

19¹/₂[®] Product range



Save up to 75% of space or add more functionality

Our innovative approach to product design can be seen with our new modular 19"/2[®] units. The halved dimensions compared with the existing 19" form factor means that we create up to 75% more space in racks, which can be used to mount more units and hence more functionality. Smaller units are particularly valuable for use in cramped spaces, such as found in ground vehicles and aircraft.

This is a perfect example of where we are truly reshaping your communication power.

Endless configuration possibilities

The ability to readily combine communication units of the 19" form factor with units of MilDef's 19"/2[®] form factor gives the practical benefits of integrated solutions and endless configuration possibilities to quickly build the communication system you want.

More important benefits

The smaller size of our 19"/2[®] modules provides you with the additional important benefits of:

- Less weight
- Less energy consumption
- Less heat generation

Sustainable form factor

A key consideration taken into account when designing our 19"/2[®] form factor was to make it sustainable. This satisfies the demand of defence equipment purchasers for the long-term stable supply of particular types of equipment. Such sustainability also matches the long lifecycles of most military vehicles and aircraft, and the need to continually update systems.

Moreover, we assure you of lifetime support for all MilDef equipment.



19" rack installation



Two modules can be mounted together in a 19" rack



Stand-alone installation



Two or more modules can be stacked on top of each other

BICES NATO Gateway

The latest Swedish BICES NATO Gateway comprises several 19"/2[®] units:

- Server
- RAID
- Firewall
- 2 × LogIn/Cisco Routers
- UPS
- Power Distribution Unit
- LCD with KVM functions
- Keyboard

Compared with the old Gateway package, we have reduced the weight and size by about 60%. Along with other relevant units, the completely integrated BICES NATO Gateway is ready to be shipped worldwide and be set up in seconds as a secure communication network.

Typical application segments

The various communication units of the MilDef 19"/2[®] product series are typically used within the following military segments:

- Ground vehicles
- Deployed forces
- Special forces
- Air force
- Navy

Customized units or special electronics

Our 19"/2[®] communication units are supplied as military off-the-shelf (MOTS) products, but MilDef can complement these with our hardware according to customer specifications. In addition, 19"/2[®] units can be created as special electronics in our own development department. These result from customers approaching us to see whether we can build special electronic units based on specifications that suit their particular needs, and which are not available as MOTS products or modifications of these.



The possibilities are endless



Works in extreme environments where reliability and high performance is crucial.

Rapid development of special electronics

Complex communication systems are the sum of individual parts, which are often supplied by many different companies. Thus, in order to keep to project deadlines – and in many cases to promises made – it's imperative that product lead times are as short as possible.

A system supplier's reputation is on the line when it comes to fulfilling defence contract agreements. Maintaining competitiveness and supplying the latest technological advances in communication to the military demands tight timeframes.

Technology demonstration units

MilDef has supplied computers for technology demonstration purposes and risk reduction exercises for the Warrior Fightability & Lethality Improvement Programme in the UK. We are working with Ultra Electronics Electric who is supplying the computers to Lockheed Martin as a part of a bigger system for the Warrior tracked armoured vehicles.

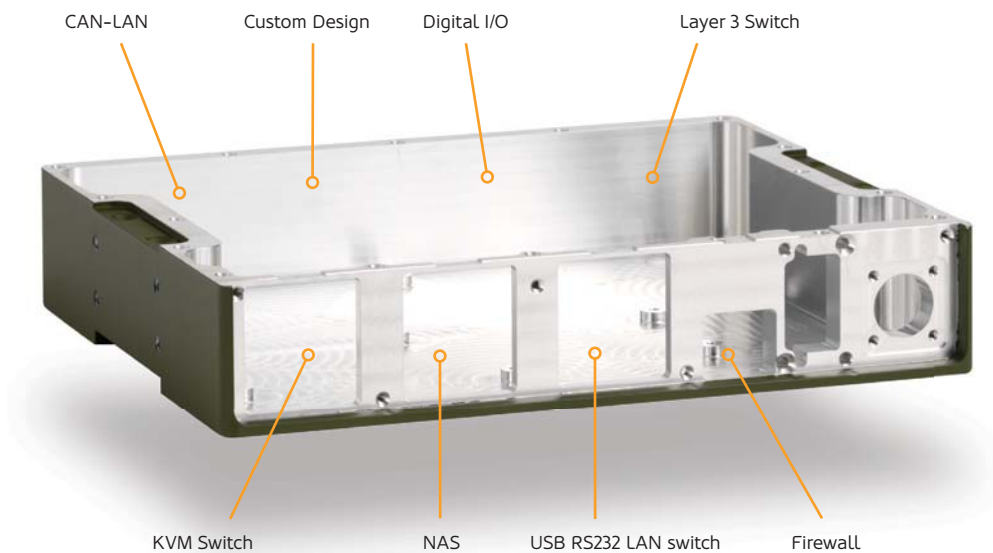
Each vehicle has a total of five computers in its hull and turret. The computers control vital functions and information on board.

