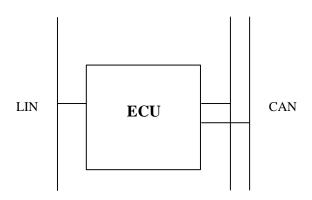


Change Description	A = Added D = Deleted C = Changed/Correct	Document Release S	tatus
		Date	Modification Count
		2017-03-26	

Network Requirement Specification

SAIC Motor Network Requirement Specification Instruments ZS12 PPV V08



Document Title

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VOLCANO SIGNAL	SPECIFICATION
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Checked by	Chen Cang/ee	
Approved by		

NETWORK RECHIREMENT SPECIFICATION

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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
		EcoDrvngAIO EcoDrvngDspStsGearSIS EcoDrvngDspStsRcmndFG
		EmgcCallFIrSts 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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EP-V07	21/12/2016	A /Tx:
EP-V07	21/12/2016	CCSwStsDisDecSwA
		CCSwStsDistIncSwA
		ClstrDistUnt
		ClstrFuelCsumpUnt
		ClstrTemUnt
		ClstrTyrePressureUnt
		LanggSetng
		A /Rx:
		AutoHoldMsg
		AutoHoldSysSts
		BatAgngSta
		BatSOC
		BatVol
		BCMGearShftParkNtrlESR
		BCMNoSmtKeyPressBrkTRR
		BCMNoSmtKeyPressClToRR
		BCMPressBrkRmndr
		BCMPressCIRmndr
		BCMPutSmtKeyToBkupPosR
		BCMRunCrkF
		BCMShftParkRmndr
		BCMSSBFltSts
		BCMSyncSmtKeyRmndr
		BCMTakeSmtKeyOutOfSR
		DayTimeRunningLghtF
		DrvrPWLInitnRmndr
		DrvrWndOpenRmndr
		ECMCIsDoorToAutoStR
		ECMFasnSbltToAutoStR
		ECMPressClBrkRmndr
		ECMShftNtrlToAutoStR
		EPBSysAudWrnngReq
		EPBSysDspMsgReq
		EPBSysStsIndReq
		EPBSysWrnngIndReq
		FICMDistUnitAdjtReqA
		FICMFuelCsumpUntAdj
		FICMFuelCsumpUntAdjARA
		FICMOverSpdFnCrntSts
		FICMOvrSpdThrshldAdj
		FICMOvrSpdThrshldAdjtRA
		FICMTemUntAdj
		FICMTemUntAdjtReqA
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		FICMTyrePressureUntAdjtReqA		
		FICMVehMntnceSts		
		FLTireTem		
		FLTireTemV		
		FRTireTem		
		FRTireTemV		
		FrtSideLghtF		
		HDCSysSts		
		LBrkLghtF		
		LDipdBeamLghtF		
		LDircnIndLghtF		
		MusSrcMd		
		NavDirch		
		NavDist		
		NavDistUnit		
		PEPSAntFlt		
		RBrkLghtF		
		RDipdBeamLghtF		
		RDircnIndLghtF		
		RdoFrqcVal		
		RevsLghtF		
		RLTireTem		
		RLTireTemV		
		RrFogLghtF		
		RrSideLghtF		
		RRTireTem		
		RRTireTemV		
		ShifterLckRlseBrkReqA		
		SrfInitnRmndr		
		SrfOpenRmndr		
		SSBEnOffRmndr		
		TPMSAutoLoctnCm		
		TI MO TOLOGOMOTI		
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PPV-P07	24/12/2016	A /Rx:		
		FICMDistUntAdj		
		FICMTyrePressureUntAdj		
Revision	Date	Description A=Added C=Changed/Corrected D=Deleted		
ZS12_PPV-	26/03/2017	NCF:1041384008		
V08		NCFRefNOIPK: 0x34 0x01 0x06 0x10 0x31 0x22 0x58 0x08		
		A /Tx:		
		ClstrDspdEleccParkngBW		
		ClstrDspdHDCWrnng		
		A /Rx:		
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	EnGPFLampOnSts
	FasnSecRowLSbltIndCmd
	FasnSecRowMidSbltIndC
	FasnSecRowRSbltIndCmd
	RRDoorOpenSts

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

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.

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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. - "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. - "FIX": Fixed file. Document Title

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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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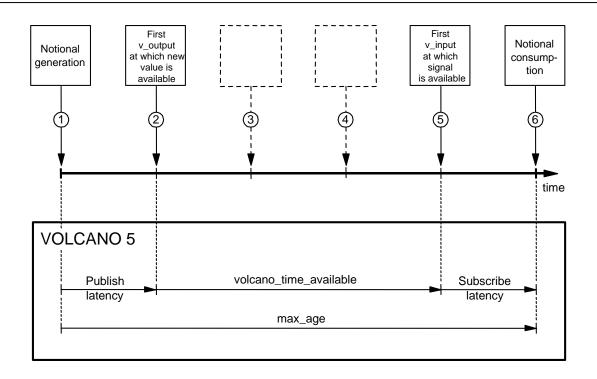


Figure 1: The Volcano 5 signal timing model

- 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 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 ClstrDspdEleccParkngBW Front_Infotainment_Control_Modul, Tester ClstrDspdEnDrvBvWireW Front Infotainment Control Modul, Telematics BOX ClstrDspdEPSWrnng Front_Infotainment_Control_Modul, Telematics_BOX ClstrDspdFLTirePrs Telematics BOX ClstrDspdFLTireSts Telematics BOX Telematics_BOX ClstrDspdFRTirePrs ClstrDspdFRTireSts Telematics BOX Telematics_BOX ClstrDspdFuelLvlSgmt ClstrDspdFuelSnsrWrnng Front_Infotainment_Control_Modul, Telematics_BOX ClstrDspdFuelSts Front_Infotainment_Control_Modul, Telematics_BOX ClstrDspdHDCWrnng Front_Infotainment_Control_Modul, Tester ClstrDspdInfoMsk Front Infotainment Control Modul, Telematics BOX ClstrDspdInvdKeyWrnng Telematics BOX ClstrDspdMalfIndrLghtW Front Infotainment Control Modul, Telematics BOX ClstrDspdOilPrsLowW Engine_Control_Module, Front_Infotainment_Control_Modul, Telematics_BOX ClstrDspdPDCWrnng Front_Infotainment_Control_Modul, Telematics_BOX ClstrDspdRLTirePrs Telematics BOX ClstrDspdRLTireSts Telematics BOX Telematics_BOX ClstrDspdRRTirePrs ClstrDspdRRTireSts Telematics BOX ClstrDspdSASUncalWrnng Front_Infotainment_Control_Modul, Telematics_BOX ClstrDspdSASWrnng Front_Infotainment_Control_Modul, Telematics_BOX ClstrDspdSCSWrnng Front Infotainment Control Modul, Telematics BOX ClstrDspdScurtKeyBatLW Front Infotainment Control Modul, Telematics BOX Front_Infotainment_Control_Modul, Telematics_BOX ClstrDspdSpStWrnng Front Infotainment Control Modul, Telematics BOX ClstrDspdTCSWrnng Front_Infotainment_Control_Modul, Telematics_BOX ClstrDspdTrWrnng Front_Infotainment_Control_Modul, Telematics_BOX ClstrDspdTyrePrsSts ClstrDspdVehSpd Front Infotainment Control Modul, Telematics BOX 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 **FLObsRng** Front_Infotainment_Control_Modul **FRObsRng** Front Infotainment Control Modul Front_Infotainment_Control_Modul FrtMidLObsRng FrtMidRObsRng Front_Infotainment_Control_Modul **FrtObsDist** Front Infotainment Control Modul Engine_Control_Module, Front_Infotainment_Control_Modul, Telematics_BOX **FuelLvIPcnt FuelLvlPcntV** 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, Front Infotainment Control Modul, Sensing Diagnostic Module, HourOfDay Stability Control System, Telematics BOX, TPMS, Transmission Control Module **VOLCANO SIGNAL SPECIFICATION** INSTRUMENTS Document Type NETWORK REQUIREMENT SPECIFICATION Document No Issue Index Volume No PPV_V

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IPCAccryA Body Controller IPCEcoDrvngSwA Engine Control Module **IPCRunCrkA** Body_Controller **IPCRunCrkF** Body_Controller **IPCSSBA Body Controller IPCSSBAV Body Controller IPCSSBFItSts** Body_Controller keep network IPK **Body Controller** Front_Infotainment_Control_Modul LanggSetng Park Distance Control LowAcurcVehSpdAva 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 Body_Controller, Telematics_BOX OdoPriy **PDCCofignSts** Front Infotainment Control Modul **PDCSvsSts** Front_Infotainment_Control_Modul PfTrTapUpDwnEnbSwSta Transmission Control Module PfTrTapUpDwnSecySwSta Transmission Control Module PfTrTapUpDwnSwSta Transmission_Control_Module PfTrTapUpDwnSwStsAlvRCTransmission Control Module RLObsRng Front Infotainment Control Modul Front_Infotainment_Control_Modul, Telematics_BOX RmnDrvngDist RrMidLObsRng Front Infotainment Control Modul RrMidRObsRng Front_Infotainment_Control_Modul **RrObsDist** Front_Infotainment_Control_Modul RRObsRna 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 **Body Controller** SIAOdoPriy Air_Condition, Elec_Steering_Column_Lock, Front_Infotainment_Control_Modul, sm_network_mode_h1 **TPMS** 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, Front_Infotainment_Control_Modul, Sensing_Diagnostic_Module, SysBPMEnbd Stability Control System, Telematics BOX, TPMS, Transmission Control Module Electronic_Park_Brake, Engine_Control_Module, **TimeDspFmt** Front_Infotainment_Control_Modul, Sensing_Diagnostic_Module TrPfShftPtrnSw1A Transmission Control Module VOLCANO SIGNAL SPECIFICATION INSTRUMENTS Document Type NETWORK REQUIREMENT SPECIFICATION Document No Issue Index Volume No Page No

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TrPfShftPtrnSw4A Transmission_Control_Module
TrPfShftPtrnSwAlvRC Transmission_Control_Module
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** Body Controller **BatSOC** BatVol Body_Controller **BCMEmgcSp Body Controller** Body_Controller BCMGearShftParkNtrlESR BCMNoSmtKeyInVehRmndr Body_Controller BCMNoSmtKeyPressBrkTRR Body_Controller **BCMNoSmtKeyPressCIToRR Body Controller BCMPressBrkRmndr** Body_Controller **BCMPressCIRmndr** Body_Controller 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
CCFltPrst Engine_Control_Module

ChmA Front_Infotainment_Control_Modul

CrusAndSpdLmtrDrvrSS Engine_Control_Module

DayTimeRunningLghtF Body_Controller

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DiagnosticFuncAddrReq Diagnostics DiagnosticRegIPK Diagnostics DipdBeamLghtOn Body_Controller DistRCAvgDrvn Stability_Control_System DistRCAvaDrvnV Stability Control System **DrvrDoorOpenSts Body Controller** DrvrPWLInitnRmndr Body_Controller DrvrShftCtrlTrgtGear Engine Control Module Body_Controller DrvrWndOpenRmndr **ECMCIsDoorToAutoStR** Engine Control Module **ECMFasnSbltToAutoStR** Engine Control Module ECMPressClBrkRmndr Engine_Control_Module **ECMShftNtrlToAutoStR** Engine_Control_Module **EcoDrvngAIO** Engine_Control_Module 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 Engine_Control_Module **EnCIntTemV** EnEmsnRltdMalfA Engine_Control_Module EnEmsnRltdMalfIndReg Engine_Control_Module **EnGPFLampOnSts** 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 **EPBSysWrnngIndReq** Electronic_Park_Brake **EPSFIrSts** Electric Power Steering **ESCLFIrIndCmd** Elec_Steering_Column_Lock FasnDrvrSbltIndCmd Sensing_Diagnostic_Module FasnFrtPsngSbltIndCmd Sensing Diagnostic Module FasnSbltAudRmndr Sensing_Diagnostic_Module Sensing_Diagnostic_Module FasnSecRowLSbltIndCmd FasnSecRowMidSbltIndC Sensing_Diagnostic_Module FasnSecRowRSbltIndCmd Sensing_Diagnostic_Module FICMDistUnitAdjtReqA Front Infotainment Control Modul FICMDistUntAdj Front_Infotainment_Control_Modul FICMFuelCsumpUntAdj Front_Infotainment_Control_Modul FICMFuelCsumpUntAdjARA Front Infotainment Control Modul FICMOverSpdFnCrntSts Front Infotainment Control Modul Front_Infotainment_Control_Modul FICMOvrSpdThrshldAdj FICMOvrSpdThrshldAdjtRA Front Infotainment Control Modul FICMTemUntAdj Front_Infotainment_Control_Modul FICMTemUntAdjtReqA Front_Infotainment_Control_Modul Document Title VOLCANO SIGNAL SPECIFICATION INSTRUMENTS Document Type NETWORK REQUIREMENT SPECIFICATION Document No Issue Index Volume No Page No

