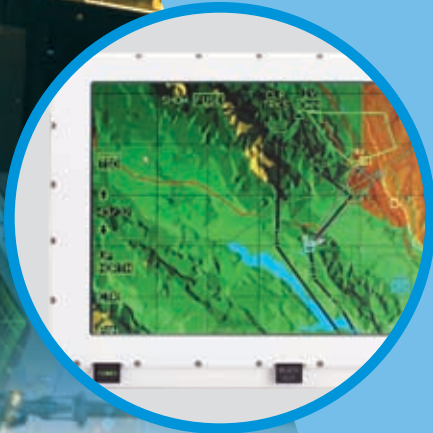
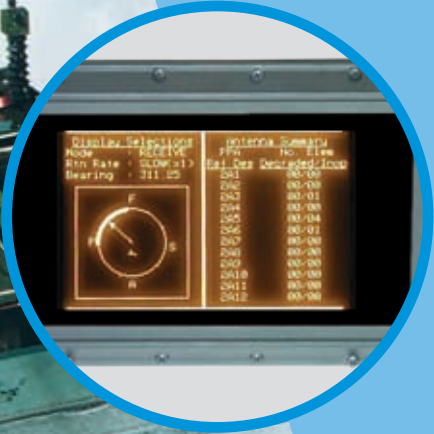


## Flat Panel Displays

- Color AMLCD Displays
- LED Backlit Color AMLCD Displays
- Transflective LCD Displays
- Electroluminescent Displays



**RUGGEDIZED  
SUNLIGHT READABLE  
NVIS QUALIFIED**



# Rely on Orbit Ruggedized Flat Panel Products that Clearly Display Superior Readability, Functionality & Durability.

Orbit Electronics Group designs, develops and manufactures a wide array of ruggedized color AMLCD and Electroluminescent Flat Panel Displays for militarized defense electronics, aerospace, air traffic control, severe environment and industrial applications. Our ruggedized flat panel display products have proven to offer superior clarity, contrast, accurate color and uniformity in even the most extreme airborne, shipboard, wheeled/tracked vehicle and handheld environments, while providing the utmost reliability and economical operation.

Utilizing select COTS products and our proprietary in-house technologies and processes, we professionally engineer every system to meet each customer's unique requirements — while ensuring superior quality and competitive cost. Extensive preliminary modeling and thermal simulation, unique isolation/integration/cooling techniques, and years of proven manufacturing practices ensure that every display product meets or exceeds the performance, hazardous environment (MIL-STE-810), and EMI/EMC demands of its application. Orbit Flat Panel Displays also support MIL-STD-1275 (Vehicular), MIL-STD-704 (Airborne) and MIL-STD-1399 (Shipboard) power source inputs, and operate within MIL-STD-461 EMI/EMC environments.



Many standard and optional features are available, such as:

- High brightness for sunlight/daylight readability
- NVIS capability
- Touch control screens
- Protective faceplates with anti-glare/reflective enhancements
- Extended operating temperature ranges
- Custom bezels with integrated switches
- Many more options to meet your specific requirements

Orbit Flat Panel Displays are available in three standard size ranges: Small (4.0" up to 8.4"), Medium (10.4" up to 15.0"), and Large (18.1" to 21.3" and beyond), and are available in forms ranging from simple standalone flat panel display devices to complex display-based systems with processing, control and I/O features.

**RUGGEDIZED  
BY ORBIT**

Orbit Electronics Group Flat Panel Displays are rigorously tested and certified to withstand the demands of harsh military and industrial environments. Our products have proven to reliably perform on a broad range of mission critical applications, in even the most extreme temperature, vibration and hazardous conditions.

# Orbit Color AMLCD Display Products

Orbit Electronics Group offers a broad range of rack-mounted, panel-mounted, stand-alone and table-top ruggedized color AMLCD display products. Our ability to economically customize display products to meet unique program requirements has made us the provider of choice for countless new AMLCD display applications. For upgrades of legacy systems, our AMLCD's provide significant weight and power advantages over older CRT displays, while offering Orbit's unique ability to deliver a form-fit-function replacement, with added features if required. For limited-space applications with requirements for display, processing, data storage/entry, control and

multiple I/Os, Orbit color AMLCDs with internal integrated single board computer, memory and I/O are ideal solutions.