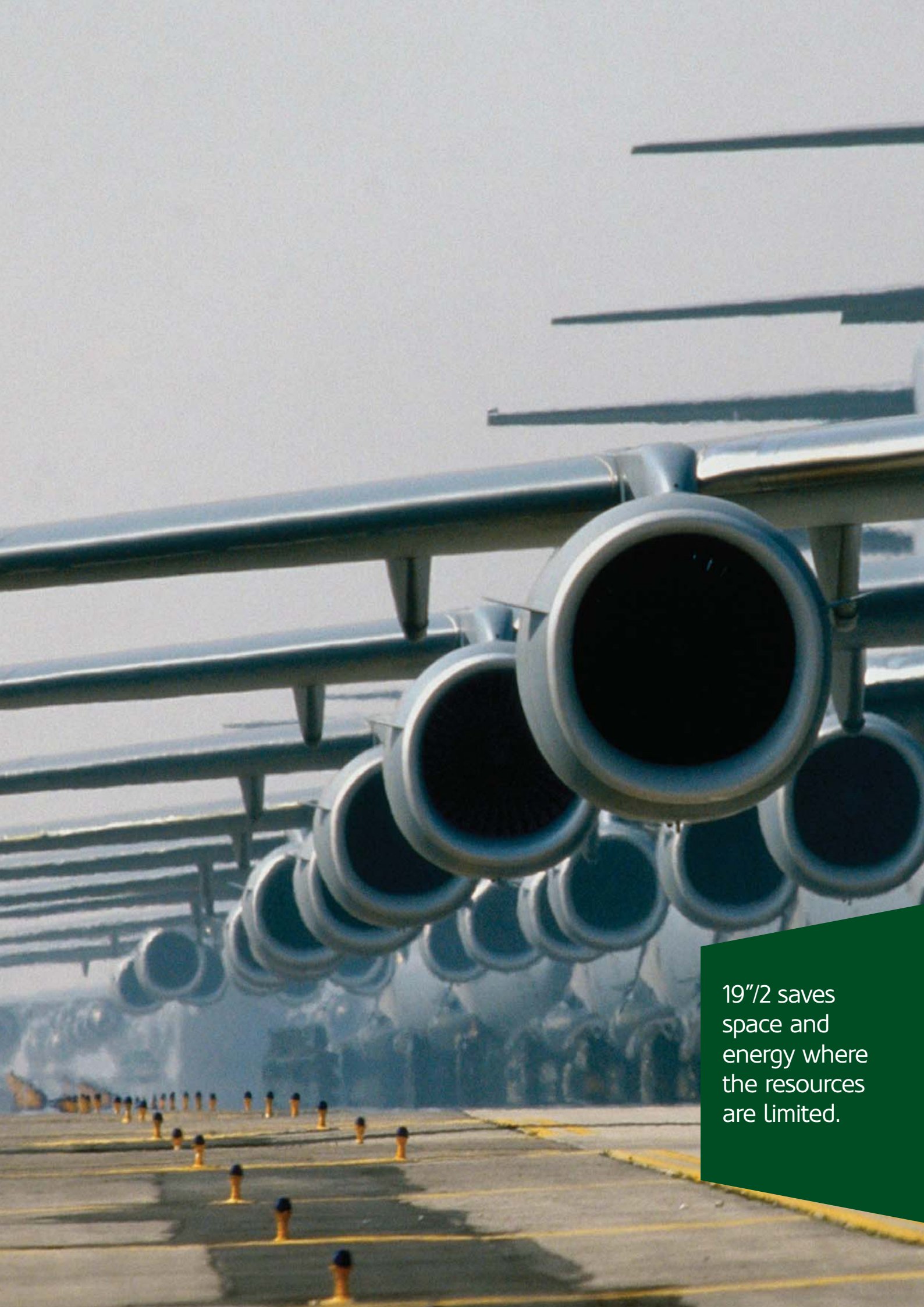
The computer is a special development based on the existing 19"/2" form factor computer with new functionalities added according to customer requirements. MilDef used its rapid development system that enabled product delivery within three months from project start. The computer is built to meet the extreme conditions it will be subjected to during its operation in the Warrior vehicle.

