

**Research & Vehicle Technology**

**Core Audio Engineering Product Development**

**Infotainment Diagnostics Specification**

**APIM Gen 4**

**Version 7.19.0**

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# FRD-REQ-242726/A-Overall Diagnostics Requirements

## SWR-REQ-242663/A-Overall Diagnostics Requirements

Every Infotainment Module shall comply with all sourced agreements in respect with Netcom Diagnostics Specifications (Netcom specifications override contradicting requirement between the Netcom Specification and this document).

The Diagnostics Part II Specification is maintained by the supplier and shall be submitted to the Ford Infotainment D&R for review to ensure that are requirements are captured as called out in this specification.

## SWR-REQ-242664/B-Diagnostic Reviews

Reviews are held by the Infotainment Diagnostic Engineer or the appropriate Infotainment D&R at the follow timeline to ensure that the specification requirements are captured correctly. These reviews are to be completed and all items closed out before the appropriate milestone date.

1. Initial Supplier Diagnostics Submission (Part II SSDS)– 2 months prior to FDJ
2. Initial Release of Part II - FDJ
3. Completed Part I, Part II and Mux Results – VP
4. Ford Part II Acceptance Test Procedure Completed – VP
5. Completed and Pass Results for Part I, Part 2, Mux and Part 2 Acceptance Test - PEC

A work plan is needed right before the first Diagnostic Review. This document will be discussed during the kickoff meeting.

All deviations to this specification need a signed SVA and a closure date.

All Execution Routines are limited to 20 seconds or less.

All missed dates are to be tracked in Etracker.

## SWR-REQ-242665/B-Ford Multimedia Templates

**This section has been removed.**

## SWR-REQ-242666/A-Ford Part II (SSDS) Acceptance Test Procedure

The Ford Part II Acceptance Test Procedure is created and maintained by Ford to ensure that all requirements that are called out in this document are captured correctly in the software. The only exception is DTCs that require the component to be broken or corrupted in some manner (i.e. mechanism failures, overheat and checksum failures) are done by the supplier only.

DTCs that are not captured in the test procedure must have a submitted test plan and procedure to the Ford Infotainment Diagnostics Engineer.

The results are reviewed after the VP submission and with every scheduled software delivery after to ensure what outstanding issues are present.

All issues will be tracked in the Ford E-Tracker system.

## SWR-REQ-242667/A-Infotainment Diagnostic TDR

An initial kickoff Diagnostic TDR will review all the planned dates of the meetings. Below is an example of meeting topics.

* Introduction Kick Off Meeting
* Infotainment Diagnostics Specification Review, Internal SDARS Review (for ACMs)
* Survey Review and DTC Review, Part 2 Template Review
* Infotainment Diagnostics Test Procedure Review
* Part 2 Submission Review
* Part 1, Part 2, IDS Test Results Review
* Lead Program VSCS Review
* Lead Program TT Review
* Lead Program PP Review

# FRD-REQ-290385/B-Common Diagnostic Features

## SWR-REQ-242668/A-Common Diagnostic Features

This section covers all Infotainment Diagnostic Features that are common among all components.

## SWR-REQ-242669/A-Criteria for Setting Continuous DTCs

The following is the criteria that shall be met in order to run the diagnostics routines for Continuous DTC setting in addition to the Netcom requirements:

1. The component must be between 10 volts and 16 volts.
2. The component must be in Run, Accessory, or Delayed Accessory (no logging in Crank or OFF) – Run for ignition switch modules
3. All fault conditions must resume back to normal conditions when fault is removed.
4. The module shall be complete with initialization processes, before continuous monitoring begins.
5. The continuous monitoring of DTCs shall be suspended when performing Diagnostic Routines.
6. The component must be in non-programming modes.
7. All DTCs must be cleared after 80 ignition cycles if fault does not reoccur.
8. Retry strategies must be exhausted before setting DTC.
9. All DTCs need to be stored into permanent memory when triggered.
10. Clearing DTCs shall clear permanent memory when triggered.

## SWR-REQ-242670/B-Criteria for Setting Missing Message DTCs (CGEA 1.3)

The following is the criteria that shall be met in order to set Missing Message DTCs:

1. The component must be between 10 volts and 16 volts.
2. The signal Ignition\_Status must equal RUN (last known)
3. The signal PwPckTq\_D\_Stat must NOT be equal to PwPckStrtInPrgrss\_TqNotAvail (last known)
4. The signal ElPw\_D\_Stat (if supported) must NOT be equal to LV Event in Progress. (last known)
5. The signal Ignition\_Status must not have changed in the last 1000ms.
6. The signal PwPckTq\_D\_Stat must not have changed in the last 1000ms.
7. The signal ElPw\_D\_State (if supported) must not have changed in the last 1000ms.
8. The component must suspend Missing Message Setting Strategy when performing Diagnostic Routines.
9. The component must be in non-programming modes.
10. The status message must be missing for more than five seconds in all of the above states listed above.
11. Timers shall be stored and controlled in the application software.
12. Timers need be continuously reset if they do not match items 1-7 above.
13. Reset time if message is received.

### SWR-REQ-242696/C-Exception for Message

1. The last known ignition message is RUN.
2. The last known ignition is Stable.
3. $3B2 is missing for more than five seconds.
4. If 1-3 are met, then the component shall set the DTC for loss communication with the BCM.

### SWR-REQ-242697/A-Missing, Invalid, or Unknown Messages Failure Modes

1. Failure modes for missing messages, unknown states and invalid messages have the same failure mode as described in the missing/invalid message DTCs.
2. Failure modes will work regardless of DTC setting is enabled.
3. Failure modes will work with these errors as long as CAN is functioning (9 volts and above typically).

## SWR-REQ-290386/B-Criteria for Setting Battery Low and High DTCs

The following is the criteria that shall be met in order to set the Low Voltage DTC.

1. When less than 10 volts +/- 3%, the ECU shall suspend logging DTCs (with exception of Battery Low).
2. When less than 10 volts, for a period greater than 10 seconds, the Battery Low DTC shall set.

The following is the criteria that shall be met in order to set the High Voltage DTC.

1. When above 16 volts +/- 3%, the radio shall suspend logging DTCs (with the exception of Battery High).
2. When above 16 volts +/- 3% for greater than 5.5s, the Battery High DTC shall set.

## SWR-REQ-242672/C-IVS Part Number Scheme

The IVS Base Part Numbers can be pulled from the IVS website. www.ivs.ford.com

The Part Number Hierarchy is as follows:

* Ford Assembly Part Number
  + Core Assembly Part Number (all hardware)
  + Strategy Part Number (main application)
  + Calibration Part Number (calibration files)
  + Secondary Bootloader Part Number
* Configuration (Standalone Calibration) Part Number has no effect on Ford Assembly Part Number.

The ECU requires DIDs for the Delivery Assembly Part Number, Strategy Part Number(s), and Core Assembly Part Number. The Calibration Part Number(s), and Configuration (Standalone Calibration) Part Number(s) may be required by your design.

* Delivery Assembly Part Number (DID F113) – Assembly Part Number stored in non-erasable ROM when part is delivered from supplier. (Required)
* Core Assembly Part Number (DID F111) – Core Assembly Part Number is stored in non-erasable ROM. (Required)
* Strategy Part Number (DID F188) – Application Part Number stored in the strategy file. (Required)
* Calibration Part Number (DID F124) – Calibration Part Number stored in the calibration file. (Depends on if Calibration File is needed)
* Standalone Calibration File (DID F10A) – Configuration Part Number stored in the standalone configuration file. (Depends on if Configuration File is needed)

There is no DID required for Current Assembly Part Number.

## SWR-REQ-290387/A-Security Code for Downloading - APIM

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Security** | **Fixed Bytes from Security Algorithm (SWDL 6)** | | | | | | | | | | | |
| **Level** | **F1** | **F2** | **F3** | **F4** | **F5** | **F6** | **F7** | **F8** | **F9** | **F10** | **F11** | **F12** |
| **01** | 5F | 27 | 8C | 5D | 2F | 73 | A6 | 52 | 50 | 12 | CD | 54 |

## SWR-REQ-369543/A-Security Code for Configuration and Certain Routines

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Security** | **Fixed Bytes from Security Algorithm (SWDL 6)** | | | | | | | | | | | |
| **Level** | **F1** | **F2** | **F3** | **F4** | **F5** | **F6** | **F7** | **F8** | **F9** | **F10** | **F11** | **F12** |
| **03** | 60 | 34 | AC | 8A | 26 | 7F | 94 | B8 | 94 | BD | 71 | AE |

* This security level is required for any 2E configurations items and/or routines the explicitly ask for security.

# FRD-REQ-290381/D-APIM Specific Requirements - Gen4.0

The Diagnostic CAN Transmit ID is 0x7D8 for the APIM.

The Diagnostic CAN Receive ID is 0x7D0 for the APIM.

## SWR-REQ-290382/B-Tx/Rx ID

The Diagnostic CAN Transmit ID is 0x7D8 for the APIM.

The Diagnostic CAN Receive ID is 0x7D0 for the APIM.

## SWR-REQ-290383/A-Required Messages

|  |  |  |
| --- | --- | --- |
| **defaultSession** | |  |
| 10 | Diagnostic Session Control | Y |
| 11 | ECUReset | Y |
| 27 | SecurityAccess | N |
| 3E | TesterPresent | Y |
| 85 | ControlDTCSetting | N |
| 22 | ReadDataByIdentifier | Y |
| 23 | ReadMemoryByAddress | N |
| 24 | ReadScalingDataByIdentifier | N |
| 2A | ReadDataByPeriodicIdentifier | N |
| 2C | DynamicallyDefineDataIdentifier | N |
| 2E | WriteDataByIdentifier | N |
| 3D | WriteMemoryByAddress | N |
| 14 | ClearDiagnosticInformation | Y |
| 19 | ReadDTCInformation | Y |
| 2F | InputOutputCtrlByIdentifier | N |
| 31 | RoutineControl | N |
| **ExtendedDiagnosticSession** | |  |
| 10 | Diagnostic Session Control | Y |
| 11 | ECUReset | Y |
| 27 | SecurityAccess | N |
| 3E | TesterPresent | Y |
| 85 | ControlDTCSetting | Y |
| 22 | ReadDataByIdentifier | Y |
| 23 | ReadMemoryByAddress | N |
| 24 | ReadScalingDataByIdentifier | N |
| 2A | ReadDataByPeriodicIdentifier | N |
| 2C | DynamicallyDefineDataIdentifier | N |
| 2E | WriteDataByIdentifier | Y |
| 3D | WriteMemoryByAddress | N |
| 14 | ClearDiagnosticInformation | Y |
| 19 | ReadDTCInformation | Y |
| 2F | InputOutputCtrlByIdentifier | Y |
| 31 | RoutineControl | Y |
|  |  |  |
| **ProgrammingSession** | |  |
| 10 | Diagnostic Session Control | Y |
| 11 | ECUReset | Y |
| 27 | SecurityAccess | Y |
| 22 | ReadDataByIdentifier | Y |
| 31 | RoutineControl | Y |
| 34 | RequestDownload | Y |
| 36 | TransferData | Y |
| 37 | RequestTransferExit | Y |
| 3E | TesterPresent | Y |

## SWR-REQ-290388/A-On-Demand Self-Test

The On-Demand Self Test (0202) shall enter self-test only if all the following criteria are met:

* Ignition is in the Run State
* Battery Voltage is Between 10-16 volts
* Extended Diagnostic Session (not programming modes)
* On-Demand Test is requested by tester.
* Not in Phone Call, No Phone Connected

The On-Demand Self Test (0202) shall exit self-test if any one of the following criteria is met:

* Ignition transitions out of Run State
* Battery Voltage Drops below 9 volts or exceeds 16 volts
* A stop routine command is issued.
* Tester does not communicate for more than five (5) seconds.
* Test is complete.
* Phone Call, No Phone Connected

### SWR-REQ-290389/A-EOL Entry Condition DIDs

* + - DID 411F – Key Position
    - DID 8032 –Gateway Features Status

### SWR-REQ-290390/E-On-Demand DTCs and Criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin #** | **I/O** | **Circuit Description** | **Tested** | **DTCs Details** | Configuration that applies |
| n/a | n/a | Flash ROM Checksum | Y | Verify Flash ROM checksum matches stored value. DTC F00041 | N/A |
| n/a | n/a | EEPROM Checksum | Y | Verify non-changing EEPROM Checksum matches stored value. DTC F00041 | N/A |
| n/a | n/a | Configuration Check | Y | Verify that configuration has been done and done correctly. DTCs E10000 and E10100 | N/A |
| J1-1 | I | Battery B+ | Y | Will Set F00316 if below 10 volts during test for greater than 250 ms. Will set F00317 if voltage is greater than 16 volts for greater than 5500ms. | N/A |
| J2-53 | na | No connect | N | N/A | N/A |
| J2-54 | n/a | No connect | N | N/A | N/A |
| J1-16 | na | No connect | N | N/A | N/A |
| J1-17 | n/a | No connect | N | N/A | N/A |
| J1-19 | I/O | HS3 CAN\_H | N | Will not enter diagnostics if not connected. | N/A |
| J1-20 | I/O | HS3CAN\_L | N | Will not enter diagnostics if not connected. | N/A |
| J1-51 | I/O | SDL\_H | Y | When On-demand test is requested, APIM will send diagnostic request over ICAN and wait for response from SDL. Will set DTC DA0087 if valid response is not received in 5 seconds with at least three retries. (Only takes one pass to not set DTC). Any data shall pass the test. | (SDARS = Available) & (X40 = Pre-X40) |
| J1-52 | I/O | SDL\_L | Y | When On-demand test is requested, APIM will send diagnostic request over ICAN and wait for response from SDL. Will set DTC DA0087 if valid response is not received in 5 seconds with at least three retries. (Only takes one pass to not set DTC). Any data shall pass the test. | (SDARS = Available) & (X40 = Pre-X40) |
| J1-27 | I/O | DDRL\_H TX+ | Y | APIM to set DTC DA0087 if the APIM is not able to communicate with SRM for greater than ten (10) seconds. | (SDARS = Available) & (X40 = X40) |
| J1-28 | I/O | DDRL\_L Tx- | Y | APIM to set DTC DA0087 if the APIM is not able to communicate with SRM for greater than ten (10) seconds. APIM is not able to communicate with SRM for greater than ten (10) seconds. | (SDARS = Available) & (X40 = X40) |
| J2-51 | I/O | DDRL\_H Transmit | Y | APIM to set DTC DA0087 if the APIM is not able to communicate with SRM for greater than ten (10) seconds. APIM is not able to communicate with SRM for greater than ten (10) seconds. | (SDARS = Available) & (X40 = X40) |
| J2-52 | I/O | DDRL\_L Transmit | Y | APIM to set DTC DA0087 if the APIM is not able to communicate with SRM for greater than ten (10) seconds. APIM is not able to communicate with SRM for greater than ten (10) seconds. | (SDARS = Available) & (X40 = X40) |
| J-12 | I | Mic1 In+ | Y | Microphone is detected if present via hardware. VMCU will set if open 9D7913, short to ground 9D7911, or short to battery 9D7912 for greater than one second. Shut power off to microphone if error is detected until next ignition cycle. | N/A |
| J1-13 | I | Mic1 In- | Y | Microphone is detected if present via hardware. VMCU will set if open 9D7913, short to ground 9D7911, or short to battery 9D7912 for greater than one second. | N/A |
| J1-29 | - | NA | N |  | N/A |
| J1-30 | - | N/A | N |  | N/A |
| J1-31 | - | N/A | N |  | N/A |
| J1-14 | I | Rear Camera Video In+ | Y | Set DTC 500101 if camera signal is missing for greater than (>) 5 seconds | Front or Rear Camera = Present & (Type of RVC Camera = Analog) |
| J1-15 | I | Rear Camera Video In- | Y | Set DTC 500101 if camera signal is missing for greater than (>) 5 seconds | Front or Rear Camera = Present & (Type of RVC Camera = Analog) |
| J1-33 | - | Rear Camera Shield | N |  | N/A |
| J1-10 | - | NA | N |  | N/A |
| J1-11 | - | NA | N |  | N/A |
| J1-9 | - | NA | N |  | N/A |
| J1-34 | - | NA | N |  | N/A |
| J1-35 | - | NA | N |  | N/A |
| J1-36 | - | NA | N |  | N/A |
| J1-22 |  | Stereo Audio Out Shield | N |  | N/A |
| J1-25 | O | Stereo Audio Out Right + | N | See Tones Test | N/A |
| J1-26 | O | Stereo Audio Out Right - | N | See Tones Test | N/A |
| J1-23 | O | Stereo Audio Out Left + | N | See Tones Test | N/A |
| J1-24 | O | Stereo Audio Out Left - | N | See Tones Test | N/A |
| J1-21 |  | Alert Audio Out Shield | N |  | N/A |
| J1-3 | O | Alert Audio Out 1+ | N | See Tones Test | N/A |
| J1-4 | O | Alert Audio Out 1- | N | See Tones Test | N/A |
| J1-5 | - | NA | N |  | N/A |
| J1-6 | - | NA | N |  | N/A |
| J1-8 | O | Media Connectivity Module 5V Power | N |  | N/A |
| J1-7 | - | NA | N |  | N/A |
| J2-38 | - | Media Connectivity Module Ground | N |  | N/A |
| J2-37 | - | Power Ground- | Y | See Battery | N/A |
| J2-39 | - | NA | N |  | N/A |
| J2-40 | - | NA | N |  | N/A |
| J2-46 | I | SWC+ | Y | Set for out of range DTC 91BA1C. Set for stuck if pressed more than three (3) seconds. DTC 91BA63. | SWC= Hardwired |
| J2-47 | I | SWC- | Y | Set for out of range DTC 91BA1C. Set for stuck if pressed more than three (3) seconds. DTC 91BA63. | SWC = Hardwired |
| J2-48 | - | NA | N |  | N/A |
| J-49 | - | NA | N |  | N/A |
| J1-32 | - | NA | N |  | N/A |
| J2-50 | - | NA | N |  | N/A |
| J1-43 | - | NA | N |  | N/A |
| J1-44 | I/O | LIN | Y | Set when missing LIN signals for greater than three (3) seconds. DTC 908701.  Set for stuck button for greater than three (3) seconds. DTC E01363. | ICP(EFP) Network = LIN |
| J1-45 | - | NA | N |  | N/A |
| J1-41 | I/O | HS4+ | N |  | N/A |
| J1-42 | I/O | HS4- | N |  | N/A |
|  |  |  |  |  |  |
| J2-1 | O | USB1 Vbus | N |  | N/A |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| J2-2 | I | USB1 D- | Y | Remote USB1 Open DTC 92B813 | USB1 Self-Test Detection = Enabled |
| J2-3 | I | USB1 D+ | Y | Remote USB1 Open DTC 92B813 | USB1 Self-Test Detection = Enabled |
| J2-2 | I | USB1 D- | Y | Remote USB2 Open DTC 960013 | USB1 Self-Test Detection = Enabled |
| J2-3 | I | USB1 D+ | Y | Remote USB2 Open DTC 960013 | USB1 Self-Test Detection = Enabled |
| J2-2 | I | USB1 D- | Y | USB1 Open DTC 925213 | USB1 Self-Test Detection = Enabled |
| J2-3 | I | USB1 D+ | Y | USB1 Open DTC 925213 | USB1 Self-Test Detection = Enabled |
| J2-4 | I | N/A | N |  | N/A |
| J2-5 | I | USB1-Ground | N |  | N/A |
|  |  |  |  |  |  |
| J3-1 | I/O | TP1+ | N | Reserved for Future Use. |  |
| J3-2 | I/O | TP2+ | N | Reserved for Future Use. |  |
| J3-3 | I/O | TP1- | N | Reserved for Future Use. |  |
| J3-4 | I/O | TP2- | N | Reserved for Future Use. |  |
| J3 | I/O | RVC Digital | Y | Set DTC 5001-01 for LVDS Link Detect Fault or General Electrical Failure from RVC.  Set DTC 5001-87 if Loss of Communication with I2C Slave Microcontroller from RVC. | Rear Camera = Present and Type of RVC = Digital |
| J3 | I/O | Display | Y | See REQ-199371 to set DTC C16200. | N/A |
| J3 | I/O | SDM4 Display | Y | Set 908E63 when SDM4 Buttons are pressed (stuck) for greater than (>) 3 seconds. | Based on SDM4 display on CCPU side |

## SWR-REQ-290411/A-Speaker Walkaround (6009)

* This test is a manual test of the speakers. Self-Test on ACM and DSPs check speakers automatically.
* This test will generate tones to the speakers (1KHz tones to satellite and center speakers and 100 Hz tones to subwoofers) – These are handled by the AHU and DSP.
* The ACM and DSP will cycle the speakers for 1.5 seconds each in the following sequence (LF quadrant, RF quadrant, RR quadrant, LR quadrant, and subwoofers.
* The Speaker being tested shall be displayed to the display. (Speaker 1, Speaker 2…)
* Exiting will take radio to previous setting (exception – dual play will still be deactivated)

The Speaker Self Test (6009) shall enter self-test only if all the following criteria are met (if not correct: send conditions not correct message to tester):

* Ignition is in the Run or Accessory State
* Battery Voltage is Between 10-16 volts
* ECU in Extended Diagnostics Mode.
* Speaker Self Test (6009) is requested by tester.
* Vehicle speed is below 5KPH. (DID F40D)
* Primary Audio Source is in AM, FM or SAT modes. (DID FD52)
* Vehicle is in Park (if configured for Automatic Transmission) (DID 6310 – Value 00)
* IPC must be up with the CCPU.

The Speaker Self Test (6009) shall exit self-test if any one of the following criteria is met:

* Ignition transitions out of Run or Accessory State
* Battery Voltage Drops below 9 volts or exceeds 16 volts
* A stop routine command is issued.
* Tester does communicate for more than five (5) seconds.
* Test is complete.

## SWR-REQ-290412/A-Tones Test (601C)

* This test is a manual test of the audio connection between the APIM and the ACM.
* This test will generate tones to the speakers (1KHz tones to right stereo line and 500 Hz tones to left stereo line, and 1kHz tone to the Alert1, and a 500Hz tone to Alert2)
* APIM will change to primary audio source for this test.
* The APIM will cycle the stereo lines and alert lines for 1.5 seconds each in the following sequence (Right Stereo, Left Stereo, Alert1, Alert2)
* APIM will ignore all button presses except source change.
* APIM will display "TEST TONES" to the display.
* APIM will return to previous channel/state and update display upon exiting test.

The Tones Test (601C) shall enter self-test only if all the following criteria are met (if not correct: send conditions not correct message to tester):

* Ignition is in the Run or Accessory State
* Battery Voltage is Between 10-16 volts
* Extended Diagnostic Session (not programming modes)
* Tones Test (601C) is requested by tester.
* APIM is not in a phone call

The Tones Test (601C) shall exit self-test if any one of the following criteria is met:

* Ignition transitions out of Run or Accessory State
* Battery Voltage Drops below 9 volts or exceeds 16 volts
* Phone Call is issued during test.
* A stop routine command is issued.
* Tester does not communicate for more than five (5) seconds.
* Test is complete.

## SWR-REQ-290414/A-Display Test (600A)

* This routine is to demonstrate the RGB control lines are correctly connected.
* The display will fill the entire screen in the sequence of colors red, green and blue for 3 seconds each.

The Display Test (600A) shall enter self-test only if all the following criteria are met (if not correct: send conditions not correct message to tester):

* Multimedia System is On
* Battery Voltage is Between 10-16 volts
* Extended Diagnostic Session (not programming modes)
* Not in Phone Call.
* Display Test (600A) is requested by tester.

The Display Test (600A) shall exit self-test if any one of the following criteria is met:

* Ignition transitions out of Run or Accessory State
* Battery Voltage Drops below 9 volts or exceeds 16 volts
* A Phone Call is issued during test.
* A stop routine command is issued.
* Tester does not communicate for more than five (5) seconds.
* Test is complete.

## SWR-REQ-290415/A-Clear All User Data Routine (FB00)

* **This is a Type 1 Routine to clear all user data (including Navigation Parameters) for plant use only.**

The Clear All User Data Routine (FB00) shall enter self-test only if all the following criteria are met (if not correct: send conditions not correct message to tester):

* Ignition is in the Run or Accessory State
* Battery Voltage is Between 10-16 volts
* Extended Diagnostic Session (not programming modes)

The Clear All User Data Routine (FB00) shall exit self-test if any one of the following criteria is met:

* Not applicable to Type 1 Routine.

## SWR-REQ-290416/A-Configure Private Subnodes and Collect Private Sub Node Part Numbers (203A)

* **This is a Type 2 Routine configure the Digital RVC and collect any data required.**

The Configure Private Subnodes and Collect Private Sub Node Part Numbers (203A) shall enter self-test only if all the following criteria are met (if not correct: send conditions not correct message to tester):

* Ignition is in the Run State
* Battery Voltage is Between 10-16 volts
* Extended Diagnostic Session (not programming modes)

The Configure Private Subnodes and Collect Private Sub Node Part Numbers (203A) shall exit self-test if any one of the following criteria is met:

* Ignition transitions out of Run State
* Battery Voltage Drops below 9 volts or exceeds 16 volts
* A stop routine command is issued.
* Tester does not communicate for more than five (5) seconds.
* Test is complete.

## SWR-REQ-352785/A-Reset VMCU for E100-00 Routine (F002)

This routine will set the clear the configuration flag to allow the DTC E10000 to be set after initial configuration has been performed.

* **This is a Type 1 Routine to reset DTC E10000 for engineering use only.**

The Reset VMCU for E100-00 Routine (F002) shall enter only if all the following criteria are met (if not correct: send conditions not correct message to tester):

* Ignition is in the Run or Accessory State
* Battery Voltage is Between 10-16 volts
* Extended Diagnostic Session (not programming modes)

The Reset VMCU for E100-00 Routine (F002) shall exit self-test if any one of the following criteria is met:

* Not applicable to Type 1 Routine.

## SWR-REQ-352794/C-Tokenmgr Debug Token Removal Routine (DC00)

* **This is a Type 1 Routine to remove all security tokens from the VMCU.**

The Tokenmgr Debug Token Removal Routine (DC00) shall enter self-test only if all the following criteria are met (if not correct: send conditions not correct message to tester):

* Ignition is in the Run State
* Battery Voltage is Between 10-16 volts
* Extended Diagnostic Session (not programming modes)
* Security Level 3 unlocked is successful.

## SWR-REQ-369090/B-Touch Panel Activation Routine (FA62)

* This is a manual test to check the calibration of the touch screen.
* This is the same test that appears in Bezel Diagnostics labeled as Touch Screen Activation Test.
* This is a Type 3 Routine.