Orbit Electronics Group has achieved a number of technological developments that have allowed for the integration of state-of-the-art LED backlights and transfective enhancement processes into select ruggedized display products (indicated with "Backlit" and "Transfective" icons throughout this brochure).

## AMLCD Display Products

### 5.7" VGA Display w/Dual Mode LED Backlight (1)

Ideal for avionics and vehicular applications, especially where night vision operations are required, this innovative VGA 640 x 480 color display features a dual mode LED backlight for daylight and NVIS-B/night operating modes. Luminance modes are front panel controlled via switch/concentric potentiometers. Additional features include RGB analog video input, AC or DC input power, and a compact (5.80"W x 6.00"H x 4.50"D) housing.

Display Size: 5.7" (14.5 cm) diagonal  
 Resolution: 640 x 480 (VGA)  
 Luminance: Day Mode: 0 to >860 cd/m<sup>2</sup> (0-250fL)  
 NVIS-B/Night Mode: 0 to 52 cd/m<sup>2</sup> (0-15fL)  
 Contrast: C:R = 400:1 @ ctr.  
 Viewing Angle: Typically V: +70°/-80° H: ±80°  
 Power: Approximately 15 W



### 6.3" High-Resolution XGA Display w/Integrated SBC (Single Board Computer) (2)

Designed primarily for avionics and vehicular applications where processing and control features are desired, this XGA 1024 x 768 color display features an integrated high-performance single board computer, multiple I/Os (USB, Ethernet, IEEE1284, PS/2, RS-232/422), and resistive touch-control screen with anti-glare treatment. Also features 21 function buttons integrated into front bezel, RGB analog video input, and 28-VDC input power, all in a compact (10.75"W x 8.00"H x 3.50") housing.

Display Size: 6.3" (16 cm) diagonal  
 Resolution: 1024 x 768 (XGA)  
 Luminance: 0 to 250 cd/m<sup>2</sup> (0-73fL)  
 Contrast: C:R = 500:1 @ ctr.  
 Viewing Angle: Typically V: +45°/-60° H: ±60°  
 Power: Approximately 75 W

### 6.4" Daylight Readable/NVIS-B Compliant Display with Transfective Enhancements (3)

Integration of transfective enhancements into this VGA 640 x 480 color display allows utilization of standard backlighting and ambient light to provide a unique dual mode, low-power display with daylight and NVIS-B/night operating modes, making this unit effective for avionics and vehicular applications where control features and night vision operations are required. Luminance modes are front-panel controlled via a switch/concentric potentiometer. Additional features include 17 function buttons integrated into front bezel, RGB analog video input and DC input power, in a compact (8.20"W x 6.10"H x 4.10"D) enclosure.

Display Size: 6.4" (16.3 cm) diagonal  
 Resolution: 640 x 480 (VGA)  
 Luminance: Day Mode: 0 to >290 cd/m<sup>2</sup> (0-85fL)  
 NVIS-B/Night Mode: 0 to 17 cd/m<sup>2</sup> (5fL)  
 Contrast: C:R = 350:1 @ ctr.  
 Viewing Angle: Typically V: +70°/-40° H: ±70°  
 Power: Approximately 15 W



### 6.5" High Bright Dual Mode Avionics Display

This VGA 640 x 480 color display is ideal for avionics, vehicular and shipboard bridge applications where control features are required for both sunlight and night vision operations. Luminance modes (sunlight and NVIS-B/night) are front-panel controlled via a switch/concentric potentiometer. 24 function buttons with serial I/O are integrated into the front bezel. Features include an RGB analog video input and 28-VDC input power, and the display is housed in a compact (7.66"W x 6.52"H x 4.89"D) enclosure. Touch control and extended temperature operating ranges are available.

Display Size: 6.4" (16.3 cm) diagonal  
 Resolution: 640 x 480 (VGA)  
 Luminance: Day Mode: 0 to >714 cd/m<sup>2</sup> (0-210fL)  
 Contrast: C:R = 350:1 @ ctr.  
 Viewing Angle: Typically V: +35°/-55° H: ±70°  
 Power: Approximately 12 W

### 8.4" Ultra-High Bright Panel Mount Display

This SVGA 800 x 600 color display is the perfect choice for vehicular and cockpit applications where sunlight and severe environment operations are specified. Features include an OSD (On Screen Display) with front panel luminance control potentiometer, user-selectable NTSC/PAL or analog video input, and 12-VDC input power. Display is housed in a high-shock (100 G) rated, compact (9.25"W x 7.93"H x 3.47"D) enclosure. XGA resolution, touch control and extended temperature operating options are available.

