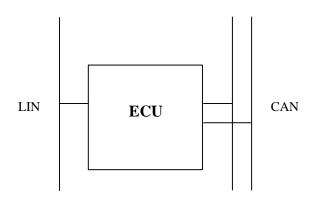


Change Description	A = Added D = Deleted C = Changed/Correct	Document Release	Status
		Date	Modification Count
		2016-12-21	

# **Network Requirement Specification**

# SAIC Motor Network Requirement Specification Instruments ZS12 EP V07



Document Title

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VOLCANO SIGNAL SPECIFICATION INSTRUMENTS
Document Type

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Checked by	Chen Cang/ee	
Approved by		

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# 1 CHANGE INFORMATION

Revision EP2-V02	Date 07/05/2016	Description A=Added C=Changed/Corrected D=Deleted  NCF: 10320953/02  A /Tx:
		ClstrDspdASpdLmtrWrnng ClstrDspdBrkSysWrnng
		ClstrDspdTyrePrsSts IPCEcoDrvngSwA
		D /Tx: ECOSwA
		C /Tx: ClstrDspdScurtKeyBatLowWrnng to ClstrDspdScurtKeyBatLW
		A /Rx: AmbtLghtLvl
		BCMNoSmtKeyInVehRmndr DipdBeamLghtOn
		EcoDrvngAlO EcoDrvngDspStsGearSIS EcoDrvngDspStsRcmndFG
		EmgcCallFlrSts LghtSwPosSts
		PDCOverVolFlt_L PDCUnderVolFlt_L
		SpdAstSysStsECM SpdAstSysTrgtSpd
		D /Rx: LanggSetngAdj LanggSetngAdjReqA
Revision EP2-V02	Date 20/05/2016	D: ClstrDspdEleclBrkDstrbutnWrnng ClstrDspdTPMSF SIADatePriy
		C: ClstrDspdOilPrsLowWrnng to ClstrDspdOilPrsLowW ClstrDspdMalfIndrLghtWrnng to ClstrDspdMalfIndrLghtW
Revision	Date	Description A=Added C=Changed/Corrected D=Deleted NCF:1041384002

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EF-V07	21/12/2010	CCSwStsDisDecSwA
		CCSwStsDistlncSwA
		ClstrDistUnt
		ClstrFuelCsumpUnt
		ClstrTemUnt
		ClstrTyrePressureUnt
		LanggSetng
		Langgoong
		A /Rx:
		AutoHoldMsg
		AutoHoldSysSts
		BatAgngSta
		BatSOC
		BatVol
		BCMGearShftParkNtrlESR
		BCMNoSmtKeyPressBrkTRR
		BCMNoSmtKeyPressClToRR
		BCMPressBrkRmndr
		BCMPressClRmndr
		BCMPutSmtKeyToBkupPosR
		BCMRunCrkF
		BCMShftParkRmndr
		BCMSSBFltSts
		BCMSyncSmtKeyRmndr
		BCMTakeSmtKeyOutOfSR
		DayTimeRunningLghtF
		DrvrPWLInitnRmndr
		DrvrWndOpenRmndr
		ECMClsDoorToAutoStR
		ECMFasnSbltToAutoStR
		ECMPressClBrkRmndr
		ECMShftNtrlToAutoStR
		EPBSysAudWrnngReq
		EPBSysDspMsgReq
		EPBSysStsIndReq
		EPBSysWrnngIndReq
		FICMDistUnitAdjtReqA
		FICMFuelCsumpUntAdj
		FICMOverSpdFpCretSte
		FICMOverSpdThrobldAdi
		FICMOvrSpdThrohldAdj
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FICMTyrePressureUntAdjtReqA FICMVehMntnceSts **FLTireTem** FLTireTemV FRTireTem FRTireTemV FrtSideLghtF **HDCSysSts** LBrkLghtF LDipdBeamLghtF LDircnIndLghtF MusSrcMd NavDircn NavDist NavDistUnit **PEPSAntFlt** RBrkLghtF RDipdBeamLghtF RDircnIndLghtF RdoFrqcVal RevsLghtF **RLTireTem** RLTireTemV RrFogLghtF RrSideLghtF RRTireTem RRTireTemV ShifterLckRlseBrkReqA SrfInitnRmndr SrfOpenRmndr SSBEnOffRmndr **TPMSAutoLoctnCm** 

# **2 REFERRED DOCUMENTS**

References are made to the following documents:

- [1] SMTC 2 800 002 CAN Node Design Requirements
- [2] SMTC 2 800 003 LIN Node Design Requirements
- [3] "Volcano Concept Overview, V5-gen-006 rev C
- [4] "Volcano 5 signal timing model, V5-cfg-003 rev 03

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# 3 GENERAL

# 3.1 Document description

This document (Network Requirement Specification, doc type: NRS) is the specification for an ECU with an implementation of VOLCANO. It is automatically generated from the Volcano Network Architect (VNA).NRS is the update version of SWRS(Software Requirement Specification), and covers all content of SWRS. In addition, the information of hardware interface is added to NRS.

The document is a complementary document to the specification for the ECU, i.e. it is valid for a specific ECU software version and refers to a specific issue of the *fixed* file (.FIX). This document is valid as long as new configurations only affect the *networks* (.NET) file. A new document will be issued if the signalling (a new issue of the fixed file) or the CAN hardware requirements are changed in some way for the ECU.

The signal definitions in this document (Signal specification) shall be regarded as the valid definition, if the information in the NRS specification and the Signals Database are contradictory.

# 4 Configuration files

If any of the parameters in the FIX or NET file is incorrectly specified, new configuration files (FIX and/or NET) must be issued from VNA. It is the responsibility of the supplier to inform the system integrator if any parameter is incorrect, and that the configuration files are not edited.

# 4.1 NET file

Each NET file has an issue number. Changes of functional requirements or fault corrections in the VNA may cause a new issue of the networks file. The networks file issue number will then be increased.

File name convention: The filename "NMC1\_PP\_SMU-V1.0.NET" consists of the following parts:

- "NMC1": The project in SAIC, e.g. AP11 or ZP11.
- "PP": The build stage of the vehicle in SAIC, e.g. EP1 or EP2 or OTS or PP.
- "SMU": The ECU name in SAIC, e.g. EMS or TCU or others.
- "V1.0": Issue number of the file.
- "NET": Networks file

# 4.2 FIX file

Each FIX file has an issue number. If the changes cause the FIX file to be changed, the FIX file issue number will be increased and a new issue of this document will be released.

File name convention: The filename "NMC1\_PP\_SMU-V1.0.FIX" consists of the following parts:

- "NMC1": The project in SAIC, e.g. AP11 or ZP11.

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- "FIX": Fixed file.    Document Tale	<ul> <li>"PP": The build stage of the vehicle in SAIC,</li> <li>"SMU": The ECU name in SAIC, e.g. EMS or</li> <li>"V1.0": Issue number of the file.</li> </ul>		or PP.	
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# 5 Communication concept

# 5.1 VOLCANO

The signalling in the vehicle is based on the use of VOLCANO, see referred document [2]. Signal types, frame types and other notions refer to the nomenclature used in the VOLCANO specification.

### 5.2 The Volcano Network Architect

The content of the Volcano Network Architect signals database is a result of the design process at the car manufacturer. Signal definitions are agreed between the owner of the electrical function and the designers of the source ECU and user ECUs. The definition is documented in the VNA signals database. The signals generated or used by the ECU are listed in paragraph "Signal definitions" below.

In the VNA signals database, the timing requirements on each signal are stored. This is necessary to be able to produce a frame configuration, using the "Frame compiler" tool. If there is more than one user function of a signal, there might be individual requirements on the generation, propagation time and reception of a signal.

# 5.3 Specification of timing requirements

A function has a requirement on the end-to-end propagation time for a signal, called Total latency. The maximum allowed Total latency is called the Max\_age.

The input to the frame compiler is the Max\_age requirement together with Publish and Subscribe latencies.

Below is a description of the different notations (referred document [3]).- "003": Issue number of the file.

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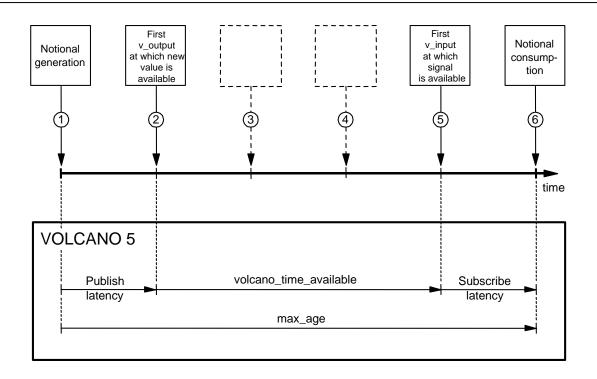


Figure 1: The Volcano 5 signal timing model

- Notional generation is associated to an event that causes a signal value update. The signal value cycle can be initiated periodically, for example by an application program timeout. It can also be triggered by an external event, for example when a switch is pressed.
- 2 The earliest possible time point when the frame containing the updated signal can be queued for transmission by the v\_output() call.
- 5 The occurrence of a v\_input() call that makes the signal available to the application.
- 6 Notional consumption denotes the actual usage of the signal (output), for example a function task is activated, for example electrical output to a step motor. The signal can also be republished to another ECU.

# **Volcano 5 Latencies and Intervals**

The **max\_age** (functional deadline) is the end-to-end time period that is acceptable, that is, the overall timing requirement on the function. It is important not to specify shorter time periods than necessary as it can have a serious impact on the bus load.

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The **publish latency** is the time from notional generation to the first v\_output() call that makes the signal available for the transmit frame that contains the signal. Normally this time includes the volcano processing period (in this case this is the maximum time from the v\_write... call to the v\_output() call). The publish latency can be smaller than the volcano processing period if the v\_write... call is synchronized with the v\_output() call.

The **volcano\_time\_available** is the max\_age - publish latency - subscribe latency and is derived directly from the end-to-end requirement. It must, of course, include all delays due to any gateway nodes.

The **subscribe latency** is a user-defined value that depends on the properties of the subscribing application.

**Write\_interval** (Published signal). Write interval has different meaning depending on the signal generation and information type. If the signal is Sporadic or State change, then the *minimum* write interval must be specified. From this information, the maximum frame period is extracted if the signal is Sporadic and is mapped to a Sporadic frame. For signals of type State change this information is used to ensure that the signal will never be overwritten on the publisher or subscriber side before the application reads it.

If the signal is Periodic and State, the *maximum* write interval can be specified (optional). It can be used by a tool in combination with an update bit, to check that the application program is always updating that signal within the given interval.

**Max\_interval** (Subscribed signal). The maximum read interval is used only if the signal is State change to ensure that the signal will never be overwritten on the publisher or subscriber side before the application reads it.

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# **6 INTERFACE REQUIREMENTS**

# 6.1 Hardware interface

# 6.2 Overview of signals

Transmitted Signals Subscriber Nodes

AirbagWrnngIndF Sensing\_Diagnostic\_Module
ASSInhBtnA Engine\_Control\_Module

AvgFuelCsump Front\_Infotainment\_Control\_Modul, Telematics\_BOX
AvgFuelCsumpV Front\_Infotainment\_Control\_Modul, Telematics\_BOX

Air\_Condition, Body\_Controller, Electric\_Power\_Steering, Electronic\_Park\_Brake,

Elec\_Steering\_Column\_Lock, Engine\_Control\_Module,

CalendarDay Front\_Infotainment\_Control\_Modul, Sensing\_Diagnostic\_Module,

Stability\_Control\_System, Telematics\_BOX, TPMS,

Transmission\_Control\_Module

Air\_Condition, Body\_Controller, Electric\_Power\_Steering, Electronic\_Park\_Brake,

Elec\_Steering\_Column\_Lock, Engine\_Control\_Module,

CalendarMonth Front\_Infotainment\_Control\_Modul, Sensing\_Diagnostic\_Module,

Stability\_Control\_System, Telematics\_BOX, TPMS,

Transmission Control Module

Air\_Condition, Body\_Controller, Electric\_Power\_Steering, Electronic\_Park\_Brake,

Elec\_Steering\_Column\_Lock, Engine\_Control\_Module,

CalendarYear Front\_Infotainment\_Control\_Modul, Sensing\_Diagnostic\_Module,

Stability\_Control\_System, Telematics\_BOX, TPMS,

Transmission\_Control\_Module

CCSwStsAlvRC Engine\_Control\_Module
CCSwStsCanclSwA Engine\_Control\_Module
CCSwStsDisDecSwA Engine\_Control\_Module
CCSwStsDistIncSwA Engine Control Module

CCSwStsOnSwA Engine\_Control\_Module, Sensing\_Diagnostic\_Module

CCSwStsPV Engine\_Control\_Module
CCSwStsRsmSwA Engine\_Control\_Module
CCSwStsSetSwA Engine\_Control\_Module
CCSwStsSpdDecSwA Engine\_Control\_Module
CCSwStsSpdIncSwA Engine\_Control\_Module
CCSwStsSwDataIntgty Engine\_Control\_Module

ChmCmdSndCndcPrd Front\_Infotainment\_Control\_Modul
ChmCmdSndLoctnFL Front\_Infotainment\_Control\_Modul
ChmCmdSndLoctnFR Front\_Infotainment\_Control\_Modul
ChmCmdSndLoctnRL Front\_Infotainment\_Control\_Modul
ChmCmdSndLoctnRR Front\_Infotainment\_Control\_Modul
ChmCmdSndLoctnRR Front\_Infotainment\_Control\_Modul
ChmCmdSndTone Front\_Infotainment\_Control\_Modul

Clstr10KmTick Body Controller

ClstrDistUnt Front\_Infotainment\_Control\_Modul

ClstrDspdABSWrnng Front\_Infotainment\_Control\_Modul, Telematics\_BOX ClstrDspdAirbagWrnng Front\_Infotainment\_Control\_Modul, Telematics\_BOX ClstrDspdAltrWrnng Front\_Infotainment Control\_Modul, Telematics\_BOX Front\_Infotainment\_Control\_Modul, Telematics\_BOX

ClstrDspdASpdLmtrWrnng Front\_Infotainment\_Control\_Modul

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ClstrDspdBrkSysWrnng Front\_Infotainment\_Control\_Modul, Telematics\_BOX ClstrDspdCCWrnng Front Infotainment Control Modul, Telematics BOX ClstrDspdCIntTemWrnng Front\_Infotainment\_Control\_Modul, Telematics\_BOX ClstrDspdEnDrvByWireW Front\_Infotainment\_Control\_Modul, Telematics\_BOX ClstrDspdEPSWrnna Front Infotainment Control Modul, Telematics BOX ClstrDspdFLTirePrs Telematics BOX ClstrDspdFLTireSts Telematics BOX ClstrDspdFRTirePrs Telematics BOX ClstrDspdFRTireSts Telematics\_BOX ClstrDspdFuelLvlSqmt Telematics BOX ClstrDspdFuelSnsrWrnng Front Infotainment Control Modul, Telematics BOX ClstrDspdFuelSts Front\_Infotainment\_Control\_Modul, Telematics\_BOX ClstrDspdInfoMsk Front Infotainment Control Modul, Telematics BOX ClstrDspdInvdKeyWrnng Telematics BOX ClstrDspdMalfIndrLghtW Front Infotainment Control Modul, Telematics BOX ClstrDspdOilPrsLowW Front Infotainment Control Modul, Telematics BOX ClstrDspdPDCWrnng Front Infotainment Control Modul, Telematics BOX ClstrDspdRLTirePrs Telematics BOX ClstrDspdRLTireSts Telematics\_BOX ClstrDspdRRTirePrs Telematics BOX ClstrDspdRRTireSts Telematics BOX ClstrDspdSASUncalWrnng Front\_Infotainment\_Control\_Modul, Telematics\_BOX ClstrDspdSASWrnng Front\_Infotainment\_Control\_Modul, Telematics\_BOX ClstrDspdSCSWrnng Front\_Infotainment\_Control\_Modul, Telematics\_BOX Front\_Infotainment\_Control\_Modul, Telematics BOX ClstrDspdScurtKeyBatLW ClstrDspdSpStWrnng Front Infotainment Control Modul, Telematics BOX ClstrDspdTCSWrnng Front Infotainment Control Modul, Telematics BOX Front\_Infotainment\_Control\_Modul, Telematics\_BOX ClstrDspdTrWrnng Front Infotainment Control Modul, Telematics BOX ClstrDspdTyrePrsSts Front\_Infotainment\_Control\_Modul, Telematics\_BOX ClstrDspdVehSpd ClstrFuelCsumpUnt Front\_Infotainment\_Control\_Modul ClstrTemUnt Front Infotainment Control Modul ClstrTyrePressureUnt Front\_Infotainment\_Control\_Modul DiagnosticRespIPK Diagnostics **DspMeasSys** Engine Control Module, Front Infotainment Control Modul **DTCInfomationIPK** Telematics BOX **FLObsRna** Front Infotainment Control Modul **FRObsRng** Front Infotainment Control Modul FrtMidLObsRng Front\_Infotainment\_Control\_Modul FrtMidRObsRng Front Infotainment Control Modul Front\_Infotainment\_Control\_Modul **FrtObsDist FuelLvIPcnt** Engine\_Control\_Module, Front\_Infotainment\_Control\_Modul, Telematics\_BOX **FuelLvIPcntV** Engine Control Module, Front Infotainment Control Modul, Telematics BOX Engine\_Control\_Module, Front\_Infotainment\_Control\_Modul, Telematics\_BOX FuelTotCapct Air\_Condition, Body\_Controller, Electric\_Power\_Steering, Electronic\_Park\_Brake, Elec\_Steering\_Column\_Lock, Engine\_Control\_Module, HourOfDay Front\_Infotainment\_Control\_Modul, Sensing\_Diagnostic\_Module, Stability\_Control\_System, Telematics\_BOX, TPMS, Transmission\_Control\_Module **IPCAccrvA Body Controller IPCEcoDrvngSwA Engine Control Module** Document Title VOLCANO SIGNAL SPECIFICATION INSTRUMENTS Document Type NETWORK REQUIREMENT SPECIFICATION Document No Issue Index Volume No PPV\_V 12 (161)

**IPCRunCrkA** Body\_Controller **Body Controller IPCRunCrkF IPCSSBA** Body\_Controller **IPCSSBAV** Body\_Controller **IPCSSBFItSts** Body Controller keep network IPK **Body Controller** LanggSetng Front\_Infotainment\_Control\_Modul LowAcurcVehSpdAvg Park Distance Control Air\_Condition, Body\_Controller, Electric\_Power\_Steering, Electronic\_Park\_Brake, Elec\_Steering\_Column\_Lock, Engine\_Control\_Module, Front Infotainment Control Modul, Sensing Diagnostic Module, MinuteOfHour Stability Control System, Telematics BOX, TPMS, Transmission Control Module MstrSysPwrMd Park Distance Control OdoPriv Body\_Controller, Telematics\_BOX Front\_Infotainment\_Control\_Modul PDCCofignSts Front\_Infotainment\_Control\_Modul **PDCSysSts** PfTrTapUpDwnEnbSwSta Transmission Control Module PfTrTapUpDwnSecvSwSta Transmission\_Control\_Module PfTrTapUpDwnSwSta Transmission Control Module PfTrTapUpDwnSwStsAlvRCTransmission Control Module RLObsRng Front\_Infotainment\_Control\_Modul RmnDrvngDist Front Infotainment Control Modul, Telematics BOX RrMidLObsRng Front Infotainment Control Modul Front\_Infotainment\_Control\_Modul RrMidRObsRng Front Infotainment Control Modul **RrObsDist** RRObsRng Front\_Infotainment\_Control\_Modul Air\_Condition, Body\_Controller, Electric\_Power\_Steering, Electronic\_Park Brake, Elec Steering Column Lock, Engine Control Module, Front\_Infotainment\_Control\_Modul, Sensing\_Diagnostic\_Module, SecsOfMinute Stability Control System, Telematics BOX, TPMS, Transmission Control Module SIAOdoPriy Body\_Controller Air\_Condition, Elec\_Steering\_Column\_Lock, Front\_Infotainment\_Control\_Modul, sm\_network\_mode\_h1 Air\_Condition, Elec\_Steering\_Column\_Lock, Front\_Infotainment\_Control\_Modul, sm signal config id h1 **TPMS** StabCtrlDsblSwA Stability Control System Air Condition, Body Controller, Electric Power Steering, Electronic Park Brake, Elec Steering Column Lock, Engine Control Module, Front Infotainment Control Modul, Sensing Diagnostic Module, SysBPM Stability\_Control\_System, Telematics\_BOX, TPMS, Transmission Control Module Air Condition, Body Controller, Electric Power Steering, Electronic Park Brake, Elec\_Steering\_Column\_Lock, Engine\_Control\_Module, SysBPMEnbd Front\_Infotainment\_Control\_Modul, Sensing\_Diagnostic\_Module, Stability\_Control\_System, Telematics\_BOX, TPMS, Transmission\_Control\_Module Electronic Park Brake, Engine Control Module, TimeDspFmt Front Infotainment Control Modul, Sensing Diagnostic Module

Transmission\_Control\_Module

| Document Title | VOL CAN |

Transmission Control Module

Transmission Control Module

TrPfShftPtrnSw1A

TrPfShftPtrnSw4A

**TrPfShftPtrnSwAlvRC** 

# VOLCANO SIGNAL SPECIFICATION INSTRUMENTS

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TrShftLvrPosV\_I5 Park\_Distance\_Control
TrShftLvrPos\_I5 Park\_Distance\_Control
VINClstr Body\_Controller
wake\_network\_IPK Body\_Controller

Received Signals Publisher Node

ABSIO Stability\_Control\_System
AirbagSysFltIndCmd Sensing\_Diagnostic\_Module

AmbtLghtLvl Body\_Controller

ASSInhBtnLampOn Engine\_Control\_Module
ASSInhIO Engine\_Control\_Module
ASSStsLampOn Engine\_Control\_Module
ASSWrnngLampOn Engine\_Control\_Module
AutoHoldMsg Stability\_Control\_System
AutoHoldSysSts Stability Control System

BatAgngSta **Body Controller BatSOC** Body\_Controller BatVol **Body Controller BCMEmgcSp Body Controller** BCMGearShftParkNtrlESR Body\_Controller BCMNoSmtKevInVehRmndr **Body Controller** BCMNoSmtKeyPressBrkTRR Body\_Controller BCMNoSmtKeyPressClToRR Body\_Controller BCMPressBrkRmndr Body\_Controller **Body Controller BCMPressCIRmndr** BCMPutSmtKeyToBkupPosR Body\_Controller **BCMPwrMdHwdSta** Body\_Controller **BCMPwrMdHwdStaV** Body\_Controller **BCMRunCrkF** Body\_Controller **BCMShftParkRmndr Body Controller BCMSSBA** Body\_Controller **BCMSSBAV** Body\_Controller **BCMSSBFItSts** Body\_Controller BCMSyncSmtKeyRmndr Body\_Controller **BCMTakeSmtKeyOutOfSR Body Controller BntOpenSts Body Controller** 

BrkFludLvlLow Stability\_Control\_System
BrkFludLvlLowV Stability\_Control\_System
BrkSysRedBrkTlltReq Stability\_Control\_System

CalendarAdjReqA Front\_Infotainment\_Control\_Modul
CalendarDayAdj Front\_Infotainment\_Control\_Modul
CalendarMonthAdj Front\_Infotainment\_Control\_Modul
CalendarYearAdj Front\_Infotainment\_Control\_Modul

CCA Engine\_Control\_Module
CCEnbd Engine\_Control\_Module
CCFItPrst Engine\_Control\_Module

ChmA Front\_Infotainment\_Control\_Modul

CrusAndSpdLmtrDrvrSS Engine\_Control\_Module

DayTimeRunningLghtF Body\_Controller
DiagnosticFuncAddrReq Diagnostics
DiagnosticReqIPK Diagnostics

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Document Type

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DipdBeamLghtOn Body\_Controller DistRCAvgDrvn Stability Control System Stability\_Control\_System DistRCAvgDrvnV DrvrDoorOpenSts Body\_Controller DrvrPWLInitnRmndr **Body Controller** DrvrShftCtrlTrgtGear Engine\_Control\_Module DrvrWndOpenRmndr Body\_Controller **ECMCIsDoorToAutoStR** Engine Control Module Engine\_Control\_Module **ECMFasnSbltToAutoStR** Engine Control Module **ECMPressClBrkRmndr** Engine Control Module **ECMShftNtrlToAutoStR** Engine\_Control\_Module **EcoDrvngAIO** EcoDrvngDspStsGearSIS Engine\_Control\_Module EcoDrvngDspStsRcmndFG Engine\_Control\_Module **ECODrvngSpdRutA** Engine Control Module **EmgcCallFlrSts** Telematics BOX En12VoltStrMotCmddOn Engine Control Module **EnASSSta** Engine\_Control\_Module **EnCIntTem** Engine\_Control\_Module **EnCIntTemV** Engine Control Module **EnEmsnRltdMalfA** Engine Control Module EnEmsnRltdMalfIndReq Engine\_Control\_Module EnNonEmsnRltdMalfA Engine\_Control\_Module **EnOilPrsLowIO** Engine\_Control\_Module **EnRunA** Engine\_Control\_Module **EnSpd** Engine Control Module **EnSpdSts Engine Control Module EPBSysAudWrnngReq** Electronic\_Park\_Brake **EPBSysDspMsgReq** Electronic Park Brake **EPBSysStsIndReq** Electronic\_Park\_Brake **EPBSysWrnngIndReg** Electronic\_Park\_Brake **EPSFIrSts** Electric Power Steering **ESCLFIrIndCmd** Elec\_Steering\_Column\_Lock FasnDrvrSbltIndCmd Sensing\_Diagnostic\_Module FasnFrtPsngSbltIndCmd Sensing\_Diagnostic\_Module FasnSbltAudRmndr Sensing Diagnostic Module FICMDistUnitAdjtReqA Front Infotainment Control Modul FICMFuelCsumpUntAdj Front Infotainment Control Modul FICMFuelCsumpUntAdjARA Front\_Infotainment\_Control\_Modul FICMOverSpdFnCrntSts Front\_Infotainment\_Control\_Modul FICMOvrSpdThrshldAdj Front\_Infotainment\_Control\_Modul FICMOvrSpdThrshldAdjtRA Front\_Infotainment\_Control\_Modul FICMTemUntAdi Front Infotainment Control Modul FICMTemUntAdjtReqA Front\_Infotainment\_Control\_Modul FICMTyrePressureUntAdjtReqA Front\_Infotainment\_Control\_Modul **FICMVehMntnceSts** Front\_Infotainment\_Control\_Modul **FLTirePrs TPMS TPMS FLTirePrsV TPMS FLTireSts TPMS FLTireTem FLTireTemV TPMS** Document Title **VOLCANO SIGNAL SPECIFICATION** INSTRUMENTS Document Type NETWORK REQUIREMENT SPECIFICATION Document No Issue Index Volume No Page No PPV\_V 15 (161)

