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Title: S13 (EPA 2024) Calibration Revision History

Applies To: MY2023 - MY2026 LT RH, HX and HV models w/ S13 Integrated (S13 Engine, T14 Transmission & Aftertreatment) (feature codes 0012BGT, 0012BGU, 0012GBV, 0012BGW, 0012BGX, 0012BHC)

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

<ul style="list-style-type: none"> 03/11/2026 Added RC8 Calibration Changes 10/31/2025 - Made changes based from Feedback 10/10/2025 - Added RC7 Calibration Changes 09/04/2025 - Added RC6 Calibration Changes 04/07/2025 - Added RC5 Calibration Changes 	
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DESCRIPTION

This article will provide the calibration revision history for S13 Integrated EPA 2024 Powertrains.

NOTE: Calibrations will update to the most recently released calibration. The latest calibration content will include all previously released calibration content.

NOTE: International utilizes campaigns and diagnostics to assess the necessity of calibration updates. Warranty claims may be denied if there is no active campaign or if diagnostics do not indicate that a calibration update is required."

Calibration Update Advisory on Misfire:

- Misfire code History (3 Known Issues)
 1. Misfire while vehicle is in motion
 - a. Resolved with RC7
 2. Misfire between 1000 and 1300 rpm (vehicle not in motion)
 - a. Resolved with RC8
 3. Misfire at idle
 - a. Under Investigation

Current Calibration Release

High Level Overview of the "RC8" Calibration Release

- **Misfire:** SPN 1322 through 1328 FMI 31 (Reduction of codes logging under false pretenses (resolves codes from logging between 1000 and 1300 rpm))
- **Upstream and Downstream Dosers:** Resolve codes logging under false pretenses
- **SCR Inducement:** Time it takes to level four inducement to log
- **Low Fuel Pressure:** Allow more time for fuel filter replacment

- **Nox Codes:** Reduction of codes logging under false pretenses
- **Cold Ambient Protection:** Increase engine warm performance during cold start

High Level Overview of the "RC7" Calibration Release

- **Misfire:** SPN 1322 through 1328 FMI 31 (Reduction of codes logging under false pretenses (resolves high percentage of false codes))

High Level Overview of the "RC6" Calibration Release

- **Misfire:** SPN 1322 through 1328 FMI 31 (Reduction of codes logging under false pretenses (resolves issue in a small population))
- **Driver Rewards:** Prevent Reset during key cycle
- **Fault Codes:** 5835 FMI 9, 7030 FMI 9, SPN 105 FMI 20, SPN 110 FMI 20, SPN 175 FMI 20, SPN 157 FMI 18
- **Brake Switch Faults:** Corrected fault codes were not being detected when a brake switch had failed
- **High Soot Load Reaction (SPN 3251/0):** Reaction changed from when the vehicle is moving and not moving

High Level Overview of the "RC5" Calibration Release

- **Fuel Analytics:** enhancements for On Command Connection Reporting
- **Regeneration:** Updates to increase Performance
- **SDS Change:** Fix for fan turning on when running service diagnostic tests
- **Codes:** SPN 157 FMI 18, SPN 2067 FMI 9, and SPN 91 FMI 19
- **PTO:** TSC1 messaging updates
- **Accumulators:** Several accumulator changes
- **Transmission:** (SPN 2607 FMI 9) Prevent Electronic Clutch Actuator Bricking Failures (Tow Event)

High Level Overview of the "RC4" Calibration Release

- **S13 Codes SPN 110, 105 & 175 FMI 20:** Logging due to coolant heating with the engine not running.
- **Regeneration:** Allow regeneration when Auto Start Stop is used for extended periods.
- **Hydrocarbon Desorb:** Improvements implemented.
- **Compression Break:** Improvements implemented.
- **Park Regeneration:** Enhancements made.
- **DEF Line Freezing Protection:** Upgrades introduced.
- **Additional Enhancements:** Multiple other improvements are detailed below