Display Size: 8.4" (21.3 cm) diagonal  
 Resolution: 800 x 600 (SVGA)  
 Luminance: 0 to >1360 cd/m<sup>2</sup> (10-400fL)  
 Contrast: C:R = 500:1 @ ctr.  
 Viewing Angle: Typically V: +45°/-60° H: ±60°  
 Power: Approximately 24 W



## Ruggedized Medium Size AMLCD Display Products

### 10.4" VGA Control Terminal w/Transflective Display Enhancements

This VGA display/processor, for man-pack and vehicular applications, boasts a heavy-duty housing and provides a viewing area of 8.31" x 6.24". Includes a 233 MHz x86 single board computer (64 MB RAM and 32 MB Flash), 2 PCMCIA slots, RS-232, RS-422, analog VGA and PS/2 I/Os, together with a 20-key PS/2 keyboard. Size is 11.85"W x 12.31"H x 3.79"D (not including connector protrusion), and input is 16 – 34 VDC. Environmental characteristics include high humidity tolerance, and extended operational and storage temperature ranges. Transflective display enhancements help keep power consumption low.

Display Size: 10.4" (26 cm) diagonal  
 Resolution: 640 x 480 (VGA)  
 Luminance: 0 to >340 cd/m<sup>2</sup> (0–100fL)  
 Contrast: C:R = 70:1 @ ctr.  
 Viewing Angle: Typically V: +85°/-85° H: ±85°  
 Power: 36 W @ 28 VDC



### 10.4" SVGA Display w/Touch Control (4)

This SVGA display for airborne and shipboard applications features resistive touch control, and is encased in a 12.60"W x 8.98"H x 3.50"D panel mount enclosure. Features include 5-button on-screen-display controls enhanced with anti-glare/reflective treatment, RGB analog video I/O and RS-232 touch control I/O.

Display Size: 10.4" (26 cm) diagonal with 8.31" x 6.24" viewing area  
 Resolution: 800 x 600 (SVGA)  
 Luminance: 375 cd/m<sup>2</sup> (0–110 fL)  
 Contrast: C:R = 250:1 @ ctr.  
 Viewing Angle: Typically V: +35°/-45° H: ±45°  
 Power: 28 VDC (< 65 W)

### 10.4" SVGA High Bright Avionics Display

This SVGA display with heavy-duty bulkhead mount housing provides a viewing area of 8.31" x 6.24". It includes a day/night (NVIS) mode control switch, and has 21 control keys embedded within the bezel. External dimensions are 13.6"W x 10.63"H x 3.97"D. Power input can be either 18 – 36 VDC input (standard), or 86 – 264 VAC (optional).

Display Size: 10.4" (26 cm) diagonal  
 Resolution: 800 x 600 (SVGA)  
 Luminance: 0 to >816 cd/m<sup>2</sup> (0–240fL)  
 Contrast: C:R = 300:1 @ ctr.  
 Viewing Angle: Typically V: +30°/-50° H: ±50°  
 Power: 36 W @ 24 VDC

### 10.4" High Bright XGA Display w/Touch Control (5)

This XGA display for airborne and shipboard applications features resistive touch controls, and is encased in a 12.60"W x 8.98"H x 3.50"D panel mount enclosure. Features include 5-button on-screen display controls, 1000:1 dimming, 16M+ colors, anti-glare/reflective treatment, RGB analog video I/O and RS-232 touch control.

Display Size: 10.4" (26 cm) diagonal with 8.28" x 6.21" viewing area  
 Resolution: 1024 x 768 (XGA)  
 Luminance: 500 cd/m<sup>2</sup> (0–147 fL)  
 Contrast: C:R = 250:1 @ ctr.  
 Viewing Angle: Typically V: +35°/-40° H: ±55°  
 Power: 28 VDC (< 75 W)

### 12.1" SVGA Sunlight Readable Command and Control Monitor

This High Bright SVGA monitor features a plate or yoke mount housing, and provides a viewing area of 9.69" x 7.26". External dimensions are 12.52"W x 10.19"H x 3.97"D. Power input is either 18 – 36 VDC (standard) or 86 – 264 VAC (optional). 8 control keys are embedded within the bezel.