The Touch Screen Activation (FA62) Test shall enter self-test only if all the following criteria are met (if not correct: send conditions not correct message to tester):

* Ignition is in the Run or Accessory State
* Battery Voltage is Between 10-16 volts
* Extended Diagnostic Session (not programming modes)
* Touch Panel Activation (FA62) is requested by tester.
* No other diagnostic routine is running.

The Touch Screen Activation (FA62) Test shall exit self-test if any one of the following criteria is met:

* Ignition transitions out of Run or Accessory State
* Battery Voltage Drops below 9 volts or exceeds 16 volts
* A stop routine command is issued.
* Tester does not communicate for more than five (5) seconds.

## SWR-REQ-290417/H-Required DIDs

* DID D111 Battery Voltage (volts)
* DID 411F – Ignition State for Run, ACC, Crank, Delayed-Acc (Post Accessory), Off
* DID F141 – ECU Serial Number (8 byte serial number, pad rest of DID with zeros 0x00)
* DID 8032 – Gateway Features Status
* DID 8033 – Embedded Consumer Operating System Part Number (CCPU Application)
* DID 833C – SWC2 Switch Status (only use values associated with the APIM)
* DID 8012 – GPS Information
* DID F190 – Vehicle Identification Number (as transmitted by PCM) - if information missing use all 00s
* DID 6310 – Transmission State
* DID F40D – Vehicle Speed
* DID 419E – Application Software Download Status
* DID 8060 – Embedded Consumer Applications Part Number 1 (16 – 24 byte ASCII Part Numbers) – Note: Will place ascii nulls if part number is missing. Will place ascii nulls at end of valid part number.
* DID 8061 – Embedded Consumer Applications Part Number 2 (16 – 24 byte ASCII Part Numbers) – Note: Will place ascii nulls if part number is missing. Will place ascii nulls at end of valid part number.
* DID 806A – Embedded Consumer Applications Part Number 3 (16 – 24 byte ASCII Part Numbers) – Note: Will place ascii nulls if part number is missing. Will place ascii nulls at end of valid part number.
* DID 806B – Embedded Consumer Applications Part Number 4 (16 – 24 byte ASCII Part Numbers) – Note: Will place ascii nulls if part number is missing. Will place ascii nulls at end of valid part number.
* DID 806C – Embedded Consumer Applications Part Number 5 (16 – 24 byte ASCII Part Numbers) – Note: Will place ascii nulls if part number is missing. Will place ascii nulls at end of valid part number.
* DID 806D – Embedded Consumer Applications Part Number 6 (16 – 24 byte ASCII Part Numbers) – Note: Will place ascii nulls if part number is missing. Will place ascii nulls at end of valid part number.
* DID C006 – VIN Missing Counter
* DID C008 – VIN History List
* DID F1D0 – Bluetooth Mac Address – 6 bytes HEX
* DID F1D1– WiFi Mac Address – 6 bytes HEX
* DID D704 – Checksum VMCU – 4 Bytes HEX (Calculated using CRC-32)
* DID D705 – Checksum CCPU – 4 Bytes HEX (Calculated using CRC-32)
* DID 804A – ECU Fault Reason Code
* DID 804B - ECU CCPU Fault
* DID F124 – Software Configuration Calibration Part Number
* DID F129 – ICP Part Number (Assembly) (read on every ignition cycle, FFs if part number cannot be read after 1 second) (Part Number will be padded with 00s after Part Number has been read) – LIN only
* DID F12A – ICP Hardware Part Number (read on every ignition cycle, FFs if part number cannot be read after 1 second) (Part Number will be padded with 00s after Part Number has been read) – LIN only
* DID F12B – Display Part Number (Assembly) (read on every ignition cycle, FFs if part number cannot be read after 1 second) (Part Number will be padded with 00s after Part Number has been read)
* DID F12C – Display Hardware Part Number (read on every ignition cycle, FFs if part number cannot be read after 1 second) (Part Number will be padded with 00s after Part Number has been read)
* DID F0E8 – ICP Software Part Number (read on every ignition cycle, FFs if part number cannot be read after 1 second) (Part Number will be padded with 00s after Part Number has been read) – LIN only
* DID F0E9 – Display Software Part Number (read on every ignition cycle, FFs if part number cannot be read after 1 second) (Part Number will be padded with 00s after Part Number has been read)
* DID F142 – Display Serial Number (Sync Display) (read on every ignition cycle, FFs if part number cannot be read after 1 second) (Part Number will be padded with 00s after Part Number has been read from Display)
* DID F143 – ICP Serial Number (read on every ignition cycle, FFs if part number cannot be read after 1 second) (Part Number will be padded with 00s after Part Number has been read) – LIN only
* DID F10A – Audio Profile File (standalone calibration files – does not affect assembly part number) (read on every ignition cycle, FFs if part number cannot be read after 1 second)
* DID F16B– Illumination File (standalone calibration files – does not affect assembly part number) (read on every ignition cycle, FFs if part number cannot be read after 1 second)
* DID F12D – Digital RVC Delivery Assembly Part Number - read on every ignition cycle, FFs if part number cannot be read after 1 second) (Part Number will be padded with 00s after Part Number has been read)
* DID F145 – Digital RVC Serial Number - read on every ignition cycle, FFs if part number cannot be read after 1 second) (Part Number will be padded with 00s after Part Number has been read)
* DID 8001 – Navigation Application Version
* DID 8004 – Supported Bluetooth Profiles – (ASCII string of comma separated BT profile names)
* DID 8023 – Active Bluetooth Profiles – (ASCII string of comma separated BT profile names)
* DID 8024 – Bluetooth Status
* DID 8047 – Bezel Diagnostic Status (2F controllable)
* DID 804F – Bluetooth Streaming Status
* DID 8052 – Navigation Map Version
* DID 8053 – DAB Current Station
* DID 805C – AppLink Status
* DID 805D – AppLink Version
* DID D03D – Software ID Number
* DID D040 – Enabled Debug Token
* DID F17F – Ford Electronic Serial Number
* DID D021 – Authorization State
* DID F1E1 - Ethernet Mac Address – 6 bytes HEX
* DID 8068 – APIM CCPU Bootloader Image
* DID D033 – Consumer Apps Failure
* DID D027 – Sync VMCU Boot Loader Part Number

### SWR-REQ-290418/L-Supplier DIDs

* DID FDA0 – Over the Air Bootloader Part Number - 24 Bytes ASCII
* DID FD02 – Operating System Version Data – 32 bytes ASCII
* DID FD03 – Bluetooth Module Firmware – 32 bytes ASCII
* DID FD51 – AM/FM Station – Use 2F to switch station to switch to station – will respond FF if AM or FM Station (on read only) is not the primary source. 2 Byte. DID will match Signal NAV\_SetCurrentStatFreq\_Rq (with only the range larger).
* DID FD52 – Audio Source – Use 2F for Temporary Change to switch audio modes. (1BYTE State Encoded)
  + - Byte 1 SED 00 – AM
    - Byte 1 SED 01 – FM1
    - Byte 1 SED 02 – FM2
    - Byte 1 SED 03 – SDARS
    - Byte 1 SED 04 – DAB

Byte 1 SED 05 – Front Disc

* + - Byte 1 SED 06 – Front Aux Input
    - Byte 1 SED 07 – USB
    - Byte 1 SED 08 – BT\_Stereo
    - Byte 1 SED 09 – Rear Disc
    - Byte 1 SED 0A – In-Dash CD Changer
    - Byte 1 SED 0B-FF - Reserved
* DID FD08 - Vehicle Health Monitor Activity Timer – 2E adjustable – Size: 2 bytes, Range: 0-65535 seconds, Units: Seconds, Default Value: 1200 seconds, Resolution: 1 second
* DID FD09 - Voltage Hysteresis Timer – 2E adjustable – Size: 1 byte, Range 0-255 seconds, Default Value: 10 seconds, Units: Seconds, Resolution: 1 second
* DID FD10 - Wifi Hotspot Data Usage Refresh Timeout – 2E adjustable – Size: 1 byte, Range 0-255 seconds, Default Value: 30 seconds, Units: Seconds, Resolution: 1 second
* DID FD60 - Greeting Screen Timer – 2E adjustable – Size: 2 bytes, Range 0-65535 seconds (Max accepted value 6000 seconds [10 minutes], Default Value: 25 seconds, Units: Seconds, Resolution: 1 second
* DID FD0A – Display Parameters: 1byte DID with encoding below:
  + - BIT 7: Display Connection Error
      * 1 - Open circuit to Sharp display exists
      * 0 – Open circuit to Sharp display does not exist
    - BIT 6: Touch Screen Error
      * 1 - Touch screen open or short circuit exists
      * 0 – No Error Exists
    - BIT 5: Thermistor backlight de-rating
* 1 – Backlight de-rating active
  + - * 0 – Backlight de-rating not active
    - BIT 4: Reserved
    - BIT 3 : Touch Type
      * 1 – Touch Screen Present
      * 0 – Touch Screen Not Present
    - BITS 2-0: Reserved
* DID FD1A – Display Parameters: 3byte DID with encoding below:
  + - Byte1
    - Bit 7: Spurious Interrupt
      * 1 – Interrupts Present
      * 0 – Interrupts Not Present
    - Bit 6: Touch Circuit Fault (Set during Self-Test [0202] only)
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 5: Touch Panel Fault (Set during Self-Test [0202] only)
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 4: Lost Communication with Display Microprocessor
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 3: Display Micro Reset
      * 1 – Reset Requested
      * 0 – Reset Not Requested
    - Bit 2: Over temperature
      * 1 – Over temperature Condition Exists
      * 0 – Over temperature Condition Does not Exist
    - Bit 1: Lost Communication with Touch Controller
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 0: Touch Panel Range/Performance (Set during Self-Test [0202] only)
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Byte 2
    - Bit 7: Backlight Circuit Fault
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 6: Loss of Lock Fault
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 5: Unexpected Reset (INIT)
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 4: Mismatched Electronic Identifier
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 3: Failure to Enable (Gen1)
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 2: Loss of LVDS Lock
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 1: Unsupported Display (Gen2)
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Bit 0: LVDS Link Detect Fault
      * 1 – Fault Present
      * 0 – Fault Not Present
    - Byte 3 Reserved
    - FE80 – Panasonic Serial Number (24 bytes HEX) – readable and writable (2E) in session 60 (only readable in sessions 01, 02, and 03)
    - FD1B – RVC Digital Faults :4 Bytes Bitmap Encoding
      * Byte 1 Bit 7: Unexpected Reset
      * Byte 1 Bit 6: Reset Request
      * Byte 1 Bit 5: LVDS Link Detect Fault
      * Byte 1 Bit 4: General Electrical Fault
      * Byte 1 Bits 3-0: Reserved
      * Bytes 2-4 Reserved
* DID FD61 – Sound Menu Reset – Use 2F for Temporary Change to switch audio modes. (1BYTE State Encoded)
  + - Byte 1 SED 00 – Non-Reset Event
    - Byte 1 SED 01 – Reset All Bass/Treble/Mid and Fade/Balance Settings
    - Byte 1 SED 02 – Master Reset
    - SED 03-FF: Reserved
* DID FD63 – Default\_Vehicle\_Connectivity\_On\_Prompt\_Retrigger – Use 2E for Permanent Change. (1BYTE Integer)
  + - Default Value :5
    - Range of Data: 0-15
    - Unitless
* DID EEFA – ECU AP Hardware ID – 16 bytes ASCII
* DID EEFB – ECU CP Hardware ID – 32 bytes ASCII
* DID EEFC – IDS Version 4 Byte Unsigned
  + Byte 1 – Architecture Version
  + Byte 2 – Major Version
  + Byte 3 – Minor Version
  + Byte 4 – Sub Version

(i.e. IDS Version 7.5.0 would be 7 5 0 0)

* DID EEFE – APIM VMCU Recover Partition Image – 24 Bytes ASCII
* DID EEF9 – APIM VMCU Active Application Bank – 1 Bytes ASCII
* DID EEFF – APIM CCPU Recover Partition Image – 24 Bytes ASCII
* DID EEF0 – Automation Test Mode – 1 Byte SED. Use 2E for Permanent Change (VMCU to treat it like DExx parameter)
  + 00 – Normal Mode
  + 01 - Automation Test Mode
  + 02-FF – Reserved
* DID EEF1 – Recovery Mode VMCU Indication DID – 4 Bytes BITMAPPED
  + Byte 1 Bit 7 - BOOT\_DTC pins set to failure for 5 consecutive boot attempts
  + Byte 1 Bit 6 - 3 IPC establishment timeouts this ignition cycle
  + Byte 1 Bit 5 - 3 Boot complete timeouts this ignition cycle
  + Byte 1 Bit 4 - CAN based recovery mode request
  + Byte 1 Bit 3 - CCPU requested recovery mode
  + Byte 1 Bits 2-0 - Reserved
  + Bytes 2-4 Reserved
* DID EEE0 – ECU KeyPackage Version
  + Size: 2 Bytes
  + Units: UNSIGNED Integer
  + Resolution: 1
  + Offset: 0
  + Range: 0-65535
* DID EEE1 ECU HW Security Status – 1 Byte State Encoded
  + 0x00 = Unknown
  + 0x01 = Insecure
  + 0x02 = Dev-Secure
  + 0x03 = Prod-Secure
* DID EF11 - Ethernet Channel 1 Error Counters (40 Byte Packeted)

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter Name | Size (bytes) | Parameter Data Type | Readable in Sessions |
| Eth1 Network Startups | 4 | hex | 0x01, 0x03 |
| Eth1 Network Startup Timeout | 4 | hex | 0x01, 0x03 |
| Eth1 Network CRC Errors | 4 | hex | 0x01, 0x03 |
| Eth1 Network Checksum Errors | 4 | hex | 0x01, 0x03 |
| Eth1 Unsupported MAC Address | 4 | hex | 0x01, 0x03 |
| Eth1 Unsupported Multicast MAC Address | 4 | hex | 0x01, 0x03 |
| Eth1 Unsupported Ethernet Type | 4 | hex | 0x01, 0x03 |
| Eth1 Unsupported IP Unicast Address | 4 | hex | 0x01, 0x03 |
| Eth1 Unsupported IP Multicast Address | 4 | hex | 0x01, 0x03 |
| Eth1 Unsupported IP Port Number | 4 | hex | 0x01, 0x03 |

* DID EEE2 – Token Removal Reason (64 bytes Packeted)
  + 32 Sets of the Below Packets (2 bytes each = 32x2 = 64 bytes)
  + Token Name (1 Byte SED)

|  |  |
| --- | --- |
| **Value** | **State Description** |
| 0x00 | Default Value |
| 0x01 | Sync\_ap\_dev\_sign |
| 0x02 | Sync\_ap\_dev\_unsign |
| 0x03 | Sync\_ap\_debug |
| 0x04 | Sync\_ap\_logging |
| 0x05 | Sync\_cp\_debug |
| 0x06 | Analytics\_override |

* + Token Update (1 Byte SED)

|  |  |
| --- | --- |
| 0x00 | Default |
| 0x01 | Unknown Removal |
| 0x02 | Unknown Loading |
| 0x03 | Master Reset |
| 0x04 | Removal Routine |
| 0x05 | Console App Removal |
| 0x06 | Console App Loading |
| 0x07 | Token Content Invalid Removal |
| 0x08 | Token File Access Error Removal |
| 0x09 | Token Expiry Removal |
| 0x0A | Token Status Service Removal |
| 0X0B | Token Status Service Loading |

* DID FD67 – Navigation Test Parameters– Use 2E for Permanent Change. (1 BYTE BITMAP)
  + - Byte 1 Bit 7: Onboard Gyro
      * 0 – On
      * 1 – Off
    - Byte 1 Bit 6: Accelerometer
      * 0 – On
      * 1 – Off
    - Byte 1 Bits 5-0: Reserved
* DID FDEF – Rear Seat Occupant Alert (1 byte bitmap)
  + - Bit 7 : 0 (Untriggered)/1 (Triggered)
    - Bits 6-0 : Reserved
* DID FDF0 – Rear Seat Alert Timeout – Use 2E for Permanent Change (1 byte integer)
  + - Default Value: 15
    - Range of Data: 1-60
    - Units: minutes
* DID FDF1 – Rear Seat Alert Chime Duration – Use 2E for Permanent Change (1 byte integer)
  + - Default Value: 10
    - Range: 0 – 255
    - Units: Seconds
    - Resolution : 1
* DID FDF2 – Stop Mode Timer – Use 2E for Permanent Change (2 byte integer)
  + - Default Value: 120 minutes
    - Range: 0-65535 Minutes
    - Units: Minutes
    - Resolution:1

### SWR-REQ-290419/D-Illumination DIDs

All associated DIDs shall be 2F adjustable.

* The APIM / AHU should have the following end of line programmable DIDs for the 2 dimming zones:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DID | Identifier | Value | Bytes | Comments/Description |
| FDB0 | DID\_VMCU\_Low\_PWM\_RotoryBL | 5 | 1 | PWM value for lowest brightness  Rotory backlight  Use it with DID\_VMCU\_WeightFactorBL |
| FDB1 | DID\_VMCU\_High\_PWM\_RotoryBL | 255 | 1 | PWM value for highest brightness  Rotory backlight  Use it with DID\_VMCU\_WeightFactorBL |
| FDB2 | DID\_VMCU\_Low\_PWM\_ButtonB | 5 | 1 | PWM value for lowest brightness  Button backlight  Use it with DID\_VMCU\_WeightFactorBL |
| FDB3 | DID\_VMCU\_High\_PWM\_ButtonB | 255 | 1 | PWM value for highest brightness  Button backlight  Use it with DID\_VMCU\_WeightFactorBL |
|  |  |  |  |  |

* The APIM / AHU should have the following 3 DIDs which are end of line programmable tables:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DID | Identifier | Value | Bytes | Comments/Description |
| FDB5 | DID\_VMCU\_WeightFactorBL |  | 108\*2 | Default values see “Definition Of Weight Factors  For 8 Bit PWM Backlight” |
|  |  |  |  |  |
|  |  |  |  |  |

These DIDs are used to generate the following signals:

* + DID\_VMCU\_WeightFactorBL, DID\_VMCU\_Low\_PWM\_RotoryBL,, DID\_VMCU\_High\_PWM\_RotoryBL ==> DSPLDimmLvl2
  + DID\_VMCU\_WeightFactorBL, DID\_VMCU\_Low\_PWM\_ButtonBL, DID\_VMCU\_High\_PWM\_ButtonBL ==> DSPLDimmLvl1
* The APIM / AHU should have the following end of line programmable DIDs for the 2 dimming zones:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| D | Identifier | Value | Bytes | Comments/Description |
| FDB8 | DID\_CCP\_Low\_PWM\_DisplayBL | 5 | 2 | PWM value for lowest brightness  Display backlight  Use it with DID\_CCP\_WeightFactorDP |
| FDB9 | DID\_CCP\_High\_PWM\_DisplayB | 1023 | 2 | PWM value for highest brightness  Display backlight  Use it with DID\_CCP\_WeightFactorDP |
| FDBA | DID\_CCP\_Low\_PWM\_DisplayButtonBL | 5 | 1 | PWM value for lowest brightness  Display button backlight  Use it with DID\_CCP\_WeightFactorBL |
| FDBB | DID\_CCP\_High\_PWM\_DisplayButtonBL | 255 | 1 | PWM value for highest brightness  Display button backlight  Use it with DID\_CCP\_WeightFactorBL |
|  |  |  |  |  |

* The APIM / AHU should have the following 4 DIDs which are end of line programmable tables:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DID | Identifier | Value | Bytes | Comments/Description |
|  |  |  |  |  |
| FDBE | DID\_CCP\_WeightFactorBL |  | 108\*2 | Default values see “Definition Of Weight Factors  For 8 Bit PWM Backlight” |
|  |  |  |  |  |
|  |  |  |  |  |

The DIDs are used to generate the following signals:

DID\_CCP\_High\_PWM\_DisplayBL ==> Display\_BL\_PWM\_low, Display\_BL\_PWM\_high

DID\_CCP\_High\_PWM\_DisplayButtonBL ==> Button\_BL\_PWM

|  |  |  |  |
| --- | --- | --- | --- |
| DID | | Indentifier | Size in Bytes |
| FDC1 | | DID\_VMCU\_TransTime\_Usr | 1 |
| FDC2 | | DID\_VMCU\_TransTime\_Amb\_Up | 1 |
| FDC3 | | DID\_VMCU\_TransTime\_Amb\_Down | 1 |
| FDC4 | | DID\_VMCU\_TransTime\_OnOff | 1 |
| FDC5 | | DID\_CCP\_WeightFactorDP\_SDM4 | 108\*2 |
| FDC6 | | DID\_CCP\_Low\_PWM\_SDM4 | 2 |
| FDC7 | | DID\_CCP\_High\_PWM\_SDM4 | 2 |
| FDC8 | | DID\_CCP\_WeightFactorDP\_SDM6 | 108\*2 |
| FDC9 | | DID\_CCP\_Low\_PWM\_SDM6 | 2 |
| FDCA | | DID\_CCP\_High\_PWM\_SDM6 | 2 |
| FDCB | | DID\_CCP\_WeightFactorDP\_SDM8 | 108\*2 |
| FDCC | | DID\_CCP\_Low\_PWM\_SDM8 | 2 |
| FDCD | | DID\_CCP\_High\_PWM\_SDM8 | 2 |
| FDCE | | DID\_CCP\_TransTime\_Usr | 1 |
| FDCF | | DID\_CCP\_TransTime\_Amb\_Up | 1 |
| FDD0 | | DID\_CCP\_TransTime\_Amb\_Down | 1 |
| FDD1 | | DID\_CCP\_TransTime\_OnOff | 1 |
| FDD2 | | DID\_CCP\_Threshold\_to\_Night | 1 |
| FDD3 | | DID\_CCP\_DayToNightTime | 1 |
| FDD4 | | DID\_CCP\_NightToDayTime | 1 |
| FDD5 | | DID\_VMCU\_Dimming\_Lvl\_Timer | 1 |
| FDD6 | | DID\_VMCU\_BatterySave\_Timer | 1 |
| FDD7 | | DID\_CCP\_Dimming\_Lvl\_Timer | 1 |
| FDD8 | | DID\_CCP\_BatterySave\_Timer | 1 |
| FDD9 | DID\_CCP\_WeightFactorDP\_SDM10L (landscape) | 108\*2 |
| FDDA | DID\_CCP\_Low\_PWM\_SDM10L | 2 |
| FDDB | DID\_CCP\_High\_PWM\_SDM10L | 2 |
| FDDC | DID\_CCP\_WeightFactorDP\_SDM10P (portrait) | 108\*2 |
| FDDD | DID\_CCP\_Low\_PWM\_SDM10P | 2 |
| FDDE | DID\_CCP\_High\_PWM\_SDM10P | 2 |
| FDDF | DID\_CCP\_WeightFactorDP\_SDM12L (landscape) | 108\*2 |
| FDE0 | DID\_CCP\_Low\_PWM\_SDM12L | 2 |
| FDE1 | DID\_CCP\_High\_PWM\_SDM12L | 2 |
| FDE7 | DID\_CCP\_WeightFactorDP\_SDM12P (portrait) | 108\*2 |
| FDE8 | DID\_CCP\_Low\_PWM\_SDM12P | 2 |
| FDE9 | DID\_CCP\_High\_PWM\_SDM12P | 2 |
| FDEA | DID\_CCP\_WeightFactorDP\_SDM15\_5 | 108\*2 |
| FDEB | DID\_CCP\_Low\_PWM\_SDM15\_5 | 2 |
| FDEC | DID\_CCP\_High\_PWM\_SDM15\_5 | 2 |
| FDED | DID\_RVC\_MinThreshold\_Night | 1 |
| FDEE | DID\_RVC\_MinThreshold\_Day | 1 |

### SWR-REQ-290420/B-SRM DIDs

These only apply to APIM’s that are compatible with X40 SDARS (when SDARS = X40 – CCPU shall populate these items if SDARS is configured for X40 regardless of SDARS is configured to Present or Not Present) .

