE CELL TO CELL NON-LINEARITY SHALL BE : 14INCH < 5%

4-6-3 OVERALL LINEARITY - USING THE RESPECTIVE HORIZONTAL OR VERTICAL GRILL PATTERN, THE OVERALL LIMIT FOR NON-LINEARITY SHALL BE : 14INCH < 5%
20INCH < 7%

THE METHOD FOR CALCULATING OVERALL LINEARITY IS :

$$((\text{MAX}-\text{MIN})/(\text{MAX}+\text{MIN})) \times 100 < 5\% (14\text{INCH})$$

$$7\% (20\text{INCH})$$

4-7. HIGH VOLTAGE REGULATION - SHALL BE MEASURED ALTERNATING BETWEEN A HORIZONTAL GRILL PATTERN AND A BLACK LEVEL PATTERN. THE HIGH VOLTAGE REGULATION SHALL LIMIT THE AMOUNT OF MOVEMENT AT THE SCREEN CORNERS TO LESS THAN 2%.

4-8. DRIFT WITH TEMPERATURE - MEASURED AFTER A 20 MINUTE WARM-UP PERIOD AT AMBIENT TEMPERATURE OF 25°C. WHEN THE TEMPERATURE IS CYCLED FROM 25°C TO 0°C AND FROM 25°C TO 55°C, VIDEO SIZE AND CENTERING DRIFT WILL NOT EXCEED 4mm HORIZONTALLY OR 3mm VERTICALLY DURING ANY PART OF A 24 HOUR PERIOD.

4-9. ENVIRONMENTAL CONDITIONS

4-9-1 AMBIENT OPERATIONAL TEMPERATURE - 10°C ~ 55°C

4-9-2 AMBIENT OPERATIONAL HUMIDITY - 10~90%. CONDENSATION

5. VISUAL SPECIFICATIONS

5-1. DISPLAY SIZE

HORIZONTAL : $275 \pm 3\text{mm}$

VERTICAL : $200 \pm 3\text{mm}$

5-2. DISPLAY RESOLUTION

1. MODE1 : 640×350

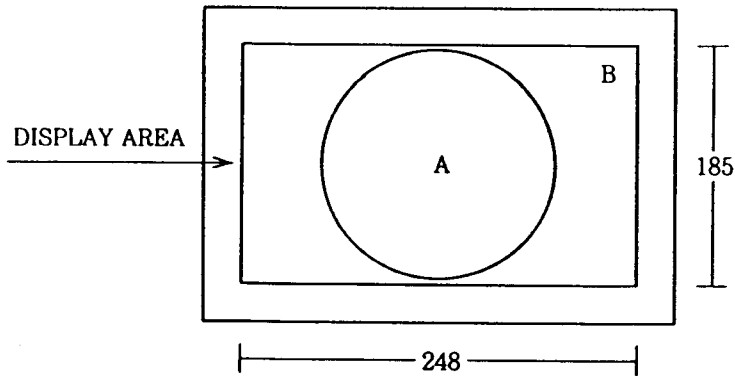
2. MODE2 : 720×400

3. MODE3 : 640×480 (STD)

4. MODE4 : 800×600

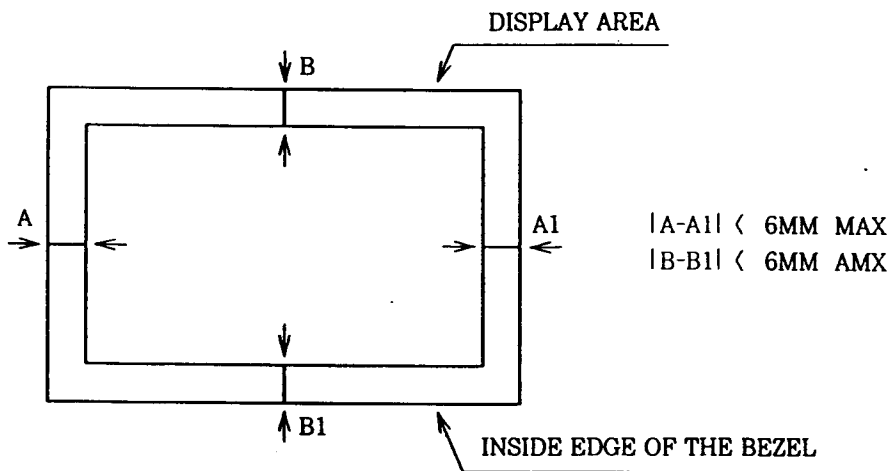
5. MODE5 : 1024×768 (INTERLACE)

5-3. CONVERGENCE ERROR



ZONE	SPECIFICATION (mm)
A	0.31
B	0.5

5-4. DISPLAY LOCATION



6. MECHANICAL SPECIFICATION

6-1. OUTSIDE DIMENSION

OUTSIDE DIMENSION MEETS SEJOO SPECIFICATION.

6-2. CONTROLS

6-2-1 USER CONTROLS.

BRIGHTNESS.

CONTRAST

H-SIZE.

H-POSITION.

V-SIZE.

V-POSITION.

6-2-2 INTERNAL CONTROLS.

HORIZONTAL HOLD 1.

HOLD 2.

VERTICAL SIZE

SIDE PINCUSHION.

RED VIDEO DRIVE.

BLUE VIDEO DRIVE.

RED BIAS

BLUE BIAS

GREEN BIAS

SCREEN GRID VOLTAGE ADJUSTMENT.

FOCUS ADJUSTMENT.

SUB CONTRAST

6-2-3 POWER CORD

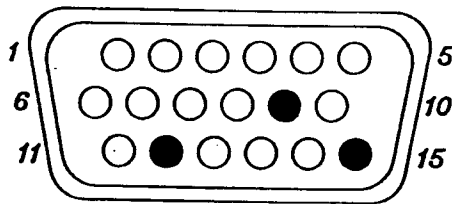
● USE UL LISTED AND CSA CERTIFIED DETACHABLE POWER CORD TYPE, STV, 3-CONDUCTORS, 18AWG FOR AC 120V AREA.

● USE VDE LISTED DETACHABLE POWER CORD TYPE, H05VV-F, 3-CONDUCTORS, 18AWG FOR AC 220~240V AREA.

6-2-4 SIGNALS

SIGNAL CONNECTOR IS A STANDARD 15 PINS SUBMINIATURED 3 LAYER D CONNECTOR, " FAXCONN TYPE DV 40299" OR EQUIVALENT WITH MALE SCREW LOOK ASSEMBLY WITH PIN ASSIGNMENT AS FOLLOW.

D - type 15pin connector



PIN NUMBER	FUNCTION
1	RED
2	GREEN
3	BLUE
4	N.C.
5	N.C.
6	RED GND.
7	GREEN GND.
8	BLUE GND.
9	N.C.
10	GND. (SHIELD)
11	GND.
12	N.C.
13	H. SYNC.
14	V. SYNC.
15	N. C.

7. ENVIRONMENTAL CONDITIONS.

7-1. TEMPERATURE & HUMIDITY.

7-1-1 TEMPERATURE.

OPERATING 5 TO 35 DEGREE C

STORAGE -10 TO 60 DEGREE C

7-1-2 HUMIDITY

OPERATING 5 TO 60% (NON CONDENSATION)

STORAGE 5 TO 90% (NON CONDENSATION)

V-SIZE.

V-POSITION.

8. RELIABILITY.

MEAN TIME BETWEEN FAILURE (MTBF)

MORE THAN 15,000 HOURS.

9. SAFETY & EMI APPROVAL

C-UL ——— E159083

DHHS — 9420433-00

