



## Interface With Excellence

# For Battle-Hardened Performance Under any Conditions, Trust Orbit Control Display Units.

Orbit Electronics Group control display units (CDUs) are proven reliable in even the most extreme land-based, shipboard or airborne environments. Whether for system updates or new systems, our ruggedized, cost-effective custom solutions are designed to withstand the rigors of nuclear, biological and chemical battlefield environments. Their proven performance has compelled a number of U.S. and foreign military customers to embed our hardware as standard products in their program requirements. Orbit's communication intercom units, commander display units, digital transponder units, secure voice systems and ground positioning systems are industry standards for night vision and harsh terrain environment applications.

Orbit's control display units are specifically designed for custom function and interface capabilities. Most of our units incorporate single board computers and custom software to provide a total system solution. Unit panels can incorporate a variety of interfaces including (but not limited to) RS-232, RS-422, PS/2, USB and Ethernet, while the output of the panel to the operator control can be either a standard or custom interface. Switch backlighting can be customized using LEDs, which can be controlled from both normal (sunlight readable) conditions to night vision standards.

**NOTE:**  
*The products shown in this brochure represent only a few of the many custom designs we have produced. Contact us to discuss what we can custom design and manufacture for your applications.*



## Remote Control Units

Orbit Electronics Group remote control units are used extensively in U.S. Navy airborne programs for IFF functions. These panels are manufactured with 2 rotary function switches (one for alphanumeric display), backlit switches with engraved keycaps, brightness level rocker switches and light sensors to keep illumination at the proper levels. Supported by our proprietary, custom software, Orbit remote control units meet all customer requirements while allowing for future upgrades and enhancements.

### Avionic IFF Panel (1)

This avionic IFF panel addresses modes 1, 2, 3A, 4, 5, S and supports the T-CAS, M-CAS and ET-CAS functions. Meets MIL-STD-810 for environmental testing, MIL-STD-461 for electromagnetic interference and MIL-L-85762 for aircraft night vision goggle requirements.

## Commander Display Units

Designed primarily for Army ground-based battlefield operations, Orbit Electronics Group CDUs are vehicle-mounted panels that allow the vehicle commander to monitor systems status and data. These units utilize a powerful single board computer that is embedded into the design so that additional functions can be added as new application needs arise. Orbit CDUs are designed and tested to meet extreme environmental conditions, with their computers enclosed in cases that are sealed to the elements. They have no special heat dissipation requirements.

### Army COTS Modules (2)

This ruggedized panel utilizes COTS modules, and features a VGA color 5.5" LCD display. Includes a 733-MHz single board computer with onboard solid-state memory, and provides fast response time with low power consumption. With an operating temperature range of -35°C to +71°C, this unit is qualified for operations worldwide.

### Army Radar Display Unit (3)

This battlefield-ready unit is supported with software written by Orbit Electronics Group engineers specifically for the U.S. Army TPQ Radar program, and has proven itself in the field for many years. Includes VGA 5.5" color LCD display and 7.33-MHz single-board computer, and delivers fast response time with low power consumption.

### XGA Wide-angle Panel (4)

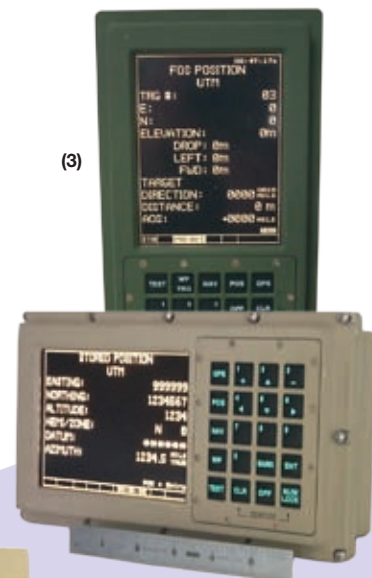
This rugged 6.3" XGA high-brightness, wide-angle panel provides vehicle commanders with real-time video and data, and can also transmit video data to the battlefield network. This compact, powerful unit features a restive touch-screen, 20 programmable function switches, and a full-function Windows-based computer.

### Digital Interrogator Unit (5)

Designed for naval surface ships, this unit features a powerful single board computer and onboard solid-state memory to report on the status of the computer racks. Its electroluminescent display is designed and tested for reliable operation in extreme temperatures, and the unit has passed our customers' lightweight hammer shock test.



(4)



(2)



(5)



## Intercommunication Panels

While Orbit intercommunication panels are primarily used aboard naval surface ships to control onboard communications traffic, they are also capable of communicating off-ship to other ships and aircraft. They are used to amplify anything from specific signals to a ship's whole information system. Orbit Electronics Group can provide form-fit-function replacement panels that meet the specifications of older systems while improving reliability and performance, or provide cost-effective, newly-designed communications panels that require only minimal interface changes to update older systems. Orbit panels isolate at 100 dB between secure and non-secure networks.

### Audio Control Panel (6)

Designed for use on naval surface ships, this audio control panel can provide audio output from 6 separate audio inputs. Left/right audio potentiometers allow for independent control of output. The unit provides supervisor and operator headset connections on the front panel, and the audio output can also be routed to the enclosed loudspeaker.

### Console Intercommunications Unit (CIU) (7)

This rugged CIU transmits and receives data messages and audio information from a central switching unit (CSU), and enables the operator to communicate with another CIU or the CSU in any of four modes (interphone, network, radio-telephone, or conference) with a backup sound power mode. A telco function allows connectivity to telephone networks, and separate left/right channels can operate independently.

