

# 19" ULTRA HIGH RESOLUTION DIGITAL IMAGE DISPLAY

## Features

- 2048 x 1536 Pixel Display
- 2048 x 2048 Pixel Frame Buffer
- Scroll and Window Functions
- 16-Bit Parallel Interface operates at up to 20 M byte/sec
- 0.2 Sec Display Update Time
- 256 Levels of Gray-Scale

## Typical Applications

- Photogrammetry
- Picture Archiving and Communication Systems
- Reconnaissance
- Gray-scale Imaging
- Computer-aided Publishing

**The GMA 251 is a member of the Tektronix display product family, which provides unparalleled raster-scan video performance.**

The GMA 251 is especially suited to system builders in the fields of gray-scale imaging, military reconnaissance, PACS, computer-aided publishing, document retrieval, and other similar technical applications.

The GMA 251 makes the benefits of high-resolution video available to the system builder. Key features include a bright, stable, flicker-free 60 Hz refresh rate, a full 1536 vertical by 2048 horizontal viewable pixels, and a crisp, well-focused beam at all points



on the screen. A high-bandwidth 200 MHz amplifier affords maximum image fidelity while digitally-adjusted focus and astigmatism tracking provide crisp, stable displays, even in the corners. To improve viewability, a contrast enhancement panel is bonded to the CRT faceplate.

The frame buffer incorporates ultra fast circuits that allow the user to update the display as fast as 0.2 seconds. This frame buffer has a

storage capacity of 2048 x 2048 x 8 and, by scrolling the entire image can be displayed on the screen.

The T16 bus interface is a 16-bit parallel digital interface for connecting to host busses through a 50-pin connector. The entire display is packaged in a rugged impact resistant cabinet.

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## Standard Performance Characteristics

### Display Characteristics

#### Addressable Area

356 by 267 mm (14 x 10.5 in.)

#### Addressable Resolution

2048 x 1536 pixels at 60 Hz, non-interlaced

#### Aspect Ratio

3:4-Horizontal Long Axis

#### Spot Size (shrinking raster)

7.5 mils (0.19 mm) center screen

9.0 mils (0.23 mm) corners (maximum)

#### Brightness

100 cd/m<sup>2</sup> (30 fL) with installed 60% contrast enhancement filter

#### Phosphor

WW (P4) (others available)

#### Focus

Dynamically controlled, digitally adjusted

#### Astigmatism

Dynamically controlled, digitally adjusted

#### Geometric Distortion

Incremental non-linearity:  $\pm 3\%$  @25°C

Positional accuracy:  $\pm 1\%$  of image height

Peak-to-peak line variation:  $\pm 5\%$

### Electrical Characteristics

#### Frame Buffer Characteristics

Addressable Memory:

2048 x 2048 x 8 bits

Interface: T16 Bus

16-bit asynchronous

20 M bytes/sec, Burst

16 M bytes/sec, Continuous

Driver/Receiver: RS-422 compatible

Cable: 50 conductor flat ribbon cable with D-connector

Image Update Time: 0.2 seconds

Maximum Connection Distance (GMA 251 to Host):

40 feet (20 M bytes/sec data transfer)

400 feet (2 M bytes/sec data transfer)

#### Power Requirements

380 watts maximum. Input voltage:

selected by voltage range switch

Range: 87 to 128 volts, 48 to 63 Hz

174 to 256 volts, 48 to 63 Hz

#### Condition Indicators

Scan fail indicator

Low voltage power supply indicator

High voltage power supply indicator

### Environmental Characteristics

#### Shock

Non-operating: 20 g's, 1/2 sine, 11 ms duration

#### Vibration

Non-operating: 15 minutes along each major axis;

0.010 in. displacement

with frequency varied from 10 Hz to

35 Hz to 10 Hz

#### Temperature Range

Operating: 0 to 40°C

Non-operating: -40 to +60°C

#### Humidity

Operating to 95% relative humidity (non-condensing)

#### Radiated and Conducted Emissions

Meets FCC Part 15, subpart J, class A

#### Altitude

Non-operating: 15 Km (50,000 ft)

Operating: 4.5 Km (15,000 ft)

#### Safety Certification

UL 114/478

CSA 154

DHHS 21 CFR, Subch. J. parts 1020 and 1030

### Physical Characteristics

#### Weight

37.7 Kg (83 lbs)

#### Dimensions

Height: 429 mm (16.9 in.)

Width: 553 mm (21.8 in.)

Depth: 567 mm (22.3 in.)

### Options

Opt. 01: WB (P45) Phosphor with 30% contrast enhancement filter

Opt. A1: Universal European power cord 220V/16A, 50 Hz operation

Opt. A2: United Kingdom power cord 240V/13A, 50 Hz operation

Opt. A3: Australian power cord 240V/15A, 60 Hz operation

Opt. A4: North American power cord 240V/15A, 60 Hz operation

Opt. A5: Swiss power cord 220V/6A, 50 Hz operation

Opt. B1: Service Manual

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