* + - 8214 – SDARS Antenna Status
    - F144 – X40 SDARS ESN read on every ignition cycle, If cannot be read should read EEPROM storage of previous read) (The ESN is 16 Bytes (character) Alpha-Numeric and will be padded with 00s after ESN has been read)
    - 8066 – Pellet (50 bytes Hex)
    - FD62 – SDARS Firmware (5 byte HEX)
      * Byte 1: system12, minor\_rev\_num
      * Byte 2: system1, ver\_num
      * Byte 3: system1, rev\_num
      * Byte 4: system1, minor\_rev\_num
      * Byte 5: system18, minor\_rev\_num
    - FD64 – SXM Channel Name (Current Channel Name when in SDARS audio mode. If SDARS is not current audio mode, send all 00s (NULLS)
      * Size: 20 bytes
      * Units: ASCII (HEX)
      * Pad with NULLS after data
    - FD65 – SXM PDT Info for Current Channel Artist (Current Artist Name when in SDARS audio mode. If SDARS is not current audio mode, send all 00s (NULLS)
      * Size: 36 bytes
      * Units: ASCII (HEX)
      * Pad with NULLS after data
    - FD66 – SXM PDT Info for Current Channel Song Title (Current Song Title when in SDARS audio mode. If SDARS is not current audio mode, send all 00s (NULLS)
      * Size: 36 bytes
      * Units: ASCII (HEX)
      * Pad with NULLS after data

### SWR-REQ-329650/C-CCS Supplier DIDs

* DID EE10 – CCS Entity Settings – 34 Bytes Packeted DID

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Byte | Description | Size | Default Value | Range of Data | Units |
| 1 | PTE\_File\_Platform\_Version | 16bits | 0 | 0x0000-0xFFFF | number |
| 3 | PTE\_File\_Major\_Version | 16bits | 0 | 0x0000-0xFFFF | number |
| 5 | PTE\_File\_Minor\_Version | 16bits | 0 | 0x0000-0xFFFF | number |
| 7 | PTE\_File\_Time\_Stamp\_Seconds | 6bits | 0 | 0-59 | seconds |
| 8 | PTE\_File\_Time\_Stamp\_Minutes | 6bits | 0 | 0-59 | minutes |
| 9 | PTE\_File\_Time\_Stamp\_Hours | 5bits | 0 | 0-23 | hours |
| 10 | PTE\_File\_Time\_Stamp\_Day | 5bits | 1 | 1-31 | day |
| 11 | PTE\_File\_Time\_Stamp\_Month | 4bits | 1 | 1-12 | month |
| 12 | PTE\_File\_Time\_Stamp\_Year | 14bits | 2000 | 2000-9999 | year |
| 14 | PTE\_File\_Hash\_Value | 32bits | 0 | 0 | N/A |
| 18 | UFM\_File\_Platform\_Version | 16bits | 0 | 0x0000-0xFFFF | number |
| 20 | UFM\_File\_Major\_Version | 16bits | 0 | 0x0000-0xFFFF | number |
| 22 | UFM\_File\_Minor\_Version | 16bits | 0 | 0x0000-0xFFFF | number |
| 24 | UFM\_File\_Time\_Stamp\_Seconds | 6bits | 0 | 0-59 | seconds |
| 25 | UFM\_File\_Time\_Stamp\_Minutes | 6bits | 0 | 0-59 | minutes |
| 26 | UFM\_File\_Time\_Stamp\_Hours | 5bits | 0 | 0-23 | hours |
| 27 | UFM\_File\_Time\_Stamp\_Day | 5bits | 1 | 1-31 | day |
| 28 | UFM\_File\_Time\_Stamp\_Month | 4bits | 1 | 1-12 | month |
| 29 | UFM\_File\_Time\_Stamp\_Year | 14bits | 2000 | 2000-9999 | year |
| 31 | UFM\_File\_Hash\_Value | 32bits | 0 | 0 | N/A |

* DID EE11 – CCS Synchronization State – 1 Bytes Packeted DID

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Byte | Description | Size | Default Value | Range of Data | Units |
| 1 | CCS Synchronization State | 2 bits | 0 | 0 – Synchronizing  Synchronized  Error | N/A |

## SWR-REQ-290454/N-Required APIM Core Continuous DTCs

| **DTC** | **Condition** | **DTC Trigger** | **Fault Action** | **Configuration Associated** |
| --- | --- | --- | --- | --- |
| F00041 – Checksum | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | * + Flash ROM checksum failure   + EEPROM checksum failure   + EEPROM write failure (after retries have failed) | * + APIM will cease to function normally   + EEPROM portion cannot be used   + EEPROM portion is flagged for non-use | N/A |
| F00004 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | * + Non-memory failure   + See fault DIDs 804A and 804B.   + GPS Chip Error. | APIM may not function correctly | N/A |
| F00009 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Gyro has an error for greater than five seconds. | Dead reckoning may not work properly. | Internal Gyro = Present |
| F00088 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | IPC Link Down | APIM will not function correctly | N/A |
| F00043 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts | Set when keymgr is unable to read a key from encrypted storage on the /dps partition. | * + SOA may not be operational   + Cloud communications may not be operational   + OBD port may not be operational. | N/A |
| F00057 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts | Set when tonkenmgr finds on token file on the /boot\_fs file system. | Warning to the user that the APIM is in development mode. | N/A |
| F00005 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | When the APIM has entered into Recovery Mode. | APIM Enters Recovery Mode | N/A |
| 91BA63 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when SWC is stuck within range for more than 120 seconds. | Loss of SWC controls. | SWC Hardwired |
| 91BA1C | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when SWC is not within range for greater than 250 ms. | Loss of SWC controls. | SWC Hardwired |
| E10000 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | APIM has not received initial configuration for Blocks DE00-DE08. | APIM may not respond correctly | See configuration section regarding blocks DE00-DE08. |
| E10100 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | APIM is misconfigured – see Configuration (Method 2 section for DTC details) | APIM may not respond correctly | See configuration section. |
| E10100 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | APIM is configured for ECALL and TCU sends EmgcyCall\_D\_Stat = 02, 0x3, 0x4. | Ecall will take priority if EA and Ecall event takes place at the same time. | Emergency Assist (911 Assist) = Enabled. |
| F00317 | Key in Run, ACC, or Delayed Acc. Voltage is above 9 volts. | Set when Battery Voltage is Greater (>) 16 volts for greater than 5500 milliseconds. | Normal Operating Conditions may begin to shut down. | N/A |
| F00316 | Key in Run, ACC, or Delayed Acc. Voltage is above 9 volts. | Set when Battery Voltage is Below (<) 10 volts for greater than 10 seconds. | Normal Operating Conditions begin to shut down. CAN communication will work until voltage drops below 9 volts. | N/A |
| 925211 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when USB1 is shorted to ground or overloaded. | USB1 no longer functions. | N/A |
| 92B811 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when Remote USB Port 1 is shorted to ground or overloaded. | Remote USB Port 1 no longer functions. | N/A |
| 960011 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when Remote USB Port 2 is shorted to ground or overloaded. | Remote USB Port 1 no longer functions. | N/A |
| C16200 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | See REQ-199371 | Loss of display. | N/A |
| 908E02 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when five (5) instances of Loss of Lock (Gen2) signal, five (5) instances of Unexpected Resets or, five (5) Reset Request occur with display module. | Loss of display. | N/A |
| 908E4A | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when an unexpected display (Gen2) has been detected with display module. | Loss of display. | N/A |
| 908E87 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when LVDS Source Module detects a condition where the LVDS link is operational but the display microcontroller has a persistent NAK response. | Loss of display. | N/A |
| 908E63 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when SDM4 sends a button press for greater than 120 seconds. | Loss of buttons from SDM 4. | Based on SDM4 display on CCPU side |
| 908E01 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when error has been detected from touchscreen. | Loss of display. | N/A |
| 908E87 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Loss communication with Display microprocessor for greater than five (5) seconds. | Loss of display. | N/A |
| 908E4B | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Over  temperature condition set in Display. | Loss of display. | N/A |
| 94FD11 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts | Set when MCM power output is short to ground for greater than one (1) second. | Loss of multimedia connectivity module. | N/A |
| 500101 | Key in Run.Voltage is between 10 and 16 volts. Gear is in Reverse. | Set when video signal is not detected from Rear View Camera for more than 5 seconds when vehicle is in reverse. | No rear camera display. | Rear Camera = On and Type of RVC Camera = Analog |
| 500101 | Key in Run.Voltage is between 10 and 16 volts. Gear is in Drive. | Set when video signal is not detected from Front View Camera for more than 5 seconds when vehicle is in Drive. | No front camera display. | Front Camera = On = Enabled |
| E01751 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Packaged software is not provisioned. | No packaged software functionality. | Packages selected for download. |
| E01745 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Software BOM not found. | No packaged software functionality. | Packages selected for download. |
| E01754 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Software package not available. | No packaged software functionality. | Packages selected for download. |
| E01752 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Provisioning failed; Memory constraint | No packaged software functionality. | Packages selected for download. |
| 919F13 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when GPS Antenna is Open for greater than (>) than 250ms. | Loss of GPS information. | N/A |
| 919F01 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when GPS Antenna is Short to Ground or Battery  for greater than (>) than 250ms. | Loss of GPS information. | N/A |
| E01363 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts | Set when ICP button is stuck for greater (>) than two (2) minutes. | Button stops transmitting on CAN and is considered to be not pressed. | ICP(EFP) Network = LIN AND (ICP (EFP)=Present |
| E01316 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts | Set when ICP indicates Low Voltage. | Buttons will not work. | ICP(EFP) Network = LIN AND (ICP (EFP)=Present |
| E01317 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts | Set when ICP indicates High Voltage. | Buttons will not work. | ICP(EFP) Network = LIN AND (ICP (EFP)=Present |
| E01301 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts | Set when ICP indicates Rotary knob or Volume Knob Error. | Rotary Knob or Volume knob may not work. | ICP(EFP) Network = LIN AND (ICP (EFP)=Present |
| 908701 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts | Set when missing LIN signals for greater than five (5) seconds. | Buttons will not work. | ICP(EFP) Network = LIN AND (ICP (EFP)=Present |
| DA0087 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | Set when SRM doesn’t respond to SRM commands or has an error state for at least ten (10) seconds. (along with two resets via CAN with ACM) when ACM states SRM is active. | SDARS functions are no longer available. | X40=X40 |
| 500102 | Key in Run., Voltage is between 10 and 16 volts. | Set for when RVC has an Unexpected Reset or Reset Request. | Loss of RVC. | Type of RVC = Digital and Rear View Camera = Present |
| 500101 | Key in Run. Voltage is between 10 and 16 volts. | Set for when RVC has an LVDS Link Detect Fault or General Electrical Failure. | Loss of RVC. | Type of RVC = Digital and Rear View Camera = Present |
| 500181 | Key in Run. Voltage is between 10 and 16 volts. | Set for RVC has a loss of lock. | Loss of RVC. | Type of RVC = Digital and Rear View Camera = Present |
| 500187 | Key in Run. Voltage is between 10 and 16 volts. | Set for when RVC has loss communication for 500 miliseconds. | Loss of RVC. | Type of RVC = Digital and Rear View Camera = Present |
| 50014B | Key in Run. Voltage is between 10 and 16 volts. | Set for when RVC has a Over temperature condition. | Loss of RVC. | RVC = Digital (Not EOL configuration, HW detected) and Rear View Camera = Present |
| 500155 | Key in Run. Voltage is between 10 and 16 volts. | Set when RVC hasn’t received configuration. | Loss of RVC. | Type of RVC = Digital and Rear View Camera = Present |
| 50011C | Key in Run. Voltage is between 10 and 16 volts. | Set when RVC +9V Diag is not asserted 500ms after the nine volt power (to Digital RVC) has been activated. | Loss of RVC. | Type of RVC = Digital and Rear View Camera = Present |
| E40092 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | If no Ethernet frames are received for greater than five seconds from Gateway Module then the Link Status register of the PHY is read. If the Link Status indicates the link is down, then set the DTC. | ECG functions may not work. | N/A |
| E40081 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | If 50% of the MAC frames received during a 5 second period have invalid CRC from the Gateway Module then set the DTC. | ECG functions may not work. | N/A |
| 956D89 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | * + The implementing part fails its system memory self test and subsequently initializes the OnBoardPolicyServer, it shall raise the DataStorageError | * + CCS Features May Not Work | Customer Connectivity Setting = Enabled |
| 956D54 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | * + Missing Policy Table:   For the current display size and/or feature bundle a policy table is neither available onboard nor received via offboard synchronization. | * + CCS Features May Not Work | Customer Connectivity Setting = Enabled |
| 95EB57 | Key in Run, ACC, or Delayed Acc. Voltage is between 10 and 16 volts. | If the ALM components persist information about installed apps in files which are corrupted which cannot be corrected. | Some installed apps may not work properly. | N/A |

### SWR-REQ-370586/B-Core APIM Missing Message DTCs

| **DTC** | **Condition** | **DTC Trigger** | **Fault Action** | **Configuration Associated** |
| --- | --- | --- | --- | --- |
| C15500 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set when missing 0x225 for more than five (5) seconds. | APIM prompt generator won’t know if chimes are active. | Sync 4.0 Hardware or (Internal/External Cluster = External) |
| C21200 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set when missing 0x2A1 for more than five (5) seconds. | Loss of SWC controls. | SWC CAN = Enabled |
| C15900 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set when missing 0x3A8 for more than five (5) seconds. | Loss of Parking Aid or functionality. | Park Aid = SAPP or APA |
| C10000 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set when missing 0x283 when missing for more than five (5) seconds. | Reverse message is lost. | Reverse Gear Message = New |
| C10000 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set when missing 0x202 AND 0x38A when missing for more than five (5) seconds. | Bezel Diagnostics will be disabled.  Driving Restrictions will be enabled. | N/A |
| C14000 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set when missing when missing for more than five (5) seconds. | * + HVAC Personalization will be loss.   + Ambient Lighting for APIM will be turned off. | [Ambient Lighting =Present] |
| C14000 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is Stable. | Set when missing 0x3B2 when missing for more than five (5) seconds. | APIM will power down. | N/A |
| C14000 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set when missing 0x331 when missing for more than five (5) seconds. | Welcome screens and other welcome strategies may not work properly. Farewell strategy might not operate correctly. | N/A |
| C14000 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set when missing 0x40A when missing for more than five (5) seconds. | VIN will not be captured correctly. | N/A |
| C18400 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set for missing messages from the ACM 0x223 is missing for more than five (5) seconds. | APIM won’t generate prompts. | N/A |
| C18400 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set for missing messages from the ACM (0x2D5, 0x2D6,0x2D8,0x2D9, 0x2DC, 0x2F5, and 0x3E8) missing for more than five (5) seconds. | Loss of radio functions. | N/A |
| C18400 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set for missing HD messages from the ACM ( 0x2F7) missing for more than five (5) seconds. | Loss of HD functions. | HD Radio = Available |
| C15100 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Log if 0x4A is missing for more than five seconds from RCM. | Emergency Assist will not work properly. | Emergency Assist (911 Assist) = Enabled |
| C12100 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Log if 0x216 is missing for more than five seconds from the ABS. | Loss of Dead Reckoning. | N/A |
| C41500 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Log if 0x216 signal WhlDiryx\_D\_Act=Failed for more than five seconds from the ABS. | Loss of Dead Reckoning. | N/A |
| C45200 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Log if 0x4A is not supported for more than five seconds from RCM. | Emergency Assist l will not work properly. | Emergency Assist (911 Assist) = Enabled |
| C23B00 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the IPMB (3EE) is missing for more than five (5) seconds. | If message is missing in non-Reverse gears then the pop-up "Camera is Unavailable” will be shown.  If the signal is missing while if Reverse, the image will be shown with no overlays (No Zoom, no please check surroundings text). | DE01 byte 7, bit 2 = 1 (TBA Available)  & DE01 byte 5, bit 5 (RVC w/SV Available)  or  DE01 byte 5, bit 5 (RVC w/SV Available)  &  DE01 byte 5, bit 4 (360 Camera)  or  DE01 byte 5, bit 5 (RVC w/SV Available)  & DE01 byte 5, bit 2 (DAFVC w/SV Available |
| C23800 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set for missing messages from the DSP (0x221, 0x224 and 0x228) missing for more than five (5) seconds. | Loss of DSP menus.  Loss of SYNC generated prompts. | Smart DSP = Present |
| C23800 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is Stable. | Set for missing messages from the AAM (0x221) missing for more than five (5) seconds. | Loss of AAM menus. | AAM = Present |
| C25600 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set for missing messages from the FCIM (0x2A0) missing for more than five (5) seconds. | Loss of FCIM functionality. | ICP(EFP) Network = CAN AND (ICP (EFP)=Present |
| C25600 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is stable. | Set for missing messages from the FCIM (0x360, 0x361) missing for more than five (5) seconds. | See reference 4 for fault actions and symptoms. | Climate Control = Automatic |
| C42200 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set when 0x3B2 when (Illumination Signal) is invalid for more than five (5) seconds. | Illumination will be full nighttime brightness. | N/A |
| C19600 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the RSEM (0x2A2) missing for more than five (5) seconds if configured for RSEM. | Loss of RSEM controls. | RSEM = Available or REFP = Available |
| C19800 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the TCU (0x21E) missing for more than five (5) seconds if configured for TCU. | Loss of GPS information. | TCU = Present and GPS From TCU = Enabled |
| C19800 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the TCU (0x28B) missing for more than five (5) seconds if configured for TCU. | Loss of CPP Functionality. | TCU = Present |
| C29300 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the HPCM (0x365) missing for more than five (5) seconds if configured for PHEV, HEV or BEV. | Loss of Battery Monitoring. | PHEV = Available or HEV – Available or Fuel Type = BEV |
| C24B00 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the SCMG (0x34A or 0x034C) missing for more than five (5) seconds if configured for Multicontoured Seat. | Loss of Multicontoured Seat HMI. | Legacy Multi Contoured Seat = Available or Enhanced MCS = Available |
| C24C00 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the SCMH (0x34B or 0x034D) missing for more than five (5) seconds if configured for Multicontoured Seat. | Loss of Multicontoured Seat HMI. | (Legacy Multi Contoured Seat = Available or Enhanced MCS = Available) AND Driver MCS Only = Disabled |
| C20900 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the PSM (0x274) missing for more than five (5) seconds if configured for Lumbar Seat. | Loss of Lumbar HMI. | (Lumbar = 2 Way or 4 Way) AND Driver MCS Only = Disabled |
| C15900 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the PAM (0x3AA or 0x3AB) missing for more than five (5) seconds if configured for PDC HMI. | Loss of PDC popups. | PDC HMI = Available |
| C15100 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the RCM (0x27A) missing for more than five (5) seconds if configured for Gyro = Not Present. | Dead reckoning function will not work. | Gyro = Not Present and Gyro on Bus = Present |
| C23200 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the SODL (0x3A6) missing for more than five (5) seconds if configured for Cross Traffic. | Cross Traffic Left Signal Icon will not be displayed. | Cross Traffic = Enabled |
| C23300 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the SODR (0x3A7) missing for more than five (5) seconds if configured for Cross Traffic. | Cross Traffic Right Signal Icon will not be displayed. | Cross Traffic = Enabled |
| C20C00 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the WACM (0x3F6) missing for more than five (5) seconds if configured for WACM. | Loss of WACM popups | WACM = Present |
| C20800 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for missing messages from the DSM (0x3E1) missing for more than five (5) seconds if configured for Enhanced Memory. | Enhanced Memory will not function. | Enhanced Memory = Enabled and DSM = Present |
| C12100 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for Update Bit (AutoHoldSwMde\_B\_Ind\_UB) in message 0x27A hasn’t been active for more than five (5) seconds if configured for Auto hold. | Auto hold feature will turn off on the menu. | Auto hold = Enabled |
| C41500 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for Signal after AutoHold button has been activated (AutoHoldSwMde\_B\_Ind) in message 0x27A hasn’t changed for more than five (5) seconds if configured for Auto hold. | Auto hold feature will turn off on the menu. | Auto hold = Enabled |
| C12100 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is Stable (see missing messages in 2.3 based on CGEA 1.3 strategy). | Set for the following messages (0x420) missing for more than five (5) seconds. | Park Hold Button will be greyed out and will be disabled and/or Selectable Drive Mode may not function. | Park Hold = Enabled or Selectable Drive Mode = Enabled |
| C12155 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is Stable (see missing messages in 2.3 based on CGEA 1.3 strategy). | CCPU hasn’t received configuration for Selectable Drive Mode via message 0x44E (ever). | Default SDM Menu | Selectable Drive Mode = Enabled |
| C41500 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is Stable (see missing messages in 2.3 based on CGEA 1.3 strategy). | CCPU sets when receiving Not Used states for Drive Mode for greater than five seconds from the ABS or no HMI mode assigned to requested Drive Mode. | Selectable drive mode may not work properly. | Selectable Drive Mode = Enabled |
| C41594 | Key in RUN. Voltage is between 10 and 16 volts. Ignition is Stable (see missing messages in 2.3 based on CGEA 1.3 strategy). | CCPU set when SDM Counter reaches max number of Errors | Selectable drive mode may not work properly. | Selectable Drive Mode = Enabled |
| C21400 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for Update Bit if signals (IgnPsswrdSetup\_B\_Rq\_UB or IgnPsswrdLckout\_B\_Stat\_UB or IgnPsswrdActv\_B\_Stat\_UB) in message 0x281 is has not updated for greater than five (5) seconds when configured for Backup Start Passcode = Enabled. | Loss of LBI functionality.  Possible error popup. | Backup Start Passcode = Enabled |
| C14000 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set when message 0x38D is missing for greater than five (5) seconds when configured for Backup Start Passcode = Enabled. | Loss of LBI functionality. | Backup Start Passcode = Enabled |
| C14000 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set when message 0x3BA or 0x3C3 is missing for greater than five (5) seconds when 360 Lighting is enabled. | Loss of 360 Lighting. | 360 Lighting = Enabled |
| C14000 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set when ExtLghtDsply\_B\_StatArb (0x32A) has not been missing for greater than five (5) seconds when 360 Lighting is enabled. | Loss of 360 Lighting. | 360 Lighting = Enabled |
| C14000 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set when signals ExtLghtLeft\_D\_Stat and ExtLghtRight\_D\_Stat are equal to Null or Not USED for greater than five (5) seconds when 360 Lighting is enabled and set for four zones. | Loss of 360 Lighting. | 360 Lighting = Enabled and 360 Lighting: Number of Zones = 4 |
| C42200 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for Signal after 360 button has been activated, Front or Rear (ExtLghtFront\_D\_Stat, ExtLghtRear\_D\_Status) in message 0x3BA hasn’t changed for more than five (5) seconds if configured for 360 lighting. | 360 Lighting will no function | 360 Lighting= Enabled |
| C42200 | Last Known Key in RUN. Voltage is between 10 and 16 volts. Last Known Ignition is stable. | Set for Signal after 360 button has been activated, Left or Right (ExtLghtLeft\_D\_Stat, ExtLghtRight\_D\_Status) in message 0x3BA hasn’t changed for more than five (5) seconds if configured for 360 lighting and 4 zones. | 360 Lighting will no function | 360 Lighting = Enabled and 360 Lighting: Number of Zones = 4 |

## SWR-REQ-290455/C-Configuration - Method 2 (Direct Configuration)

* $2E is used to write to the configuration blocks.
* Blocks DE00 is for the Option Content in the vehicle – BMP flipping.
* Blocks DE01 is for Destination Code, Splash Screen and Vehicle Style – SED.
* Block DE02 contains ECO Route Parameters.
* Block DE03 contains Global Options – SED.
* Missing configuration DTCs are only set based on the table in Block DE00-DE03 below:
* Configuration can be performed whenever CAN is awake and voltage is between 9-16 volts.