### Color Computer Controlled Action Entry Panel (CCCAEP) (8)

Designed for surface ship console-mounting, this panel can display 24 switch locations with 48 messages for each location. It features a touch-selectable control panel on a resistive touch screen panel, and displays on-screen indicators to notify the operator when a selection has been made.

### Audio Control Panel (9)

This compact panel-mounted audio amplifier has the ability to control and amplify multiple audio and microphone signals, which it generates with less than 1 percent distortion. This panel features a 2 line backlit LCD display, 26 backlit switches, 2 audio tapered potentiometers and a green LED ring indicator. Available health management software includes a heartbeat signal and built-in test status reporting.

## Operator Control Trays

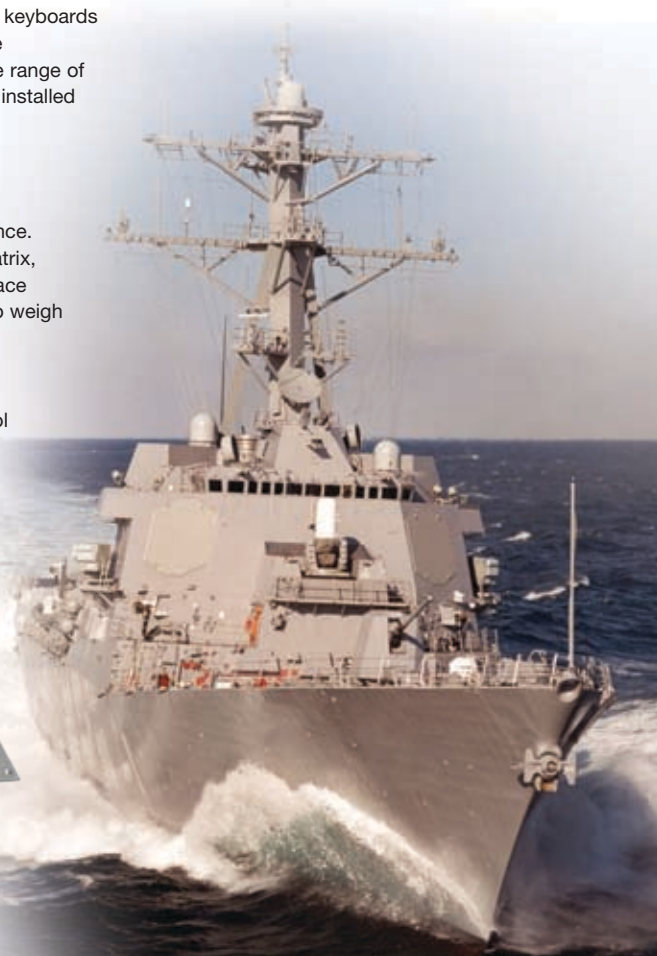
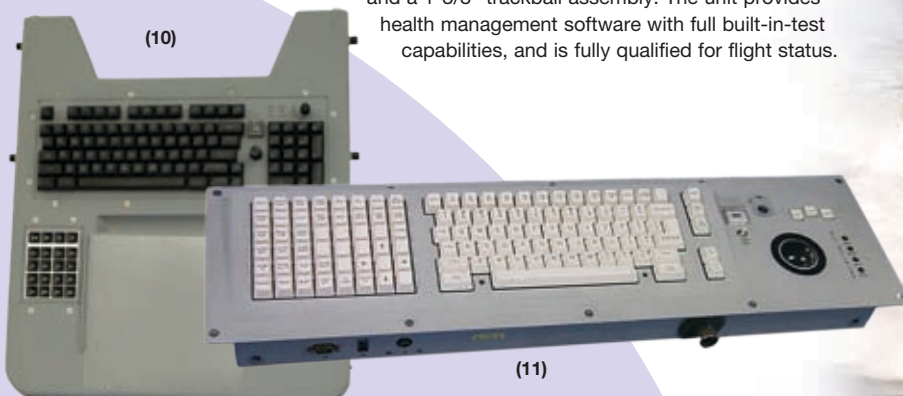
Orbit Electronics Group custom operator control trays are total workstations or modified-function keyboards used primarily to support airborne, shipboard and subsurface programs. Built to withstand severe environmental conditions and electromagnetic interference, these control trays incorporate a wide range of ruggedized components manufactured by Orbit Electronics Group, and are delivered ready to be installed as approved military-specified equipment.

### E2D Keytray Assembly (10)

Proven on countless aircraft carrier takeoffs and landings, this ruggedized control tray meets or exceeds all requirements for severe environments, shock, vibration and electromagnetic interference. Features include a full function QWERTY keyboard with numerical keypad, a 4x5 switch panel matrix, a 2.5" trackball and an embedded force transducer as a secondary pointing device. A USB interface connects the unit to the mission computer. The lightweight composite housing enables the unit to weigh in at no more than 14 lbs.

### Data Entry KY-940/A Control Tray (11)

Used on Air Force airborne surveillance programs, this multifunction control tray incorporates a full QWERTY keyboard, 8x6 switch matrix, and a 1-3/8" trackball assembly. The unit provides health management software with full built-in-test capabilities, and is fully qualified for flight status.



# 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 world's most demanding airborne, shipboard, sub-surface, ground-based and handheld mission critical applications. By delivering leading-edge hardware with extreme environmental and operational survivability, we have become the supplier of choice 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 advancements to products.

**In addition to our Control Display Units, Orbit Electronics Group product categories include:**

- **Keyboards/Keypads**
- **Flat Panel Displays**
- **Integrated Switch Panels**
- **Cursor Controllers**

Our focus on superior customer support, and our company-wide commitment to the continuous improvement of HMI tools, 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.**



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