Select your own functionality

MilDef rapidly develops new and customized products. New developments can be compatible with our 19"/2" modules or customized according to customer specification.

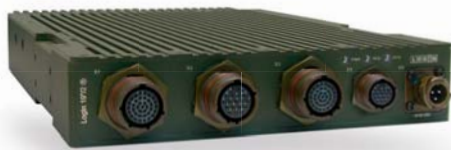
Some suggestions for what can be built into a 19"/2" communication unit are shown in the image below. But whatever your needs, feel free to contact us to discuss the best solution for satisfying your particular requirements.





19" / 2 saves space and energy where the resources are limited.

Extensive module range to satisfy



19 1/2 Computer i7 MIL

A rugged computer based on the Intel Core i7 platform. It is available with a powerful dedicated graphics card. Approved for: IP65, MIL-STD-810F & MIL-STD-461F
Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
Dimensions: 220 x 350 x 44 mm, Weight: 4 kg

Connections on front:

1 x DC in, 10-32V
1 x SATA (38999)
3 x 38999 with following interfaces:
2 x RS232/422/485
1 x Mic (Mono)
1 x Audio out
2 x USB
1 x LAN 10/100/1000 Mbps
1 x DVI
1 x VGA

Additional options:

3 x LAN 10/100/1000 Mbps
2 x USB or RS232/422/485 or CAN 2.0
4 channel analogue video capture card
1 x DVI (trade of with the VGA)



19 1/2 Server i7 MIL

A rugged server based on the Intel Sandy Bridge platform. Built in RAID system with support for RAID 0 and 1. Designed to meet: IP54, MIL-STD-810F and MIL-STD-461F
Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
Dimensions: 220 x 335 x 88 mm, Weight: 7,5 kg

Connections on front:

1 x DC in 10-32V
3 x 38999 with following interfaces:
1 x DVI
1 x VGA
1 x LAN 10/100/1000 Mbps*
1 x RS232 (without RI)
2 x RS232 (only RX, TX, RTS)
5 x USB 2.0
1 x Mic (mono)
1 x Audio Out

Connections on back:

1 x Service port

*The Server is also available with Fiber LAN.



19 1/2 RAID HS

A compact fully rugged RAID system, with SATA drives. It contains two HDDs, and supports RAID 0 and 1. Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
Dimensions: 220 x 182 x 44 mm, Weight: 2 kg

Connections on front:

2 x slots for 2.5" HDD
1 x LED for each HDD
1 x LED for RAID status
1 x External SATA
1 x DC-in, 10-32 V



19 1/2 LCD

LCD display with built in video switch. The display slides out of the unit. Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
Temp operating: -20 to +55 °C, Temp storage: -40 to +70 °C
Dimensions: 220 x 300 x 44 mm, Weight: 2 kg

Connections on back:

2 x DVI (38999)
1 x DC In, 10-32 V



19 1/2 Computer C2D

Intel 1.66 GHz Core 2 Duo, up to 4GB RAM DDR II
Designed to meet: MIL-STD-810F & MIL-STD-461F
Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
Dimensions: 220 x 340 x 44 mm, Weight: 3 kg

Connections on front:

2 x LAN Fiber SC Multimode (100 Mbps, 1300 nm)
2 x LAN RJ45 (10/100 Mbps)
2 x USB
1 x VGA (DB15)
1 x RS232 (DB9)
1 x DC In, 10-32 V

Connections on back:

1 x SATA for 19 1/2 RAID or external SATA (38999)
1 x DVI for 19 1/2 LCD or a KVM switch (38999)
1 x RS232, i.e. for communication with 19 1/2 UPS (DB9)



19 1/2 RAID

SATA drives, Raid settings available: 0, 1, 10. Individual heater for all 4 drives. Can be used for external storage without RAID enabled. Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
Dimensions: 220 x 182 x 44 mm, Weight: 2 kg

Connections on front:

4 x slots for 2.5" HDD
1 x LED for each HDD
1 x LED for RAID status

Connections on back:

