

Overcoming integration roadblocks with wearables

Military OEM design engineers of wearable ecosystems and tactical vests can simplify their electronic devices and connectivity solutions with the Fischer Freedom™ connectivity technology platform. This newly extended platform can help improve tactical communication, improve situational awareness and provide a better soldier experience.

Compact, easy-to-use devices like portables and wearables demand simple, efficient integration. The Fischer Freedom™ Series sets the standard for simplicity and efficiency.

Delivering 360° mating freedom, low-profile design and superb ergonomics, the Fischer Freedom™ connectors, cable assemblies and active devices (LED, Rugged Flash Drive, USB 2.0 adapter, and Tactical BodyCam) optimise cable management and improve data and power management.

Optimised Cable Management

Fischer Freedom™ connectors and cable assemblies eliminate key codes and deliver 360° mating freedom. Devices can be plugged and routed in any direction, ensuring that the cable on the vest always goes straight to the device. Straight connections means shorter cables, fewer tangles and better usability because equipment is lighter and faster to set up.

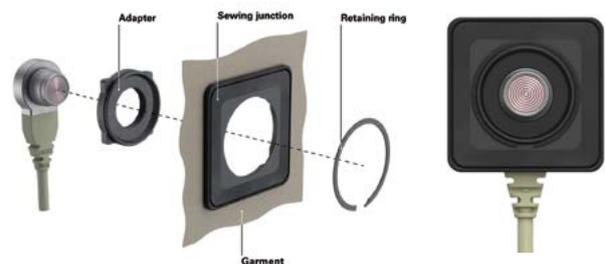
Cable-free solutions can also be achieved by integrating the panel plug directly into the housing of wearable devices such as radios, bodycams, LEDs, and alert systems or biometric sensors. These wearables can quickly and easily be mated to ready-to-use cabled receptacles or receptacles with the new Quick Detach System fitted into the fabric of a smart tactical vest (such as Wearin's connected vest).

Improved Data and Power Management

The connected vest works like a hub, allowing a modular array of body-worn communication systems and active devices to interconnect through a shared data and power bus. The vest integrates this bus with wiring on the inside, one central battery for all, and connectors that serve as a hub interface at strategically chosen locations. This minimises external cables and enables standardisation and further miniaturisation of the entire electronic ecosystem.

NEW – Wearable Connector Products and Accessories

The Fischer Freedom™ Series includes new products and accessories allowing design engineers to optimise cable management in line with their SWaP (size, weight and power) requirements, and to integrate connectors easily into all sorts of materials, even the most flexible of fabrics.



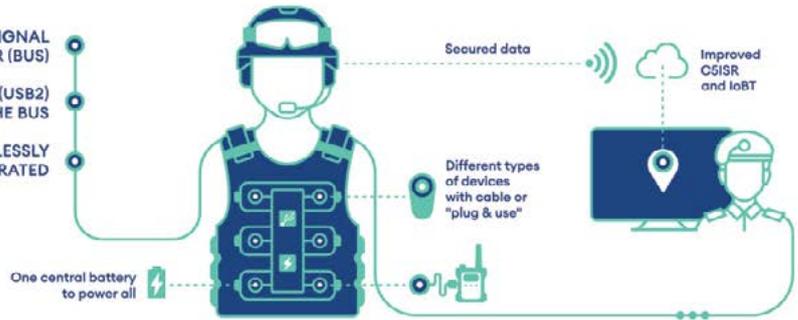
The rugged sewing junction of the new Fischer Freedom™ **Quick Detach System** allows flexible material to easily be converted into a potential panel, e.g., heavy-duty tarp cover/tent, sail, vehicle tyre blankets, smart backpacks and tactical vests. The system's adapter and retaining ring facilitate the quick fitting and interchange of receptacles (e.g., a cabled receptacle with 7 contacts as shown in the illustration).

The new Fischer Freedom™ **cabled receptacle** in size 08 is a smaller version of the receptacle introduced to the market in 2019. With a metal housing, four signal and power contact tracks (up to 24AWG, USB 2.0 and Ethernet), IP68 sealing and EMI shielding, this new cabled receptacle is ready to use in any conditions, easy to integrate into garments or mount onto the panels of military equipment, or to integrate into tactical vests and backpacks (MOLLE/PALS compatible). Designed with no sharp edges, it is also easy to fit and remove in the field, even with gloves.