High Level Overview of the "RC3" Calibration Release

- **Optimization of 50+ Diagnostic Trouble Codes (DTCs):** Reduced false positive faults and related dash lights & messages.
 - Note: All related GUIDE Live Diagnostic Procedures now direct technicians to update the calibration. Additional diagnostics are available if a code continues to set
- **Engine Fan Activation:** During hot ambient temperature conditions in PTO mode to prevent PM Sensor overheating.
- **Compression Release Brake (CRB):** Minimum engine speed for activation.
- **DEF Level Reading:** Corrected the issue where the DEF level reads "0" after flashing.
- **Fuel Economy Reporting:** Improved accuracy.
- **Additional Enhancements:** Multiple other improvements are detailed below

Adjust timer to allow fuel filter priming after replacement or prolonged vehicle inactivity.

RC8 Calibration Released on 03/10/2026	
Released to Service and Production	
ECM Software ID: SxxxCRKA	
SPN 1322 thru 1328 FMI 31	Reduction of codes logging under false pretenses (Resolves Misfire logging at 1000 and 1300 rpm)
SPN 6324 FMI 17	Prevent code from logging under false pretenses
SPN 5394 FMI 17	Prevent code from logging under false pretenses
SPN 94 FMI 17	
SPN 3226 FMI 16	Prevent code from logging under false pretenses
SPN 4392 FMI 16	Prevent code from logging under false pretenses

SPN 4419 FMI 18	Prevent code from logging under false pretenses
SPN 2000 FMI 19	Reduce codes from logging during a calibration update
	Cold Ambient Protection (CAP) enhancements to improve engine warmup
ACM Software ID: SxxxDRKA	
	SCR inducement changes per EPA regulation
SPN 4374 FMI 15	Removed code due to redundancy of codes

RC7 Calibration Released on 10/25/2025	
Released to Service and Production	
ECM Software ID: SxxxCNKA	
SPN 1322 thru 1328 FMI 31	Reduction of codes logging under false pretenses (Major reduction of codes logging under false pretenses)
ACM Software ID: SxxxDNKA	
	DEF Line Heater Changes to support HV launch

Specific Details of the "RC6" Calibration Release

Fuel Analytics Updates.

RC6 Calibration Released on 09/28/2025	
Released to Service and Production	
ECM Software ID: SxxxCMKA	
SPN 1322 thru 1328 FMI 31	Reduction of codes logging under false pretenses (resolves the issue in a small population).
	Corrected brake switch faults are not being detected when a brake switch has failed.
SPN 5835 FMI 9	Prevent code from logging under false pretenses.
SPN 7030 FMI 9	Prevent code from logging under false pretenses.
	Engine fan operating state changes.
	Injector adaptation values can now be read/write with DID.
	Accumulator improvements
SPN 105 FMI 20 SPN 110 FMI 20 SPN 175 FMI 20	Long term solution to reduce the occurrence of false plausibility fault codes caused by engine coolant circulation and heating when the engine is not running. This applies to trucks equipped with aftermarket ESPAR heaters, Auxiliary Power Units (APU) integrated into the factory coolant system, and trucks built with feature Code 16UZL (No Idle A/C by Bergstrom).
SPN 157 FMI 18	Monitor improvements to detect failure earlier.
	The Split Shaft vehicle speed signal comes from the front axle speed signal.
	ECM to honor TSC1 speed control request from body builder module when PIM signals on CAN interlocks are met.
	ECM reports that the source address is controlling the engine when the TSC1 source address is in control of the engine.
	FON seeding to support injector adaptation at manufacturing.
	Boost monitor improvement for over, under boost, and slow response.
	Turbocharger speed signal improvements.
	Soot model fix when operating in SCR warmup mode.
SPN 3251 FMI 0	Reaction change: When the vehicle is moving, change the 30-second delayed shutdown to no regeneration allowed. When the vehicle is NOT moving, change 30 second delayed shutdown to an immediate shutdown.
	Key on plausibility change for coolant and oil temp sensors.