Display Size: 12.1" (30.7 cm) diagonal  
 Resolution: 800 x 600 (SVGA)  
 Luminance: 0 to >850 cd/m<sup>2</sup> (0–250fL)  
 Contrast: C:R = 600:1 @ ctr.  
 Viewing Angle: Typically V: +40°/-50° H: ±60°  
 Power: 18-36 VDC, 26 W @ 28 VDC, 86–264 VAC Optional  
 Interface: Analog RGB STD., RS-170 Optional

### 12.1" Wide Viewing Angle SVGA Display with Touch Control (6)

Designed for airborne and shipboard applications, this SVGA display features resistive touch control, and is encased in a compact panel mount enclosure (12.60"W x 8.98"H x 3.50"D). Additional features include 5-button on-screen-display controls, anti-glare/reflective treatment, RGB analog video I/O and RS-232 touch control.

Display Size: 12.1" (30.7 cm) diagonal with 9.69" x 7.26" viewing area  
 Resolution: 800 x 600 (SVGA)  
 Luminance: 200 cd/m<sup>2</sup> (0–59 fL)  
 Contrast: C:R = 400:1 @ ctr.  
 Viewing Angle: Typically V: ±80° H: ±60°  
 Power: 115 VAC, 47-440 Hz (<50 W)

### 12.1" Wide Viewing Angle SVGA Display/Processor with Touch Control (7)

Ideal for ground transportable and shipboard applications, this SVGA display/processor with resistive touch control is encased in a compact panel mount enclosure (12.60"W x 8.98"H x 4.63"D). Features include an embedded 733-MHz single board computer, 128 MB of RAM and a 1- to 4-GB MicroDisk, 5-button on-screen display controls, anti-glare/reflective treatment, RGB analog video I/O and RS-232 touch control I/O. Includes Ethernet, USB and serial I/O ports.

Display Size: 12.1" (30.7 cm) diagonal with 9.69" x 7.26" viewing area  
 Resolution: 800 x 600 (SVGA)  
 Luminance: 200 cd/m<sup>2</sup> (0–59 fL)  
 Contrast: C:R = 400:1 @ ctr.  
 Viewing Angle: Typically V: ±80° H: ±80°  
 Power: 115 VAC, 47-440 Hz (<50 W)

(6)

(5)

(4)

(7)



### 12.1" High Bright XGA Display/Processor with Touch Control

This XGA display/processor is used for ground-transportable control tower and open-vehicle sunlight-readable applications. Encased in a 19.00"W x 12.25"H x 5.97"D panel mount enclosure, this display features resistive touch control, a high-performance 1.6-GHz single board computer with 512 MB of RAM, a 20-GB mobile disk, 4 USB ports, 2 RS-232 ports, an Ethernet port, IDE & parallel I/Os, and incorporates a Windows XP operating system. Other features include internal UPS for the computer, 6-button on-screen display controls, anti-glare/reflective treatment, RGB analog video I/O and RS-232 touch control.

Display Size: 12.1" (30.7 cm) diagonal with 9.68" x 7.26" viewing area  
 Resolution: 1024 x 768 (XGA)  
 Luminance: 1000 cd/m<sup>2</sup> (0–293 fL)  
 Contrast: C:R = 300:1 @ ctr.  
 Viewing Angle: Typically V: +60°/–40° H: ±60°  
 Power: 115 VAC, 47–440 Hz (<50 W)

### 12.1" High-Resolution XGA Ground Vehicular Display

This XGA ground mobile/vehicular display features a heavy-duty machined aluminum chassis designed to isolate the display and internal electronics from exposure to extreme shock and vibration. A unique bezel incorporates 4 display-control backlit switches and 12 LED backlit (NVIS green) silicone softkeys that utilize RS-232 serial communication. Enclosure measures 15.10"W x 12.30"H x 3.63"D.

