Computer Technology

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Computer Technology

Comprehensive Connectivity Solution

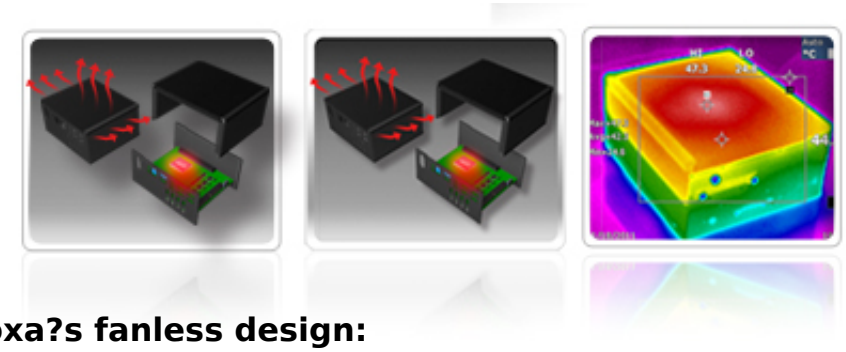
Moxa´s marine computers and panel computers incorporate a rich selection of communication interfaces to aid system integrators and ship designers in linking marine-specific devices and subsystems. The MC-7000 series of marine computers includes regulation NMEA 0183 and NMEA 2000 interfaces, giving system integrators a convenient means of connecting maritime sensors like gyrocompasses, echo sounders, and weather stations. These integrated NMEA ports simplify deployments and reduce costs in both the long term and short by cutting down on overall network complexity.

- NMEA 0183 and NMEA 2000 for Marine device connectivity
- DVI and VGA ports support up to 3 independent displays
- USB 3.0 for rapid data transfers
- PCI and PCIe (x16) slots for customized expansion

High Performance Fanless Design

Moxa´s embedded and panel computers for marine environments have been designed for easy incorporation into integrated bridge systems, particularly with respect to power and temperature demands. Moxa computers put high performance Intel Core i7 processors at the center of fanless, rugged designs that deliver fast, reliable graphics or rapid number-crunching processing in whatever combination the system requires.

- System-wide thermal design provides a stable, high-performance computing environment
- FloTherm CFD analysis guarantees the thermal design will reliably serve as required
- USB 3.0 for rapid data transfers
- PCI and PCIe (x16) slots for customized expansion



Moxa?s fanless design:

- No compromise on board design: Moxa?s thermal design is system-wide, making the computer system more reliable across the board
- A centralized CPU means that heat is evenly dissipated in three directions, increasing dispersion efficiency and adding physical component capacity
- Heat pipes at the front and rear dissipate heat with much greater efficiency than fans
- The rugged thermal design guarantees the computer will operate without any worry of crashes from overheating?even when under turbo boost!

ECDIS Marine Display

SavvyTouch Screen Control

SavvyTouch display controls are equipped with a proximity switch that lights up the controls with a mere wave of the hand, making it possible for users to easily adjust the display even in absolute darkness. At the same time, SavvyTouch also features a system information button that returns a BIOS-level rundown of hardware health, keeping users informed on any failures of power, the motherboard, system memory or video feeds.

ECDIS

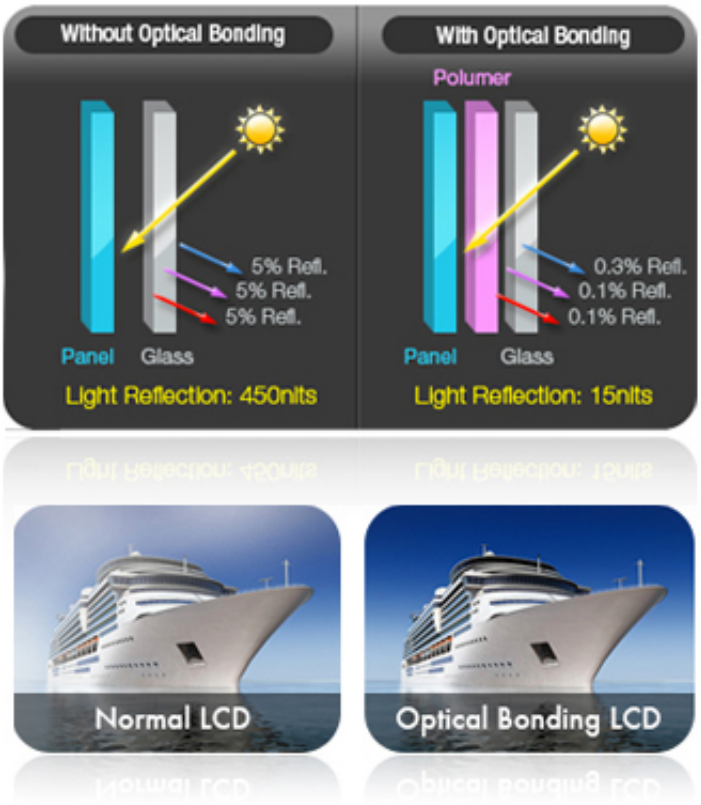
ECDIS and Color Calibration

The Electronic Chart Display and Information System (ECDIS) for marine vessels is a computer-based navigation information system that became mandatory for all new vessels in July of 2012. To meet ECDIS requirements, all displays used in marine navigation applications must be certified as compliant with IEC 60945 and type approved for IEC 61174 color calibration. These requirements ensure that all information shown is fully compliant with ECDIS standards for color definition, guaranteeing the safety of human lives when at sea.