### SWR-REQ-290456/R-DE00 Configuration (Audio/Camera/Vehicle/Diag)

| **Config Block** | **Byte** | **Bit(s)** | **Description** | **Default** | **Operation** | **Configuration DTC** |
| --- | --- | --- | --- | --- | --- | --- |
| DE00 | 1 | 7 | Smart DSP | 0 | 0 – Do not log missing DSP Messages  1 – Log missing DSP Messages | N/A |
| DE00 | 1 | 6 | AAM | 0 | 0 – Do not log missing AAM messages  1 – Log Missing AAM messages (Send speaker walkaround request to ACM) | N/A |
| DE00 | 1 | 5 | SDARS | 0 | 0 – SDARS HMI and DTCs Disabled  1 – SDARS HMI and DTCs Enabled | N/A |
| DE00 | 1 | 4 | RSEM | 0 | 0 – Do not log missing RSEM messages  1 – Log Missing RSEM messages | N/A |
| DE00 | 1 | 3 | Fader in Sound Menu | 0 | 0 – Fader in Sound Menu  1 – No Fader in Sound Menu | N/A |
| DE00 | 1 | 2 | Station List | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 1 | 1 | TMC | 0 | 0 – Not Available (Disable TMC menu)  1 – Available (Enable TMC menu) | yes, if travel link is enabled |
| DE00 | 1 | 0 | DAB | 0 | 0 – Not Available  1 – Available (Always Enhanced DAB) | N/A |
| DE00 | 2 | 7 | HD Radio | 0 | 0 – Not Available  1 - Available | N/A |
| DE00 | 2 | 6 | Radio Tuner Market | 0 | 0 – Non RDS Market (NA)  1 – RDS Market (Europe, APA, SA) | N/A |
| DE00 | 2 | 5 | REFP (Rear EFP with Rotary Volume Knob) | 0 | 0 – Not Availble   1. Available | N/A |
| DE00 | 2 | 4 | Surround Sound Available in Occupancy Mode | 0 | 0 – Available  1 – Not Available  \*This only applies if DSP is configured for available | N/A |
| DE00 | 2 | 3 | Tone Touch HMI | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 2 | 2 | HD Radio Station Logos | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 2 | 1 | REVEL Sound System | 0 | 0 – Not Present  1 – Present | N/A |
| DE00 | 2 | 0 | Autostore (Mixed Mode Presets) | 0 | 0 – Enabled (Normal Presets)  1 – Disabled (Mixed Mode Presets) | N/A |
| DE00 | 3 | 7 | Brazil Frequency | 0 | 0 – Non-Brazil or Brazil Frequency is not Supported by Radio  1 – Brazil Frequency Supported by Radio | N/A |
| DE00 | 3 | 6 | Reserved | 0 | Reserved | N/A |
| DE00 | 3 | 5 | Reserved | 0 | –Reserved | N/A |
| DE00 | 3 | 4 | Reserved | 0 | Reserved | N/A |
| DE00 | 3 | 3 | X40 Radio Present | 0 | 0 – Non-X40 Radio  1 – X40 Radio | N/A |
| DE00 | 3 | 2 | Sound Immersion | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 3 | 1 | USB1 Self Test Detection | 0 | 0 – Enabled  1 – Disabled | N/A |
| DE00 | 3 | 0 | Soft Camera/Parking Key | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 4 | 7 | Extended Play | 0 | 0 – On  1 - Off | N/A |
| DE00 | 4 | 6-5 | Extended Play Time | 01 | 00 – 20 minutes  01 – 30 minutes (FNA)  10 – 40 minutes  11 – 60 minutes (FoE)  \* - Extended Play has to be selected to make this a valid option | N/A |
| DE00 | 4 | 4 | FM Tuner | 0 | 0 – Available  1 – Not Available |  |
| DE00 | 4 | 3 | AM Tuner | 0 | 0 – Available  1 – Not Available |  |
| DE00 | 4 | 2-1 | Number of Mixed Mode Presets Per Page | 00 | 00 – 6 Presets per Page  01 – 5 Presets per Page  10 – 10 Presets Per Page  11 – Reserved | Yes, when configured for 11. (Functionality will follow 00 – 6 Presets) |
| DE00 | 4 | 0 | VR for Radio Tuner | 0 | 0 – Disabled   1. Enabled | N/A |
| DE00 | 5 | 7 | Rear Camera | 0 | 0 – Rear aNot Present  1 – Rear Camera Present | N/A |
| DE00 | 5 | 6 | Front Camera (Off Road) | 0 | 0 – Not available  1 – Available | N/A |
| DE00 | 5 | 5 | RVC Split View (when paired with multicameras) | 0 | 0 – Not Available  1 – Available | N/A |
| DE00 | 5 | 4 | 360 Camera View | 0 | 0 – Not Available  1 – Available | N/A |
| DE00 | 5 | 3 | DAFVC Split View | 0 | 0 – Not Available  1 – Available | N/A |
| DE00 | 5 | 2 | Multi Camera Strategy | 0 | 0 – Hard Button Camera Toggle  1 – Soft Button Camera Toggle | N/A |
| DE00 | 5 | 1 | Trailer Reverse Guidance | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 5 | 0 | CHMSL Camera | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 6 | 7 | Aux Camera | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 6 | 6 | RVC Split View Camera (non-Multi camera) | 0 | 0 – Not Present  1 – Present | N/A |
| DE00 | 6 | 5 | 360 Offset Views (360 Camera Required) | 0 | 0 – Not Present  1 - Present | N/A |
| DE00 | 6 | 4 | Steering Angle | 0 | 0 – Pinion  1 - Wheel | N/A |
| DE00 | 6 | 3 | Driver Restriction Images | 0 | 0 – Allowed  1 - Restricted | N/A |
| DE00 | 6 | 2-1 | Park Hold | 0 | 00 – Disabled  01 – Enabled (Hitch Improvement Feature)  10 – Reserved  11 – Reserved | Yes, when equal to 10 or 11. Functionality should equal 00 (Disabled) |
| DE00 | 6 | 0 | Type of RVC Camera | 0 | 0 – Analog  1 – Digital | Yes, if hardware is setup for other than configured. |
| DE00 | 7 | 7-2 | Digital Camera Vehicle Setting | 0x00 | 0x00 = Vehicle 1  0x01 = Vehicle 2  0x02-3F – Vehicles 3-64 | N/A |
| DE00 | 7 | 1 | Front Rock Crawl (360 Camera Required) | 0 | 0 – Not Present  1 - Present | N/A |
| DE00 | 7 | 0 | Rear Rock Crawl (360 Camera Required) | 0 | 0 – Not Present  1 - Present | N/A |
| DE00 | 8 | 7 | CAN SWC | 0 | 0 – Not Available  1 – Available | N/A |
| DE00 | 8 | 6 | Ignition Type | 0 | 0 – Key Start  1 – Push Button Start | N/A |
| DE00 | 8 | 5 | WOW Seat | 0 | 0 – Not Present  1 - Present | N/A |
| DE00 | 8 | 4 | Start/Stop Vehicle | 0 | 0 – Non Start/Stop  1 – Start Stop | N/A |
| DE00 | 8 | 3 | Transmission Type | 0 | 0 – Automatic  1 - Manual | N/A |
| DE00 | 8 | 2 | Ambient Lighting | 0 | 0 – Not Available  1 – Available | N/A |
| DE00 | 8 | 1 | Door Keypad Code | 0 | 0 – Not Available (Door Keypad menu button shall not be displayed)  1 – Available (Door Keypad menu button shall be displayed) | N/A |
| DE00 | 8 | 0 | Legacy Multi-contoured Seats | 0 | 0 – Not Available  1 - Available | N/A |
| DE00 | 9 | 7-6 | HW SWC | 00 – Not available | 00 – Not Available  01 - SWAC with volume, PTT…. (Variant C)  10 - SWAC with Mode, Seek, etc… (Variant A)  11 – Reserved | Yes – when equal to 11 (set to not available for functionality) |
| DE00 | 9 | 5-4 | Number of Bladders (MCS or WOW Seat) | 00 | 00 – Other  01 – 3 Bladders  10 – 7 Bladders  11 - 11 Bladders | N/A |
| DE00 | 9 | 3 | Park Brake Type | 0 | 0 – Mechanical Park Brake (use signal PrkBrkActv\_B\_Actl)  1 – Electronic Park Brake (use signal PrkBrkStatus) | N/A |
| DE00 | 9 | 2 | Trailer Backup Assist | 0 | 0 – Not Available  1 – Available | N/A |
| DE00 | 9 | 1 | Enhanced Memory | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 9 | 0 | Cross-Traffic Alert | 0 | 0 – Disabled  1 - Enabled |  |
| DE00 | 10 | 7-6 | Number of Personalizations | 00 | 00 – Disabled  01 – 2  02 – 3  03 – 4 | Yes, if Enhanced Memory = 1 (Enabled) and DSM = 1 (Present) and Number of Personalizations – 00 (Disabled) |
| DE00 | 10 | 5 | WACM | 0 | 0 – Not Present  1 - Present |  |
| DE00 | 10 | 4 | Ambient Lighting Type | 0 | 0 – Pantone  1 – Single Color | N/A |
| DE00 | 10 | 3 | Reverse Gear | 0 | 0 – Legacy  1 – New (GearPos\_D\_Trg) | N/A |
| DE00 | 10 | 2 | Phone as a Key | 0 | 0 – Not Present  1 – Present | N/A |
| DE00 | 10 | 1-0 | Trailer Aid Signal Source | 00 | 00 – Not Available  01 – Available with PSCM  10 – Available with IPMB  11 – Reserved | Yes, when configured as 11. Should act as 00 – Not Available in this case. |
| DE00 | 11 | 7 | Boundary Alert | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 11 | 6 | Reverse Brake Assist | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 11 | 5 | Enhanced MCS | 0 | 0 – Disabled  1 – Enabled | Yes, if configured for Legacy MCS (enhanced has priority) or Power Lumbar (enhanced MCS has priority) |
| DE00 | 11 | 4 | Ambient Lighting System Strategy | 0 | 0 – Variant 1  1 – Variant 2 | N/A |
| DE00 | 11 | 3-2 | Power Lumbar | 00 | 00 – Disabled  01 – 2 Way Lumbar  10 – 4 Way Lumbar  11 – Reserved | Yes, if equal to 11, then assume disabled. Also, if MCS (legacy or enchanced is selected), the assume MCS functionality only. |
| DE00 | 11 | 1 | Parking Hot Key | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 11 | 0 | Camera Hot Key | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 12 | 7 | Driver Assist Hot Key | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 12 | 6 | Auto Hold | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 12 | 5 | Video On Demand | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 12 | 4 | Driver Only MCS (Only applicable with Multi Contoured Seats is Enabled) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 12 | 3 | 360 Lighting | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 12 | 2 | 360 Lighting: Number of Zones (360 Lighting Needs to be configured to Enabled) | 0 | 0 – 2 zones  1 – 4 zones | N/A |
| DE00 | 12 | 1-0 | Architecture Version | 01 | 00 – Reserved  01 – FNV2  10 – Reserved  11 – Reserved | Yes, if equal to 00, 10, or 11 – should assume 01 (FNV2) |
| DE00 | 13 | 7 | Backup Start Passcode (aka LBI) | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 13 | 6 | Redcap | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE00 | 13 | 5 | Trailer Backup Assist 2 Feature | 0 | 0 – Not Available  1 – Available | yes, if configured to be available and Trailer Settings Configuration (DE00 Byte 14 Bit7) is configured as disabled. Will function as TBA 2 is Not Available. |
| DE00 | 13 | 4-3 | Dark Car Mode | 00 | 00 – Disabled  01 – Enabled (Legacy)  10 – Enabled (Version 2.0)  11 – Reserved | Yes, when equal to 11 – should assume 00 (Disabled) |
| DE00 | 13 | 2-1 | Power to the Box | 00 | 00 – Disabled  01 – Enabled with 1 Dial  10 – Enabled with 2 Dials  11 – Reserved | Yes, when equal to 11 – should assume 00 (Disabled) |
| DE00 | 13 | 0 | Trailer Reverse Guidance 2 Feature | 0 | 0 – Not Available  1 – Available | yes, if configured to be available and Trailer Settings Configuration (DE00 Byte 14 Bit7) is configured as disabled. Will function as TRG 2 is Not Available. |
| DE00 | 14 | 7 | Trailer Settings Feature | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 14 | 6 | Trailer Setup Configuration | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 14 | 5 | Trailer Vehicle Style | 0 | 0 – SUV  1 – Truck | N/A |
| DE00 | 14 | 4 | Autohitch | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 14 | 3 | Autofeature Select | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 14 | 2 | Trailer Lighting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 14 | 1 | TBA Fifth Wheel Support | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 14 | 0 | Integrated Trailer Module | 0 | 0 – Not Present  1 - Present | N/A |
| DE00 | 15 | 7-6 | Trailer Measurement | 00 | 00 – No Measurements  01 – Measurements  10 – Sticker  11 – Reserved | Yes, when equal to 11 – should assume 00 (No Measurements) |
| DE00 | 15 | 5 | IOD - Pitch/Roll (Off Road) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 15 | 4 | IOD – Eco Behavior | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 15 | 3 | IOD – Trip ½ | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 15 | 2 | IOD – Fuel Economy | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 15 | 1 | IOD – Zone Lighting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 15 | 0 | IOD – Bed Camera | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 16 | 7-2 | 360 Lighting Vehicle HMI | 0x00 | 0x00 – Vehicle 1 (P702)  0x01 Vehicle 2 (U725)  0x02 Vehicle 3 (P703 N.A.)  0x03 Vehicle 4 (U704 ECE)  0x04 – Vehicle 5 (P702 BEV)  0x05 – Vehicle 6 (U553)  0x06 – Vehicle 7 (P708)  07 – Vehicle 8 (P703 ECE)  0x08-0x3F – Reserved | N/A |
| DE00 | 16 | 1 | IOD – Navigation | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 16 | 0 | IOD – On Board Generator | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 17 | 7 | IOD – Phone | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 17 | 6 | IOD – Audio | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 17 | 5 | IOD – TPMS | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 17 | 4 | Eco-Idle | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 17 | 3 | Advanced HUD | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 17 | 2 | 4 Pin/7 Pin Trailer Connector | 0 | 0 – No connector/4 Pin  1 – 7 Pin | N/A |
| DE00 | 17 | 1 | IPD – Off-Road #2 | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 17 | 0 | Seats Hot Key | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 18 | 7 | RCOD View | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 18 | 6 | Hitch View | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 18 | 5 | CHMSL View at Speed | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 18 | 4 | Aux View at Speed | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 18 | 3 | RCOD View at Speed | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 18 | 2 | Hitch View at Speed | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 18 | 1 | 1 Pedal Drive | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 18 | 0 | Off road Views at Speed | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 19 | 7 | Selectable Drive Modes | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 19 | 6 | Camera Soft Button | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 19 | 5 | DSM | 0 | 0 – Not Present  1 - Present | N/A |
| DE00 | 19 | 4 | Rocket Setup | 0 | 0 – Disabled  1 – Enabled | Yes, if Set to 1 (Enabled) and Enhanced Memory is set to 0 (Disabled). Function should be disabled in this case. |
| DE00 | 19 | 3-2 | Number of Bladders Continued | 00 | 00 – 21 Bladders  01 – 17 Bladders  10 – Reserved  11 – Reserved | N/A |
| DE00 | 19 | 1-0 | Portrait 360 Camera View Format | 00 | 00 – Horizontal  01 – Vertical (360 top)  10 – Reserved  11 – Reserved | Yes, if set to 10 or 11. Function will be the same as 00 - Horizontal |
| DE00 | 20 | 7 | Seats Hot Key – Number of Buttons | 0 | 0 – Single  1 – Double | N/A |
| DE00 | 20 | 6 | Trailer Light Check | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 20 | 5 | Weight Distribution Hitch | 0 | 0 – Disabled in Connection Checklist  1 – Enabled in Connection Checklist | N/A |
| DE00 | 20 | 4 | Onboard Scales | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 20 | 3 | Smart Hitch | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 20 | 2-0 | Reserved | 000 | Reserved | N/A |

### SWR-REQ-290457/P-DE01 Configuration (HMI/Climate/Electrification/Phone-BT)

| **Config Block** | **Byte** | **Bit(s)** | **Description** | **Default** | **Operation** | **Configuration DTC** |
| --- | --- | --- | --- | --- | --- | --- |
| DE01 | 1 | 7 | TRG Picture in Picture | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 1 | 6 | Vehicle Driver Location | 0 – Left Hand | 0 – Left Hand Drive (When user selects Driver HMI button, send driver occupancy mode CAN signal)  1 – Right Hand Drive (When user selects Driver HMI button, send passenger occupancy mode CAN signal) | N/A |
| DE01 | 1 | 5 | Brand | 0 | 0 – Ford  1 – Lincoln | N/A |
| DE01 | 1 | 4-  3 | List Browser | 00 | 00 – Navigation and Media  01 – Navigation Only  10 – None  11 – Reserved | Yes, when equal to 11 (Functionally will equal value 00 [Navigation and Media] |
| DE01 | 1 | 2 | Calm Screen | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 1 | 1 | 4.2” HMI Menu Controller | 0 | 1. Rotary Tune Knob with OK Button 2. 5-Way controller | N/A |
| DE01 | 1 | 0 | Gracenote | 0 | 0 – Enabled  1 – Disabled | N/A |
| DE01 | 2 | 7 | Alexa HMI | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 2 | 6-5 | OTA Automatic Updates (HMI) | 00 | 00 – HMI Enabled  01 – HMI Disabled  10 – Reserved  11 – Reserved | N/A |
| DE01 | 2 | 4 | Features Domain Button | 0 | 0 – Not Preset  1 – Preset | N/A |
| DE01 | 2 | 3-2 | Favorite Domain | 00 | 00 – No Favorite Domain  01 – 1 Favorite Domain Button  10 – 2 Favorite Domain Buttons  11 - Reserved | N/A |
| DE01 | 2 | 1 | Display Off | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE01 | 2 | 0 | Trail Turn Assist | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 3 | 7 | Climate Front Zones | 0 – Dual Zone | 0 – Dual Zone  1 – Single Zone | N/A |
| DE01 | 3 | 6 | Smart Auto (Climate) | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE01 | 3 | 5 | Rear Climate | 0 | 0 – Not Available  1 – Available | Yes - Quad Zone has priority. |
| DE01 | 3 | 4 | Heated Steering Wheel | 0 | 0 – Not Available (or Hard Button Control)  1 – Available | N/A |
| DE01 | 3 | 3-2 | Heated Seats HMI | 00 | 00 – None (Hard buttons or No Heated or Cooled Seats)  01 – Cooled Only  10 – Heated and Cooled  11 – Heated Only (3-LEVEL) | N/A |
| DE01 | 3 | 1 | Mode Man (Climate Overlay) | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE01 | 3 | 0 | Climate Control Type | 0 | 0 – Automatic (will also enable Climate VR)  1 – Manual (or if Climate is controlled via hard buttons) | N/A |
| DE01 | 4 | 7 | Recirc Icon (Climate) | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE01 | 4 | 6 | Heated Windshield HMI | 0 | 0 – Not present  1 - Present |  |
| DE01 | 4 | 5-4 | Rear Climate Type (Only applicable when Rear Climate Configured) | 00 | 00 – Rear Manual w/o Air Flow Mode  01 – Rear Manual w/ Air Flow Mode  10 – Automatic  11 – Fan Only |  |
| DE01 | 4 | 3 | Outside Air Temperature HMI | 0 | 0 – Off  1 – On | N/A |
| DE01 | 4 | 2 | Rear Defrost | 0 | 0 – On  1 – Off | N/A |
| DE01 | 4 | 1 | Climate Domain | 0 | 1 – OFF  0 - ON | N/A |
| DE01 | 4 | 0 | Fan Repeater | 0 | 1 – OFF  0 - ON | N/A |
| DE01 | 5 | 7 | Temperature Repeater | 0 | 1 – OFF  0 - ON | N/A |
| DE01 | 5 | 6 | Eheat | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 5 | 5 | Quad Zone | 0 | 0 – Disabled  1 – Enabled | Yes, Quad Zone has priority. |
| DE01 | 5 | 4 | Auto Air Refresh | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 5 | 3 | PM Sensor for Auto Air Refresh (only valid if Auto Air Refresh is configured to enabled) | 0 | 0 – 2.5  1 – 10 | N/A |
| DE01 | 5 | 2 | Power (Climate Overlay) | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE01 | 5 | 1 | Dual (Climate Overlay) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 5 | 0 | Max Defrost (Climate Overlay) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 6 | 7 | Max A/C (Climate Overlay) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 6 | 6 | Status Bar Temperature | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 6 | 5 | Driver Focused Climate | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 6 | 4 | Climate Auto Seats | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 6 | 3 | Reserved | 0 | Reserved | N/A |
| DE01 | 6 | 2 | Climate Auto Heated Steering Wheel | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 6 | 1 | Mirror Defrost | 0 | 0 – Off  1 – On | N/A |
|  |  | 0 | Reserved |  |  |  |
|  |  |  |  |  |  |  |
| DE01 | 7 | 7 | Hybrid (HEV) | 0 | 0 – Not a Hybrid (HEV) Vehicle  1 – Hybrid (HEV)Vehicle | N/A |
| DE01 | 7 | 6 | PHEV | 0 | 0 – Not available  1 – Available | N/A |
| DE01 | 7 | 5 | Charge Port Lock | 0 | 0 – Not Present  1 - Present | N/A |
| DE01 | 7 | 4 | Reserved | 0 | Reserved | N/A |
| DE01 | 7 | 3-2 | Powerflow Type | 00 | 00 – None  01 – MHT  10 – PS  11 – PS w/ ERAD 4WD | N/A |
| DE01 | 7 | 1-0 | Reserved | 00 |  |  |
| DE01 | 8 | 7-3 | Charge Port Type | 00000 | 0x00 - No Charge Port  0x01 - Type 1  0X02 - Type 1 Combo  0x03 Type 2  0x04 Type 2 Combo  0x05 China AC  0x06 China DC  0x7-0x20 Reserved | N/A |
| DE01 | 8 | 2-0 | Battery Pack Size | 000 | 00 – 3P  01 – 4P  02 – 3PDR  03-07 – Reserved | N/A |
| DE01 | 9 | 7 | TCU | 0 | 0 – Not Present  1 - Present | N/A |
| DE01 | 9 | 6 | Hotspot Capable Modem | 0 | 0 – Not Present  1 – Present | N/A |
| DE01 | 9 | 5 | HS4 Network | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 9 | 4 | Customer Connectivity Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 9 | 3 | TCU Reset | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 9 | 2 | GPS from TCU | 0 | 0 – Not Present  1 – Present | N/A |
| DE01 | 9 | 1-0 | Other Brand | 00 | 00 – Standard (Ford/Lincoln)  01 – Other Brand 1  10 – Other Brand 2  11 – Other Brand 3 | N/A |
| DE01 | 10 | 7 | Android Auto Projection | 0 | 0 – Enable  1 – Disable | N/A |
| DE01 | 10 | 6 | Emergency Assistance (911 Assist) | 0 | 0 – Enable  1 – Disable | N/A |
| DE01 | 10 | 5 | AA OE Channel Feature | 0 | 0 – Enabled  1 – Disabled | N/A |
| DE01 | 10 | 4 | Mobile Navigation | 0 | 0 – Enabled  1 - Disabled | N/A |
| DE01 | 10 | 3 | Number of Telephony Buttons | 0 | 0 – 1 Telephony Button  1 – 2 Button Setup (Answer and End Call) | N/A |
| DE01 | 10 | 2 | Manual Mode (Sync 4.x) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 10 | 1 | Number of PADIs (Sync 4.x) | 0 | 0 – 1 PADI  1 – 2 PADIs | N/A |
| DE01 | 10 | 1-0 | Reserved |  |  |  |
| DE01 | 11 | 7 | ICP(EFP) Type | 1 | 0 – EFP  1 – ICP | N/A |
| DE01 | 11 | 6 | ICP(EFP) Branding | 0 | 0 – Non-Branded  1 – Branded | N/A |
| DE01 | 11 | 5 | ICP(EFP) Network | 1 | 0 – CAN  1 - LIN |  |
| DE01 | 11 | 4 | ICP(EFP) Present | 0 | 0 - Present  1 - Not Present  (Touchscreen HMI On Button) | N/A |
| DE01 | 11 | 3 | Rear Seat Occupant | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE01 | 11 | 2-1 | ICP Subtype | 00 | 00 – Legacy ICP  01 – Mini ICP  10 – Reserved  11 – Reserved | Yes, if equal to 10 or 11. Should function as 00 – Legacy ICP |
| DE01 | 11 | 0 | Reserved | 0 | Reserved | N/A |
| DE01 | 12 | 7 | Display Mode | 0 | 0 – Night and Day  1 – Night Only | N/A |
| DE01 | 12 | 6 | Illumination Change Step/Gradual | 0 | 0 – Step Change  1 – Gradual Change | N/A |
| DE01 | 12 | 5 | Illumination | 0 | 0 – On  1 – Off | N/A |
| DE01 | 12 | 4-3 | Keypad (Length of Keycode) | 00 | 00 – 5 Numbers  01 – 7 Numbers  10 – Reserved  11 – Reserved | Yes, when configured to 10 or 11. Functionality will assume 5 Numbers |
| DE01 | 12 | 2-1 | Stop Mode | 00 | 00- Disabled  01 – Stop Mode follows Sync Strategy  10 – Stop Mode follows BCM Strategy  11 – Reserved | yes, if equal to 11. Should function as 00 - Disabled |
| DE01 | 12 | 0 | Reserved |  | Reserved |  |
| DE01 | 13 | 7-6 | Climate Temperature Ranges | 00 | 00 – Full (Heat and A/C)  01 – Heat Only  02 – A/C Only  03 – Reserved | Yes, if equal to 03, should function as 00 – Full. |
| DE01 | 13 | 5-0 | Reserved |  |  |  |
| DE01 | 14-15 | 7-0 | Reserved |  |  |  |

### SWR-REQ-290459/L-DE02 Configuration (Country Codes/State Encoded/LIN Schedule)

| **Config Block** | **Byte** | **Size** | **Description** | **State Value** | | **Default** | **Configuration DTC** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DE02 | 1 | 8 | First Letter of Country Code – ASCII | ASCII Code of the first letter of the Country Code | | 00 | Yes – set E10100 if Bytes 1 and 2 don’t equal a valid country code | |
| DE02 | 2 | 8 | Second Letter of Country Code – ASCII | ASCII Code of the first letter of the Country Code | | 00 | Yes – set E10100 if Bytes 1 and 2 don’t equal a valid country code | |
| DE02 | 3 | 8 | Splash Screen | Reserve up to 32 Splash Screens | | *00 – Default/not programmed 01 – Stock Ford/Lincoln Splash Screen, as determined by brand bit* 02 – F150  03 – Raptor 04 – Black Label 05 – Presidential 06 – Non-Shelby Mustang 07 – Shelby Mustang 08 – Mustang Shelby R1 09 – Mustang EVO 0A – Base Ford (Europe) 0B – ST 0C – RS 0D – Ford GT 0E – Continental 0F – Navigator 10 – Aviator 11 – Escape 12 – Explorer 13 – Expedition  14 – Bronco  15 – Maverick (CX430)  16 - Vignale 17 – Active  18 – ST Line  19 – CX727  1A-1F - Reserved  20 – Corsair (CX483)  21 – Nautilus (U540)  22 – CX727 GT  23-FF - Unused | No | |
| DE02 | 4 | 8 | Vehicle Style | 00 – Undefined | | 00 | Yes – Sedan Assumed | |
|  |  |  |  | 01 – Sedan – PDC\_Generic\_Car | |  |  | |
|  |  |  |  | 02 – Coupe/Convertible | |  |  | |
|  |  |  |  | 03 – Pickup Truck – PDC\_Truck | |  |  | |
|  |  |  |  | 04 – SUV/CUV | |  |  | |
|  |  |  |  | 05 – Large VAN – PDC\_Lg\_Comm\_Van | |  |  | |
|  |  |  |  | 06 – Hatchback | |  |  | |
|  |  |  |  | 07 – Wagon | |  |  | |
|  |  |  |  | 08 – Small Commuter Van – PDC\_Sm\_Comm\_Van | |  |  | |
|  |  |  |  | 09 – EcoSport – PDC\_EcoSport | |  |  | |
|  |  |  |  | 0A –Fiesta – PDC\_Fiesta | |  |  | |
|  |  |  |  | 0B – Focus – PDC\_Focus | |  |  | |
|  |  |  |  | 0C - Bronco | |  |  | |
|  |  |  |  | 0D – Muscle Car | |  |  | |
|  |  |  |  | 0E-FF – Reserved | |  | N/A | |
| DE02 | 5 | 8 | Visual Design Variants | Reserve up to 32 Visual Design Variants | | 00 – 8" Landscape  01 – 10" Portrait  02 – 10” Landscape  03 – 12" Landscape  04 – 12” Portrait (Dashcard)  05 – 13.2” Letterscape Lincoln (Dashcard)  06 – 13.2” Letterscape Ford (Dashcard)  07 – 15” Portrait (Dashcard)  08 – 10” Portrait Dashcard  09 – 13.2” Landscape (Qt based)  0A – 12” Landscape (Dashcard)  0B-FF – Reserved | N/A | |
| DE02 | 6 | 8 | Vehicle | 00 – Non Program | | 00 |  | |
|  |  |  |  | 01 – C344 | |  |  | |
|  |  |  |  | 02 – C346/C519 | |  |  | |
|  |  |  |  | 03 – CD391 | |  |  | |
|  |  |  |  | 04 – CD533 | |  |  | |
|  |  |  |  | 05 – U611 | |  |  | |
|  |  |  |  | 06 – U625 | |  |  | |
|  |  |  |  | 07 – CX482 | |  |  | |
|  |  |  |  | 08 – CX483 | |  |  | |
|  |  |  |  | 09 – CX727 | |  |  | |
|  |  |  |  | 0A – P758 | |  |  | |
|  |  |  |  | 0B – P702 | |  |  | |
|  |  |  |  | 0C – CD539 | |  |  | |
|  |  |  |  | 0D – U725 | |  |  | |
|  |  |  |  | 0E – U540 | |  |  | |
|  |  |  |  | 0F – CX482N | |  |  | |
|  |  |  |  | 10 – P558 | |  |  | |
|  |  |  |  | 11 – P702 ICA (Raptor) | |  |  | |
|  |  |  |  | 12 - U553 | |  |  | |
|  |  |  |  | 13 – U554 | |  |  | |
|  |  |  |  | 14 – CD542 | |  |  | |
|  |  |  |  | 15 – V363 | |  |  | |
|  |  |  |  | 16 – P702 BEV | |  |  | |
|  |  |  |  | 17 - U704 | |  |  | |
|  |  |  |  | 18 – P703 | |  |  | |
|  |  |  |  | 19 – V713 | |  |  | |
|  |  |  |  | 1A – CX727 GT | |  |  | |
|  |  |  |  | 1B-FF – Reserved | |  | No | |
| DE02 | 7-8 | 16 | Bluetooth Audio Profile Index | 00 00 – Profile 1 | | 00 | No | |
|  |  |  |  | 00 01 – U502 – Ford Explorer (Ext Amp) | |  |  | |
|  |  |  |  | –00 02 – MKZ (Ext Amp) | |  |  | |
|  |  |  |  | 00 03 - U387 - Edge | |  |  | |
|  |  |  |  | 00 04 - C344 - CMAX (Int Amp) | |  |  | |
|  |  |  |  | 00 05 - D258 - Taurus (Ext Amp) | |  |  | |
|  |  |  |  | 00 06 - C520 - Escape (Ext Amp) | |  |  | |
|  |  |  |  | 00 07 - B299 - Fiesta (Ext Amp) | |  |  | |
|  |  |  |  | 00 08 - U222 - Expedition (Ext Amp) | |  |  | |
|  |  |  |  | 00 09 - S550 - Mustang (Ext Amp) | |  |  | |
|  |  |  |  | 00 10 - U228 - Lincoln Navigator | |  |  | |
|  |  |  |  | 00 11 - D471 - Flex (Ext Amp) | |  |  | |
|  |  |  |  | 00 12 - D472 - MKT (Ext Amp) | |  |  | |
|  |  |  |  | 00 13 - C346N - Focus ST (Int Amp) | |  |  | |
|  |  |  |  | 00 14 - P552 - F-150 with Sony | |  |  | |
|  |  |  |  | 00 32 - P473 - Superduty | |  |  | |
|  |  |  |  | 00 0A - V363N - Transit (Int Amp) | |  |  | |
|  |  |  |  | 00 0B - C346N – Focus/Generic Compact | |  |  | |
|  |  |  |  | 00 0C - Generic Small Xover (Int Amp) | |  |  | |
|  |  |  |  | 00 0D - Generic Small Xover (Ext Amp) | |  |  | |
|  |  |  |  | 00 0E - Generic Large Sedan | |  |  | |
|  |  |  |  | 00 0F - Generic Large SUV | |  |  | |
|  |  |  |  | 00 16 -EU CMAX C344E | |  |  | |
|  |  |  |  | 00 17 - EU Edge CD539X | |  |  | |
|  |  |  |  | 00 18 – EU Explorer U502 | |  |  | |
|  |  |  |  | 00 19 –EU Fiesta B299 | |  |  | |
|  |  |  |  | 00 1A –EU Focus C346E | |  |  | |
|  |  |  |  | 00 1B –EU Galaxy CD390E Smax CD539E | |  |  | |
|  |  |  |  | 00 1C –EU Kuga C520E | |  |  | |
|  |  |  |  | 00 1D –EU Mondeo CD391E | |  |  | |
|  |  |  |  | 00 1E –EU Mustang S550 | |  |  | |
|  |  |  |  | 00 1F –EU Transit 363E | |  |  | |
|  |  |  |  | 00 20 –EU Transit Connect V408 | |  |  | |
|  |  |  |  | 00 21–MKX U540 | |  |  | |
|  |  |  |  | 00 22 – D568C | |  |  | |
|  |  |  |  | 00 23 – U375A LHD | |  |  | |
|  |  |  |  | 00 24 – U375A RHD | |  |  | |
|  |  |  |  | 00 25 – P375A LHD | |  |  | |
|  |  |  |  | 00 26 – P375A RHD | |  |  | |
|  |  |  |  | 00 29 – Ford GT | |  |  | |
|  |  |  |  | 00 2A – V362 OHC mic | |  |  | |
|  |  |  |  | 00 2B – V362 HL mic | |  |  | |
|  |  |  |  | 00 2C – B460 | |  |  | |
|  |  |  |  | 00 2D – B562 HL | |  |  | |
|  |  |  |  | 00 2E B562 OHC | |  |  | |
|  |  |  |  | 00 2F - P375\_Ranger-DoubleCab | |  |  | |
|  |  |  |  | 00 30 – U375 Everest MoonRoof | |  |  | |
|  |  |  |  | 00 31 – U375 Everest Standard Roof | |  |  | |
|  |  |  |  | 00 33 – P375 Ranger DBL (Branded) | |  |  | |
|  |  |  |  | 00 34 – P375 Ranger DBL (Unbranded) | |  |  | |
|  |  |  |  | 00 35 – MY19 D568 Branded (New Mic Location) | |  |  | |
|  |  |  |  | 00 36 – MY19 D568 Unbranded (New Mic Location) | |  |  | |
|  |  |  |  | 00 37 – V363N – Transit HL mic | |  |  | |
|  |  |  |  | 00 38 – CX727 | |  |  | |
|  |  |  |  | 00 39 – U725 | |  |  | |
|  |  |  |  | FF FF - Use Method 3 provisioned profile table | |  |  | |
| DE02 | 9 | 8 | BT Vehicle Nameplate ID | 00 – FF – See Table in H83 specification. | | 00 | N/A | |
| DE02 | 10 | 4 (Bits 7-4) | LIN11-X | 0000 | | X Number of Times for LIN Scheduler 11 | N/A | |
| DE02 | 10 | 4 (Bits 3-0) | LIN12-Y | 0001 | | Y Number of Times for LIN Scheduler 11 | N/A | |
| DE02 | 11 | 4 (Bits 7-4) | LIN13-Z | 0000 | | Z Number of Times for LIN Scheduler 11 | N/A | |
| DE02 | 11 | 4 (Bits 3-2) | SDM Max Response Timer | 00 – None  01 – 200 ms  02 – 500 ms  03 – Reserved | | 00 | Yes, when equal to 03. Assume 00 for functionality. | |
| DE02 | 11 | 4 (Bits 1-0) | SDM Max Feedback Errors | 00 – None  01 – 3  02 – Reserved  03 – Reserved | | 00 | Yes, when equal to 02 or 03. Assume 00 for functionality. | |
| DE02 | 12 | 2 (Bits 7-6) | SDM Program HMI | 00 – Ford HMI Names  01 – Lincoln HMI Names  02 – BEV HMI Names  03 – Program HMI Names | | 00 | N/A | |
| DE02 | 12 | 5-4 | Reserved |  | |  |  | |
| DE02 | 12 | 3-0 | LINBtnIndIllu-A | 0000 | | “A” Number of Times for LIN Scheduler 11 | N/A | |
| DE02 | 13 | 8 | Massage Pattern | | 0x00 – Pattern Set 1  0x01 – Pattern Set 2  0x02 – Pattern Set 3  0x03 – Pattern Set 4  0x04 – Pattern Set 5  0x05 – Pattern Set 6  0x06 – Pattern Set 7  0x07 – Pattern Set 8  0x08 – Pattern Set 9  0x09 – Pattern Set 10  0x0A – Pattern Set 11  0x0B – Pattern Set 12  0x0C – Pattern Set 13  0x0D – Pattern Set 14  0x0E – Pattern Set 15  0x0F-0xFF – Reserved | 00 | | N/A |
| DE02 | 14-15 |  | Reserved |  | |  |  | |