ACM Software ID: SxxxDMKA	
	Correct a Nox Sensor mapping issue.
SPN 168 FMI 16	Fault reaction update to self-heal during the same key cycle if battery voltage returns to normal.
	Debounce timer change to detect refill detection.
	Improve def delivery in cold ambient temperatures.
PIM Software ID: SxxxBMKA	
	Fuel Analytics Updates.
	Momentary Road Speed Limit Override to allow 24-hour reset time.
	Momentary Road Speed Limit Override real time clock change.
SPN 91 FMI 19	Prevent code from logging under false pretenses.
	Created new accumulators for Trip and Total Fuel Used.
	Fuel Economy reporting enhancements.
	Fusion 3 enhancements.
	PTO Performance updates related to TSC1 messaging.
	Split Shaft enhancements.
	Trip Report Full pedal reporting enhancements.
	Trip Vehicle Overspeed reporting enhancements.
	Transfer Case Status Update.
	PIM to ECM Fuel Accumulator Request update rate change
TCM Software ID: SxxxEMKA	
	Split shaft message changes in the cluster to engage the split shaft
	Low oil warning changes to have a fault code for low transmission oil
	Brake hold improvements to prevent jerking of the vehicle when the service brake releases

Specific Details of the "RC5" Calibration Release

RC5 Calibration Released on 04/28/2025	
Released to Production Only	
ECM Software ID: SxxxCLxA	
SPN 157 FMI 18	Monitor Improvements
	Corrected the deficiency for not logging brake switch faults
	Split Shaft enhancements
	Engine Performance updates
	Cruise Control monitor improvements
	Fix for Fan Change turning ON during the Fall down test/Cylinder Balance test
	PTO Performance updates related to TSC1 messaging
	J1939 data stream improvements
	PM Sensor updates
	DEF Line 2 ECM output change
	Delta Pressure Sensor adaptation enhancements
ACM Software ID: SxxxDLKA	
	Increase the timer for DEF refile detection from 3 to 6 seconds
	Malfunction Indicator Lamp Priority fix

	DEF Pump monitor updates related to high voltage
PIM Software ID: SxxxBLKA (Not released to service)	
TCM Software ID: SxxxEJKA	
SPN 2607 FMI 9	Prevent code from logging and bricking the Electronic Control Actuator from bricking and requiring a tow event.
	New Cluster message "Wait to Drive"
	Clutch movement is avoided when battery voltage is low. DTC will set when the engine is running
	Several Paver mode enhancements
	'Disable' and 'Enable' messages are shown in the cluster when cranking
	HotShift launch gear changes

Specific Details of the "RC4" Calibration Release

RC4 Calibration Released on 01/20/2025	
Released to Service and Production	
ECM Software ID: SxxxCKxA	
SPN 105 FMI 20 SPN 110 FMI 20 SPN 175 FMI 20	Reduce the occurrence of false plausibility fault codes caused by engine coolant circulation and heating when the engine is not running. This applies to trucks equipped with aftermarket ESPAR heaters, Auxiliary Power Units (APU) integrated into the factory coolant system, and trucks built with feature Code 16UZL (No Idle A/C by Bergstrom)
SPN 5543 FMI 7	Compression Exhaust Brake fault code improvements to reduce false codes
	Allow regen when Auto Start Stop is used for extended periods of time
	Hydrocarbon desorb improvements
	Fan on/off improvements to reduce the cycling of the engine fan
	PTO changes to determine normal PTO versus Hot Shift PTO installation for engagement
	Diagnostics added for Power Take Off Hot Shift time-out and error state
	Compression brake improvements when the fault is active
	Park regen improvements
	Fixed ECM Distance, Fuel Used, and Engine Run Time going to 0 after flashing the ECM, now able to write to parameters
	Improvements to the Frequent regen monitor to avoid unnecessary faults
	Implementation of alternative DEF line Heater 2 (applies to HX ONLY)
	Nox Sensor monitoring improvements
ACM Software ID: SxxxDKKA	
	DEF Dosing rates updated to prevent overdosing of DEF
	DEF freeze detection and protection logic updated
	Def Line heater 2 changes to support HV launch
PIM Software ID: SxxxBKKA	
	Remote pedal updates
	Resume Cruise Control threshold lowered to 20 mph (32 km/h)