Display Size: 12.1" (30.7 cm) diagonal with 9.69" x 7.26" viewing area  
 Resolution: 1024 x 768 (XGA)  
 Luminance: 748 cd/m<sup>2</sup> (0–220 fL)  
 Contrast: C:R = 600:1 @ ctr.  
 Viewing Angle: Typically V: +40°/–50° H: +/-60°  
 Power: 18–36 VDC, 23 Watts @ 28 VDC  
 Interface: Dual – Operator selectable – DVI or Analog RGB

### 12.1" High-Resolution/High Bright XGA Vetronics Ground Mobile Display (8)

This XGA Vetronics ground mobile/vehicular display's heavy duty machined aluminum chassis isolates the display and internal electronics from extreme shock and vibration. A unique bezel incorporates 12 LED backlit (NVIS green) silicone soft keys that utilize RS-232 serial communication and are controlled by a rotary brightness dial. Enclosure measures 12.70"W x 10.76"H x 3.60"D.

Display Size: 12.1" (30.7 cm) diagonal with 9.69" x 7.26" viewing area  
 Resolution: 1024 x 768 (XGA)  
 Luminance: 748 cd/m<sup>2</sup> (0–220 fL)  
 Contrast: C:R = 600:1 @ ctr.  
 Viewing Angle: Typically V: +35°/–55° H: +/-60°  
 Power: 12 VDC +/- 3 V STD., 18–36 VDC or 86–264 VAC Optional  
 Interface: Analog RGB STD., RS-170 or LVDS Optional



### 12.1" XGA High Bright MFD Avionics Display with NVIS Features

This multi-function, dual mode, High Bright display is enclosed within a machined aluminum chassis, in an A/C bulkhead/panel mount configuration. Its bezel includes 21 programmable keys, 3 rocker switches with NVIS LED illumination, and RS-232/422 I/O. Withstands extended temperature ranges (–20° C to +55° C operating, and –46° C to +71° C storage). Touch control screen is optional. Enclosure measures 12.61"W x 9.60"H x 3.63"D.

Display size: 12.1" (30.73 cm) diagonal with 9.69" x 7.26" viewing area  
 Resolution: 1024 x 768 (XGA)  
 Luminance: 0 – 816 cd/m<sup>2</sup> (0–240 fL)  
 Contrast: C:R = 600:1 @ ctr.  
 Viewing Angle: Typically V: +30°/–50° H: +/-50°  
 Power: 36 Watts @ 28 VDC  
 Input: DVI

### 12.1" XGA High-Bright Avionics Display with NVIS Features (9)

This dual mode, high-bright avionics display is enclosed within a machined aluminum chassis, in an A/C bulkhead/panel mount configuration. Its bezel includes 34 programmable keys, 2 rotary switches, 2 control potentiometers with NVIS LED illumination and RS-422 I/O. Touch control screen is optional. Enclosure measures 12.31"W x 9.70"H x 5.71"D (not including connector protrusion).

Display size: 12.1" (30.73 cm) diagonal with 9.69" x 7.26" viewing area  
 Resolution: 1024 x 768 (XGA)  
 Luminance: 0 – 714 cd/m<sup>2</sup> (0–210 fL)  
 Contrast: C:R = 500:1 @ ctr.  
 Viewing Angle: Typically V: +/- 30° H: +45°/–10°  
 Power: 28 VDC per MIL-STD-704  
 Input: DVI

### 15" XGA Ground Mobile C<sup>2</sup> Smart Display

This wide viewing angle XGA display includes operator-selectable analog RGB and DVI I/Os, and an embedded X86 CPU. Its unique bezel incorporates an impact shield for the display, 4 display control backlit switches, and 12 LED backlit (NVIS green) silicone soft keys that utilize RS-232 serial communication. Enclosure measures 15.15"W x 12.30"H x 3.63"D.

Display Size: 15" (38 cm) diagonal with viewing area of 11.97" x 8.98"  
 Resolution: 1024 x 768 (XGA)  
 Luminance: 204 cd/m<sup>2</sup> (0–60 fL)  
 Contrast: C:R = 350:1 @ ctr.  
 Viewing Angle: Typically V: +45°/–50° H: +/-65°  
 Power: 18–36 VDC (19 Watts @ 28 VDC)  
 Interface: Dual – Operator selectable – DVI or Analog RGB



## Ruggedized Medium Size AMLCD Display Products, continued

### 15" ULTRA-Wide Viewing Angle XGA Display with SAW Touchscreen

This XGA display/processor features a Surface Acoustic Wave (SAW) touch control for excellent clarity and off-angle viewing. Touchscreen resolution is 1024 x 768. The display is encased in a compact (14.50"W x 11.00"H x 3.85"D) panel mount enclosure for aircraft installation. Features include 4-button on-screen-display controls, a protective faceplate with anti-glare/reflective treatment, RGB analog video I/O and RS-232 touch control, and an internal heater for extended low temperature operation.