### SWR-REQ-290460/E-DE03 Configuration (Timers)

| **Config Block** | **Byte** | **Size** | **Description** | **Default** | **Default**  **(HEX)** | **Res** | **Offset** | **Min** | **Max** | **Units** | **Configuration DTC** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DE03 | 1 | 8 | BT Pairing Timeout | 5 | 0x05 | 1 | 0 | 0 | 255 | seconds | N/A |
| DE03 | 2 | 8 | CCPU Reboot Timer | 36 | 0x24 | 1 | 0 | 0 | 255 | hrs | N/A |
| DE03 | 3-4 | 16 | Stop Mode Timer | 120 | 0x78 | 1 | 0 | 0 | 65535 | Minutes | N/A |
| DE03 | 3-5 | 8 | Reserved |  |  |  |  |  |  |  | N/A |

### SWR-REQ-290461/E-DE04 Configuration (Navigation Features)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Config Block** | **Byte** | **Bit(s)** | **Description** | **Default** | **Operation** | **Configuration DTC** |
| DE04 | 1 | 7-6 | Reserved | 0 | Reserved | N/A |
| DE04 | 1 | 5 | Display Speed Limit in HMI (Traffic Sign Recognition Installed) | 0 | 0 – Speed Limit in HMI1 – Speed Limit not in HMI (Traffic Sign Recognition) | N/A |
| DE04 | 1 | 4 | Reserved | 0 | Reserved | N/A |
| DE04 | 1 | 3-2 | Fuel Type | 00 | 00 – Gasoline  01 – Diesel  10 – CNG  11 - BEV | N/A |
| DE04 | 1 | 1-0 | NAV Repeater Conformance | 00 | 00 – Off  01 – Current  10 – HUD Support  11 – Reserved | Yes – 11 (Assume Off) |
| DE04 | 2 | 7 | Electronic horizon | 0 | 0 - Electronic Horizon Off  1 - Electronic Horizon EH | N/A |
| DE04 | 2 | 6 | Electronic Horizon Type | 0 | 0 – MPP + Stubs  1 – MPP + First Level Sub Paths | N/A |
| DE04 | 2 | 5 | Reserved | 0 | Reserved | N/A |
| DE04 | 2 | 4 | Reserved | 0 | Reserved | N/A |
| DE04 | 2 | 3-2 | Online Traffic | 00 | 00 – Online Traffic (TPEG) Not Available  01 – Online Traffic Modem (TPEG) Available  10 - Online Traffic App (TPEG) Available  11 - Reserved | Yes, when equal to 11 (Use 00 as functionality) |
| DE04 | 2 | 1 | Internal Gyro | 0 | 0 – Not Present  1 – Present | N/A |
| DE04 | 2 | 0 | Gyro on Bus | 0 | 0 – Not Present  1 - Present | N/A |
| DE04 | 3 | 7-6 | Local Hazard Information | 00 | 00 – Off  01 – IPC Support Only  10 – IPC + HUD Support  11 - Reserved | yes, if equal to 11. Follow 00 (off) for functionality. |
| DE04 | 3 | 5 | Cloud Based Routing | 0 | 0 – Enabled  1 - Disabled | N/A |
| DE04 | 3 | 4 | Cloud based routing fuel | 0 | 0 – Enabled  1 - Disabled | N/A |
| DE04 | 3 | 3 | Cloud based routing weather | 0 | 0 – Enabled  1 - Disabled | N/A |
| DE04 | 3 | 2-0 | Reserved | 00 0000 | Reserved | Reserved |
| DE04 | 4-5 | 7-0 | Reserved |  |  |  |

### SWR-REQ-290462/E-DE04 Configuration (Navigation Parameters 1)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Block** | **Byte** | **Description** | **State Value** | **Default** | **Configuration DTC** |
| DE04 | Byte 6 Bits 7-4 | Wheel Tick Frequency | 0x00 – 20ms  0x01 – 30ms  0x02 – 40ms  0x03 – 50ms  0x04 – 60ms  0x05 – 70ms  0x06 – 80ms  0x07-0x0F - Reserved | 0x00 | No |
| DE04 | Byte 6 Bits 3-0 | GPS Mount Type | 0x00 - Roof Mount  0x01 - IP Mount (No Heated windshield)  0x02 - IP Mount (Heated windshield)  0x03 - Windshield (non Heated)  0x04 -Windshield (Heated)  0x05-0x0F - Reserved | 0x00 | No |
| DE04 | 7 | Drive Type | 00 – FWD | 00 |  |
|  |  |  | 01 – RWD |  |  |
|  |  |  | 02 – AWD |  |  |
|  |  |  | 03 – 4WD |  |  |
|  |  |  | 04 – Dually 2WD |  |  |
|  |  |  | 05 – Dually 4WD |  |  |
|  |  |  | 06-FF - Reserved | 00 | Yes |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Config Block** | **Byte** | **Size** | **Description** | **Default** | **Default**  **(HEX)** | **Res** | **Offset** | **Min** | **Max** | **Units** | **Configuration DTC** |
| DE04 | 8-10 | 24 | Vehicle Length | 0 | 0x00 | 0.01 | 0 | 0 | 1,677,720.15 | cm | N/A |
| DE04 | 11-12 | 16 | Vehicle Height | 0 | 0x00 | 0.01 | 0 | 0 | 655.35 | cm | N/A |
| DE04 | 13-15 | 24 | Reserved | 0 | 0x0000 |  |  |  |  |  |  |

### SWR-REQ-290463/A-DE05 Configuration (NAV Parameters - Track and Wheel Base)

| **Config Block** | **Byte** | **Size** | **Description** | **Default** | **Default**  **(HEX)** | **Res** | **Offset** | **Min** | **Max** | **Units** | **Configuration DTC** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DE05 | 1-2 | 16 | Front Track | 0 | 0x00 | 0.01 | 0 | 0 | 655.35 | In | N/A |
| DE05 | 3-4 | 16 | Rear Track | 0 | 0x00 | 0.01 | 0 | 0 | 655.35 | In | N/A |
| DE05 | 5-6 | 16 | Wheel Base | 0 | 0x00 | 0.01 | 0 | 0 | 655.35 | In | N/A |

### SWR-REQ-290464/B-DE06 Configuration (NAV Vehicle Parameters)

| **Config Block** | **Byte** | **Size (Bits)** | **Description** | **Default** | **Default**  **(HEX)** | **Res** | **Offset** | **Min** | **Max** | **Units** | **Configuration DTC** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DE06 | 1 | 8 | Vehicle Weight | 1000 | 0x0A | 100 | 0 | 0 | 25500 | kgs | N/A |
| DE06 | 2 | 8 | ECO Route Curve | 0 | 0x00 | 1 | 1 | 1 | 256 | unitless | N/A |
| DE06 | 3 | 8 | Powertrain Efficiency | 0 | 0x00 | 0.392156863 | 0 | 0 | 100.000000065 | % | N/A |
| DE06 | 4 | 8 | Regenerative Braking Efficiency Highway | 0 | 0x00 | 0.392156863 | 0 | 0 | 100.000000065 | % | N/A |
| DE06 | 5 | 8 | Regenerative Braking Efficiency City | 0 | 0x00 | 0.392156863 | 0 | 0 | 100.000000065 | % | N/A |
| DE06 | 6-7 | 16 | Install Angle of APIM for Accelerometer X | 0 | 0x0000 | 0.006 | 0 | 0 | 393.21 | degrees | Yes – anything above 360 should be flagged and assumed 0 degrees |
| DE06 | 8-9 | 16 | Install Angle of APIM for Accelerometer Y | 0 | 0x0000 | 0.006 | 0 | 0 | 393.21 | degrees | Yes – anything above 360 should be flagged and assumed 0 degrees |
| DE06 | 10-11 | 16 | Install Angle of APIM for Accelerometer Z | 0 | 0x0000 | 0.006.0. | 0 | 0 | 393.21 | degrees | Yes – anything above 360 should be flagged and assumed 0 degrees |
| DE06 | 12 | 8 | Wheel Ticks to Revolution Front | 40 | 0x00 | 1 | 40 | 40 | 295 | Unitless | N/A |
| DE06 | 13 | 8 | Wheel Ticks to Revolution Rear | 40 | 0x00 | 1 | 40 | 40 | 295 | Unitless | N/A |
| DE06 | 14 | 8 | Tire Circumference | 100 | 0x00 | 1 | 100 | 100 | 355 | cm | N/A |
| DE06 | 15-16 | 16 | Distance from IP to rear axle | 100 | 0x00 | 1 | 100 | 100 | 65635 | cm | N/A |

### SWR-REQ-290468/B-DE07 Configuration (Park Aids)

| **Config Block** | **Byte** | **Bit(s)** | **Description** | **Default** | **Operation** | **Configuration DTC** |
| --- | --- | --- | --- | --- | --- | --- |
| DE07 | 1 | 7 | PDC HMI | 0 | 0 – Off  1 – On | N/A |
| DE07 | 1 | 6 | Steering Wheel Angle Sensor | 0 | 0 – Relative  1 – Absolute | N/A |
| DE07 | 1 | 5 | Flank Guard HMI | 0 | 0 – Off  1 – On | N/A |
| DE07 | 1 | 4 | Front Park Aid Adjustable Chimes | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE07 | 1 | 3 | Rear Park Aid Adjustable Chimes | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE07 | 1 | 2-1 | APACSI Signal Strategy (Only applies when APACSI is configured On) | 00 | 00 – Disable (All APACSI Signals are Supported)  01 – Enable (  ApaTrgtDist\_D\_Stat signal is not supported use default value described in APACSI SPSS)  10 – Enable (ApaMsgTxt\_D\_Rq is not supported use default values described in APACSI SPSS)  11 – Enable (Both ApaMsgTxt\_D\_Rq and ApaTrgtDist\_D\_Stat signals are not supported use default values described in APACSI SPSS) | N/A |
| DE07 | 1 | 0 | Reserved |  |  |  |
| DE07 | 2-5 | 7-0 | Reserved |  |  |  |

| **Block** | **Byte** | **Description** | **State Value** | **Default** | **Configuration DTC** |
| --- | --- | --- | --- | --- | --- |
| DE07 | 4 | Parking Assistance | 00 - No PDC/PSM/SAPP (None or Configuration C5) | 00 |  |
|  |  |  | 01 - Rear PDC (Configuration C1 or C3) |  |  |
|  |  |  | 02 - Rear/Front PDC (Configuration C6 or C7) |  |  |
|  |  |  | 03 - Rear/Front PDC/SAPP (Configuration C2 or C4) (NA HMI) |  |  |
|  |  |  | 04 - Rear/SAPP (NA HMI) |  |  |
|  |  |  | 05 - Rear/Front PDC/SAPP (Configuration C2 or C4) (EU HMI) |  |  |
|  |  |  | 06 - Rear/SAPP (EU HMI) |  |  |
|  |  |  | 07 - Rear/Front PDC with APA |  |  |
|  |  |  | 08 – APA Lite |  |  |
|  |  |  | 09 – APA Lite Plus (SAPP/POA – 10 Channel) |  |  |
|  |  |  | 0A – APACSI |  |  |
|  |  |  | 0B – FAPA |  |  |
|  |  |  | 0C - SAPP with APA Deluxe |  |  |
|  |  |  | 0D -FAPA with APA Deluxe |  |  |
|  |  |  | 0E - FAPA and RePA with APA Deluxe |  |  |
|  |  |  | 0F-FF - Reserved |  | Yes |
| DE07 | 5-10 | Reserved | Reserved |  |  |

### SWR-REQ-290469/N-DE08 Configuration (Centerstack Settings)

| **Config Block** | **Byte** | **Bit(s)** | **Description** | **Default** | **Operation** | **Configuration DTC** |
| --- | --- | --- | --- | --- | --- | --- |
| DE08 | 1 | 7 | AEIS Without Override | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 1 | 6 | AEIS with Override | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 1 | 5 | ACC Menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 1 | 4 | Adaptive Head Lamps Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 1 | 3 | Adjustable Speed Limiter Device (ASLD) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 1 | 2 | AdvanceTrac Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 1 | 1 | Auto High Beam Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 1 | 0 | Autolamp Delay | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 2 | 7 | Autolock Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 2 | 6 | Adaptive Head Lamps Traffic | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 2 | 5 | Auto Relock | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 2 | 4 | Autounlock Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 2 | 3 | City Safety | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 2 | 2 | Approach Detection Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 2 | 1 | Courtesy Wipe After Wash | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 2 | 0 | Driver Alert System | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 3 | 7 | Easy Entry/Exit | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 3 | 6-5 | Forward Collision Warning | 00 | 00 – None  01 – FCW  10 – FCW + FDA  11 – Unused | Yes – when configured to 11. Will use 00 for functionality. |
| DE08 | 3 | 4 | Fuel Operated Heater (FOH) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 3 | 3 | Global Window Open | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 3 | 2 | Global Window Close | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 3 | 1 | Daytime Running Lamps Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 3 | 0 | Temporary Mobility Kit | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 4 | 7 | Mirrors Autofold | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 4 | 6 | Mirrors Reverse Tilt | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 4 | 5 | Do Not Disturb | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 4 | 4 | Fuel Operated Park Heater | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 4 | 3 | One/Two Stage Unlocking | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 4 | 2 | Perimeter Alarm w/ Reduced Guard Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 4 | 1 | Power Liftgate Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 4 | 0 | Rear Reverse Gear Wipe (RRGW) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 5 | 7 | Remote Start – Climate Settings | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 5 | 6 | Remote Start – Driver Seat | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 5 | 5 | Remote Start - Feature | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 5 | 4 | Remote Start – Passenger Seat | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 5 | 3 | Remote Start – Rear Defrost | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 5 | 2 | Remote Start – Steering Wheel | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 5 | 1 | Side Detect | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 5 | 0 | Intelligent Speed Assistance | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 6 | 7 | Trailer Sway | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 6 | 6 | Front Collision Warning – On Menu (FCW\_OnMenu) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 6 | 5 | Intelligent Access Menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 6 | 4 | Silent Mode Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 6 | 3-0 | Police Max Speed | 0x0 | 0 – Off  1 – Reserved  2 – Reserved  3– Reserved  4– Reserved  5- 90 mph  6- 95 mph  7- 100 mph  8- 105 mph  9- 110 mph  A – 115 mph  B – 120 mph  C – 125 mph  D – 130 mph  E – 135 mph  F – 140 mph | Yes – if configured with 1-4. Will function as Off. |
| DE08 | 7 | 7 | Police Enhanced Feature Speed | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 7 | 6 | Forward Collision Warning – Braking On/Off (FCW\_BrakingOn/Off) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 7 | 5 | Locking Feedback Audible | 0 | 0 – Disabled | N/A |
| DE08 | 7 | 4 | Locking Feedback Visual | 0 | 1 – Enabled | N/A |
| DE08 | 7 | 3 | Evasive Steering Assist | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 7 | 2 | Lane Assist Haptic Intensity | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 7 | 1 | Intelligent Adaptive Cruise Control | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 7 | 0 | Adaptive Headlamps Feature | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 8 | 7-6 | Lane Change Assist (Lane Assist) | 00 | 1. – Disabled 2. – Enabled 3. – Euro N Cap 4. – Reserved | Yes, if equal to 11. Should function as 00. |
| DE08 | 8 | 5 | Lane Keeping Sensitivity | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 8 | 4 | Advanced Trac Hard Button Control | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 8 | 3-2 | Traction Control/IVD/RSC (TC/IVD/RSC) | 00 | 00 – Disabled  01 – TC  10 – IVD  11 - RSC | N/A |
| DE08 | 8 | 1 | Adaptive Cruise | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 8 | 0 | TSR NCAP Adaptations | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 9 | 7 | TSR Overspeed Chime | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 9 | 6 | Tow Haul | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 9 | 5 | Trailer Blind Spot | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 9 | 4 | Wrong Way Alert | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 9 | 3 | Hill Descent Control (HDC Control Function) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 9 | 2 | Snow Plow | 0 | 0 – Not Present  1 - Present | N/A |
| DE08 | 9 | 1 | Select Mode | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE08 | 9 | 0 | Running Board Control Function | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 10 | 7-6 | Park Lock Control Allw | 00 | 0x0 Less\_Park\_Lock\_Control  0x1 ALLW\_SUST\_ENBL\_FOR\_PARKING  0x2 ALLW\_TEMP\_ENBL\_FOR\_TOWING 0x03 ALLW\_FOR\_EITHER\_PARKING\_OR\_TOWING) | N/A |
| DE08 | 10 | 5 | Auto Start-Stop | 0 | 0 – Disabled  1 – Enabled |  |
| DE08 | 10 | 4 | Perimeter Alarm Guard Reminder | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE08 | 10 | 3 | Traffic Sign Recognition | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE08 | 10 | 2 | TPMS By Location | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE08 | 10 | 1 | TPMS Placard Pressure Display | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE08 | 10 | 0 | Centerstack Settings | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE08 | 11 | 7 | Predictive Lights | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE08 | 11 | 6-5 | LaneAssist NCAP Aid | 00 | 00 – Disabled (Aid menu not displayed)  01 – Menu 1 (Reduced, Enhanced)  10 – Menu 2 (Off, Reduced, Enhanced)  11 – Menu 3 (Off, On) |  |
| DE08 | 11 | 4-3 | LaneAssist NCAP Alert | 00 | 00 – Disabled (Alert menu not displayed)  01 – Menu 1 (High, Normal, Low, Off)  10 – Menu 2 (On, Off)  11 – Menu 3 (High, Normal, Low) |  |
| DE08 | 11 | 2 | Key Free (Intelligent Access or Key Free Text) | 0 | 0 – Intelligent Access  1 – Key Free |  |
| DE08 | 11 | 1 | Grade Assist (Menu) | 0 | 0 – Disabled  1 – Enabled |  |
| DE08 | 11 | 0 | One/Two Stage Unlocking – Passenger/Commercial | 0 | 0 – Passenger (One/Two State HMI)  1 – Commercial (Global Unlock HMI) |  |
| DE08 | 12 | 7-6 | Auto High Beam Menu | 00 | 00 – Disabled  01 – Auto High Beams  10 – Glare free High Beams  11 – Adaptive Driving Beams |  |
| DE08 | 12 | 5 | Air Suspension SUMA Control Function | 0 | 0 – Disabled  1 – Enabled |  |
| DE08 | 12 | 4 | Air Suspension Auto Height SUMA | 0 | 0 – Disabled  1 – Enabled |  |
| DE08 | 12 | 3 | Blindspot Trailer Tow (BTT) Lite | 0 | 0 – Disabled  1 – Enabled |  |
| DE08 | 12 | 2 | Passenger Airbag Settings | 0 | 0 – Disabled  1 – Enabled |  |
| DE08 | 12 | 1 | mHEV Start Stop Threshold Control Function | 0 | 0 – Disabled  1 – Enabled |  |
| DE08 | 12 | 0 | Air Suspension Cargo Loading SUMA | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 13 | 7 | MyColor | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 13 | 6-5 | MyColor HMI Type | 00 | 00 – Disabled  01 – 12 Inch Cluster HMI  10 – 4 Inch Cluster HMI  11 - Reserved | Yes, if equal to 11 (functionality to be disabled) |
| DE08 | 13 | 4 | MyColor Green Type | 0 | 0 – Green  1 – Highland Green | N/A |
| DE08 | 13 | 3 | Power Liftgate Handsfree Menu | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE08 | 13 | 2 | Power Liftgate/Decklid HMI | 0 | 0 – Liftgate  1 – Decklid | N/A |
| DE08 | 13 | 1 | Auto Regen Control | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 13 | 0 | Adaptive Steering Manual Menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 14 | 7 | Adaptive Steering Menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 14 | 6 | Adaptive Steering System Menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 14 | 5 | Adaptive System Comfort Menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 14 | 4 | Adaptive Drive Menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 14 | 3 | Drive Control Menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 14 | 2 | Trailer Brake Controller | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 14 | 1 | Tunable Exhausts | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 14 | 0 | Engine Rev Match | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 15 | 7 | Lap Timer | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 15 | 6 | Brake Performance | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 15 | 5 | Acceleration Timer | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 15 | 4 | Driver Select Suspension | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 15 | 3 | Custom Mode | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 15 | 2 | Front Park Aid Long Term Disable | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 15 | 1 | Rear Park Aid Long Term Disable | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 15 | 0 | Park Aid Accessory Mode | 0 | 0 – Not Present  1 - Present | N/A |
| DE08 | 16 | 7 | Vehicle settings – B-car Only | 0 | 0 – Off  1 - On | N/A |
| DE08 | 16 | 6 | Hill Start Assist | 0 | 0 – Off  1 – On | N/A |
| DE08 | 16 | 5 | ESP setting – B-car Only | 0 | 0 – Off  1 – On | N/A |
| DE08 | 16 | 4 | ESP hard button timer – B-car Only | 0 | 0 – FoE  1 – FNA | N/A |
| DE08 | 16 | 3 | Message Center HMI – B-car Only | 0 | 0 – Off  1 – On | N/A |
| DE08 | 16 | 2 | Electronic Stability Control (ST Vehicles) | 0 | 0 – Not Available  1 – Available | N/A |
| DE08 | 16 | 1 | Rain Sensor  Wipers | 0 | 0 – Not Available  1 – Available | N/A |
| DE08 | 16 | 0 | MyKey Settings – B-car Only | 0 | 0 – Not Available  1 – Available | N/A |
| DE08 | 17 | 7 | Powerfold mirrors | 0 | 0 – Off  1 – On | N/A |
| DE08 | 17 | 6 | Lane Change Indicator | 0 | 0 – Off  1 – On | N/A |
| DE08 | 17 | 5 | Deflation Detection System | 0 | 0 – Off  1 – On | N/A |
| DE08 | 17 | 4 | Park Lock Control | 0 | 0 – Off  1 – On | N/A |
| DE08 | 17 | 3 | Information Chimes (Chime Menu) | 0 | 0 – Off  1 – On | N/A |
| DE08 | 17 | 2 | Warning Chimes (Chime Menu) | 0 | 0 – Off  1 – On | N/A |
| DE08 | 17 | 1 | Active City Stop | 0 | 0 – Off  1 – On | N/A |
| DE08 | 17 | 0 | Alarm on Exit | 0 | 0 – Off  1 – On | N/A |
| DE08 | 18 | 7 | Moodlight Mode | 0 | 0 – Off  1 – On | N/A |
| DE08 | 18 | 6 | TPMS | 0 | 0 – Off  1 – On | N/A |
| DE08 | 18 | 5 | ECO Mode | 0 | 0 – Not Present  1 – Present | N/A |
| DE08 | 18 | 4 | PRB Kickswitch | 0 | 0 – Not Present  1 – Present | N/A |
| DE08 | 18 | 3 | Power Tailgate | 0 | 0 – Not Present  1 – Present | N/A |
| DE08 | 18 | 2 | SLIF | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 18 | 1 | Blindspot Trailer Tow (BTT) Full | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 18 | 0 | PRB Auto Timer | 0 | 0 – Off  1 – On (only valid if Running Board Control Function is Enabled) | N/A |
| DE08 | 19 | 7-4 | PRB Max Permissible Speed | 0x05 | 0x0 – 0 KPH  0x1 – 1 KPH  0x2 – 2 KPH  …  0xF – 15 KPH | N/A |
| DE08 | 19 | 3 | Park Aid Control Rear | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 19 | 2-1 | Liftgate Softswitch | 00 | 00 – Off  01 – Power Liftgate  10 – Manual Liftgate/Decklid  11 – Reserved | Yes, if equal to 11. Follow 00 (Off in this case) |
| DE08 | 19 | 0 | Frunk Softswitch | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 20 | 7 | Speed Limit Menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 20 | 6 | Cruise Control Variant 2 | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 20 | 5 | Lane Centering | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 20 | 4 | Smart Offering | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 20 | 3 | Tire Monitor/Pressure Reset Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 20 | 2 | Considerate Prompts Border Crossing Reminder Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 20 | 1 | Eco Coach – Show In Go Mode Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 20 | 0 | Eco Coach – Eco Advices Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 21 | 7 | Eco Coach – Coasting Support Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 21 | 6 | Ambient Light Auto/Manual Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 21 | 5 | Drive Control Version (Only used if Drive Control Menu is enabled) | 0 | 0 – Version 1 (Cluster Middle Man)  1 – Version 2 (SDM) | N/A |
| DE08 | 21 | 4 | Brake Coach Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 21 | 3 | Neutral Tow Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 21 | 2 | Nav Repeater in Cluster Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 21 | 1 | Maps in Cluster Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 21 | 0 | Drive History Reset Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 22 | 7 | Low Battery Alert Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 22 | 6 | Propulsion Sound Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 22 | 5 | Speedometer Unit Setting (Units are based on Country Code) | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 22 | 4 | LCWA | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 22 | 3-0 | Liftgate Max Permissible Speed | 0x05 | 0x0 – 0 KPH  0x1 – 1 KPH  0x2 – 2 KPH  …  0xF – 15 KPH | N/A |
| DE08 | 23 | 7 | Walk Away Lock | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 23 | 6 | Walk Away Lock Feedback | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 23 | 5 | Double Lock Reminder | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 23 | 4 | Steering Gear Ratio | 0 | 0 = 17:1 1 = 20:1 | N/A |
| DE08 | 23 | 3 | FoE Seatbelt Warning Strategy | 0 | 0 – Disabled  1 - Enabled | N/A |
| DE08 | 23 | 2 | Quiet Time Exhaust Mode | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 23 | 1-0 | Clear Exit Assist | 00 | 00 – Disabled  01 – Enabled – Egress Warning  10 – Enabled – Egress Prevention  11 – Enabled – Menu Setting Disabled | N/A |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| DE08 | 24-25 | 7-0 | Reserved |  |  |  |