FrtFogLghtOn Body\_Controller **FRTirePrs TPMS FRTirePrsV TPMS FRTireSts TPMS FRTireTem TPMS FRTireTemV TPMS** FrtPsngDoorOpenSts Body\_Controller FrtSideLghtF Body Controller FuelCsump Engine\_Control\_Module GenrSta **Body Controller** Stability Control System **HDCSysSts** Front\_Infotainment\_Control\_Modul HourOfDayAdj keep\_network\_AC Air Condition keep\_network\_ESCL Elec\_Steering\_Column\_Lock keep\_network\_FICM Front\_Infotainment\_Control\_Modul keep network TPMS **TPMS** LBrkLghtF Body\_Controller LDipdBeamLghtF Body\_Controller LDircnIndLghtF Body\_Controller **LDircnIO Body Controller** LdspcOpenSts Body\_Controller LghtSwPosSts Body\_Controller MainBeamLghtOn Body\_Controller MinuteOfHourAdj Front\_Infotainment\_Control\_Modul Front\_Infotainment\_Control\_Modul MusSrcMd NavDircn Front Infotainment Control Modul **NavDist** Front Infotainment Control Modul Front\_Infotainment\_Control\_Modul NavDistUnit Body\_Controller network\_mode Body\_Controller OdoSecy PDCCofignSts\_L Park\_Distance\_Control PDCOverVolFlt L Park Distance Control PDCRespEr L Park\_Distance\_Control PDCRLSnsrFlt L Park\_Distance\_Control PDCRrMidLSnsrFlt L Park Distance Control PDCRrMidRSnsrFlt L Park Distance Control PDCRRSnsrFlt L Park Distance Control PDCSysSts L Park Distance Control PDCUnderVolFlt\_L Park\_Distance\_Control **PEPSAntFlt Body Controller** PwrMdMstrAccryA Body\_Controller PwrMdMstrAccryWkupA Body\_Controller PwrMdMstrlanA **Body Controller** PwrMdMstrRunCrkA Body\_Controller RBrkLghtF Body\_Controller RDipdBeamLghtF **Body Controller** RDircnIndLghtF **Body Controller** Body\_Controller **RDircnIO** RdoFrqcVal Front Infotainment Control Modul RevsLghtF Body\_Controller RLObsRng\_L Park\_Distance\_Control Document Title **VOLCANO SIGNAL SPECIFICATION** INSTRUMENTS Document Type NETWORK REQUIREMENT SPECIFICATION Document No Issue Index Volume No Page No PPV\_V

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**RLTirePrs TPMS RLTirePrsV TPMS TPMS RLTireSts RLTireTem TPMS RLTireTemV TPMS** RrFogLghtF **Body Controller** RrFogLghtOn Body\_Controller RrMidLObsRng L Park Distance Control RrMidRObsRng\_L Park\_Distance\_Control RrObsDist L Park Distance Control RRObsRng L Park Distance Control RrPDCAudWrnng\_L Park\_Distance\_Control RrSideLghtF Body\_Controller **RRTirePrs TPMS RRTirePrsV TPMS RRTireSts TPMS RRTireTem TPMS RRTireTemV TPMS** ScurtAlrmSts Body\_Controller ScurtKeyBatLow Body Controller ScurtKeyInvd Body\_Controller Front\_Infotainment\_Control\_Modul SecsOfMinuteAdj ShifterLckRlseBrkRegA Body\_Controller SIAOdoSecv Body\_Controller Body\_Controller signal\_config\_id Engine Control Module SpdAstSysStsECM SpdAstSysTrgtSpd **Engine Control Module** SrfInitnRmndr Body\_Controller SrfOpenRmndr Body\_Controller SSBEnOffRmndr Body\_Controller StrgWhlAngSnsrCalSts Electric\_Power\_Steering StrgWhlAngSnsrFlt Electric Power Steering SysOpnlMd Body\_Controller SysPwrMd Body\_Controller SysPwrMdV **Body Controller** SysVol Body\_Controller SysVolMd **Body Controller** SysVolMdV Body Controller Body\_Controller SysVolV TakeKeyOutRmndr Body\_Controller Stability\_Control\_System TCSOpngMd **TCSOpngSts** Stability\_Control\_System TimeAdjRegA Front Infotainment Control Modul Front\_Infotainment\_Control\_Modul TimeDspFmtAdj **TPMSAutoLoctnCm TPMS TPMSF TPMS TPMSIdficnLrnCm TPMS TPMSTirePrsLowIO TPMS TPMSWntrMdA TPMS** TrNonEmsnRltdMalfA Transmission\_Control\_Module TrShftLvrPos Engine\_Control\_Module Document Title **VOLCANO SIGNAL SPECIFICATION INSTRUMENTS** Document Type NETWORK REQUIREMENT SPECIFICATION Document No Issue Index Volume No Page No

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TrShftLvrPosV Engine\_Control\_Module
TrShftPtrnASts Engine\_Control\_Module
TrTapUpTapDwnMdSts Engine\_Control\_Module

VehLckngStaBody\_ControllerVehLdShedLvIBody\_ControllerVehOdoBody\_ControllerVehOdoVBody\_ControllerVehSideLghtStsBody\_Controller

VehSpdAvgDrvn Stability\_Control\_System VehSpdAvgDrvnV Stability\_Control\_System

VINBCM Body\_Controller

VSEMd Stability\_Control\_System VSESts Stability\_Control\_System

wake\_network\_AC Air\_Condition

wake\_network\_TPMS TPMS

WhlGndVelLDrvn Stability\_Control\_System WhlGndVelLDrvnV Stability\_Control\_System WhlGndVelLNonDrvn Stability Control System WhlGndVelLNonDrvnV Stability\_Control\_System Stability\_Control\_System WhlGndVelRDrvn WhlGndVelRDrvnV Stability\_Control\_System WhlGndVelRNonDrvn Stability\_Control\_System WhlGndVelRNonDrvnV Stability\_Control\_System

# **Constant Signals**

busoff\_decrement\_time

busoff\_max
busoff\_time
busoff\_wait\_time

communication\_timeout\_time\_slave

fixed\_frame\_normal\_period fixed\_frame\_startup\_period

 $keep\_network\_timeout\_time\_slave$ 

keep\_net\_alive\_time\_master

local\_signal\_config\_id

m

master\_timeout\_time\_sec\_master monitoring\_timeout\_time\_master

n

**NCFRefNoIPK** 

remoteframe\_timeout\_time short\_time\_recovery\_num startup\_time\_sec\_master

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stay_in_busoff				
stay_in_expulsion				
wait_for_network_sleep_time_master				
wait_for_network_sleep_time_slave				
wakeup_network_signal_time_slave				
wakeup_network_time_slave				
wakeup_pending_time_master				
wakeup_pending_time_sec_master				
wakeup_pending_time_slave				
wake_network_signal_time_slave				
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# 6.3 ECU information

In this paragraph the properties of the ECU are listed. The ECU information is used in the Volcano configuration process.

If any of the parameters below is incorrectly specified, new configuration files (FIX and/or NET) must be issued from the system integrator. It is the responsibility of the supplier to inform the system integrator if any parameter is incorrect, and that the configuration files are not edited.

The jitter parameters below shall be seen as requirements (the specified jitter must not be exceeded).

# 6.3.1 Field explanations

Diagnostic Address: The diagnostic address used to address an ECU in a diagnostic request (if applicable)

Compiler: This compiler information is the same as specified in the fixed file.

Volcano Processing Period (ms): The period of volcano\_input, volcano\_output and volcano\_gateway.

All outgoing frames must be specified with a period equal to a multiple of Volcano

Processing Period.

For incoming frames, the Volcano Processing Period is the maximum rate at which incoming data is made available to the application. In the timing analysis, the Volcano Processing Period is a part of the Volcano latency (in worst case, an updated signal

arrives at the CAN-controller directly after a volcano input.

Input Jitter (ms): The maximum difference between the earliest and the latest time to complete a

Volcano input call, counting from the time Volcano output is scheduled (according to

Volcano processing period), see Volcano, referred document [2].

Output Jitter (ms): The maximum difference between the earliest and the latest time to complete a

Volcano output call, counting from the time Volcano input is scheduled (according to

Volcano processing period), see Volcano, referred document [2].

**Note:** In the frame configuration, the jitter is a crucial parameter. If the real jitter is greater than the value specified here, the timing analysis (the fulfilment of deadlines

and the guaranteed processing of incoming frames) will be not valid.

Configuration File Sector Address: The start address of the sector in which the configuration file is stored. The sector

address is a constant defined in the configuration file and can be accessed by the

application (D2) by reading the signal SignalConfigSectorAddr.

Volcano NVRAM Start Address: See Volcano (referred document [2]).
Volcano NVRAM End Address: See Volcano (referred document [2]).
Volcano RAM start address: See Volcano (referred document [2]).
Volcano RAM End Address: See Volcano (referred document [2]).
Physical NVRAM Base: See Volcano (referred document [2]).

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# 6.3.2 ECU specification

Node Name: Instruments

Diagnostic Address [hex]: 00

Compiler: GHS RH850

Volcano Processing Period: 5.000
Input Jitter [ms]: 0.500
Output Jitter [ms]: 0.500
RAM Start [hex]: FEBC7000
RAM End [hex]: FEBC83FF
NVRAM Start [hex]: 10000
NVRAM End [hex]: 17FFF
Physical NVRAM Base [hex]: 0
Signal Config Sector [hex]: 0

# 6.4 Interface information

In this paragraph the properties of the interface(s) to the ECU are listed. The interface information is used in the Volcano configuration process. If any of the parameters below is incorrectly specified, new configuration files (FIX and/or NET) must be issued from the system integrator, see ECU Information above.

# 6.4.1 Field explanations

Network Type: ECAN or LIN.

Network Speed: Bitrate, in kbit/s.

Number of priority bits: See Volcano (referred document [2]). ECAN: 9 bits, Vlite: 4 bits.

Number of filter bits: See Volcano (referred document [2]). ECAN: 20 bits, Vlite: 0 bits.

Controller: See Volcano (referred document [2]).

Clock Frequency: Frequency used in CAN module, in MHz. See Volcano (referred document [2]).

Input Budgets: See Volcano (referred document [2]).

Polled Frames Received: Zero if receive by interrupt is used.

Interrupt frames received: Zero if receive by polling is used.

Output Budgets: See Volcano (referred document [2]).

Slot Frames Transmitted: Zero if transmit by interrupt is used.

Interrupt Frames Transmitted: Zero if transmit by slot is used.

Filter Mask: See Volcano (referred document [2]).

Response Error Signal: Response Error Signal on LIN 2 Slave Interfaces

Initi NAD:

Initial NAD on LIN 2 Slave Interfaces

Supplier ID on LIN 2 Slave Interfaces

Function Id

Function ID on LIN 2 Slave Interfaces

Variant ID on LIN 2 Slave Interfaces

P2min:

P2 min on LIN 2 Slave Interfaces in ms

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STmin: ST min on LIN 2 Slave Interfaces in ms

FNOS Attributes FNOS Attributes

# 6.4.2 Interface specification

Name: IPK\_CAN\_HS

Network Name: HSCAN Network Type: CAN 11

Local Modes: FM\_Normal\_HS, FM\_Quiet\_HS, FM\_Silent\_HS

Controllers: Name IPK CAN HS Ctrl

Device Driver ID RSCAN
Input Clock [kHz] 8000.000
Controller Base Address [hex] FFD00000

Total Number of Slots: 112
Max. Slot Frames Received: 96
Max. Slot Frames Transmitted: 16
Max. Interrupt Frames Received: 255
Max. Interrupt Frames Transmitted: 255
Input Budget: 0
Output Budget: 0

Interest Masks: xxxxxxxxxxx

Name: IPK LIN3

Network Name: IPC\_LIN3 Network Type: LIN Master

Local Modes: FM\_Diagnostics\_L3, FM\_Normal\_L3

Controllers: Name IPK\_LIN3\_CtrI

Device Driver ID RLIN3
Input Clock [kHz] 8000.000
Controller Base Address [hex] FFCE0000

# 7 Signal definitions

# 7.1 General

In this paragraph the definitions of transmitted and received signals are listed. The signal specifications are the result of a design process at the car manufacturer, automatically generated (exported) from the VNA tool. The definition in the signals database is always the valid definition.

Publisher ECU: The ECU from which the signal originates.

**Description:** A short explanation of the meaning and purpose of the signal.

General Remarks: An optional short remark. "-" if no remark is made.

Revision: A short remark informing about changes in the signal since last release of the Signal

database. "-" if no changes are made.

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**Group:** If a group name is specified the signal is a member of that group. All signals in one group must be updated "atomically", i.e. no Volcano Output call must be made in between (requirement on the software in source ECU). All signals in one group must be placed in the same frame (requirement on systems integration).

**Update Bit:** 'Yes' if signal has an associated update bit, otherwise 'No'. In a group, only one signal (normally) has an update bit.

**Signal Type:** The signal can be either 'Boolean, Unsigned' or 'Bytes'. See referred document [2].

# **Information Type:**

'<u>State info'</u>: The signal carries the complete information about the state in the source ECU. A slow read process in the receiving node causing an updated value to be missed will not cause malfunction, only a delay; the application will always get the state of the source application from the signal value.

'<u>State change info</u>': The signal carries one part of the information about the state in the source ECU, the other part is depending on the previous states. A state\_change\_info signal must be read by the receiving application every single time the generating application has updated the signal, otherwise the information will be lost and cause function failure.

'<u>Diagnostic Info</u>': The signal carries message information according to "Diagnostic Communication on CAN" (if applicable).

'Global Parameters': The signal carries message information according to "Global Parameters" (if applicable).

**Size:** The signal size in bits or bytes (if 'bytes').

**Range:** The signal use this value range (for the engineer value, E), i.e. min. and max. value, e.g. 20..140 kmph. "-" if not applicable.

Unit: This is the engineering unit (if applicable). "-" if not applicable.

**Resolution:** The value of the least significant bit, LSB (if applicable). "-" if not applicable.

## Generation type:

A '<u>sporadic'</u> signal is a value updated sporadically to VOLCANO, i.e. due to an occurrence of an event or state change, e.g. button pressed or key inserted. A sporadic signal must not be updated more often than the *minimum update interval*. se below.

A 'periodic' signal is updated periodically to VOLCANO, e.g. a speed or temperature value regularly refreshed by periodical polling of a sensor. A periodic signal must always be updated according to the specified update period, see below. The receiving applications have requirements on the maximum update period.

A '<u>constant</u> signal is accessed from Volcano in the same way as an ordinary Volcano signal. The value of the signal is stated in the Networks file, in the mappings section. A constant signal is not transmitted on the bus and is always "read only".

**Accuracy:** The specified accuracy, or rather inaccuracy, of a given signal value. "-" if not applicable.

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## Coding:

This field applies to both encoded signals ("Coding") and value signals ("Formula"). The coding of the signals is described in a formal manner, to be able to auto-generate signal description files according to the ASAP2 standard. The coding field shall be interpreted as explained below. Both "//" and "/\* \*/" are used for comments, to explain the formal description in the Coding field.

"#Coding" means that the signal shall be interpreted with a *verbal table*. Each verbal table has an number of value pairs,

e.g. "0x01 = Lamp on". "#Coding" is equivalent to "TAB\_VERB" in the ASAP2 standard.

"#Formula" means that the signal shall be interpreted as a *rational function*, N = A \* E + B, where N is the numerical value (hex) and E is the engineering value (physical). Each rational function has 6 coefficients, a, b, c, d, e and f: where

N =  $(a^*E^*E + b^*E + c) / (a^*E^*E + e^*E + f)$ , e.g. 0 2 10 0 0 1. "#Formula" is equivalent to "RAT\_FUNC" in the ASAP2 standard.

"#Unformatted" means that the syntax is not according to ASAP standard, and therefore in the current database this signal will be omitted when generating A2L files. The coding is written in plain text.

"#Null" means that the signal has no coding. This is the case for zero-size signals.

Note: If a signal consists of "sub-signals" (e.g. bit-coded signals) the "#Coding" or "#Formula" is followed by the size, bit offset and signal suffix. For example, "#Coding:1,0:0" means that the sub-signal is a *verbal table* (see above), the size is 1 bit, the bit offset is 0 (LSB) and the suffix is "\_0". The suffix is used for the interpretation of signals in ASAP2 files.

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# 7.2 Transmitted signals

Interface: IPK\_CAN\_HS

			Airbaç	gWrnngInd	F			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		Name I/A	Initial Value false		
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	rval [ms]			
	FM_Normal_HS 30.000 0.000							
Description:		•	on Failed Airbag warning la	mp				
Encoding	Name:	Во	oleanCoding					
type:	Size:	1 b	it					
	Description	: boo	olean value	an value				
	Values:	Values: <b>Type</b>		Value	Scale	Offset	Interpretation	
		Log	gical Value	0			FALSE	
		Log	gical Value	1			TRUE	

	ASSInhBtnA									
Size [bits]	<b>Type</b> Boolean	or I I I I I I I I I I I I I I I I I I I					Initial Value false			
Timings:	Interface N FM_Norma		. Latency [ms] 00	Write Inte	rval [ms]					
Description:	Auto Stop S 0x0 = Switc 0x1 = Switc	h released	Switch Pressed	Active						
Encoding type:	Name: Size: Description Values:	1 b : boo <b>Ty</b> l Log	BooleanCoding 1 bit boolean value Type Value Scale Offset Interpretation Logical Value 0 FALSE Logical Value 1 TRUE							

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			Avgl	FuelCsum	р		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		u <b>p Name</b> N/A	Update Bit No	Initial Value
Timings:	Interface N FM_Norma	Mode Pub ILHS 30.0	. Latency [ms]	Write In	terval [ms]		
Description:	Average Fu	iel Consump	otion				
Encoding type:	Name: Size: Values:	AvgFuelC 8 bits Type	·	Value	Scale	Offset	Interpretation
		Physical F	Range	0 - 255	0.1	0	

			AvgF	uelCsump	V		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value 0
Timings:	Interface N	lode Pul	o. Latency [ms]	Write Inte	erval [ms]		
	FM_Norma	I_HS 30.	000	0.000			
Description:	Average Fu	iel Consum	ption Validity				
Encoding	Name:	Va	alidityCoding				
type:	Size:	1	bit				
	Description	: Va	alidity Encode Typ	е			
	Values:	Ty	/pe	Value	Scale	Offset	Interpretation
		Lo	gical Value	0			Valid
		Lo	gical Value	1			Invalid

			Cal	endarDa	y		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	<b>up Name</b> N/A	Updat Bit No	e Initial Value
Timings:	Interface N FM_Norma		. Latency [ms]	Write In 0.000	nterval [ms	5]	
Description:	current day	info.					
Encoding type:	Name: Size: Values:	Calendar 5 bits Type Physical F	·	<b>Value</b> 0 - 31	Scale	Offset 0	Interpretation

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			Cal	endarMo	onth			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	•	Update Bit No	Initial Value
Timings:	Interface Mode Pub. Latency [ms] Write Interval [ms] FM Normal HS 30.000 0.000							
Description:	current mor	nth info.						
Encoding type:	Name: Size:	4 bits	MonthET					
	Values:	Type		Value	Scale	Offs		terpretation
		Logical V		)				nknown
		Logical V		l ว				inuary
		Logical V		2 3				ebruary arch
		Logical V		5 4				
		Logical V Logical V		+ 5			•	oril ay
		Logical V		S S				ay Ine
		Logical V		5 7			Ju	
		Logical V		, 3				ugust
		Logical V		9				eptember
		Logical V		10				ctober
		Logical V		11			_	ovember
		Logical V		12				ecember
		Logical V		13				eserved
		Logical V		14				eserved
		Logical V		 15				eserved

			Cal	endarYea	r		
Size [bits] 8	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	1	u <b>p Name</b> N/A	Update Bit No	Initial Value
Timings:	Interface N FM_Norma		. Latency [ms]	Write In	terval [ms]		
Description:	current yea	r info					
Encoding type:	Name: Size: Values:	Calendar' 8 bits Type Physical F		<b>Value</b> 0 - 255	Scale	Offset 2000	Interpretation

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	CCSwStsAlvRC								
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Updat Bit No	Initial Value		
Timings:	Interface N	lode Pub	. Latency [ms]	Write In	terval [ms]				
	FM_Norma	I_HS 30.0	000	0.000					
Description:	Cruise Con	trol Switch S	Status Alive Rollir	ng Count					
Encoding	Name:	<b>EequalN</b>	_2ET						
type:	Size:	2 bits							
	Values:	Type		Value	Scale	Offset	Interpretation		
		Physical I	Range	0 - 3	1	0			

			CCSws	StsCand	ISwA			
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	Gr	oup Name N/A	U	<b>pdate</b> <b>Bit</b> No	Initial Value false
Timings:	Interface N FM_Norma	Node Pub	. Latency [ms]	<b>Write</b> 0.000	Interval [m	ıs]		
Description:	Cruise Con	trol Switch S	Status : Cancel S	witch Ac	tive			
Encoding type:	Name: Size:	CCSwSts 1 bit	sCancISwAET					
	Values:	<b>Type</b> Logical V	alue 1	/alue	Scale	Offset	<b>int</b> Tro	<b>erpretation</b> ue
		Logical V	alue 0				Fa	lse

			CCSwS	tsDisDecS	wA		
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]		
	FM_Norma	I_HS 30.0	000	0.000			
Description:	Cruise Con	trol Switch	Status Distance D	ecrease S	witch Active	Э	
Encoding	Name:	Вс	oleanCoding				
type:	Size:	1 b	oit				
	Description	: bo	olean value				
	Values:	Ту	pe	Value	Scale	Offset	Interpretation
		Lo	gical Value	0			FALSE
		Lo	gical Value	1			TRUE

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			CCSwS	tsDistIncS	wA		
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Interface N	/lode Pu	b. Latency [ms]	Write Inte	erval [ms]		
	FM_Norma	ıl_HS 30.	000	0.000			
Description:	Cruise Con	trol Switch	Status Distance I	ncrease Sw	itch Active		
Encoding	Name:	В	ooleanCoding				
type:	Size:	1	bit				
	Description	i: bo	oolean value				
	Values:	Ty	/pe	Value	Scale	Offset	Interpretation
		Lo	gical Value	0			FALSE
		Lo	gical Value	1			TRUE

	CCSwStsOnSwA								
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	Gro	oup Name N/A	Updat Bit No	Initial Value false		
Timings:	Interface N	lode Pub	. Latency [ms]	Write I	nterval [ms	<u> </u>			
	FM_Norma	I_HS 30.0	00	0.000					
Description:	Cruise Con	trol Switch S	Status : On Switc	h Active					
Encoding	Name:	CCSwSts	sOnSwAET						
type:	Size:	1 bit							
	Values:	Type	V	/alue	Scale	Offset	Interpretation		
		Logical V	alue 1				True		
		Logical V	alue 0				False		

	CCSwStsPV								
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	1	u <b>p Name</b> N/A	Update Bit No	Initial Value 0		
Timings:	Interface N	lode Pub	. Latency [ms]	Write In	terval [ms]				
	FM_Norma	I_HS 30.0	00	0.000					
Description:	Cruise Con	trol Switch S	Status Protection	Value					
Encoding	Name:	CCSwSts	PVET						
type:	Size:	8 bits							
	Values:	Type		Value	Scale	Offset	Interpretation		
		Physical F	Range	0 - 255	1	0			

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			CCSw	StsRsm	SwA			
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	Gr	oup Name N/A	В	date it	Initial Value false
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [m	s]		
	FM_Norma	I_HS 30.0	000	0.000				
Description:	Cruise Con	trol Switch	Status : Resume	Switch A	Active			
Encoding	Name:	CCSwSt	sRsmSwAET					
type:	Size:	1 bit						
	Values:	Type	V	'alue	Scale	Offset	Inte	erpretation
		Logical V	alue 1				Tru	е
		Logical V	alue 0				Fal	se

CCSwStsSetSwA								
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	G	roup Name N/A	, L	date Bit lo	Initial Value false
Timings:	Interface N FM_Norma	Mode Pub ILHS 30.0	. Latency [ms]	<b>Write</b> 0.000	Interval [m	ns]		
Description:	Cruise Con	trol Switch S	Status : Set Swite	ch Activ	е			
Encoding type:	Name: Size:	CCSwSts 1 bit	sSetSwAET					
	Values:	Type	\	/alue	Scale	Offset	Inte	rpretation
		Logical V	alue 1				True	Э
		Logical V	alue 0	)			Fals	se

	CCSwStsSpdDecSwA								
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false		
Fimings: Interface Mode Pub. Latency [ms] Write Interval [ms]									
	FM_Normal_HS 30.000 0.000								
Description:	Cruise Con	trol Switch S	Status : Speed De	ecrease Sw	ritch Active				
Encoding	Name:	CCSwSts	sSpdDecSwAET	-					
type:	Size:	1 bit							
	Values:	Type	V	alue S	cale Of	fset In	terpretation		
		Logical V	alue 1			Tr	ue		
		Logical V	alue 0			Fa	alse		

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			CCSwS	tsSpdlı	ncSwA			
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	Gı	roup Name N/A	•   <u>'</u> B	date it	<b>Initial Value</b> false
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [n	ns]		
	FM_Norma	I_HS 30.0	000	0.000				
Description:	Cruise Con	trol Switch S	Status : Speed In	crease	Switch Acti	ve		
Encoding	Name:	CCSwSt	sSpdIncSwAET					
type:	Size:	1 bit						
	Values:	Type	V	'alue	Scale	Offset	Inte	rpretation
		Logical V	alue 1				True	е
		Logical V	'alue 0				Fals	se

			CCSwSt	sSwData	alntgty					
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	oup Nan N/A	ne	Update Bit No	Initial Value 0		
Timings:	Interface N	rface Mode Pub. Latency [ms] Write Interval [ms]								
	FM_Norma	FM_Normal_HS								
Description:	Cruise Con	trol Switch S	Status : Switch Da	ata Integ	rity					
Encoding	Name:	CCSwSts	SwDataIntgtyE	Γ						
type:	Size:	2 bits								
	Values:	Type	Va	lue :	Scale	Offse	t Interp	oretation		
		Logical Va	alue 0				Data '	Valid		
		Logical Va	alue 1				Data	Invalid		
		Logical Va	alue 2				Failur	e Detected		
		Logical Va	alue 3				Illegal	l Range		

			ChmCm	dSndCnd	cPrd				
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value		
Timings:	Interface N	Interface Mode Pub. Latency [ms] Write Interval [ms]							
	FM_Norma	I_HS 5.00	0	0.000					
Description:			d Cadence Perio	od					
Encoding	Name:	ChmCmd	SndCndcPrd						
type:	Size:	8 bits							
	Values:	Type		Value	Scale	Offset	Interpretation		
		Physical F	Range	0 - 255	10	0			

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			ChmCm	idSndDut	tyCyc		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Type Group Name N/A Periodic		Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma	<b>l_HS</b> 5.00	. Latency [ms]	Write Ir 0.000	nterval [ms]		
Description:	1		nd Duty Cycle				
Encoding type:	Name: Size: Values:	8 bits Type Physical R		<b>alue</b> - 255	<b>Scale</b> 0.392157	Offset 0	Interpretation

			ChmCm	dSndLoct	nFL		
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	ngs: Interface Mode Pub. Latency [ms] Write Interval [ms]						
	FM_Norma	I_HS 5.00	0	0.000			
Description:	1		d Location Front	Left			
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description: boo		olean value				
	Values: Ty		ре	Value	Scale	Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

			ChmCm	dSndLoctr	FR		
Size [bits]	<b>Type</b> Boolean	Info Type State	State Periodic N/A				Initial Value false
Timings:	Interface N FM_Norma		. Latency [ms]	Write Inte	rval [ms]		
Description:			d Location Front	Right			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Ty</b> Log	<b>pe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			ChmCm	dSndLocti	nRL		
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]		
	FM_Norma	I_HS 5.00	0	0.000			
Description:	sound locat	tion					
	Chime Con	nmand Sour	nd Location Rear	Left			
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	oit				
	Description: boo		poolean value				
	Values:	Ту	pe	Value	Scale	Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