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FICMTyrePressureUntAdj Front_Infotainment_Control_Modul FICMTyrePressureUntAdjtRegA Front Infotainment Control Modul **FICMVehMntnceSts** Front_Infotainment_Control_Modul **FLTirePrs TPMS FLTirePrsV TPMS FLTireSts TPMS FLTireTem TPMS FLTireTemV TPMS** Body_Controller FrtFogLghtOn **FRTirePrs TPMS TPMS FRTirePrsV FRTireSts TPMS FRTireTem TPMS FRTireTemV TPMS** FrtPsngDoorOpenSts Body_Controller FrtSideLghtF **Body Controller** FuelCsump Engine Control Module GenrSta Body_Controller **HDCSysSts** Stability_Control_System HourOfDayAdj Front Infotainment Control Modul keep network AC Air Condition Elec_Steering_Column_Lock keep_network_ESCL keep_network_FICM Front_Infotainment_Control_Modul keep_network_TPMS **TPMS** LBrkLghtF Body_Controller LDipdBeamLghtF **Body Controller Body Controller** LDircnIndLahtF **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 NavDistUnit Front Infotainment Control Modul network mode **Body Controller** OdoSecy **Body Controller** 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 PwrMdMstrlgnA Body_Controller Document Title VOLCANO SIGNAL SPECIFICATION INSTRUMENTS Document Type NETWORK REQUIREMENT SPECIFICATION Document No Issue Index Volume No Page No PPV_V 16 (163) 80

PwrMdMstrRunCrkA Body_Controller **RBrkLahtF** Body_Controller RDipdBeamLghtF Body_Controller RDircnIndLghtF Body_Controller **RDircnIO Body Controller** Front Infotainment Control Modul RdoFrqcVal Body_Controller RevsLghtF RLObsRng L Park Distance Control **RLTirePrs TPMS RLTirePrsV TPMS TPMS RLTireSts** RLTireTem **TPMS RLTireTemV TPMS** RRDoorOpenSts Body_Controller RrFogLghtF Body_Controller RrFogLghtOn **Body Controller** RrMidLObsRng L Park Distance Control Park_Distance_Control RrMidRObsRng_L RrObsDist_L Park_Distance_Control Park Distance Control RRObsRng L RrPDCAudWrnng_L Park Distance Control Body_Controller RrSideLghtF **RRTirePrs TPMS RRTirePrsV TPMS TPMS RRTireSts** RRTireTem **TPMS RRTireTemV TPMS** Body_Controller ScurtAlrmSts ScurtKeyBatLow Body_Controller ScurtKeyInvd Body_Controller SecsOfMinuteAdi Front_Infotainment_Control_Modul ShifterLckRlseBrkRegA **Body Controller** Body_Controller SIAOdoSecv signal_config_id Body_Controller SpdAstSysStsECM Engine Control Module Engine Control Module SpdAstSysTrgtSpd SrfInitnRmndr **Body Controller** SrfOpenRmndr **Body Controller** SSBEnOffRmndr Body_Controller StrgWhlAngSnsrCalSts Electric Power Steering StrgWhlAngSnsrFlt Electric_Power_Steering SysOpnlMd Body_Controller SvsPwrMd **Body Controller** SysPwrMdV Body_Controller SysVol Body_Controller SysVolMd **Body Controller** SysVolMdV Body Controller SysVolV Body_Controller TakeKeyOutRmndr **Body Controller TCSOpngMd** Stability_Control_System **TCSOpngSts** Stability_Control_System Document Title **VOLCANO SIGNAL SPECIFICATION INSTRUMENTS** Document Type NETWORK REQUIREMENT SPECIFICATION Document No Issue Index Volume No Page No

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TimeAdjReqA Front_Infotainment_Control_Modul
TimeDspFmtAdj Front_Infotainment_Control_Modul

TPMSAutoLoctnCm TPMS
TPMSF TPMS
TPMSIdficnLrnCm TPMS
TPMSTirePrsLowIO TPMS
TPMSWntrMdA TPMS

TrNonEmsnRltdMalfA Transmission Control Module

TrShftLvrPos Engine_Control_Module
TrShftLvrPosV Engine_Control_Module
TrShftPtrnASts Engine_Control_Module
TrTapUpTapDwnMdSts Engine_Control_Module

VehLckngStaBody_ControllerVehLdShedLvlBody_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

Stability Control System WhlGndVelLDrvn WhlGndVelLDrvnV Stability_Control_System WhlGndVelLNonDrvn Stability Control System WhlGndVelLNonDrvnV Stability_Control_System WhlGndVelRDrvn Stability_Control_System WhlGndVelRDrvnV Stability Control System Stability_Control_System WhlGndVelRNonDrvn 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

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master_timeout_time_sec_master monitoring_timeout_time_master n NCFRefNoIPK remoteframe_timeout_time short_time_recovery_num startup_time_sec_master 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 Document Title **VOLCANO SIGNAL SPECIFICATION INSTRUMENTS** Document Type NETWORK REQUIREMENT SPECIFICATION Volume No Document No Issue Index $\mathbf{PPV}_{-}\mathbf{V}$ 19 (163) 80

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

Initial NAD on LIN 2 Slave Interfaces
Supplier Id Supplier ID on LIN 2 Slave Interfaces
Function Id Function ID on LIN 2 Slave Interfaces
Variant Id 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]	Type Boolean	Info Type State	Generation Type Periodic		Name I/A	Update Bit No	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						
	Values:	Tyl	ре	Value	Scale	Offset	Interpretation		
		Log	gical Value	0			FALSE		
		Log	gical Value	1			TRUE		

			AS	SInhBtnA			
Size [bits]	Type 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:	Auto Stop S	Start Inhibit I	Button Active				
Encoding type:	Name: Size: Description	1 b	oleanCoding oit olean value				
	Values:	Ty Log	pe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			Avgl	uelCsum	р		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	1	ı p Name N/A	Update Bit No	Initial Value
Timings:	Interface N FM_Norma	l_HS 30.0	Latency [ms]	Write Int	terval [ms]		
Description:	Average Fu	iel Consump	otion				
Encoding type:	Name: Size: Values:	AvgFuelC 8 bits Type Physical F	·	Value 0 - 255	Scale 0.1	Offset 0	Interpretation L/100 km

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			AvgF	uelCsump	V		
Size [bits]	Type 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:	Average Fu	iel Consum	otion Validity				
Encoding type:	Name: Size:	Va 1 b	lidityCoding oit				
	Description	: Va	lidity Encode Typ	е			
	Values:	Ту	ре	Value	Scale	Offset	Interpretation
		Lo	gical Value	0			Valid
		Lo	gical Value	1			Invalid

			Cal	endarDa	y		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	e Initial Value
Timings:	Interface N FM_Norma		. Latency [ms]	Write Ir 0.000	nterval [ms]		
Description:	current day	info.					
Encoding type:	Name: Size:	Calendar 5 bits	DayET				
	Values:	Type Physical F	Range	Value 0 - 31	Scale 1	Offset 0	Interpretation

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			Cal	endarM	onth			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	,	Update Bit No	Initial Value
Timings:	Interface N FM_Norma		Latency [ms]	Write 0.000	Interval [m	ns]		
Description:	current mor	nth info.						
Encoding type:	Name: Size:	4 bits	MonthET					
	Values:	Type		Value ^	Scale	Off		terpretation
		Logical V		0				nknown
		Logical V Logical V		2				nuary ebruary
		Logical V		3				arch
		Logical V		4				oril
		Logical V		- 5				ay
		Logical V		6				ine
		Logical V		7			Ju	
		Logical V		8				ugust
		Logical V		9				eptember
		Logical V		10				ctober
		Logical V		11			_	ovember
		Logical V		12			De	ecember
		Logical V		13			Re	eserved
		Logical V		14			Re	eserved
		Logical V		15			Re	eserved

			Cale	endarYea	r		
Size [bits]	Type 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 In	terval [ms]		
Description:	_						
Encoding type:	Name: Size: Values:	Calendar' 8 bits Type Physical F		Value 0 - 255	Scale	Offset 2000	Interpretation

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	CCSwStsAlvRC											
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Updat Bit No	e 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:	EequalN	_2ET									
type:	Size:	2 bits										
	Values:	Type		Value	Scale	Offset	Interpretation					
		Physical I	Range	0 - 3	1	0						

		CCSwS	StsCand	ISwA			
Type Boolean	Info Type State	NTO Type Group Name Bi				Jpdate Bit No	Initial Value false
		,	Write 0.000	Interval [m	ns]		
Cruise Con	trol Switch S	Status : Cancel S	witch Ad	ctive			
Name: Size:	CCSwSts 1 bit	sCancISwAET					
Values:	•	alue 0		Scale	Offse	Fa	terpretation ulse
	Interface N FM_Norma Cruise Con Name: Size:	Boolean State Interface Mode Pub FM_Normal_HS 30.0 Cruise Control Switch S Name: CCSwSts Size: 1 bit Values: Type Logical V	Type State State Type Periodic Interface Mode Pub. Latency [ms] FM_Normal_HS 30.000 Cruise Control Switch Status : Cancel S Name: CCSwStsCanclSwAET Size: 1 bit Values: Type	Type State State Type Periodic Gradual Minimum Type Periodic Type Periodic Mode Pub. Latency [ms] Write FM_Normal_HS 30.000 0.000 Cruise Control Switch Status : Cancel Switch Advance: CCSwStsCanclSwAET Size: 1 bit Values: Type Value Logical Value 0	Type State State Type Periodic State N/A Interface Mode Pub. Latency [ms] Write Interval [ms]	Type State Type Periodic N/A	Type State State Type Periodic State

			CCSwS	tsDisDecS	wA		
Size [bits]	Type 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:	Cruise Con	trol Switch S	Status Distance D	ecrease S	witch 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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			CCSwS	tsDistIncS	wA .		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group 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				
	1		oolean value				
			уре	Value	Scale	Offset	Interpretation
		Lo	ogical Value	0			FALSE
		Lo	ogical Value	1			TRUE

			CCSv	vStsOnSw	/A				
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		ı p Name N/A	te	Initial Value false		
Timings: Interface Mode Pub. Latency [ms] Write Interval [ms] FM_Normal_HS 30.000 0.000									
Description:	Cruise Con	trol Switch S	Status : On Switc	h Active					
Encoding type:	Name: Size:	CCSwSts 1 bit	SOnSwAET						
	Values:	Type Logical V Logical V	alue 0		Scale	Offset	Interpre False True	etation	

	CCSwStsPV											
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	1	u p Name N/A	Update Bit No	Initial Value 0					
Timings: Interface Mode Pub. Latency [ms] Write Interval [ms]												
FM_Normal_HS 30.000 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]	Type Boolean	Info Type State	Generation Type Periodic	Gre	oup Name N/A	ate t	Initial Value false	
Timings:	Interface N	lode Pub	. Latency [ms]	Write I	nterval [ms	s]		
	FM_Norma	I_HS 30.0	000	0.000				
Description:	Cruise Con	trol Switch	Status : Resume	Switch A	ctive			
Encoding	Name:	CCSwSt	sRsmSwAET					
type:	Size:	1 bit						
	Values:	Type	V	'alue	Scale	Offset	Inte	rpretation
		Logical V	alue 0				Fals	se
		Logical V	alue 1				True	Э

