WE ARMOR IT MILDEF



WE ARMOR IT.

Letters. Words. Codes. Coordinates. Orders. Every moment vital information is transmitted around us and at risk. Enter MilDef. We create rugged IT solutions for the harshest conditions and most challenging environments, which prevent your information from being interrupted, intercepted or disrupted.

Our story

MilDef is a systems integrator and full-spectrum provider specializing in rugged IT for military, government and critical infrastructure sectors. We provide hardware, software, and services that help digitalize vital information streams in the harshest conditions and most challenging environments.

We shield and protect the most critical information streams and systems, where and when the stakes are the highest. We ensure secure, resilient, and reliable IT, which ultimately protects not only human lives, but also our common way of life, freedom, and democracy. The very fabric of our society.

In close cooperation with our customers and partners, we integrate durable, reliable and bespoke hardware into highly flexible and customizable systems and solutions. Solutions that are rigorously tested — not only in our laboratory and environmental test facilities, but also in real life.

Put simply. WE ARMOR IT.

PEACE. ONE OF THE MOST IMPORTANT WORDS WE HELP PROTECT.

OUR CUSTOMER PROMISE

RUGGED, RELIABLE & RESILIENT

We are built tough. We are built to be the one you can depend upon. We are built to never back down or bail out. Rugged, reliable, resilient. It is not just words. It is how our products are made. It is what our products deliver. It is how we make a difference, when and where the stakes are the highest.

SECURITY & PROTECTION

We are the enemy of "ooops". The opposite of wishful thinking. The antidote to short-sightedness. Our reason for being is to give the good cause the upper hand. To stand up for freedom and democracy. To make the world a safer place and to protect the fabric of our society.

FIELD PROVEN

We stand behind our products because we know what they are capable of. We spend huge amounts of money on R&D to test and find out how they perform in the harshest conditions. But the real test is out there in the real world. In the mud. In the cold. In the heat. In the never-ending rain. We have been there. Done that. And so have our products.

FLEXIBLE & CUSTOMIZABLE

Working with systems integration means being part of a greater context. Which means that we constantly need to adapt and adjust our way of working as well as align and comply with a wide number of products, systems and solutions. We know the importance of fitting in. Therefore, we do not have a set menu. The products and systems we build are the ones our customers need. More than anything, it is a matter of attitude and mindset. To us, impossible is only temporary. If there is a will, we will surely find a way.

INTEGRITY & TRUST

Our business is built on integrity and trust. Neither of them comes in a gift box. They have to be earned. And at MilDef we are hardworking earners. People turn to us because our word and pledge means something. They turn to us because we have always stood up for our beliefs, ideas and actions – and always will. Something that can be costly in the short perspective. But something that always pays off in the long run. For everyone.

UNSTOPPABLE

Unstoppable would be the perfect description of the spirit of MilDef. Of our approach to challenges, difficulties and our customers' needs. Of our responsiveness, alertness and swiftness. And of the success story we have been writing together for the past few decades. But it goes beyond that. Unstoppable is at the very essence of our brand promise and offer. We make sure that the information streams we protect never get interrupted, intercepted or corrupted. We stop at nothing. Literally.

RUGGED COMPUTERS

Maintain good communication in difficult conditions

Military operations often take place in difficult conditions: in the desert heat or arctic cold; in tropical rain or humid jungles; and in arid sandy plains. Not only must computer equipment withstand such tough conditions, but also the shocks and vibration common in military situations.

MilDef is well aware of what defense forces have to face in various theatres of operation, and is dedicated to developing and supplying a variety of rugged computers that help military personnel maintain good communication wherever they are.

An extensive range

We offer an extensive range of rugged computers and associated equipment as presented in this brochure. Most of the units are ideal for use by army, navy and air force personnel, although ground forces represent the biggest application area. MilDef units are found in ground vehicles such as tanks, armed personnel carriers and smaller road vehicles. They are also used in staff headquarters, field tents, and by all ground forces. As we can satisfy virtually all of your computer equipment requirements, MilDef is the only contact that you need.



Mobile solutions

MilDef products ensure maintaining high situational awareness and the tactical advantage in a combat zone. For example, our MilDef DE13 is a combat-rugged tablet built to be used in harsh conditions as a soldier device or in military vehicles and naval vessels, running military applications.

The MilDef DE13 is equipped with all the technology you need in such situations and can be customized to meet customer requirements. It has high brightness LCD multitouch screen, and complies with many applicable standards, including MIL-STD-810G, MIL-STD-461G and IP67.

Customized units

As MilDef is a flexible and very service-minded company, we respond quickly to customer demands. We can rapidly customize units to exacting standards and deliver them within tight time frames, whether it only concerns a few tailored products or hundreds of units. Computers can be modified and equipment connectors changed to suit your complete system. In addition, our accessories enhance the performance of our computer equipment. Naturally, they are designed for tight integration with our products.

As you would expect, our development department uses the latest technology in the design, development and manufacture of our product range and in customizing computers for our customers.

We have our own in-house environmental and EMI test labs where we can test products and verify their performance after modification or upgrades.

Compliance and military standards

As we are familiar with the extreme conditions under which military computer equipment operates, we use only the high-quality designs and materials necessary to protect and maintain long-term functionality and reliability. We are certified according to ISO 9001:2015 regarding design, development and production. We are also ISO 14001:2015 certified, and our care for the natural environment forms an important part of our business strategy.

All our units are built to comply with tough military standards to further ensure their high performance over long equipment lifecycles. They are, typically, true IP65 products as well as fulfilling MIL-STD-810 and MIL-STD-461.



Sustainable products

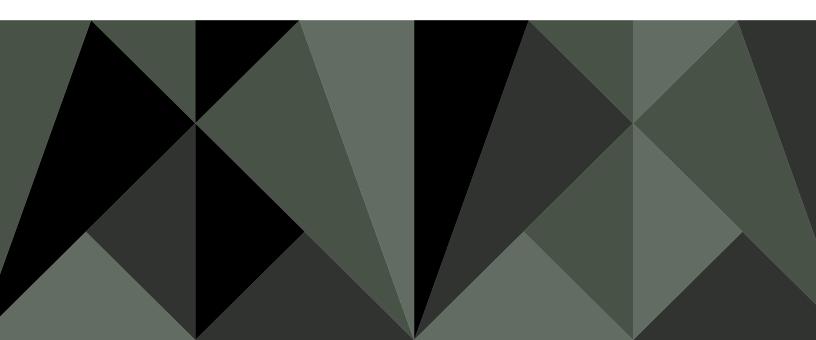
A key consideration taken into account when designing new equipment is to make it sustainable and highly reliable. This satisfies the demand of defense equipment purchasers for the long-term stable supply of particular types of equipment. Such sustainability also matches the long lifecycles of most military vehicles and aircraft, and the need to continually update systems. Typical MilDef features that promote sustainability and cost-effectiveness are a form factor that remains the same even if computers are updated, a computer lifecycle of up to ten years, and lifetime support for all MilDef units.