			ChmCm	dSndLoctr	nRR		
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		o Name I/A	Update Bit No	Initial Value false
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]		
	FM_Norma	I_HS 5.00	0	0.000			
Description:	sound locat	ion					
•	Chime Com	nmand Soun	d Location Rear	Right			
Encoding	Name:	Во	oleanCoding				
type:	Size: 1 bit		it				
	Description: boo		olean value				
	Values: <b>Ty</b>		ре	Value	Scale	Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

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			Chm(	CmdSr	ndTone				
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic		<b>Group Nan</b> N/A	ne	Update Bit No	Initial Value 0	
Timings:	Interface N FM_Norma		. Latency [ms]	<b>W</b> rit	t <b>e Interval  </b> 10	[ms]			
Description:		aracteristics nmand Sour	d Tone						
Encoding	Name:	ChmCmc	ISndToneET						
type:	Size:	4 bits							
	Values:	Type	V	alue	Scale	Offse	et Inter	pretation	
		Logical V	alue 0				Clac	k	
		Logical V	alue 1				Click		
		Logical V	alue 2				Beep (750 Hz)		
		Logical V	alue 3				Beep (2000 Hz)		
		Logical V	alue 4				Gong	g (750 Hz)	
		Logical V	alue 5				Gong	g (2000 Hz)	
		Logical V	alue 6				Rese	erved	
		Logical V	alue 7				Rese	erved	
		Logical V	alue 8				Rese	erved	
		Logical V	alue 9				Rese	erved	
		Logical V	alue 1	0			Rese	erved	
		Logical V	alue 1	1			Rese	erved	
		Logical V	alue 1	2			Rese	erved	
		Logical V	alue 1	3			Rese	erved	
		Logical V	alue 1	4			Rese	erved	
		Logical V	alue 1	5			Rese	erved	

			Clstr	·10KmTick					
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false		
Timings:	Interface Mode Pub. Latency [ms] Write Interval [ms] FM_Normal_HS 30.000 0.000								
Description:			ck es match with oth	er module,	IPK will se	end '1' statu	s out.		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value						
	Values:	<b>Tyj</b> Log	<b>pe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE		

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			Cls	trDistUnt	:		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write In	terval [ms]		
	FM_Norma	I_HS 30.0	00	0.000			
Description:	Cluster Dis	tance Units					
Encoding	Name:	ClstrDist	UntET				
type:	Size:	1 bit					
	Values:	Type	V	alue	Scale (	Offset I	nterpretation
		Logical V	alue 0			k	xm
		Logical V	alue 1			n	niles

			ClstrDs	pdABS	Wrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	U	<b>pdate</b> <b>Bit</b> No	Initial Value 0
Timings:	Interface N FM_Norma	Mode Pub	. Latency [ms]	<b>Write</b> 0.000	Interval [m	ns]		
Description:	Cluster Dis	played Antilo	ock Brake Syster	m Warn	ing			
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	\	/alue	Scale	Offset	Inte	erpretation
		Logical V		)				Warning
		Logical V	alue 1				Wa	rning

			ClstrDsp	dAirbag\	<b>N</b> rnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A			<b>Jpdate</b> <b>Bit</b> No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write Ir	terval [m	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Disp	olayed Airba	g Warning					
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	V	alue	Scale	Offse	t In	terpretation
		Logical V	alue 0				No	o Warning
		Logical V	alue 1				W	arning

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			ClstrDs	spdAltr\	Wrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A			<b>Update</b> <b>Bit</b> No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [m	าร]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	played Alter	nator Warning					
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	V	/alue	Scale	Offse	et Int	terpretation
		Logical V	alue 0	)			No	Warning
		Logical V	alue 1				W	arning

			ClstrDspd	ASpdLn	ntrWrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Group Name N/A Update Bit No				Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	<b>Write</b> 0.000	Interval [m	s]		
Description:	Cluster Dis	olayed Activ	e Speed Limiter	Warning				
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	-	'alue	Scale	Offset	Inte	erpretation
		Logical V					No	Warning
ı		Logical V	alue 1				Wa	arning

	ClstrDspdBrkSysWrnng										
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value 0				
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]						
	FM_Norma	I_HS 30.0	00	0.000							
Description:	Cluster Disp	olayed Brak	e System Warnin	ıg							
Encoding	Name:	WarnET									
type:	Size:	1 bit									
	Values:	Type	V	alue S	cale Of	fset Int	terpretation				
		Logical V	alue 0			No	Warning				
		Logical V	alue 1			W	arning				

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			ClstrDs	spdCCV	/rnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gr	oup Name N/A	l	<b>Jpdate</b> <b>Bit</b> No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [m	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	played Cruis	e Control Warnii	ng				
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	/alue	Scale	Offset	t Int	erpretation
		Logical V	alue 0	)			No	Warning
		Logical V	alue 1				Wa	arning

			ClstrDsp	dCIntTe	mWrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	, (	<b>Jpdate</b> <b>Bit</b> No	Initial Value
Timings:	Interface N FM_Norma	<b>flode Pub</b> ILHS 30.0	. Latency [ms]	<b>Write</b> 0.000	Interval [m	ns]		
Description:	Cluster Dis	played Cool	ant Temperature	Warnir	ng			
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	-	/alue	Scale	Offset		terpretation
		Logical V		)				o Warning
		Logical V	alue 1				W	/arning

			ClstrDspd	IEnDrvB	yWireW		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gr	oup Name N/A	Updat Bit No	Initial Value
Timings:	Interface N FM_Norma		. Latency [ms]	<b>Write I</b> 0.000	nterval [ms	<b>i</b> ]	
Description:	Cluster Disp	olayed Engir	ne Drive By Wire	Warning	]		
Encoding type:	Name: Size: Values:	WarnET 1 bit Type Logical V Logical V	alue 0	′alue	Scale	Offset	Interpretation No Warning Warning

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			ClstrDs	pdEPSWrnng						
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		Update Bit No	Initial Value 0			
Timings:	Interface N	nterface Mode Pub. Latency [ms] Write Interval [ms]								
	FM_Norma	I_HS 30.0	00	0.000						
Description:	Cluster Dis	played Elect	ric Power Steerir	ng Warning						
Encoding	Name:	ClstrDsp	dEPSWrnngET							
type:	Size:	2 bits								
	Values:	Type	Val	lue Scale	Offse	t Interp	retation			
		Logical Va	alue 0			No Wa	arning			
		Logical Va	alue 1			Gener	al Warning			
		Logical Va	alue 2			Seriou	ıs Warning			
		Logical Va	alue 3			Reser	ved			

			ClstrDs	spdFLTire	Prs		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value
Timings:	Interface M	lode Pub	. Latency [ms]	Write In	terval [ms]		
	FM_Norma	I_HS 30.0	00	0.000			
Description:	Cluster Disp	played Front	t Left Tire Pressu	ıre			
Encoding	Name:	ClstrDspo	dFLTirePrsET				
type:	Size:	7 bits					
	Values:	Type		Value	Scale	Offset	Interpretation
		Physical F	Range	0 - 127	4	0	kPa

			ClstrDs	spdFLT	ireSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gr	oup Name N/A	'   E	date Bit lo	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	<b>Write</b> 0.000	Interval [m	ns]		
Description:	Cluster Disp	olayed Front	Left Tire Status					
Encoding type:	Name: Size: Values:	WarnET 1 bit Type Logical V Logical V	alue 0	alue	Scale	Offset	No	erpretation Warning Irning

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	Clair	Periodic	<b>Group Name</b> N/A		Bit No	Initial Value
			Write In	terval [ms]		
Cluster Disp	olayed Front	Right Tire Press	sure			
Name: Size: /alues:	7 bits <b>Type</b>			Scale	Offset	Interpretation kPa
- 	nterface M M_Normal luster Disp lame: ize:	nterface Mode Pub M_Normal_HS 30.0 luster Displayed Front lame: ClstrDspo ize: 7 bits falues: Type	mterface Mode Pub. Latency [ms] M_Normal_HS 30.000 luster Displayed Front Right Tire Press ame: ClstrDspdFLTirePrsET ize: 7 bits falues: Type	nterface Mode Pub. Latency [ms] Write In M_Normal_HS 30.000 0.000  luster Displayed Front Right Tire Pressure lame: ClstrDspdFLTirePrsET ize: 7 bits lalues: Type Value	nterface Mode Pub. Latency [ms] Write Interval [ms] M_Normal_HS 30.000 0.000  luster Displayed Front Right Tire Pressure lame: ClstrDspdFLTirePrsET ize: 7 bits alues: Type Value Scale	nterface Mode Pub. Latency [ms] Write Interval [ms] M_Normal_HS 30.000 0.000  luster Displayed Front Right Tire Pressure lame: ClstrDspdFLTirePrsET ize: 7 bits alues: Type Value Scale Offset

			ClstrDs	spdFRT	ireSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	G	roup Name N/A	•	Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma	<b>l_HS 30.0</b>	. Latency [ms]	<b>Write</b> 0.000	Interval [m	ns]		
Description:	Cluster Dis	played Front	Right Tire Statu	ıs				
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	alue/	Scale	Offs	et In	terpretation
		Logical V	alue 0	)			No	o Warning
		Logical V	alue 1				W	arning

			ClstrDsp	dFuelLvlSgm	nt		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		Latency [ms]	Write Interva	al [ms]		
Description:			Level Segment	0.000			
Encoding type:	Name: Size:	4 bits	IFuelLvlSgmtET				
	Values:	Type Logical Va	lue 1 lue 2 lue 3 lue 4 lue 5 lue 6 lue 7	ie Scale	Offset	Interpret 1st Segm 1st Segm 2nd Segm 3th Segm 4th Segm 5th Segm 6th Segm 7th Segm 8th Segm	nent Flash nent On ment On nent On nent On nent On nent On nent On nent On

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			ClstrDspd	FuelSn	srWrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gr	oup Name N/A	•	Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [m	าร]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	played Fuel	Sensor Warning					
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	alue	Scale	Off	set Ir	nterpretation
		Logical V	alue 0				N	o Warning
		Logical V	alue 1				V	/arning

			ClstrD	spdFuelSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	Write Interv 0.000	al [ms]		
Description:	Cluster Dis	played Fuel	Status				
Encoding type:	Name: Size:	ClstrDspc 2 bits	dFuelStsET				
	Values:	Type	Valu	ie Scale	Offset	Interpre	tation
		Logical Va	alue 0			Fuel Sta	tus OK
		Logical Va	alue 1			Fuel Sta	tus Low
		Logical Va	alue 2			Fuel Sta	tus Critical
		Logical Va	alue 3			Reserve	d

			ClstrD	spdInfoMsk			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		<b>Update Bit</b> No	Initial Value 0
Timings:	Interface Mode Pub. Latency [ms] Write Interval [ms] FM_Normal_HS 30.000 0.000						
Description:	Cluster Disp	olayed Infor	mation Mask				
Encoding type:	Name: Size: Values:	1 bit <b>Type</b>	dInfoMskET Val	ue Scale	Offset	-	retation
		Logical Va				Don <sub>i</sub> ® Use D	ot Use Data ata

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			ClstrDspc	dInvdKey	/Wrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	oup Name N/A	U	<b>pdate</b> <b>Bit</b> No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write I	nterval [ms	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	olayed Inval	id Key Warning					
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	V	alue	Scale	Offset	Int	erpretation
		Logical V	alue 0				No	Warning
		Logical V	alue 1				Wa	arning

			ClstrDsp	dMalfIn	drLghtW			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	'   <u>'</u> '	date Bit No	Initial Value 0
Timings:	Interface N FM Norma	Mode Pub	. Latency [ms]	<b>Write</b> 0.000	Interval [m	ns]		
Description:	Cluster Dis	 played Malfu	unction Indicator	Light W	arning			
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Туре	-	/alue	Scale	Offset		erpretation
		Logical V Logical V		) 				Warning rning

			ClstrDsp	odOilPrsLowW	1		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Group Na N/A	ıme	Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write Interva	l [ms]		
	FM_Normal_HS 30.000 0.000						
Description:	Cluster Disp	olayed Oil P	ressure Low Wai	rning			
Encoding	Name:	WarnET					
type:	Size:	1 bit					
	Values:	Type	V	alue Scale	Off	set Int	erpretation
		Logical V	alue 0			No	Warning
		Logical V	alue 1			Wa	arning

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			ClstrDs	pdPDC	Wrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		Update Bit No	Initial Value 0	
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [m	าร]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	olayed Park	Distance Contro	l Warnir	ng			
Encoding type:	Name: Size:	<b>WarnET</b> 1 bit						
	Values:	Type	V	'alue	Scale	Off	set Ir	nterpretation
		Logical V	alue 0				N	o Warning
		Logical V	alue 1				V	/arning

			ClstrDs	spdRLTire	ePrs		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	u <b>p Name</b> N/A	Update Bit No	Initial Value
Timings:	Interface N FM_Norma	<b>lode Pub</b> I_HS 30.0	. Latency [ms]	Write In 0.000	terval [ms]		
Description:	Cluster Disp	olayed Rear	Left Tire Pressu	re			
Encoding type:	Name: Size: Values:	ClstrDspo 7 bits Type	dFLTirePrsET	Value	Scale	Offset	Interpretation
		Physical F	Range	0 - 127	4	0	kPa

			ClstrDs	spdRLTi	ireSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		Upda Bit No		Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	<b>Write I</b> 0.000	nterval [ms	5]		
Description:	Cluster Dis	olayed Rear	Left Tire Status					
Encoding type:	Name: Size: Values:	WarnET 1 bit	V	/alue	Soolo	Offset	Intor	nrotation
	values:	<b>Type</b> Logical V Logical V	alue 0		Scale	Offset		<b>pretation</b> Varning ning

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			ClstrDs	pdRRTire	ePrs		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	u <b>p Name</b> N/A	Updat Bit No	e Initial Value
Timings:	Interface N FM_Norma	<b>flode Pub</b> ILHS 30.0	o. Latency [ms]	Write In 0.000	terval [ms]		
Description:	Cluster Dis	played Rea	r Right Tire Press	sure			
Encoding type:	Name: Size: Values:	ClstrDsp 7 bits Type Physical I	dFLTirePrsET	<b>Value</b> 0 - 127	Scale	Offset 0	Interpretation kPa

			ClstrDs	spdRRT	ireSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	•	<b>Update</b> <b>Bit</b> No	Initial Value 0
Timings:	Interface N FM_Norma	<b>lode Pub</b> I_HS 30.0	. Latency [ms]	<b>Write</b> 0.000	Interval [m	ns]		
Description:	Cluster Dis	olayed Rear	Right Tire Statu	S				
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	'alue	Scale	Offse	et Ir	nterpretation
		Logical V	alue 0				Ν	lo Warning
		Logical V	alue 1				V	Varning

			ClstrDspd	SASUnca	lWrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	u <b>p Name</b> N/A	Upo B N		<b>Initial Value</b> 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write In	terval [m	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Disp	olayed Steer	ring Angle Senso	r Uncaliba	artion War	ning		
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	V	alue	Scale	Offset	Inte	erpretation
		Logical V	alue 0				No '	Warning
		Logical V	alue 1				Wai	rning

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			ClstrDs	pdSASV	Vrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gr	oup Name N/A	Upo B N	it	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write I	nterval [m	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	played Stee	ring Angle Senso	r Warnir	ng			
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	<b>Type</b> Logical V Logical V	alue 0	alue	Scale	Offset	No \	rpretation Warning rning

			ClstrDs	pdSCS	Wrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	, E	date it	Initial Value 0
Timings:	Interface N FM_Norma	<b>l_HS 30.0</b>	. Latency [ms]	<b>Write</b> 0.000	Interval [m	ns]		
Description:	Cluster Dis	played Stabi	lity Control Syste	em War	ning			
Encoding type:	Name: Size:	<b>WarnET</b> 1 bit						
	Values:	<b>Type</b> Logical V	_	/alue	Scale	Offset		rpretation Warning
		Logical V					Wai	rning

			ClstrDspd	ScurtKe	yBatLW		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	oup <b>Name</b> N/A	Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write I	nterval [ms]		
	FM_Norma	I_HS 30.0	00	0.000			
Description:	Cluster Disp	olayed Secu	rity Key Battery I	Low War	ning		
Encoding	Name:	WarnET					
type:	Size:	1 bit					
	Values:	Type	V	'alue	Scale C	offset Ir	nterpretation
		Logical V	alue 0			N	lo Warning
		Logical V	alue 1			٧	/arning

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			ClstrDs	pdSpSt	Wrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gr	oup Name N/A		<b>date</b> Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [ms	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	played Stop	Start Warning					
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	V	/alue	Scale	Offset	Inte	erpretation
		Logical V	alue 0	)			No	Warning
		Logical V	alue 1				Wa	rning

			ClstrDs	pdTCS	Wrnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	'   <u>'</u> '	date Bit No	Initial Value 0
Timings:	Interface N	Mode Pub	. Latency [ms]	<b>Write</b> 0.000	Interval [m	ns]		
Description:			tion Control Syst	em Wai	ning			
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	<b>Type</b> Logical V	_	/alue	Scale	Offset		erpretation Warning
		Logical V						rning

			ClstrD	spdTrW	rnng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gr	oup Name N/A	•	Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write I	nterval [m	าร]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Disp	olayed Trans	smission Warning	g				
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	V	alue	Scale	Offs	set Ir	nterpretation
		Logical V	alue 0				N	lo Warning
		Logical V	alue 1				V	Varning

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			ClstrDs	pdTyre	ePrsSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	G	iroup Nam N/A	е	Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [ı	ms]		
	FM_Norma	I_HS 30.0	00	0.000	)			
Description:	Cluster Dis	played Tyre	Pressure Status					
Encoding	Name:	ClstrDsp	dTyrePrsStsET					
type:	Size:	2 bits						
	Values:	Type	V	alue	Scale	Offs	set Inte	erpretation
		Logical V	alue 0				No '	Warning
		Logical V	alue 1				Low	v Tyre
		Logical V	alue 2				Sys	tem Failure

			Clsti	rDspdV	ehSpd			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic		<b>Group N</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface	Mode Pub	. Latency [ms]	Writ	e Interv	al [ms]		
	FM_Norm	al_HS 5.00	00	0.00	0			
Description:	Cluster Dis	splayed Vehi	cle Speed					
Encoding	Name:	ClstrDspdVe	hSpdET					
type:	Size:	3 bits	-					
	Values:	Гуре	Value	Scale	Offset	Interpre	etation	
	1	Physical Ran	ge 0 - 254	1	0	km/h		
	1	_ogical Value	255			Speed S	Signal Missing	Error of SCS

			ClstrFu	ıelCsuı	mpUnt			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	•	Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	<b>Write</b> 0.000	Interval [n	ns]		
Description:	Cluster Fue	l Consumpt	ion Units					
Encoding type:	Name: Size:	ClstrFue 2 bits	ICsumpUntET					
	Values:	Type Logical V Logical V Logical V Logical V	alue 0 alue 1 alue 2	alue	Scale	Off	L/1 mp	erpretation 00km g(UK) g(US) /L

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			Cls	trTemUnt			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	Write Inte	erval [ms]		
Description:	Cluster Ten	nperature Ui	nits				
Encoding type:	Name: Size:	ClstrTemU 2 bits	IntET				
	Values:	Type Logical Val Logical Val Logical Val Logical Val	ue 1 ue 2	Scale	Offset	Interpretation Celsius Degramment E Rahrenheit E Not Available Reserved	ree(¡æ) Degree(¨H)

			ClstrTyr	ePressu	reUnt			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	oup Name N/A		Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write I	nterval [ms	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Tyre	e Pressure l	Jnits					
Encoding	Name:	ClstrTyre	ePressureUntET	•				
type:	Size:	2 bits						
	Values:	Type	V	alue	Scale	Offs	et Int	terpretation
		Logical V	alue 0				ba	ır
		Logical V	alue 1				kp	a
		Logical V	alue 2				Ps	si

			Diagno	sticRespIPK		
Size [bits]	<b>Type</b> Bytes	Info Type State	Generation Type Sporadic	Group Name DIAG_PhysResp_IPK	<b>Update</b> <b>Bit</b> No	Initial Value 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x0
Timings:	Interface N	lode Pub	. Latency [ms]	Write Interval [ms]		
	FM_Norma	I_HS 5.00	00	10.000		
	FM_Quiet_	HS 5.00	00	10.000		
	FM_Silent_	HS 5.00	00	10.000		
Description:	Diagnostic	response fr	om IPK			

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			Dsp	oMeasSy	/S			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gre	oup Name N/A	Upo B N	it	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write I	nterval [ms	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Display Me	asurement S	System					
Encoding type:	Name: Size:	DspMeas 1 bit	sSysET					
	Values:	Type	V	'alue	Scale	Offset	Inte	erpretation
		Logical V	alue 0				kph	ı
		Logical V	alue 1				MP	PH

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DTCInfomationIPK											
Size [bits] 56	<b>Type</b> Bytes	Info T Sta		Generation Type Sporadic	Group Name N/A	Update Bit No	Initial Value 0x00 0x00 0x00 0x00 0x00 0x00 0x00				
Timings:	Interface N FM_Norma		<b>Pub</b> 100.	. Latency [ms] 000	Write Interval [ms] 1000.000						
Description:	Byte 0 is M For each by Byte 0: Bit (7-4): D Bit (3-0): Re Byte 1: Bit (7-0): D Byte 2: Bit (7-0): D Byte 3: Bit (7-0): D Byte 4: Bit (7-0): D Byte 5: Bit 7: warni Bit 6: testNe Bit 5: testFa Bit 4: testNe Bit 3: confir Bit 1: testFa Bit 0: testFa Byte 6: Byte 6: Bit (7-0): D	of DTC SB (mo yte, Bit TC Ser eserve eserve TCHigh TCLow TCFaill ngIndic otCom ailedSii otCom medD ngDTC ailedTh ailed TC Typ	c inforost signature of the control	nsb (most significe) Level  peByte  Requested  AThisOperationC	nd Byte 6 is LSB (least cant bit), and Bit 0 is lst						

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				FLObsRr	ng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generatio Type</b> Periodic	n G	roup Name N/A	`   E	date Bit lo	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [m	s] Write 0.000	Interval [m	ns]		
Description:	Front Left C	Obstacle Rar	nge					
Encoding type:	Name: Size:	ObsRngl 4 bits	ΕT					
	Values:	Type		Value	Scale	Offset	Int	erpretation
		Logical V	alue	0			No	Obstacle
		Logical V		1				nge 1
		Logical V		2				nge 2
		Logical V						nge 3
		Logical V		4				nge 4
		Logical V		5				nge 5
		Logical V		6				nge 6
		Logical V		7				nge 7
		Logical V	alue	8			Ra	nge 8
		Logical V	alue	9			Ra	nge 9
		Logical V		10				nge 10
		Logical V	alue	11			Ra	nge 11
		Logical V	alue	12			Ra	nge 12
		Logical V	alue	13			Ra	nge 13
		Logical V	alue	14			Ra	nge 14
		Logical V	alue	15			Ra	nge 15

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				FRObsRi	ng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generatio</b> <b>Type</b> Periodic	n G	roup Name N/A	В	date Sit Io	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [m:	s] Write 0.000	Interval [m	s]		
Description:	Front Right	Obstacle Ra	ange					
Encoding type:	Name: Size:	ObsRngl 4 bits	ET					
	Values:	Type		Value	Scale	Offset	Int	erpretation
		Logical V	alue	0			No	Obstacle
		Logical V		1				nge 1
		Logical V		2				nge 2
		Logical V		3				nge 3
		Logical V		4				nge 4
		Logical V		5				nge 5
		Logical V		6				nge 6
		Logical V		7				nge 7
		Logical V		8				nge 8
		Logical V		9				nge 9
		Logical V		10				nge 10
		Logical V		11				nge 11
		Logical V		12				nge 12
		Logical V		13				nge 13
		Logical V		14				nge 14
		Logical V	alue	15			Ra	nge 15

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			Fr	MidLObs	Rng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	В	late it	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms	<b>6] Write</b> 0.000	Interval [m	s]		
Description:	Front Middl	e Left Obsta	cle Range					
Encoding type:	Name: Size:	ObsRngl 4 bits	ET					
	Values:	Type		Value	Scale	Offset	Int	erpretation
		Logical V		0				Obstacle
		Logical V		1				nge 1
		Logical V		2				nge 2
		Logical V		3				nge 3
		Logical V		4				nge 4
		Logical V		5				nge 5
		Logical V		6				nge 6
		Logical V		7				nge 7
		Logical V		8				nge 8
		Logical V		9				nge 9
		Logical V		10				nge 10
		Logical V	alue	11			Ra	nge 11
		Logical V	alue	12			Ra	nge 12
		Logical V	alue	13				nge 13
		Logical V	alue	14			Ra	nge 14
		Logical V	alue	15			Ra	nge 15

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	FrtMidRObsRng										
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	·	nitial Value 0		
Timings:	Interface N FM_Norma		. Latency [ms] 00	<b>Write</b> 0.000	Interval [m	s]					
Description:	Front Middl	e Right Obs	tacle Range								
Encoding type:	Name: Size:	ObsRngl 4 bits									
	Values:	Туре		Value	Scale	Off		Interpret			
		Logical V		0				No Obsta	acle		
		Logical V		1				Range 1			
		Logical V		2				Range 2			
		Logical V		3				Range 3			
		Logical V		4				Range 4			
		Logical V		5				Range 5			
		Logical V		6				Range 6			
		Logical V		7				Range 7			
		Logical V		8				Range 8			
		Logical V		9				Range 9			
		Logical V		10				Range 10			
		Logical V		11				Range 1			
		Logical V		12				Range 12			
		Logical V		13				Range 13			
		Logical V		14				Range 1			
		Logical V	alue	15				Range 1	5		

			Fr	tObsDist			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	1	ı <b>p Name</b> N/A	Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	Write Int	erval [ms]		
Description:	Front Obsta	acle Distance	Э				
Encoding type:	Name: Size: Values:	FrtObsDis 8 bits Type Physical F		<b>Value</b> 0 - 255	Scale 1	Offset 0	Interpretation cm

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	FuelLvIPcnt									
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Type Group Name N/A Periodic		Update Bit No	Initial Value 0			
Timings:	<b>lode Pub</b> I_HS 30.0	nterval [ms]								
Description:	Fuel Level	Percent								
Encoding type:	Name: Size: Values:	FuelLvIPc 8 bits Type Physical R	Va	<b>alue</b> - 255	<b>Scale</b> 0.390625	Offset 0	Interpretation E=N*100/255			

			Fue	elLvlPcı	ntV			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	G	roup Name N/A	Upda Bi	t	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	<b>Write</b> 0.000	Interval [m	ns]		
Description:	Fuel Level	Percent Vali	dity					
Encoding type:	Name: Size:	FuelLvIP 1 bit	cntVET					
	Values:	<b>Type</b> Logical V Logical V	alue C	/alue )	Scale	Offset	Inter Valid Inval	

			Fue	TotCapct			
Size [bits] 12	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		i <b>p Name</b> N/A	Update Bit No	Initial Value 0
Timings:	ngs: Interface Mode Pub. Latency [ms] FM_Normal_HS 30.000				erval [ms]		
Description:	Fuel Total (	Capacity					
Encoding type:	Name: Size: Values:	FuelTotCa 12 bits Type Physical R	,	<b>Value</b> 0 - 4095	<b>Scale</b> 0.125	Offset 0	Interpretation

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			Ho	urOfDay			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	<b>up Name</b> N/A	Update Bit No	Initial Value
Timings:	Interface N FM_Norma		. Latency [ms]	Write In 0.000	nterval [ms]		
Description:	Hour Of Da	•					
Encoding type:	Name: Size: Values:	HourOfDa 5 bits Type Physical F		<b>Value</b> 0 - 23	Scale	Offset 0	Interpretation