Specific Details of the "RC3" Calibration Release

RC3 Calibration Released on 08/28/2024	
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Released to Service and Production

ECM Software ID: SxxxCJxA

SPN 651-656 FMI 16 & 18 SPN 4257 FMI 16 & 18	Idle fuel quantity, reducing false codes from logging
SPN 5395 FMI 16	Changed idle fuel for trucks with Allison transmissions
SPN 2659 FMI 10, 16 & 18	EGR monitor changes to reduce false codes from logging
SPN 102 FMI 10 SPN 1209 FMI 10	Boost Pressure monitor improvements
SPN 3936 FMI 31	HC Desorb Timeout changes
SPN 5835 FMI 12 SPN 3936 FMI 20	PM sensor updates to prevent false faults
SPN 6778 FMI 2	Aftertreatment Particulate Sensor monitor changes from logging due to low battery voltage
	Add the following monitors <ul style="list-style-type: none">o (SPN/FMI) 2033/9 CAN message PTODE from BCM timeouto (SPN/FMI) 1239/31 A small leak in the high-pressure part of the fuel systemo (SPN/FMI) 5395/16 Injected fuel quantity at idle is higher than expectedo (SPN/FMI) 5571/7 MDV tripped at a lower rail pressure than expectedo (SPN/FMI) 5571/20 Mechanical dump valve tripped due to high pressure in the railo (SPN/FMI) 12836/2 The first two temperature sensors in the aftertreatment
	Accumulator Memory change to prevent loss of fuel used, engine run time, and total distance from going to 0 during flashing. Affects the ECM only
	Nox Sensor improvements
	Fuel reporting enhancements
	Compression Retarder Brake low activation changed to 800 rpm
	Software to support trucks built with an Allison Transmission
	Reduced complexity due to Oil level sensors (International only offers one sensor)
	Adaptive Cruise Control, improvements when approaching a vehicle
	Turbocharger 1 outlet pressure signal correction
ACM Software ID: SxxxDJKA	
	Fix the issue of lost parameters during flashing
	Fix the issue with the DEF gauge reading 0% after flashing
PIM Software ID: SxxxBJKA	
	PTO enhancements
	Corrected mapping to several parameters
TCM Software ID: SxxxEHKA	
SPN 2005 FMI 09	Fault code improvements
	New parameter for Force Hold Neutral Feature
	Force Neutral Hold enhancements
	Clutch opening/ closing improvements, enhancements due to low battery voltage
	PTO hot shift Improvements

RC2 Calibration Released on 03/29/2024

Released to Production Only

ECM Software ID: SxxxCHxA

SPN 105 FMI 20 SPN 110 FMI 20 SPN 175 FMI 20 SPN 1135 FMI 20 & 21 SPN 4360 FMI 2	More improvements to key on plausibility faults
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SPN 3242 FMI 2 SPN 3246 FMI 2	
SPN 6779 FMI 20	Aftertreatment Particular Sensor fault code enhancements
SPN 110 FMI 10 SPN 1659 FMI 18 SPN 1659 FMI 14	Prevent false faults for coolant temperature, unable to reach the normal operating range
SPN 1072 FMI 10	Compression Release Brake (CRB) improvements
SPN 5397 FMI 31	Aftertreatment 1 Diesel Particulate Filter Too Frequent Regeneration monitor improvements
SPN 5319 FMI 31	Aftertreatment 1 Diesel Particulate Filter Incomplete Regeneration monitor improvements
SPN 5319 FMI 31	Aftertreatment 1 Diesel Particulate Filter Incomplete Regeneration monitor improvements
SPN 1322 - 1328 FMI 31	Misfire monitor improvements for false codes
SPN 4360 FMI 10	Aftertreatment 1 SCR Intake Temperature monitor improvements
SPN 3246 FMI 18	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature monitor improvements
SPN 1413 - 1418	Corrected the report that was showing values as "not available"
SPN 6779 FMI 20	Aftertreatment Particulate Sensor enhancements due to low exhaust flow
SPN 105 FMI 20 SPN 110 FMI 20 SPN 175 FMI 20 SPN 1135 FMI 20 & 21	Key on plausibility change #2 to prevent false codes
	Park and driver demanded regeneration enhancements
	Soot load estimate improvements at 500 rpm
	Fuel injector adaptation bug fix for low fueling
ACM Software ID: SxxxDHKA	
SPN 6802 FMI 14	DEF frozen monitor enhancements
PIM Software ID: SxxxBHKA	
SPN 629 FMI 12	Reduce faults for keep alive memory
	Auto Engine Speed Control ramp up improvements for standby and preset
	Gear Down Protection functionality improvements
	Enable engine braking during cruise control or adaptive cruise control when not paused
	Cruise Control minimum gear change thresholds
	Adaptive Cruise Control enhancements
	Update low battery thresholds
	Update the low oil pressure accumulator type