			CCSv	vStsSet	SwA			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name Bit				Initial Value false
Timings:	Interface N FM_Norma	flode Pub ILHS 30.0	. Latency [ms]	Write 0.000	Interval [m	ıs]		
Description:	Cruise Con	trol Switch S	Status : Set Swite	ch Activ	9			
Encoding type:	Name: Size:	CCSwSts 1 bit	sSetSwAET					
	Values:	Type	V	/alue	Scale	Offset	Inter	pretation
		Logical V	alue 0)			False	Э
		Logical V	alue 1				True	

	CCSwStsSpdDecSwA											
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name N/A	e Update Bit No	Initial Value false						
Timings: Interface Mode Pub. Latency [ms] Write Interval [ms]												
	FM_Normal_HS											
Description:	Cruise Con	trol Switch S	Status : Speed De	ecrease Switch Ac	ctive							
Encoding	Name:	CCSwSts	sSpdDecSwAET	-								
type:	Size:	1 bit										
	Values:	Type	V	alue Scale	Offset	Interpretation						
		Logical V	alue 0			False						
		Logical V	alue 1		•	True						

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			CCSwS	tsSpdlı	ncSwA			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Gı	roup Name N/A	Upd Bi	it	Initial Value 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 0				Fals	se
		Logical V	'alue 1				True	Э

			CCSwSt	sSwDatal	ntgty					
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 0			
Timings:	imings: Interface Mode Pub. Latency [ms] Write Interval [ms]									
FM_Normal_HS 30.000 0.000										
Description:	Cruise Con	trol Switch S	Status Switch Dat	a Integrity						
Encoding	Name:	CCSwStsSwDataIntgtyET								
type:	Size:	2 bits								
	Values:	Type	Va	lue So	ale Off	set Inter	pretation			
		Logical Va	alue 0			Data	Valid			
		Logical Va	Logical Value 1			Data	Invalid			
		Logical Va	alue 2			Failu	re Detected			
		Logical Va	alue 3			Illega	l Range			

	ChmCmdSndCndcPrd											
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value					
Timings:	Timings: Interface Mode Pub. Latency [ms] Write Interval [ms]											
	FM_Normal_HS 5.000 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	dSndDut	tyCyc		
Size [bits]	Type Unsigned State Generation Type Periodic Group Name N/A					Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma	l_HS 5.00	. Latency [ms]	Write In 0.000	nterval [ms]		
Description:	1		nd Duty Cycle				
Encoding type:	Name: Size: Values:	8 bits Type Physical R			Scale 0.392157	Offset 0	Interpretation

			ChmCm	dSndLocti	nFL		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	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:	1		d Location Front	Left			
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	: boo	olean value				
	Values:	Туј	ре	Value	Scale	Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

			ChmCm	dSndLoctr	FR		
Size [bits]	bits] Type Boolean State State Generation Type State Periodic Group Name N/A Update Bit No						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:	Ty Log	pe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			ChmCm	dSndLoctr	nRL			
Size [bits]	Boolean State Periodic N/A No fa						Initial Value false	
Timings:	Timings: Interface Mode Pub. Latency [ms] Write Interval [ms]							
	FM_Normal_HS 5.000 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	olean value					
	Values:	Ту	pe	Value	Scale	Offset	Interpretation	
		Log	gical Value	0			FALSE	
		Log	gical Value	1			TRUE	

			ChmCm	dSndLoctr	nRR		
Size [bits]	Type 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	tion					
•	Chime Com	nmand Soun	d Location Rear	Right			
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
		Loc	gical Value	1			TRUE

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			Chm	CmdSr	ndTone			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Group Nan N/A	ne	Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma		. Latency [ms]	Writ 0.00	t e Interval 00	[ms]		
Description:		aracteristics nmand Sour	d Tone					
Encoding	Name:	ChmCmc	ISndToneET					
type:	Size:	4 bits						
	Values:	Type	•	/alue	Scale	Offs	et Inte	rpretation
		Logical V)			Clac	
		Logical V		1			Click	
		Logical V		2				o (750 Hz)
		Logical V		3				o (2000 Hz)
		Logical V		4				g (750 Hz)
		Logical V		5				g (2000 Hz)
		Logical V		5				erved
		Logical V		7				erved
		Logical V		3				erved
		Logical V		9				erved
		Logical V		10				erved
		Logical V		11				erved
		Logical V		12				erved
		Logical V		13				erved
		Logical V		14				erved
		Logical V	alue	15			Rese	erved

			Clstr	·10KmTick			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Interface N FM_Norma		. Latency [ms]	Write Inte	erval [ms]		
Description:	1		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:	Tyj Log	pe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			Cls	trDistUnt			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name 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 Ir	nterpretation
		Logical V	alue 0			k	m
		Logical V	alue 1			m	niles

	ClstrDspdABSWrnng									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gr	oup Name N/A	Upda Bit No		Initial Value 0		
Timings:	Interface N FM_Norma		. Latency [ms] 00	Write I 0.000	nterval [m	s]				
Description:	Cluster Disp	played Antilo	ock Brake Syster	n Warnir	ng					
Encoding type:	Name: Size:	WarnET 1 bit	_							
	Values:	Type Logical V Logical V	alue 0	/alue	Scale	Offset	Interpo No Wa Warnir	· ·		

	ClstrDspdAirbagWrnng									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A Update Bit No 0						
Timings:	Timings: Interface Mode Pub. Latency [ms] Write Interval [ms]									
	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 C	Offset I	nterpretation			
		Logical V	alue 0			N	lo Warning			
		Logical V	alue 1			V	Varning			

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			ClstrDs	spdAltr'	Wrnng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	l	J pdate Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [m	ıs]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	played Alter	nator Warning					
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	\	/alue	Scale	Offse	t Int	erpretation
		Logical V	alue C)			No	Warning
		Logical V	alue 1				Wa	arning

			ClstrDspd	ASpdL	mtrWrnng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		odate Bit No	Initial Value 0
Timings:	Interface N FM_Norma	Mode Pub	. Latency [ms]	Write 0.000	Interval [m	ıs]		
Description:	Cluster Dis	played Activ	e Speed Limiter	Warnin	g			
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	\	/alue	Scale	Offset	Inte	erpretation
		Logical V	alue C)			No	Warning
		Logical V	alue 1				Wa	rning

	ClstrDspdBrkSysWrnng									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit No	Initial Value 0			
Timings: Interface Mode Pub. Latency [ms] Write Interval [ms]										
	FM_Normal_HS 30.000 0.000									
Description:	Cluster Disp	olayed Brak	e System Warnin	ıg						
Encoding	Name:	WarnET								
type:	Size:	1 bit								
	Values:	Type	V	alue	Scale Of	ffset In	terpretation			
		Logical V	alue 0			No	o Warning			
		Logical V	alue 1			W	arning			

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			ClstrDs	spdCCV	Vrnng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gr	roup 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 Cruis	e Control Warnir	ng				
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	'alue	Scale	Off	set lı	nterpretation
		Logical V	alue 0				N	lo Warning
		Logical V	alue 1				V	Varning

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

			ClstrDspd	EleccParkngBW	1	
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Nam N/A	ne Update Bit No	Initial Value
Timings:	Interface N FM_Norma		. Latency [ms]	Write Interval [0.000	ms]	
Description:	Cluster Disp	olayed Elect	ronic Parking Bra	ake Warning		
Encoding type:	Name: Size:	warningl		alue Seele	Office	Into un votatio n
	Values:	Type Logical V Logical V	alue 0	alue Scale		Interpretation No Warning Warning

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			ClstrDspd	EnDrv E	ByWireW			
Size [bits]	Type 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 Engir	ne Drive By Wire	Warnin	g			
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	V	alue	Scale	Offs	set l	nterpretation
		Logical V	alue 0				1	No Warning
		Logical V	alue 1				V	Varning

			ClstrDs	pdEP	SWrnng						
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A			Update Bit No	Initial Value 0			
Timings:		Interface Mode Pub. Latency [ms] Write Interval [ms] FM_Normal_HS 30.000 0.000									
Description:	Cluster Dis	played Elect	ric Power Steerir	ng Wa	rning						
Encoding type:	Name: Size:	ClstrDspo	dEPSWrnngET								
	Values:	Type Logical Va Logical Va Logical Va Logical Va	alue 0 alue 1 alue 2	lue	Scale	Offset	No Wa Gener	ral Warning us Warning			

			ClstrDs	pdFLTire	Prs					
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		u p Name N/A	Update Bit No	Initial Value			
Timings:	gs: Interface Mode Pub. Latency [ms] Write Interval [ms] FM_Normal_HS 30.000 0.000									
Description:	Cluster Disp	played Front	Left Tire Pressu	ire						
Encoding type:	Name: Size: Values:	ClstrDspo 7 bits Type Physical F		Value 0 - 127	Scale 4	Offset 0	Interpretation kPa			

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			ClstrDs	spdFLTi	reSts			
Size [bits]	Type 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 Front	t Left Tire Status					
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	alue	Scale	Off	set In	nterpretation
		Logical V	alue 0				N	o Warning
		Logical V	alue 1				V	/arning

			•	Prs		
Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value
			Write In	terval [ms]		
Cluster Disp	played Front	Right Tire Press	sure			
Name: Size: Values:	7 bits Type			Scale	Offset	Interpretation kPa
	Interface N FM_Norma Cluster Disp Name: Size:	Unsigned State Interface Mode Pub FM_Normal_HS 30.0 Cluster Displayed Front Name: ClstrDspo Size: 7 bits Values: Type	Unsigned State Periodic Interface Mode Pub. Latency [ms] FM_Normal_HS 30.000 Cluster Displayed Front Right Tire Press Name: ClstrDspdFLTirePrsET Size: 7 bits Values: Type	Unsigned State Periodic Interface Mode Pub. Latency [ms] Write Interface Mode Pub. Latency [ms] Unsigned Full FM_Normal_HS 30.000 0.000 Cluster Displayed Front Right Tire Pressure Name: ClstrDspdFLTirePrsET Size: 7 bits Values: Type Value	Unsigned State Periodic N/A Interface Mode Pub. Latency [ms] Write Interval [ms] FM_Normal_HS 30.000 0.000 Cluster Displayed Front Right Tire Pressure Name: ClstrDspdFLTirePrsET Size: 7 bits Values: Type Value Scale	Unsigned State Periodic N/A No Interface Mode Pub. Latency [ms] Write Interval [ms] FM_Normal_HS 30.000 0.000 Cluster Displayed Front Right Tire Pressure Name: ClstrDspdFLTirePrsET Size: 7 bits Values: Type Value Scale Offset

			ClstrDs	pdFRT	ireSts			
Size [bits]	Type 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	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Disp	played Front	t Right Tire Statu	s				
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	V	alue	Scale	Off	set In	terpretation
		Logical V	alue 0				N	o Warning
		Logical V	alue 1				W	arning

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			ClstrDs	pdFu	elLvlSgmt			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface M	lode Pub	. Latency [ms]	Wri	te Interval	[ms]		
	FM_Norma	I_HS 30.0	000	0.00	00			
Description:	Cluster Disp	played Fuel	Level Segment					
Encoding	Name:	ClstrDsp	dFuelLvlSgmtE	Т				
type:	Size:	4 bits						
	Values:	Type	Val	lue	Scale	Offset	Interpre	etation
		Logical Va	alue 0				1st Seg	ment Flash
		Logical Va	alue 1				1st Seg	ment On
		Logical Va	alue 2				2nd Seg	gment On
		Logical Va					3th Seg	ment On
		Logical Va					•	ment On
		Logical Va					•	ment On
		Logical Va					•	ment On
		Logical Va					•	ment On
		Logical Va	alue 8				8th Seg	ment On

			ClstrDspd	FuelSns	rWrnng		
Size [bits]	Type 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]		
	FM_Norma	I_HS 30.0	00	0.000			
Description:	Cluster Disp	olayed Fuel	Sensor Warning				
Encoding	Name:	WarnET					
type:	Size:	1 bit					
	Values:	Type	V	alue	Scale O	ffset In	terpretation
		Logical V	alue 0			No	o Warning
		Logical V	alue 1			W	arning