Rapid deployment of IT services at the Tactical Edge

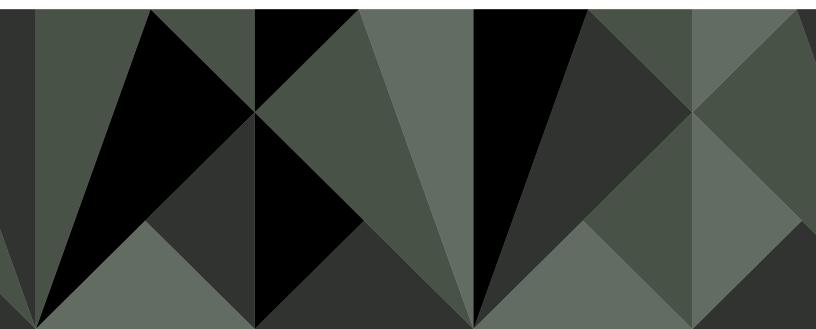
The MilDef OneCIS solution enables rapid deployment of tactical IT services to mobile commands, tactical units and quick responders. Together with our ruggedized hardware – we provide a fully rugged tactical IT solution.

HANDHELDS

	MilDef DH8	MilDef DF10
Platform	Intel® Elkhart Lake Platform	ARM Cortex-A53
OS	Windows 10, Windows 11	Android™ 10
Processor	- Intel® Atom® x6211E - 1.5 MB Cache	MediaTek MT8365i350 ARM Cortex A53 Quad Core
Graphics	Intel® UHD Graphics	Mali-G52 3EEE MC1
Display	 5.7" LCD (1280 x 720) Optical bonding Resistive multi-touch Brightness: 640 nits Invisible mode (optional) 	 5.7" LCD (720 x 1280) Optical bonding Resistive 2 point touch Brightness: 720 nits Invisible mode (optional)
Memory	8 GB / 16 GB / 32 GB DDR4 (1x slot)	3 GB RAM (on board)
Storage	M.2 2242 SATAIII SSD	128 GB ROM
Security	TPM2.0	ARM® TrustZone® Security
Interface	See data sheet at mildef.com	See data sheet at mildef.com
Battery	2x 7.2V Li-lon (2500 mAh), hot swap	3.6 V Li-ion (4170 mAh), standard 3.6 V Li-ion (8100 mAh), optional hot swap
Case	CNC milled aluminum	CNC milled aluminum
Color	Green	Black
Temperature	Operational: -20°C to +60°C (-4°F to +140°F) Storage: -40°C to +71°C (-40°F to +160°F)	Operational: -20°C to +60°C (-4°F to +140°F) Storage: -40°C to +70°C (-40°F to +158°F)
Wide temp option	-30°C to +60°C (-22°F to +140°F)	-
Dimensions (W x D x H)	201 x 99 x 44.5 mm (7.9 x 3.9 x 1.8 in)	90 x 184 x 23 mm (3.5 x 7.2 x 0.9 in)
Weight	905 g (1.99 lbs) w/ battery	440 g (1 lbs) w/ battery







TABLETS





Intel® Meteor Lake Platform		MilDef DS16P	MilDef DR15
Processor	Platform	Intel® Meteor Lake Platform	Intel® Tiger Lake -U Platform
Care LizeMB Cache, up to 4.8GHz Intel® Wint technology	os	Windows 11 IoT	Windows 11 IoT
Display	Processor	- 12 Cores, 1z2MB Cache, up to 4.8GHz	
Optional bonding	Graphics	Intel® UHD Graphics	Intel® UHD Graphic
Storage Optional: 2nd: 8GB/16GB/32GB DDR5-5600 x 1 Storage Sealed 25GGB M.2 2280 PCIe 4.0 SSD x 1 Optional: Sealed 512GB/1TB M.2 2280 PCIe 4.0 SSD x 1 M.2 PCIe Gen3 x 4 SSD x 1 (256GB-1TB) TPM TPM 2.0 TPM 2.0 Keyboard - - Interface See data sheet at mildef.com See data sheet at mildef.com Primary battery 11.61V (5000 mAh) 10.8 V (5300 mAh) Secondary battery 10.8 V (9100 mAh) option Power in Fast Charging via USB Type-C - Fischer 3-pin DC-in 19V Optional: - 12-32 V with Built-in Vehicle Adapter and surge protector Case Magnesium alloy Magnesium Color Black/NATO green NATO green Temperature Operational: -20°C to +60°C (-40°F to +158°F) Operational: -20°C to +50°C (-40°F to +158°F) Wide temp option -30°C to +60°C (-22°F to +140°F) -250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in) Dimensions (W x D x H) 286 x 32 x 193 mm (11.3 x 1.26 x 7.6 in) 250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in)	Display	 Optical bonding Brightness: 1200 nits Capacitive multi-touch screen Optional: Resistive multi-touch screen 	 Resistive single-touch type
Optional: Sealed 512GB/1TB M.2 2280 PCIe 4.0 SSD x 1 TPM 2.0 TPM 2.0 Keyboard See data sheet at mildef.com See data sheet at mildef.com See data sheet at mildef.com 10.8 V (5300 mAh) Secondary battery 11.61V (5000 mAh) 10.8 V (5300 mAh) Secondary battery 10.8 V (9100 mAh) option 10.8 V	Memory	Optional:	16GB/32GB DDR4-3200 x 1, up to 32GB
Interface See data sheet at mildef.com See data sheet at mildef.com	Storage	Optional:	M.2 PCle Gen3 x 4 SSD x 1 (256GB~1TB)
Interface See data sheet at mildef.com See data sheet at mildef.com 10.8 V (5300 mAh) 10.8 V (9100 mAh) option Power in Fast Charging via USB Type-C — Fischer 3-pin DC-in 19V Optional: — 12-32 V with Built-in Vehicle Adapter and surge protector Case Magnesium alloy Magnesium Magnesium Color Black/NATO green Temperature Operational: -20°C to +60°C (-4°F to +140°F) Storage: -40°C to +70°C (-40°F to +158°F) Wide temp option -30°C to +60°C (-22°F to +140°F) Dimensions (W x D x H) See data sheet at mildef.com 10.8 V (9300 mAh) 10.8 V (9100 mAh) option A-pin 12-32 V with Built-in Vehicle Adapter and surge protector A-pin 12-32 V with Built-in Vehicle Adapter and surge protector NATO green Operational: -20°C to +50°C (-40°F to +122°F) Storage: -40°C to +70°C (-40°F to +158°F) - 250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in)	TPM	TPM 2.0	TPM 2.0
Primary battery 11.61V (5000 mAh) 10.8 V (5300 mAh) 10.8 V (9100 mAh) option 3-pin 12-32 V with Built-in Vehicle Adapter and surge protector 10.8 V (9100 mAh) option 10	Keyboard	-	
Power in - Fast Charging via USB Type-C - Fischer 3-pin DC-in 19V Optional: - 12-32 V with Built-in Vehicle Adapter and surge protector Case Magnesium alloy Magnesium Color Black/NATO green Temperature Operational: -20°C to +60°C (-4°F to +140°F) Storage: -40°C to +70°C (-40°F to +158°F) Wide temp option -30°C to +60°C (-22°F to +140°F) Dimensions (W x D x H) 10.8 V (9100 mAh) option 3-pin 12-32 V with Built-in Vehicle Adapter and surge protector Magnesium Magnesium Operational: -20°C to +50°C (-40°F to +122°F) Storage: -40°C to +50°C (-40°F to +122°F) Storage: -40°C to +70°C (-40°F to +158°F) -250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in) (W x D x H)	Interface	See data sheet at mildef.com	See data sheet at mildef.com
Power in Fast Charging via USB Type-C Fischer 3-pin DC-in 19V Optional: - 12-32 V with Built-in Vehicle Adapter and surge protector Case Magnesium alloy Magnesium NATO green Temperature Operational: -20°C to +60°C (-4°F to +140°F) Storage: -40°C to +70°C (-40°F to +158°F) Wide temp option -30°C to +60°C (-22°F to +140°F) Dimensions (W x D x H) Spin 12-32 V with Built-in Vehicle Adapter and surge protector Magnesium Magnesium NATO green Operational: -20°C to +50°C (-40°F to +122°F) Storage: -40°C to +70°C (-40°F to +158°F) -250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in)	Primary battery	11.61V (5000 mAh)	10.8 V (5300 mAh)
- Fischer 3-pin DC-in 19V Optional: - 12-32 V with Built-in Vehicle Adapter and surge protector Case Magnesium alloy Magnesium Color Black/NATO green NATO green Temperature Operational: -20°C to +60°C (-4°F to +140°F) Storage: -40°C to +70°C (-40°F to +158°F) Storage: -40°C to +70°C (-40°F to +158°F) Wide temp option -30°C to +60°C (-22°F to +140°F) Dimensions (W x D x H) - Fischer 3-pin DC-in 19V Optional: -12-32 V with Built-in Vehicle Adapter and surge protector Magnesium NATO green Operational: -20°C to +50°C (-40°F to +122°F) Storage: -40°C to +70°C (-40°F to +158°F) - 250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in)	Secondary battery		10.8 V (9100 mAh) option
Color Black/NATO green NATO green Temperature Operational: -20°C to +60°C (-4°F to +140°F) Storage: -40°C to +70°C (-40°F to +158°F) Operational: -20°C to +50°C (-40°F to +122°F) Storage: -40°C to +70°C (-40°F to +158°F) Wide temp option -30°C to +60°C (-22°F to +140°F) - Dimensions (W x D x H) 286 x 32 x 193 mm (11.3 x 1.26 x 7.6 in) 250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in)	Power in	- Fischer 3-pin DC-in 19V Optional:	3-pin 12-32 V with Built-in Vehicle Adapter and surge protector
Temperature Operational: -20°C to +60°C (-4°F to +140°F) Storage: -40°C to +70°C (-40°F to +158°F) Operational: -20°C to +50°C (-40°F to +122°F) Storage: -40°C to +70°C (-40°F to +158°F) Wide temp option -30°C to +60°C (-22°F to +140°F) - Dimensions (W x D x H) 250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in)	Case	Magnesium alloy	Magnesium
Storage: -40°C to +70°C (-40°F to +158°F) Wide temp option -30°C to +60°C (-22°F to +140°F) Dimensions (W x D x H) Storage: -40°C to +70°C (-40°F to +158°F) - 250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in)	Color	Black/NATO green	NATO green
Dimensions 286 x 32 x 193 mm (11.3 x 1.26 x 7.6 in) 250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in) (W x D x H)	Temperature		
(W x D x H)	Wide temp option	-30°C to +60°C (-22°F to +140°F)	•
Weight 1.8 kg (3.97 lb) 2.3 kg (5.07 lbs)		286 x 32 x 193 mm (11.3 x 1.26 x 7.6 in)	250 x 45 x 190 mm (9.84 x 1.77 x 7.48 in)
	Weight	1.8 kg (3.97 lb)	2.3 kg (5.07 lbs)