	IPCAccryA									
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false			
Timings: Interface Mode Pub. Latency [ms] Write Interval [ms]										
	FM_Normal_HS 30.000									
Description:	Instrument	Panel Clust	ter Start Accessor	y Active						
Encoding type:	Name: Size: Description	11	poleanCoding bit polean value							
	Values:	Ty Lo	<b>rpe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE			

	IPCEcoDrvngSwA										
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false				
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]						
	FM_Norma	I_HS 30.0	000	0.000							
Description:	Economic S	Switch Active	е								
Encoding	Name:	Во	oleanCoding								
type:	Size:	1 b	oit								
	Description	: bo	olean value								
	Values:	Ту	pe	Value	Scale	Offset	Interpretation				
		Lo	gical Value	0			FALSE				
		Lo	gical Value	1			TRUE				

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			IPC	RunCrkA					
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false		
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]				
	FM_Norma	I_HS 30.0	000	0.000					
Description:	Description: Instrument Panel Cluster Run Crank Active								
Encoding	Name:	Вс	oleanCoding						
type:	Size:	1 b	oit						
	Description	: bo	olean value						
	Values:	Ту	pe	Value	Scale	Offset	Interpretation		
		Lo	gical Value	0			FALSE		
		Lo	gical Value	1			TRUE		

	IPCRunCrkF									
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false			
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]					
	FM_Norma	I_HS 30.0	000	0.000						
Description:	Instrument	Panel Clust	er Run Crank Fai	led						
Encoding	Name:	Во	oleanCoding							
type:	Size:	1 b	oit							
	Description: boo		olean value							
	Values:	Ту	pe	Value	Scale	Offset	Interpretation			
		Lo	gical Value	0			FALSE			
		Lo	gical Value	1			TRUE			

	IPCSSBA									
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false			
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]					
	FM_Norma	I_HS 30.0	000	0.000						
Description:	Instrument	Panel Clust	er Start Stop Butt	on Active						
Encoding	Name:	Во	oleanCoding							
type:	Size:	1 b	oit							
	Description	: boo	olean value							
	Values: Ty		pe	Value	Scale	Offset	Interpretation			
		Log	gical Value	0			FALSE			
		Log	gical Value	1			TRUE			

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			IP	CSSBAV			
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false
Timings:	Interface N	/lode Pub	. Latency [ms]	Write Inte	erval [ms]		
	FM_Norma	I_HS 30.0	000	0.000			
Description:	Instrument	Panel Clust	er Start Stop But	ton Active \	/alidity		
Encoding type:	Name: Size:	<b>V</b> a 1 k	lid4Coding oit				
	Values: Ty		lid info 4				
			•	Value	Scale	Offset	Interpretation
			gical Value	0			Valid
		Lo	gical Value	1			Invalid

	IPCSSBFltSts										
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	•	Update Bit No	Initial Value 0			
Timings:	Interface N FM_Norma		. Latency [ms]	<b>Write</b> 0.000	Interval [n	ns]					
Description:	Instrument	Panel Clust	er Start Stop Butt	on Fau	ılt Status						
Encoding type:	Name: Size:	IPCSSBF 3 bits	ItStsET								
	Values:	Type Logical V	alue 0 alue 1 alue 2 alue 3 alue 4 alue 5 alue 6	alue	Scale	Offse	No F short short Stud Ope switt Res	rpretation Fault It to GND It to Battery It chairs It ch			

	keep_network_IPK											
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	Gro	u <b>p Name</b> N/A	Update Bit Yes	Initial Value false					
Timings:	Interface N	lode Pub	. Latency [ms]	Write In	terval [ms]							
	FM_Norma	I_HS 20.0	00	0.000								
Description:	NM signal:	the IPK use	s this signal wher	n it wants	to keep the	network awake	Э.					
Encoding	Name:	keep_netw	ork_coding									
type:	Size:	1 bit										
	Values:	Туре	Value	Scale	Offset	Interpretation	ı					
		Logical Val	ue 0			no keep netwo	ork request					
		Logical Val	ue 1			keep network	request					

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			La	nggSeti	ng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gı	roup Nam N/A	ie	Update Bit No	Initial Value 0
Γimings:	Interface N FM_Norma		o. Latency [ms]	<b>Write</b> 0.000	Interval [	ms]		
Description:	Language S	Setting						
Encoding type:	Name: Size: Description	7 bi	ggSetngET s -\$7F=Reserved					
	Values:	Log Log Log Log Log Log	e ical Value	Value 0 1 2 3 4 5 6 7	Scale	Offse	•	glish sh n sh
		Log Log Log	ical Value ical Value ical Value ical Value	8 9 10 11			Norwe Finnisl Danish Greek	gian n n
		Log Log Log	ical Value ical Value ical Value ical Value ical Value	12 13 14 15 16			Japan Arabic Germa Polish Turkis	an
		Log Log Log	ical Value ical Value ical Value ical Value ical Value	17 18 19 20			Korea	n onal Chinese
		Log Log Log	ical Value ical Value ical Value ical Value ical Value	21 22 23 24			Czech Slovak Russia Thai	(

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			Min	uteOfHo	ır		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Updat Bit No	Initial Value
Timings:	Interface N FM_Norma		. Latency [ms]	Write Ir 0.000	nterval [ms	5]	
Description:	Minute Of F current Min						
Encoding type:	Name: Size: Values:	MinuteOf 6 bits Type Physical F		<b>Value</b> 0 - 59	Scale	Offset 0	Interpretation

OdoPriy									
Size [bits]	<b>Type</b> Bytes	Info Type State	Generation Type Periodic	<b>Group Nam</b> N/A	e Update Bit No	Initial Value 0x00 0x00 0x00			
Timings:	Interface I FM_Norma		. Latency [ms] 00	Write Interval [ 0.000	ms]				
Description:	Odometer odometer	•							
Encoding type:	Name: Size: Values:	ODO_codi 24 bits Type Physical Ra	Val	ue 16777215	Scale Offset	: Interpretation km			

			PDC	CofignSt	s		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	Initial Value 0		
Timings:	Interface	Mode Pub	. Latency [ms]	Write In	terval [ms]		
	FM_Norm	al_HS 30.0	00	0.000			
Description:	Park Dista	nce Control C	Configuration Sta	tus			
Encoding	Name:	PDCCofignSt	tsET				
type:	Size:	3 bits					
	Values:	Туре	Value Scale	Offset	Interpretatio	n	
		Logical Value	0		3 rear sensor	'S	
		Logical Value	1		4 rear sensor	'S	
		Logical Value	2		4 rear sensor	s and 2 fron	t side sensors
		Logical Value	3		4 rear sensor	s and 4 fron	t sensors
		Logical Value	4		2 rear sensor	'S	
		Logical Value	5		Reserved		
		Logical Value	6		Reserved		
		Logical Value	7		Reserved		

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	PDCSysSts								
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	0	Group Name N/A		Update Bit No	Initial Value 0	
Timings:	Interface N FM_Norma		. Latency [ms]	<b>Write</b> 0.000	e Interval	[ms]			
Description:	Park Distar	ce Control S	System Status						
Encoding type:		PDCSysSts 4 bits	ET						
		Type Logical Valu	ne 0 ne 1 ne 2 ne 3 ne 4 ne 5 ne 6	Scale	Offset	Syster Syster Syster Syster Front I Front I Rear F	retation In OK In initialization In Failed In Disabled IN DISABLE IN TOTAL	ed	

			PfTrTapUp	DwnEnbSwSta							
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name  N/A  Update  Bit  No  0							
Timings:	Interface M	lode Pub.	Latency [ms]	Write Interval [ms	s]						
	FM_Normal	I_HS 30.00	00	0.000							
Description:	Platform Tra	ansmission T	ap Up/Down En	able Switch State							
Encoding	Name:	PfTrTapUp	DwnEnbSwSta	1							
type:	Size:	2 bits									
	Description	: Platform Tr	ansmission Tap	Up/Down Enable S	Switch State						
	Values:	Туре	Value Scale	Offset Interpreta	ition						
		Logical Val	ue 0	No Activat	ion						
		Logical Val	ue 1	Driver Shir	ft Control Enable	Switch Active					
		Logical Val	ue 2	Electronic	Range Select En	able Switch Active					
		Logical Val	ue 3	Illegal Ena	able Switch State	Active					

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			PfTrTapU	pDwnSecySw	Sta	
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group N N/A	ame Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		<b>Latency [ms]</b>	Write Interva 0.000	al [ms]	
Description:	Platform Tra	ansmission 1	Гар Up/Down S	econdary Switc	h State	
Encoding	Name:	PfTrTap	UpDwnSecySw	/Sta		
type:	Size:	2 bits				
	Description	: Platform	Transmission T	ap Up/Down S	econdary Switch Stat	te
	Values:	Type	Value	Scale Offset	Interpretation	
		Logical V	/alue 0		No Activation	
		Logical V	/alue 1		Increment Switch A	ctive
		Logical V	/alue 2		Decrement Switch	Active
		Logical V	/alue 3		Illegal Up/Down Sw	itch State Active

			PfTrTa <sub>l</sub>	pUpDwnSwSta	l						
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	N/A Bit No Initial Value							
Timings:	Interface M	lode Pub	. Latency [ms]	Write Interva	al [ms]						
	FM_Normal_HS 30.000 0.000										
Description:	Platform Tra	ansmission <sup>*</sup>	Tap Up/Down S	witch State							
Encoding	Name:	PfTrTap	UpDwnSwSta								
type:	Size:	2 bits									
	Description	: Platform	Transmission T	ap Up/Down S	witch State						
	Values:	Type	Value	Scale Offset	Interpretation						
		Logical \	/alue 0		No Activation						
		Logical \	/alue 1		Increment Switch A	Active					
		Logical \	/alue 2		Decrement Switch	Active					
		Logical \	/alue 3		Illegal Up/Down Sv	witch State Active					

	PfTrTapUpDwnSwStsAlvRC									
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	<b>up Name</b> N/A	Update Bit No	Initial Value			
Timings:	Interface N FM_Norma	<b>lode Pub</b> I_HS 30.0	. Latency [ms]	Write In 0.000	terval [ms]					
Description:	Platform Tr	ansmission	Tap Up/Down Sv	vitch Stati	us Alive Roll	ing Count				
Encoding type:	Name: Size: Values:	EequalN_ 2 bits Type Physical F		Value 0 - 3	Scale	Offset 0	Interpretation			

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			R	LObsRr	ng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms] 00	<b>Write</b> 0.000	Interval [m	s]		
Description:	Rear Left O	bstacle Ran	ige					
Encoding type:	Name: Size:	ObsRngl 4 bits						_
	Values:	Туре		Value	Scale	Off		terpretation
		Logical V		)				Obstacle
		Logical V		] ว				ange 1
		Logical V		2				ange 2
		Logical V Logical V		3 4				ange 3 ange 4
		Logical V		<del>1</del> 5				ange 5
		Logical V		5 S				ange 6
		Logical V		7				ange 7
		Logical V		3				ange 8
		Logical V		9				ange 9
		Logical V		10				ange 10
		Logical V		11				ange 11
		Logical V		12				ange 12
		Logical V		13				ange 13
		Logical V		14			Ra	ange 14
		Logical V	alue	15			Ra	ange 15

	RmnDrvngDist									
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0			
	Interface N FM_Norma		. Latency [ms]	Write Inte	erval [ms]					
Description:	Remain Dri	ving Distanc	e							
Encoding type:	Name: Size: Values:	RmnDrvn 12 bits Type Physical R	,	<b>/alue</b> ) - 4095	Scale	Offset 0	Interpretation km			

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			RrM	lidLObs	Rng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	<b>Write</b> 0.000	Interval [m	s]		
Description:	Rear Middle	e Left Obsta	cle Range					
Encoding type:	Name: Size:	ObsRngl 4 bits	ET					
	Values:	Туре		Value	Scale	Offs		terpretation
		Logical V		0				Obstacle
		Logical V		1				ange 1
		Logical V		2				ange 2
		Logical V		3				ange 3
		Logical V	alue	4				ange 4
		Logical V	alue	5			Ra	ange 5
		Logical V		6				ange 6
		Logical V		7				ange 7
		Logical V	alue	8			Ra	ange 8
		Logical V		9				ange 9
		Logical V		10				ange 10
		Logical V	alue	11			Ra	ange 11
		Logical V	alue	12			Ra	ange 12
		Logical V	alue	13			Ra	ange 13
		Logical V	alue	14			Ra	ange 14
		Logical V	alue	15			Ra	ange 15

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			RrM	lidRObs	Rng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	Initial Value
Timings:	Interface N FM_Norma		. Latency [ms]	<b>Write</b> 0.000	Interval [m	s]		
Description:	Rear Middle	e Right Obst	acle Range					
Encoding type:	Name: Size:	ObsRngl 4 bits					_	_
	Values:	Type		Value	Scale	Off		terpretation
		Logical V		0				Obstacle
		Logical V Logical V		1 2				ange 1
		Logical V		3				ange 2 ange 3
		Logical V		4				ange 4
		Logical V		5				ange 5
		Logical V		6				ange 6
		Logical V		7				ange 7
		Logical V		8				ange 8
		Logical V		9				ange 9
		Logical V		10				ange 10
		Logical V		11				ange 11
		Logical V	alue	12			Ra	ange 12
		Logical V	alue	13			Ra	ange 13
		Logical V		14				ange 14
		Logical V	alue	15			Ra	ange 15

			Rr	ObsDist			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	1	i <b>p Name</b> N/A	Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	Write Int	erval [ms]		
Description:	Rear Obsta	cle Distance	<del>)</del>				
Encoding type:	Name: Size: Values:	FrtObsDis 8 bits Type Physical F		<b>Value</b> 0 - 255	Scale	Offset 0	Interpretation cm

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			R	RObsRı	ng			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms] 0	<b>Write</b> 0.000	Interval [m	s]		
Description:	Rear Right	Obstacle Ra	ange					
Encoding type:	Name: Size:	ObsRngl 4 bits			_		_	_
	Values:	Type		Value	Scale	Off		terpretation
		Logical V		)				Obstacle
		Logical V		l ว				ange 1
		Logical V Logical V		2 3				ange 2 ange 3
		Logical V		4				ange 4
		Logical V		5				ange 5
		Logical V		6				ange 6
		Logical V		7				ange 7
		Logical V		8				ange 8
		Logical V		9				ange 9
		Logical V		10				ange 10
		Logical V		11				ange 11
		Logical V	alue	12			Ra	ange 12
		Logical V	alue ·	13			Ra	ange 13
		Logical V		14				ange 14
		Logical V	alue	15			Ra	ange 15

	SecsOfMinute										
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Updat Bit No	Initial Value				
Timings:	Interface N	lode Pub	. Latency [ms]	Write In	terval [ms	s]					
	FM_Norma	I_HS 30.0	00	0.000							
Description:	Seconds Ocurrent Sec										
Encoding	Name:	SecsOfM	inuteET								
type:	Size:	6 bits									
	Values:	Type		Value	Scale	Offset	Interpretation				
		Physical F	Range	0 - 59	1	0					

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	SIAOdoPriy										
Size [bits]	<b>Type</b> Bytes	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0x00 0x00 0x00				
Timings:	Interface N	/lode Pub	. Latency [ms]	Write Interva	[ms]						
	FM_Norma	al_HS 30.0	000	0.000							
Description:	Description: Service Interval Announcement Odometer Primary the odometer value of last do SIA operation.										
Encoding	Name:	ODO_codi	ng								
type:	Size:	24 bits									
	Values:	Type	Val	ue	Scale	Offset	Interpretation				
		Physical Ra	ange 0 - 1	16777215	1	0	km				

			sm_netv	vork_m	ode_h1			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Sporadic	1	roup Name	•	<b>Ipdate</b> <b>Bit</b> No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [n	ns]		
	FM_Norma	I_HS 10.0	00	50.00	0			
	FM_Silent_HS 10.000 50.000							
Description:			Second Master ntrols the frame r					ed mode of the
Encoding	Name:	network	_mode_coding					
type:	Size:	8 bits	_					
	Values:	Type	V	alue	Scale	Offset	Int	erpretation
		Logical V	alue 0				sta	rt-up
		Logical V	alue 1				shı	utdown
		Logical V	alue 2				noi	rmal

	sm_signal_config_id_h1										
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Sporadic	Group Name IPK_HSC1_SecNWM	Update Bit No	Initial Value 28673					
Timings:	Timings: Interface Mode Pub. Latency [ms] Write Interval [ms]										
	FM_Norma	I_HS 10.0	000	50.000							
	FM_Silent_	HS 10.0	000	50.000							
	rescription: NM signal published by second master node: this is the identification number of the signal configuration used. Read by the slave nodes to determine if they have the correct configuration or not										

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			StabC	trlDsblSw	Α		
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value false
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]		
	FM_Norma	I_HS 30.0	000	0.000			
Description:	Stability Co	ntrol Disabl	e Switch Active				
Encoding type:	Name: Size:	<b>B</b> c	oleanCoding				
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			olean value				
	Values:	Ту	pe	Value	Scale	Offset	Interpretation
		Lo	gical Value	0			FALSE
		Lo	gical Value	1			TRUE

			S	ysBPM			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface N	/lode Pub	. Latency [ms]	Write Inte	erval [ms]		
	FM_Norma	I_HS 30.0	000	0.000			
Description:	System Ba	ckup Power	Mode				
Encoding	Name:	Sy	sPwrMd				
type:	Size:	2 b	its				
	Description	ı: Sy	stem Power Mod	е			
	Values:	Ty	ре	Value	Scale	Offset	Interpretation
		Log	gical Value	0			Off
		Log	gical Value	1			ACC
		Log	gical Value	2			Run
		Log	gical Value	3			Crank

			Sys	BPMEnbd			
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value false
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]		
	FM_Norma	I_HS 30.0	000	0.000			
Description:	System Bad	ckup Power	Mode Enabled				
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	: bo	olean value				
	Values:	Ту	pe	Value	Scale	Offset	Interpretation
		Lo	gical Value	0			FALSE
		Lo	gical Value	1			TRUE

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			Tim	neDspFi	nt			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Group Name N/A			<b>Update</b> <b>Bit</b> No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [m	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Time Displa	•						
Encoding	Name:	TimeDsp	FmtET					
type:	Size:	1 bit						
	Values:	Type	V	alue	Scale	Offse	et Int	terpretation
		Logical V	alue 0				12	hour mode
		Logical V	alue 1				24	hour mode

				TrPfSl	nftPtrnSw1	Α		
Size [bits]	<b>Type</b> Boolean	Info T	•	<b>Generation Type</b> Periodic	Group Name N/A		Update Bit No	Initial Value false
Timings:	Interface N	/lode	Pub	. Latency [ms]	Write Inte	erval [ms]		
	FM_Normal_HS 30.000			0.000				
Description:	Transmissi	on Platf	orm :	Shift Pattern Swi	tch 1 Active	)		
Encoding	Name:		Во	oleanCoding				
type:	Size:		1 b	it				
	Description	1:	boo	olean value				
	Values:		Тур	ре	Value	Scale	Offset	Interpretation
			Log	gical Value	0			FALSE
			Log	gical Value	1			TRUE

			TrPfSI	nftPtrnSw4	A		
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic		o Name I/A	Update Bit No	Initial Value false
Timings:	Interface N	/lode Pul	b. Latency [ms]	Write Inte	erval [ms]		
	FM_Norma	I_HS 30.	000	0.000			
Description:	Transmissi	on Platform	Shift Pattern Swi	tch 4 Active	)		
Encoding type:	Name: Size:		ooleanCoding bit				
	Description	ı: bo	oolean value				
	Values:	Ty	/pe	Value	Scale	Offset	Interpretation
		Lo	gical Value	0			FALSE
		Lo	gical Value	1			TRUE

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	TrPfShftPtrnSwAlvRC											
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Updat Bit No	e Initial Value					
Timings:	Interface M	lode Pub	. Latency [ms]	Write In	terval [ms							
	FM_Norma	I_HS 30.0	000	0.000								
Description:	Transmission	on Platform	Shift Pattern Swi	tch Alive	Rolling Cou	ınt						
Encoding	Name:	<b>EequalN</b>	_2ET									
type:	Size:	2 bits										
	Values:	Type		Value	Scale	Offset	Interpretation					
		Physical I	Range	0 - 3	1	0						

	VINCIstr										
Size [bits]	<b>Type</b> Bytes	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A	Update Bit No	Initial Value 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x0					
Timings:	Interface N	lode Pub	. Latency [ms]	Write Interval [ms]							
	FM_Norma	I_HS 30.0	00	0.000							
	Description: Vehicle Identifier Number Cluster the last 8 btyes' of VIN.										

	wake_network_IPK								
Size [bits] Type Boolean State Sporadic Generation Type Sporadic Group Name N/A Update Bit Yes Initial Value false									
Timings:	Interface N	/lode Pub	. Latency [ms]	Write Interva	ıl [ms]				
	FM_Norma	I_HS 20.0	000	20.000					
	FM_Silent_	_HS 20.0	000	20.000					
Description:	NM signal:	the IPK use	s this signal whe	n it wants to wa	ake-up the	e network			
Encoding	Name:	wake_netw	ork_coding						
type:	Size:	1 bit							
	Values:	Туре	Value	Scale Offse	t Inter	pretation			
		Logical Valu	ie 0		no wa	ake-up netwo	ork request		
		Logical Valu	ıe 1		wake	-up network	request		

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## Interface: IPK\_LIN3

	LowAcurcVehSpdAvg									
Size [bits] Type Unsigned Unsigned State S										
Timings:	Interface N FM_Norma		. Latency [ms]	Write In 0.000	terval [ms]					
Description:	Low Accura	cy Vehicle S	Speed Average							
Encoding type:	Name: Size: Values:	LowAcure 8 bits Type Physical F		<b>Value</b> 0 - 255	Scale 2	Offset 0	Interpretation km/h/bit			

	MstrSysPwrMd									
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value 0			
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]					
	FM_Norma	I_L3 50.0	000	0.000						
Description:	Master Sys	tem Power I	Mode							
Encoding	Name:	Sy	sPwrMd							
type:	Size:	2 b	oits							
	Description	: Sy	stem Power Mod	е						
	Values:	Ту	pe	Value	Scale	Offset	Interpretation			
		Log	gical Value	0			Off			
		Log	gical Value	1			ACC			
		Log	gical Value	2			Run			
		Log	gical Value	3			Crank			

	TrShftLvrPosV_I5									
Size [bits] Type Unsigned Unsigned State State State Generation Type Periodic Group Name N/A Update Bit No Unitial Value O										
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]					
	FM_Norma	I_L3 50.0	00	0.000						
Description:	Transmission	on Shift Leve	er Position Validit	:у						
Encoding	Name:	Va	lidityCoding							
type:	Size:	1 b	it							
	Description	: Val	lidity Encode Typ	е						
	Values:	Ty	ре	Value	Scale	Offset	Interpretation			
		Log	gical Value	0			Valid			
		Lo	gical Value	1			Invalid			

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				tLvrPos_			
Size [bits] 4	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic		ı <b>p Name</b> N/A	Update Bit No	Initial Value 0
Timings:	Interface N	/lode Pul	b. Latency [ms]	Write Int	erval [ms	·]	
	FM_Norma	al_L3 50.	000	0.000			
Description:	Transmissi	on Shift Lev	ver Position				
	For DCT/A' \$0=Betwee \$1=Park R: \$2=Revers \$3=Neutral \$4=Forwar \$5=Forwar \$7=Forwar \$8=Forwar \$9=Forwar \$A=Forwar	en Ranges ange e Range Range d Range A d Range B d Range C d Range D d Range E	sion :				
	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral	Position Unl Transmiss e Range Range (Va	sion: only below sta			for Neutral ranç	ge)
Encoding	\$B=Forwar \$F=Lever F For Manua \$2=Revers	Position Unl Transmiss e Range Range (Va Position Unl	sion: only below sta			for Neutral ranç	ge)
Encoding type:	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range Range (Va Position Unla TrShftLvr 4 bits	sion: only below sta alidity on MT vehic known PosCoding	les is only	protected		
-	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name:	Position Unla I Transmiss e Range Range (Va Position Unla TrShftLvr 4 bits Type	sion: only below sta alidity on MT vehic known PosCoding Value			Interpretation	n
-	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range Range (Va Position Unla TrShftLvr 4 bits Type Logical Va	sion: only below standidity on MT vehicknown  PosCoding  Value  slue  0	les is only	protected	Interpretation Between Ran	n
_	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range Range (Va Position Unla TrShftLvr 4 bits Type Logical Va Logical Va	sion: only below standidity on MT vehicknown  PosCoding  Value  slue 0  slue 1	les is only	protected	Interpretation Between Ran Park Range	n ges
_	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range Range (Va Position Unla TrShftLvr 4 bits Type Logical Va	sion: only below state alidity on MT vehick known  PosCoding  Value alue 0 alue 1 alue 2	les is only	protected	Interpretation Between Ran	n ges
_	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range Range (Va Position Unla TrShftLvr 4 bits Type Logical Va Logical Va	sion: only below stated alidity on MT vehick known  PosCoding  Value alue 0 alue 1 alue 2	les is only	protected	Interpretation Between Ran Park Range	n ges ge
_	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range Range (Va Position Unla TrShftLvr 4 bits Type Logical Va Logical Va Logical Va	sion: only below stated alidity on MT vehicknown  PosCoding  Value alue 0 alue 1 alue 2 alue 3	les is only	protected	Interpretation Between Ran Park Range Reverse Ran	n ges ge
_	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range Range (Va Position Unla TrShftLvr 4 bits Type Logical Va Logical Va Logical Va Logical Va	sion: only below standing on MT vehicles from PosCoding  Value  slue 0  slue 1  slue 2  slue 3  slue 4	les is only	protected	Interpretation Between Ran Park Range Reverse Rang Neutral Range	n ges ge e ge A
-	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range Range (Va Position Unla TrShftLvr 4 bits Type Logical Va Logical Va Logical Va Logical Va Logical Va	sion: only below standidity on MT vehicknown  PosCoding  Value alue 0 alue 1 alue 2 alue 3 alue 4 alue 5	les is only	protected	Interpretation Between Ran Park Range Reverse Rang Neutral Range	n ges ge e ge A ge B
_	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range Range (Va Position Unla TrShftLvr 4 bits Type Logical Va Logical Va Logical Va Logical Va Logical Va Logical Va	sion: only below stated alidity on MT vehick known  PosCoding  Value alue 0 alue 1 alue 2 alue 3 alue 4 alue 5 alue 6	les is only	protected	Interpretation Between Ran Park Range Reverse Rang Neutral Range Forward Rang	n ges ge e ge A ge B ge C
_	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla Transmiss e Range (Va Position Unla TrShftLvr 4 bits Type Logical Va	sion: only below stated alidity on MT vehick known  PosCoding  Value  alue 0  alue 1  alue 2  alue 3  alue 4  alue 5  alue 5  alue 6  alue 7	les is only	protected	Interpretation Between Ran Park Range Reverse Rang Neutral Range Forward Rang Forward Rang	n ges ge e ge A ge B ge C ge D
_	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range (Va Position Unla Position Unla TrShftLvr 4 bits Type Logical Va	sion: only below stated alidity on MT vehick known  PosCoding  Value  alue 0  alue 1  alue 2  alue 3  alue 4  alue 5  alue 5  alue 6  alue 7  alue 8	les is only	protected	Interpretation Between Ran Park Range Reverse Range Neutral Range Forward Range Forward Range Forward Range Forward Range Forward Range	n ges ge e ge A ge B ge C ge D
-	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla Transmiss e Range (Va Position Unla TrShftLvr 4 bits Type Logical Va	sion: only below stated alidity on MT vehick shown  PosCoding  Value alue 0 alue 1 alue 2 alue 3 alue 4 alue 5 alue 6 alue 7 alue 8 alue 9	les is only	protected	Interpretation Between Ran Park Range Reverse Rang Neutral Range Forward Rang Forward Rang Forward Rang	n ges ge e ge A ge B ge C ge D ge E
-	\$B=Forwar \$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unla I Transmiss e Range (Va Position Unla Position Unla TrShftLvr 4 bits Type Logical Va	sion: only below stated alidity on MT vehick known  PosCoding  Value alue 0 alue 1 alue 2 alue 3 alue 4 alue 5 alue 6 alue 6 alue 7 alue 8 alue 8 alue 9 alue 9	les is only	protected	Interpretation Between Ran Park Range Reverse Rang Neutral Range Forward Rang	n ges ge ge A ge B ge C ge D ge E ge F n Unknown