			Clstr	Dspc	IFuelSts			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface N		. Latency [ms]		ite Interv	al [ms]		
	FM_Norma	I_HS 30.0	00	0.0	000			
Description:	Cluster Dis	played Fuel	Status					
Encoding	Name:	ClstrDspc	FuelStsET					
type:	Size:	2 bits						
	Values:	Type	Val	ue	Scale	Offset	Interpret	ation
		Logical Va	ılue 0				Fuel Stat	us OK
		Logical Va	ılue 1				Fuel Stat	us Low
		Logical Va	ılue 2				Fuel Stat	us Critical
		Logical Va	lue 3				Reserved	d

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			ClstrDs	pdHDCW	rnng		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit No	Initial Value
Timings:	Interface N	lode Pub	. Latency [ms]	Write In	terval [ms]		
	FM_Norma	I_HS 30.0	00	0.000			
Description:	Cluster Dis	played Hill C	Descent Control V	Varning			
Encoding type:	Name: Size:	warningl 1 bit	ET				
	Values:	Type	V	'alue	Scale C	Offset	Interpretation
		Logical V	alue 0			1	No Warning
		Logical V	alue 1			•	Warning

			ClstrE	SpdInfo	Msk			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gr	oup Na N/A	me	Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma	lode Pub I_HS 30.0	. Latency [ms]	Write 0.000	Interval	[ms]		
Description:	Cluster Dis	olayed Inforr	mation Mask					
Encoding type:	Name: Size:	ClstrDspo 1 bit	dInfoMskET					
	Values:	Type Logical Va	alue 0	lue	Scale	Offset	Interpr Don _i ®t Use Da	Use Data

			ClstrDspc	linvdKe	yWrnng			
Size [bits]	Type 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 Disp	olayed Inval	id Key Warning					
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	V	alue	Scale	Offs	set In	terpretation
		Logical V	alue 0				N	o Warning
		Logical V	alue 1				W	arning/

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			ClstrDsp	dMalfInd	drLghtW			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gr	oup Name N/A		odate Bit 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 Malfu	unction Indicator	Light W	arning			
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	/alue	Scale	Offset	Inte	erpretation
		Logical V	alue 0)			No	Warning
		Logical V	alue 1				Wa	rning

			ClstrDs	odOilPi	rsLowW			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	` `i	date Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [m	ns]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	olayed Oil P	ressure Low Wa	rning				
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	pdPDCWrr	nng		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		o Name I/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 Park	Distance Contro	l Warning			
Encoding	Name:	WarnET					
type:	Size:	1 bit					
	Values:	Type	V	alue S	cale Off	fset Int	terpretation
		Logical V	alue 0			No	Warning
		Logical V	alue 1			W	arning

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			ClstrDs	spdRLTire	Prs		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit No	e Initial Value
Timings:	Interface N FM_Norma	Mode Pub	. Latency [ms]	Write In 0.000	terval [ms]		
Description:	Cluster Dis	played Rear	Left Tire Pressu	re			
Encoding type:	Name: Size: Values:	7 bits Type	dFLTirePrsET	Value	Scale	Offset	Interpretation
		Physical F	Range	0 - 127	4	0	kPa

			ClstrDs	spdRLT	ireSts			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma	lode Pub I_HS 30.0	Latency [ms]	Write 0.000	Interval [m	ıs]		
Description:	Cluster Dis	olayed Rear	Left Tire Status					
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	/alue	Scale	Offs	et l	nterpretation
		Logical V)			1	No Warning
		Logical V	alue 1				1	Warning

			ClstrDs	pdRRTire	ePrs		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit No	Initial Value
Timings:	Interface N FM_Norma	l_HS 30.0	. Latency [ms]	Write In 0.000	terval [ms]		
Description:	Cluster Dis	played Rear	Right Tire Press	ure			
Encoding type:	Name: Size: Values:	7 bits Type Physical F	dFLTirePrsET Range	Value 0 - 127	Scale 4	Offset	Interpretation kPa

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			ClstrDs	spdRRT	ireSts			
Size [bits]	Type 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	s]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	played Rear	Right Tire Status	s				
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	'alue	Scale	Offs	et lı	nterpretation
		Logical V	alue 0				N	lo Warning
		Logical V	alue 1				V	Varning

			ClstrDspd	SASUn	calWrnng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	•	Update Bit No	Initial Value
Timings:	Interface N FM_Norma	flode Pub II_HS 30.0	. Latency [ms]	Write 0.000	Interval [m	ns]		
Description:	Cluster Dis	played Stee	ring Angle Senso	or Unca	libartion Wa	arning		
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Туре	-	/alue	Scale	Offse		nterpretation
		Logical V Logical V)				No Warning Warning

			ClstrDs	pdSASWrnng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Na N/A	ame Upda Bi	t	Initial Value 0
Timings:	Interface Norma		. Latency [ms]	Write Interva	l [ms]		
Description:	_		ring Angle Senso	or Warning			
Encoding type:	Name: Size:	WarnET 1 bit					
	Values:	Type Logical V Logical V	alue 0	alue Scale	e Offset		pretation /arning _i ing

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			ClstrDs	pdSCS	Wrnng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [n	ns]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	played Stab	ility Control Syste	em War	ning			
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	/alue	Scale	Offs	et Ir	nterpretation
		Logical V	alue 0)			N	lo Warning
		Logical V	alue 1				V	Varning

			ClstrDspc	Scurtk	eyBatLW			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	U	pdate Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [m	ns]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Dis	played Secu	rity Key Battery	Low Wa	arning			
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	\	/alue	Scale	Offset	Int	erpretation
		Logical V	alue 0)			No	Warning
		Logical V	alue 1				Wa	arning

			ClstrDs	pdSpSt	Wrnng			
Size [bits]	Type 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	ıs]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Disp	olayed Stop	Start Warning					
Encoding	Name:	WarnET						
type:	Size:	1 bit						
	Values:	Type	V	alue	Scale	Off	set In	terpretation
		Logical V	alue 0				N	o Warning
		Logical V	alue 1				W	arning

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			ClstrDs	pdTCS	Wrnng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gı	roup 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 Tract	tion Control Syste	em War	ning			
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	/alue	Scale	Offs	et li	nterpretation
		Logical V	alue 0)			N	lo Warning
		Logical V	alue 1				V	Varning

			ClstrD	spdTrV	Vrnng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	Upd B N	it	Initial Value 0
Timings:	Interface N FM_Norma	lode Pub I_HS 30.0	. Latency [ms]	Write 0.000	Interval [m	ns]		
Description:	Cluster Dis	played Trans	smission Warnin	g				
Encoding type:	Name: Size:	WarnET 1 bit						
	Values:	Type	V	/alue	Scale	Offset	Inte	rpretation
		Logical V	alue 0)			No V	Varning
		Logical V	alue 1				War	ning

			ClstrDs	pdTyre	PrsSts			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gı	roup Name N/A	9	Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [r	ns]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Disp	played Tyre	Pressure Status					
Encoding type:	Name: Size:	ClstrDsp 2 bits	dTyrePrsStsET					
	Values:	Type	V	alue	Scale	Off	set Inte	erpretation
		Logical V	alue 0				No	Warning
		Logical V	alue 1				Lov	v Tyre
		Logical V	alue 2				Sys	stem Failure

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			Clstrl	DspdV	ehSpd			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	0	Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface N FM_Norma	Mode Pub al_HS 5.00	. Latency [ms]	Write 0.000	e Interva	al [ms]		
Description:	Cluster Dis	played Vehi	cle Speed					
Encoding type:	Size: 8	ClstrDspdVe bits ype	•	Scale	Offset	Interpre	tation	
		Physical Ran ogical Value	•	1	0	km/h Speed S	ignal Missinç	g Error of SCS

			ClstrFu	ıelCsuı	mpUnt					
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A)	Update Bit No	Initial Value 0		
Timings:		nterface Mode Pub. Latency [ms] Write Interval [ms] M_Normal_HS 30.000 0.000								
Description:	Cluster Fue	l Consumpt	ion Units							
Encoding type:	Name: Size:	ClstrFue 2 bits	ICsumpUntET							
	Values:	Type	V	alue	Scale	Off	set Int	erpretation		
		Logical V	alue 0				L/1	100km		
		Logical V	alue 1				mp	og(UK)		
		Logical V	alue 2				mp	og(US)		
		Logical V	alue 3				km	n/L		

			Cls	trTemUnt			
Size [bits]	Type 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 Inte	erval [ms]		
Description:	Cluster Ten	nperature U	nits				
Encoding type:	Name: Size:	ClstrTemU 2 bits	IntET				
	Values:	Type	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	Э
		Logical Val	ue 3			Reserved	

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			ClstrTyr	ePress	sureUnt			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A)	Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [n	ns]		
	FM_Norma	I_HS 30.0	00	0.000				
Description:	Cluster Tyr	e Pressure l	Jnits					
Encoding	Name:	ClstrTyre	ePressureUntET	•				
type:	Size:	2 bits						
	Values:	Type	V	alue	Scale	Off	set Int	erpretation
		Logical V	alue 0				ba	r
		Logical V	alue 1				kp	a
		Logical V	alue 2				Ps	i

				Diagno	sticRespIPK		
Size [bits]	Bytes Stat		• •	Generation Type Sporadic	Group Name DIAG_PhysResp_IPK	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	5.00	0	10.000		
			5.00	0	10.000		
	FM_Silent_	HS	5.00	0	10.000		
Description:	Diagnostic	respons	se fro	m IPK			

			Dsp	MeasS	ys			
Size [bits]	Type 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	s]		
	FM_Normal_HS 30.000 0.000							
Description:	Display Me	asurement S	System					
Encoding	Name:	DspMeas	SysET					
type:	Size:	1 bit	-					
	Values:	Type	V	alue	Scale	Off	set Ir	nterpretation
		Logical V	alue 0				kį	ph
		Logical V	alue 1				M	IPH

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DTCInfomationIPK											
Size [bits] 56	Type Bytes	Info T		Generation Type Sporadic	Group Name N/A	Update Bit No	Initial Value 0x00 0x00 0x00 0x00 0x00 0x00 0x00				
Timings:	Interface N FM_Norma		Pub 100.	Latency [ms]	Write Interval [ms] 1000.000						
Description:	The length Byte 0 is M For each by Byte 0: Bit (7-4): D' Bit (3-0): Ro Byte 1: Bit (7-0): D' Byte 2: Bit (7-0): D' Byte 3: Bit (7-0): D' Byte 5: Bit (7-0): D' Byte 5: Bit 7: warni Bit 6: testN Bit 5: testFa Bit 4: testN Bit 3: confir Bit 2: pendi Bit 1: testFa Bit 0: testFa Byte 6: Byt	of DTC SB (mo yte, Bit TC Ser eserved eserved TCHigh TCLow TCFailu ngIndic otComp ailedSir otComp medDT ngDTC ailedTh ailed TC Typ	c inforcest signal in the sign	nsb (most signification) Level PeByte Requested IThisOperationC	nd Byte 6 is LSB (least scant bit), and Bit 0 is lsb						

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			F	LObsRr	ng			
Size [bits]	Type Unsigned	TO TODA TO THE STATE OF THE STA		Bit	Initial Value 0			
Timings:	Interface N FM_Norma		. Latency [ms]	Write 0.000	Interval [m	s]		
Description:	Front Left C	Obstacle Rar	nge					
Encoding type:	Name: Size:	ObsRngl 4 bits	ET					
	Values:	Type		Value	Scale	Offse		terpretation
		Logical V)				Obstacle
		Logical V		1				ange 1
		Logical V		2				ange 2
		Logical V		3				ange 3
		Logical V		4				ange 4
		Logical V		5				ange 5
		Logical V		6				ange 6
		Logical V		7				ange 7
		Logical V		3				ange 8
		Logical V	alue 9	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				ange 14
		Logical V	alue	15			Ra	ange 15