MilDef DK13

Intel® Kaby Lake-U

Windows 10

- Intel® Core™ i7-7600U
- 4 MB Intel® Vpro technology

Intel® HD Graphics 620

- 12.1" LCD (1024 x 768)Optical bondingResistive single-touch
- Brightness: 650 nits
- Invisible mode (optional)

8 GB / 16 GB / 32 GB DDR4 (1x slot)

1x 2.5" SATAIII SSD (removable)

TPM 2.0 (optional)

See data sheet at mildef.com

10.8V Li-Ion (5800 mAh)

10.8V Li-Ion (8700 mAh) optional

12-32 VDC w/ surge protector

Magnesium

Black or green

Operational: -20°C to +50°C (-40°F to +122°F) Storage: -40°C to +70°C (-40°F to +158°F)

-30°C to +50°C (-22°F to +122°F)

310 x 255 x 54 mm (12.2 x 10.0 x 2.1 in)

~ 2.8 kg (6.17 lbs)



NOTEBOOKS





	WIIDEI KKID	MILIDEL VOIO	
Platform	Intel® Tiger Lake-H	Intel® Kaby Lake	
OS	Windows 10, Windows 11	Windows 10	
CPU	Intel® Xeon® W-11865MLE 8 core 24 MB Cache	Intel® Core™ i7-7600U 2 core 4 MB Cache	
Graphics	Intel® UHD Graphics	Intel® HD Graphics 620	
Display	- 15" LCD (1600 x 1200) - Optical bonding - Brightness: 900 nits	13.3" LCD (1920 x 1080)Optical bondingBrightness: 400 nits (800 nits option)	
RAID		-	
Memory	Up to 64 GB (2x Slots)	Up to 32 GB	
Storage	M.2 PCIe NVME SSD (removable)	2.5" SATA III SSD (removable)	
TPM	TPM2.0	TPM2.0 (optional)	
Keyboard	83-key with backlight, resistive single-touch touchpad Smart Card Reader, optional	83-key with backlight, resistive single-touch touchpad	
Interface	See data sheet at mildef.com	See data sheet at mildef.com	
Battery	10.8V Li-ion (8700 mAh)	11.1V Li-Po (6040 mAh)	
Power	19 VDC 12- 32 VDC w/ surge protector (optional)	19 VDC 12- 32 VDC w/ surge protector (optional)	
Case	Magnesium	CNC milled aluminum	
Color	Black or green	Black or green	
Temperature	Operating: -20°C to +55°C (-4°F to +131°F) Storage: -40°C to +71°C (-40°F to +160°F)	Operating: -20° C to $+60^{\circ}$ C (-4° F to $+140^{\circ}$ F) Storage: -40° C to $+70^{\circ}$ C (-40° F to $+158^{\circ}$ F)	
Wide temp option	-30°C to +55°C (-22°F to +131°F)	-30°C to +60°C (-22°F to +140°F)	
Dimensions (W x D x H)	353 x 301 x 79 mm (13.89 x 11.85 x 3.10 in) w/ bumpers	338 x 265 x 31.5 mm (13.31 x 10.43 x 1.24 in) w/ bumpers	
Weight	5.5 kg (12.1 lbs)	2.5 kg (5.5 lbs) w/ battery	





