Military-Rugged Electronics for Naval Defense Systems

As naval planners continue to design and build manned and unmanned ships as integrated systems of systems, demand grows for modular electronics that can easily be integrated into existing or new systems and withstand various shipboard environments.

Since 1997, MilDef has designed, tested, qualified, manufactured, sold and globally supported rugged computing products designed specifically for military applications in the harshest environments. As a result, MilDef, a registered Small Business, is a trusted supplier to many armed forces deployed globally.

MilDef's proven, rugged electronics are modular and reliable, designed to withstand harsh shipboard environments. Designed with SWaP needs in mind, MilDef flagship products can be customized for size, power, bulkhead and deck connections for cost and time-effective replacement of shipboard consoles or system components.

The MilDef approach

MilDef structures all processes—from concept design to component sourcing, rapid prototyping and customization—to get military personnel the rugged electronics they need, when they need them.

Concept design	Project start	Development	Verification	Production
Concept description Cost calculation Compliance matrix	Specification & SOW Risk analysis Time plan Resources Block diagram	Design Design review Obsolescence management review BOM & MRI	Prototype units Verification & validation Design updates	LRIP units Verification & validation Design updates Full rate production

In-house capabilities

Design

MilDef invests in the right people and tools for product design, development and testing to continually improve product quality, reliability and performance. As an OEM solely focused on the defense sector, MilDef has been able to selectively tailor design capabilities to meet precise customer requirements:

- Electronical
- Mechanical
- Printed circuit board layouts
- Customization (blueprint strategy)
- System integration (inclusion of MilDef products in a sub-system)
- Thermal analysis and passive cooling
- Ruggedization to the latest military standards
- EMC/EMI protection
- Prototyping (3D-printed proof of concept or milled aluminum chassis)

Environmental/ EMI testing

Product design and testing to stringent, well-defined military standards (e.g. MIL-STD-810, MIL-STD-461, RTCA/DO-160) is a critical requirement of rugged hard-ware production for MilDef's customers. Mildef not only rigorously tests every finished product, but also the components that make up each finished product. MilDef's in-house testing assets include:

- EMI/EMC test chambers for MIL-STD-461 CE102, RE102 and DEF STAN 59-411
- MIL-STD-1275 test equipment
- Temperature cycling and Ingress Protection test chambers
- Vibration, shock and drop testing

MilDef also employs 3rd party test houses for accredited testing to DEF STAN 59-411, RTCA/DO-160, TEMPEST (SDIP-27) standards.

Manufacturing

MilDef manufactures all products in-house to maintain control over quality, BOM traceability, lead times and delivery. To ensure every product is ready to deploy straight out of the box, MilDef employs an automated test system, PTS (Production Test System), for final quality control with unique test reports for all units produced.

Supply chain / delivery

MilDef 's supply chain management team is involved in every development initiative, ensuring component suppliers can meet ruggedization qualifications, quality and MilDef's 10-year production/sustainment lifecycle roadmaps.
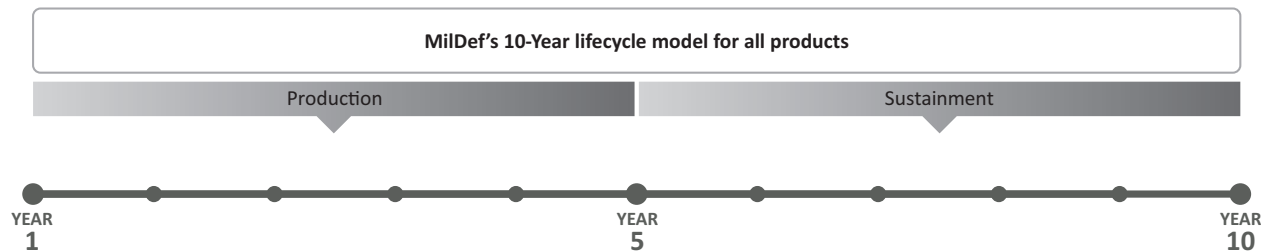
Project management

MilDef's resources, processes and successful track record ensure efficient project management for complex new development or product customization on budget and schedule.

MilDef Rugged Products
Full product catalog available upon request

MilDef develops rugged IT products for use in demanding environments, where durability and functionality are of critical importance. Products are designed with a focus on long product life cycles and consistent form over generations, resulting in low total cost of ownership.

MilDef's 10-Year lifecycle model for all products

Production — Sustainment

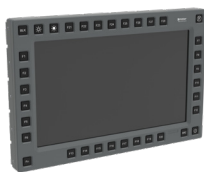| YEAR 1 | YEAR 5 | YEAR 10 |

Overview

The MilDef suite of products includes small form factor computers and electronics, mobile computers, displays, panel PCs and special electronics, available out of the box. All products can also be tailored to customers exact specifications.

Small form factor

Mobile computers

Intelligent displays

Special electronics

Modular 19"/2® Small Form Factor Computing & Communication Systems

The 19"/2® product line offers a broad range of rugged small form factor computers and network equipment. The line's modular design, used as individual products, sub-systems or complete systems, allows for a building block approach in a wide array of applications.

Servers

Computer platforms

Network attached storage solutions

KVMs & extenders

Switches & gateways

Routers & firewalls

Power products

Mounting frames

MilDef Rugged Products
Full product catalog available upon request

Mobile computers

A complete line of rugged mobile computers, tablets and handhelds in varying screen sizes.