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				FRObsRr	ng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic) G	roup Name N/A	E	date Bit No	Initial Value
Timings:	Interface N FM_Norma		. Latency [ms	5] Write 0.000	Interval [m	ıs]		
Description:	Front Right	Obstacle Ra	ange					
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		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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			Frti	MidLObs	Rng			
Size [bits]	Type 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]	Write 0.000	Interval [m	s]		
Description:	Front Middl	e Left Obsta	cle Range					
Encoding type:	Name: Size:	ObsRng 4 bits						
	Values:	Type		Value	Scale	Off		nterpretation
		Logical V		0				o Obstacle
		Logical V		1				ange 1
		Logical V		2				ange 2
		Logical V		3				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		12				ange 12
		Logical V		13				ange 13
		Logical V		14				ange 14
		Logical V	alue	15			R	ange 15

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			FrtM	lidRObs	sRng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	Initial Value 0
Timings:	Interface M FM_Norma		Latency [ms]	Write 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		terpretation
		Logical V)				Obstacle
		Logical V		1				ange 1
		Logical V		2				ange 2
		Logical V		3 4				ange 3
		Logical V Logical V		+ 5				ange 4 ange 5
		Logical V) 5				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				ange 14
		Logical V		15				ange 15

FrtObsDist									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	1	u p Name N/A	Update Bit No	Initial Value		
Timings:	Interface N FM_Norma		. Latency [ms]	Write In	terval [ms]				
Description:	Front Obsta	acle Distance	е						
Encoding type:	Name: Size: Values:	FrtObsDis 8 bits Type Physical F		Value 0 - 255	Scale	Offset 0	Interpretation cm		

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			Fue	elLvIPcnt	t		
Size [bits]	Type Unsigned	Info Type State	IVDe -		up Name N/A	Update Bit No	Initial Value 0
Timings:	Interface N	lode Pub	. Latency [ms]	Write In	terval [ms]		
	FM_Normal_HS 30.000 0.000						
Description:	1		level divide 'Fuel	Total Ca	pacity'.		
Encoding	Name:	FuelLvIPc	ntCoding				
type:	Size:	8 bits					
	Values:	Type	Va	alue	Scale	Offset	Interpretation
		Physical R	ange 0	- 255	0.392156	0	%

	FuelLvIPcntV									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		o Name I/A	Update Bit No	Initial Value 0			
Timings:	Interface N	lode Pub	. Latency [ms]	Write Inte	erval [ms]					
	FM_Normal_HS 30.000 0.000									
Description:			dity ance is out of rar	nge, the sig	nal value i	s set to 1 oth	nerwise set to 0.			
Encoding	Name:	Va	lidityCoding							
type:	Size:	1 b	it							
	Description	: Va	lidity Encode Typ	-ype						
	Values: Ty		ре	Value	Scale	Offset	Interpretation			
		Log	gical Value	0			Valid			
		Log	gical Value	1			Invalid			

	FuelTotCapct									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 0			
Timings:	Interface Mode Pub. Latency [ms] Write Interval [ms] FM_Normal_HS 30.000 0.000									
Description:			which can be de	tected by fue	l sensor.					
Encoding type:	Name: Size: Values:	FuelTotCa 12 bits Type Physical R			Scale 0.125	Offset 0	Interpretation			

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	HourOfDay								
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	up Name 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		Value 0 - 23	Scale	Offset 0	Interpretation		

	IPCAccryA								
Size [bits]	Type 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	I_HS 30.	000	0.000					
Description:	Instrument	Panel Clus	ter Start Accessor	y Active					
Encoding type:	Name: Size:		ooleanCoding bit						
	Description: bo		oolean value						
	Values:	Ty	/pe	Value	Scale	Offset	Interpretation		
		Lo	gical Value	0			FALSE		
		Lo	gical Value	1			TRUE		

	IPCEcoDrvngSwA								
Size [bits]	Type 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:	Description: Instrument Cluster Economy Driving Switch Active								
Encoding	Name: Bo		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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	IPCRunCrkA								
Size [bits]	Type 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_Normal_HS 30.000 0.000									
Description:	Description: Instrument Panel Cluster Run Crank Active								
Encoding	Name:	Во	oleanCoding						
type:	Size:	1 b	it						
	Description	: boo	olean value						
	Values:	Ту	ре	Value	Scale	Offset	Interpretation		
		Log	gical Value	0			FALSE		
		Log	gical Value	1			TRUE		

	IPCRunCrkF								
Size [bits]	Type 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: bo		olean value						
	Values:	Ту	pe	Value	Scale	Offset	Interpretation		
		Lo	gical Value	0			FALSE		
		Lo	gical Value	1			TRUE		

			IP	CSSBA			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	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 k		oit				
	Description: boo		olean value				
	Values:	Ту	pe	Value	Scale	Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

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			IP	CSSBAV			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	1	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 Start Stop But	ton Active \	/alidity		
Encoding type:	Name: Size:	Va 1 k	lid4Coding oit				
	Description: val		lid info 4				
			pe	Value	Scale	Offset	Interpretation
		Lo	gical Value	0			Valid
		Lo	gical Value	1			Invalid

	IPCSSBFltSts									
Size [bits]	Type 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 0.000	Interval [n	ns]				
Description:	Instrument	Panel Clusto	er Start Stop Butt	on Fau	ılt Status					
Encoding type:	Name: Size:	IPCSSBF 3 bits	ItStsET							
	Values:	Туре		alue	Scale	Offs		erpretation		
		Logical V Logical V						Fault rt to GND		
		Logical V					sho Stu	rt to Battery		
		Logical V Logical V						en Circuit		
		Logical V						tch failed		
		Logical V Logical V						served served		

	keep_network_IPK									
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit Yes	Initial Value false			
Timings:	Interface N	lode Pub	. Latency [ms]	Write In	terval [ms]					
	FM_Normal_HS 20.000 0.000									
Description:	NM signal:	the IPK use	s this signal wher	n it wants	to keep the	network awake	Э.			
1.	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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			L	anggSet	ng			
Size [bits]	Type Unsigned	Info Type State	e Generation Type Periodic	G	Group Name N/A		Update Bit No	Initial Value
Γimings:	Interface Mode Pub. Latency [ms] FM_Normal_HS 30.000] Write 0.000	Interval [ms]			
Description:	Language S	Setting						
Encoding type:	oding Name: : Size: Description:		nggSetngET oits 9-\$7F=Reserved pe	l Value	Scale	Offse	4 Intorn	retation
	Values:	Lo L	gical Value	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18			Simpli UK En NA En Swedi French Spanis Dutch Portug Norwe Finnish Danish Greek Japan Arabic Germa Polish Turkis Koreal	fied Chinese glish glish sh n sh quese gian n n ese
		Lo Lo Lo Lo	gical Value gical Value gical Value gical Value gical Value gical Value	19 20 21 22 23 24			Italian Hunga Czech Slovak Russia Thai	3

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			Min	uteOfHo	ır		
Size [bits]	Type 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		Value 0 - 59	Scale	Offset 0	Interpretation

OdoPriy									
Size [bits]	Type Bytes	Info Type State	Generation Type Periodic	Group Nar N/A	me	Update Bit No	Initial Value 0x00 0x00 0x00		
Timings:	Interface I FM_Norma		. Latency [ms]	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		

	PDCCofignSts PDCCofignSts										
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	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	ance Control (Configuration Sta	tus							
Encoding	Name:	PDCCofignStsET									
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]	Type Unsigned	Info Type State	Generation Type Periodic	G	Group Name N/A		Update Bit No	Initial Value 0			
Timings:	Interface N FM_Norma		. Latency [ms]	Write 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	System System System System Front F Front F Rear F	retation n OK n initializatio n Failed n Disabled PDC Disable PDC Failed PDC Failed PDC Failed	ed			

	PfTrTapUpDwnEnbSwSta										
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A	Initial Value 0						
Timings:	Interface M	lode Pub.	Latency [ms]	Write Interval [ms]							
	FM_Normal_HS 30.000 0.000										
Description: Platform Transmission Tap Up/Down Enable Switch State											
Encoding	Name: PfTrTapUpDwnEnbSwSta										
type:	Size:	2 bits									
	Description:	: Platform Tr	ransmission Tap	Up/Down Enable Sw	vitch State						
	Values:	Туре	Value Scale	e Offset Interpretati	on						
		Logical Val	lue 0	No Activatio	n						
		Logical Val	lue 1	Driver Shift	Control Enable	Switch Active					
		Logical Val	lue 2	Electronic R	ange Select En	able Switch Active					
		Logical Val	lue 3	Illegal Enable Switch State Active							

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			PfTrTapU	pDwnSe	cySwS	Sta		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gr	oup N a N/A	ame	pdate Bit No	Initial Value 0
Timings:	Interface M	lode Pub.	Latency [ms]	Write	nterva	l [ms]		
	FM_Norma	I_HS 30.00	00	0.000				
Description:	Platform Tra	ansmission T	Гар Up/Down S	econdary	Switcl	n State		
Encoding	Name:	PfTrTapl	UpDwnSecySv	vSta				
type:	Size:	2 bits						
	Description	: Platform	Transmission T	Tap Up/D	own Se	econdary Sw	itch Stat	te
	Values:	Type	Value	Scale (Offset	Interpretati	on	
		Logical V	/alue 0			No Activation	n	
		Logical V	/alue 1			Increment S	witch A	ctive
		Logical V	/alue 2			Decrement	Switch A	Active
		Logical V	/alue 3			Illegal Up/D	own Sw	itch State Active

			PfTrTa	pUpDwnSwS	ita					
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A Update Bit No 0						
Timings: Interface Mode Pub. Latency [ms] Write Interval [ms]										
FM_Normal_HS 30.000 0.000										
Description:	Platform Tr	ansmission -	Tap Up/Down S	witch State						
Encoding	Name:	me: PfTrTapUpDwnSwSta								
type:	Size:	2 bits								
	Description	: Platform	Transmission 7	Гар Up/Down	Switch Sta	ate				
	Values:	Type	Value	Scale Offse	t Interpr	etation				
		Logical \	/alue 0		No Acti	vation				
		Logical \	/alue 1		Increme	ent Switch Act	ive			
		Logical \	/alue 2		Decrem	Decrement Switch Active				
		Logical \	/alue 3		Illegal l	Jp/Down Switch	ch State Active			

	PfTrTapUpDwnSwStsAlvRC										
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name 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:	Platform Tr	ansmission	Tap Up/Down Sv	vitch Statu	ıs Alive Rolli	ng Count					
Encoding	Name:	EequalN	_2ET								
type:	Size:	2 bits									
	Values:	Type		Value	Scale	Offset	Interpretation				
		Physical F	Range	0 - 3	1	0					

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			R	LObsRı	ng			
Size [bits]	Type 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]	Write 0.000	Interval [m	ıs]		
Description:	Rear Left O	bstacle Rar	ige					
Encoding type:	Name: Size:	ObsRngl						
	Values:	Туре		/alue	Scale	Off		terpretation
		Logical V)				o Obstacle
		Logical V		l				ange 1
		Logical V		<u>2</u> 3				ange 2
		Logical V Logical V) 1				ange 3 ange 4
		Logical V		† 5				ange 5
		Logical V		3				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				ange 14
		Logical V		15				ange 15

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

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			RrM	lidLObs	Rng				
Size [bits]	Type 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]	Write 0.000	Interval [m	s]			
Description:	Rear Middle	e Left Obsta	cle Range						
type:	Name: Size:	ObsRngl 4 bits	ΞT						
	Values:	Туре		Value	Scale	Offs		erpretation	
		Logical V)				Obstacle	
		Logical V		1				ange 1	
		Logical V		2				ange 2	
		Logical V		3				ange 3	
		Logical V	alue 4	4			Range 4		
		Logical V	alue !	5			Ra	ange 5	
		Logical V		6				ange 6	
		Logical V		7				ange 7	
		Logical V	alue 8	3			Ra	ange 8	
		Logical V		9				ange 9	
		Logical V		10				ange 10	
		Logical V	alue ´	11			Ra	ange 11	
		Logical V		12			Ra	ange 12	
		Logical V		13				ange 13	
		Logical V		14				ange 14	
		Logical V	alue '	15			Ra	inge 15	