ا	MilDef RW14	MilDef RB14
In	tel® Coffee Lake	Intel® Coffee Lake
W	indows 10, Windows 11 and Windows Server	Windows 10, Windows 11 and Windows Server
6	tel® Xeon® E-2176M core 2 MB Cache	Intel® Xeon® E-2176M 6 core 12 MB Cache
In	tel® UHD Graphics P630	Intel® UHD Graphics P630
_ (15.6" LCD (1920 x 1080) Optical bonding Brightness: 850 nits	- 17.3" LCD (1920 x 1080) - Optical bonding - Brightness: 1000 nits
R/	AID 0,1,5,10	RAID 0,1,5,10
Uį	p to 64 GB	Up to 64 GB
Uį	p to 4x 2.5" SATA III SSD (removable)	Up to 4x 2.5" SATA III SSD (removable)
TF	PM2.0 (optional)	TPM2.0 (optional)
83	3-key with backlight, resistive single-touch touchpad	83-key with backlight, resistive single-touch touchpad
Se	ee data sheet at mildef.com	See data sheet at mildef.com
2x	x Removable 10,8V Li-ion (6900 mAh)	2x Removable 10.8V Li-ion (6900 mAh)
	9 VDC 2- 32 VDC w/ surge protector (optional)	19 VDC 12- 32 VDC w/ surge protector (optional)
CI	NC milled aluminum	CNC milled aluminum
ВІ	lack or green	Black or green
	perating: -20°C to + 60°C (-4°F to +140°F) torage: -40°C to +70°C (-40°F to +158°F)	Operating: -20°C to +60°C (-4°F to +140°F) Storage: -40°C to +70°C (-40°F to +158°F)
-3	80°C to +60°C (-22°F to +140°F)	-30°C to +60°C (-22°F to +140°F)
	92 x 302 x 43 mm 5.43 x 11.89 x 1.69 in) w/ bumpers	436 x 328 x 52 mm (17.2 x 12.9 x 2 in) w/ bumpers
	.9 kg (10.8 lbs), / wifi, 2x battery, 1x SSD	~ 7 kg (15 lbs)

ACCESSORIES

Here you'll find a selection of accessories to compliment your MilDef computer. Please contact your local MilDef office to discuss your needs and requirements.

USB source

Magnesium

IP55

Black





CNC milled aluminum

Different color options available at request



Description

Keyboard language

Mouse / touchpad

Keys

Source

Case

Color

Standards

Temperature



DS Adjustable Stand

Description

A perfect fit for DS tablet PCs. Adjustable in all directions, and works perfect as vehicle or wall mount.

Recommended to combine with DockLite docking station which will enable further connection possibilities.



MilDef Mobilite

Description

Mobile CPU based on the MilDef tablet design but without the display. Suitable for e.g. in-vehicle mounting.

Different variants are available, please check mildef.com for more information.



DockLite

Description

Docking list for the MilDef DS, DK, DR and DT tablets. Add more connectivity/interfaces to the tablet.

Different variant are available, please see mildef.com for more information.



19"/2® PRODUCT RANGE

Save up to 75% of space or add more functionality

Our innovative approach to product design can be seen with our modular $19^{\prime\prime}/2^{\circ}$ units. Being only 50 % of the size of the existing 19" form factor, they create up to 75 % more space in racks. This makes it possible to mount more units and hence add 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 - SWaP

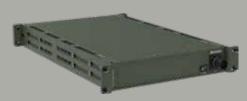
The smaller size of our 19"/2® modules provides you with the additional important benefits of:

- Less weight
- Less energy consumption
- Less heat generation

Sustainable form factor

A key consideration taken into account when designing our $19^{\prime\prime}/2^{\circ}$ form factor was to make it sustainable. This satisfies the demand of defense 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"/2 half rack mouting



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



Two modules can be mounted together in a 19" rack



The possibilities are endless



Typical application segments

The various communication units of the MilDef $19^{\prime\prime}/2^{\circ}$ product series are typically used within the following military segments:

- Ground platforms
- Deployed forces
- Special forces
- Air force platforms
- Naval platforms

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, if there are no MOTS products that suit your needs, we can design special electronic units based on your particular specifications.

COMPUTERS AND STORAGE







cCS2200 (MSP)

Customized non 19"/2 form factor based on customer requested dimensions, based on CS2200 platform $\,$

Intel® Coffee Lake

Intel® Xeon® E-2276ML / E-2276ME 6 core 12 MB Cache

Intel® HD Graphics P630 (NVIDIA GPU options available)

RAID options available

Up to 64 GB RAM

One or more M.2 or 2.5 SSDs depending on product variant

Supported

TPM2.0

Based on customer requirements

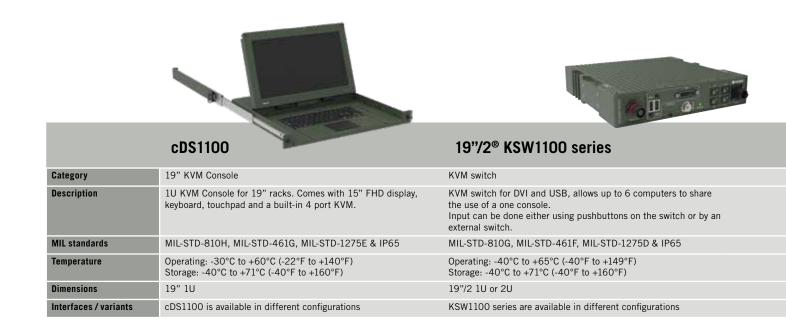
cCS2200 series are available in many different variants/ configurations, see mildef.com for more details

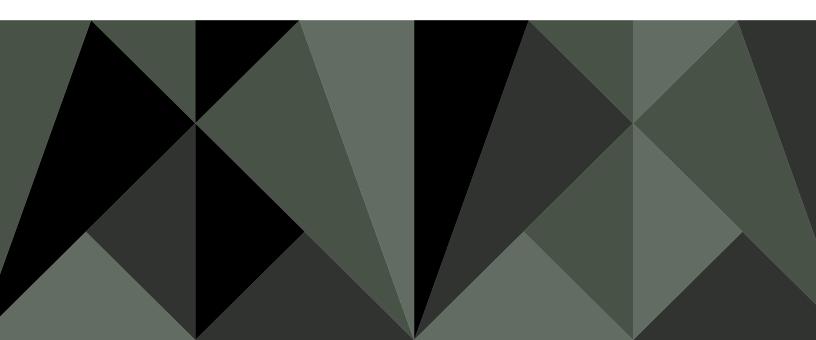
CNC milled aluminum

Different color options available at request



KVM & MATRIX

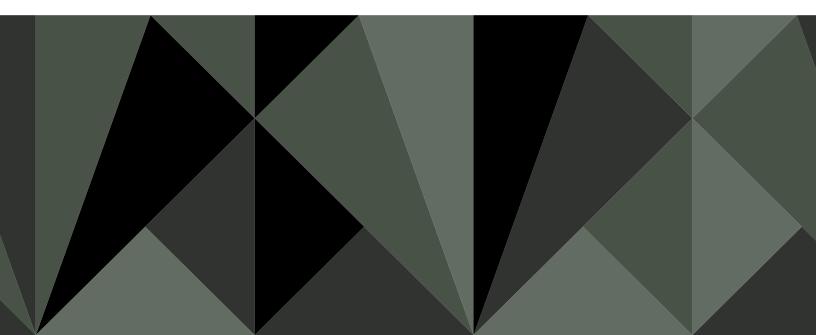








KSW4100 series	19"/2® SSW2100 series
KVM extender	USB Matrix
The KSW4100 series extenders offer USB and DVI connectivity over fiber link.	The USB switch allows any combination of USB inputs to be connected to any combination of USB outputs at any given time. The Matrix have four inputs and four outputs.
MIL-STD-810G, MIL-STD-461F, MIL-STD-1275D & IP65	MIL-STD-810G, MIL-STD-461F, MIL-STD-1275D & IP65
Operating: -40° C to $+55^{\circ}$ C (-40° F to $+131^{\circ}$ F) Storage: -40° C to $+71^{\circ}$ C (-40° F to $+160^{\circ}$ F)	Operating: -40° C to $+55^{\circ}$ C (-40° F to $+131^{\circ}$ F) Storage: -40° C to $+71^{\circ}$ C (-40° F to $+160^{\circ}$ F)
KSW4101 and KSW4103 own form factor, KSW4102 19"/4	19"/2 1U
KSW4100 series are available in different configurations	