Mobile workstations (15-17")

Laptops (13-15")

Tablets (8-12")
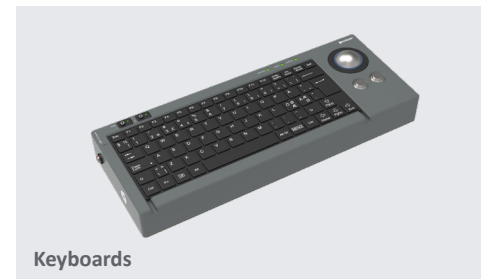

Handheld/ Dismounted (5-7")

Rugged displays

A range of rugged displays and panel PCs for tactical applications. Utilizing modular back boxes MilDef's rugged displays can transform from a standard display to a panel PC with a quick swap. Sizes range from 10.4" to 40".

Intelligent displays

Panel PCs

MDU series

Special electronics

MilDef supports customer projects which require specialized rugged electronics not based on any standard product segment.

Computers & KVMs

Docking stations & trays

Keyboards

Power solutions

Unmanned systems controller
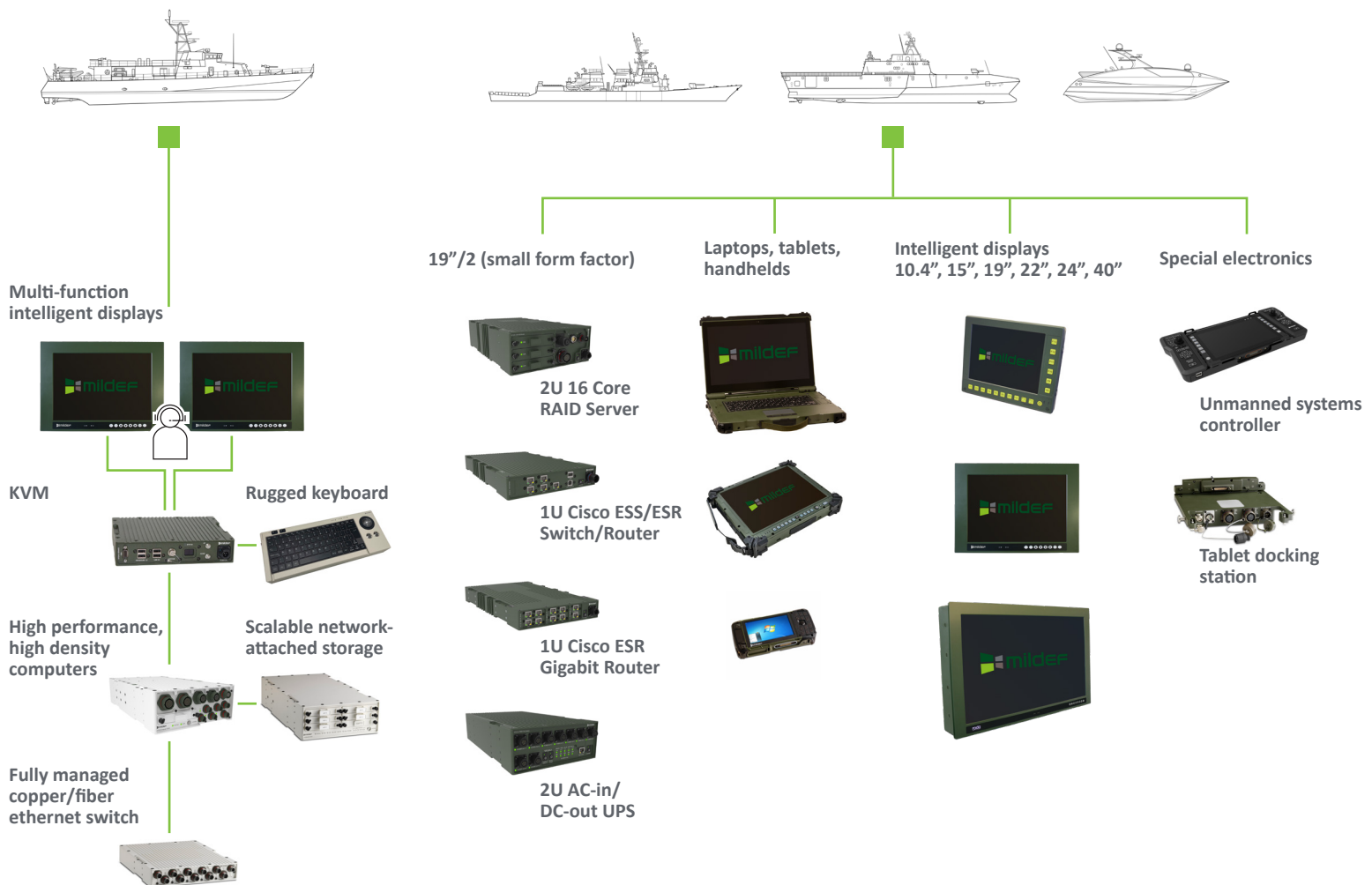

Network products

Military-Rugged Electronics
for Naval Defense Systems

MilDef military-rugged products can be integrated into existing network architecture or deployed as a new network. All products are designed for reliable operation in extreme environments and can be customized to meet specific mission requirements.

- Client/Server solutions for amphibious mobile command posts
- SATCOM: management servers/terminals
- RADAR: mission consoles/servers
- Servers, network-attached storage, routers, switches
- Touch panel displays

Multi-mission shipboard solutions

19"/2 (small form factor)

Laptops, tablets, handhelds

Intelligent displays 10.4", 15", 19", 22", 24", 40"

Special electronics

Multi-function intelligent displays

KVM

Rugged keyboard

High performance, high density computers

Scalable network-attached storage

Fully managed copper/fiber ethernet switch

2U 16 Core RAID Server

1U Cisco ESS/ESR Switch/Router

1U Cisco ESR Gigabit Router

2U AC-in/ DC-out UPS

Unmanned systems controller

Tablet docking station

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