### SWR-REQ-367445/B-DE09 - Centerstack Settings and Climate (Continued)

| **Config Block** | **Byte** | **Bit(s)** | **Description** | **Default** | **Operation** | **Configuration DTC** |
| --- | --- | --- | --- | --- | --- | --- |
| DE09 | 1 | 7 | EcoCoach in Eco Mode | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 1 | 6 | Engine Oil Temp Gauge – Cluster menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 1 | 5 | Power Gauge – Cluster menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 1 | 4 | Tachometer Gauge – Cluster menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 1 | 3 | Oil Life | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 1 | 2 | Calm Screen – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 1 | 1 | Trip 1 – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 1 | 0 | Trip 2 – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 2 | 7 | This Trip – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 2 | 6 | Fuel Economy – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 2 | 5 | Electric Efficiency – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 2 | 4 | Eco Behaviors – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 2 | 3 | EV Coach – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 2 | 2 | Auto Start Stop – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 2 | 1 | Seatbelt Status – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 2 | 0 | TPMS – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 3 | 7 | Eco Coach – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 3 | 6 | Now Playing (Audio / Phone) – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 3 | 5 | Nav / Compass – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 3 | 4 | Average Speed – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 3 | 3 | Battery Charge – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 3 | 2 | Maps / Augmented Reality – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 3 | 1 | Classic View – Cluster IoD config | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 3 | 0 | Reset All values for Trip 1 | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 4 | 7 | Reset Trip 1 Odometer | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 4 | 6 | Reset Trip 1 Average Speed | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 4 | 5 | Reset Trip 1 Average Fuel | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 4 | 4 | Set to Default – configure Cluster Trip 1 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 4 | 3 | Trip 1 Odometer – configure Cluster Trip 1 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 4 | 2 | Trip 1 Timer – configure Cluster Trip 1 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 4 | 1 | Average Speed – configure Cluster Trip 1 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 4 | 0 | Average Fuel – configure Cluster Trip 1 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 5 | 7 | Instantaneous Fuel – configure Cluster Trip 1 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 5 | 6 | Reset All values for Trip 2 | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 5 | 5 | Reset Trip 2 Odometer | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 5 | 4 | Reset Trip 2 Average Speed | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 5 | 3 | Reset Trip 2 Average Fuel | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 5 | 2 | Set to Default – configure Cluster Trip 2 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 5 | 1 | Trip 2 Odometer – configure Cluster Trip 2 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 5 | 0 | Trip 2 Timer – configure Cluster Trip 2 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 6 | 7 | Average Speed – configure Cluster Trip 2 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 6 | 6 | Average Fuel – configure Cluster Trip 2 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 6 | 5 | Instantaneous Fuel – configure Cluster Trip 2 view | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE09 | 6 | 4 | Classic View – Cluster Speedo view – Cluster Menu | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE00 | 6 | 3-0 | Reserved | 0000 | Reserved | N/A |
| DE00 | 7-25 | 7-0 | Reserved | 0000 0000 | Reserved | N/A |

## SWR-REQ-290470/A-Software Part Numbers

The software part numbers must follow the Software Part Number Scheme as defined by the Software Group.

## SWR-REQ-290471/A-Method 3 Flash

The APIM shall meet all Netcom Requirements for Flashing Modules.

### SWR-REQ-290472/A-Audio Profile Calibration File Data Structure

The Audio Profile calibration consists of 10 188-byte records. Records that are unused should be filled with the value 0xFF.

The calibration data is embedded in a structure that makes up the calibration-file payload. The payload structure contains the following fields:

|  |  |  |
| --- | --- | --- |
| **Offset** | **Length** | **Description** |
| 0x0000 | 4 | Data-File Signature  The field used by the Flash Bootloader to verify if the calibration is present in the microcontroller’s flash memory.  This field must contain the fixed hex array 0xAA, 0x55, 0xAA, 0x55. |
| 0x0004 | 4 | Data-File CRC  The field is used by the VMCU application to verify the integrity of all fields that follow the CRC. If incorrect, the VMCU will set DTC F00041. The CRC is a 32-bit value stored in big-endian order. The polynomial used to calculate the CRC does not follow the CCITT standard; it must use the polynomial required by the Green Hills Power-PC compiler. Details of the algorithm are provided below. |
| 0x0008 | 24 | Calibration Part-Number  The field contains the 24-byte ASCII part-number returned in DID F10A. |
| 0x0020 | 1880 | Audio Profile Data  Each Audio Profile contains 188 bytes. Space is provided for 10 profiles. The profiles are stored back-to-back in memory. Unused profiles should be filled with ‘FFs. |
| 0x0778 | 4 | Audio Profile CRC  The field provides the data CRC to the CCPU via OID 030:004. The CRC is a 32-bit value stored in big-endian order. The CRC is calculated from the 1880-byte Audio Profile Data field using the standard 32-bit CCITT standard. |
| 0x077C | 4 | Data-File Presence-Pattern  The field used by the Flash Bootloader (in conjunction with the Data-File Signature) to verify if the calibration is present in the microcontroller’s flash memory.  The field must contain the fixed hex array 0x55, 0xAA, 0x55, 0xAA. |

#### SWR-REQ-290473/A-Audio Mode

SYNC supports different Audio Modes that can change dynamically during operation.

A maximum of 10 Audio Modes is supported in SYNC.

Each Audio Mode matches a unique index:

|  |  |
| --- | --- |
| **Parameter** | **Index** |
| HFP NB | 0 |
| HFP WB | 1 |
| Siri | 2 |
| CarPlay | 3 |
| Android Auto | 4 |
| FaceTime | 5 |
| Skype | 6 |
| Extra 1 | 7 |
| Extra 2 | 8 |
| Extra 3 | 9 |

### SWR-REQ-290474/D-Illumination Calibration File

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  | **Payload** |  |
|  |  |  | **DID Name** | **DID Id** |
| 0020\* |  | 1 | DID\_VMCU\_Low\_PWM\_RotoryBL | FDB0 |
| 0021\* |  | 1 | DID\_VMCU\_High\_PWM\_RotoryBL | FDB1 |
| 0022\* |  | 1 | DID\_VMCU\_Low\_PWM\_ButtonB | FDB2 |
| 0023\* |  | 1 | DID\_VMCU\_High\_PWM\_ButtonB | FDB3 |
| 0024\* |  | 108\*2 | DID\_VMCU\_WeightFactorBL | FDB5 |
| 00FC |  | 2 | DID\_CCP\_Low\_PWM\_DisplayBL | FDB8 |
| 00FE |  | 2 | DID\_CCP\_High\_PWM\_DisplayBL | FDB9 |
| 00FF |  | 1 | DID\_CCP\_Low\_PWM\_DisplayButtonBL | FDBA |
| 0100 |  | 1 | DID\_CCP\_High\_PWM\_DisplayButtonBL | FDBB |
| 0101 |  | 108\*2 | DID\_CCP\_WeightFactorBL | FDBE |
| 01D9 |  | 1 | DID\_VMCU\_TransTime\_Usr | FDC1 |
| 01DA |  | 1 | DID\_VMCU\_TransTime\_Amb\_Up | FDC2 |
| 01DB |  | 1 | DID\_VMCU\_TransTime\_Amb\_Down | FDC3 |
| 01DC |  | 1 | DID\_VMCU\_TransTime\_OnOff | FDC4 |
| 01DD |  | 108\*2 | DID\_CCP\_WeightFactorDP\_SDM4 | FDC5 |
| 02B5 |  | 2 | DID\_CCP\_Low\_PWM\_SDM4 | FDC6 |
| 02B7 |  | 2 | DID\_CCP\_High\_PWM\_SDM4 | FDC7 |
| 02B9 |  | 108\*2 | DID\_CCP\_WeightFactorDP\_SDM6 | FDC8 |
| 0391 |  | 2 | DID\_CCP\_Low\_PWM\_SDM6 | FDC9 |
| 0393 |  | 2 | DID\_CCP\_High\_PWM\_SDM6 | FDCA |
| 0395 |  | 108\*2 | DID\_CCP\_WeightFactorDP\_SDM8 | FDCB |
| 046D |  | 2 | DID\_CCP\_Low\_PWM\_SDM8 | FDCC |
| 046F |  | 2 | DID\_CCP\_High\_PWM\_SDM8 | FDCD |
| 0471 |  | 1 | DID\_CCP\_TransTime\_Usr | FDCE |
| 0472 |  | 1 | DID\_CCP\_TransTime\_Amb\_Up | FDCF |
| 0473 |  | 1 | DID\_CCP\_TransTime\_Amb\_Down | FDD0 |
| 0474 |  | 1 | DID\_CCP\_TransTime\_OnOff | FDD1 |
| 0475 |  | 1 | DID\_CCP\_Threshold\_to\_Night | FDD2 |
| 0476 |  | 1 | DID\_CCP\_DayToNightTime | FDD3 |
| 0477 |  | 1 | DID\_CCP\_NightToDayTime | FDD4 |
| 0478 |  | 1 | DID\_VMCU\_Dimming\_Lvl\_Timer | FDD5 |
| 0479 |  | 1 | DID\_VMCU\_BatterySave\_Timer | FDD6 |
| 047A |  | 1 | DID\_CCP\_Dimming\_Lvl\_Timer | FDD7 |
| 047B |  | 1 | DID\_CCP\_BatterySave\_Timer | FDD8 |
| 047C |  | 1 | Padding |  |
| 047D |  | 108\*2 | DID\_CCP\_WeightFactorDP\_SDM10L (landscape) | FDD9 |
| 0555 |  | 2 | DID\_CCP\_Low\_PWM\_SDM10L | FDDA |
| 0557 |  | 2 | DID\_CCP\_High\_PWM\_SDM10L | FDDB |
| 559 |  | 108\*2 | DID\_CCP\_WeightFactorDP\_SDM10P (portrait) | FDDC |
| 0631 |  | 2 | DID\_CCP\_Low\_PWM\_SDM10P | FDDD |
| 0633 |  | 2 | DID\_CCP\_High\_PWM\_SDM10P | FDDE |
| 0635 |  | 108\*2 | DID\_CCP\_WeightFactorDP\_SDM12L (landscape) | FDDF |
| 070D |  | 2 | DID\_CCP\_Low\_PWM\_SDM12L | FDE0 |
| 070F |  | 2 | DID\_CCP\_High\_PWM\_SDM12L | FDE1 |
| 0711 |  | 108\*2 | DID\_CCP\_WeightFactorDP\_SDM12P (portrait) | FDE7 |
| 07E9 |  | 2 | DID\_CCP\_Low\_PWM\_SDM12P | FDE8 |
| 07EB |  | 2 | DID\_CCP\_High\_PWM\_SDM12P | FDE9 |
| 07ED |  | 108\*2 | DID\_CCP\_WeightFactorDP\_SDM15\_5 | FDEA |
| 08C5 |  | 2 | DID\_CCP\_Low\_PWM\_SDM15\_5 | FDEN |
| 08C7 |  | 2 | DID\_CCP\_High\_PWM\_SDM15\_5 | FDEC |
| 08C9 | 1 | | DID\_RVC\_MinThreshold\_Night | FDED |
| 08CA | 1 | | DID\_RVC\_MinThreshold\_Day | FDEE |
|  |  | **2218** | **Payload Size** |  |
| 08CBA |  | 4 | Illumination Profile CRC The field provides the data CRC to the CCPU via OID 060:021. The CRC is a 32-bit value stored in big-endian order. The CRC is calculated from the 918-byte Illumination Profile Data field using the standard 32-bit CCITT polynomial. |  |
| 08CF |  | 4 | Data File Presence Pattern The field used by the Flash Bootloader (in conjunction with the Data-File Signature) to verify if the calibration is present in the microcontroller’s flash memory. The field must contain the fixed hex array 0x55, 0xAA, 0x55, 0xAA. |  |
|  |  | 2226 | **File Size** |  |

Note: \* VMCU Illumination only applies to LIN Hardware.

## SWR-REQ-290475/A-SDARS (X40) Special Procedure for EOL

Sirius requires VIN, ESN, and Pellet number from Ford Assembly End of Line.

* Record in eCATS EOL file the VIN, ESN number (read from DID) and Pellet Data (read from DID) - which is to be transferred to TRACE database and/or GIVIS.

### SWR-REQ-290476/A-SXM Country Availability at Ford Assembly End of Line

* SDARS is configured to available when SDARS chipset is present and when destined for the US, Canada, GSA and Military Sales.
* SDARS Audio is configured to US for vehicles destined for the US, GSA, and Military Sales.
* SDARS Audio is configured to Canada for vehicles destined for Canada.
* SDARS Audio is configured to Not Used for all other destinations not listed above bullet above
* SDARS Data Services is configured to Available for vehicles destined for the US, Canada, GSA and Military Sales when Navigation is an installed option.
* SDARS Data Services is configured to Not Available for vehicles all other destinations not listed bullet above or when Navigation is not an installed option.

### SWR-REQ-290477/A-SDARS (X40) Audio and Data Subscription

Once country code has been configured, the APIM will try to program the SDARS subscription (if X40 SDARS is present) within a Hard reset or Session 03 to Session 01 transition.

After audio subscription has been performed, and then the subscription for data can proceed based on Travel Link Configuration.

ESN should always report valid ESN when SRM hardware is present (when SDARS = X40 – CCPU shall populate these items if SDARS is configured for X40 regardless of SDARS is configured to Present or Not Present).

Pellet Data should be read directly from the SRM on ignition or ECU reset.

## SWR-REQ-305883/B-Special Procedure for DIDs that go to TRACE (Non SDARS)

Record in eCATS EOL file to send to the TRACE Database the following DIDs:

* MCC (DID D705)
* MVC (DID D704)
* MCP ( DID 8033)
* MSN (DID F17F)

## SWR-REQ-290478/A-IVS

The supplier shall meet the latest IVS requirements at time of sourcing.

# FRD-REQ-290543/B-References

## SWR-REQ-290545/A-References

The following Netcom Specifications that are mentioned throughout this specification are referenced below.

* Generic Global Diagnostic Specification (004)
* ECU Configuration Specification (002)
* Software Download Specification (006)
* Climate Control System HMI Requirements (Latest Version)
* On-Board Tester Coordination Specification (Latest Version)

