

Connecting the modern soldier

Soldier Modernisation talks to ITT Cannon about their innovative military selected connector range

Whether it's gathering critical intelligence to executing a targeted reconnaissance mission, today's modern soldier must be prepared to operate in a variety of austere environments, which include desert, jungle, arctic and sometimes sub-surface domains. To aid in these ISR missions, modern soldiers are outfitted in a variety of body-worn, situational awareness electronic systems, also known as C4ISR. The successful functionality of these complex, integrated systems is highly dependent on how the soldier-worn electrical interconnect system is designed, built and maintained.



ITT Cannon MKJ Nett Warrior

ITT Cannon LLC is focused on current and future needs of the modern soldier, and how the electrical interconnect system provide mission critical performance every time. Cannon's design team is focused on meeting or exceeding the defined electronic system requirements that takes into consideration power/data demands, operating temperature, water submersion, shock/vibration and EMI/EMC environment. One of the newest standards driving power and data requirements is outlined in the US Nett Warrior specification. Cannon's robust breakaway connector series, MKJ Warrior, meets these requirements in addition to being qualified to GOSSRA and NATO STANAG 4695 specification. "This solution is proven for 1 meter submersion for an hour, and operates at USB 2.0 data requirements with 5 amp current carrying," states Wayde King, Product Manager from ITT Cannon. The MKJ Warrior connector series is used extensively for the core Nett Warrior system, which includes a radio, conformal wearable battery and End-User device (EUD). The system is expanded with tactical power/data hubs, power management controllers, GPS receivers, and power scavenging devices.

King went on to mention, "given the wide range of extreme terrain our soldiers face, Cannon's circular Nemesis (NEM) series has found broad adoption for soldier worn radios with its +20 meter immersion performance and up to 10,000 mating cycle durability." The NEM series has both positive latching and break-away coupling options to provide additional mating security when needed.

"Size, weight and power (SWaP) continues to be a key theme for soldier-worn equipment," says Mike Finona, Field Application Engineer from ITT. To fully understand the soldier and system requirements, Finona has interviewed



many end-users from the Marines to Special Forces, and also works closely with system designers to bring new interconnect technologies forward. "Additional requirements and future product roadmaps look at higher data rates, increased power demand, 20 meter sealing and increased mating-durability cycles." Electrical connections for this soldier-worn equipment often need to be coupled with gloved-hands, which limit dexterity, in arctic cold weather and icy environments and/or in low or no light which limit visual coupling-confirmation. Soldiers are also looking for body-worn cables that are less bulky, body-conformal to eliminate field-s snag conditions and that are lighter weight.



ITT Cannon Nemesis II CBA 3

"Several of Cannon's soldier-worn connector products address these requirements. Cannon's rectangular Rock-in-Lock RIL series and Hot Shoe-style HSC series utilize a low profile positive latching coupling system that ensure cables can be easily routed through the MOLLE loops on a tactical vest or mounted to a tactical helmet rail system," states Paul Alpers, ITT Cannon Business Development Manager. These interconnect systems provide robust easy-clean spring-probe contacts that allow for 10,000 plus mating cycles, and are sealed to withstand 20 meter of water immersion for multiple hours. Other applications require a quick

disconnect decoupling designs that allows the soldier to quickly egress from a vehicle/aircraft or doff various gear components without becoming entangled.

One of the newest innovations at ITT Cannon is the miniature, high-density circular HDX series. This robust line reduces the size and profile of connectors and cables, allowing designers to increase data rates to USB 3.2 Gen 1 (5.0 Gbps) and power up to 5 amps. This series is also immersion sealed to withstand 20 meters for 2 hours, mating durability of 5,000 cycles and the coupling can be offered in both positive-latching or break-away variants.

With over 100 years of harsh-environment interconnect heritage, ITT Cannon is focused on mission success for our soldiers and NATO allies, and is continuously developing new interconnect solutions and materials to provide our troops with full-spectrum dominance of the battle space. ■

For more information, please see: www.ittcannon.com