Integrated Rack Level Systems
COTS Equipment Use in Rugged Spaces

ELMA
Cabinets

ELMA
Your Solution Partner

Elma delivers more than cabinets integrated for your application. Our systems ship with all the support needed to keep things running smoothly:

- Selection of network equipment from leading suppliers such as Dell and Cisco
- Configuration control and life cycle management down to the last component
- The most advanced custom I/O and cabling methods in the industry
- Exacting functional test and verification
- Complete documentation packages every step of the way
- Cost effective COTS performance in a rugged mission ready cabinet

cisco Technology

Elma's engineering and manufacturing teams work closely with world-class technology companies who make the best servers, routers, storage and displays to deliver fully assembled, cabled and tested cabinets ready for implementation.

Configuration control with life cycle management
down to the last component

End of life (EOL) and configuration management issues are key concerns to our integrated rack customers. You need to know your supplier will take on the challenges. At Elma, we take on those tasks with every system we design, so you don't have to worry. We do that by:

- Maintaining a baseline configuration
- Maintaining consistency between the product and documentation
- Ensuring support of the system following any changes
- Limiting changes to only those that offer significant benefits
- Evaluating cost-savings trade-offs
- Providing clear and regular communication regarding potential changes

Communication → Configuration Control → Documentation → Ongoing Support → Assessment → Cost Saving →

OVERVIEW

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Industrial Market   **Military**   **Cabinets**

Rugged Performance

Tough environments require proven performance. Elma's line of cabinets have been lab and field tested to ensure that mission critical equipment remains up and running while deployed in harsh environments for rugged apps. Choose from our range of cabinets designed to meet defense, transportation and industrial specifications:

- Tested and Qualified to Meet AREMA and CENELEC Standards
- MIL-STD: 901D - Shipboard shock/vibration
- MIL-STD: 810F Shock
- MIL-STD: 167 - Vibration
- MIL-STD: 461 - EMC
- NEBS Level 3 zone 4 - Seismic
- GR-63-CORE

The most advanced custom I/O and
cabling methods in the industry

Designing the cabling and I/O for your cabinet can be a real challenge due to competing requirements such as signal integrity, signal isolation, airflow, strain relief, signal timing and speed and ease of movement where sliding bays are required. At Elma, we have decades of expertise to work through all of these concerns to get to the performance levels you expect.
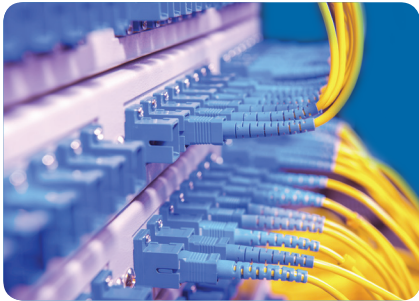
Exacting functional
test and
verification

We test our cabinet level solutions from the board level right on up to the completed cabinet to ensure the system meets the application requirements. Functional testing ranges from system power on to higher level functional testing so your cabinet is application-ready.

RAIL TRANSPORTATION

DATA CENTER

SEISMIC

MIL-STD

Complete documentation packages every step of the way

No project is complete without the paperwork. When Elma designs an integrated rack-level solution, we generate product proposals, design and build plans, manufacturing drawings and instructions, project management tools, test and inspection documentation plans; whatever is necessary to ensure you know we're on top of the details.

Full thermal characterization and testing

In an equipment rack filled with servers, storage, switching and more, thermal management. Internal air-flow is optimized by proper cable management and the use of blanking plates and brush grommets. In IT-style rooms, hot aisle / cold aisle layout strategies allow optimal venting in multi-cabinet installations, and EMI door gasketing provides both EMI protection and efficient outside airflow.

EMC compliance testing and verification

The ideal electronic circuit should be free of active EMI/RFI sources and immune to disturbances from outside. We work closely with our gasket vendors to select the correct EMI/RFI shielding to meet the needs of each application. Additional EMI/RFI mitigation features include electrical component layout, solid top panels, bottom base plates and others. Elma's integrated rack-level solutions can be designed to meet MIL-STD 461. Testing methods according to IEC 61000-4 may be used as necessary.
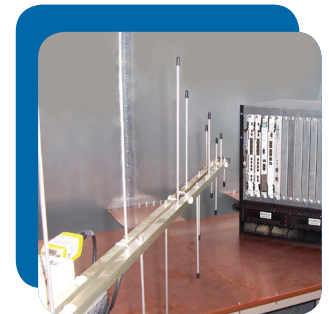
Strong, rugged cabinet construction you can rely on

Elma's rugged and seismic cabinets are designed and tested to meet a wide range of rugged environmental specifications such as MIL-STD-901D, MIL-STD-461 and MIL-STD-167. Options for hard-mounting and shock isolation are available for improved Class 1 & 2 compliance. In addition to our standard extruded aluminum, welded frame construction, Elma offers an innovative, mechanically fastened, no-weld frame design for applications where it is critical to reduce points of potential failure.

Electronic equipment components that serve as common elements across multiple implementations can be readily adapted to a variety of cabinet configurations with a single base design.

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One Assembly Number

No Compromises.

Let our team take the lead in putting it all together. We supply 19" racks fully integrated with a single assembly number which includes all the elements needed for your system:

- Rack-mount servers
- Storage bays
- Ethernet switching
- Power supplies
- Keyboard, monitor
- Custom paint color available for racks

Application Examples:

- Flight training equipment
- Test instrumentation
- Mobile shelter equipment
- Rugged shipboard or ground communications

- Transportation / Railway
- Emergency services
- Security

- Telecom
- Broadcasting
- Shipboard and ground radar equipment

In addition to meeting MIL standards, Elma's flexible integrated rack configurations are designed to meet other environmental standards requirements (IEEE, ISO, EN, NEBS, AREMA/CENELEC, etc.) for applications in industrial, transportation, oil & gas, mining, telecom and medical.

Elma Electronic is an ISO 9001 and AS9100C certified company.