SWITCHES





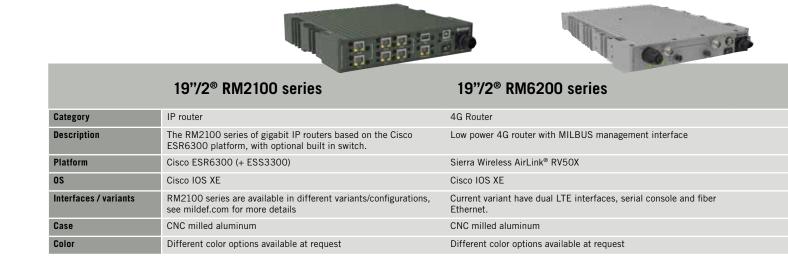
	19"/2® ESW1100 series	19"/2® ESW2200 series
Description	Unmanaged Ethernet switch (plug and play)	Managed Cisco Ethernet switch
Configuration / variants	Available as copper switch with option for fiber uplinks.	Available in many different configuration, pure copper, copper with fiber uplink and pure fiber switches.
Platform	Microchip	Cisco ESS3300
OS	-	Cisco IOS XE
Ports	Up to 10x 1 Gbps Ethernet	Up to 24x 1G Eth 2x 10G uplinks
Layer 2 switching	Layer 2 switching	IEEE 802.1, 802.3 standard, UDLD, CDP, LLDP, VTPv2/v3, EtherChannel, Trunking, Mirroring, REP, PVST+, MSTP, RSTP
Multicast	-	IGMPv1, v2, v3 snooping, IGMP filtering, IGMP querier, MLD v1, v2 snooping
Layer 2 IPv6	-	IPv6 host support, HTTP over IPv6, SNMP over IPv6
Quality of service	-	Policing, shaping, autoQoS
IP routing	-	OSPF (V2 and V3), RIP (V1 and V2), ISIS (for IPv4 and IPv6), EIGRP (for IPv4 and IPv6), PBR (Policy Based Routing) - NA only
IP multicast	-	PIM sparse mode (PIM-SM), PIM dense mode (PIM-DM) and PIM Sparse dense mode - NA only
Power over Ethernet	PoE, PoE+	PoE, PoE+
Management	-	CLI, Web UI, MIB, SmartPort, SNMP, syslog, DHCP server, Full Flexible Netflow (FnF)
Security	-	802.1x, DHCP snooping, dynamic ARP inspection, IP source guard, guest VLAN, storm control, SSHv2/v3, TACACS+, RADIUS, BPDU guard, MACsec-128, MACSEC-256 (NA only), ARP Snooping
Timing and synchronization		PTP (IEEE 1588 v2), NTP
High availability	-	BFD echo mode, HSRP, VRRP - NA only
Virtualization	-	VRF-lite - NA only
Case	CNC milled aluminum	CNC milled aluminum
Color	Different color options available at request	Different color options available at request





19"/2® ESW4100 series	19"/2® ESW6100 series
Managed Ethernet switch based on the Microchip SparX-5I platform	Managed 10G Cisco Ethernet Switch
Highly flexible platform that can offer everything from compact small switches up to 50+ ports. Fiber options are available.	10x 10G Fiber configuration is available, other variants possible at request.
Microchip SparX-5I	Cisco ESS9300
SMBStax VSC6816	Cisco IOS XE
Platform support up to 50+ port with 1/10/25/40G interfaces	Up to 10x 1/10 Gbps Ethernet
IEEE 802.1, 802.3 standard, LLDP, Link Aggregation, Trunking, Mirroring, MSTP, RSTP	IEEE 802.1, 802.3 standard, UDLD, CDP, LLDP, VTPv2/v3
IGMPv1, v2, v3 snooping, IGMP filtering, IGMP querier	IGMPv1, v2, v3 snooping, IGMP filtering, IGMP querier
-	IPv6 host support, HTTP over IPv6, SNMP over IPv6
Policing, shaping, autoQoS	Ingress policing, rate limit, egress queuing/shaping, auto QoS
OSPFv2/v3 Dynamic routing, RIPv2, IPv4/6 - static routing	OSPF (V2 and V3), RIP (V1 and V2), ISIS (for IPv4 and IPv6), EIGRP (for IPv4 and IPv6), PBR (Policy Based Routing) - NA only
-	PIM sparse mode (PIM-SM), PIM dense mode (PIM-DM) and PIM Sparse dense mode - NA only
PoE, PoE+	PoE, PoE+
ICLI, Web UI, MIB, SmartPort, SNMP, Syslog, DHCP server, Full Flexible Netflow (FnF)	CLI, Web UI, MIB, SmartPort, SNMP, syslog, DHCP, Flexible Netflow (FnF) server, Full
802.1x, DHCP snooping, dynamic ARP inspection, IP source guard, guest vlan, Storm control, SSHv2/v3, TACACS+, RADIUS, BPDU guard, ARP Snooping	802.1x, DHCP snooping, dynamic ARP inspection, IP source guard, guest VLAN, storm control, SSHv2/v3, TACACS+, RADIUS, BPDU guard, MACsec-128, MACSEC-256 (NA only), ARP Snooping
NTP, TSN	NTP
VRRP	BFD echo mod, HSRP, VRRP
VRF lite	VRF-lite
CNC milled aluminum	CNC milled aluminum
Different color options available at request	Different color options available at request

ROUTERS AND GATEWAYS







19"/2® RM5100 series

Analogue telephone adapter

This ATA allows up to 8 analogue telephones and/or fax devices to be integrated into a VoIP network.

Innovaphone IP29

Innovaphone

 $RM5100\ series$ are available in different variants/configurations, see mildef.com for more details