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## 7.3 Received signals

Interface: IPK\_CAN\_HS

	ABSIO								
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	G	roup Name N/A	В	late it	Initial Value false	
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/I	Function	<b>Suk</b> [ms	-	Max. <i>[</i> [ms] 100.00		Read Interval [ms]	
Encoding type:	Name: Size: Values:	ABSIOET 1 bit Type		Value	Scale	Offset		erpretation	
		Logical Value Logical Value Va		0 1			fals true	_	

	AirbagSysFltIndCmd									
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0			
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ I_HS	Function	Sub. Late [ms] 30.000	ency	Max. Age [ms] 100.000	Read Interval [ms]			
Description:	Airbag Syst	em Fault Ind	dication Comman	d						
Encoding type:	Name: Size:	AirbagSys 2 bits	sFltIndCmdET							
	Values:	Type Logical Va Logical Va Logical Va Logical Va	lue 1 lue 2	e Scale	Offset	drive lam drive lam	p OFF p ON p Flashing			

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			Aml	otLghtLvl		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	/Function	Sub. Latency [ms] 30.000	Max. Age [ms] 200.000	Read Interval [ms]
Description:			om Auto Light Se	nsor		
Encoding type:	Size: 2 k	nbtLghtLvII				
	Values: <b>Ty</b>	-		set Interpretation		
		gical Value		, , ,	•	d dipped beam off)
	Lo	gical Value	1	Level 1 (Reserv	ed for position I	amp On Request)
	Lo	gical Value	2	Level 2 ( Dipped	Beam On ) Red	quest
	Lo	gical Value	3	Level 3 ( Reserv	ed)	

			ASSInI	nBtnLamp(	On		
Size [bits]	ts] Type Boolean State Generation Type Periodic			Boolean State Type Group Name Bi		Update Bit No	Initial Value false
Timings: Interface Mode/FuncVerFolder/Function			Sub. La [ms]	itency	Max. Age [ms]	Read Interval [ms]	
	FM_Normal_HS			10.000		300.000	
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description: boo		olean value				
	Values: Ty		ре	Value		Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

			AS	SSInhIO			
Size [bits]	Type Boolean State Generation Type State Periodic		<b>Group Name</b> N/A		Update Bit No	Initial Value false	
Fimings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency       Max. Age         [ms]       [ms]         10.000       300.000		Read Interval [ms]	
Description:	Auto Stop S	Start Inhibit I	ndication On				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:		<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			ASSS	StsLampOr	า		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		o Name N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 300.000	Read Interval [ms]
Description:	Auto Stop S	Start Status I	_amp On				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	-	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			ASSWr	nngLamp(	On		
Size [bits]	Type Boolean State Generation Type Periodic		<b>Group Name</b> N/A		Update Bit No	Initial Value false	
Timings:	Mode/FuncVerFolder/Function FM_Normal_HS			Sub. La [ms] 10.000	atency	Max. Age [ms] 300.000	Read Interval [ms]
Description:	Auto Stop S	Start Warnin	g Lamp On				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	<b>pe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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				Autol	łoldMsg			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Genera Type Period	<b>e</b>	<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function		Sub. Lat [ms] 30.000	ency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Autohold M	essage						
Encoding type:	Name: Size: Values:	AutoholdN 3 bits Type Logical Val Logical Val Logical Val Logical Val	lue lue lue	<b>Value</b> 0 1 2 3	Scale	Offset	reserved	not fastend ke pedal
		Logical Val Logical Val Logical Val Logical Val	lue lue lue	4 5 6 7			Autohold Autohold reserved reserved	off

			Auto	oHoldSy	'sSts			
Size [bits]	Type Unsigned	·   · · ·   IVNA		Type Group Name B		Update Bit No		
Timings: Interface Mode/FuncVerFolder/Function FM_Normal_HS					b. Latency s] 000	Max. / [ms] 100.00	•	Read Interval [ms]
Description:	_	 System Statu	IS					
Encoding type:	Name: Size: Values:	AutoHolo 2 bits Type	lSysStsET	Value	Scale	Offset	Inte	erpretation
	valuos.	Logical V		0	Coulo	Cirott	Off	-
		Logical V		1			inte	ervention
		Logical V	alue	2			staı	ndby
		Logical V	alue	3			erro	or

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				BatAg	gngSta			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generati Type Periodi		<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms] [ms]		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	battery dan	nage level						
Encoding type:	Name: Size:	BatAgngS 3 bits	itaET					
	Values:	Type Logical Va	llue Ilue Ilue Ilue Ilue Ilue	Value 0 1 2 3 4 5 6 7	Scale	Offse	Good Little Ag Middle A	ing Aging reminding d d

				BatSOC			
Size [bits] 8	<b>Type</b> Unsigned	IVNE		Type Info Type Type Group Name		Updat Bit No	e Initial Value 187
Timings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	e Read Interval [ms]	
Encoding type:	Name: Size:	BatSOCE 8 bits	Т				
	Values:	Туре		Value	Scale	Offset	Interpretation
		Physical R Logical Va Logical Va Logical Va	llue llue	0 - 250 254 253 252	0.4	0	% reserved reserved reserved
		Logical Va	lue	251			reserved

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				BatVol			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation</b> <b>Type</b> Periodic	Group	Group Name N/A Update Bit No		Initial Value 16383
Timings:	Interface Mode/Fund FM_Norma	c <b>VerFolder/</b> ILHS	Function	<b>Sub. La</b> [ <b>ms</b> ] 30.000			Read Interval [ms]
Description:	Battery volt	age sample	by PMDC				
Encoding type:	Name: Size: Description	BatVoll 14 bits : E=N/10					
	Values:	•	l Range 0	/alue ) - 15360 5361 - 16382	<b>Scale</b> 0.0009	7656 3 0	set Interpretation V reserved

			BC	/IEmgcSp			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		o Name I/A	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 20.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Body Contr	ol Module E	mergency Stop				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Ty</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			BCMGears	ShftParkNt	rIESR		
Size [bits]	Type Boolean State Generation Type State Periodic			Group Name N/A		Initial Value false	
Timings:	Interface Mode/Fund	cVerFolder/	Function	Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]
	FM_Normal_HS					100.000	
Description:	<b>Body Contr</b>	ol Module G	ear Shift Park Ne	eutral Engir	ne Starting	Reminder	
Encoding	Name:		oleanCoding				
type:	Size:	1 b					
	Description	i: boo	olean value				
	Values: Typ		oe	Value	Scale	Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

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			<b>BCMNoSm</b> t	KeylnVeh	Rmndr		
Size [bits]	Type   Into Type   Type   Group Name   F		Update Bit No	Initial Value false			
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 200.000	Read Interval [ms]
Description:	Body Contr	ol Module N	o Smart Key In V	ehicle Ren	ninder		
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			BCMNoSmt	KeyPressB	rkTRR		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Body Contr	ol Module N	o Smart Key Pre	ss Brake To	Restart F	Reminder	
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Typ</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			<b>BCMNoSmt</b>	KeyPress(	CIToRR		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		Update Bit No	Initial Value false
Timings:	ings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency [ms] 30.000		Read Interval [ms]
Description:	Body Contr	ol Module N	o Smart Key Pre	ss Clutch T	o Restart	Reminder	
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			BCMPre	essBrkRm	ndr		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Body Contr	ol Module P	ress Brake Remi	nder			
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

	BCMPressCIRmndr										
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false				
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]				
Description:	Body Contr	ol Module P	ress Clutch Rem	inder							
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value								
	Values:	•	<b>pe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE				

			BCMPutSmt	KeyToBkı	ıpPosR		
Size [bits]	Type Boolean State Generation Type Periodic			<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Fimings: Interface Mode/FuncVerFolder/Function FM Normal HS					Max. Age [ms]	Read Interval [ms]
Description:			ut Smart Key Into	30.000	osition Po		
· ·	-			д Баскир г	USILIOIT INC	iiiiidei	
Encoding type:	Name: Size:	Size: 1 bit					
	Description Values:		olean value	Value	Scale	Offset	Interpretation
	values.	_	gical Value gical Value	0 1	Scale	Onset	FALSE TRUE

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			BCMP	wrMdH	wdSta					
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	G	roup Name N/A		Update Bit No	Initial Value 0		
Timings:	Interface Mode/Fund FM Norma	cVerFolder/	Function	[ms	b. Latency s] 000	Max. Age [ms] 100.000		Read Interval [ms]		
Description:	Description: Body Control Module Power Mode Hardwired State									
Encoding type:	Name: Size:	BackupP 2 bits	wrMd							
	Values:	Type	V	alue	Scale	Offs	set Int	erpretation		
		Logical V	alue 0				OF	F		
		Logical V	alue 1				AC	CC		
		Logical V	alue 2				RU	JN		
		Logical V	alue 3				CF	RANK		

			BCMPw	rMdHwdS	taV		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS			Sub. Latency [ms] 20.000		Max. Age [ms]	Read Interval [ms]
Description:	_		ower Mode Hard			1001000	
Encoding type:	Name: ValidityCoding Size: 1 bit Description: Validity Encode Type			e			
	Values:	<b>Tyj</b> Log	, ,,	Value 0 1	Scale	Offset	Interpretation Valid Invalid

			BCM	<b>IRunCrkF</b>			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	nings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Body Contr	ol Module R	un Crank Failed				
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:		oe gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			BCMSh	ftParkRmı	ndr		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	nings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Body Contr	ol Module S	hift Park Remind	er			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			В	CMSSBA			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	u <b>p Name</b> N/A	Upda Bit No	initial value
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 20.000		Max. Aç [ms] 100.000	[ms]
Description:	Body Contr	ol Module S	tart Stop Button	Active			
Encoding type:	Name: Size:	BCMSSB 1 bit	AET				
	Values:	<b>Type</b> Logical Value	alue	<b>Value</b> 0 1	Scale	Offset	Interpretation Inactive Active

			BC	MSSBAV			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Body Contr	ol Module S	tart Stop Button A	Active Valid	lity		
Encoding type:	Name: Size: Description	1 b	idityCoding it idity Encode Typ	e			
	Values:	<b>Tyr</b> Log	, , ,	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

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	BCMSSBFItSts									
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		Update Bit No		Initial Value 0		
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms	b. Latency s] 000	[	Max. Age [ms] 100.000	Read Interval [ms]		
Description:	Description: Body Control Module Start Stop Button Fault Status									
Encoding type:	Name: Size: Values:	BCMSSB 3 bits Type Logical Va	V	alue	Scale	Offs		erpretation Fault		
		Logical Va Logical Va Logical Va Logical Va	alue 1 alue 2 alue 3 alue 4				sho Stud Ope	en Circuit		
		Logical Va Logical Va Logical Va	alue 6				Res	ch failed served served		

			BCMSynd	SmtKeyR	mndr		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value false
Timings:	ngs: Interface Mode/FuncVerFolder/Function FM Normal HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Body Contr	ol Module S	ynchronize Smar	t Key Rem	inder		
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			BCMTakeS	SmtKeyOu	tOfSR		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Body Contr	ol Module T	ake Smart Key O	ut Of Slot I	Reminder		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			Bnt	tOpenSt	S		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	oup Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/	Function	Sub. [ms] 30.00		Max. Age [ms] 200.000	Read Interval [ms]
Description:	Bonnet Op	en Status					
Encoding type:	Name: Size: Values:	BntOpenSt 2 bits Type	sET Value	Scale	Offset	Interpretation	
		Logical Valu	ue 0			Bonnet Closed	
		Logical Valu				Bonnet Open	
		Logical Valu	ie 2			Bonnet Switch	Disconnect
		Logical Valu	ie 3			Reserved	

			BrkF	ludLvlLow	1		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Name</b>	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. La [ms] 30.000	•	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Brake Fluid	Level Low					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			BrkFlu	dLvILow\	V		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	c <b>VerFolder/</b> II_HS	Function	Sub. La [ms] 30.000	atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Brake Fluid	Level Low '	√alidity				
Encoding type:	Name: Size: Description	1 b	lidityCoding it idity Encode Type				
	Values:	•	oe gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

			BrkSysF	RedBrkTlltl	Req		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Brake Syst	em Red Bral	ke Telltale Reque	est			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			Calend	darAdjReq	Α		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Mode/FuncVerFolder/Function			Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]
	FM_Norma	ıl_HS		30.000		2000.000	
			equest Active equest from infot	ainment			
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	i: boo	olean value				
	Values:	Тур	oe	Value	Scale	Offset	Interpretation
		Log	jical Value	0			FALSE
		Log	jical Value	1			TRUE

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			Caler	ndarDay <i>A</i>	∖dj		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	<b>up Name</b> N/A	Update Bit No	Initial Value
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS		[ms]	Sub. Latency [ms] 30.000		e Read Interval [ms]	
Description:			ent ent information fro	om infota	inment		
Encoding type:	Name: Size: Values:	Calendar 5 bits Type Physical F	•	<b>Value</b> 0 - 31	Scale	Offset 0	Interpretation

			Calen	darMor	nthAdj				
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	В	date Sit	Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms	b. Latency s] 000	<b>Age</b> 000	Read Interval [ms]		
Description:		lonth Adjustr Ionth Adjustr	nent nent informatior	n from ir	nfotainment				
Encoding type:	Name: Size:	Calendar 4 bits	MonthET						
	Values:	Type	,	/alue	Scale	Offset	Inte	erpretation	
		Logical V	alue (	)			Unk	Unknown	
		Logical V	alue 1	1		Ja		anuary	
		Logical V	alue 2	2			Feb	ruary	
		Logical V	alue 3	3			Mar	rch	
		Logical V	alue 4	4			Apr	il	
		Logical V	alue 5	5			May	y	
		Logical V	alue 6	6			Jun	е	
		Logical V	alue 7	7			July	1	
		Logical V	alue 8	3			Aug	just	
		Logical V	alue 9	9			Sep	otember	
		Logical V	alue 1	10			Oct	ober	
		Logical V	alue 1	11			Nov	vember	
		Logical Value						cember	
		Logical V		13			Res	served	
		Logical V		14			Res	served	
		Logical V	alue 1	15			Res	served	

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		Calen	darYearA	dj			
<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		•	Update Bit No	Initial Value	
Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 2000.000	Read Interval [ms]	
			rom infotai	inment			
Name: Size: Values:	8 bits <b>Type</b>	· • • • • • • • • • • • • • • • • • • •		Scale	Offset	Interpretation	
	Interface Mode/Fund FM_Norma Calendar Y Calendar Y Name: Size:	Unsigned State  Interface Mode/FuncVerFolder/ FM_Normal_HS  Calendar Year Adjustm Calendar Year Adjustm Name: Calendar Size: 8 bits Values: Type	Type Unsigned Info Type State Generation Type Periodic  Interface Mode/FuncVerFolder/Function FM_Normal_HS  Calendar Year Adjustment Calendar Year Adjustment information formation format	Type Unsigned Info Type State State Periodic Ground Type Periodic  Interface Sub. I [ms] FM_Normal_HS 30.000  Calendar Year Adjustment Calendar Year Adjustment information from infotal Name: CalendarYearET Size: 8 bits Values: Type Value	Type Unsigned State Type Periodic Sub. Latency Mode/FuncVerFolder/Function FM_Normal_HS 30.000  Calendar Year Adjustment Calendar Year Adjustment information from infotainment  Name: CalendarYearET  Size: 8 bits  Values: Type Value Scale	Type Unsigned Info Type State State Periodic Group Name N/A Bit No  Interface Sub. Latency [ms] [ms] FM_Normal_HS 30.000 2000.000  Calendar Year Adjustment Calendar Year Adjustment information from infotainment  Name: CalendarYearET Size: 8 bits Values: Type Value Scale Offset	

				CCA			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value false
Timings: Interface Mode/FuncVerFolder/Function			Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]	
	FM_Normal_HS			30.000		100.000	
Description:	Cruise Con	trol Active					
Encoding	Name: Boo		oleanCoding				
type:	Size: 1 bit						
	Description: boolean value						
	Values: Typ		ре	Value	Scale	Offset	Interpretation
			gical Value	0	0		FALSE
		Logical Value		1			TRUE

			C	CEnbd			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		o Name I/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	Sub. La [ms] 30.000	atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Cruise Con	trol Enabled					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	oe gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			C	CFItPrst			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	<b>Sub</b> . La [ms] 30.000	atency	Max. Age [ms] 100.000	Read Interval [ms]		
Description:	Cruise Con	trol Fault Pre	esent				
Encoding type:	Size: 1 bit		oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	oe gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

				ChmA			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		Name I/A	Update Bit No	Initial Value false
Timings:	s: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Chime Acti	ve					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
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	CrusAndSpdLmtrDrvrSS									
Size [bits]	Type Unsigned State Generation Type Periodic				Group Name N/A Update Bit No		Initial Value 0			
Timings:		VerFolder/	Function	Sub. Late [ms]	-	Max. Age [ms]	Read Interval [ms]			
	FM_Norma	I_HS		30.000		400.000				
Description:	Cruise and	Speed Limit	er Driver Selecte	d Speed						
Encoding	Name:	Crus	AndSpdLmtrDr	vrSS						
type:	Size:	12 bi	ts							
	Description	: Cruis	se and Speed Lim	niter Driver Se	elected Sp	peed				
Values:		Туре	•	Value	Scale	Offset	Interpretation			
		Phys	ical Range	0 - 4095	0.0625	0				

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			DayTime	RunningL	ghtF		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Name</b>	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			<b>Sub</b> . La [ms] 30.000	atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Day Time F	Running Ligh	t Failed				
Encoding type:	Size: 1 bit		oleanCoding it olean value				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

	DiagnosticFuncAddrReq								
Size [bits]			Group Name DIAG_FuncReq_HSC1	Update Bit No	Initial Value 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x0				
Timings: Interface Mode/FuncVerFolder/Function					Max. Age [ms]	Read Interval [ms]			
	FM_Norma	I_HS		5.000	50.000	10.000			
	FM_Quiet_HS			5.000	50.000	10.000			
	FM_Silent_HS			5.000	50.000	10.000			
Description:	Diagnostic	functional ac	ldress request						

	DiagnosticReqIPK								
Size [bits]	Type Bytes		Group Name DIAG_PhysReq_IPK	Update Bit No	Initial Value 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x0				
Timings:	Interface Mode/Fund	cVerFolder/	Function	Sub. Latency [ms]	Max. Age [ms]	Read Interval [ms]			
	FM_Norma	I_HS		5.000	50.000	10.000			
	FM_Quiet_	et_HS 5.000		50.000	10.000				
	FM_Silent_HS			nt_HS 5.000 5		10.000			
Description:	Diagnostic	request to IF	ΥK						

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	DipdBeamLghtOn									
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		o Name N/A	Update Bit No	Initial Value false			
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. La [ms] 30.000	atency	Max. Age [ms] 200.000	Read Interval [ms]			
Description: Dipped Beam Light On Indicate Dipped Beam Light was On for AFS										
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value							
	Values:	-	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE			

			Dist	RCAvgDrv	n			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function				atency.	Max. Age [ms]	Read Interval [ms]	
	FM_Norma	I_HS		30.000	)	100.000		
Description:	Distance R	olling Count	Average Driven					
Encoding type:	Name: Size:	DistRCAv 13 bits	gET					
	Values:	<b>Type</b> Physical R		<b>Value</b> 0 - 8191	<b>Scale</b> 0.125	Offset 0	Interpretation m	

			DistRO	CAvgDrvn	V			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic		Group Name N/A		Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Distance Ro	olling Count	Average Driven \	/alidity				
Encoding type:	Name: Size: Description	1 b	idityCoding it idity Encode Type	Э				
	Values:	<b>Tyj</b> Log		<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid	

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			DrvrDe	oorOpenSts					
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A	Update Bit No	Initial Value 0			
Timings:	Interface Mode/Fund FM_Norma	c <b>VerFolder/</b> ILHS	Function	Sub. Latency [ms] 30.000	Max. Age [ms] 200.000	Read Interval [ms]			
Description: Driver Door Open Status									
Encoding type:	· · · · · · · · · · · · · · · · · · ·								
		gical 0		Driver Door Closed					
		ogical Driver Door Open(For latch switch can't detect door ajar status)							
	Log Val	gical ue 2		Driver Door Ajar					
	Log Val	gical ue 3		Driver Door Full Open	1				

			DrvrPV	/LInitnRmr	ndr		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Group Name</b> N/A		Initial Value false
Timings:	Interface Mode/Fund FM Norma	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]		
Description:	<del>-</del> -	er Window L	ifter Initialization		Remind th		nitialize Driver Power
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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	DrvrShftCtrlTrgtGear											
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gı	roup Name N/A		Update Bit No	Initial Value 0				
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/l	Function	Suk [ms 30.0	-	[1	Max. Age ms] :00.000	Read Interval [ms]				
Description:	Driver Shift	Control Tar	get Gear									
Encoding	Name:	DrvrShft(	CtrlTrgtGearET									
type:	Size:	4 bits										
	Values:	Type	V	/alue	Scale	Off	set Int	erpretation				
		Logical Va	alue 0	)			No	t Supported				
		Logical Va	alue 1				Fir	st Gear				
		Logical Va	alue 2	2			Se	cond Gear				
		Logical Va	alue 3	3			Th	ird Gear				
		Logical Va	alue 4	ļ.			Fo	urth Gear				
		Logical Va	alue 5	<u>,</u>			Fif	th Gear				
		Logical Va	alue 6	;			Six	rth Gear				
		Logical Va	alue 7	•			Se	venth Gear				
		Logical Va	alue 8	3			Eiç	ghth Gear				

			DrvrWn	dOpenRm	ndr			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	[ms]		Update Bit No	Initial Value false Read Interval [ms]	
Timings:	Interface Mode/Fun FM_Norma	<b>cVerFolder/</b> al_HS	Function			Max. Age [ms] 100.000		
Description:	Driver Wind	dow Open R	eminder					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value					
	Values:	-	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE	

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			ECMCIsD	oorToAut	oStR		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		Group Name N/A		Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Engine Cor	ntrol Module	Close Door To A	uto Start R	eminder		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			ECMFasn	SbltToAuto	StR			
Size [bits]	Size [bits] Type Info Type 1 Boolean State		Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Engine Co	ntrol Module	Fasten Seatbelt	To Auto Sta	rt Remino	der		
Encoding type:	Name: Size: Descriptior	1 b	oleanCoding it olean value					
	Values:	<b>Tyr</b> Log	<b>oe</b> jical Value jical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE	

			ECMPres	ssCIB	rkRmndr				
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	(	Group Nam N/A	ne	E	date Bit No	Initial Value 0
Timings:	Mode/FuncVerFolder/Function				ub. Latency ns]	y	Max. [ms]	Age	Read Interval [ms]
	FM_Normal_HS 30.000 100.00						00		
Description:	<b>Engine Cor</b>	trol Module	Press Clutch Bra	ake Re	eminder				
Encoding type:	Name: Size:	ECMPres 2 bits	sCIBrkRmndrE <sup>-</sup>	Т					
1912	Values:	Type	Va	lue	Scale	Off	set	Inter	pretation
		Logical Va	alue 0					No m	essage
		Logical Va	alue 1					Press	s the clutch
		Logical Va	alue 2					Press	s the brake
		Logical Va	alue 3					Rese	rved

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			<b>ECMShft</b>	NtrlToAuto	oStR		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false
Timings:	ings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Engine Cor	ntrol Module	Shift Neutral To	Auto Start	Reminder		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			Eco	DrvngAlO											
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value false								
Timings:	Interface Mode/Fun FM_Norma		Sub. Latency         Max. Age           Ider/Function         [ms]         [ms]           30.000         300.000		[ms]		[ms]		[ms] [n		[ms]		[ms] [ms]		Read Interval [ms]
Description:	Economy D	Driving Active	Indication On												
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value												
	Values:	<b>Ty</b> Log	<b>pe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE								

			EcoDrvng	DspS	tsGearSIS	3			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	(	<b>Group Na</b> r N/A	ame '		date Bit No	Initial Value 0
Timings:	Mode/FuncVerFolder/Function				ıb. Latency Max. Age ıs] [ms]		Age	Read Interval [ms]	
	FM_Norma	I_HS		30	30.000 300.000				
Description:	Economy D	riving Displa	ay Status Gear S	nift In	dication St	atus			
Encoding type:	Name: Size:	EcoDrvno 2 bits	gDspStsGearSIS	ET					
	Values:	Type	Va	lue	Scale	Off	set	Interp	retation
		Logical Va	alue 0					No Sh	nift
		Logical Va	alue 1					Gear	Shift Up
		Logical Va	alue 2					Gear	Shift Down
		Logical Va	alue 3					Reser	ved

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			EcoDrvngD	spStsRc	mndFG		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 300.000	Read Interval [ms]
Description:	Economy D	riving Displa	y Status Recomi	mended F	orward Ge	ear	
Encoding	Name:	EcoDrvng	) SpStsRcmndF0	SET			
type:	Size:	4 bits	•				
	Values:	Type	Value	Scale	Offset	Interpretation	1
		Logical Valu	ue 0			None	
		Logical Valu	ue 1			First Gear	
		Logical Valu	ue 2			Second Gear	
		Logical Valu	ue 3			Third Gear	
		Logical Valu	ue 4			Fouth Gear	
		Logical Valu	ue 5			Fifth Gear	
		Logical Valu	ue 6			Sixth Gear	
		Logical Valu	ue 7			Seventh Gear	•
		Logical Valu	ue 8			Eighth Gear	
		Logical Valu	ue 9			Unused and F	Reserved 1
		Logical Valu	ue 10			Unused and F	Reserved 2
		Logical Valu	ue 11			Unused and F	Reserved 3
		Logical Valu				Unused and F	Reserved 4
		Logical Valu				Unused and F	
		Logical Value	ue 14			Unused and F	Reserved 6
		Logical Valu	ue 15			Unused and F	Reserved 7

			ECODr	vngSpdRu	ıtΑ		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	gs: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 10.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Economic [	Driving Spe	ed Route Active				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	,	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			Emge	cCallFlrSts				
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A	Update Bit No	Initial Value 0		
Timings:	gs: Interface Mode/FuncVerFolder/Function FM_Normal_HS		Sub. Latency [ms] 30.000	Max. Age [ms] 300.000	Read Interval [ms]			
Description:	Emergen	cy Call Failure	Status					
Encoding type:		mgcCallFlrS bits	tsET					
	Values: <b>T</b>	уре	Value Scale Offs	set Interpretation				
	L	ogical Value	0	ECall Function No failure(Indication off)				
	L	ogical Value	1	ECall Function Light Level failure indication(Orange)				
	L	ogical Value	2	ECall Function He	eavy Level failu	re indication(Red)		
	L	ogical Value	3	Invalid				