Display Size: 15" (38 cm) diagonal with viewing area of 11.97" x 8.98"  
 Resolution: 1024 x 768 (XGA)  
 Luminance: 300 cd/m<sup>2</sup> (0-117 fL)  
 Contrast: C:R = 400:1 @ ctr.  
 Viewing Angle: Typically V: ±85° H: ±85°  
 Power: 28 VDC or 115 VAC, 47 – 440 Hz (<55 Watts)

### 15" XGA Daylight Readable/NVIS Ground Mobile Display with Touch Control (10) – image shown on page 5

This XGA display features analog RGB and 'Live Video' I/Os allowing for video overlay presentations. Control features include resistive touch screen, brightness potentiometer, power 'ON' illuminated switch, and a blackout switch for night-vision operations. Enclosure measures 14.50"W x 12.00"H x 3.25"D.

Display Size: 15" (38 cm) diagonal with viewing area of 11.97" x 8.98"  
 Resolution: 1024 x 768 (XGA)  
 Luminance: 682 cd/m<sup>2</sup> (0-200fL)  
 Contrast: C:R = 350:1 @ ctr.  
 Viewing Angle: Typically V: +45°/-50° H: +/-60°  
 Power: 18-36 VDC (19 Watts @ 28 VDC)  
 Interface: VESA analog VGA (up to 85 Hz @ XGA, SVGA and VGA), Sync on green, composite sync, live video per NTSC, PAL/SECAM, PIP

## Ruggedized Large Screen AMLCD Display Products

### 18.1" SXGA Display (11)

Designed for shipboard applications, this SXGA display provides a viewing area of 14.13" x 11.31". Enclosure measures 18.98"W x 15.00"H x 5.35"D.

Display Size: 18.1" (46 cm) diagonal  
 Resolution: 1280 x 1024 (SXGA)  
 Luminance: 240 cd/m<sup>2</sup>  
 Contrast: C:R = 300:1 @ ctr.  
 Viewing Angle: Typically V: ±85° H: ±85°  
 Power: 28 Vdc (<75 Watts)

### 20.1" SXGA Display (12)

Designed for airborne and shipboard applications, this SXGA display provides a viewing area of 15.72" x 12.58". Enclosure measures 18.98"W x 19.25"H x 5.15"D.

Display Size: 20.1" (51 cm) diagonal  
 Resolution: 1280 x 1024 (SXGA)  
 Luminance: 250 cd/m<sup>2</sup>  
 Contrast: C:R = 300:1 @ ctr.  
 Viewing Angle: Typically V: ±85° H: ±85°  
 Power: 115 VAC (<100 Watts)

(11)



### 20.1" UXGA Wide Viewing Angle Display/Monitor (13)

With both shipboard and airborne models featuring heavy-duty, all-aluminum, convection-cooled chassis, this high-performance, large screen display/monitor offers very wide viewing angles. Mechanical configurations include 19" rack-mount or stand-alone versions (featuring a yoke style base for mounting to a console). Chassis includes a protective plate glass faceplate with anti-reflective or anti-glare and ITO treatment. Full-featured on-screen display system allows for full operator control of display performance criteria. Standard input power is 28 VDC with 115 VAC 50/60 Hz or 400 Hz optional. Additional features include RGB analog video I/O with BNC connectors. Options include touch control screen, high-brightness, extended temperature range, custom bezels and custom mounting configurations. Enclosure measures 18.98"W x 15.72"H x 4.72"D, and its viewing area is 16.06"W x 12.05"H.