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			RrN	lidRObs	Rng			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	Initial Value
Timings:	Interface M FM_Norma		. Latency [ms] 00	Write 0.000	Interval [m	s]		
Description:	Rear Middle	e Right Obst	acle Range					
Encoding type:	Name: Size:	ObsRngl 4 bits					_	_
	Values:	Туре		Value	Scale	Off		terpretation
		Logical V		0				Obstacle
		Logical V		1				ange 1
		Logical V		2				ange 2
		Logical V		3 4				ange 3
		Logical V		4 5				ange 4
		Logical V Logical V		6				ange 5 ange 6
		Logical V		0 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		12				ange 12
		Logical V		13				ange 13
		Logical V		14				ange 14
		Logical V		15				ange 15

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

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			R	RObsRı	ng			
Size [bits]	Type 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]	Write 0.000	Interval [m	s]		
Description:	Rear Right	Obstacle Ra	ange					
Encoding type:	Name: Size:	ObsRngl 4 bits					_	_
	Values:	Туре		Value	Scale	Off		terpretation
		Logical V)				Obstacle
		Logical V		1				ange 1
		Logical V		2				ange 2
		Logical V		3				ange 3
		Logical V		4 5				ange 4
		Logical V Logical V		o ô				ange 5 ange 6
		Logical V		5 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				ange 14
		Logical V		15				ange 15

	SecsOfMinute									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Updat Bit No	Initial Value			
Timings:	Interface M	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]	Type Bytes	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 0x00 0x00 0x00			
Timings:	s: Interface Mode Pub. Latency [ms] Write Interval [ms] FM_Normal_HS 30.000 0.000									
•	Description: Service Interval Announcement Odometer Primary the odometer value of last do SIA operation.									
Encoding type:	Name: Size: Values:	ODO_codi 24 bits Type Physical R	Val	u e 16777215	Scale	Offset	Interpretation km			

	sm_network_mode_h1										
Size [bits]	Type Unsigned	Info Type State	· IVDA		Group Name IPK_HSC1_SecNWM		Update Bit No	Initial Value 0			
Timings:	Interface N	lode Pub	. Latency [ms]	Write	Interval [m	าร]					
	FM_Normal_HS 10.000 50.000										
	FM_Silent_	M_Silent_HS 10.000 50.000									
			Second Master ntrols the frame r					led mode of the			
Encoding	Name:	network	_mode_coding								
type:	Size:	8 bits	_								
	Values:	Type	V	alue	Scale	Offs	et Int	erpretation			
		Logical V	alue 0				sta	art-up			
		Logical V	alue 1				sh	utdown			
		Logical V	alue 2				no	rmal			

	sm_signal_config_id_h1									
Size [bits] 16	Type Unsigned	Info Type State	Generation Type Sporadic	Group Name IPK_HSC1_SecNWM	Update Bit No	Initial Value 28673				
Timings:	imings: 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						
Description:	Description: 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]	Type Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value false
Timings:	Interface N	/lode Pul	o. Latency [ms]	Write Inte	erval [ms]		
	FM_Normal_HS 30.000						
Description:	Stability Co	ntrol Disab	le Switch Active				
Encoding	Name:	В	ooleanCoding				
type:	Size: 1 b Description: boo		bit				
			olean value				
	Values:	Ty	/ре	Value	Scale	Offset	Interpretation
		Lo	gical Value	0			FALSE
		Lo	gical Value	1			TRUE

	SysBPM									
Size [bits]	Type 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_Normal_HS 30.000 0.000									
Description:	System Bad	ckup Power	Mode							
Encoding	Name:	Sy	sPwrMd							
type:	Size:	2 b	its							
	Description	: Sys	stem Power Mode	е						
	Values:	Ty	pe	Value	Scale	Offset	Interpretation			
		Log	gical Value	0			Off			
		Log	gical Value	1			ACC			
		Log	gical Value	2			Run			
		Lo	gical Value	3			Crank			

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

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			Tim	neDspFi	nt			
Size [bits]	Type 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	Interval [m	s]		
	FM_Normal_HS							
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

	TrPfShftPtrnSw1A									
Size [bits]	Type Boolean	Info Type State		Generation Type Periodic	Group Name 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:	Transmissi	on Plati	form	Shift Pattern Swi	tch 1 Active)				
Encoding	Name:		Во	oleanCoding						
type:	Size:		1 b	it						
	Description	1:	bod	olean value						
	Values:		Туј	oe	Value	Scale	Offset	Interpretation		
			Log	gical Value	0			FALSE		
			Log	gical Value	1			TRUE		

			TrPfSI	nftPtrnSw4	Α			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value false	
Timings:	ings: Interface Mode Pub. Latency [ms] Write Interval [ms]							
	FM_Normal_HS							
Description:	Transmissi	on Platform	Shift Pattern Swi	tch 4 Active)			
Encoding	Name:	В	ooleanCoding					
type:	Size:	1	bit					
	Description	i: bo	olean 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]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Updat Bit No	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	int					
Encoding	Name:	EequalN	_2ET								
type:	Size:	2 bits									
	Values:	Type		Value	Scale	Offset	Interpretation				
		Physical I	Range	0 - 3	1	0					

	VINCIstr									
Size [bits]	Type Bytes	Info Type State	Generation Type Periodic	Group Name 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:	1	ntifier Numb tyes' of VIN.								

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

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Interface: IPK_LIN3

	LowAcurcVehSpdAvg										
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit No	Initial Value 0				
Timings:	Interface Mode Pub. Latency [ms] Write Interval [ms] FM_Normal_L3 50.000 0.000										
Description:	Low Accura	cy Vehicle S	Speed Average								
Encoding type:	Name: Size: Values:	LowAcure 8 bits Type Physical F	cVehSpdAvgET Range	Value 0 - 255	Scale 2	Offset 0	Interpretation km/h/bit				

			Mstr	SysPwrMd			
Size [bits]	Type 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

			TrShft	LvrPosV_	15		
Size [bits]	Type 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	00	0.000			
Description:	Transmission	on Shift Leve	er Position Validit	y			
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
		Log	gical Value	1			Invalid

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	1	1		tLvrPos_	.10					
Size [bits] 4	Type Unsigned	Info Type State	Generation Type Periodic		u p Name N/A	Update Bit No	Initial Value 0			
Timings:	Interface I	/lode Pub	. Latency [ms]	Write Int	terval [ms]				
-	FM_Norma	al_L3 50.0	000	0.000	_	-				
Description:	: Transmission Shift Lever Position									
	\$0=Betwee \$1=Park R \$2=Revers \$3=Neutral \$4=Forwar \$5=Forwar \$6=Forwar \$7=Forwar \$8=Forwar \$9=Forwar	ange e Range l Range d Range A d Range B d Range C d Range D d Range E d Range F	on :							
	\$F=Lever F For Manua \$2=Revers \$3=Neutral	Position Unk I Transmissi e Range I Range (Val	on: only below sta			for Neutral range	e)			
	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F	Position Unk I Transmissi e Range I Range (Val Position Unk	on: only below sta idity on MT vehic nown			for Neutral range	e)			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name:	Position Unkl I Transmissice Range I Range (Val Position Unkl TrShftLvrF	on: only below sta idity on MT vehic nown			for Neutral range	e)			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking I Transmission E Range (Val.) Range (Val.) Position Unking TrShftLvrF 4 bits	on: only below standing on MT vehiconown	les is only	protected)			
Encoding type:	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name:	Position Unking I Transmission E Range (Valide Position Unking I TrShftLvrF 4 bits	on: only below standing on MT vehice nown PosCoding Value			Interpretation				
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking I Transmission E Range (Val. Position Unking TrShftLvrF 4 bits Type Logical Val.	on: only below stated idity on MT vehice nown PosCoding Value 0	les is only	protected	Interpretation Between Rang				
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking I Transmission E Range (Valide Range (Valide I Range) TrShftLvrF 4 bits Type Logical Valide Logical Valide I Range (Valide I Range)	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1	les is only	protected	Interpretation Between Rang Park Range	es			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking I Transmission E Range (Valide Position Unking TrShftLvrF 4 bits Type Logical Valide Logical Valide Logical Valide Logical Valide Position Unking TrShftLvrF 4 bits	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1 ue 2	les is only	protected	Interpretation Between Rang Park Range Reverse Range	es			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking I Transmission Range (Valide Range (Valide Range) Position Unking TrShftLvrF 4 bits Type Logical Valide Logical Valide Logical Valide Logical Valide Range Ran	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1 ue 2 ue 3	les is only	protected	Interpretation Between Rang Park Range Reverse Range Neutral Range	es e			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking I Transmission Range (Valide Range)	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1 ue 2 ue 2 ue 3 ue 4	les is only	protected	Interpretation Between Rang Park Range Reverse Range Neutral Range Forward Range	es e			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking I Transmission E Range (Valide Range (Valide I Range (Valide I Range (Valide I Valide	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5	les is only	protected	Interpretation Between Rang Park Range Reverse Range Neutral Range Forward Range	es e e A e B			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking I Transmission Enange (Vale Range (Vale Position Unking TrShftLvrF 4 bits Type Logical Vale Position United Position Un	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 4 ue 5 ue 6	les is only	protected	Interpretation Between Rang Park Range Reverse Range Neutral Range Forward Range Forward Range	es e e A e B e C			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkall Transmission Range (Valle Range (Valle Range) Position Unkalle Range (Valle Range) TrShftLvrF 4 bits Type Logical Valle Logica	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1 ue 2 ue 3 ue 3 ue 4 ue 5 ue 6 ue 7	les is only	protected	Interpretation Between Range Park Range Reverse Range Neutral Range Forward Range Forward Range Forward Range	es e e A e B e C			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking I Transmission Range (Valide Range)	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5 ue 4 ue 5 ue 6 ue 7 ue 8	les is only	protected	Interpretation Between Range Park Range Reverse Range Neutral Range Forward Range Forward Range Forward Range Forward Range Forward Range	es e e A e B e C e D e E			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking Pransmission Range (Valide Range (Valide Range) Range (Valide Range (Valide Range) Range (Valide R	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5 ue 6 ue 7 ue 8 ue 9	les is only	protected	Interpretation Between Range Park Range Reverse Range Neutral Range Forward Range	es e e A e B e C e D e E e F			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking I Transmission E Range (Valide Range (Valide I Range (Valide I Range (Valide I Range I Range (Valide I Range I Valide I Range	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5 ue 6 ue 7 ue 8 ue 9 ue 10	les is only	protected	Interpretation Between Range Park Range Reverse Range Neutral Range Forward Range	es e e A e B e C e D e E e F e G			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unking Pransmission Range (Valide Range (Valide Range) Range (Valide Range (Valide Range) Range (Valide R	on: only below stated idity on MT vehice nown PosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5 ue 6 ue 7 ue 8 ue 9 ue 10 ue 11	les is only	protected	Interpretation Between Range Park Range Reverse Range Neutral Range Forward Range	es e e A e B e C e D e E e F e G e H			

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7.3 Received signals

Interface: IPK_CAN_HS

			,	ABSIO			
Size [bits]	Type Boolean	i Ivne I Ivne		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:	Antilock Br	ake System	Indication On				
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			AirbagS	ysFltIndCm	d		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group I		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ ILHS	Function	Sub. Late [ms] 30.000	ency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Airbag Syst	tem 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

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			Amı	otLghtLvl				
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A	Update Bit No	Initial Value 0		
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/ al_HS	Function	Sub. Latency [ms] 30.000	Max. Age [ms] 200.000	Read Interval [ms]		
Description:			om Auto Light Sei	nsor				
Encoding type:	l	mbtLghtLvlE bits vne		set Interpretation				
		ogical Value		•	scition lamp and	dinned beam off)		
	Lo	gical Value	1	Level 0 (Day: position lamp and dipped beam off) Level 1 (Reserved for position lamp On Request)				
	Lo	gical Value	2	Level 2 (Dipped	Beam On) Re	quest		
	۱ .	gical Value	3	Level 3 (Reserv	od)			

