

Battle-ready: Military Communications Case Study

Battery Connector Case Study

Harwin was invited to review several applications required by AEA Technology Battery Systems Ltd (ABSI), an Intelligent Battery and Charger Solutions manufacturer, for inclusion into a major contract bid for a UK Ministry of Defense project. The application consisted of a number of interconnection products for use within a military communications system battery pack.

Tough Targets

At the time of meeting with the customer, the project was well underway and other potential suppliers were slow in reacting to their requirements. The target set for Harwin was to provide technically acceptable solutions and prototype parts, at a competitive cost within a 6-week period. A tall order, but one that was achieved by building a strong core team from Harwin staff and the customer's representatives.



The Harwin solution offered costs and prototypes within 6 weeks of the complicated application being outlined.

Connector requirements

The first connector reviewed was the 10 Way Hot Shoe Connector. This is the main connector between the system and battery.

The design consists of two main parts:

1. In the lower half is an insert molded assembly of 10 contacts, effectively providing the waterproof seal for the battery.
2. The top half comprises of a molding with 10 free floating spring contacts. For added reliability, a sealing gasket is also included.

The second connector required was a Charging Connector. This connector consisted of two halves, both insert molded and both using proven Harwin technology to ensure a reliable solution.



The main connector for the battery pack. Tested to perform under battle conditions, and easy to repair or replace.

Strict Connect Criteria

All connectors supplied has to meet strict requirements. These included:

- chemical and biological agent resistance
- water immersion
- durability tests

- and the ability to be soldier proof!

As part of the extended life requirements of these two items, both connectors can be serviced with a repair kit, allowing damaged connection points to be replaced without the need to disassemble the whole battery. This ensures that any battlefield damage can be easily rectified either at a service base or by a return to the vendor.

Simplified Supply Chain

In addition to the two main connectors listed above, Harwin has also provided a number of other smaller, custom parts as well as a number connectors assembled into cable harnesses, simplifying the supply chain and keeping vendor numbers low.



The charge connector uses proven Harwin contact technology to ensure the utmost reliability.

Working in Partnership

By choosing Harwin as their preferred vendor, ABSL has benefited from a solid technical working partnership and the economies of scale for larger product purchases. The level of integration between both teams has effectively shortened the lines of communication between both companies.

"Harwin were selected by us due to the swift response to our urgent enquiry and the technical excellence and quick turnaround in producing prototype drawings and components. Praise has got to be attributed to the Harwin team for the high levels of commercial awareness and customer commitment we have experienced."

Senior Project Engineer