RC1 Calibration Released on 01/02/2024	
Released to Service and Production	
ECM Software ID: SxxxCGxA	
SPN 102 FMI 10	Intake Manifold Pressure robustness improvements
SPN 1209 FMI 20	Exhaust Back Pressure 2 robustness improvements
SPN 105 FMI 20 SPN 110 FMI 20 SPN 175 FMI 20 SPN 1135 FMI 20 & 21	Key on plausibility fault changes due to the rapid key cycle
SPN 1072 FMI 10	Engine Compression Brake, robustness improvements
SPN 110 FMI 10	Engine Coolant Temperature robustness improvements
SPN 1659 FMI 18	Engine Coolant Temperature robustness improvements
SPN 102 FMI 16 & 18	Intake Manifold Pressure robustness improvements
SPN 103 FMI 21	Engine Turbocharger Speed Sensor robustness improvements

SPN 4363 FMI 2	SCR temperature robustness improvements
SPN 4795 FMI 31	DPF missing robustness improvements
SPN 3216 FMI 12	Engine out NOX sensor robustness improvements
SPN 3226 FMI 12	Exhaust out Nox robustness improvements
SPN 3255 FMI 12	Engine Exhaust NOX 2 robustness improvements
SPN 3251 FMI 10	DPF differential pressure robustness improvements
SPN 158 FMI 18	Key on battery voltage improvements
SPN 628 FMI 12	ECM memory improvements
SPN 629 FMI 2	Changes to fan actuator and oil pump actuator from having the same fault code
SPN 2003 FMI 9 SPN 2011 FMI 9 SPN 2033 FMI 9 SPN 2039 FMI 9	Reduce CAN errors when using the Service Diagnostic Solution (SDS)
SPN 3936 FMI 20	Differential Pressure Sensor robustness improvements
SPN 12836 FMII 19	Removed fault code due to duplication
SPN 970 FMI 7	New DTC for auxiliary shutdown
SPN 597 FMI 15 & 31	Brake switch robustness improvements
SPN 116 FMI 31	Brake application robustness improvements
SPN 603 FMI 15	Redundant brake switch improvements
SPN 4094 FMI 34	DEF quality Robustness improvements
SPN 524032 FMI 9 SPN 524042 FMI 9 SPN 524043 FMI 9	Reduce the 'bus off' CAN faults
	Power Take -off improvements
	Enable fuel level 2 monitor
	Coolant temperature fault code reaction improvements
	Fix the regeneration counter
ACM Software ID: SxxxDGKA	
SPN 4331 FMI 18 & 21	DEF dosing quantity robustness improvements
SPN 6802 FMI 31	DEF dosing system frozen robustness improvements
SPN 168 FMI 17	Battery voltage improvements
SPN 7030 FMI 12	ECU robustness improvements
PIM Software ID: SxxxBGKA	
SPN 629 FMI 12	Disable fault during low battery conditions
SPN 603 FMI 2	Brake switch plausibility robustness
	Cruise control minimum gear change
	Updated low battery voltage accumulator thresholds
	Low engine oil pressure changes for engine protection
	Accelerator pedal position 2 corrected error state
	Support bodybuilder connector pin configurations

SPECIAL TOOL(s) / SOFTWARE

Tool Description	Tool Number	Comments	Instructions
Service Diagnostics Solutions Professional	SDS-Pro		

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