CNC milled aluminum

Different color options available at request

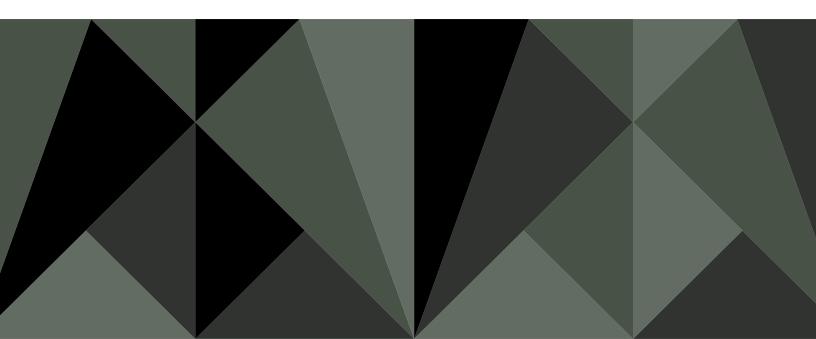


POWER

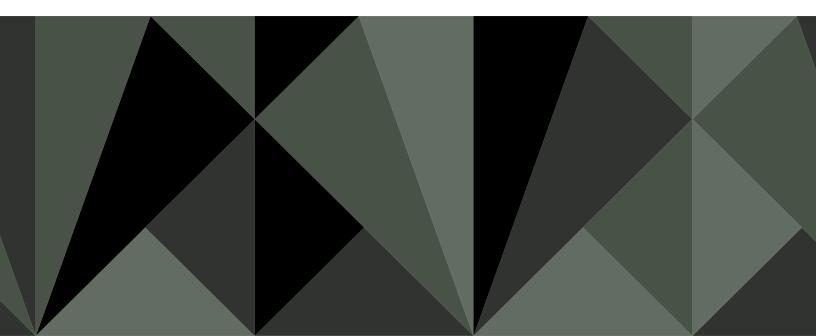




	19"/2® PWR1100 series	19"/2® PWR2100 series
Category	Power distribution unit	Power distribution unit
Description	A PDU with AC input and up to nine DC outputs. It comes with built in UPS and up to 15 A continuous total output.	A PDU with AC input and up to four DC outputs. It comes with built in UPS with a 4 Ah battery capacity. Up to 8 A continuous total output.
Input	1x AC in 110/230 V	1x AC in 110/230 V (option for DC input available)
Output	9x DC output 28 V	4x DC output 28 V
UPS	11.2 Ah battery capacity	4 Ah battery capacity
Capacity	420 W (490 W peak)	192 W (250 W peak)
Remote management	SNMP	SNMP
Interfaces / variants	Please see PWR1100 at mildef.com for more details	Please see PWR2100 at mildef.com for more details
Case	CNC milled aluminum	CNC milled aluminum
Color	Different color options available at request	Different color options available at request







SPECIAL ELECTRONICS

MilDef can offer our customers a complete realization of any product idea or concept. Our creative, experienced and well-motivated personnel understand what is required to convert a customer's idea into a finished product – keeping cost, quality and time in full focus.

Below are examples of custom special electronics, all of which were tailored for customers' specific requirements and needs.



MSP142 Tactical computer

Description

A highly mobile computing platform for tactical scenarios, which can be powered by a BB2590 battery. The electromagnetic signature of MSP142 is very silent (MIL-STD 461F, Army, Ground), securing radio communications and offering strong protection against unwanted interference. Please get in touch with your local MilDef sales office for more information.



MSP160 Battery pack

Description

Battery Pack compatible with Harris battery box, 10513-4800-02. The MSP160 will give you several different power out options to power mobile devices, e.g. radios, computers, mobile phones etc. Please get in touch with your local MilDef sales office for more information.



MSP148 RS13 Tray

Description

MilDef offers a wide selection of mounting options for its rugged handheld and mobile devices. The MSP148 is an example of a rack mounted docking for an RS13 laptop, mounted on sliders for compact stowing.

Please get in touch with your local MilDef sales office for more information.



MSP163 Mini switch

Description

The palm-sized gigabit Ethernet switch is perfect for scenarios where low weight and size is key, perhaps in a backpack.

Please get in touch with your local MilDef sales office for more information.



RUGGED DISPLAYS

Forged in the thick of battle



Every MilDef RD display was inspired by action in the field. Each design was developed in cooperation with armed forces to meet the ongoing communication challenges of their armored vehicles and command posts. The range we have today is the result of 10 years of such in-depth collaboration.

We push display technology forward by finding the critical areas of improvement as revealed by on the ground use. That's why MilDef displays are not only some of the toughest on the market, but adapted to the finer points of military operations like the need for stealth, to save space in tight quarters and to be easily integrated with other equipment.

Today, the RD range is a staple of military operations with thousands in use by armed forces around the world.

Performance where it matters most

You can count on our RD displays even in the harshest conditions. They are combat proven to withstand severe shocks, function in extreme temperatures and to be moisture resistant. We build them according to MIL-STD-810 and MIL-STD-461 and put them through an extensive burn-in program before they leave our facilities to guarantee each unit can take everything that's thrown at it.

Hi-res and multifunctional

Your displays need to keep up with modern computing power. We offer hi-res screens with up to 20 megapixel resolution and options like PIP functionality to run multiple programs simultaneously, infrared touch screens and programmable hotkeys.

Plays well with others

The RD displays are compatible with most equipment thanks to their wide range of input and output options and flexible mounting solutions. They also have a long "form, fit, and function" period so you don't have to worry about upgrading any time soon. And no matter how long your displays are in use, you can count on efficient service as we offer lifetime support.

Endless customization options

We specialize in customizing our displays to your needs. Creating your own unique solution is a quick process with rapid prototyping and a short time to production. These projects usually include customized mounting systems, selecting functionality from our wide range of options and tailoring in- and outputs.



Operational advantages that give you an edge

- Wide storage and operating temperature ranges
- Optional infrared touch screen
- Night vision (NVIS) compatible
- PIP functionality
- Invisible Mode automatically dims backlight in stealth situations
- Wide range of inputs and outputs including DVI, USB, composite, serial port, resistive touch screen, etc.
- On site service is available in many countries
- All MilDef computers can be remote controlled by RD displays over a distance up to 5 meters
- Designed, developed, produced and maintained according to ISO 9001 and AQAP standards
- Built according to MIL-STD-810, MIL-STD-461 and Ingress Protection standards





MILDEF INTELLIGENT DISPLAY

MilDef have long experience when it comes to develop rugged electronics for tactical use. Rugged electronics has to survive in demanding environments and must be supportable over the lifecycle of a military program.

MID series

The MID (MilDef Intelligent Displays) is a range of displays that are designed for the tactical environment. Based on feedback from key customers and the industry, we have developed a flexible and user-friendly platform. It's modular design with a built-in docking-slot for a removable computer module, enables a highly customizable platform with possibility for midlife upgrades during the lifecycle of the product.

Benefits with the MilDef modular design approach

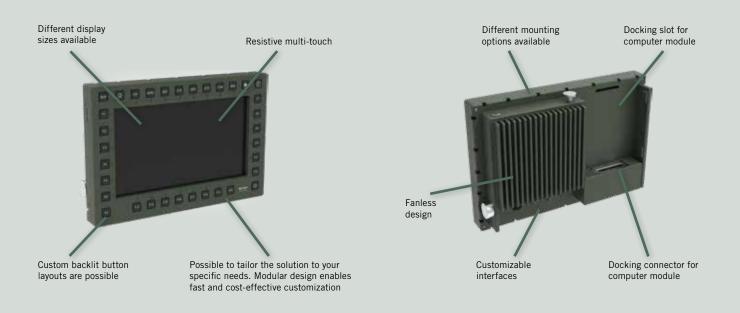
- All products are designed with a focus on high availability and long product lifecycles
- MilDef offers a full product ecosystem around the MID concept and can take responsibility for complete system solution
- Relevant for all military branches and can be customized to intended use-case
- Removable computer module enables several additional benefits as well:
 - Training and maintenance outside of the vehicle/vessel/aircraft
 - Enables cost effective midlife upgrades
 - Secure handling of classified information
 - Same display can be used with different computer modules (or as a stand-alone display)

Display sizes

The MID series is available in different display sizes. The standard sizes are 10", 13", 15" and 18", and other sizes are available upon request.

Customization

MilDef is specialized in customized solutions, so all products can be tailored to you specific needs. You can for example have a customer chassis with your flavor of connectors and buttons, or design a specific computer modul based on your specification.