Display Size: 20.1" (51 cm) diagonal  
 Resolution: 1600 x 1200 (UXGA)  
 Luminance: 250 cd/m<sup>2</sup>  
 Contrast: C:R = 500:1 @ ctr.  
 Viewing Angle: Typically V: ±88° H: ±88°  
 Power: 28 VDC @ <80W (Std.), 115 VAC 50/60 Hz or 400 Hz Optional

### 21.3" UXGA Display (14)

This high-performance, large-screen display/monitor, with ultra-wide viewing angles for airborne and shipboard use, features a heavy duty, all aluminum, convection cooled chassis. Mechanical configurations include 19" rack-mount or stand-alone configurations (featuring a yoke style base for mounting to a console). Chassis includes protective plate glass faceplate with anti-reflective or anti-glare and ITO treatment. Full-featured on-screen display system allows for full operator control of display performance criteria. Standard input power is 28 VDC with 115 VAC 50/60 Hz or 400 Hz optional. Enclosure measures 18.98"W x 15.72"H x 4.72"D, with a viewing area that is 17.01" W x 12.56" H. Includes RGB analog video I/O with BNC connectors. Options include touch control screen, high-brightness, extended temperature range, custom bezels and custom mounting configurations.

Display Size: 21.3" (54 cm) diagonal  
 Resolution: 1600 x 1200 (UXGA)  
 Luminance: 300 cd/m<sup>2</sup>  
 Contrast: C:R = 450:1 @ ctr.  
 Viewing Angle: Typically V: ±88° H: ±88°  
 Power: 28 VDC @ <80 W (Std.), 115 VAC 50/60 Hz or 400 Hz Optional

(14)



(12)



(13)



# Electroluminescent Displays

Orbit Electroluminescent Displays are designed and tested to perform reliably in extreme environments, including high and low temperature, low pressure, shock, vibration, salt, sand and dust, and explosive atmospheres. Operable from  $-40^{\circ}\text{C}$  without heaters to  $+71^{\circ}\text{C}$  without any degradation in performance, these displays are ideal for environments that require optimum operation within an extended temperature range. Some of the many available options include touch control screens, embedded single board computers and AC or DC power.

## Surface Shipboard Control Display Device (15)

Designed and tested to meet all environmental requirements onboard naval surface ships, this integrated 6" diagonal display and single board computer features a 20-key backlit keypad and a compact housing (9.36"W x 5.06"H x 2.25"D), with captive hardware in a bulkhead mounting configuration.

## Shipboard Display / 60323 Airborne Display, both with IR Touch Control (16)

These high-performance 12" diagonal displays feature an integrated IR (infrared) touch control and a robust electronics package that allows data/graphics to be displayed and control functions to be executed in extreme shipboard or airborne environmental conditions ( $-40^{\circ}\text{C}$  to  $+71^{\circ}\text{C}$ ). Their lightweight, high-strength housings include captive mounting hardware and input connectors with integrated filters for EMI suppression. Enclosures measure 8.30"W x 12.30"H x 2.25"D.

## Surface Ship Communications Control Panel (17)

This panel is a form-fit-function replacement for legacy manual switch control panels in UYA-4 Shipboard Tactical System Operator Consoles. It can provide operators with complete shipboard communications capability. Proven to perform in the most extreme shipboard environments, its features include an integrated 6.3" diagonal EL display with single-board computer, touch controls and system-interfacing electronics. The hardware/software package includes controls for 15 dedicated audio channels and 5 sound power nets with secure/non-secure communication modes.

