

## Script.CAN.J1939.500KBPS.ACK\_ENBL.v1.33.0.12

### 500 KBPS J1939 CAN Script

**The compatibility if this script can only be guaranteed for:**

1. The script supports SAE J1939 Protocol

This script can be used with the following devices:

1. MiX 4000
2. MiX 6000
3. FM3316 and FM3306 Communicators
4. FM3517i and FM3507i Communicators
5. FM3617i and FM3607i Communicators
6. FM3717i and FM3707i Communicators
7. FM3817i and FM3807i Communicators

### Version History

Reference	Version	Changes
<a href="#">SCR-1455</a> <a href="#">SCR-1469</a>	V1.14.1.0	First version of new generation scripts. Based on <a href="#">Script.CAN.J1939.DM TT_FEF1_FE6C_FE6E_FEF2_FEE9.0250KBPS_02.2019.v1.13.0.0_DC</a>
<a href="#">SCR-1487</a>	V1.14.1.1	The filter of the Brake Switch accepted values of 3, which is not correct. This caused false triggers.
	V1.14.1.2	The Brake pedal switch acronym was misspelled in the conditional.
<a href="#">SCR-1518</a>	V1.15.0.0	delta speed, delta RPM and delta fuel pulses added. Trip fuel parameter also added. Added Engine Hours Sync.
<a href="#">SR-8548</a>	V1.16.0.0	Torque fuel added.
<a href="#">SR-8699</a>	V1.17.0.0 [SR-8699] test	Debug parameters specific to this SR added
<a href="#">SR-8699</a>	V1.17.0.0 [SR-8699] test1	Speed sync after speed is received instead of in 1 second timer.

<a href="#"><u>SR-8699</u></a>	V1.17.0.0	Speed and one second timer toggle debug parameters added.Speed sync after speed is received instead of in 1 second timer to reduce false harsh braking and harsh acceleration events.
<a href="#"><u>SR-9195</u></a>	V1.18.0.0	Fix engine hour synchronization.
<a href="#"><u>SCR-1712</u></a>	V1.19.0.0	Add Park Brake Signal.
<a href="#"><u>SCR-1751</u></a>	V1.20.0.0	Speed sync now only happens for lower priority speed sources when the counters for the higher priority speed sources have increased to 3 or more seconds.  The values for Catalyst Tank Level, Coolant Level, Engine Oil Level and Fuel Level have been initialized to -1. A value of zero for these signals now means the signal is present and zero valued instead of being initialized to zero by default irrespective of whether the signal is present or not.
<a href="#"><u>SR-10286</u></a>	V1.21.0.1	Fixed fuel increase and decrease timer in FMS. Changed DIV value for total fuel used in XML
<a href="#"><u>SR-10154</u></a>	V1.21.0.2	Lifetime Fuel initialization value change.
<a href="#"><u>SR-10425</u></a>	V1.22.0.2	The priority of the speed sources have been changed to V3, V1, V2. This is due to V3 being the closest to the actual vehicle speed.  Wheel-based, tachograph and front axle speed initialization values changed.  V1, V2 and V3 flags have been added to the script and are used to confirm if the corresponding speed sources are present on the CAN bus. Only the highest priority source with it's flag set will now sync speed. A value between 2km/h and 199km/h (both included) can set the flags.  Lower priority speed sources are no longer reverted to once a higher priority speed source has been confirmed. Timers no longer used to determine which speed source is used. Checks are also done for lower priority sources to determine if higher priority flags have been set.  The source that was used to sync speed now also sets the V1Used, V2Used and V3used parameters. These parameters are no longer set to zero when ignition is turned off.  The delta speed debug parameter, the one second speed test debug parameters, the speed source parameter and the sync speed parameter have been removed to simplify the script.
<a href="#"><u>SCR-2013</u></a>	V1.22.0.3	Fixed Fuel Sync Issues.
<a href="#"><u>SR-12165</u></a> <a href="#"><u>SCR-2111</u></a>	V1.23.0.3	Initialized the Catalyst Tank Level, Coolant Level, Engine Oil Level and Fuel Level to 0xFFFFFFFF instead of -1 to clearly indicate the value is unavailable.  Can ID Format in XML changed from 1 to 2
<a href="#"><u>SR-12750</u></a>	V1.24.0.4	Added "FMS At Least One PTO Engaged" param to script
<a href="#"><u>SCR-2238</u></a>	V1.25.0.5	Added Gross Vehicle Weight (FE70)
<a href="#"><u>SR-13601</u></a>	V1.26.0.5	Added 3 second ignition timeout after which speed and RPM are reset to zero.
<a href="#"><u>ESCR-42</u></a>	V1.27.0.6	Added the "FMS Transmission Oil Temperature", "FMS Brake Primary Pressure" and "FMS Brake Secondary Pressure" parameters to the script.