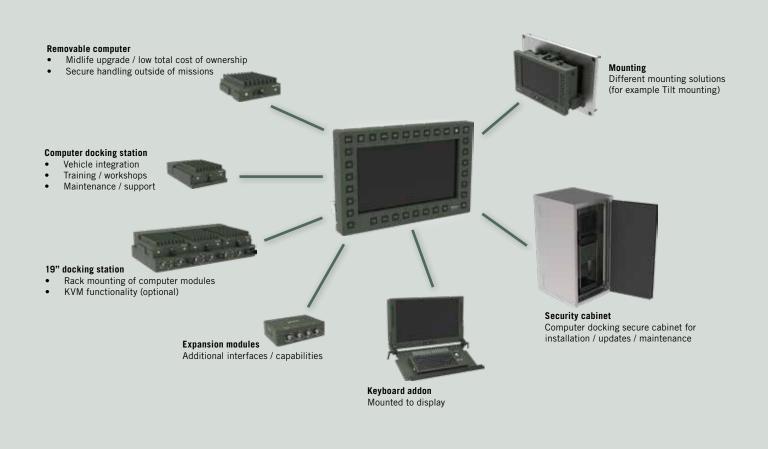


MD series

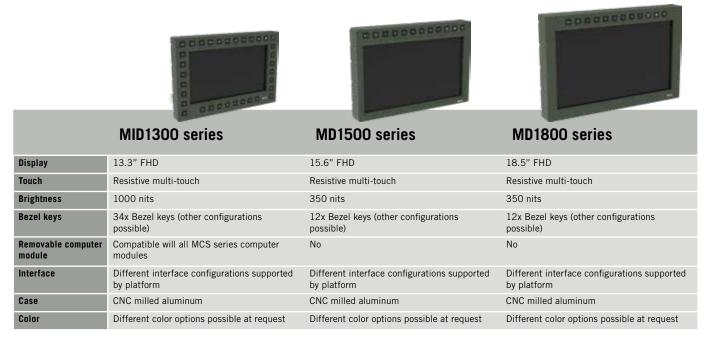
The MD (MilDef Displays) is a range of displays optimized for tactical environments. Based on the same displays as the MID series but without the possibility to add the modular computer, high focus on optimizing the design for SWaP-C. The flexible design enables a highly customized product, that can be optimized for a specific use case. All MID and MD series display come with a wide range of possible configuration and features, such as custom keys, different video inputs, picture-in-picture, video-over-ethernet etc.

Display ecosystem

MilDef has built a full ecosystem around the MID displays, that offers multitude of standard products and services for a flexible solution. MilDef also offers R&D capabilities for customized designs that are built to customer specification.

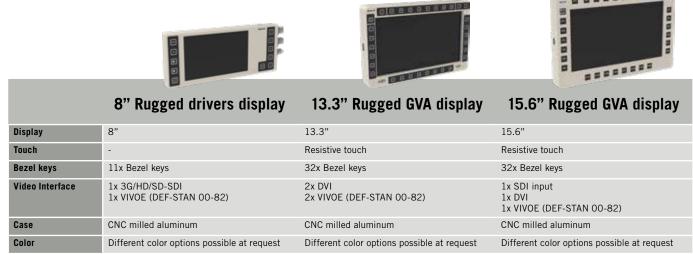


MilDef intelligent display



MCS1100 seri	es
Platform	Intel® Tiger Lake (11th Gen)
CPU	Intel® Core™ i7-1185GRE
Graphics	Intel® Iris® Xe
RAM	Up to 48 GB
Storage	1x M2. SSD NVMe
Dimensions (W x D x H)	146 x 179 x 54 mm (5.7 x 7.0 x 2.1 in)
Weight	1.5 kg (3.3 lbs.)

Customer projects



INTELLIGENT VEHICLE DISPLAYS

The roda Common Crew stations (roCCs) is an entire product family with flexible design focused on the requirements of the open architectures such as GVA & NGVA. The roCCs series is available as either a display, or as a Panel PC or as a vehicle

computer (with display). The Panel PC and vehicle computer can either be a high-performance Xeon processor or as an energy-saving client with a low power processor.

roCCs display series		
Description	roCCs (roda Common Crew Station) is display / panel PC design to comply with current vehicle standards	
Display	LCD 12" (1024 x 768), 4:3, 800 nits, resistive touch or 11.6" (1920 x 1080), 16:9, 800 nits, resistive touch	
Platform	Intel® Coffee Lake platform	
CPU	Intel® Core™ i7-9850HL (6 core, 9 MB Cache) Optional: Intel® Xeon® E-2276ML (6 core, 12 MB Cache)	
Graphics	Intel® HD Graphics P630	
RAM	Up to 64 GB RAM	
Interfaces / variants	roCCs series is available in different configurations, CPU is optional	



Key Features

High modularity to cover a whole product family from 9" to 15.6"

- Different CPU's possible to adapt the thermal concept to the application
- High flexibility for additional project specific interfaces
- Individually dimmable button backlight with different colors (RGB LED's)
- Dedicated graphics card possible
- Built-In-Test functionality
- CAN-Bus
- · Analog and digital video interfaces

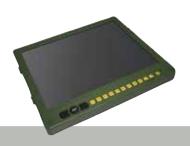
ARMORED VEHICLE DISPLAYS

The Serval series are fully ruggedized and can be equipped with a heater for operations down to -20° C. They also come with options like PIP, touch screen functionality and remote

control to give you an operational edge. Available mounting solutions also allow use in tactical vehicles.









Serval RD15 FHD

- 15.6" (1920 x 1080)
- Brightness: 800 nits Contrast: 750:1
- Format 16:9
- Resistive touch (optional)

8x programable function keys

- Camouflage mode
- NVIS compliant
- Picture in Picture (optional)

Operational: -31°C to $+60^{\circ}\text{C}$ (-24°F to +140°F) Storage: -40°C to $+85^{\circ}\text{C}$ (-40°F to 185°F)

393 x 270 x 66 (15.5 x 10.6 x 2.6 in)

4.8 kg (10.6 lbs.)

Please see mildef.com for full specification

Serval RD19

- 19" (1280 x 1024)
- Brightness: 350 nits Contrast: 1000:1
- Format 4:3
- Resistive touch (optional)

8 keys OSD menu

- Camouflage mode
- Circuit breaker

Operational: -30°C to $+70^{\circ}\text{C}$ (-22°F to +158°F) Storage: -40°C to $+70^{\circ}\text{C}$ (-40°F to +158°F)

480 x 405 x 78 (18.9 x 15.9 x 3.1 in)

10.7 kg (23.6 lbs.)

Please see mildef.com for full specification



COMMAND CENTER DISPLAYS

The Serval series are fully ruggedized and can be equipped with a heater for operations down to -20° C. They also come with options like touch screen functionality and remote control to give you an operational edge. Available mounting solutions also allow use in tactical vehicles.



