

MODULAR PACKAGING WITH ARINC 836 / MINI MRP BOXES



Aeronautics

PRESENTATION

Modular Packaging with ARINC 836 / Mini MRP boxes.

Created by AIRBUS as an evolution of the already existing ARINC 836 MRP, the Mini MRPs offer a much smaller and modular alternative for future generation of electronics packaging.

Mini MRPs reduce overall volume and weight while giving systems manufacturers a unique level of design flexibility.

Several box sizes (A,B,C...) and configurations (stand alone, 2, 3,etc...) and multiple combinations, offer unique packaging opportunities.

The basic system consists of a robust rack and panel architecture with a receiving frame and a rail-guided box.
The correct insertion, guiding and positioning of the box into the rack is secured by a locking mechanism.

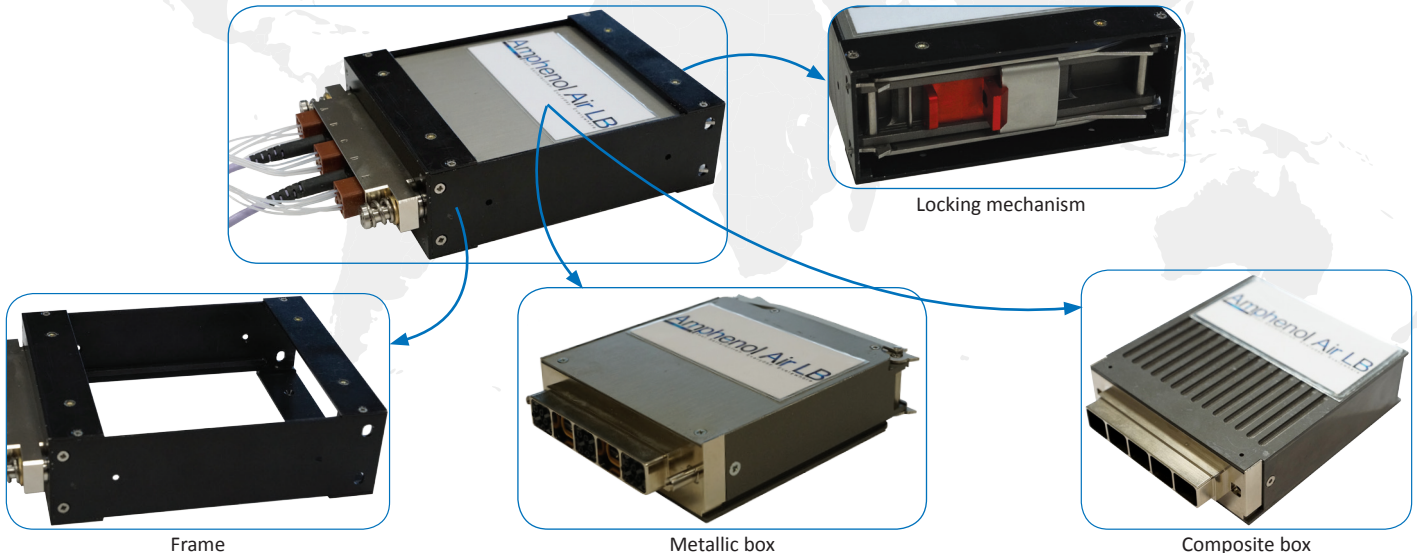
Designers can freely integrate Cabin Network Units, using COTS or customs designed electronics into a pre-defined space envelope.
In addition, standardized mechanical and electrical interfaces will guarantee intermateability of units produced from different sources.

The boxes are available in lightweight aluminum, or in composite for further weight saving.

EMI / RFI Shielding can be an issue, a metalized composite version will provide overall shielding of the box where needed.

Mini MRPs being fully closed, thermal dissipation management can be a concern.

Capitalizing on its expertise in the field of thermoplastics solutions for electrical connectors and cable harness fixation systems for harsh environment, Amphenol Air LB is offering a charged composite box with the same thermal dissipation capability as an aluminum equivalent.