		Corrected the CANFL fuel scaling in the XML file.
<u>SR-15278</u>	V1.28.0.6	Speed and RPM messages are processed and synced irrespective of Ignition state. Quiet Bus Timeout logic (formerly Ignition Timeout logic) prevents final non-zero speed or RPM values from persisting trips.  Torque fuel is now inactive while quiet bus timeout flag is high.
<u>SR – 17725</u>	V1.29.0.7	Update seatbelt status only after receiving 3 consecutive signals with the same state
<u>SR – 17725</u>	Not released	Updated seatbelt logic and reset telltale data on 5 seconds timeout
MX46-1297	Not released	Added simple source address targeting mechanism for fuel sources. Script will now lock onto first ECU address of major fuel messages after ScriptStart. Target ECU address reset with each load of new Config – <b>Dependent on unit running FW v5.8.13+</b>
MX46-1296	Not released	Added Odo source address selection. This includes sampling Odo sources for 4 seconds at the start of trip to find the closest to System Odo. The closest source is chosen as the target HRESO source address. – <b>Dependent on unit running FW v5.8.13+</b> Also updated legacy HRESO handling and syncing.
<u>ESCR-127</u>	V1.32.0.9	Added Engine Emission Filter Regeneration Alarm telltale signal; Added GFC Gas Parameters (including source address targeting); Added fuel source timeout.
<u>SR-20522</u>	V1.32.0.10	Removed source address selection for Engine Hours from filter file.
<u>SR-20452</u>	V1.32.0.11	Reduced maximum allowable Fuel Rate.
<u>SCR-2709</u>	V1.33.0.12	Added jump protection to Engine Hours

## Supported Parameters

**Currently there is no configuration group to automatically configure the new events in this script.**

The following system generated parameters are supported by the script:

- Road Speed (FEF1 or FE6C or FE6E)
- Engine Speed (Revs).
- High-Res ODO Sync. (With 20 km Threshold)
- Fuel Consumption (FEF2 or FEE9 or FD09 or FEAF or Torque fuel)
- ECMST (ELD detection)

Refer to the following link for instructions on how to set up events for the new parameters:

- [Events and Parameter Names - J1939](#)
- [FMS Telltale Events and Parameter Names - J1939](#)

ACRONYM	PARAMETER NAME	PARAMETER DESCRIPTION	Return values/states (if applicable)
DM1DA	FMS.DM1DA	FMS Active Diagnostic Trouble Codes	
DM2PA	FMS.DM2PA	FMS Previously Active Trouble Codes	
FMSRT	FMS.FMSRT	FMS Retarder Torque	
FMSPP	FMS.FMSPP	FMS Brake Pedal Position	
FMSA1	FMS.FMSA1	FMS Aftertreatment 1 SCR Catalyst Tank Level	
SBAP1	FMS.SBAP1	FMS Service Brake Air Pressure Circuit 1	
SBAP2	FMS.SBAP2	FMS Service Brake Air Pressure Circuit 2	
FMSFD	FMS.FMSFD	FMS Fan Drive State	
FMTEH	FMS.FMTEH	FMS DM Total Engine Hours	
AXLW0	FMS.AXLW0	FMS Vehicle Weight Axle 0	
AXLW1	FMS.AXLW1	FMS Vehicle Weight Axle 1	
AXLW2	FMS.AXLW2	FMS Vehicle Weight Axle 2	
AXLW3	FMS.AXLW3	FMS Vehicle Weight Axle 3	
AXLW4	FMS.AXLW4	FMS Vehicle Weight Axle 4	
FMSCT	FMS.FMSCT	FMS Engine Coolant Temperature	
FMSET	FMS.FMSET	FMS DM Engine Oil Temperature	
FMSCL	FMS.FMSCL	FMS Coolant Level	
FMSEO	FMS.FMSEO	FMS Engine Oil Level	