# FRD-REQ-290544/C-Change Log

## SWR-REQ-290546/O-Change Log

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date of Change** | **Sections Changed** | **Details** |
| 7.1.0 | 4/12/2018 | 3.10 | Added DID D03D for Software ID Number. |
| 7.1.0 | 4/12/2018 | 3.10.3 | Changed DID number 805F to 8066. |
| 7.1.0 | 4/12/2018 | 3.10.3 | Changed DID number FE35 to FD64. |
| 7.1.0 | 4/12/2018 | 3.10.3 | Changed DID number FE36 to FD65. |
| 7.1.0 | 4/12/2018 | 3.10.3 | Changed DID number FE37 to FD66. |
| 7.1.0 | 4/12/2018 | 3.11 | Change DTC setting for DTC C15100 to set from (0x91 or 0x27A) to (0x91 and 0x27A) |
| 7.1.0 | 4/12/2018 | 3.12.1 | Removed DE00 byte 1 Bit 4 Dark Car Mode. |
| 7.1.0 | 4/12/2018 | 3.12.1 | Added configuration to DE00 Byte 13 Bit 6 Ford FOB Free Entry and Ignition - Fleet. |
| 7.1.0 | 4/12/2018 | 3.12.1 | Added configuration to DE00 Byte 13 Bit 5 Ford FOB Free Entry and Ignition - Retail. |
| 7.1.0 | 4/12/2018 | 3.12.1 | Added configuration Dark Car Mode to DE00 Byte 13 Bits 4 and 3. |
| 7.1.0 | 4/12/2018 | 3.12.2 | Added Configuration to DE01 Byte 6 Bit 4 - Climate Auto Heated Seats. |
| 7.1.0 | 4/12/2018 | 3.12.2 | Added Configuration to DE01 Byte 6 Bit 3 - Climate Auto Vented Seats. |
| 7.1.0 | 4/12/2018 | 3.12.2 | Added Configuration to DE01 Byte 6 Bit 2 - Climate Auto Heated Steering Wheel. |
| 7.1.0 | 4/12/2018 | 3.12.2 | Added configuration to DE01 Byte 12 Bit 5 - Illumination. |
| 7.1.0 | 4/12/2018 | 3.12.3 | Added new parameters to DE02 Bytes 7-8. (00 33 - P375 Ranger DBL (Branded), 00 34 - P375 Rangle DBL (Unbranded)) |
| 7.1.0 | 4/12/2018 | 3.12.5 | Added new configuration to DE04 Byte 3 Bit 5 - Cloud Based Routing. |
| 7.1.0 | 4/12/2018 | 3.12.5 | Added new configuration to DE04 Byte 3 Bit 4 - Cloud Based Routing Fuel. |
| 7.1.0 | 4/12/2018 | 3.12.5 | Added new configuration to DE04 Byte 3 Bit 3 - Cloud Based Routing Weather. |
| 7.1.0 | 4/12/2018 | 3.12.10 | Removed duplicate configuration for Power Liftgate Control Function in DE08 Byte 13 Bit 3. |
| 7.1.0 | 4/12/2018 | 3.12.10 | Reversed bit operation for DE08 Byte 16 Bit 7 from 0 - On/1-Off to 0-Off/1-On. |
| 7.1.0 | 4/12/2018 | 3.16 | Added new requirement SWR-REQ-305883. |
| 7.1.0 | 5/10/2018 | 3.10 | Added DIDs D040 and DID F17F. |
| 7.1.0 | 5/10/2018 | 3.10.1 | Added DIDs EEFA and EEFB. |
| 7.1.0 | 5/10/2018 | 3.11 | Added DTCs F00043 and F00057. |
| 7.1.0 | 5/10/2018 | 3.11 | Added DTCs C14000, C42200 for 360 Lighting for message 0x31A (2 and 4 zones). |
| 7.1.0 | 5/10/2018 | 3.11 | Added DTCs C09D95 and C09D81 for Ethernet DTCs. |
| 7.1.0 | 5/10/2018 | 3.12.1 | Added configuration FM Tuner to DE00 Byte 4 Bit 4 and configuration AM Tuner to DE00 Byte 4 Bit 3. |
| 7.1.0 | 5/10/2018 | 3.12.1 | Added configuration Power to the Box to DE00 Byte 13 Bits 2-1. |
| 7.1.0 | 5/10/2018 | 3.12.3 | Added Values 00 33 (P375 Ranger DBL (Branded)) and 00 34 (P375 Ranger DBL (Unbranded)) to DE02 Bytes 7-8 (Bluetooth Audio Profile Index). |
| 7.1.0 | 5/10/2018 | 3.12.5 | Removed configuration Navigation Application (DE04 Byte 1 Bits 7-6). |
| 7.1.0 | 5/10/2018 | 3.12.5 | Removed configuration Non Metric Units for NAV (DE04 Byte 1 Bit 4) |
| 7.1.0 | 5/10/2018 | 3.12.5 | Removed configuration Online Traffic for SA and China (DE04 Byte 2 Bit5) |
| 7.1.0 | 5/10/2018 | 3.12.5 | Removed configuration Hazard Spot Warning (DE04 Byte 2 Bit 4) |
| 7.1.0 | 5/10/2018 | 3.12.10 | Added new configuration Snow Plow to DE08 Byte 9 Bit 2. |
| 7.1.0 | 5/10/2018 | 3.12.10 | Added new configuration Select Mode to DE08 Byte 9 Bit 1. |
| 7.1.0 | 5/10/2018 | 3.12.10 | Added new configuration Custom Mode to DE08 Byte 15 Bit 3. |
| 7.2.0 | 6/21/2018 | 2.3.1 | Made corrections to remove reference to stable bit and to change IPC to BCM. |
| 7.2.0 | 6/21/2018 | 3.10 | Added DID D021 - Authorization State |
| 7.2.0 | 6/21/2018 | 3.10 | Added DID F1E1- Ethernet MAC Address |
| 7.2.0 | 6/21/2018 | 3.11 | Removed reverse gear notes. |
| 7.2.0 | 6/21/2018 | 3.11 | Corrected incorrect message 0x81 to 0x2A1 in DTC C21200. |
| 7.2.0 | 6/21/2018 | 3.12.1 | Added new configuration "Number of Mixed Mode Presets Per Page" to DE00 Byte 4 Bits 2-1. |
| 7.2.0 | 6/21/2018 | 3.12.1 | Removed CGEA 1.3C from configuration "Architecture Version" in DE00 Byte 12 Bits 1-0. Updated to assume FNV2 for reserved when setting E10100. Set default to 01 - FNV2. |
| 7.2.0 | 6/21/2018 | 3.12.2 | Removed text "Mirror Defrost Icon Displayed" in the off state in configuration parameter "Rear Defrost" in DE01 Byte 4 Bit 2. |
| 7.2.0 | 6/21/2018 | 3.12.2 | Added new configuration parameter "Mirror Defrost" to DE01 Byte 6 Bit 1. |
| 7.2.0 | 6/21/2018 | 3.12.2 | Updated default configuration to 1- ICP in configuration "ICP(EFP) Type" in DE01 Byte 11 Bit 7. |
| 7.2.0 | 6/21/2018 | 3.12.2 | Updated default configuration to 1- LIN in configuration "ICP(EFP) Network" in DE01 Byte 11 Bit 5. |
| 7.2.0 | 6/21/2018 | 3.12.2 | Updated default configuration to 1- CGEA 1.3+ in configuration "CGEA 1.3+ Illumination Strategy" in DE01 Byte 12 Bit 7. |
| 7.2.0 | 6/21/2018 | 3.12.3 | Updated Visual Design Variants configuration states in DE02 Byte 5. |
| 7.2.0 | 6/21/2018 | 3.12.6 | Removed Configuration ADA Feature Level in DE04 Byte 8. |
| 7.2.0 | 6/21/2018 | 3.12.10 | Added new configuration Power Liftgate Handsfree Menu to DE08 Byte 13 Bit3. |
| 7.2.0 | 6/21/2018 | 3.12.10 | Added new configuration Front Park Aid Long Term Disable to DE08 Byte 15 Bit 2. |
| 7.2.0 | 6/21/2018 | 3.12.10 | Added new configuration Rear Park Aid Long Term Disable to DE08 Byte 15 Bit 1. |
| 7.2.0 | 6/21/2018 | 3.12.2 | Added new configuration Alexa HIM to DE01 Byte 2 Bit 7. |
| 7.2.0 | 6/21/2018 | 3.12.2 | Added new configuration OTA Automatic Updates (HMI) to DE01 Byte 2 Bites 6-5. |
| 7.3.0 | 9/7/2018 | 3.3.2, 3.11 | Made note that Camera configuration (analog vs digital) is hardware detected and no longer a configuration item. |
| 7.3.0 | 9/7/2018 | 3.10.2, 3.14.2 | Updated Illumination DIDs. |
| 7.3.0 | 9/7/2018 | 3.11 | Updated DTC E01363, E01316, E01317, E01301, 908701, C25600 configuration associated that ICP(EFP) is present. |
| 7.3.0 | 9/7/2018 | 3.11 | Updated DTCs for 360 Lighting with updated criteria for DTC C14000 and C42200. |
| 7.3.0 | 9/7/2018 | 3.11 | Replaced DTC C09D92 with E40092 and C09D81 with E40081 and updated setting criteria for each. |
| 7.3.0 | 9/7/2018 | 3.12.1 | Removed configuration Digital Rear Camera (DE00 Byte 6 Bit 5). |
| 7.3.0 | 9/7/2018 | 3.12.1 | Added new configuration parameter Park Hold (DE00 Byte 6 Bits 2-1). |
| 7.3.0 | 9/7/2018 | 3.12.2 | Added new configuration parameter ICP(EFP) Present (DE01 Byte 11 Bit 4). |
| 7.3.0 | 9/7/2018 | 3.12.2 | Added new configuration parameter Keypad (Length of Keycode) to DE01 Byte 12 Bits 4-3. |
| 7.3.0 | 9/7/2018 | 3.12.3 | Added new state value (09 - CX727) to configuration Vehicle in DE02 Byte 6. |
| 7.3.0 | 9/7/2018 | 3.12.10 | Added new configuration parameter Park Aid Accessory Mode to DE08 Byte 15 Bit 0. |
| 7.4.0 | 10/3/2018 | 3.11 | Added CCS DTC 956D89 for Customer Connectivity Setting Data Storage Error. |
| 7.4.0 | 10/3/2018 | 3.12.1 | Added new Trailer Configurations to DE00 Byte 14 (Bit 7 - Trailer Brake Configuration, Bit 6 - Trailer Setup Configuration, Bit 5 - Trailer Measurement, Bit 4- Autohitch, Bit 3 - Auto Feature Select, Bit 2 - Trailer Lighting, Bit 1 - TBA Fifth Wheel Support). |
| 7.4.0 | 10/3/2018 | 3.12.2 | Added new configuration Features Domain Button to DE01 Byte 2, Bit 4 |
| 7.4.0 | 10/3/2018 | 3.12.2 | Updated Climate Auto Heated Seats configuration to revise to new Description Climate Auto Seats in DE01 Byte 6, Bit 4. |
| 7.4.0 | 10/3/2018 | 3.12.2 | Removed Climate Auto Vented Seats configuration in DE01 Byte 6 Bit 3. |
| 7.4.0 | 10/3/2018 | 3.12.11 | Added new configuration block DE09 CCS Bitmap. |
| 7.4.0 | 10/3/2018 | 3.12.12 | Added new configuration block DE0A CCS Adjustable Parameters. |
| 7.4.0 | 10/3/2018 | 3.10.2, 3.14.2 | Changed DIDs FDE2-FDE6 to FDE7-FEEC due to DIDs were already used for other functions. |
| 7.4.0 | 10/3/2018 | 3.10.4 | Added new section for new CCS Supplier DIDs. |
| 7.4.0 | 10/3/2018 | 3.10.1 | Updated DIDs EEFA and EEFB from HEX to ASCII. |
| 7.4.0 | 10/4/2018 | 3.11 | Removed message 0x91 for DTC C15100. |
| 7.4.0 | 10/4/2018 | 3.11 | Removed DTC C20800 with message 0x276. |
| 7.4.0 | 10/4/2018 | 3.11 | Removed message 0x27D for DTC C19800. |
| 7.4.0 | 10/4/2018 | 3.12.1 | Added new configuration parameter (VR for Radio Tuner) to DE00 Byte 4 Bit 0. |
| 7.5.0 | 10/26/2018 | 3.10.4 | Updated DIDs for CCS Supplier DIDs. |
| 7.5.0 | 10/26/2018 | 3.11 | Updated configuration associated for DTC C15500 (message 0x225) to remove Chimes configuration. |
| 7.5.0 | 10/26/2018 | 3.11 | Updated configuration for DTC C15900 (message 0x3A8) to remove Message Set configuration. |
| 7.5.0 | 10/26/2018 | 3.11 | Added new DTC 956D54 for Missing Policy Table for CCS. |
| 7.5.0 | 10/26/2018 | 3.12.1 | Updated Configuration Parameter DE00 Byte 1 Bit 0 (DAB) that when enabled it is always Enhanced DAB. Removed configuration parameter DE00 Byte 3 Bit 0 Enhanced DAB due to DAB will always be Enhanced. |
| 7.5.0 | 10/26/2018 | 3.12.1 | Removed configuration parameter DE00 Byte 3 Bit 6 (AM Longwave / DAB L-Band) as this will always be disabled for European radios. |
| 7.5.0 | 10/26/2018 | 3.12.3 | Updated Splash Screens (DE02 Byte 3) values based on HMI team input. |
| 7.5.0 | 10/26/2018 | 3.12.3 | Removed configuration DTC for Vehicle Style (DE02 Byte 4) for the reserved values. |
| 7.5.0 | 10/26/2018 | 3.12.3 | Updated Visual Design Variants (DE02 Byte 5) values based on HMI team input. |
| 7.5.0 | 10/26/2018 | 3.12.10 | Added configuration parameters PRB Kickswitch (DE08 Byte 18 Bit 4), Power Tailgate (DE08 Byte 18 Bit 3), SLIF (DE08 Byte 18 Bit 2), Blindspot Trailer Tow (BTT) Full (DE08 Byte 18 Bite 1), and PRB Auto Timer (DE08 Byte 18 Bit 0), PRB Max Permissible Speed (DE08 Byte 19, Bits 7-4), and Park Aid Control Rear (DE08 Byte 19 Bit3). |
| 7.5.0 | 10/26/2018 | 3.12.11 | Split configuration DE09 until DE09, DE0A, DE0B, DE0C, DE0D, and DE0E. |
| 7.5.0 | 10/26/2018 | 3.12.12 | Updated incorrect Size (Bits) and configuration change from DE0A to DE0F. |
| 7.5.0 | 10/26/2018 | 3.12.3 | Added new value (F150 – 0x0A) to configuration Vehicle in DE02 Byte 6. |
| 7.6.0 | 11/30/2018 | 3.10.1 | Added new DID EEFC (IDS Version). |
| 7.6.0 | 11/30/2018 | 3.11 | Added new message (0x420) for DTC C12100 when Park Hold is Enabled. |
| 7.6.0 | 11/30/2018 | 3.12.1 | Added new configuration for 360 Camera Features with DE00 Byte 6 Bit 5 (360 Offset Views), DE00 Byte 7 Bit 1 (Front Crawl), and DE00 Byte 7 Bit 0 (Rear Crawl). |
| 7.6.0 | 11/30/2018 | 3.12.1 | Removed configuration Trailer Brake Configuration from DE00 Byte 14 Bit 7 due to redundancy. |
| 7.6.0 | 11/30/2018 | 3.12.1 | Added new configuration to DE00 Byte 14 Bit 7 (Trailer Settings Feature). |
| 7.6.0 | 11/30/2018 | 3.12.1 | Added new configuration to DE00 Byte 14 Bit 5 (Trailer Vehicle Style). |
| 7.6.0 | 11/30/2018 | 3.12.1 | Move Trailer Measure configuration from DE00 Byte 14 Bit 5 to DE00 Byte 15 Bits 7-6 and added more operation options. |
| 7.6.0 | 11/30/2018 | 3.12.10 | Added new configuration parameter (Liftgate Softswitch) to DE08 Byte 19 Bits 2-1. |
| 7.6.0 | 11/30/2018 | 3.12.10 | Added new configuration parameter (Frunk Softswitch) to DE08 Byte 19 Bit 0. |
| 7.6.0 | 11/30/2018 | 3.12.10 | Added new configuration parameter (Speed Limit Menu) to DE08 Byte 20 Bit 7. |
| 7.6.0 | 11/30/2018 | 3.12.10 | Added new configuration parameter (Cruise Control Variant 2) to DE08 Byte 20 Bit 6. |
| 7.6.0 | 11/30/2018 | 3.12.10 | Added new configuration parameter (Lane Centering) to DE08 Byte 20 Bit 5. |
| 7.6.0 | 11/30/2018 | 3.10 | Added new DID 8068 (APIM CCPU Bootloader Image) |
| 7.6.0 | 11/30/2018 | 3.10.1 | Added new DID EEFF (APIM CCPU Recover Partition Image) |
| 7.7.0 | 02/05/2019 | 3.11, 3.12.2 | Change Parameter Name from Ecall to Emergency Assist (911 Assist) in DTCs E10100, C15100, and C45200 and in configuration parameter DE01 Byte 10 Bit 6. |
| 7.7.0 | 02/05/2019 | 3.12.1 | Removed configuration parameters Ford FOB Free Entry and Ignition - Fleet (DE00 Byte 13 Bit 6) and Ford FOB Free Entry and Ignition (DE00 Byte 13 Bit 5). |
| 7.7.0 | 02/05/2019 | 3.12.1 | Added new configuration Redcap to DE00 Byte 13 Bit 6. |
| 7.7.0 | 02/05/2019 | 3.12.2 | Added new configuration Favorite Domain in DE01 Byte 2 Bits 3-2. |
| 7.7.0 | 02/05/2019 | 3.12.3 | Updated Visual Variants (DE02 Byte 5 Bit 8) for 04, 05, 06, 07, and 08. |
| 7.7.0 | 02/05/2019 | 3.12.10 | Added new configuration parameters for Center Stack Settings. The following have been added: Tire Monitor/Pressure Reset Setting (DE08 Byte 20 Bit 3), Considerate Prompts Border Crossing Reminder Setting (DE08 Byte 20 Bit 2), Eco Coach - Show in Go Mode Setting (DE08 Byte 20 Bit 1), Eco Coach - Eco Advices Setting (DE08 Byte 20 Bit 0), Eco Coach - Coasting Support Setting (DE08 Byte 21 Bit 7), Ambient Light Auto/Manual Setting (DE08 Byte 21 Bit 6), Drive Control Version (DE08 Byte 21 Bit 5), Brake Coach Setting (DE08 Byte 21 Bit 4), Neutral Tow Setting (DE08 Byte 21 Bit 3), NAV Repeater in Cluster Setting (DE08 Byte 21 Bit 2), Maps in Cluster Setting (DE08 Byte 21 Bit 1), Drive History Reset Setting (DE08 Byte 21 Bit 0), Low Batter Alert Setting (DE08 Byte 22 Bit 7), Propulsion Sound Setting (DE08 Byte 22 Bit 6), and Speedometer Unit Setting (DE08 Byte 22 Bit 5). |
| 7.7.0 | 02/05/2019 | 3.12.1 | Added configuration parameter Type of RVC Camera to DE00 Byte 6 Bit 0. |
| 7.7.0 | 02/05/2019 | 3.3.2, 3.11 | Updated Camera DTCs to look for the Type of Camera (Digital or RVC) configuration. |
| 7.8.0 | 3/20/2019 | 2.5 | Updated section to reflect correct usage of Part Numbers that may not be used on ECU. |
| 7.8.0 | 3/20/2019 | 3.10 | Added DIDs 806A, 806B, 806C, and 806D for more Embedded Apps Part Numbers. |
| 7.8.0 | 3/20/2019 | 3.10 | Added DID EF01 for Ethernet Error Counters. |
| 7.8.0 | 3/20/2019 | 3.10.1 | Added new DID EEF0 for Automation Test Mode. |
| 7.8.0 | 3/20/2019 | 3.10.1 | Added new DID EEF1 for Recover Mode VMCU Indication. |
| 7.8.0 | 3/20/2019 | 3.10.2, 3.14.2 | Updated Size of DIDs FDB5 FDBE and from 72\*2 to 108\*2 |
| 7.8.0 | 3/20/2019 | 3.10.2, 3.14.2 | Added new DIDs FDED (DID\_RVC\_MinThreshold\_Night) and FDEE (DID\_RVC\_MinThresholdDay). |
| 7.8.0 | 3/20/2019 | 3.11 | Added new DTC F00005 for APIM Recovery Mode. |
| 7.8.0 | 3/20/2019 | 3.11 | Removed messages 0x27B and 0x28E from DTC C19800. |
| 7.8.0 | 3/20/2019 | 3.12.1 | Added new configuration Ambient Lighting System Strategy to DE00 Byte 11 Bit 4. |
| 7.8.0 | 3/20/2019 | 3.12.1 | Added new configuration IOD - Pitch/Roll (Off Road), IOD - Eco Behavior, IODS - Trip 1/2, IOD - Fuel Economy to DE00 Byte 15 Bits 5-2. |
| 7.8.0 | 3/20/2019 | 3.12.1 | Added new configuration 360 Lighting Vehicle HMI to DE00 Byte 16 Bits 7-2. |
| 7.8.0 | 3/20/2019 | 3.12.2 | Added new configuration Charge Port Type to DE01 Byte 8 Bits 7-3. |
| 7.8.0 | 3/20/2019 | 3.12.10 | Added new configuration Liftgate Max Permissible Speed to DE08 Byte 22 Bits 3-0. |
| 7.8.0 | 3/20/2019 | 3.12.12 | Removed configuration DTC setting for DE0F Byte 11. |
| 7.8.0 | 3/20/2019 | 3.14.2 | Update starting addresses based on new sizes and added Parameters to Illumination Calibration Table. |
| 7.9.0 | 4/17/2019 | 3.10.1 | Added new DID EEFE - APIM VMCU Recover Partition Image. |
| 7.9.0 | 4/17/2019 | 3.12.1 | Added new IOD Configurations to DE00. DE00 Byte 15 Bit 1 - IOD - Zone Lighting, DE00 Byte 15 Bit 0 - IOD - Bed Camera, DE00 Byte 16 Bit 1 - IOD - Navigation, DE00 Byte 16 - IOD - On Board Generator, DE00 Byte 17 Bit 7 - IOD - Phone, DE00 Byte 17 Bit 6 - IOD - Audio. |
| 7.9.0 | 4/17/2019 | 3.12.3 | Added values 00 37 - V363N - Transit HL Mic and 00 38 - CX727 to DE02 Bytes 7-8. |
| 7.10.0 | 5/29/2019 | 3.6 | Removed section Provision Routine (602C) |
| 7.10.0 | 5/29/2019 | 3.10 | Added new section: Reset VMCU for E100-00 Routine |
| 7.10.0 | 5/29/2019 | 3.11 | Added new section: Tokenmgr Debug Token Removal Routine |
| 7.10.0 | 5/29/2019 | 3.12 | Removed DID F120 - Over the Air Strategy Part Number. |
| 7.10.0 | 5/29/2019 | 3.12 | Removed DID EF01. |
| 7.10.0 | 5/29/2019 | 3.12 | Added new DIDs D033 - Consumer Apps Failure and DID D027 - Sync CCPU Boot Loader Part Number |
| 7.10.0 | 5/29/2019 | 3.12.1 | Added new DIDs EEFE - APIM VMCU Recover Partition Image, EEE0 - ECU KeyPackage Version, EEE1 - ECU HW Security Status, and EF11 - Ethernet Channel 1 Error Counters. |
| 7.10.0 | 5/29/2019 | 3.13 | Replaced message 0x20A with message 0x283 in DTC C10000. |
| 7.10.0 | 5/29/2019 | 3.13 | Removed message 0x45A for DTC C15500. |
| 7.10.0 | 5/29/2019 | 3.13 | Removed messages 0x2DA, 0x2DB, and 0x2E6 from DTC C18400. |
| 7.10.0 | 5/29/2019 | 3.13 | Deleted DTC D01800. |
| 7.10.0 | 5/29/2019 | 3.13 | Removed message 0x22C from DTC C25600. |
| 7.10.0 | 5/29/2019 | 3.13 | Replace message 0x31A with 0x32A from message C14000 and removed UB reference. |
| 7.10.0 | 5/29/2019 | 3.13 | Added new DTC 95EB57. |
| 7.10.0 | 5/29/2019 | 3.14.1 | Removed configurations External CD (DE00 Byte 2 Bit 3), Travel Link (DE00 Byte 2 Bit 2), CD Alert Popup (DE00 Byte 3 Bit 5), and CD Player (DE00 Byte 3, Bit 4). |
| 7.10.0 | 5/29/2019 | 3.14.1 | Renamed Trailer Back Up Assist 2 Feature (DE00 Byte 10 Bits 1-0) to Trailer Aid Signal Source. |
| 7.10.0 | 5/29/2019 | 3.14.1 | Added new configurations Trailer Back Assist 2 Feature (DE00 Byte 13 Bit 5) and Trailer Reverse Guidance 2 Feature (DE00 Byte 13 Bit 0). |
| 7.10.0 | 5/29/2019 | 3.14.1 | Added new configuration Integrated Trailer Module (DE00 Byte 14 Bit 0). |
| 7.10.0 | 5/29/2019 | 3.14.1 | Added new configuration IOD - TPMS (DE00 Byte 17 Bit 5). |
| 7.10.0 | 5/29/2019 | 3.14.1 | Added new configurations RCOD View (DE00 Byte 18 Bit 7), Hitch View (DE00 Byte 18 Bit 6), CHMSL View at Speed (DE00 Byte 18 Bit 5), Aux View at Speed (DE00 Byte 18 Bit 4), and Hitch View at Speed (DE00 Byte 18 Bit 3). |
| 7.10.0 | 5/29/2019 | 3.14.1 | Added new configuration 1 Pedal Drive (DE00 Byte 18 Bit 1). |
| 7.10.0 | 5/29/2019 | 3.14.1 | Renamed configuration Parameter Revel/B&O Sound System to Revel Sound System (DE00 Byte 2 Bit 1) |
| 7.10.0 | 5/29/2019 | 3.14.2 | Added new configuration Display Off (DE01 Byte 2 Bit 1). |
| 7.10.0 | 5/29/2019 | 3.14.3 | Added new Parameter 0A - P758 to DE00 Byte 6. |
| 7.10.0 | 5/29/2019 | 3.14.3 | Added new Parameter 00 29 - U725 to DE00 Byte 7-8. |
| 7.10.0 | 5/29/2019 | 3.14.4 | Removed Configuration Day/Night Palette Delay (DE03 Byte 2). |
| 7.10.0 | 5/29/2019 | 3.14.5 | Renamed Parameter MPP+Stub Expansion to First Level Sub Paths in configuration Electronic Horizon Type (DE04 Byte 2 Bit 6) |
| 7.10.0 | 5/29/2019 | 3.14.10 | Added new configuration LCWA (DE08 Byte 22 Bit 4). |
| 7.10.0 | 5/29/2019 | 3.14.10 | Added new configurations: Walk Away Lock (DE08 Byte 23 Bit 7), Walk Away Lock Feedback (DE08 Byte 23 Bit 6), and Double Lock Reminder (DE08 Byte 23 Bit 5). |
| 7.11.0 | 07/12/2019 | 3.12 | Updated name for DID D027. |
| 7.11.0 | 07/12/2019 | 3.12.1 | Added new DID EEF9 - APIM VMCU Active Application Bank. |
| 7.11.0 | 07/12/2019 | 3.12.1 | Added new DID EEE2 - Token Removal Reason. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Removed note in operation concerning Deep Note. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Changed name of DE00 Byte 7 Bits 1 and 0 to add Rock to the names. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Added new configuration Eco-Idle to DE00 Byte 17 Bit 4. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Added new configuration Advance HUD to DE00 Byte 17 Bit 3. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Added new configuration 4 Pin/7 Pin Trailer Connector to DE00 Byte 17 Bit 2. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Added new configuration IPD - Off-Road #2 to DE00 Byte 17 Bit 1. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Added new configuration Seats Hot Key to DE00 Byte 17 Bit 0. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Added new configuration Off Road Views at Speed to DE00 Byte 18 Bit 0. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Added new configuration Selectable Drive Modes to DE00 Byte 19 Bit 7. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Added new configuration Camera Soft Button to DE00 Byte 19 Bit 6. |
| 7.11.0 | 07/12/2019 | 3.14.1 | Added new configuration DSM to DE00 Byte 19 Bit 5. |
| 7.11.0 | 07/12/2019 | 3.14.2 | Removed configuration EV Type form DE01 Byte 7 Bit 4. |
| 7.11.0 | 07/12/2019 | 3.14.2 | Added new configuration TCU Reset to DE01 Byte 9 Bit 3. |
| 7.11.0 | 07/12/2019 | 3.14.2 | Added new configuration Number of Telephony Buttons to DE01 Byte 10 Bit 3. |
| 7.11.0 | 07/12/2019 | 3.14.6 | Added new configuration Vehicle Length to DE04 Bytes 8-10. |
| 7.11.0 | 07/12/2019 | 3.14.6 | Added new configuration Vehicle Height to DE04 Bytes 11-12. |
| 7.11.0 | 07/12/2019 | 3.14.10 | Added new configuration Steering Gear Ration to DE08 Byte 23 Bit 4. |
| 7.11.0 | 07/12/2019 | 3.14.11 | Removed requirement. |
| 7.11.0 | 07/12/2019 | 3.14.12 | Removed requirement. |
| 7.12.0 | 08/09/2019 | 3.13 | Added additional configuration criteria for DTC C20800 for missing message 0x3E1 that DSM must be equal to present. |
| 7.12.0 | 08/09/2019 | 3.13 | Added additional configuration criteria for DTC C12100 for missing message 0x420 that also includes that Selectable Drive Mode = Enabled will also monitor for the DTC. |
| 7.12.0 | 08/09/2019 | 3.13 | Added new message 0x44E for DTC C12100 if Selectable Drive Mode is enabled. |
| 7.12.0 | 08/09/2019 | 3.14.1 | Updated operational text for Configuration SDARS in DE00 Byte 1 Bit 5 to match actual functionality for X40 and beyond. |
| 7.12.0 | 08/09/2019 | 3.14.2 | Removed configuration Type of Volume Knob from DE01 Byte 1 Bit 7. |
| 7.12.0 | 08/09/2019 | 3.14.2 | Added new configuration Rear Seat Occupant to DE01 Byte 11 Bit 3. |
| 7.13.0 | 09/06/2019 | 3.13 | Removed message 0x44E from DT C12100. |
| 7.13.0 | 09/06/2019 | 3.13 | Added DTC C12155, C41500, and C41594 for Selectable Drive Mode invalid data (errors). |
| 7.13.0 | 09/06/2019 | 3.13 | Added GPS Chipset Failure to DTC F00004. |
| 7.13.0 | 09/06/2019 | 3.14.1 | Changed value 00 in DE00 Byte 9 Bits 5-4 (Number of Bladders) from 9 to 21. |
| 7.13.0 | 09/06/2019 | 3.14.2 | Added new configuration TRG Picture in Picture to DE01 Byte 1 Bit 7. |
| 7.13.0 | 09/06/2019 | 3.14.2 | Added new configuration Off-Road Turn Assist to DE01 Byte 2 Bit 0. |
| 7.13.0 | 09/06/2019 | 3.14.2 | Added new configuration Battery Pack Size to DE01 Byte 8 Bits 2-0. |
| 7.13.0 | 09/06/2019 | 3.14.2 | Removed configuration CGEA 1.3+ Illumination Strategy configuration from DE01 Byte 12 Bit 7. |
| 7.13.0 | 09/06/2019 | 3.14.3 | Changed description of value 00 of DE02 Byte 6 (Vehicle) from Non HEV, BEV, PHEV to Non-Program. |
| 7.13.0 | 09/06/2019 | 3.14.3 | Added several vehicle lines to DE01 Byte 6 (Vehicle) for Driver's Owner Manual. |
| 7.13.0 | 09/06/2019 | 3.14.3 | Added new configuration SDM Max Response Timer to DE02 Byte 11 Bits 3-2. |
| 7.13.0 | 09/06/2019 | 3.14.3 | Added new configuration SDM Max Feedback Errors to DE02 Byte 11 Bits 1-0. |
| 7.13.0 | 09/06/2019 | 3.14.3 | Added new configuration SDM Program HMI to DE02 Byte 12 Bits 7-6. |
| 7.14.0 | 10/03/2019 | 3.13 | Changed wording for DTC C41500 for setting for Selectable Drive Mode errors. |
| 7.14.0 | 10/03/2019 | 3.14.1 | Changed values of 0 and 1 for DE00 Byte 4 Bit 0 VR for Radio Tuner to 0 - Disabled and 1 - Enabled. |
| 7.14.0 | 10/03/2019 | 3.14.1 | Changed value 00 from 21 Bladders to Other for DE00 Byte 9 Bits 5-4 (Number of Bladders). |
| 7.14.0 | 10/03/2019 | 3.14.1 | Added Configuration DTC for DE00 Byte 10 Bits 7-6 (Number of Personalizations). |
| 7.14.0 | 10/03/2019 | 3.14.1 | Added new configuration Rocket Setup to DE00 Byte 19 Bit 4. |
| 7.14.0 | 10/03/2019 | 3.14.1 | Added new configuration Number of Bladders Continued to DE00 Byte 19 Bits 3-2. |
| 7.14.0 | 10/03/2019 | 3.14.3 | Added new values 0C - Bronco and 0D - Muscle Car to DE02 Byte 4 (Vehicle Style). |
| 7.14.0 | 10/03/2019 | 3.14.3 | Added new value 09 - 13.2" Landscape (Qt based) to DE02 Byte 5 (Visual Design Variants). |
| 7.14.0 | 10/03/2019 | 3.14.3 | Added new configuration Massage Pattern to DE02 Byte 13. |
| 7.14.0 | 10/03/2019 | 3.14.6 | Cleaned up confusing Bytes, Bits, and state Values. |
| 7.14.0 | 10/03/2019 | 3.14.10 | Added new configuration to DE08 Byte 23 Bit 3 - Power Tailgate. |
| 7.15.0 | 11/7/2019 | 2.4 | Added missing requirements. |
| 7.15.0 | 11/7/2019 | 2.7 | Added new section for Level 3 Security. |
| 7.15.0 | 11/7/2019 | 3.10 | Added Security Level 3 for Routine DC00. |
| 7.15.0 | 11/7/2019 | 3.12.1 | Updated DID EEE2. |
| 7.15.0 | 11/7/2019 | 3.12.1 | Added new configuration DID FD67 - Navigation Test Parameters. |
| 7.15.0 | 11/7/2019 | 3.13 | Updated criteria for setting DTC F00317. |
| 7.15.0 | 11/7/2019 | 3.13 | Added new message for DTC C19800 when GPS comes from the TCU. |
| 7.15.0 | 11/7/2019 | 3.13 | Updated missing configuration for DTC C20800. |
| 7.15.0 | 11/7/2019 | 3.14.1 | Added new configuration to DE00 Byte 2 Bit 3 (B&O Tone Touch HMI). |
| 7.15.0 | 11/7/2019 | 3.14.1 | Changed naming of configuration DE00 Byte 5 Bit 6 to replace Raptor to Off Road. |
| 7.15.0 | 11/7/2019 | 3.14.1 | Updated Configuration DTC criteria for configuration DE00 Byte 10 Bits 7-6 (Number of Personalizations). |
| 7.15.0 | 11/7/2019 | 3.14.1 | Added new configuration to DE00 Byte 19 Bits 1-0 (360 Camera View Format). |
| 7.15.0 | 11/7/2019 | 3.14.1 | Added new configuration to DE00 Byte 20 Bit 7 (Seats Hot Key - Number of Buttons). |
| 7.15.0 | 11/7/2019 | 3.14.2 | Added new configuration to DE00 Byte 9 Bit 2 (GPS from TCU). |
| 7.15.0 | 11/7/2019 | 3.14.2 | Added new configuration to DE00 Byte 9 Bits 1-0 (Other Brand). |
| 7.15.0 | 11/7/2019 | 3.14.10 | Added new configuration to DE08 Byte 23 Bit 2 (Quiet Time Exhaust Mode) |
| 7.15.0 | 11/7/2019 | 3.14.10 | Added new configuration to DE08 Byte 23 Bit 1 (Tone Touch) |
| 7.15.0 | 11/7/2019 | 3.3.2 | Updated criteria for setting DTC F00317. |
| 7.15.0 | 11/7/2019 | 3.14.1 | Added new configuration to DE00 Byte 20 Bit 6 (Trailer Light Check). |
| 7.16.0 | 12/12/2019 | 3.10 | Changed routine DC00 from Type 2 to Type 1 Routine. |
| 7.16.0 | 12/12/2019 | 3.13 and 3.13.1 | Moved all Missing Message DTCs to new section 3.13.1 |
| 7.16.0 | 12/12/2019 | 3.14.1 | Changed name of configuration in DE00 Byte 2 Bit 3 from B&O Touch Tone HMI to Tone Touch HMI. |
| 7.16.0 | 12/12/2019 | 3.14.1 | Add misconfiguration DTC to configuration DE00 Byte 6 Bit 0 (Type of RVC Camera) |
| 7.16.0 | 12/12/2019 | 3.14.2 | Added new configuration to DE00 Byte 12 Bits 2-0 (EV Range Buffer). |
| 7.16.0 | 12/12/2019 | 3.14.3 | Added new parameter 0x22 (CX727 GT) to configuration DE02 Byte 3 (Splash Screen) and removed configuration DTC. |
| 7.16.0 | 12/12/2019 | 3.14.3 | Added new parameter 0x0B (12" Landscape (Dashcard)) to DE02 Byte 5 (Visual Design Variants). |
| 7.16.0 | 12/12/2019 | 3.14.10 | Removed duplicate configuration Tone Touch from DE08 Byte 23 Bit 1. |
| 7.16.0 | 12/12/2019 | 3.14.11 | Added new configuration parameters to DE09 Byte 1 Bit 7 thru DE09 Byte 6 Bit 4. |
| 7.17.0 | 01/27/2020 | 3.12.1 | Added DIDs FDEF, FDF0, and FDF1 for Rear Seat Alert. |
| 7.17.0 | 01/27/2020 | 3.14.1 | Added new configuration to DE00 Byte 2 Bit 2 - HD Radio Station Logos. |
| 7.17.0 | 01/27/2020 | 3.14.1 | Added new configurations to DE00 Byte 20 Bit 5 (Weight Distributation Hitch), DE00 Byte 20 Bit 4 (Onboard Scales), and DE00 Byte 20 Bit 3 (Smart Hitch). |
| 7.17.0 | 01/27/2020 | 3.14.2 | Changed configuration name in DE01 Byte 2 Bit 0 from Off-Road Turn Assist to Trail Turn Assist. |
| 7.17.0 | 01/27/2020 | 3.14.2 | Added new configurations (for 4.x only) to DE01 Byte 10 Bit 2 (Manual Mode) and to DE01 Byte 10 Bit 1 (Number of PADIs). |
| 7.17.0 | 01/27/2020 | 3.14.2 | Removed configuration EV Range Buffer from DE01 Byte 12 Bits 2-0. |
| 7.18.0 | 02/21/2020 | 3.14.1 | Updated name for Configuration in DE00 Byte 19 Bits 1-0 to add "Portrait" to the name. |
| 7.18.0 | 02/21/2020 | 3.14.2 | Added new value to DE01 Byte 8 Bits 2-0 (Battery Pack Size) with 0x02- 3PDR. |
| 7.18.0 | 02/21/2020 | 3.14.3 | Added new program value to DE02 Byte 6 (Vehicle) with 0x1A - CX727 GT. |
| 7.18.0 | 02/21/2020 | 3.14.4 | Added new timer parameter (CCPU Reboot Timer) to DE03 Byte 2. |
| 7.18.0 | 02/21/2020 | 3.14.9 | Added new parameters to DE07 Byte 4 Parking Assistance with 0x0D - SAPP with APA Deluxe, 0x0E - FAPA with APA Deluxe, and 0x0E - FAPA and RePA with APA Deluxe |
| 7.18.0 | 02/21/2020 | 3.14.10 | Added new configuration (FoE Seatbelt Warning Strategy) to DE08 Byte 23 Bit 3. |
| 7.19.0 | 03/18/2020 | 3.13.1 | Added configuration to DTC C15500 to state if Sync 4 or (Internal/External Cluster = External) for Sync 4.x. |
| 7.19.0 | 03/18/2020 | 3.14.1 | Added new configuration parameter to DE00 Byte 3 Bit 0 (Soft Camera/Parking Key). |
| 7.19.0 | 03/18/2020 | 3.14.2 | Added new configuration parameter to DE01 Byte 11 Bits 2-1 (ICP Subtype). |
| 7.19.0 | 03/18/2020 | 3.14.2 | Added new configuration parameter to DE01 Byte 12 Bit 7 (Display Mode). |
| 7.19.0 | 03/18/2020 | 3.14.2 | Added new configuration parameter to DE01 Byte 12 Bits 2-1 (Stop Mode). |
| 7.19.0 | 03/18/2020 | 3.14.2 | Added new configuration parameter to DE02 Byte 13 Bits 7-6 (Climate Temperature Ranges). |
| 7.19.0 | 03/18/2020 | 3.14.2 | Added new configuration parameter to DE02 Byte 12 Bits 3-0 (LINBtIndIllu-A). |
| 7.19.0 | 03/18/2020 | 3.14.3 | Added new configuration parameter to DE03 Bytes 3-4 (Stop Mode Timer). |
| 7.19.0 | 03/18/2020 | 3.14.10 | Update Description names for DE08 Byte 1 Bit 3, DE08 Byte 6 Bit 5, DE08 Byte 7 Bit 6, DE08 Byte 8 Bits 7-6, DE08 Byte 8 Bits 3-2, DE08 Byte 9 Bit 3, DE08 Byte 11 Bit 2, DE08 Byte 11 Bit 1, DE08 Byte 16 Bit 6, DE08 Byte 16 Bit 1, DE08 Byte 17 Bit 3, and DE08 Byte 17 Bit 2. |
| 7.19.0 | 03/18/2020 | 3.14.10 | Added new configuration parameter to DE08 Byte 23 Bit 1-0 (Clear Exit Assist). |