	Serval RD22	Serval RD24
Display	- 21.5" (1920 x 1080) - Brightness: 600 nits - Contrast: 5000:1 - Format 16:9 - Resistive touch (optional)	 - 24" (1920 x 1080) - Brightness: 300 nits - Contrast: 5000:1 - Format 16:9 - Resistive touch (optional)
Keys	8 keys OSD menu	8 keys OSD menu
Functions	- Camouflage mode - Circuit breaker	- Camouflage mode - Circuit breaker
Temperature	Operational: -20°C to +60°C (-4°F to +140°F) Storage: -30°C to +70°C (-22°F to +158°F)	Operational: -20°C to +60°C (-4°F to +140°F) Storage: -30°C to +70°C (-22°F to +158°F)
Dimensions (W x D x H)	557 x 72 x 353 mm (21.9 x 2.83 x 13.9 in)	614 x 76 x 370 (24.2 x 3 x 14.6 in)
Weight	13 kg (28.7 lbs.)	11 kg (24.3 lbs.)
Other	Please see mildef.com for full specification	Please see mildef.com for full specification





Serval RD40

- 40" (3840 x 2160) Brightness: 350 nits Contrast: 4800:1 Format 16:9 IR touch (optional)

8 keys OSD menu

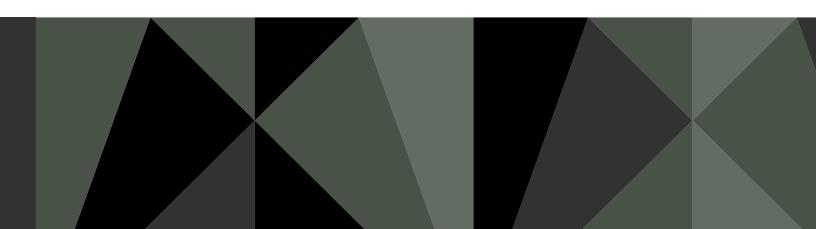
- Camouflage mode Circuit breaker

Operational: -20°C to $+40^{\circ}\text{C}$ (-4°F to 104°F) Storage: -20°C to $+60^{\circ}\text{C}$ (-4°F to $+140^{\circ}\text{F}$)

1009 x 120 x 617 mm (39.7 x 4.7 x 24.3 in)

40 kg (88.2 lbs.)

Please see mildef.com for full specification



FULLY RUGGED MONITORING SYSTEM

The high-resolution electronic large-screen (HEL) display is the ideal solution for conveying mission critical data in a command post or situation room. It gives you up to 8K resolution (4k per display) and powerful split graphics computing so you can connect multiple sources for real time viewing.

Highly mobile with demountable parts, the HEL 4.0 display is tough enough to withstand harsh environments where dust, humidity and vibrations are ever present.

The HEL 4.0 is available in 1x1, 2x1 and 2x2 versions. During ISAF mission some HELs were in duty 24/7 for mission planning and situation report.



	HEL 65	HEL RD55
Display	- 65" (3840 x 2160) - Brightness: 450 nits - Contrast: 4000:1 - Format 16:9	- 55" (3840 x 2160) - Brightness: 700 nits - Contrast: 4000:1 - Format 16:9 - Infrared multi-touch (optional)
Keys		8 keys OSD menu
Functions	- HEL4.0	- Camouflage mode - Circuit breaker
Temperature	TBD	Operational: 0°C to +55°C (32°F to +131°F)* Storage: -20°C to +60°C (-4°F to +140°F) *-20°C (-4°F) option available
Dimensions (W x D x H)	1453 x 93.4 x 834 mm (57.2 x 3.7 x 32.8 in)	557 x 72 x 353 mm (21.9 x 2.83 x 13.9 in)
Weight	56 kg (124 lbs.) per display	54 kg (119 lbs.)
Other	Part of the HEL4.0 from roda, up to 4 display video wall. Please see mildef.com for full specification	Please see mildef.com for full specification



FROM CONCEPT TO CREATION

Specification

Upon receipt of a customer order a development specification is produced. This specification will ensure that both MilDef and the customer have a common understanding of the required deliverables. The agreed specification is also the key document on commencement of a detailed design. The development specification is the backbone of the project and will be referred to and reviewed throughout the R&D process.



Design

After the development specification has been approved by the customer, the detailed design work may commence for the mechanical, electronic and software elements. All drawings, layouts, and specifications needed to produce the prototype are prepared in-house with the support of the latest available systems, such as 3D CAD and PCB layout. Potential design solutions are continuously evaluated with a practice of "Upstream Design" ensuring that MilDef prototypes are in accordance with customer expectations.



Suppliers

MilDef works with both local sub-contractors and global vendors. Key suppliers include CNC (Computer Numerical Control) service suppliers, who machine chassis from single billets of aluminium, SMA (Surface Mounted Assembly) suppliers, conducting the assembly of PCBs and selected vendors, supplying inter-connectivity solutions especially developed for the defense industry.



Prototype builds

Once suppliers have delivered the parts to MilDef requirements, these are processed through the R&D lab and prototypes are built. The prototypes are always assembled in co-operation between the R&D engineers and production personnel. This ensures that a volume production perspective is gleaned from an early phase.



Prototype verification and validation

MilDef has its own test standard called the MilDef Verification Handbook, which details the minimal tests that are carried out on all prototypes.

After prototype assembly, verification and validation consist of functional, environmental and EMC tests, allied with inspection activities (more extensive testing can be provided on request).



Test certificate

All tests and inspection activities that are conducted when verifying and validating prototypes are referenced from the requirements laid down in the development specifications. After verification and validation, a report will be issued proving compliance with the development specification and customer expectations.



Finished product

For short production runs or custom solutions, MilDef delivers the customer requirement after the prototype has been successfully verified and validated. For volume products to be built by MilDef the development will continue until the item is verified for serial production.



Designing the solutions of the future

Not every challenge has an off-the-shelf solution. Many of the innovations forces around the world rely on today started out as customization initiatives. Whether it's a few tailored products or hundreds of units, MilDef can help convert a concept for a better solution into reality with speed and efficiency.

Such projects generally involve modifying computers and connectors, designing a space-saving setup and enhancing units with a huge range of accessories. MilDef is also capable of integrating data security solutions and tempest requirements. Every new unit is tested in an EMI chamber to ensure it meets all the required standards.

Innovation at work

Thousands of MilDef solutions are in operation around the world. The German Army is using 2,500 customized MilDef units in their FülnfoSys Heer battle management system.

Airbus in France have equipped all of their A400 military transporters with portable maintenance access terminals (PMATs) built from MilDef III and RK886s. And MilDef recently helped the Norwegian Armed Forces create a compact and mobile communication solution using 19"/2® units for their CV90's.

To help the Norwegian Armed Forces take control of the sprawling equipment in their CV90's, we created a compact solution based on 19"/2® units. The solution houses all critical tech like computers, switches, UPS, etc. in one mobile unit.



Custom built solutions

MilDef Design House

MilDef offers its customers complete realisation of their product ideas or concepts. This is achieved by experienced and well-motivated personnel, who have a clear understanding of what is required to convert a customer's idea into a finished product. MilDef focuses on cost, quality and time for both high and low volume products and solutions.





MilDef is a global systems integrator and full-spectrum provider specializing in rugged IT for military, government and critical infrastructure sectors. MilDef provide hardware, software, and services that help digitalize vital information streams in the harshest conditions and most challenging environments.

In close cooperation with customers and partners, MilDef integrate durable, reliable and bespoke hardware into highly flexible and customizable systems and solutions. MilDef shield and protect the most critical information streams and systems, when the stakes are the highest.

Put simply. WE ARMOR IT.

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