			ASSInf	BtnLamp	On		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. La [ms]	Sub. Latency [ms]		Read Interval [ms]
				10.000		300.000	
Description:	Auto Stop S	Start Inhibit E	Button Lamp On				
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	n: boo	olean value				
	Values:	Tyl	ре	Value	Scale	Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

			AS	SInhIO			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		o Name I/A	Update Bit No	Initial Value false
Timings:	gs: Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 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:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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

			ASSWr	nngLamp	On		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	Update Bit No	Initial Value false
Timings:	Mode/FuncVerFolder/Function FM_Normal_HS				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:	Ty Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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				Autol	HoldMsg			
Size [bits]	Type Unsigned	Info Type State	Generati Type Periodi		Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function		Sub. Late [ms] 30.000	ency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Autohold M	essage						
Encoding type:	Name: Size: Values:	Autohold N 3 bits Type Logical Val	lue lue lue lue lue lue	Value 0 1 2 3 4 5 6	Scale	Offset	Interpreta reserved Seat belt Press bra Autohold Autohold reserved reserved	not fastend ke pedal standby off

			Auto	oHoldSy	sSts			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	В	date Sit Io	Initial Value 0
Timings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				[ms	Sub. Latency Max. Age [ms] [ms] 30.000 100.000			Read Interval [ms]
Description:	Auto Hold S	System Statu	IS					
Encoding type:	Name: Size: Values:	AutoHolo 2 bits Type	lSysStsET	Value	Scale	Offset	Inte	erpretation
		Logical Va	alue	0	223.0	2501	Off	-
		Logical Va	alue	2			sta	ndby or

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				BatAg	gngSta			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodion		Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function		Sub. Later [ms] 30.000	ncy	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Battery Agi	ng State						
Encoding type:	Name: Size: Values:	BatAgngS 3 bits Type Logical Va	lue lue lue lue lue lue lue	Value 0 1 2 3 4 5 6	Scale	Offset	Good Little Ag Middle A	ling Aging e reminding d d

			I	BatSOC			
Size [bits] 8	Type Unsigned State Generation Type State Periodic		Group Name N/A		Update Bit No	Initial Value 187	
Timings:	nings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency [ms] 30.000		e Read Interval [ms]
Description:	Battery Sta	te Of Charge	9				
Encoding type:	Name: Size:	BatSOCE 8 bits	Т				
	Values:	Type Physical R	•	Value 0 - 250	Scale 0.4	Offset 0	Interpretation %
		Logical Va Logical Va	ılue	251 252			reserved reserved
		Logical Va Logical Va		253 254			reserved reserved

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				BatVol				
Size [bits]	Type Unsigned Info Type State		Generatio Type Periodic	Group	Group Name N/A		date it	Initial Value 16383
Timings:	imings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency Max [ms] [ms 30.000 100		J	Read Interval [ms]
Description:	Battery volt	age sample	by PMDC					
Encoding type:	Name: Size: Description	BatVol l 14 bits a: E=N/10						
	Values:	Type Physica	l Range	Value 0 - 15360 15361 - 16382	Scale 0.0009		Offset 3 0	Interpretation V reserved

			BCN	/IEmgcSp				
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/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: BooleanCoding Size: 1 bit Description: boolean value							
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE	

			BCMGears	ShftParkNt	rIESR		
Size [bits]	Boolean State Periodic				Name I/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund	cVerFolder/	Function	_		Max. Age [ms]	Read Interval [ms]
	FM_Normal_HS					100.000	
Description:	Body Contr	ol Module G	ear Shift Park Ne	eutral Engin	e Starting	Reminder	
Encoding type:	Name: BooleanCoding Size: 1 bit						
	Description: boolean value						
	Values: Typ		ре	Value	Scale	Offset	Interpretation
		Log	jical Value	0			FALSE
		Log	jical Value	1			TRUE

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			BCMNoSm ²	tKeylnVeh	Rmndr		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	ngs: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency [ms] 30.000		Read Interval [ms]
Description:	Body Contr	ol Module N	o Smart Key In V	ehicle Ren	ninder		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			BCMNoSmt	KeyPressB	rkTRR		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	oe Group Name			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:	Typ Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			BCMNoSmt	KeyPress(CIToRR		
Size [bits]	Type Boolean State Generation Type Periodic				Name	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000		Max. Age [ms]	Read Interval [ms]
Description:	_	_	o Smart Key Pre	ss Clutch T	o Restart	Reminder	
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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

			BCMPr	essCIRmn	dr		
Size [bits]	Type 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] 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:	Typ Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			BCMPutSm:	tKeyToBkı	upPosR		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	S: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency [ms] 30.000		Read Interval [ms]
Description:	Body Contr	ol Module P	ut Smart Key Into	Backup P	osition Re	minder	
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	_	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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	BCMPwrMdHwdSta										
Size [bits]	Type Unsigned	Info Type State	Generation Type 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. 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	Off	set In	terpretation			
		Logical V	alue 0				0	FF			
		Logical V	alue 1				Α	CC			
		Logical V	alue 2				R	UN			
		Logical V	alue 3	3			С	RANK			

			BCMPw	rMdHwdS	taV			
Size [bits]	Type Unsigned	Info Type State Generation Type Periodic			p Name N/A	Update Bit No	Initial Value 0	
Timings:	Mode/FuncVerFolder/Function				Sub. Latency [ms]		Read Interval [ms]	
	FM_Normal_HS					100.000		
Description:	Body Contr	ol Module P	ower Mode Hard	wired State	Validity			
Encoding	Name:	Val	idityCoding					
type:	Size:	1 b	it					
	Description	: Val	idity Encode Typ	е				
	Values: Ty		oe	Value	Scale	Offset	Interpretation	
		Log	jical Value	0			Valid	
		Log	jical Value	1			Invalid	

	BCMRunCrkF									
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	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:	Body Contr	ol Module R	un Crank Failed							
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value									
	Values:		oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE			

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			BCMSh	ftParkRmı	ndr		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	Sub . La [ms] 30.000	•	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Body Contr	ol Module S	hift Park Remind	er			
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			В	CMSSB	4		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gr	oup Name N/A	Upda Bit No	Initial value
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ nl_HS	Function	Sub [ms] 20.0	-	Max. Ag [ms] 100.000	[ms]
Description:	Body Contr	ol Module S	tart Stop Button	Active			
Encoding type:	Name: Size:	BCMSSB 1 bit	AET				
	Values:	Type Logical V Logical V	alue (Value) 1	Scale	Offset	Interpretation Inactive Active

			BCI	MSSBAV			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. La [ms] 20.000	atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Body Contr	ol Module S	tart Stop Button A	Active Valid	dity		
Encoding type:	Name: ValidityCoding Size: 1 bit Description: Validity Encode Type			e			
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Valid Invalid

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	BCMSSBFitSts									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	Group Name N/A		Update Bit No	Initial Value 0		
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				b. Latency s] 000	[Max. Age [ms] 100.000	Read Interval [ms]		
Description:	Body Contr	ol Module S	tart Stop Button	Fault S	tatus					
Encoding type:	Name: Size: Values:	BCMSSB 3 bits Type Logical Va	V	alue	Scale	Offs		erpretation Fault		
		Logical Volume Logica	alue 1 alue 2 alue 3				sho sho Stud	rt to GND rt to Battery		
		Logical Va Logical Va Logical Va	alue 5 alue 6				swit Res	served		

			BCMSynd	SmtKeyR	mndr			
Size [bits]	Type Boolean State Generation Type Periodic		Group Name N/A		Update Bit No	Initial Value false		
Timings:	Interface Mode/Fun	cVerFolder/	Function	Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]	
		30.000		100.000				
Description:	Body Contr	ol Module S	ynchronize Smar	t Key Rem	inder			
Encoding	Name:	Во	oleanCoding					
type:	Size:	1 bit						
	Description	Description: boolean value						
	Values:	Тур	oe	Value	Scale	Offset	Interpretation	
	Log		jical Value	0			FALSE	
		Logical Value		1			TRUE	

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			BCMTake\$	SmtKeyOu [*]	tOfSR		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name 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:	Body Contr	ol Module Ta	ake Smart Key O	ut Of Slot F	Reminder		
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			Bnt	tOpenSt	S		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	oup Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. [ms] 30.00		Max. Age [ms] 200.000	Read Interval [ms]
Description:	Bonnet Ope	en Status					
Encoding type:	Name: Size: Values:	BntOpenSt 2 bits Type	sET Value	Scale	Offset	Interpretation	
		Logical Valu		0000	0001	Bonnet Closed	
		Logical Valu				Bonnet Open	
		Logical Valu	ie 2			Bonnet Switch I	Disconnect
		Logical Valu	ie 3			Reserved	

			BrkF	ludLvlLow	1		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	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:		oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			BrkFlu	dLvILow\	V		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value 0
Timings:	ngs: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		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	ı			
	Values:	Tyj Log		Value 0 1	Scale	Offset	Interpretation Valid Invalid

			BrkSysF	RedBrkTlltl	Req		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma		rFolder/Function		Sub. Latency [ms] 30.000		Read Interval [ms]
Description:	Brake Syste	em Red Bra	ke Telltale Reque	est			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	pe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			Calend	darAdjReq	Α		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N∕A	Update Bit No	Initial Value false
Fimings: Interface Mode/FuncVerFolder/Function			Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]	
	FM_Normal_HS			30.000		2000.000	
			equest Active equest from infot	ainment			
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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			Caler	ndarDay <i>A</i>	\dj		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Update Bit No	e Initial Value
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS		Sub. [ms] 30.00	Latency 0	Max. Age [ms] 2000.000	[ms]	
Description:			ent ent information fro	om infota	nment		
Encoding type:	Name: Size: Values:	Calendar 5 bits Type Physical F	·	Value 0 - 31	Scale	Offset 0	Interpretation

			Caler	ndarMor	nthAdj					
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	iroup Name N/A	Upo B N	it	Initial Value 0		
Γimings:	Interface Mode/FuncVerFolder/Function FM Normal HS		[ms	b. Latency s] 000	Max. A [ms]					
Description:	Calendar M	 lonth Adjustr	ment ment informatio			2000.0				
Encoding	Name:	Calendar	MonthET							
type:	Size:	4 bits								
	Values:	Type	,	Value	Scale	Offset	Inte	erpretation		
		Logical V	alue	0			Unk	known		
		Logical V	alue	1			Jan	uary		
		Logical V	alue	2			Feb	oruary		
		Logical V		3			Mar	rch		
		Logical V		4			Apr	il		
		Logical V		5			May	y		
		Logical V		6			Jun	е		
		Logical V	alue	7			July	/		
		Logical V		8			Aug	•		
		Logical V		9				otember		
		Logical V		10				ober		
		Logical V		11 12			_	vember		
		Logical Value						December		
		Logical V		13				Reserved		
		Logical V		14				served		
		Logical V	alue	15			Res	served		

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			Caler	ndarYear <i>A</i>	١dj		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	1	u p Name N/A	Update Bit No	Initial Value
Timings:	S: Interface Mode/FuncVerFolder/Function FM_Normal_HS		Sub. I [ms] 30.000	_atency	Max. Age [ms] 2000.000	Read Interval [ms]	
Description:		ear Adjustm ear Adjustm	ent ent information f	rom infota	inment		
Encoding type:	Name: Size: Values:	Calendar' 8 bits Type Physical R		Value 0 - 255	Scale	Offset 2000	Interpretation

				CCA			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name 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:	Во	oleanCoding				
type:	Size:	Size: 1 bit					
	Description: boole		olean value				
	Values: Typ		ре	Value	Scale	Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

			C	CEnbd			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		o Name I/A	Update Bit No	Initial Value false
Timings:	gs: Interface Mode/FuncVerFolder/Function FM_Normal_HS			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:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			C	CFItPrst			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	ngs: Interface Mode/FuncVerFolder/Function FM_Normal_HS				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:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

				ChmA			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name I/A	Update Bit No	Initial Value false
Timings:	ings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. La [ms] 30.000	atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Chime Acti	ve					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