Optical Bonding

When used outdoors, under bright sunlight, the readability of normal displays can be compromised by image fading. Optical bonding improves outdoor visibility by adding a layer of protective glass secured by an optical-grade adhesive. With optical bonding, LCD monitors present vibrant, accurate colors even under bright sunlight, further increasing their utility, safety, and reliability.

- Improved durability: better resistance against scratches, stains, and abrasions, protecting an LCD panel from wear and tear
- Improved optics: better visibility under bright sunlight
- USB 3.0 for rapid data transfers
- Eliminates condensation: by eliminating the space between the cover glass and panel, moisture cannot collect, bringing foggy displays to an end.



Wide Viewing Angles

Wide LCD viewing angles allow marine users to conveniently view displayed images from many different angles, allowing for more flexible placement when arranging

and installing ship display stations. Moxa LCD panels allow undistorted views at 178° across two axes. This guarantees that displays will be clearly visible from nearly all angles with no noticeable color washout. Wide viewing angles give greater flexibility of usage, and translate into greater crew mobility and efficiency .

Ethernet Switch Technologies

The ocean is hard on electronic devices, so maritime automation systems demand engineering that compensates for its peculiar wear and tear. At the same time, protecting systems against rapid obsolescence means that even relatively simple devices like Ethernet switches become a complex exercise in exacting engineering. Among the harsh ship-board elements network switches must resist are extreme temperatures, daily exposure to water, and constant vibration. Additionally, ship systems must also meet stringent reliability requirements like full redundancy and strong security, while reliably managing a heavy stream of video, voice, automation and control applications that receive constant input from large arrays of sensors and instruments. Moxa delivers switching solutions for every layer of a hierarchical network, whether at the top or bottom, edge or core, making it easy to find the right device for any marine networking need.

Our marine devices carry marine certifications from DNV, GL, ABS, LR, and NK, proving our switches will perform as claimed, in the way you require.

Marine-Grade Ethernet Switches

- A full range of managed and unmanaged switches:
  - 5 to 19 ports - Gigabit Ethernet Switches
  - Modular or stand-alone
  - Rack or DIN rail mounts available
- Turbo Ring and Turbo Chain for highly resilient networks
- Full gigabit performance for high speed network transmission

Proprietary Network Redundancy Technologies the Utmost in Scalability, Reliability, and Cost Efficiency

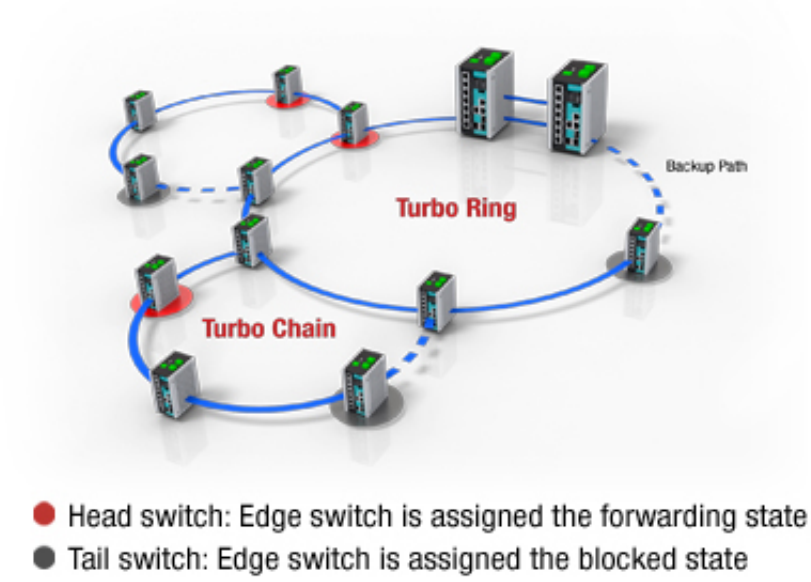
Moxa switches offer Turbo Ring and Turbo Chain technologies to give our customers the strongest and fastest automated redundancies available on Ethernet networks. These ring technologies are paired with a full range of tough, robust maritime switch solutions designed to simplify and optimize your networks with superior availability, reliability, and flexibility, all while dropping costs on deployment and maintenance to give you substantial savings on your TCO.

Turbo Ring: Enabling Ring and Media Redundancy

- Fast fault recovery < 20 ms
- Flexible ring topology
- Lower total cost of ownership

Turbo Chain: Simplify Complex Deployments for Better Network Redundancy

- Fast fault recovery < 20 ms
- Limitless expansion potential
- Live node expansions reduce network interruptions
- Big savings on cabling costs



A Full Range of Gigabit Ethernet Solutions for High Bandwidth Infrastructure

To meet the demanding requirements of high bandwidth network communication, Moxa offers a complete range of strongly secure Gigabit Ethernet switching and routing solutions for maritime environments. Moxa´s switching solutions offer up to 16 full-gigabit ports suitable for delivering converged data, voice, or HD video signals in whatever capacity required. Moxa´s routing solutions include full-gigabit devices with strong security features like IPsec fully-featured firewall technology, network address translation (NAT), and much more.