# FRD-REQ-242662/A-Appendix A - DTC Failure Sub Type Definitions

## SWR-REQ-242695/A-Appendix A - DTC Failure Sub Type Definitions

Table 1 — DTC Failure Sub Type definition for failure category ‘0’

|  |  |  |
| --- | --- | --- |
| **Failure Type byte** | **Sub Type Nibble** | **General Failure Information** |
| **(hex)** | **(binary)** | **Sub Type Description** |
| 00 | 0000 | **no sub type information** |
|  |  | This sub type is used for failures where the base DTC text string provides the complete description of the failure itself (no Category and no Sub Type information used, e.g. emissions-related DTC (012700 hex): P0127 Intake Air Temperature Too High). |
| 01 | 0001 | **General Electrical Failure** |
|  |  | This sub type is used for General Electrical Failures that cannot be assigned to a specific sub type (Category information and no Sub Type information, e.g. DTC (011501): P0115 Engine Coolant Temperature Circuit – General Electrical Failure). |
| 02 | 0010 | **General signal failure** |
|  |  | This sub type is used for General Signal Failures that cannot be assigned to a specific sub type (Category information and no Sub Type information, e.g. DTC (014802): P0148 Fuel Delivery Error – General Signal Failure). |
| 03 | 0011 | **FM (Frequency Modulated) / PWM (Pulse Width Modulated) Failures** |
|  |  | This sub type is used for FM / PWM Failures that cannot be assigned to a specific sub type. |
| 04 | 0100 | **System Internal Failures** |
|  |  | This sub type is used for server Internal Failures that cannot be assigned to a specific sub type. |
| 05 | 101 | **System Programming Failures** |
|  |  | This sub type is used for System Programming Failures that cannot be assigned to a specific sub type. |
| 06 | 0110 | **Algorithm Based Failures** |
|  |  | This sub type is used for Algorithm Based Failures that cannot be assigned to a specific sub type. |
| 07 | 0111 | **Mechanical Failures** |
|  |  | This sub type is used for Mechanical Failures that cannot be assigned to a specific sub type. |
| 08 | 1000 | **Bus Signal / Message Failures** |
|  |  | This sub type is used for Bus Signal / Message Failures that cannot be assigned to a specific sub type. |
| 09 | 1001 | **Component Failures** |
|  |  | This sub type is used for Component Failures that cannot be assigned to a specific sub type. |

Table 2 — DTC Failure Sub Type definition for failure category ‘1’

|  |  |  |
| --- | --- | --- |
| **Failure Type byte** | **Sub Type Nibble** | **General Electrical Failures** |
| **(hex)** | **(binary)** | **Sub Type Description** |
| 11 | 0001 | **circuit short to ground** |
|  |  | This sub type is used for failures, where the server measures ground (battery negative) potential for greater than a specified time period or when some other value is expected. |
| 12 | 0010 | **circuit short to battery** |
|  |  | This sub type is used for failures, where the server measures vehicle system (battery positive) potential for greater than a specified time period or when some other value is expected. |
| 13 | 0011 | **circuit open** |
|  |  | This sub type is used for failures, where the server determines an open circuit via lack of bias voltage, low current flow, no change in the state of an input in response to an output, etc. |
| 14 | 0100 | **circuit short to ground or open** |
|  |  | This sub type is used for failures, where the condition detected by the server is the same for either indicated failure mode. |
| 15 | 0101 | **circuit short to battery or open** |
|  |  | This sub type is used for failures, where the condition detected by the server is the same for either indicated failure mode. |
| 16 | 0110 | **circuit voltage below threshold** |
|  |  | This sub type is used for failures, where the server measures a voltage below a specified range but not necessarily a short to ground. |
| 17 | 0111 | **circuit voltage above threshold** |
|  |  | This sub type is used for failures where, the server measures a voltage above a specified range but not necessarily a short to battery. |
| 18 | 1000 | **circuit current below threshold** |
|  |  | This sub type is used for failures, where the server measures current flow below a specified range. |
| 19 | 1001 | **circuit current above threshold** |
|  |  | This sub type is used for failures, where the server measures current flow above a specified range. |
| 1A | 1010 | **circuit resistance below threshold** |
|  |  | This sub type is used for failures, where the server infers a circuit resistance below a specified range. |
| 1B | 1011 | **circuit resistance above threshold** |
|  |  | This sub type is used for failures, where the server infers a circuit resistance above a specified range. |
| 1C | 1100 | **circuit voltage out of range** |
|  |  | This sub type is used for failures, where the server measures a voltage outside the expected range but not identified as too high or too low. |
| 1D | 1101 | **circuit current out of range** |
|  |  | This sub type is used for failures, where the server measures a current outside the expected range but not identified as too high or too low. |
| 1E | 1110 | **circuit resistance out of range** |
|  |  | This sub type is used for failures, where the server measures a resistance outside the expected range but not identified as too high or too low. |
| 1F | 1111 | **circuit intermittent** |
|  |  | This sub type is used for failures, where the server momentarily detects one of the conditions defined above, but not long enough to set a specific sub type. |

Table 3 — DTC Failure Sub Type definition for failure category ‘2’

|  |  |  |
| --- | --- | --- |
| **Failure Type byte** | **Sub Type Nibble** | **General Signal Failures** |
| **(hex)** | **(binary)** | **Sub Type Description** |
| 21 | 0001 | **signal amplitude < minimum** |
|  |  | This sub type is used for failures where the server measures a signal voltage below a specified range but not necessarily a short to ground (e.g., low gain). |
| 22 | 0010 | **signal amplitude > maximum** |
|  |  | This sub type is used for failures where the server measures a signal voltage above a specified range but not necessarily a short to battery (e.g., gain too high). |
| 23 | 001 | **signal stuck low** |
|  |  | This sub type is used for failures where the server measures a signal that remains low when transitions are expected. |
| 24 | 0100 | **signal stuck high** |
|  |  | This sub type is used for failures where the server measures a signal that remains high when transitions are expected. |
| 25 | 0101 | **signal shape / waveform failure** |
|  |  | This sub type is used for failures where the shape of the signal (plot of the amplitude with respect to time) is not correct, e.g., improper circuit impedance. |
| 26 | 0110 | **signal rate of change below threshold** |
|  |  | This sub type is used for failures where the signal transitions more slowly than is reasonably allowed. |
| 27 | 0111 | **signal rate of change above threshold** |
|  |  | This sub type is used for failures where the signal transitions more quickly than is reasonably allowed. |
| 28 | 1000 | **signal bias level out of range / zero adjustment failure** |
|  |  | This sub type is used for failures where the server applies a bias voltage to a circuit upon which is superimposed a signal voltage (e.g., Oxygen Sensor circuit.). This sub type is also used for failures where the server applies a zero signal level to a circuit upon which is superimposed a signal voltage (e.g., bias voltage to an Oxygen Sensor circuit, or a filtered digital m/sec2 signal while vehicle stands still for a lateral accelerator sensor module.) |
| 29 | 1010 | **signal signal invalid** |
|  |  | This sub type is used for failures where the value of the signal is not plausible given the operating conditions. |
| 2F | 1111 | **signal erratic** |
|  |  | This sub type is used for failures where the signal is momentarily implausible (not long enough for "signal invalid") or discontinuous. |

Table 4 — DTC Failure Sub Type definition for failure category ‘3’

|  |  |  |
| --- | --- | --- |
| **Failure Type byte** | **Sub Type Nible** | **FM (Frequency Modulated) / PWM (Pulse Width Modulated) Failures** |
| **(hex)** | **(binary)** | **Sub Type Description** |
| 31 | 0001 | **no signal** |
|  |  | This sub type is used for failures where the server does not detect a signal which ought to be present (e.g., wheel speed signals present for three of the four wheels and brakes not applied.) |
| 32 | 0010 | **signal low time < minimum** |
|  |  | This sub type is used for failures where the server detects the low pulse is too narrow with respect to time. |
| 33 | 0011 | **signal low time > maximum** |
|  |  | This sub type is used for failures where the server detects the low pulse is too wide with respect to time. |
| 34 | 0100 | **signal high time < minimum** |
|  |  | This sub type is used for failures where the server detects the high pulse is too narrow with respect to time. |
| 35 | 0101 | **signal high time > maximum** |
|  |  | This sub type is used for failures where the server detects the high pulse is too wide with respect to time. |
| 36 | 0110 | **signal frequency too low** |
|  |  | This sub type is used for failures where the server detects excessive duration for one cycle of the output across a specified sample size. |
| 37 | 0111 | **signal frequency too high** |
|  |  | This sub type is used for failures where the server detects insufficient duration for one cycle of the output across a specified sample size. |
| 38 | 1000 | **signal frequency incorrect** |
|  |  | This sub type is used for failures where the server measures an incorrect number of cycles in a given time period. |
| 39 | 1001 | **incorrect has too few pulses** |
|  |  | This sub type is used for failures where the server measures too few pulses (e.g., position is calibrated in counts from one extreme to the other). |
| 3A | 1010 | **incorrect has too many pulses** |
|  |  | This sub type is used for failures where the server measures too many pulses (e.g., position is calibrated in counts from one extreme to the other). |

Table 5 — DTC Failure Sub Type definition for failure category ‘4’

|  |  |  |
| --- | --- | --- |
| **Failure Type byte** | **Sub Type Nibble** | **System Internal Failures** |
| **(hex)** | **(binary)** | **Sub Type Description** |
| 41 | 0001 | **general checksum failure** |
|  |  | This sub type is used by the server to indicate an incorrect checksum calculation where memory type is not specified. |
| 42 | 0010 | **general memory failure** |
|  |  | This sub type is used by the server to indicate a memory failure where memory type is not specified. |
| 43 | 0011 | **special memory failure** |
|  |  | This sub type is used by the server to indicate a memory failure where the specific memory type is not defined in this category. |
| 44 | 0100 | **data memory failure** |
|  |  | This sub type is used by the server to indicate a data (or working) memory failure for embedded systems using FLASH memory. This is equivalent to RAM in RAM/ROM/EEPROM embedded systems. |
| 45 | 0101 | **program memory failure** |
|  |  | This sub type is used by the server to indicate a progam memory failure for embedded systems using FLASH memory. This is equivalent to ROM in RAM/ROM/EEPROM embedded systems. |
| 46 | 0110 | **calibration / parameter memory failure** |
|  |  | This sub type is used by the server to indicate a calibration / parameter memory failure for embedded systems using FLASH memory. This is equivalent to EEPROM in RAM/ROM/EEPROM embedded systems. |
| 47 | 0111 | **watchdog / safety µC failure** |
|  |  | This sub type is used by the server to indicate a watchdog / safety µC failure. |
| 48 | 1000 | **supervision software failure** |
|  |  | This sub type is used by the server to indicate a supervision software failure. |
| 49 | 1001 | **internal electronic failure** |
|  |  | This sub type is used by the server to indicate the detection of an internal circuit failure. |
| 4A | 1010 | **incorrect component installed** |
|  |  | This sub type is used by the server to indicate a mismatch between the hardware connected to the server and the hardware expected by the server. |
| 4B | 1011 | **over temperature** |
|  |  | This sub type is used by the server to indicate the detection of an internal temperature above the expected range. |

Table 6 — DTC Failure Sub Type definition for failure category ‘5’

|  |  |  |
| --- | --- | --- |
| **Failure Type byte** | **Sub Type Nibble** | **System Programming Failures** |
| **(hex)** | **(binary)** | **Sub Type Description** |
| 51 | 00001 | **not programmed** |
|  |  | This sub type is used by the server to indicate that programming is required. |
| 52 | 0010 | **not activated** |
|  |  | This sub type is used by the server to indicate that that some portion of the program has not been enabled. |
| 53 | 0011 | **deactivated** |
|  |  | This sub type is used by the server to indicate that that some portion of the program has been disabled. |
| 54 | 0100 | **missing calibration** |
|  |  | This sub type is used by the server to indicate, that an operational range etc. for a sensor or actuator must be taught to the server, e.g. by programming or learning. |
| 55 | 0101 | **not configured** |
|  |  | This sub type is used by the server to indicate the need to enter (program) the sub system option content or the vehicle option content. |

Table 7 — DTC Failure Sub Type definition for failure category ‘6’

|  |  |  |
| --- | --- | --- |
| **Failure Type byte** | **Sub Type Nibble** | **Algorithm Based Failures** |
| **(hex)** | **(binary)** | **Sub Type Description** |
| 61 | 0001 | **signal calculation failure** |
|  |  | This sub type is used for algorithm based calculation failures. |
| 62 | 0010 | **signal compare failure** |
|  |  | This sub type is used for failures where the server compares two or more input parameters for plausibility. |
| 63 | 0011 | **circuit / component protection time-out** |
|  |  | This sub type is used for failures where the server detects a function is active for greater than a specified time period. |
| 64 | 0100 | **signal plausibility failure** |
|  |  | This sub type is used for failures where the server detects plausibility failures. |
| 65 | 0101 | **signal has too few transitions / events** |
|  |  | This sub type is used for failures where the server monitors a parameter over time within specified limits and detects fewer than the expected number of transitions. |
| 66 | 0110 | **signal has too many transitions / events** |
|  |  | This sub type is used for failures where the server monitors a parameter over time within specified limits and detects more than the expected number of transitions. |
| 67 | 0111 | **signal incorrect after event** |
|  |  | This sub type is used for failures where the server does not see the correct change of a parameter or group of parameters in response to a particular event. |
| 68 | 1000 | **event information** |
|  |  | This sub type is used by the server to indicate the detection of a system event that was not caused by the server itself but forces the server to store a DTC (e.g. missing functionality from another system/server). |

Table 8 — DTC Failure Sub Type definition for failure category ‘7’

|  |  |  |
| --- | --- | --- |
| **Failure Type byte** | **Sub Type Nibble** | **Mechanical Failures** |
| **(hex)** | **(binary)** | **Sub Type Description** |
| 71 | 0001 | **actuator stuck** |
|  |  | This sub type is used for failures where the server does not detect any motion in response to energizing a motor, solenoid, relay, etc. |
| 72 | 0010 | **actuator stuck open** |
|  |  | This sub type is used for failures where the server does not detect any motion upon commanding the operation of a motor, solenoid, relay, etc., to close some piece of equipment. |
| 73 | 0011 | **actuator stuck closed** |
|  |  | This sub type is used for failures where the server does not detect any motion upon commanding the operation of a motor, solenoid, relay, etc., to open some piece of equipment. |
| 74 | 0100 | **actuator slipping** |
|  |  | This sub type is used for failures where the server detects excessive duration to command a motor, solenoid, relay, etc., to move a piece of equipment to a desired position. |
| 75 | 0101 | **emergency position not reachable** |
|  |  | This sub type is used for failures where the server is unable to command a motor, solenoid, relay, etc., to move a piece of equipment to the emergency position. |
| 76 | 0110 | **wrong mounting position** |
|  |  | This sub type is used for failures where the server detects incorrectly mounted components, e.g., acceleration sensor showing a position error of 90°. |
| 77 | 0111 | **commanded position not reachable** |
|  |  | This sub type is used for failures where the server is unable to command a motor, solenoid, relay, etc., to move a piece of equipment to the commanded position either due to a failure in the actuator or its mechanical environment. |
| 78 | 1000 | **alignment or adjustment incorrect** |
|  |  | This sub type is used for failures where the server detects incorrectly adjusted or aligned components |
| 79 | 1001 | **mechanical linkage failure** |
|  |  | This sub type is used for failures where the server detects that the actuator is operational but the driven device is not operating e.g. drive cable for power sliding door broken |
| 7A | 1010 | **fluid leak or seal failure** |
|  |  | This sub type is used for failures where the server detects that a mechanical component has an unexpected gas or liquid flow in, out or through the component. |
| 7B | 1011 | **low fluid level** |
| This sub type is used for failures where the server detects that a fluid level is too low for proper operation of the system |

Table 9 — DTC Failure Sub Type definition for failure category ‘8’

|  |  |  |
| --- | --- | --- |
| **Failure Type byte** | **Sub Type Nibble** | **Bus Signal / Message Failures** |
| **(hex)** | **(binary)** | **Sub Type Description** |
| 81 | 0001 | **invalid serial data received** |
|  |  | This sub type is used by the server to indicate a signal was received with the corresponding validity bit equal to "invalid" or post processing of the signal determines it is invalid. |
| 82 | 0010 | **alive / sequence counter incorrect / not updated** |
|  |  | This sub type is used by the server to indicate, that a signal was received without the corresponding rolling count value being properly updated. |
| 83 | 0011 | **value of signal protection calculation incorrect** |
|  |  | This sub type is used by the server to indicate, that a message was processed with an incorrect protection (checksum) calculation. |
| 84 | 0100 | **signal below allowable range** |
|  |  | This sub type is used for failures where some circuit quantity, reported via serial data, is below a specified range. |
| 85 | 0101 | **signal above allowable range** |
|  |  | This sub type is used for failures where some circuit quantity, reported via serial data, is above a specified range. |
| 86 | 0110 | **signal invalid** |
|  |  | This sub type is used for failures where some circuit quantity, reported via serial data, is not plausible given the operating conditions. |
| 87 | 0111 | **missing message** |
|  |  | This sub type is used for failures where one (or more) expected message(s) is not received, e.g., periodic transmission where the repetition time is too high, or message not received as a result of unforeseen reset events of the concerning component (e.g. engine control unit communicating with ABS). |
| 88 | 1000 | **bus off** |
|  |  | This sub type is used for failures where a data bus is not available. |
| 8F | 1111 | **erratic** |
|  |  | This sub type is used for failures where the signal, reported via serial data, is momentarily implausible or discontinuous. |

Table 10 — DTC Failure Sub Type definition for failure category ‘9’

|  |  |  |
| --- | --- | --- |
| **Failure Type byte** | **Sub Type Nibble** | **Component Failures** |
| **(hex)** | **(binary)** | **Sub Type Description** |
| 91 | 0001 | **parametric** |
|  |  | This sub type is used for failures where the server has detected that a component parameter e.g. capacitance or inductance is outside its expected range. |
| 92 | 0010 | **performance or incorrect operation** |
|  |  | This sub type is used for failures where the server has detected that the component performance is outside its expected range or operating in an incorrect way. |
| 93 | 0011 | **no operation** |
|  |  | This sub type is used for failures where the server has detected that the component is not operating. |
| 94 | 0100 | **unexpected operation** |
|  |  | This sub type is used for failures where the server has detected that the component is operating in a way or at a time that it has not been commanded to operate. |
| 95 | 0101 | **incorrect assembly** |
|  |  | This sub type is used for failures where the server has detected that the component has been incorrectly installed e.g. hydraulic pipes crossed over, circuits cross wired or polarity errors. |
| 96 | 0110 | **component internal failure** |
|  |  | This sub type is used for failures where the server has recived an indication about the component that indicates a failure e.g. an intelligent actuator or sensor is indicating an internal fault. |
| 97 | 0111 | **Component or system operation obstructed or blocked** |
|  |  | This sub type is used for failures where the server has detected that the operation of a component is prevented by an obstruction e.g. advanced cruise system radar beam obstructed. |
| 98 | 1000 | **component or system over temperature** |
|  |  | This sub type is used for failures where the server has detected that the temperature is too high for the correct operation of the component or system. |