TECHNICAL DATA

MATERIAL

Box : Composite or aluminum
Electroless nickel plated

ENVIRONMENT

Temperature of use : -55°C to +125°C

Amphenol Air LB
Your Satisfaction. Everyday. Everywhere.



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CONNECTORS

The ARINC 836 specification defines key intermateability and positioning criteria on the boxes for electrical connector types such as EN4165 in various configurations (3,4 or 5 bay versions, as well as single module ARINC 800 style).

These connectors are the preferred by default, however different types of connectors can be used for the Mini MRP (e.g EN3545, EN4644, etc) depending on box size or function. Details shall be defined in the ARINC 836.

For signal, power, high speed data, fiber optics, Amphenol Air LB can support to define, select and supply the most appropriate connector for your application.

■ EN4165 / SIM CONNECTORS SERIES 2

FEATURES

- Clicker-nut or rack & panel versions
- Shielding for EMC applications
- 36 coupling polarizations
- Metallic or lightweight composite
- Shells with bright nickel & olive drab cadmium plating, or without plating (composite versions only)
- Sealed - IP66 / IP68 / IP69K
- Standard modules fitted with MIL-C-39029 / EN 3155 crimp contacts for electrical connection (size 23 / 22 / 20 / 16 / 12 / 8)
- Modules with PCB contacts (23 / 22 / 20 / 16 / 12)
- Also available: modules for RJ45, optical termini Lumiere®/Elio® or Amphenol®/Luxcis®, MPO connector with MT ferrule and special contacts (quadrax, twinax, coax, triax...)
- Cable clamp or straight / 45° / 90° EMC backshells
- Operating temperature: -55°C to +175°C (permanent)
- 500 mating cycles
- Conform to ABD 031 and FAR 25853



BENEFITS

- Lightweight (composite versions)
- Sealed connection (intercavity, crossing and interfacial)
- Modularity
- "Compartmenting" is possible inside the connector shell (signal, power, optical, RJ45, quadrax...)

■ MONOMODULE EN4165 / SIM CONNECTORS

FEATURES

- Push-Pull locking system
- Lightweight composite with bright nickel plating
- 7 coupling polarizations
- Sealed - IP66 / IP68 / IP69K
- Standard modules fitted with MIL-C-39029 / EN 3155 crimp contacts for electrical connection (size 23 / 22 / 20 / 16 / 12 / 8)
- Modules with PCB contacts (23 / 22 / 20 / 16 / 12)
- Also available: modules for RJ45, optical termini Lumiere®/Elio® or Amphenol®/Luxcis®, quadrax, twinax, coax, triax...
- Cable clamp or straight / 45° / 90° EMC backshells
- 3 mounting: on 1750 rail, on structure (3 pins) or feedthru
- Operating temperature: -55°C to +175°C (permanent)
- Conform to ABD 031 and FAR 25853



BENEFITS

- Lightweight composite
- Sealed connection (intercavity, crossing and interfacial)
- Modularity (one connector shell, many layouts)
- Quick and easy-to-use
- Push-Pull locking
- Clip-in rear accessories

■ 1900 / EN3545 CONNECTORS

FEATURES

- Sealed - IP66 / IP68 / IP69K
- For copper cable and aluminum cable contacts
- Also available for 7 Elio® Optical termini
- 36 polarization positions
- Composite material
- For crimp contacts MIL-C-39029 / EN3155
- Many contacts size / layouts: 78cts#22 / 50cts#20 / 21cts#16 / 13cts#12 / 7cts#10 / 5cts#8 + mixed
- Operating temperature: -55°C to +175°C (permanent)
- Conform to ABD 031 and FAR 25853



BENEFITS

- Lightweight composite (thermoplastic + silicone elastomer)
- Sealed connection
- Quick locking available (1/4 turn, quick lock)
- Time saving (clip-in rear accessories)

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