			En12Volt	StrMotCmo	ddOn								
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		•		•		•		Update Bit No	Initial Value false
Timings: Interface Mode/FuncVerFolder/Function		Sub. La [ms]	Sub. Latency [ms]		Read Interval [ms]								
	FM_Norma	al_HS		10.000		200.000							
Description:	Engine 12	Volt Starter N	Motor Commande	ed On									
Encoding	Name:	Во	oleanCoding										
type:	Size:	1 b	it										
	Description	i: boo	olean value										
	Values:	Ту	oe	Value	Scale	Offset	Interpretation						
		Log	jical Value	0			FALSE						
		Log	jical Value	1			TRUE						

			E	nAS	SSta						
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		<b>Group Nar</b> N/A	ne	Update Bit No				Initial Value 1
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ I_HS	Function	I	Sub. Latenc [ms] 10.000	y	Max. [ms] 200.0		Read Interval [ms]		
Description:	Engine Aut	o Stop Start	State								
Encoding type:	Name: Size:	EnASSSt 2 bits	аЕТ								
	Values:	Type Logical Va Logical Va Logical Va Logical Va	alue 0 alue 1 alue 2	alue	Scale	Offs	set	Engin Engin Engin	pretation the Off the Running the Starting the Stopping		

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			En	CIntTem			
Size [bits]	<b>Type</b> Unsigned	Info Type State	· IVDE :		Update Bit No	Initial Value 0	
imings: Interface Mode/FuncVerFolder/Function			Sub. Late [ms]	Sub. Latency [ms]		Read Interval [ms]	
	FM_Normal_HS		30.000	30.000			
Description:	Engine Cod	olant Tempe	rature				
Encoding	Name:	EnC	IntTem				
type:	Size:	8 bit	S				
	Description	: Eng	ine Coolant Tem	perature			
	Values:	Тур	е	Value	Scale	Offset	Interpretation
		Phys	sical Range	0 - 255	1	-40	deg C

			EnCl	ntTemV				
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	-	o Name I/A	Update Bit No	Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 1100.000	Read Interval [ms]	
Description:	Engine Cod	olant Tempe	rature Validity					
Encoding type:	Name: Size: Description	1 b	lidityCoding it lidity Encode Type					
	Values:	,	<b>pe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid	

			EnEms	snRltdMalf	fA		
Size [bits]	Type Boolean State Generation Type Periodic Generation			<b>Group Name</b> N/A		Initial Value false	
Timings:	ings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 400.000	Read Interval [ms]
Description:	Engine Em	issions Rela	ted Malfunction A	ctive			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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	EnEmsnRltdMalfIndReq									
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	Group Name N/A		Update Bit No	Initial Value 0		
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	[m:	<b>b. Latenc</b> <b>s]</b> 000		Max. Age [ms] 400.000	Read Interval [ms]		
Description:	Engine Em	issions Rela	ted Malfunction	Indication	on Reques	st				
Encoding type:	Size:	3 bits	dMalfIndReq							
		Type Logical Valu	te 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Scale	Offset	Conti No In Flash Flash	rved	Indication Indication		

			EnNonE	msnRltdM	alfA			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false	
Timings: Interface Mode/FuncVerFolder/Function			Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]		
	FM_Normal_HS		30.000		400.000			
Description:	Engine Nor	n Emissions	Related Malfunct	ion Active				
Encoding	Name:	Во	oleanCoding					
type:	Size: 1 bit							
	Description	n: boo	lean value					
	Values: Typ		oe .	Value	Scale	Offset	Interpretation	
		Log	jical Value	0			FALSE	
		Log	jical Value	1			TRUE	

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			EnOi	IPrsLowIC	)		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Group Name</b> N/A		Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 1100.000	Read Interval [ms]
Description:	Engine Oil	Pressure Lo	w Indication On				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			E	nRunA			
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 10.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Engine Rur	n Active					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	<b>pe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

				EnSpd			
Size [bits]	ts] Type Unsigned State Generation Type Periodic		Group Name N/A		Update Bit No	Initial Value	
Fimings: Interface Mode/FuncVerFolder/Function FM Normal HS				[ms] [n		Max. Age [ms] 100.000	Read Interval [ms]
Description:		_		30.000		100.000	
Encoding type:	Name: Size: Description	16 bi	odCoding ts ne Speed				
	Values:	<b>Type</b> Phys	ical Range	<b>Value</b> 0 - 65535	<b>Scal</b> 6 0.25	Offset 0	Interpretation rpm

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			ı	EnSpdS	ts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	uncVerFolder/Function			b. Latency Max. Age [ms] 000 100.000		[ms]	Read Interval [ms]
Description:	Engine Spe	ed Status						
Encoding type:	Name: Size:	EnSpdSts 2 bits	Coding					
	Values:	Type Logical Val Logical Val Logical Val Logical Val	lue 1 lue 3	ue S	cale	Offset	Interpreta Normal O Degraded Invalid Reserved	peration I Operation

			EPBSys	AudWr	nngReq			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gı	Group Name Bit		t	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms	Sub. Latency         Max. Ag           [ms]         [ms]           30.000         100.000			Read Interval [ms]
Description:	Electric Par	k Brake Sys	tem Audible Wa	arning Re	equest			
Encoding type:	Name: Size:	2 bits	AudWrnngReqI			<b></b>		
	Values:	Type		Value	Scale	Offset		erpretation
		Logical V		0			Off	
		Logical Va		1				rning #1
		Logical Va	alue 2	2			Wa	rning #2

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	EPBSysDspMsgReq											
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation</b> <b>Type</b> Periodic	Group Name N/A		Update Bit No		Initial Value 0				
Timings:	Interface Mode/Fund FM_Norma	<b>VerFolder/I</b> I_HS	[m	Sub. Latency         Max.           [ms]         [ms]           30.000         100.0			Read Interval [ms]					
Encoding type:	Name: Size: Values:	EPBSysE 3 bits Type Logical Va	alue alue alue alue alue alue	Value 0 1 2 3 4 5 6 7	Scale	Offs	Off Me Me Me Me Me	erpretation essage #1 essage #2 essage #3 essage #4 essage #5 essage #6 essage #7				

			EPBSy	sStsIndF	leq			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0	
Timings:	ngs: Interface Mode/FuncVerFolder/Function FM Normal HS				atency	Max. Age [ms]	Read Interval [ms]	
				30.000		100.000		
Description:	Electric Par	k Brake Sys	tem Status Indica	ation Requ	uest			
Encoding type:	Name: Size:	EPBSysWr 2 bits	nngIndReqET					
	Values:	Туре	Value	Scale	Offset	Interpretation	1	
		Logical Valu	ie 0			No Indication		
		Logical Valu	ie 1			Continuous Inc	dication	
		Logical Valu	ie 2			Flash Rate #1	Indication	
		Logical Valu	ie 3			Flash Rate #2 Indication		

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			<b>EPBSys</b>	Wrnngln	dReq					
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0			
Timings:	Interface Mode/Fun FM Norma	cVerFolder/	Function	Sub. I [ms]	_atency	Max. Age [ms] 100.000	Read Interval [ms]			
Description: Electric Park Brake System Warning Indication Request										
Encoding type:	Name: Size:	EPBSysWr 2 bits	rnngIndReqET							
	Values:	Туре	Value	Scale	Offset	Interpretation	n			
		Logical Valu	ue 0			No Indication				
		Logical Valu	ue 1			Continuous In	ndication			
		Logical Valu	ue 2			Flash Rate #1	Indication			
		Logical Value	ue 3			Flash Rate #2	2 Indication			

			EP	SFIrSts		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A	Update Bit No	Initial Value 0
Timings:	mings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Max. Age [ms] 100.000	Read Interval [ms]
Description:	Electric Po	wer Steering	Failure Status A	nd Fault Level Status		
Encoding type:	Size: 2	PSFIrStsET bits				
	Values: Ty	ype	Value Scale C	Offset Interpretation		
	Lo	ogical Value	0	EPS No failure	(Indication off)	
	Lo	ogical Value	1	EPS Light Leve	el failure indica	ition£"Orange£©
	Lo	ogical Value	2	EPS Heavy Le	vel failure indic	cation£"Red£©
	Lo	ogical Value	3	Invalid		

	ESCLFIrIndCmd											
Size [bits]	<b>Type</b> Unsigned	I IVDA I			ame	<b>Jpdate</b> <b>Bit</b> No	Initial Value 0					
Timings:	Interface Mode/Fund FM Norma	cVerFolder/	Function	Sub. Later [ms] 10.000	[m:	x. Age s] 0.000	Read Interval [ms]					
Description: Electronic Steering Column Lock Failure Indication Command												
Encoding type:	Name: Size: Description	2 bits	rIndCmdET	mn Lock Failur	e Indication	Comman	d ET					
	Values:	Type	•	Scale Offset								
		Logical \			No defect f		ected					
		Logical \	/alue 1		Defect failu	re detect	ed					
		Logical \	/alue 2		Steering wh	neel is blo	ocked					
		Logical \	/alue 3		Functional	limitation	failure detected					

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	FasnDrvrSbltIndCmd											
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group I		Update Bit No	Initial Value 0					
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Late [ms] 30.000	ency	Max. Age [ms] 100.000	Read Interval [ms]					
Description:	Description: Fasten Driver Seatbelt Indication Command											
Encoding type:	Name: Size:	SbltIndCm 2 bits	ndET									
	Values:	Type Logical Va Logical Va Logical Va Logical Va	lue 1 lue 2	e Scale	Offset	drive lam drive lam drive lam	p OFF					

			FasnFrtF	sngSk	oltIndCr	nd		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	(	Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	[m	u <b>b. Late</b> n <b>s]</b> 0.000	ncy	Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Fasten Fro	nt Passenge	r Seatbelt Indica	ation C	omman	b		
Encoding type:	Name: Size:	SbltIndCm 2 bits	ndET					
	Values:	<b>Type</b> Logical Va	<b>Val</b> lue 0	ue	Scale	Offset	Interpret drive lam	
		Logical Va					drive lam	•
		Logical Va						p Flashing
		Logical Va	lue 3				Signal no	ot available

			FasnSb	oltAudRmr	ndr		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 10.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Fasten Sea	tbelt Audible	Reminder				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Typ</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			FICMDis	tUnitAdjtR	eqA				
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Group Name</b> N/A		· Bit		Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]		
Description:	Front Infota	inment Con	trol Module Dista	nce Unit Ad	djust Requ	est Active			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value						
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE		

			FICMFue	Csump	UntAdj			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	oup Name N/A	Upd Bi	t	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	<b>Sub.</b> [ms] 30.00	<b>Latency</b>	Max. <i>A</i> [ms] 100.00	•	Read Interval [ms]
Description:	Front Infota	inment Cont	rol Module Fuel	Consum	otion Units	Adjust		
Encoding type:	Name: Size:	FICMFue 2 bits	ICsumpUntAdj <b>i</b>	ĒΤ				
	Values:	<b>Type</b> Logical Value Val	alue 0 alue 1		Scale	Offset	L/1 mp	erpretation 00km g(UK) g(US)

			FICMFuelC	sumpUntA	djARA		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Ficm Fuel (	Consumption	Units Adjust Re	quest			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			FICMOV	erSpdFi	nCrntSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	G	N/A		te	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000		Max. Aç [ms] 100.000		Read Interval [ms]
Description:	Ficm Over	Speed Func	tion Current Stat	us				
Encoding type:	Name: Size:	FICMOve	erSpdFnCrntSts	ET				
	Values:	Type	\	/alue	Scale	Offset	Inter	oretation
		Logical V	alue C	)			OFF	
		Logical V	alue 1				ON	

			FICMOvr	SpdThrsl	nldAdj		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value
Timings:	Interface Mode/Fund FM Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Front Infota	 inment Cont	trol Module Over	Speed TI	nreshold Ad	ljust	
Encoding type:	Name: Size:	FICMOvr	SpdThrshldAdjE	ΞT			
	Values:	<b>Type</b> Physical F	Range	<b>Value</b> 0 - 63	<b>Scale</b> 5	Offset 0	Interpretation

			FICMOvrSp	dThrshld.	AdjtRA		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function			Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]
	FM_Normal_HS					100.000	
Description:	Ficm Over	Speed Thres	shold Adjust Requ	uest			
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	: boo	olean value				
	Values:	Ту	oe	Value	Scale	Offset	Interpretation
		Log	jical Value	0			FALSE
		Log	jical Value	1			TRUE

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			FICM.	ΓemUnt Ac	lj		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	30.000			Read Interval [ms]
Description:	Front Infota	inment Cont	rol Module Temp	erature Ur	nits Adjust		
Encoding type:	Name: Size:	FICMTemU 2 bits	IntAdjET				
	Values:	Туре	Value	Scale	Offset	Interpretation	on
		Logical Val	ue 0			Celsius Deg	ree(¡æ)
		Logical Val	ue 1			Fahrenheit D	Degree("H)
		Logical Val	ue 2			Not Available	е

			FICMTen	nUntAdjtR	eqA				
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		•		· Bit	
Timings:	Interface Mode/Fun FM_Norma	<b>cVerFolder/</b> al_HS	Function	Sub. La [ms] 30.000	•	Max. Age [ms] 100.000	Read Interval [ms]		
Description:	Ficm Temp	erature Unit	s Adjust Request						
Encoding type:	Name: Size: Descriptior	1 b	oleanCoding it olean value						
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE		

			FICMTyrePre	ssureUntA	AdjtReqA		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Ficm Tyre F	Pressure Un	its Adjust Reques	st			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			FIC	MVeh	MntnceSt	s		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	n	<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function		Sub. Lat [ms] 30.000	ency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Ficm Vehic	le Maintenar	nce Status					
Encoding type:	Name: Size:	FICMVehN 2 bits	IntnceStsET	•				
	Values:	Type	Va	alue	Scale	Offset	Interpreta	tion
		Logical Val	ue 0				Status OK	
		Logical Val	ue 1				Suggest to	Maintain
		Logical Val	ue 2				Maintain in	nmediately
		Logical Val	ue 3				Reserved	

			F	LTirePrs			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	u <b>p Name</b> N/A	Update Bit No	Initial Value 55
Timings:	ings: Interface Mode/FuncVerFolder/Function			Sub. [ms]	Latency	Max. Age [ms]	Read Interval [ms]
	FM_Norma	I_HS		50.00	50.000		
Description:	Front Left T	ire Pressure	)				
Encoding type:	Name: Size:	FLTirePrs 7 bits	ET				
	Values:	<b>Type</b> Physical F	Range	<b>Value</b> 0 - 127	Scale 4	Offset 0	<b>Interpretation</b> Kpa

			FL	TirePrsV			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		<b>Group Name</b> N/A		Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	<b>VerFolder/</b> I_HS	Function	Sub. Latency [ms] 50.000		Max. Age [ms] 500.000	Read Interval [ms]
Description:	Front Left T	ire Pressure	Validity				
Encoding type:	Name: Size: Description	1 b	id4Coding it d info 4				
	Values:		<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

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				Fl	_TireSts				
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generat Type Periodi		<b>Group Name</b> N/A			Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/Function		Sub. Latency [ms] 50.000		[1	Max. Age ms] 500.000	Read Interval [ms]	
Description:	Front Left T	ire Status							
Encoding type:	Name: Size:	FLTireStsE 3 bits	T						
1,00.	Values:	Type	Va	alue	Scale	Offset	Int	erpretation	
		Logical Valu	ue 0				No	rmal	
		Logical Valu	ue 1				Un	kown	
		Logical Valu	ue 2				Pre	essure Low	
		Logical Valu	ue 3				Qu	ick leak	
		Logical Valu	ue 4				Pre	essure High	
		Logical Valu	ue 5				Te	mperature H	High
		Logical Valu	ue 6				Ax	le Pressure	imbalance
		Logical Valu	ue 7				Ba	ttery Low	

			FI	_TireTem			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 45
Timings:	S: Interface Mode/FuncVerFolder/Function FM Normal HS			Sub. I [ms]			Read Interval [ms]
Description:			ature	30.000	J	200.000	
Encoding type:	Name: Size: Values:	FLTireTei 7 bits Type	nET	Value	Scale	Offset	Interpretation
	3.0.3.30.	Physical F	Range	0 - 127	2	-60	

			FL1	<b>TireTemV</b>			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	<b>VerFolder/</b> I_HS	Function	Sub. La [ms] 30.000	atency	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Front Left T	ire Tempera	ture Validity				
Encoding type:	Name: Size: Description	1 b	id4Coding it d info 4				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

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			FrtF	ogLghtOn			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency [ms] 50.000		Read Interval [ms]
Description:	Front Fog L	ight On					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			F	RTirePrs			
Size [bits]	<b>Type</b> Unsigned	Insigned State Periodic N/A		Update Bit No	Initial Value 55		
Timings:	mings: Interface Mode/FuncVerFolder/Function				Latency	Max. Age [ms]	Read Interval [ms]
	FM_Norma	I_HS		50.00	50.000		
Description:	Front Right	Tire Pressu	re				
Encoding type:	Name: Size:	FLTirePrs 7 bits	ET				
	Values:	<b>Type</b> Physical F	Range	<b>Value</b> 0 - 127	Scale 4	Offset 0	<b>Interpretation</b> Kpa

			FR	TirePrsV			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		Update Bit No	Initial Value 0
Timings:	ings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 50.000		Max. Age [ms] 500.000	Read Interval [ms]
Description:	Front Right	Tire Pressu	re Validity				
Encoding type:	Name: Size: Description	1 b	id4Coding it id info 4				
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

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			F	RTireSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	up Name N/A	Update Bit No	e Initial Value
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	<b>Sub.</b> [ms] 50.00	<b>Latency</b> 0	Max. Age [ms] 500.000	e Read Interval [ms]
Description:	Front Right	Tire Status					
Encoding type:	Name: Size: Values:	FLTireStsE 3 bits Type	T Value	Scale	Offset	Interpretat	iion
		Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu	ue 1 ue 2 ue 3 ue 4 ue 5			Normal Unkown Pressure L Quick leak Pressure H Temperatu Axle Press	ligh
		Logical Valu				Battery Lov	W

			Fi	RTireTem			
Size [bits]	Type Unsigned State Generation Type Periodic		Gro	<b>Group Name</b> N/A		Initial Value 45	
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS			Sub. Latency [ms] 30.000		Max. Age [ms] 200.000	Read Interval [ms]
Description:			rature	30.00	<u> </u>	200.000	
Encoding type:	Name: Size: Values:	FLTireTer 7 bits Type Physical R		<b>Value</b> 0 - 127	Scale	Offset	Interpretation

			FR1	<b>FireTemV</b>			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. La [ms] 30.000	•	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Front Right	Tire Tempe	rature Validity				
Encoding type:	Name: Valid4Coding Size: 1 bit Description: valid info 4						
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

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	FrtPsngDoorOpenSts								
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A	Update Bit No	Initial Value 0			
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 50.000	Max. Age [ms] 100.000	Read Interval [ms]			
Description:	Description: Front Passenger Door Open Status								
Encoding type:	Name: FrtPsngDoorOpenStsET Size: 2 bits Values: Type Value Scale Offset Interpretation								
	Log Val	gical ue 0		Front Passenger Door	Closed				
	Log Val	gical ue 1		Front Passenger Open(latch switch canni®t detect door ajar statu					
	Log Val	gical ue 2		Front Passenger Door	Ajar				
	Log Val	gical ue 3		Front Passenger Door	Full Open				

			FrtS	ideLghtF			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Name</b>	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. La [ms] 30.000	atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Front Side	Light Failed					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			Fu	ıelCsump			
Size [bits]	Type Unsigned State Generation Type Periodic		<b>Group Name</b> N/A		Update Bit No	Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Fuel Consu	ımption					
Encoding type:	Name: Size: Values:	FuelCsum 12 bits Type Physical R		<b>Value</b> 0 - 4095	Scale 16	Offset 0	Interpretation microlitre

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				Geni	Sta			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generatio Type</b> Periodic	n	Group I		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function		Sub. Late [ms] 30.000		Max. Age [ms] 400.000	Read Interval [ms]
Description:	state of ger	nerator						
Encoding type:		GenrStaET B bits						
		Type Logical Value	9 1 9 2 9 3 9 4 9 5 9 6	Scale	Offset	generato	or is ok or lost comm or failed or running in d d	unication default state

			HDC	SysSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group</b> N/		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Hill Descen	t Control Sy	stem Status				
Encoding type:	Name: Size: Values:	3 bits	CtrlSysStsET Value	Scale	Offset	Interprete	lian
	values.	<b>Type</b> Logical Val Logical Val	ue 0	Scale	Onset	Interpretate Normal Enabled	lion
		Logical Val	ue 3			Active Failed	
		Logical Val	ue 4			Temporaril	y Inhibited

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			Hou	rOfDayA	dj		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	up Name N/A	Update Bit No	Initial Value
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 2000.000	Read Interval [ms]
Description:		ıy Adjustmer y Adjustmen	nt t from infotainme	nt			
Encoding type:	Name: Size: Values:	HourOfDa 5 bits Type	•	Value	Scale	Offset	Interpretation
		Physical F	Range	0 - 23	1	0	

			keep_ı	network_	AC				
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Periodic	Gro	Group Name N/A Update Bit Yes		Initial Value false		
Timings:	Interface Mode/FuncVerFolder/Function			Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]		
	FM_Norma	al_HS		10.000		200.000			
Description:	NM signal:	the ATC/AC	ETC uses this si	gnal whe	n it wants t	o keep the netwo	ork awake.		
Encoding type:	Name: Size:	keep_netw	ork_coding						
.71 -	Values:	Туре	Value	Scale	Offset	Interpretation			
		Logical Valu	ue 0			no keep netwo	rk request		
		Logical Valu	ue 1			keep network request			

			keep_n	etwork_E	SCL		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	Gro	u <b>p Name</b> N/A	Update Bit Yes	Initial Value false
Timings:	Mode/FuncVerFolder/Function			Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]
	FM_Normal_HS			10.000		200.000	
Description:	NM signal:	the ESCL us	ses this signal wh	en it wan	ts to keep	the network awa	ıke.
Encoding type:	Name: Size:	<b>keep_netw</b> 1 bit	ork_coding				
	Values:	Туре	Value	Scale	Offset	Interpretation	
		Logical Valu	ue 0			no keep netwo	rk request
		Logical Valu	ue 1			keep network i	request

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			keep_n	etwork_F	ICM		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	Gro	u <b>p Name</b> N/A	Update Bit Yes	<b>Initial Value</b> false
Timings:	imings: Interface Mode/FuncVerFolder/Function FM_Normal_HS		Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]	
			10.00	0	200.000		
Description:	NM signal:	the FICM/IC	E uses this signa	al when it	wants to k	eep the network	awake.
Encoding type:	Name: Size:	keep_netw 1 bit	ork_coding				
	Values:	Туре	Value	Scale	Offset	Interpretation	
		Logical Valu	ue 0			no keep netwo	rk request
		Logical Valu	ue 1			keep network r	equest

			keep_ne	etwork_T	PMS		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	Gro	u <b>p Name</b> N/A	Update Bit Yes	<b>Initial Value</b> false
Timings:	Interface Mode/Fund FM Norma	cVerFolder/	Function	Sub. Latency [ms] 10.000		Max. Age [ms] 200.000	Read Interval [ms]
Description:	NM signal:	the TPMS u	ses this signal wh	nen it war	nts to keep	the network awa	ake.
Encoding type:	Name: Size:	keep_netw 1 bit	ork_coding				
	Values:	Type Logical Valu Logical Valu		Scale	Offset	Interpretation no keep netwo keep network r	rk request

			LB	rkLghtF				
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false	
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/ al_HS	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Left Brake	Light Failed						
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value					
	Values:	<b>Ty</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE	

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			LDipd	<b>BeamLght</b>	:F		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Left Dipped	l Beam Light	Failed				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			LDire	nIndLghtF	=			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value false	
Timings:	Interface Mode/Fun FM_Norma	<b>cVerFolder/</b> al_HS	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Left Directi	on Indication	Light Failed					
_ :	Name: BooleanCoding Size: 1 bit Description: boolean value							
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE	

			L	DircnIO						
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		Group Name N/A		-		Initial Value false	
Timings:	Interface Mode/FuncVerFolder/Function			Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]			
	FM_Norma	I_HS		30.000	30.000 200.000					
Description:	Description: Left Direction Indication On Remind the Driver that Left Hand Direction Indicate Light was On									
Encoding	Name:	Во	oleanCoding							
type:	Size:	1 b	it							
	Description	: boo	olean value							
	Values:	Ту	oe	Value	Scale	Offset	Interpretation			
		Log	jical Value	0			FALSE			
		Log	jical Value	1			TRUE			

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			Ld	spcO	penSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		<b>Group N</b> /A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function		Sub. Late [ms] 30.000	ency	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Loadspace	Open Status	6					
Encoding type:	Name: Size:	LdspcOpe 2 bits	enStsET					
	Values:	Туре	Va	lue	Scale	Offset	Interpret	ation
		Logical Va	lue 0				Load Spa	ace Closed
		Logical Va	lue 1				Load Spa	ace Open
		Logical Va	lue 2				Reserved	d l
		Logical Va	lue 3				Reserved	d

			Lgł	tSwPos	Sts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gr	Group Name N/A		<b>Update</b> <b>Bit</b> No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub [ms 30.0	_	[m	ax. Age s] 0.000	Read Interval [ms]
Description:	•	n Position St Posistion o						
Encoding type:		<b>LghtSwPos</b> 3 bits	StsET					
		Type Logical Valu	1	Scale	Offset	Switch Switch Side La	is on "Au amp d Beam w position ed ed	f" position to" position

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			MainB	eamLghtC	)n		
Size [bits]	Type Boolean State Generation Type State Periodic		<b>Group Name</b> N/A		Update Bit No	Initial Value false	
Timings:	Interface Mode/Fun FM_Norma	<b>cVerFolder/</b> al_HS	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 200.000	Read Interval [ms]
Description:	Main Beam	Light On					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

	MinuteOfHourAdj												
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	<b>Group Name</b> N/A		Initial Value						
Timings:	Interface Mode/Fund FM Norma	cVerFolder/	Function	Sub. [ms] 30.00	<b>Latency</b> 0	Max. Age [ms] 2000.000	[ms]						
Description:		– Hour Adjustm Iour Adjustm	nent ent from infotain	ment									
Encoding type:	Name: Size: Values:	Size: 6 bits		Value Scale		Offset	Interpretation						
		Physical F	Range	0 - 59	1	0							

			M	usSrcN	ld			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	G	roup Name N/A		Update Bit No	Initial Value 15
Timings:		nterface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency         Max. Age           [ms]         [ms]           30.000         100.000			Read Interval [ms]
Description:	Music Sour	ce Mode						
Encoding type:	Name: Size:	MusicSo 4 bits			_			
	Values:	Type Logical V Logical V Logical V Logical V	alue ( alue 1 alue 2		Scale	Off	OF AN FN	1

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				Na	vDircn			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Genera Typ Perio	e	<b>Group Name</b> N/A		Update Bit No	Initial Value 63
Timings:	Interface Mode/Fund FM_Norma	ncVerFolder/Function al_HS		Sub. Lat [ms] 30.000	tency	Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Navigation	Direction						
Encoding type:	Name: Size:	NaviDirect 6 bits	tionET					
	Values:	Type		Value	Scale	Offset	Interpretat	
		Logical Val		0			SelfCar Log	go
		Logical Val		1			turn Left	
		Logical Val		2			turn Right	
		Logical Val		3			Left Head	
		Logical Val		4			right Head	
		Logical Val		5			Left After	
		Logical Val		6 7			Right After	
		Logical Val					Back	lada 4
		Logical Val		8 9			Driver Strai Arrive Midd	•
		Logical Val		9 10			into Circle 2	
		Logical Val		10			Out Circle Z	
		Logical Val		12			Arrive Srvice	
		Logical Val		13			Arrive Toll	
		Logical Val		14			Arrive the D	
		Logical Val		15			into tube	Josunation
		Logical Val		63			invalid	