## Shipboard Communication Control Panel (18)

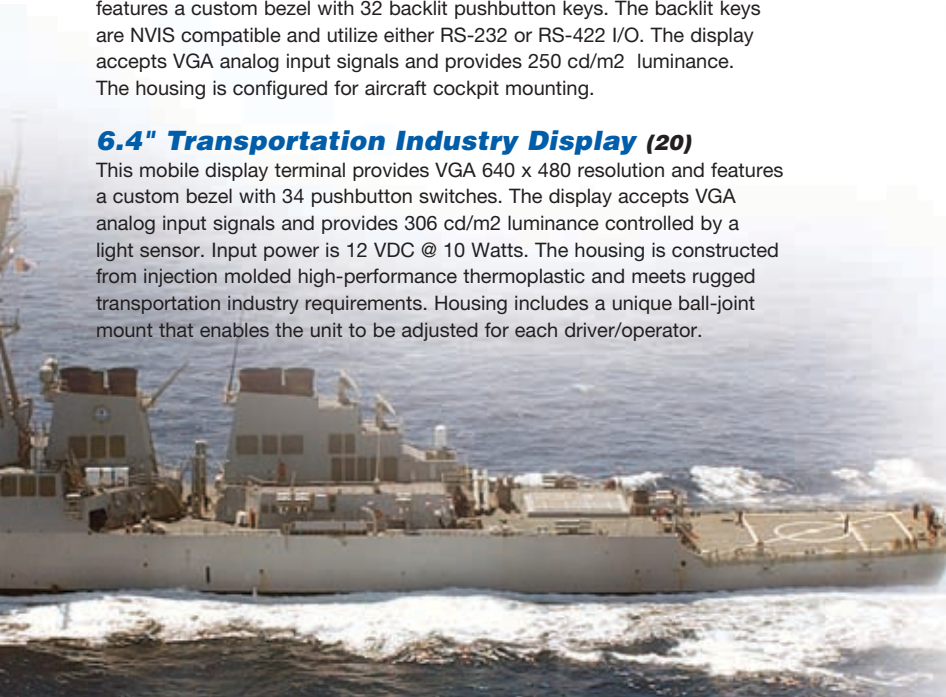
Proven to perform in the most extreme shipboard environments, this panel is a key element in Shipboard Tactical Display System Operator Consoles, and interfaces with the ON-201 System. Features include an Integrated 6.3" diagonal EL display with single-board computer, touch controls and system-interfacing electronics. The hardware/software package includes controls for dedicated audio channels and sound power nets that have both secure/non-secure communication modes. It provides 100 dB isolation between modes.

## 6.4" Avionics Display (19)

This avionics display package provides VGA 640 x 480 resolution and features a custom bezel with 32 backlit pushbutton keys. The backlit keys are NVIS compatible and utilize either RS-232 or RS-422 I/O. The display accepts VGA analog input signals and provides 250 cd/m<sup>2</sup> luminance. The housing is configured for aircraft cockpit mounting.

## 6.4" Transportation Industry Display (20)

This mobile display terminal provides VGA 640 x 480 resolution and features a custom bezel with 34 pushbutton switches. The display accepts VGA analog input signals and provides 306 cd/m<sup>2</sup> luminance controlled by a light sensor. Input power is 12 VDC @ 10 Watts. The housing is constructed from injection molded high-performance thermoplastic and meets rugged transportation industry requirements. Housing includes a unique ball-joint mount that enables the unit to be adjusted for each driver/operator.



# Superior Human-Machine Interface Solutions for Mission Critical Applications

Orbit Electronics Group hardware and software solutions provide the critical HMI link in many of the most demanding airborne, shipboard, sub-surface, ground-based and handheld mission critical applications. With superior quality as a mandatory design and manufacturing criteria, we deliver leading-edge products with extreme environmental and operational survivability. Downtime is simply not an option to our customers, and our products' proven ability to operate in extreme battlefield conditions for extended periods of time has made us the preferred source for military and non-military government and industrial programs requiring the highest degree of long-term operational reliability.

Orbit's longstanding relationships with government research and development laboratories help keep our engineering and design capabilities at the industry's forefront, where our solutions to technical challenges consistently result in state-of-the-art product advancements.

**In addition to our Flat Panel Displays, Orbit Electronics product categories include:**

- Keyboards/Keypads
- Control Display Units
- Integrated Switch Panels
- Cursor Controllers

Our focus on superior customer support, and our company-wide commitment to the continuous improvement of quality, cost-competitive hardware, enables us to deliver solutions that meet and exceed our customers' requirements for performance, reliability, longevity and economy.

**For information or a quotation, contact the Orbit Electronics Group.**



#### **ORBIT INSTRUMENT**

80 Cabot Court • Hauppauge, NY 11788  
TEL: 631 435-8300 • FAX: 631 435-8458  
sales@orbitintl.com

4532 Telephone Road, Suite 103 • Ventura, CA 93003  
TEL: 805 642-0545 • FAX: 805 642-0790

**[www.orbitintl.com](http://www.orbitintl.com)**

#### **TULIP DEVELOPMENT LABORATORY**

1765 Walnut Lane • Quakertown, PA 18951  
TEL: 215 538-8820 • FAX: 215 538-8866  
info@tuliplabs.com

**[www.tuliplabs.com](http://www.tuliplabs.com)**

**Interface With Excellence**

