



LDRS-V+

Data Recording System



Unmatched, Multi-Stream Data Recording Technology

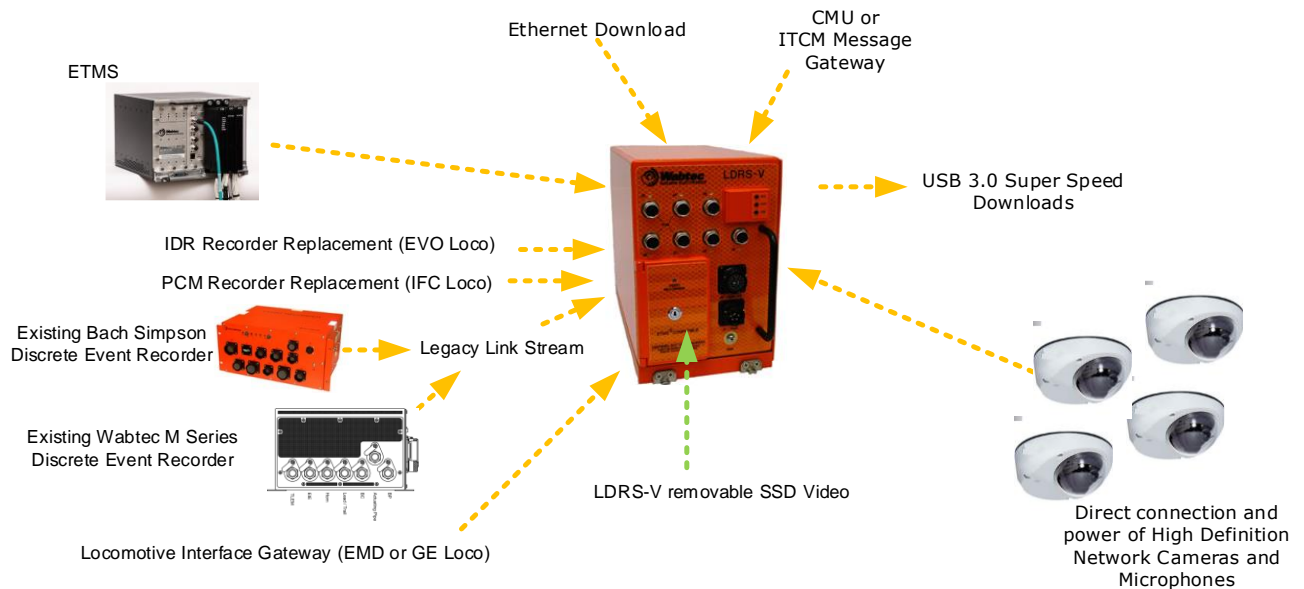
The LDRS-V+ recording system is a one box solution for recording data streams from multiple on-board sources and hi-definition network cameras. The "one box" solution provides the benefit of synchronizing the storage of all data into a single FRA compliant crash hardened memory (CHM), the ability to download both data and video from a single device, and the benefit of utilizing one software tool for all data and video analysis.

- 128GB FRA crash-hardened video storage
- 512GB to 2TB front panel removable solid-state drive (RSSD)

The LDRS-V+ has the capability of recording a wide range of on-board data including:

- FRA Event Recorder data streams:
 - Replace IDR and PCM recorders on GE locomotives recording all formats.
 - Connect to existing legacy Wabtec M Series and Bach Simpson recorders to stream FRA events into LDRS-V+.
 - Record Class C and Class D LIG on GE and EMD locomotives.
- PTC Data Streams
- High definition network video cameras as options
 - Standard cameras, multiple lens options available
 - 360 camera with IR illumination
- Up to four additional external microphones

System Overview



System Features

- The LDRS-V+ will meet the following requirements: Electrical Qualification - Tested to AAR S-9401 (Radiated Emissions, Conducted Emissions, EFT, ESD)
- Mechanical Qualification - Tested to AAR S-9401 (Vibration, Shock, Temperature, Humidity)
- CHM Qualification - Certified to CFR 49 Part 229
- Removable Storage (RSSD) - Industrial Specification
- Ethernet Ports - Seven Ethernet ports, four are PoE capable to power cameras.
- USB - Front panel USB port is USB 3.0 super speed compliant.
- Power - Typical power is 74VDC however may be operated from 35-110VDC. Super cap design provides graceful shutdown after removal of power and does not require maintenance or replacement.
- The LDRS-V+ has a built-in web server supporting HTTP, HTTPS, and URL Query. The browser interface provides ability to configure the recorder, request download files and display the recorder configuration and health.



- DAS3 (Data Analysis Software) provides the ability to display and review the download files with complete synchronized display of video and data.

In addition, numerous other features are provided including search for signals and event, an export of the data to a standard file format. Reference image shown below:



- Video Client provides the ability to configure the cameras and recording format, search for stored video, request video download files and search and review the removed solid-state drive. In addition, the tool has been enhanced to provide the de-warping of the 360-degree camera.
- Video Player is a minimal function video file player intended to be provided for legal review. Reference image shown below:

