

By focusing on the unique needs of each customer, Central Railway Manufacturing has worked with leaders in the freight transportation industry to turn their PTC event recording requirements into a reality.

## Locomotive Event Acquisition Module

Central Railway Manufacturing's equipment portfolio includes LEAM, a locomotive event aggregation device capable of interfacing discrete electric and pneumatic systems. The LEAM supports up-to-date FRA-compliant data collection and PTC-messaging support with LDARS-compatible on-board network connectivity. In conjunction with the CRM Crash Hardened Memory Module, the LEAM is part of a flexible event recording strategy.

### Insight into LEAM technology...

The advancement of FRA recording requirements due to the evolution of safety standards in the freight industry presents unique locomotive maintenance issues. The LEAM was specifically designed to allow CRM customers to update their current fleets of Quantum® recorders with minimal impact to existing wiring while providing the latest FRA compliance recording points and advanced network connectivity features.

The LEAM is available in common Quantum® recorder form factors, offering form-fit-function compliance with regard to existing electrical connections, air connections, and mounting features. Incremental FRA discrete recording connections are supported on additional ports that are physically positioned for ease of retrofit installation. The LEAM also integrates Quantum® Alerter functionality.

Equipped with two industry-standard M12 Ethernet network connections, the LEAM integrates advanced switch features such as VLAN support for maximum on-board network integration flexibility.



### Flexibility in Event Recording...

The LEAM acts as a concentrator, combining discrete locomotive events into industry-standard AAR Class D EMP messages which conform to open AAR standard data-dictionary elements. Flexibility of data collection by an external DOT-crashworthy memory module or any network-based utility for non-hardened (e.g. database) applications is ensured by utilizing this non-proprietary format. In addition to supporting external memory, the LEAM also integrates up to 2GBytes of internal non-hardened storage to accommodate a wide range of custom user applications such as locomotive configuration management.

Custom user communications configurations are available on the LEAM. For legacy serial port applications, most existing locomotive asynchronous and synchronous RS-232 and RS-422 protocols are supported. The LEAM also offers fault and status monitoring message generation, where network messages can be forwarded to user-defined locations given user-specified locomotive telemetry sequences or logic trees.