DISTRIBUTED SIGNAL & POWER (BUS)
CENTRAL HUB (USB2) TO MANAGE THE BUS
SIX PORTS SEAMLESSLY INTEGRATED



The plug-and-use Fischer Freedom™ connectors featured in the vest's electronic ecosystem offer multiple benefits. One of the most impactful is allowing connected devices to be reduced to their core function (e.g., sensing, image capture, geolocation, radio link, etc.) by relocating their power source and/or communications to a single central hub, switch, and/or battery. These wearable devices that integrate connector plugs directly into their housing can easily be plugged onto the connector receptacles fitted onto the vest using the new Quick Detach System. Wearin's vest currently features six Fischer Freedom™ 7-contact receptacles, two on the front, four on the back.

NEW - Ready-to-Use Rugged Connected Vest

Wearin's connected vest is a centralised, integrated connectivity system with optimised SWaP and agile 'plug and play' usability. The tactical vest has an internal distributed data (USB 2.0) and power bus, eliminating the need for multiple batteries, external wires and cables that weigh soldiers down and restrict movement.

Connector receptacles create a flexible system delivering power and data. Soldiers can easily connect communications gear, End User Devices (EUD), sensors, cameras, night vision devices, GPS and other essentials onto the vest to enhance mobility, performance and safety.

In September 2020, Wearin's Connected Vest won the highest-ranking 2020 Technology Innovators Award – the Platinum Award – from Military & Aerospace Electronics and Intelligent Aerospace.

Wearin's **Defense & Security Starter Kit** includes the following items: 1x tactical plate & load carrier, 1x tactical wearable hub USB 2+, 6x Fischer LP360™ cabled receptacles fitted with the new Fischer Freedom™ Quick Detach System, 1x cable with a Fischer LP360™ plug and a Fischer UltiMate™ 80 plug (6-pin NATO STANAG 4695 compatible), 1x cable with a Fischer LP360™ plug and a USB type A, 1x Fischer LP360™ LED, 1x Fischer LP360™ USB 2.0 adapter.

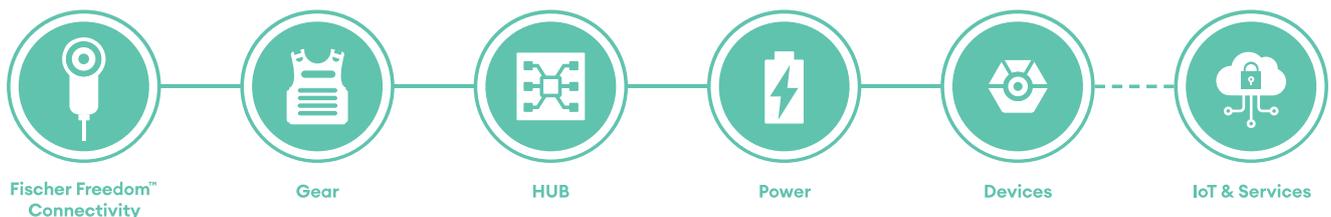
Modular, evolutionary and customisable, Wearin's sleek, human-centred, ready-to-use solutions can be tailored to meet any specific needs or requirements in terms of functionality, choice of gear, and types of device to be integrated. ■



Commercially available since summer 2020 under the name of 'Defense & Security Starter Kit', the smart tactical vest is Wearin's first ready-to-use solution.



The Fischer Freedom™ Rugged Flash Drive and Tactical BodyCam are optional.



Wearin's smart wearable solutions enable intelligence communication within platoons, enhance situational awareness, and power the Internet of Battlefield Things (IoBT). Nowadays, wearable technologies come in product silos. With global partners in wearable technology, data management, garment manufacturing and other fields, Wearin' acts as a system integrator and catalyst that breaks product silos to create complete, ready-to-use wearable IoBT ecosystems for infantry soldiers and security officers operating in the field.