			I	NavDist			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Updat Bit No	Initial Value 32767
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			<b>Suk</b> [ms	-	Max. Ag [ms] 100.000	e Read Interval [ms]
Description:	Navigation	Distance					
Encoding type:	Name: Size: Values:	NavDistE 15 bits Type Logical V	··· V	<b>/alue</b> 32767	Scale	Offset	Interpretation invalid

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			Na	avDistU	nit			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	G	roup Name N/A	Upda Bit No		Initial Value 0
Timings:		face e/FuncVerFolder/Function Normal_HS			o. Latency 6] 000	Max. Aq [ms] 100.000		Read Interval [ms]
Description:	Navigation	Distance Un	it					
Encoding type:	Name: Size:	NavDistU	InitET					
	Values:	Type	,	Value	Scale	Offset	Inter	rpretation
		Logical V	alue	0			m	
		Logical V	alue	1			0.1k	m

			net	work_m	ode		
Size [bits] 8	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Sporadic	Group Name BCM_HSC1_Frl01		Upda Bit No	Initial Value
Timings:	Mode/FuncVerFolder/Function				b. Latency	Max. Ag [ms]	[ms]
	FM_Norma FM_Silent_	_		10.0 10.0		50.000 50.000	0.000 0.000
Encoding type:	Name: Size: Values:	network_ 8 bits Type		/alue	Scale	Offset	Interpretation
	values.	Logical Value Value Logical Value Va	alue ( alue 1	) 	Juic	Onoct	start-up shutdown normal

				OdoSe	су			
Size [bits]	<b>Type</b> Bytes	Info Type State	<b>Generatio</b> <b>Type</b> Periodic	n	<b>Group Nam</b> N/A	ne	Update Bit No	Initial Value 0x00 0x00 0x00
Timings:	Interface Mode/Fun FM_Norma	<b>cVerFolder/</b> al_HS	Function	[n	ub. Latency ns] 0.000		Max. Age [ms] 300.000	Read Interval [ms]
Description:	Odometer Odo Backu	•						
Encoding type:	Name: Size: Values:	OdoSecyE 24 bits Type Physical Ra	,	<b>Value</b> 0 - 16777		Scale	Offset 0	<b>Interpretation</b> km

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			PE	<b>PSAntFlt</b>			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Group Name</b> N/A		Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Passive En	try Passive	Start Antenna Fa	ult			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			PwrMo	MstrAccry	/A		
Size [bits]	Type Unsigned State Generation Type Periodic			<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	gs: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 20.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Power Mod	e Master Ac	cessory Termina	l Status			
Encoding type:	Name: Size: Description	1 b	tive1Coding it ive info				
	Values:	<b>Tyj</b> Log	oe gical Value gical Value	<b>Value</b> 1 0	Scale	Offset	Interpretation Active Inactive

			PwrMdMs	strAccryW	kupA		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	ings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency [ms] 20.000		Read Interval [ms]
Description:	Power Mod	e Master Ac	cessory Wakeup	Active			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			PwrN	ldMstrlgn <i>l</i>	4		
Size [bits]	Boolean State Periodic		<b>Group Name</b> N/A		Update Bit No	Initial Value false	
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	Sub. La [ms] 20.000	•	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Power Mod	le Master Igr	nition Active				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			PwrMdl	MstrRunCr	·kA		
Size [bits]	<b>Type</b> Unsigned	Info Type State	e Generation Type Periodic Group Name			Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. La [ms] 20.000	atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Power Mod	e Master Ru	n Crank Termina	al Status			
Encoding type:	Name: Size: Description	1 b	tive1Coding it ive info				
	Values:	<b>Typ</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 1 0	Scale	Offset	Interpretation Active Inactive

			RE	rkLghtF			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Right Brake	Light Failed	k				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			RDipd	BeamLght	:F		
Size [bits]	Type Boolean State Generatio Type State Periodic		• •	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	<b>cVerFolder/</b> al_HS	Function	Sub. La [ms] 30.000	atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Right Dippe	ed Beam Lig	ht Failed				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			RDire	nIndLghtF	=			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value false	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Right Direc	tion Indication	n Light Failed					
Encoding type:	Name: Size: Descriptior	1 b	oleanCoding it olean value					
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE	

			R	DircnIO			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/Fund	Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]		
	FM_Normal_HS			30.000	30.000		
Description:	•		n On Right Hand Direc	tion Indicat	te Light wa	as On	
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	: boo	lean value				
	Values:	Тур	oe	Value	Scale	Offset	Interpretation
		Log	jical Value	0			FALSE
		Log	jical Value	1			TRUE

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			Ro	doFrqcVal			
Size [bits] 16	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		<b>Name</b> /A	Update Bit No	Initial Value 65535
Timings:	mings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Radio Freq	uency Value	:				
Encoding type:	Name: Size: Values:	RdoFrqcV 16 bits Type Physical R	<b>\</b> ange (	<b>/alue</b> ) - 65534	<b>Scale</b> 0.1	Offset 0	Interpretation
		Logical Va	lue 6	85535			invalid

			Re	vsLghtF			
Size [bits]	Type Boolean State Generation Type Periodic		[ms] [		Update Bit No	Initial Value false Read Interval [ms]	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				Max. Age [ms] 100.000		
Description:	Reverse Li	ght Failed					
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			R	LTirePrs			
Size [bits]	<b>Type</b> Unsigned	TVNE		1	<b>Group Name</b> N/A		Initial Value 55
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 500.000	Read Interval [ms]
Description:	Rear Left T	ire Pressure					
Encoding type:	Name: Size: Values:	FLTirePrs 7 bits Type Physical R		<b>Value</b> 0 - 127	Scale 4	Offset 0	Interpretation Kpa

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			RL	TirePrsV			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 500.000	Read Interval [ms]
Description:	Rear Left T	ire Pressure	Validity				
Encoding type:	Name: Valid4Coding Size: 1 bit Description: valid info 4						
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

		RI	_TireSts			
<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 0
Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency         Max. Age           [ms]         [ms]           30.000         500.000		[ms]	Read Interval [ms]
Rear Left T	ire Status					
Name: Size:	FLTireStsE 3 bits	Т				
Values:	Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu	1	Scale	Offset	Axle Pressure in	•
	Interface Mode/Fund FM_Norma Rear Left T Name: Size:	Interface Mode/FuncVerFolder/I FM_Normal_HS Rear Left Tire Status Name: FLTireStsE Size: 3 bits Values: Type Logical Values	Type Unsigned Info Type State State Generation Type Periodic  Interface Mode/FuncVerFolder/Function FM_Normal_HS  Rear Left Tire Status  Name: FLTireStsET Size: 3 bits  Values: Type Value Logical Value 0 Logical Value 1 Logical Value 2 Logical Value 3 Logical Value 4 Logical Value 5	Interface Mode/FuncVerFolder/Function FM_Normal_HS Name: FLTireStsET Size: 3 bits Values: Type Logical Value	Type Unsigned Info Type State State Periodic Sub. Latency N/A  Interface Mode/FuncVerFolder/Function FM_Normal_HS 30.000  Rear Left Tire Status  Name: FLTireStsET Size: 3 bits  Values: Type Value Scale Offset  Logical Value 1  Logical Value 2  Logical Value 3  Logical Value 3  Logical Value 4  Logical Value 5  Logical Value 5  Logical Value 5  Logical Value 6	Type Unsigned Info Type State State Periodic Group Name N/A State No  Interface Mode/FuncVerFolder/Function FM_Normal_HS Solo.000 500.000  Rear Left Tire Status  Name: FLTireStsET Size: 3 bits  Values: Type Value Scale Offset Interpretation Normal Unkown Logical Value 1 Unkown Pressure Low Quick leak Pressure High Logical Value 5 Temperature Hi Logical Value 6 Axle Pressure ir

			RI	_TireTem			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 45
Timings:	imings: Interface Mode/FuncVerFolder/Function				Sub. Latency [ms]		Read Interval [ms]
	FM_Norma	I_HS		30.00	30.000		
Description:	Rear Left T	ire Tempera	ture				
Encoding	Name:	FLTireTe	mET				
type:	Size:	7 bits					
	Values:	Type		Value	Scale	Offset	Interpretation
		Physical F	Range	0 - 127	2	-60	

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			RL1	<b>TireTemV</b>			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Rear Left T	ire Tempera	ture Validity				
Encoding type:	Name: Valid4Coding Size: 1 bit Description: valid info 4						
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

			RrF	ogLghtF				
Size [bits] Type Boolean II		Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Rear Fog L	ight Failed						
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value							
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE	

			RrF	ogLghtOn			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		o Name I/A	Update Bit No	Initial Value false
Timings:	S: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. La [ms] 30.000	atency	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Rear Fog L	ight On					
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			RrS	ideLghtF			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	mings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Rear Side I	_ight Failed					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	oe gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			R	RTirePrs			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gro	u <b>p Name</b> N/A	Update Bit No	Initial Value 55
Timings:	mings: Interface Mode/FuncVerFolder/Function				Sub. Latency [ms]		Read Interval [ms]
	FM_Norma	I_HS		30.00	30.000		
Description:	Rear Right	Tire Pressur	е				
Encoding type:	Name: Size:	FLTirePrs 7 bits	ET				
	Values:	<b>Type</b> Physical F	Range	<b>Value</b> 0 - 127	Scale 4	Offset 0	<b>Interpretation</b> Kpa

			RR	TirePrsV			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		o Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. La [ms] 30.000	atency	Max. Age [ms] 500.000	Read Interval [ms]
Description:	Rear Right	Tire Pressui	re Validity				
Encoding type:	Name: Size: Description	1 b	lid4Coding it id info 4				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

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	RRTireSts										
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		'i	<b>date</b> Bit No	Initial Value 0			
Timings:	Interface Mode/Fund FM_Norma	FuncVerFolder/Function			[ms] [n		Age	Read Interval [ms]			
Description:	Rear Right	Tire Status									
Encoding type:	Name: Size: Values:	FLTireStsE 3 bits Type Logical Valu	Value  De 0  De 1  De 2  De 3  De 4  De 5  De 6	Scale	Offset	Interpr Normal Unkown Pressu Quick In Pressu Tempe Axle Pr Battery	n re Low eak re High rature F essure				

	RRTireTem										
Size [bits]	Ize [bits]Type UnsignedInfo Type StateGeneration Type Periodic				<b>Group Name</b> N/A		Initial Value 45				
Timings:	ngs: Interface Mode/FuncVerFolder/Function FM Normal HS				Sub. Latency [ms] 30,000		Read Interval [ms]				
Description:			rature	30.00	<u> </u>	200.000					
Encoding type:	Name: Size: Values:	FLTireTer 7 bits Type Physical F		<b>Value</b> 0 - 127	Scale 2	Offset -60	Interpretation				

			RR <sup>-</sup>	TireTemV			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		<b>Name</b>	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. La [ms] 30.000	atency	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Rear Right	Tire Temper	ature Validity				
Encoding type:	Name: Valid4Coding Size: 1 bit Description: valid info 4						
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

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	ScurtAlrmSts										
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	(	Group Name N/A		Update Bit No	Initial Value 0			
Timings:	Interface Mode/Fund FM_Norma	/FuncVerFolder/Function			[ms] [ms		Max. Age [ms] 300.000	Read Interval [ms]			
Description:	Description: Security Alarm Status										
Encoding type:		ScurtAlrmS 3 bits	tsET								
		Type Logical Valu	e 1 e 2 e 3 e 4 e 5 e 6	Scale	Offset	off part al full ala not us not us part al	ed arm with vol arm with volu	volumetrics			

			Scurt	KeyBatLov	V		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		o Name I/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fun FM_Norma	Function	Sub. La [ms] 30.000	atency	Max. Age [ms] 200.000	Read Interval [ms]	
Description:	Security Ke	ey Battery Lo	W				
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			Scu	rtKeylnvd			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			<b>Sub</b> . La [ms] 30.000	•	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Security Ke	ey Invalid					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

	SecsOfMinuteAdj										
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A Update Bit No		Initial Value					
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 2000.000	[ms]				
Description:			ustment ustment from info	tainment							
Encoding type:	Name: Size: Values:	SecsOfM 6 bits Type		Value	Scale	Offset	Interpretation				
		Physical F	Range	0 - 59	1	0					

	ShifterLckRlseBrkReqA										
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false				
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. La [ms] 30.000	,	Max. Age [ms] 100.000	Read Interval [ms]				
Description:	Shifter Lock	Release Br	ake Request Act	ive							
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value								
	Values:	<b>Typ</b> Log	oe gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE				

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			SIA	OdoSecy			
Size [bits]	<b>Type</b> Bytes	Info Type State	ype Type Group Name Bit			Initial Value 0x00 0x00 0x00	
Timings:	Interface Mode/Fun FM_Norma	icVerFolder/l al_HS	Function	Sub. Late [ms] 30.000	ncy	Max. Age [ms] 300.000	Read Interval [ms]
Description:	Service Int	erval Annour	cement Odomet	er Secondary			
Encoding type:	Name: Size: Values:	OdoSecyE  24 bits  Type  Physical Ra	Val	<b>ue</b> 16777215	Scale	Offset 0	Interpretation km

	signal_config_id										
Size [bits] 16	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Sporadic	Group Name BCM_HSC1_Frl01		Update Bit No	Initial Value 28673				
Timings:	Interface Mode/FuncVerFolder/Function			Sub. I [ms]	_atency	Max. Age [ms]	Read Interval [ms]				
	FM_Norma	I_HS		10.000		50.000	0.000				
	FM_Silent_	HS		10.000	)	50.000	0.000				
Encoding type:	Name: Size:	signal_con 16 bits	<b>U</b>								
	Values: <b>Type Value Scale</b> Logical Value 8272		Scale	Offset	Interpretation config: NMC/C						

			SpdAs	tSysSts	ECM		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Gro	oup Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/l	Function	Sub. [ms] 30.00		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Speed Assi	ist System S	tatus Engine Co	ntrol Mod	lule		
Encoding type:		SpdAstSys 3 bits		Ol-	0554	Intonountation	
	Values:	Type Logical Valu	1	Scale	Offset	Interpretation Off Active (Limiting) Standby Entry Condition Overspeed Fault Active (Passive Reserved	s Incorrect

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			SpdAs	stSysTrg	:Spd		
Size [bits] 15	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic Group Name N/A		•	Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			<b>Sub.</b> [ms] 30.00	<b>Latency</b>	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Speed Ass	ist System T	arget Speed				
Encoding type:	Name: Size: Values:	SpdAstSys 15 bits Type Physical Ra		lue 32767	<b>Scale</b> 0.015625	Offset 0	Interpretation

			Srflr	nitnRmndr			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	Sub. La [ms] 30.000	atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Sunroof Ini	tialization Re	eminder				
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	<b>Typ</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			SrfO	penRmndr			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/ al_HS	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Sunroof Op	en Reminde	er				
Encoding type:	Name: Size: Descriptior	1 b	oleanCoding it olean value				
	Values:		<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			SSBE	nOffRmndr						
Size [bits]	<b>Type</b> Unsigned	Info Type State	Type Type Group Name		Update Bit No	Initial Value 0				
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000	Max. Age [ms] 100.000	Read Interval [ms]				
Description:	Start Stop E	Button Engin	e OFF Reminde	r						
Encoding type:	Name: SSBEnOffRmndrET Size: 2 bits Values: Type Value Scale Offset Interpretation									
	Log Val	gical ue 0		no warning request						
	Log Val	gical ue 1		Press Button Again	To Turn Engin	e Off Reminder				
		Logical 2 Long Press Button To Turn Engine Off Reminder Value								
	Log Val	gical ue 3		Double Press Buttor Reminder	n Again To Tur	n Engine Off				

			StrgWhl	AngSns	srCalSts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	o Type   Group Name   Bit			Initial Value 0		
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS				Sub. Latency         Max. Age           [ms]         [ms]           30.000         100.000			Read Interval [ms]
Description:			Sensor Calibratio	n Statu	S			
Encoding type:	Name: Size:	StrgWhlA 2 bits	\ngSnsrCalStsE	ΞT				
	Values:	Type	V	alue	Scale	Offse	et Int	terpretation
		Logical Va	alue 0				Ur	nkonw
		Logical Va	alue 1				Es	timated
		Logical Va	alue 2				Ca	alibrated
		Logical Va	alue 3				Ur	nkonw

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			StrgWh	nIAngSnsr	Flt		
Size [bits]	Type Boolean State Generation Type Periodic		<b>Group Name</b> N/A		Update Bit No	Initial Value false	
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ I_HS	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Steering W	heel Angle S	Sensor Fault				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			Sys	sOpnlMd			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fun FM_Norma	<b>cVerFolder/F</b> al_HS	unction	<b>Sub.</b> [ms] 30.00	<b>Latency</b> 0	Max. Age [ms] 300.000	Read Interval [ms]
Description:	System Op	erational Mod	е				
Encoding type:	1	<b>SysOpnIMdET</b> B bits	•				
	L L L	Type Logical Value	Value Scale 0 1 2 3 4 5	Offset	Normal Mo Manufactur Transit Mo Show Roor Storage Mo	de ring Mode de m	ning(Reserve)

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			Sys	PwrMd			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 20.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	System Pov	wer Mode					
Encoding type:	Name: Size: Description	2 b	sPwrMd oits stem Power Mode				
	Values:	Log Log	<b>pe</b> gical Value gical Value gical Value gical Value	<b>Value</b> 0 1 2 3	Scale	Offset	Interpretation Off ACC Run Crank

			S	ysPwrM	dV				
Size [bits]	1 Unsigned State Periodic		Туре	Group Name N/A		Upda Bi No	t	Initial Value 1	
Timings:			[ms	Sub. Latency [ms] 20.000		<b>ge</b>	Read Interval [ms]		
Encoding type:	Name: Size: Values:	SysPwrN 1 bit Type		Value	Scale	Offset	Inter	pretation	
		Logical Va Logical Va		1 0			Inval Valid		

				SysVol			
Size [bits] 8	Type Unsigned State Generation Type Periodic			Gro	u <b>p Name</b> N/A	Update Bit No	Initial Value
Timings:	Interface Mode/Fund	cVerFolder/	Function	Sub. [ms]	Sub. Latency [ms]		Read Interval [ms]
	FM_Normal_HS				30.000		
Description:	Battery Vol	tage					
Encoding	Name:	SysVolET	•				
type:	Size:	8 bits					
	Values:	Type		Value	Scale	Offset	Interpretation
		Physical R	tange	0 - 255	0.1	3	V

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	SysVoIMd											
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generati Type Periodi		Group Name N/A		Update Bit No	Initial Value 0				
Timings:	Interface Mode/Fund FM_Norma	uncVerFolder/Function			Sub. Latency [ms] 30.000		Max. Age [ms] 300.000	Read Interval [ms]				
Description:	System Vo	Itage Mode										
Encoding type:	Name: Size:	SysVolMd 2 bits	ET									
	Values:	Type	\	/alue	Scale	Offset	Interpretati	on				
		Logical Val	ue C	)			Normal					
		Logical Val	ue 1				Low System	n Voltage				
	Logical Value 2 High System Voltage											
		Logical Val	ue 3	3			Illegal Syste	em Voltage				

			Sys\	/olMdV			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency [ms] 30.000		Read Interval [ms]
Description:	System Vol	tage Mode \	/alidity				
Encoding type:	Name: Size: Description	1 b	idityCoding it idity Encode Type				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

				SysVolV					
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gr	oup Name N/A	Update Bit No		Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				. Latency ] 000	Max. Age [ms] 300.000		Read Interval [ms]	
Description:	Battery Vol	tage Validity							
Encoding type:	Name: Size: Values:	InvalidET 1 bit Type Logical Value Logical Value	alue	<b>Value</b> 0 1	Scale	Offset	<b>Inter</b> Valid	•	

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			TakeK	eyOutRmn	dr		
Size [bits]	Type Boolean	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS		<b>Sub</b> . La [ms] 30.000			Read Interval [ms]	
Description:	Take Key C	Out Reminde	r				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	oe gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			TC	SOpngl	<b>V</b> Id				
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Gı	roup Name N/A	Upd Bi	t	Initial Value 0	
Timings:	s: Interface Mode/FuncVerFolder/Function FM_Normal_HS			<b>Suk</b> [ms 30.0	-	Max. Age [ms] 100.000		Read Interval [ms]	
Description:	Traction Co	ontrol System	Operating Mo	de					
Encoding type:	Name: Size:	TCSOpno 3 bits	•						
	Values:	Туре		Value	Scale	Offset		erpretation	
		Logical Va		0			Off		
		Logical Va		1			Nor	mal	
		Logical Va	alue :	2			Off	Road	

			TC	SOpng\$	Sts			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	G	roup Name N/A		<b>Update</b> <b>Bit</b> No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS		<b>Suk</b> [ms	-	[m	ax. Age ns] 00.000	Read Interval [ms]	
Description:	Traction Co	ontrol System	n Operating Stat	us				
Encoding type:	Name: Size:	TCSOpno 3 bits						
	Values:	Type	-	/alue	Scale	Offs	et Int	erpretation
		Logical V	alue 0	)			Ina	active
		Logical V	alue 1				Ac	tive
		Logical V	alue 2	<u>!</u>			Fa	ult

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			Time	eAdjReqA			
Size [bits]	Roolean State Ty		<b>Generation Type</b> Periodic	<b>Group Name</b> N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms]		Max. Age [ms] 2000.000	Read Interval [ms]
Description:		tment Reque	est Active est from infotainn	nent			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			Time	<b>DspFm</b>	tAdj						
Size [bits]	<b>Type</b> Unsigned	Info Type State Generation Type Periodic		Info Type   Group Name   Bit		Type Group Name Bit		ιype   · · · · · · · · · · · · · · · · · ·		sit Initial valu	
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS			Suk [ms	-	Max. A [ms] 2000.0		Read Interval [ms]			
Description:		ay Format Aday Format Ad	djustment djustment from i	nfotainm	nent						
Encoding type:	Name: Size: Values:	TimeDsp 1 bit Type Logical Value Logical Value	Nalue (	Value	Scale	Offset	12 l	erpretation hour mode hour mode			

			TPMSA	utoLoctn	Cm		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value true
Timings:	gs: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 200.000	Read Interval [ms]
Description:	Tire Pressu	re Monitor S	System Auto Loca	ation Comp	lete		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			٦	<b>TPMSF</b>			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Name</b>	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms]		Max. Age [ms] 500.000	Read Interval [ms]
Description:	Tire Pressu	re Monitor S	System Failed				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:		<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			TPMSI	dficnLrnC	m		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value true
Timings:	ings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 50.000		Max. Age [ms] 500.000	Read Interval [ms]
Description:	Tire Pressu	re Monitor S	System Identificat	ion Learn (	Complete		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log	oe gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			TPMST	irePrsLow	·IO		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	imings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. La [ms]	Sub. Latency [ms]		Read Interval [ms]
				50.000		500.000	
Description:	Tire Pressu	re Monitor S	System Tire Press	sure Low In	dication C	)n	
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	n: boo	olean value				
	Ту	ре	Value	Scale	Offset	Interpretation	
		Log	jical Value	0			FALSE
		Log	jical Value	1			TRUE

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			TPMS	SWntrMdA			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value false
Timings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. La [ms] 50.000	atency	Max. Age [ms] 500.000	Read Interval [ms]
Description:	Tire Pressu	re Monitor S	System Winter Mo	ode Active			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			TrNonE	msnRltdMa	alfA		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value false
Timings:	imings: Interface Mode/FuncVerFolder/Function FM Normal HS				atency	Max. Age [ms] 2000.000	Read Interval [ms]
Description:			sions Related M	alfunction A	Active		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Tyr</b> Log		<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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	TrShftLvrPos										
Size [bits]	<b>Type</b> Unsigned	Info Type State	Gener Tyj Perio	ре	<b>Group Name</b> N/A			Update Bit No	Initial Value 0		
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. I [ms] 30.000	_atency	I	Max. Age [ms] 200.000	Read Interval [ms]			
Description: Transmission Shift Lever Position											
Encoding type:	Name: Size:	TrShftLvrP 4 bits	PosCodir	ng							
	Values:	Туре		Value	Scale	Offset	In	terpretatio	n		
		Logical Value	ue	0			В	etween Ran	ges		
		Logical Value	ue	1			P	ark Range			
		Logical Value	ue	2			Reverse Range				
		Logical Val	ue	3			Neutral Range				
		Logical Val	ue	4			F	orward Ranç	ge A		
		Logical Val	ue	5			F	orward Ranç	ge B		
		Logical Val		6				orward Ranç	·		
		Logical Val		7				orward Ranç	·		
		Logical Value		8				orward Ranç	·		
		Logical Val		9				orward Ranç	-		
		Logical Val		15				ever Position			
		Logical Val		10				orward Ranç	-		
		Logical Val	ue	11			F	orward Rang	ge H		

			TrShf	tLvrPosV	1		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value 0
Timings:	nings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Transmissi	on Shift Lev	er Position Validity	,			
Encoding type:	Name: Size: Description	<b>.</b>					
	Values:	Ty Log		<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

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			T	rShftPt	rnASts						
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generatio Type Periodic	n	<b>Group Name</b> N/A		Update Bit No	Initial Value 0			
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/I	Function		Sub. Late [ms] 30.000	ency	Max. Age [ms] 200.000	Read Interval [ms]			
Description:	Description: Transmission Shift Pattern Active Status										
Encoding type:		<b>FrShftPtrnA</b> 3 bits	StsET								
		<b>Type</b> _ogical Value	e 1 e 2 e 3 e 4 e 5	Scale	Offset	Shift Pa Shift Pa Shift Pa Shift Pa PT Non	Shift Pattern Attern 1 Active Itern 2 Active Itern 3 Active Itern 4 Active Protection Patern Pattern	attern Active			

			TrTapl	JpTapD	wnMdSt	5		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ nl_HS	Function	[n	Sub. Latency [ms] 30.000		Max. Age [ms] 200.000	Read Interval [ms]
Description:	Transmissi	on Tap Up/T	ap Down Mod	e Status	i			
Encoding type:		TrTapUpTa <sub>l</sub> 2 bits	oDwnMdStsE	Т				
		<b>Type</b> Logical Valu Logical Valu Logical Valu	e 1	Scale	Offset	Electr Drive	oretation ronic Range Se r Shift Control a ctivation	

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			V	ehLckn	gSta				
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	1	<b>Group Nam</b> N/A		Update Bit No	Initial Value 7	
Timings:		terface ode/FuncVerFolder/Function M_Normal_HS		[n	[ms] [ms]		Max. Age [ms] 200.000	Read Interval [ms]	
Description: Vehicle Locking State									
Encoding type:	Size: Values:	VehLckngS 3 bits Type Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu	Value e 0 e 1 e 2 e 3 e 4 e 5	Scale	Offset	Unlock Signal Interior Exterio Super	Position Ent Locked r Locked locked red	ry Unlocked	
		Logical Valu Logical Valu				Reserv Unknov			

			Vehl	LdShedLvl							
Size [bits]	<b>Type</b> Unsigne		Generation Type Periodic	Group Name N/A Update Bit No		Initial Value 0					
Timings:	Interface Mode/Fu FM_Norr	uncVerFolder	/Function	Sub. Latency [ms] 30.000	Max. Age [ms] 4000.000	Read Interval [ms]					
Description:	n: Vehicle Load Shed Level										
Encoding Name: VehLdShedLvIET type: Size: 3 bits											
Values: Type Value Scale Offset Interpretation											
		Logical 0 No Power Risk Value									
		₋ogical √alue 1		Low Power Risk							
		₋ogical ∕alue	2	Middle Power Risk							
		₋ogical ∕alue	}	High Power Risk							
		₋ogical √alue		Power management direct current converter(PMDC)-broken							
		₋ogical √alue	i	reserved							
		₋ogical ∕alue 6	j	reserved							
		₋ogical √alue	•	reserved							