FMSOP	FMS.FMSOP	FMS DM Engine Oil Pressure	
FMSBA	FMS.FMSBA	FMS Battery Current	
FMSBV	FMS.FMSBV	FMS Battery Voltage	
FMBPS	FMS.FMBPS	FMS Brake Pedal Switch	0 = Brake released 1 = Brake depressed 2 = Error 3 = Not Available
FMSPT	FMS.FMSPT	FMS PTO State	0 = Off/Disabled 1 = Hold 2 = Remote Hold 3 = Standby 4 = Remote Standby 5 = Set 6 = Decelerate/Coast 7 = Resume 8 = Accelerate 9 = Accelerator Override 10 = Preprogrammed set speed 1 11 = Preprogrammed set speed 2 12 = Preprogrammed set speed 3 13 = Preprogrammed set speed 4 14 = Preprogrammed set speed 5 15 = Preprogrammed set speed 6 16 = Preprogrammed set speed 7 17 = Preprogrammed set speed 8 18 = PTO set speed memory 1 19 = PTO set speed memory 2 20 = PTO set speed memory 3 21-30 = Reserved 31 = Not available
FMSCC	FMS.FMSCC	FMS Cruise Control Active	0 - Off/Disabled 1 - Active
FMSCS	FMS.FMSCS	FMS Clutch Switch	0 = Clutch released 1 = Clutch depressed 2 = Error 3 = Not available

DRTNS	FMS.DRTNS	FMS Distance remaining to next service	
TTDW1	CAN.TELLTALE.TTDW1	TT: DWORD 1	
TTDW2	CAN.TELLTALE.TTDW2	TT: DWORD 2	
B#S##	CAN.TELLTALE.B#S##	TT: Block # Status ## (Block 0-4, Status 1-15)	
SBLTS	System.FM.CAN.SBLTS	FM CAN: Seat Belt State	0 = Not present 1 = Engaged 2 = Disengaged 3 = Reserved
FMMIL	FMS.FMMIL	FMS Engine fault	
FMAPP	FMS.FMAPP	FMS AcceleratorPedalPosition	
HRESO	FMS.HRESO	FMS High resolution odometer	
FMSFL	FMS.FMSFL	FMS Fuel level	
CANTF	System.CAN.CANTF	Total fuel pulses for trip	
FMSPB	FMS.FMSPB	FMS Park Brake Switch	0 = Parking brake not set 1 = Parking brake set
RAWFL	System.CAN.RAWFL	Raw FEE9 Life Fuel	
PTOEN	FMS.PTOEN	FMS At Least One PTO Engaged	
GRSVW	System.CAN.GRSVW	Gross Vehicle Weight	
FMSTT	FMS.FMSTT	FMS Transmission Oil Temperature	
BRKPP	FMS.BRKPP	FMS Brake Primary Pressure	
BRKSP	FMS.BRKSP	FMS Brake Secondary Pressure	
EEFRA	System.CAN.EEFRA	Engine Emission Filter Regeneration Alarm	0 = OFF 1 = Red 2 = Yellow 3 = Info 4-6 = Reserved 7 = Not Available

## Installation Notes

1. Industry standard for heavy vehicles with a physical layer running - CAN 500kb/s, 29bit IDs
2. This script supports SAE J1939 via a FMS gateway or contact less CAN sensor and should not be directly connected to the hot-bus of a vehicle
3. **The CAN jumpers must be in a position to allow ONLY allow Read actions on the CAN bus (Passive Mode). The only exception is when the FMS gateway requires ACK messages to broadcast the data.**
4. **ODO Synchronization will only take place if the MIX OBC ODO setting and the value read from the CAN bus is within 20 km distance from each other or when the MiX OBC ODO is set to zero.**
5. **Engine Hours Synchronization will only take place if the MiX OBC Engine Hours and the value read from the CAN bus are within 15 minutes or when the MiX OBC Engine Hours value is less than 12 hours.**
6. **Torque fuel is dependent on Engine type - Therefore manual calibration of Fuel must be done if scripts selects Torque Fuel.**
7. **Source address targeting mechanism on fuel and odometer is dependent on unit running FW v 5.8.13+**