1 x External SATA I/O (38999)
1 x DC In, 10-32 V
1 x Mechanical switch for RAID setting

most needs



19 1/2 Cisco Router

Based on the Cisco 5915 ESR card.
 Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
 Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
 Dimensions: 220 × 182 × 44 mm, Weight: 2 kg

Connections on front: 2 × WAN RJ45 (10/100 Mbps) 3 × LAN RJ45 (10/100 Mbps) 1 × Console serial 1 × Console USB 2 × Power USB 1 × DC in, 10-32V	Connections on back: 1 × Service port
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19 1/2 Cisco Switch

Based on the Cisco 3560 Switch.
 Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
 Dimensions: 220 × 400 × 44 mm, Weight: 4 kg

Connections on front: 6 × LAN RJ45 (10/100/1000 Mbps) 2 × LAN Fiber Singel mode (1000 Mbps, 1310 nm) 1 × Console (USB) 1 × DC in, 10-32V	Connections on back: 2 × LAN copper (RJ45) 1 × Console serial (RJ45) 1 × Service port
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19 1/2 16-port Switch MIL (10/100 or 10/100/1000 Mbps)

Managed Layer 2 switch (also available in 10/100 Mbps unmanaged version).
 Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
 Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
 Dimensions: 220 × 182 × 44 mm, Weight: 2 kg

Connections on front: 14 × LAN Mighty Mouse Circular (10/100 or 10/100/1000 Mbps) 1 × DC in, 10-32 V	Connections on back: 2 × LAN Mighty Mouse Circular (10/100/1000 Mbps) 1 × Console port (only managed version)
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19 1/2 16-port Switch (10/100 or 10/100/1000 Mbps)

Managed Layer 2 switch (also available in 14-port 10/100 Mbps unmanaged version).
 Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
 Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
 Dimensions: 220 × 182 × 44 mm, Weight: 2 kg

Connections on front: 14 × LAN RJ45 (10/100 or 10/100/1000 Mbps) 1 × DC in, 10-32 V	Connections on back: 2 × LAN RJ45 (10/100/1000 Mbps) 1 × Console port (only managed version)
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19 1/2 6-port Fiber Switch

Unmanaged layer 2 switch (100 Mbps).
 Designed to meet: MIL-STD-810F & MIL-STD-461F
 Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
 Dimensions: 220 × 182 × 44 mm, Weight: 2 kg

Connections on front: 6 × LAN Fiber SC Multimode (100 Mbps, 1300 nm) 2 × LAN RJ45 (10/100 Mbps) 1 × DC in, 10-32 V
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19 1/2[®] 8-port Switch PoE

Unmanaged Layer 2 switch with Power over Ethernet on all 8 ports. Power over Ethernet standard IEEE802.3af (48 V, max output 12.8 W per channel).
 Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
 Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
 Dimensions: 220 × 182 × 44 mm, Weight: 2.5 kg

Connections on front: 8 × LAN RJ45 (10/100 Mbps) 1 × DC in, 10-32 V
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19 1/2 RS232/422/485 Switch

Share serial devices in an IP-network. Individual IP addressing to each serial port. Software switchable between RS232, RS422 and RS485.

Designed to meet: IP54*, MIL-STD-810F & MIL-STD-461F
Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
Dimensions: 220 x 182 x 44 mm, Weight: 2 kg

* Only the MIL version is IP54 classified
** Also available with MIL connectors

Connections on front:

6 x Serial port (DB9)**
1 x LAN RJ45 (rugged Amphenol)
1 x DC in, 10-32 V



19 1/2 VoIP Router

Analog VoIP Router with 2 telephone connectors supports SIP, H.323 & T.38 standards.

Designed to meet: MIL-STD-810F & MIL-STD-461F
Temp operating: 0 to +40 °C, Temp storage: -20 to +50 °C
Dimensions: 220 x 182 x 44 mm, Weight: 2 kg

Connections on front:

1 x LAN Fiber SC Multimode (100 Mbps, 1300 nm)
1 x LAN RJ45 (10/100 Mbps)
2 x Voice Port RJ11
1 x Console port (DB9)
1 x DC in 10-32 V



19 1/2 LANTIME R100/MRS

Based on the Meinberg MRS170 card.
Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
Dimensions: 220 x 366 x 44 mm, Weight: 3,5 kg

Connections on front:

1 x Console serial (RJ45)
1 x LAN RJ45 (10/100 Mbps)
1 x Console (USB)
1 x Host USB
1 x Antenna
1 x PPS out
1 x PPS input
1 x NMEA (RS232)
1 x DC in, 10-32 V

Connections on back:

1 x MilDef Service port



19 1/2 Power Panel

Max output 10 A/channel. Max 20 A total.
Indication for each DC out.

Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
Dimensions: 220 x 182 x 44 mm, Weight: 1.5 kg

Connections on front:

1 x DC in, 10-32 V
6 x DC out
Custom connectors available



19 1/2 AC/DC

An AC/DC Adapter built into a 19 1/2 chassis. Provide 28 V DC at maximum 9 A (in total) within the range of 110/220 V AC.
Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
Temp operating: -40 to +55 °C, Temp storage: -40 to +70 °C
Dimensions: 220 x 202 x 44 mm, Weight: 3 kg

Connections on front:

1 x AC in, 110/220 V AC (50-60 Hz)
2 x DC out, 28 V

Connections on back:

1 x Service port



19 1/2 UPS

Lithium-Ion Battery, Capacity 2.2 Ah. Battery status Indication. Suitable for 12 V and 24 V systems. Indication for external power.
Designed to meet: IP54, MIL-STD-810F & MIL-STD-461F
Temp operating: -30 to +55 °C, Temp storage: -30 to +55 °C
Dimensions: 220 x 182 x 44 mm, Weight: 2.5 kg

Connections on front:

1 x DC in, 10-32 V
1 x DC out (12 V/20 A or 24 V/10 A)

Connections on back:

1 x Console port for communication with host computer (DB9)
Battery: 2 x 4 cells Lithium-Ion



Providing benefits in different military segments





Ground vehicles

An important 19"/2[®] communication unit used in ground vehicles is the RS232 LAN switch. It connects a vehicle's GPS, radios, printers and satellite communication. It also enables all computers in the vehicle to use all the connected communication units, thus eliminating the need to connect a single dedicated unit to each computer. A good example of this is Swedish forces in NBG08.



Deployed forces

A 19"/2[®] Computer and Router communication unit, similar to those found with the BICES NATO Gateway, are typical modules used by deployment forces as a communication hub. For example, they can be connected to a satellite ground station and provide internet access in the field, which can be used to update/receive intelligence from headquarters and allies about the current situation in an operational area.



Special forces

Special forces are very likely to use a 19"/2[®] UIDM V2 communication unit that links two radios and a network. The ground-based units in the field, perhaps with a small vehicle, can use this functionality for forward air control in giving guidance to close air support to ensure that an attack hits solely the intended target. All computer users in the network can share the two connected radios. The Norwegian MoD is using the 19"/2[®] UIDM unit.



Navy

An example of an application for the navy is the supply of 19"/2[®] 6-port Fibre Switches for upgrading several Combat Boat 90 vessels for the Swedish Navy. As the CB90 is an exceptionally fast and agile boat that operates at speeds of up to 40 knots in shallow coastal waters, the 6-port Fibre Switches have to resist the continual shock and vibration occurring at such speeds, especially in rough water.



Air force

Typical 19"/2[®] communication units used by an air force are the DVI-D Video Switch and the USB Matrix. The Video Switch can transmit up to five video signals from different operators to one display unit. A commander can then choose which of the 5 operators' displays he wants to present on his own display. Areas of action for this equipment include situational awareness and radar surveillance from the air.

The USB matrix works in a similar way but involves the operators' keyboard and mouse. All operators can control all computers at the touch of a button. Units have been delivered to both SAAB and the Norwegian Air Force.

Enhancing military communication



MilDef is an international company at the forefront of designing, developing and manufacturing combat-rugged computers and special electronics for communication in extreme environments where reliability, robustness and high performance are crucial.

Our offer includes a battle-field 19"/2® standard military form factor that saves significant space and enables more functionality, customized communication units of this form factor, and special electronics based on your own specifications and dedicated to your particular needs.

We also supply the MilDef Crete range of communication products, including notebooks, tablets and PDAs. Our equipment complies with IP54, MIL-STD-810 and MIL-STD-461. We are certified according to ISO 9001:2008 regarding design, development and production. Naturally, we provide all the service required for individual units and provide them with lifetime support. Our environmental programme is guided by our ISO 14001:2004 certification.

In close cooperation with you, MilDef is dedicated to reshaping your communication power.



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