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			•	VehOdo			
Size [bits]	<b>Type</b> Bytes	Info Type State	i ivne		<b>Group Name</b> N/A		Initial Value 0x00 0x00 0x00
Timings:	Interface Mode/Fun FM_Norma	<b>cVerFolder/</b> al_HS	Function	Sub. Later [ms] 500.000			Read Interval [ms]
Description:	Vehicle Od	ometer					
Encoding type:	Name: Size: Values:	VehOdoET 24 bits Type Physical Ra	Val	lue 16777215	Scale	Offset 0	Interpretation

			Veh	OdoV				
Size [bits]	<b>Type</b> Unsigned	Info Type State	· I IVNe I		<b>Group Name</b> N/A		Initial Value 0	
Timings:	s: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency [ms] 500.000		Read Interval [ms]	
Description:	Vehicle Od	ometer Valid	lity					
Encoding type:	Name: Size: Description	1 b	lidityCoding it lidity Encode Type					
	Values:	<b>Tyj</b> Log		<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid	

				VehSid	eLghtSt	S		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generat Type Period		<b>Group Name</b> N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fur FM_Norm	ncVerFolder/Function			Sub. Latency [ms] 30.000		Max. Age [ms] 200.000	Read Interval [ms]
Description:	Vehicle Si	de Light Statu	IS					
Encoding type:		<b>VehSideLght</b> 2 bits	StsET					
		<b>Type</b> Logical Value Logical Value Logical Value Logical Value	0 1 2	Scale	Offset	Right side		plate light on

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			Veh	SpdAvgD	rvn		
Size [bits] 15	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name		Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				<b>Latency</b>	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Vehicle Spe	eed Average	Driven				
Encoding type:	Name: Size: Values:	VehSpdAv 15 bits Type Physical Ra	Va	<b>alue</b> - 32767	<b>Scale</b> 0.015625	Offset 0	Interpretation km/h

			VehSpo	AvgDrvn	١V		
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	e Group		Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency [ms] 30.000		Read Interval [ms]
Description:	Vehicle Spe	eed Average	Driven Validity				
Encoding type:	Name: Size: Description	1 b	idityCoding it idity Encode Type				
	Values:	<b>Tyj</b> Log		<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

	VINBCM											
Size [bits]	<b>Type</b> Bytes	Info Type State	<b>Generation Type</b> Periodic	<b>Group Name</b> N/A	Update Bit No	Initial Value 0xff 0x00 0x00 0x00 0x00 0x00 0x00 0x00						
Timings:	imings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Max. Age [ms] 1000.000	Read Interval [ms]						
Description:	Description: VIN Code Record in BCM											

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				VSEMd				
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	G	roup Name N/A	Update Bit No		Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms	o. Latency s] 000	Max. / [ms] 100.00		Read Interval [ms]
Description:	Vehicle Sta	bility Enhand	cement Mode					
Encoding type:	Name: Size:	VSEMdE 3 bits			_			_
	Values:	Type		Value	Scale	Offset	Int	erpretation
		Logical Va	alue	0			Off	f
		Logical Va	alue	1			No	ormal
		Logical Va	alue	2			Co	mpetitive

				VSESt	S			
Size [bits]	Type Unsigned State Generation Type Periodic		(	Group Name N/A		late it	Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[m	Sub. Latency         Max. Age           [ms]         [ms]           30.000         100.000			Read Interval [ms]
Description:	Vehicle Sta	bility Enhand	cement Status					
Encoding type:	Name: Size:	VSEStsE 3 bits	Т					
	Values:	Type		Value	Scale	Offset	Inte	erpretation
		Logical Va	alue	0			Ina	ctive
		Logical Va	alue	1			Act	ive
		Logical Va	alue	2			Fau	ult
		Logical Va	alue	3			Wa	rming Up
		Logical Va	alue	4			Not	t Ready

			wake_	networ	k_AC			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Sporadic	Group Name N/A		Update Bit Yes	Initial Value false	
Timings:	Interface Mode/Fund FM_Norma FM_Silent	_	Function	Sub. Latency [ms] 10.000 10.000			Max. Age [ms] 200.000 200.000	Read Interval [ms]
Description:	NM signal:	the ATC/AC	/ETC uses this s	ignal wl	hen it wan	ts to v	vake-up the r	network
Encoding type:	Size:	wake_netw 1 bit Type Logical Valu Logical Valu	Value e 0	Scale	Offset	no w	rpretation vake-up netwo e-up network	

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			wake_	network	ESCL			
Size [bits]	<b>Type</b> Boolean	Info Type State	Generation Type Sporadic	G	Group Name N/A		odate Bit Yes	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS			Sub. Latency [ms] 10.000		y Max. [ms] 200.0	J	Read Interval [ms]
	FM_Silent_	_HS		10.0	000	200.0	000	
Description:	NM signal:	the ESCL us	ses this signal v	vhen it w	ants to wa	ake-up the r	network	
Encoding type:		wake_netwo	ork_coding					
	Values:	Туре	Value	Scale	Offset	Interpreta	ation	
		Logical Valu	ie 0			no wake-ι	up netw	ork request
		Logical Valu	ie 1			wake-up r	network	request

			wake_ı	network	_FICM			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Sporadic	Group Name N/A		Update Bit Yes	Initial Value false	
Timings:	Interface Mode/Fun	cVerFolder/	Function	Sub. Latency [ms]		•	Max. Age [ms]	Read Interval [ms]
	FM_Norma	al_HS		10.0	000		200.000	
	FM_Silent_	_HS		10.0	000		200.000	
Description:	NM signal:	the FICM/IC	E uses this sign	al when	it wants to	o wake	e-up the netv	vork
Encoding type:	I	wake_netw 1 bit	ork_coding					
	Values:	Туре	Value	Scale	Offset	Inter	pretation	
		Logical Valu	e 0			no w	ake-up netw	ork request
		Logical Valu	e 1	wake-up network request				

			wake_ı	network	TPMS			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Sporadic	G	<b>Group Name</b> N/A		Update Bit Yes	Initial Value false
Timings:	s: Interface Mode/FuncVerFolder/Function				Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]
	FM_Norma	al_HS		10.000			200.000	
	FM_Silent_	_HS		10.000			200.000	
Description:	NM signal:	the TPMS us	ses this signal v	vhen it w	ants to wa	ake-up	the network	
Encoding type:		wake_netwo	ork_coding					
	Values:	Туре	Value	Scale	Offset	Inte	rpretation	
		Logical Valu	e 0			no w	/ake-up netwo	ork request
		Logical Valu	e 1			wak	e-up network	request

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			WhlG	ndVelLDr	vn		
Size [bits] 14	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	pe Group Name Odic N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 10.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Wheel Gro	und Velocity	Left Driven				
Encoding type:	Name: Size: Values:	WhlGndVe 14 bits Type Physical Ra	Va	alue - 16383	<b>Scale</b> 0.03125	Offset 0	Interpretation km/h

			WhlGn	dVelLDrvr	٦V			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 1	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 10.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Wheel Grou	und Velocity	Left Driven Valid	ity				
Encoding type:	Name: Size: Description	1 b	idityCoding it idity Encode Typ	е				
	Values:	Ty <sub>l</sub> Log	oe gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid	

	WhlGndVelLNonDrvn										
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		Update Bit No	Initial Value				
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. La [ms] 10.000	atency	Max. Age [ms] 100.000	Read Interval [ms]				
Description:	Wheel Grou	und Velocity	Left Non Driven								
Encoding type:	Name: Size: Values:	WhlGndVe 14 bits Type Physical Ra	Val	lue 16383	<b>Scale</b> 0.03125	Offset 0	Interpretation km/h				

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			WhlGnd\	/eILNonDr	vnV		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	Group Name N/A		Update Bit No	Initial Value 1
Timings:	Interface Mode/Fund FM_Norma	c <b>VerFolder/</b> IL_HS	Function	[ms]		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Wheel Grou	und Velocity	Left Non Driven	Validity			
Encoding type:	Name: Size: Description	1 b	idityCoding it idity Encode Typ	e			
	Values:	•	oe gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

			WhlG	andVeIRDr	vn		
Size [bits]	<b>Type</b> Unsigned	Unsigned State Type Periodic State Periodic Group Name N/A Bit			Initial Value 0		
Timings:	Interface Mode/FuncVerFolder/Function			[ms]	Sub. Latency [ms]		Read Interval [ms]
	FM_Norma	I_HS		10.000		100.000	
Description:	Wheel Grou	und Velocity	Right Driven				
Encoding type:	Name: Size:	WhlGndVe	lCoding				
	Values:	<b>Type</b> Physical Ra		<b>alue</b> - 16383	<b>Scale</b> 0.03125	Offset 0	<b>Interpretation</b> km/h

			WhlGn	dVelRDrvr	ıV		
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic		Group Name N/A		Initial Value 1
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 10.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Wheel Grou	und Velocity	Right Driven Val	idity			
Encoding type:	Name: Size: Description	1 b	idityCoding it idity Encode Typ	e			
	Values:	<b>Typ</b> Log	, , ,	<b>Value</b> 0 1	Scale	Offset	Interpretation Valid Invalid

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			WhlGnd	VelRNonD	rvn		
Size [bits]	Unsigned State Periodic			<b>Group Name</b> N/A		Initial Value 0	
Timings:	gs: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 10.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Wheel Grou	und Velocity	Right Non Driver	า			
Encoding type:	Name: Size: Values:	WhlGndVe 14 bits Type	Val		Scale	Offset	Interpretation
		Physical Ra	ange 0 -	16383	0.03125	0	km/h

			WhlGno	dVelRNc	nDrvnV			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	Upd Bi	it	Initial Value 1
Timings:	ings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms	o. Latency [3] [000	Max. <i>A</i> [ms] 100.00	•	Read Interval [ms]
Description:	Wheel Gro	und Velocity	Right Non Drive	en Validi	ty			
Encoding type:	Name: Size: Values:	1 bit <b>Type</b> Logical Va	alue	Value	Scale	Offset	Inva	
		Logical Value			)			d

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Interface: IPK\_LIN3

			PDCC	ofignSts	_L		
<b>Type</b> Unsigned	Info Type State	Туре	Group Name		•	Update Bit No	Initial Value 0
Interface Mode/FuncVerFolder/Function FM_Normal_L3		Sub. Latency [ms] 50.000		Max. Age [ms] 400.000	Read Interval [ms]		
Park Distar	nce Control C	onfiguration	on Stati	ıs			
Size: 3 Values: T L L L L L	bits Type Logical Value		Scale	Offset	3 rear sensor 4 rear sensor 4 rear sensor 4 rear sensor	ors ors ors and 2 front ors and 4 front	
 	Unsigned nterface Mode/Fun FM_Norma Park Distait Name: F Size: 3 /alues: T L L L L L	Unsigned State  nterface Mode/FuncVerFolder/F FM_Normal_L3 Park Distance Control C Name: PDCCofignSt Size: 3 bits	Type Unsigned State  Info Type State  Node/FuncVerFolder/Function  M_Normal_L3  Park Distance Control Configuration  Name: PDCCofignStsET Size: 3 bits Values: Type Value Logical Value 0 Logical Value 1 Logical Value 2 Logical Value 3 Logical Value 4 Logical Value 5 Logical Value 5 Logical Value 6	Type Unsigned Info Type State State Generation Type Periodic  Interface Mode/FuncVerFolder/Function  FM_Normal_L3  Park Distance Control Configuration State  Name: PDCCofignStsET  Size: 3 bits  Values: Type Value Scale  Logical Value 0  Logical Value 1  Logical Value 2  Logical Value 3  Logical Value 3  Logical Value 4  Logical Value 5  Logical Value 5  Logical Value 5  Logical Value 6	Type Unsigned State State Sub. Info Type Periodic  Interface Sub. Important Sub.	Into Type Unsigned State Type Periodic  Type Periodic  Type Sub. Latency [ms] So.000  Park Distance Control Configuration Status  Name: PDCCofignStsET Size: 3 bits Values: Type Value Scale Offset Interpretati Logical Value 1 4 rear sensor Logical Value 2 4 rear sensor Logical Value 3 4 rear sensor Logical Value 3 4 rear sensor Logical Value 4 2 rear sensor Logical Value 5 Reserved Logical Value 6 Reserved	Type Unsigned Info Type State State Periodic Group Name N/A Sub. Latency Max. Age [ms] [ms] [ms] So.000 400.000  Park Distance Control Configuration Status  Name: PDCCofignStsET Size: 3 bits Values: Type Value Scale Offset Interpretation Logical Value 1 4 rear sensors Logical Value 2 4 rear sensors and 2 from Logical Value 3 4 rear sensors and 4 from Logical Value 4 2 rear sensors Logical Value 5 Reserved Logical Value 5 Reserved Logical Value 6 Reserved

			PDCO	verVolFlt_	L			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>p Name</b> N/A	Update Bit No	Initial Value false	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_L3				Sub. Latency       Max. Age         [ms]       [ms]         50.000       400.000		Read Interval [ms]	
Description:	Park Distar	nce Control C	Over Voltage Fau	ılt				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value					
	Values:		<b>oe</b> jical Value jical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE	

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			PDC	RespEr_L				
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value false	
Timings:	ings: Interface Mode/FuncVerFolder/Function FM_Normal_L3				Sub. Latency [ms] 50.000		Read Interval [ms]	
Description:	PDC Respo	onse Error S	ignal that sends t	to LIN mas	ter			
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value							
	Values:	<b>Tyr</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE	

			PDCR	LSnsrFlt_	L			
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p Name N/A	Update Bit No	Initial Value false	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_L3			Sub. Latency [ms] 50.000		Max. Age [ms] 400.000	Read Interval [ms]	
Description:	Park Distar	nce Control F	Rear Left Sensor	Fault				
<u>.</u>	Name: BooleanCoding Size: 1 bit Description: boolean value							
	Values:	<b>Tyj</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE	

			PDCRrM	lidLSnsrF	t_L		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Name</b>	Update Bit No	Initial Value false
Timings: Interface Mode/FuncVerFolder/Function				Sub. La [ms]	atency	Max. Age [ms]	Read Interval [ms]
	FM_Normal_L3					400.000	
Description:	Park Distar	nce Control F	Rear Middle Left	Sensor Fau	ılt		
Encoding	Name:		oleanCoding				
type:	Size:	1 b	it				
	Description	i: boo	lean value				
	Values: Typ		oe	Value	Scale	Offset	Interpretation
		Log	jical Value	0			FALSE
		Log	jical Value	1			TRUE

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			PDCRrN	lidRSnsrF	lt_L		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		p <b>Name</b> N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_L3			[ms]	Sub. Latency         I           [ms]         I           50.000         4		Read Interval [ms]
Description:	Park Distar	nce Control F	Rear Middle Righ	t Sensor Fa	ault		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	<b>Typ</b> Log	<b>oe</b> gical Value gical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

			PDCR	RSnsrFlt_	L		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Name</b>	Update Bit No	Initial Value false
Timings: Interface Mode/FuncVerFolder/Function				Sub. La [ms]	atency	Max. Age [ms]	Read Interval [ms]
	FM_Normal_L3			50.000		400.000	
Description:	Park Distar	nce Control F	Rear Right Senso	r Fault			
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	n: boo	lean value				
	Values: Ty		oe	Value	Scale	Offset	Interpretation
		Log	jical Value	0			FALSE
		Log	jical Value	1			TRUE

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			PI	OCSysS	ts_L			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	0	Group Na N/A	me	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_L3	Function	[m	ib. Latend s] .000		Max. Age [ms] 400.000	Read Interval [ms]
Description:	Park Distar	nce Control S	System Status					
Encoding type:	Size:	PDCSysSts 4 bits Type	ET Value	Scale	Offset	Interp	retation	
		Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu	e 1 e 2 e 3 e 4 e 5 e 6			Syster Syster Front Front Rear F	m OK m initializatio m Failed m Disabled PDC Disable PDC Failed PDC Failed PDC Disable	ed

			PDCUr	nderVolFlt	L		
Size [bits]	<b>Type</b> Boolean	Info Type State	<b>Generation Type</b> Periodic		<b>Name</b>	Update Bit No	Initial Value false
imings: Interface Mode/FuncVerFolder/Function FM_Normal_L3			Sub. La [ms] 50.000	•	Max. Age [ms] 400.000	Read Interval [ms]	
Description:	Park Distar	nce Control U	Jnder Voltage Fa	ıult			
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	<b>Tyr</b> Log	<b>oe</b> jical Value jical Value	<b>Value</b> 0 1	Scale	Offset	Interpretation FALSE TRUE

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			R	LObsRn	g_L			
Size [bits]	<b>Type</b> Unsigned	Info Type State	<b>Generation Type</b> Periodic	G	Group Name N/A		late it	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_L3		[m	b. Latency s] 000	Max. / [ms] 400.00		Read Interval [ms]	
Description:	Rear Left C	bstacle Ran	ge					
Encoding type:	Name: Size:	ObsRngI 4 bits	ĒT					
	Values:	Type		Value	Scale	Offset	Inte	erpretation
		Logical V	alue	0			No	Obstacle
		Logical V	alue	1			Ran	nge 1
		Logical V	alue	2			Ran	nge 2
		Logical V		3			Ran	nge 3
		Logical Value					Ran	nge 4
		Logical V		5				nge 5
		Logical V		6				nge 6
		Logical V		7				nge 7
		Logical V		8				nge 8
		Logical V		9				nge 9
		Logical V		10		Range 10		
		Logical V		11		Range 11		
		Logical V		12 13				nge 12
		Logical Value				nge 13		
		Logical V		14				nge 14
		Logical V	alue	15			Ran	nge 15

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			RrM	lidLObs	Rng_L			
Size [bits]	<b>Type</b> Unsigned	Info Type State			Bit	Initial Value 0		
Timings:	ings: Interface Mode/FuncVerFolder/Function FM_Normal_L3		[m	b. Latency s] .000	Max. [ms]	Ū	Read Interval [ms]	
Description:	Rear Middle	e Left Obsta	cle Range					
Encoding type:	Name: Size:	ObsRngl 4 bits	ΕT					
	Values:	Type	(-1 -	Value	Scale	Offset		erpretation
		Logical V		0			_	Obstacle
		Logical V		1				nge 1
		Logical V		2				nge 2
		Logical V Logical V		3 4				nge 3 nge 4
		Logical V		5		Ra		•
		Logical V		6				ige 6
		Logical V		7				ige 7
		Logical V		8				ige 8
		Logical V		9				ige 9
		Logical V		10				ige 10
		Logical V		11	Range 11			
		Logical V		12				
		Logical Value						ige 13
		Logical V	alue	14				ige 14
		Logical V		15				ige 15

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			RrM	idRObsl	Rng_L			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	iroup Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	[m	b. Latency s] .000	[m	ax. Age ns] 00.000	Read Interval [ms]
Description:	Rear Middle	e Right Obst	acle Range					
Encoding	Name:	ObsRng	ET					
type:	Size:	4 bits						
	Values:	Type		Value	Scale	Offs	et Int	erpretation
		Logical V	alue	0			No	Obstacle
		Logical V	alue	1			Ra	inge 1
		Logical V	alue	2			Ra	inge 2
		Logical V	alue	3			Ra	inge 3
		Logical V	alue	4			Ra	inge 4
		Logical V	alue	5			Ra	inge 5
		Logical V	alue	6			Ra	inge 6
		Logical V	alue	7			Ra	inge 7
		Logical V	alue	8			Ra	inge 8
		Logical V	alue	9			Ra	inge 9
		Logical V	alue	10			Ra	inge 10
		Logical V	alue	11			Ra	inge 11
		Logical V	alue	12				inge 12
		Logical V	alue	13			Ra	inge 13
		Logical V	alue	14			Ra	inge 14
		Logical V	alue	15			Ra	inge 15

			RrC	DbsDist_L			
Size [bits]	Type Unsigned State Generation Type Periodic		1	<b>Group Name</b> N/A		Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_L3		Sub. Latency [ms] 50.000		Max. Age [ms] 400.000	Read Interval [ms]	
Description:	Rear Obsta	cle Distance	)				
Encoding type:	Name: Size:	FrtObsDis	stET				
	Values:	<b>Type</b> Physical F	Range	<b>Value</b> 0 - 255	Scale 1	Offset 0	Interpretation cm

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			R	RObsRn	 g_L				
Size [bits]	<b>Type</b> Unsigned	Info Type State	TO I I VIDE I TO BIT		3it	Initial Value 0			
Timings:	nings: Interface Mode/FuncVerFolder/Function FM_Normal_L3		[m:	b. Latency s] 000	Max. [ms] 400.0		Read Interval [ms]		
Description:	Rear Right	Obstacle Ra	ange						
Encoding	Name:	ObsRngl	ET						
type:	Size:	4 bits							
	Values:	Type		Value	Scale	Offset	Inte	erpretation	
		Logical V	alue	0			No	Obstacle	
		Logical V	alue	1			Rar	nge 1	
		Logical V	alue	2				nge 2	
		Logical V	alue	3			Rar	nge 3	
		Logical Value					Rar	Range 4	
		Logical V	alue	5			nge 5		
		Logical V		6				nge 6	
		Logical V		7				nge 7	
		Logical V		8				nge 8	
		Logical V		9				nge 9	
		Logical V		10					
		Logical V		11					
		Logical V		12				nge 12	
	Logical Value			13 14				Range 13	
		Logical Value						nge 14	
		Logical V	alue	15			Rar	nge 15	

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	RrPDCAudWrnng_L							
Size [bits]	<b>Type</b> Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	Ul	odate Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ nl_L3	Function	[m:	b. Latency s] 000	Max [ms] 400.		Read Interval [ms]
Description:	Rear Park I	Distance Co	ntrol Audible V	Varning				
Encoding type:	Name: Size:	PDCWrn 4 bits	ng					
	Values:	Type		Value	Scale	Offset	Int	erpretation
		Logical V		0			_	Obstacle
		Logical V	alue	1			Ra	nge 1
		Logical V		2				nge 2
		Logical V		3				nge 3
		Logical V		4				nge 4
		Logical V		5				nge 5
		Logical V		6				nge 6
		Logical V		7				nge 7
		Logical V		8				nge 8
		Logical V		9				nge 9
		Logical V		10				nge 10
		Logical V		11				nge 11
		Logical V		12				nge 12
		Logical V		13				nge 13
		Logical V		14				nge 14
		Logical V	alue	15			Ra	nge 15

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## 7.4 Constant signals

busoff_decrement_time				
Size [bits] 16	<b>Type</b> Unsigned	<b>Info Type</b> State	Initial Value 200	
Description: The bus counter is decremented by one after this time if there is communication without any bus errors				

busoff_max				
Size [bits]	Type Unsigned	Info Type State	Initial Value	
Description: The number of bus-off errors that make the node silent during the time BUSOFF_WAIT_TIME				

busoff_time				
Size [bits] 8	<b>Type</b> Unsigned	Info Type State	Initial Value 50	
Description: The maximum time the node waits after a busoff before it goes to the network sleep state or the previuos active state				

busoff_wait_time					
Size [bits]	<b>Type</b> Unsigned	Info Type State	Initial Value 200		
Description:	The time the node is si have occurred		MAX busoff errors		

communication_timeout_time_slave				
Size [bits] 16	<b>Type</b> Unsigned	<b>Info Type</b> State	Initial Value 1500	
Description: A slave node should stop comminicating after this time if no NetworkMode signal received				

fixed_frame_normal_period						
Size [bits] Type Info Type Initial Value						
8	Unsigned	State	12			
Description: The master should transmit its fixed frame with this period when in normal mode						

fixed_frame_startup_period					
Size [bits] Type Info Type Initial Value					
8	Unsigned	State	1		
Description: The master should transmit its fixed frame with this period at start-					

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keep_network_timeout_time_slave					
Size [bits] Type Info Type Initial Value					
16	Unsigned	State	100		
Description: The signal KeepNetwork should be written by a slave each time the NWM layer is called during this time					

keep_net_alive_time_master					
Size [bits] Type Info Type Initial Value					
8	Unsigned	State	50		
Description: After a keepNetwork siganl is received, the master node must not shutdown the network within this time					

local_signal_config_id			
Size [bits] 16	<b>Type</b> Unsigned	Info Type State	Initial Value 28673
Description: NM signal: this is the identification number of the signal configuration used.			

m				
Size [bits] 16	<b>Type</b> Unsigned	Info Type State	Initial Value 100	
Description:	It's the time ECU wait for recover communication when Busoff counter is bigger than SHORT_TIME_RECOVERY_NUM			

master_timeout_time_sec_master				
Size [bits] Type Info Type Initial Value				
8	Unsigned	State	26	

monitoring_timeout_time_master			
Size [bits] Type Info Type Initial Value			
8	Unsigned	State	20
Description: If the signal KeepNetwork is not received from a slave node during this time the slave node is considered absent			

n				
Size [bits] 16	<b>Type</b> Unsigned	Info Type State	Initial Value 10	
Description:	It's the time ECU wait for recover communication when Busoff counter is equal or smaller than SHORT_TIME_RECOVERY_NUM			

NCFRefNoIPK			
Size [bits] 64	<b>Type</b> Bytes	Info Type State	Initial Value 0x34 0x01 0x06 0x10 0x31 0x22 0x58 0x07
Description: Network Reference Number for IPK			

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remoteframe_timeout_time			
Size [bits] 8	<b>Type</b> Unsigned	Info Type State	Initial Value 100
Description:	Description: When a slave node is waken up by remote frame on the network, it waits this time for remote frame.		

short_time_recovery_num				
Size [bits]	<b>Type</b> Unsigned	Info Type State	Initial Value	
Description: It's the number that the node recovers with short time recovery.				

startup_time_sec_master				
Size [bits]	Type	Info Type	Initial Value	
8	Unsigned	State	10	

stay_in_busoff				
Size [bits]	<b>Type</b> Boolean	Info Type State	Initial Value false	
Description: set to false - the node will not stay in the state busoff				

stay_in_expulsion			
Size [bits]	<b>Type</b> Boolean	<b>Info Type</b> State	Initial Value false
Description: set to false - the signal configuration id check will continue even after it has been disapproved			

wait_for_network_sleep_time_master						
Size [bits]						
8	Unsigned	State	24			
Description: The time between the fixed frame containing the signal NetworkMode set to Shutdown is transmitted to when the controller is set to sleep mode						

wait_for_network_sleep_time_slave			
Size [bits]	Туре	Info Type	Initial Value
8	Unsigned	State	28
Description:	The time between the signal NetworkMode with the value Shutdown read and when the controller is set to sleep mode		

wakeup_network_signal_time_slave			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Initial Value 14
Description: The maximum allowed time to write the signal WakeNetwork for a slave node			

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wakeup_network_time_slave			
Size [bits] 8	<b>Type</b> Unsigned	<b>Info Type</b> State	Initial Value 20
Description:	When a slave node is trying to wakeup the network, it waits this time for a wakeup acknowledge from the master node		

wakeup_pending_time_master			
Size [bits]	<b>Type</b> Unsigned	Info Type State	Initial Value 4
Description:	When the master node is woken, it waits this time for a wakeup request		

wakeup_pending_time_sec_master			
Size [bits]	Туре	Info Type	Initial Value
8	Unsigned	State	10

wakeup_pending_time_slave			
Size [bits]	Туре	Info Type	Initial Value
8	Unsigned	State	20
	scription: When a slave node is woken it waits this time for a wakeup request from the master node		

wake_network_signal_time_slave			
Size [bits]	Туре	Info Type	Initial Value
8	Unsigned	State	14

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