



Violet Edge Series Advanced IoT Platform Integrate Data From All Available Sources

The Violet Edge Series integrates the functionality of several devices into a single, sustainable IoT Platform for rail. These devices include the Locomotive Data Acquisition Recording System (LDARS), Event Recorder (ER), Digital Video Recorder (DVR), Crash Hardened Memory Module, along with a business critical data acquisition system — all in a single box.

Access to comprehensive time-synchronized data, coupled with sophisticated edge computing, artificial intelligence, and cloud-based SaaS solutions, gives you the ability to take prompt, effective action on critical issues.

Freight, passenger, and transit systems utilize Wi-Tronix to meet today's rail challenges, enhance service delivery and reduce operating expenses. The Violet Edge IoT Platform enables solutions that are expandable and adaptable for tomorrow's challenges.

State-of-the-art Edge Processing & Cloud-Based Solutions

Over 12,000 rail vehicles from all types of manufacturers are equipped with Wi-Tronix, providing support to over one-third of all locomotives in North America. Over 2,000 Violet Edge IoT platforms have been ordered across North America.

While the 800 and 820 include Event Recorder or DVR functionality, the Violet Edge 830 can be expanded to be your Event Recorder, Digital Video Recorder, PTC Event Recorder, or all three.

- **Operations:** Real Time Locomotive Operation Crew Monitoring and Reporting (throttle and brake, EIE's, Penalty/Emergency Alerts, Operational Alerts, Locomotive Utilization, Trip Reports)
- **Operations/Safety Alerts and Reports:** Track data integration for subdivision and speed restrictions including over speed alerting
- **Maintenance:** Locomotive engine and vehicle control systems telemetry data, alerts and reports, shop scorecard, configuration management tracking of connected devices
- **Incident Reporting:** Automated downloads of Wi-Tronix or 3rd party Event Recorder and Video files triggered by alerts and On Demand requests by users
- **Maintenance of Way:** Potential Track Issue alerts include heat map reporting

Wi-Tronix Solutions Packages
Wi-Tronix.com

Why Wi-Tronix?

The Wi-Tronix Ecosystem will improve safety, efficiency, and reliability of your operations.



Violet Edge 800



Violet Edge 820



Violet Edge 830

Choose the Solution that Fits Your Needs

The Violet solution seamlessly integrates into a locomotive's current systems. The multipurpose device allows for less inventory and greater reliability with:

- Reduced onboard devices
- Fewer potential points of failure
- Less troubleshooting

Data coming from the locomotive systems is fused with railroad business data to create actionable information and alerts. Advanced video analytics enable roll by inspections, bearing detection, and track inspections via video. These analytics also monitor cab security.

Questions? Contact your sales representative or reach us at sales@wi-tronix.com for detailed discussions on how Wi-Tronix packages can help your operation.

Advanced Onboard Technology

The Violet Edge Series of Advanced IoT Platforms can be customized to meet a railroads needs with PTC or non PTC projects. Through the consolidation of hardware into a single, highly reliable solution, customers are reducing their technology footprint and the overall cost and maintenance.

Violet Edge 830 – An economical IoT platform providing immediate value that connects you to multiple onboard systems utilizing Edge applications and multi-mode wireless communications. This platform supports future machine learning, AI applications and is expandable for your future needs.

Violet Edge 820 – The power of the Violet Edge 830 plus a digital video recorder (DVR), that supports multiple HD IP cameras, data and video – all viewable with the Violet View™ online playback tool. Our growing array of video analytics tools enable your operations to do more.

Violet Edge 800 – Combines all the power and video capability of the Violet Edge 820 with a Crash Hardened Memory Module. As your FRA or PTC Event Recorder, it becomes the fastest and easiest way to view locomotive performance and investigate incidents.

Key Functionality

	Violet Edge			WI-PU 635
	800	820	830	
Fuel Management and Reporting	✓	✓	✓	✓
Fusion, Normalization, and True-Time Synchronization of Data	✓	✓	✓	✓
Connected Architecture - Anywhere, Anytime Access, on Any Device	✓	✓	✓	✓
Digital Video Recorder (DVR)	✓	✓		
Solid State Hard-Drive (SSD) 1TB and up	✓	✓		
Secure Online Video Sharing with Authorized Users	✓	✓		
FRA/PTC Crashworthy Connected Event Recorder (CHMM)	✓			
Power Hold Up Emergency Capacitive Technology	✓			
'Big Data' Collection thru RESTful Web API's	A	A	A	A
In-Cab Audible Alerting Capability	A	A	A	A
Mobile Phone Detection System	A	A		A

A: Available as an upgrade



Violet Edge 800, 820, 830 Specifications

- Violet Edge Series meet EN 50155:2007 - Electronic equipment used on rolling stock
- Digital Compass, 3-Axis Digital Accelerometer, 3-Axis Digital Gyroscope
- Device status LED displays and reporting functionality
- Available Communications: WLAN Wi-Fi, 4G LTE, Satellite
- Differential GPS (Multi-constellation support including GPS, GLONASS and Galileo)
- Integrated PoE Switch
- Remote Software Updates
- Intel Core Processor
- 64GB Flash memory
- Integrated reset-only Circuit Breaker
- Intelligent Power Supply: 74VDC (input voltage 45V-80V)
- 1 USB 2.0 Port
- 6 RS-232 isolated serial ports, 2 RS-485 isolated serial ports
- Weight: Approximately 33 lbs / 15 kg (when optioned with CHMM)
- Size: 11.5 "Lx7.5"Wx9.25"H (29.21cm x 19.05cm x 23.5cm)
- Operating Temperature: -40°C to +70°C (-40°F to +158°F)
- Operating Humidity: 40 - 95%
- LSI Rack Mounting (mini-shelf without LSI rack)
- Secure SOC 2, Type 2 complaint environment
- Violet Edge 800 meets IEEE 1482.1-2013 Standard for Rail Transit Vehicle Event Recorders
- Violet Edge 800 meets 49 CFR Part 229, Appendix D-2015, Criteria for Certification of Crashworthy Event Recorder Memory Module

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