	CrusAndSpdLmtrDrvrSS									
Size [bits]	Type Unsigned Info Type State Generation Type Periodic			Group N N/A		Update Bit No	Initial Value 0			
Timings: Interface Mode/FuncVerFolder/Function				Sub. Late [ms]	-	Max. Age [ms]	Read Interval [ms]			
	FM_Norma	30.000		400.000						
Description:	Cruise and	Speed Limit	er Driver Selecte	d Speed						
	Name:		AndSpdLmtrDr	vrSS						
type:	Size:	12 bi								
	Description	: Cruis	se and Speed Lin	niter Driver Se	elected Sp	eed				
	Values:	Туре	:	Value	Scale	Offset	Interpretation			
		Phys	ical Range	0 - 4095	0.0625	0				

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			DayTime	RunningL	ghtF		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	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:	Day Time F	Running Ligh	t Failed				
Encoding type:	Size: 1 bi		oleanCoding it olean value				
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

DiagnosticFuncAddrReq									
Size [bits]	Type Bytes		Group Name DIAG_FuncReq_HSC1	Update Bit No	Initial Value 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x0				
Timings:	Interface Mode/Fund	cVerFolder/i	Function	Sub. Latency [ms]	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 ad	dress request						

	DiagnosticReqIPK								
Size [bits]	Rytes State Type		Generation Type Sporadic	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_	FM_Quiet_HS 5.000		5.000	50.000	10.000			
	FM_Silent_HS			5.000	50.000	10.000			
Description:	Diagnostic	request to IF	ΥK						

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

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

			DistR(CAvgDrvn	V		
Size [bits]	Type Unsigned	J. I IVNE		Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	VerFolder/ I_HS	Function	Sub. La [ms] 30.000	atency	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:	Typ Log	, , ,	Value 0 1	Scale	Offset	Interpretation Valid Invalid

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

			DrvrPW	/LInitnRmr	ndr		
Size [bits]	Type Boolean	Info Type State	· I IVDE I ·		Update Bit No	Initial Value false	
Timings:	Interface Mode/Fund FM Norma	cVerFolder/	Function	Sub. La [ms] 30.000	atency	Max. Age [ms] 100.000	Read Interval [ms]
Description:		er Window L	ifter Initialization	Reminder,	Remind th	e Driver to I	nitialize Driver Power
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyr Log	gical Value	Value 0	Scale	Offset	Interpretation FALSE
	Logical Value			1			TRUE

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			DrvrSh	ftCtrlTr	gtGear					
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gı	Group Name N/A		Update Bit No	Initial Value 0		
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Suk [ms 30.0	-	[m	ax. Age ns] 00.000	Read Interval [ms]		
Description: Driver Shift Control Target Gear										
Encoding type:	Name: Size:	4 bits	CtrlTrgtGearET ,	/alue	Scale	Offs	at Int	ormrototion		
	Values:	Type Logical V	alue 0 alue 1 alue 2 alue 3 alue 4 alue 5 alue 5 alue 7		Scale	Olis	No Fir Se Th Fo Fift Six Se	erpretation t Supported st Gear cond Gear ird Gear urth Gear th Gear tth Gear venth Gear yenth Gear		

			DrvrWn	dOpenRm	ndr		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	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:	Driver Wind	dow Open R	eminder				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			ECMCIsD	oorToAut	oStR		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Group Name N/A		Initial Value false
Timings:	gs: 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:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			ECMFasn	SbltToAuto	StR			
Size [bits] Type 1 Boolea		Info Type State	Generation Type 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		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Engine Co	ntrol Module	Fasten Seatbelt	To Auto Sta	rt Remin	der		
Encoding type:	Name: Size: Descriptior	1 b	oleanCoding it olean value					
	Values:	Tyr Log	oe jical Value jical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE	

			ECMPres	sCIB	rkRmndr					
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	(Group Nan N/A	ne	'I	date Bit No	Initial Value 0	
Timings:	Interface Mode/Fund		ub. Latenc ns]	у	Max. [ms]	Age	Read Interval [ms]			
	FM_Norma	I_HS		30.000 100.000				000		
Description:	Engine Cor	ntrol Module	Press Clutch Bra	ke Re	eminder					
Encoding	Name:	ECMPres	sCIBrkRmndrE	Γ						
type:	Size:	2 bits								
	Values:	Type	Va	lue	Scale	Off	set	Inter	pretation	
		Logical Va	alue 0					No m	nessage	
		Logical Va	Logical Value 1					Pres	s the clutch	
		Logical Va	alue 2					Pres	s the brake	
	Logical Value 3						Rese		erved	

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			ECMShft	NtrlToAuto	StR		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub . La [ms] 30.000			Read Interval [ms]
Description:	Engine Cor	ntrol Module	Shift Neutral To	Auto Start I	Reminder		
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			Eco	DrvngAlO				
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name 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] 300.000	Read Interval	
Description:	Economy D	Driving Active	Indication On					
Encoding type:	Name: Size: Descriptior	1 b	oleanCoding it olean value					
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE	

			EcoDrvng	DspS	tsGearSIS	3			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	(Group Na r N/A	ne	-	date Bit No	Initial Value 0
Timings:	Interface Mode/Fund	erface de/FuncVerFolder/Function				y	Max. Age [ms]		Read Interval [ms]
	FM_Norma	_Normal_HS 30.000 300.000							
Description:	Economy D	riving Displa	ay Status Gear Sl	nift In	dication St	atus			
Encoding type:	Name: Size:	EcoDrvno 2 bits	gDspStsGearSIS	SET					
	Values:	Type	Val	lue	Scale	Off	set	Interp	oretation
		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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			EcoDrvngl) SpStsRc	mndFG		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name 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	ay Status Recom	mended F	orward Ge	ear	
Encoding	Name:) DspStsRcmndF				
type:	Size:	4 bits	•				
	Values:	Type	Value	Scale	Offset	Interpretation	n
		Logical Val	ue 0			None	
		Logical Val	ue 1			First Gear	
		Logical Val	ue 2			Second Gear	
		Logical Val	ue 3			Third Gear	
		Logical Val	ue 4			Fouth Gear	
		Logical Val	ue 5			Fifth Gear	
		Logical Val	ue 6			Sixth Gear	
		Logical Val	ue 7			Seventh Gear	r
		Logical Val	ue 8			Eighth Gear	
		Logical Val	ue 9			Unused and F	Reserved 1
		Logical Val	ue 10			Unused and F	Reserved 2
		Logical Val	ue 11			Unused and F	Reserved 3
		Logical Val	ue 12			Unused and F	Reserved 4
		Logical Val	ue 13			Unused and F	Reserved 5
		Logical Val	ue 14			Unused and F	Reserved 6
		Logical Val	ue 15			Unused and F	Reserved 7

			ECODr	vngSpdRu	ıtΑ		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	Sub. La [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:	,	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			Emgo	cCallFlrSts				
Size [bits]	Type 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		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: T	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]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]	
			10.000		200.000		
Description:	Engine 12	Volt Starter N	Motor Commande	ed On			
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	n: boo	olean value				
	Values: Typ		ре	Value	Scale	Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

			E	EnAS	SSta				
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Group Nan N/A	ne	E	date Bit No	Initial Value 1
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ I_HS	Function		Sub. Latenc [ms] 10.000	у	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		Scale	Offs	set	Engin Engin Engin	pretation the Off the Running the Starting the Stopping

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			En	CIntTem			
Size [bits]	bits] Type Info Type Type		, , , , , , , , , , , , , , , , , , ,	Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Late [ms] 30.000			Read Interval [ms]
Description:	Engine Cod	olant Tempe	rature				
Encoding type:	Name: Size: Description	8 bit	IntTem s ine Coolant Tem	nerature			
	Values:	Тур		Value 0 - 255	Scale 1	Offset -40	Interpretation deg C

			EnCl	ntTemV				
Size [bits]	Type 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: ValidityCoding Size: 1 bit Description: Validity Encode Type							
	Values:	,	pe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Valid Invalid	

			EnEms	snRltdMalf	fA		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name 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] 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:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			EnEmsr	nRltdMa	lfIndReq			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Nan N/A	ne	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	[m:	b. Latenc s] 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		0 ′′′ 1			
		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

			EnGF	PFLamp	OnSts			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	iroup Nai N/A	me	Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		y	Max. Age [ms] 1100.000	Read Interval [ms]
Description:	Engine GP	F Lamp On S	Status					
Encoding type:		EnGPFLam 2 bits	pOnStsET					
	Values:	Туре	Value	Scale	Offset	Inter	pretation	
		Logical Valu	e 0			off		
		Logical Valu	e 1			GPF	Regeneration	n Reminder
		Logical Valu	e 2			GPF	Regeneration	n Active
		Logical Valu	e 3			GPF	Full Reminde	er

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			EnNonE	msnRltdM	alfA		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	Max. Age [ms] 400.000	Read Interval [ms]
Description:	Engine Nor	n Emissions	Related Malfunct	tion Active			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			EnOi	IPrsLowIO)		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	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:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			E	nRunA			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		o Name I/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	Function	Sub. La [ms] 10.000	atency	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:	_	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			ĺ	EnSpd			
Size [bits] 16	Type Unsigned State Generation Type Periodic		Group Name N/A		Update Bit No	Initial Value 0	
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ nl_HS	Function	Sub. Later [ms] 30.000			Read Interval [ms]
Description:	Engine Spe	eed					
Encoding type:	Name: Size: Description	16 bi	odCoding ts ne Speed				
	Values:	Type Phys	e ical Range	Value 0 - 65535	Scal 6 0.25	Offset 0	Interpretation rpm

				EnS	pdSts			
Size [bits]	Type Unsigned	Info Type State	Generatior Type Periodic	1	Group Name N/A		Update Bit No	Initial Value 0
Timings:		face e/FuncVerFolder/Function Normal HS				ency	Max. Age [ms] 100.000	Read Interval [ms]
Description:					30.000		100.000	
Encoding type:	Name: Size:	EnSpdSts 2 bits	Coding					
	Values:	Type Logical Val	lue 0	alue	Scale	Offset	Interpreta Normal Op	peration
		Logical Val Logical Val Logical Val	lue 2				Degraded Reserved Invalid	Operation

			EPBSys	AudWr	nngReq			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gı	roup Name N/A	U	Jpdate Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Suk [ms	-	[ms	x. Age s] 0.000	Read Interval [ms]
Description:	Electric Par	k Brake Sys	tem Audible Wa	rning Re	equest			
Encoding type:	Name: Size:	EPBSys A	AudWrnngReqE	ĒΤ				
	Values:	Type Logical Value Logical Value Logical Value Logical Value Val	alue (l	Scale	Offse	Of W	terpretation if arning #1 arning #2

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			EPBSy	sDspM	sgReq	EPBSysDspMsgReq											
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	Initial Value 0									
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms	b. Latency [6] [000	[1	Max. Age ms] 00.000	Read Interval [ms]									
Description: Electric Park Brake System Display Message Request																	
Encoding type:	Name: Size:	EPBSysI 3 bits	DspMsgReqET														
	Values:	Type Logical Value Value Logical Value Logical Value V	alue 0 alue 1 alue 2 alue 3 alue 4 alue 5 alue 6		Scale	Offs	Off Me Me Me Me Me	erpretation f essage #1 essage #2 essage #3 essage #4 essage #5 essage #6 essage #7									

			EPBSy	sStsIndF	Req			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Group Name Updat Bit No		Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS			Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]	
			30.000	-	100.000			
Description:	Electric Par	rk Brake Sys	tem Status Indica	ation Req	uest			
Encoding type:	Name: Size:	EPBSysWr 2 bits	nngIndReqET					
	Values:	Туре	Value	Scale	Offset	Interpretation	1	
		Logical Valu	ue 0			No Indication		
		Logical Valu	ue 1			Continuous Indication		
		Logical Valu	ue 2			Flash Rate #1 Indication Flash Rate #2 Indication		
		Logical Valu	ue 3					

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			EPBSys'	Wrnnglnd	dReq					
Size [bits]	Type 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			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]			
Description:	Description: Electric Park Brake System Warning Indication Request									
Encoding type:	Name: Size:	EPBSysWr 2 bits	nngIndReqET							
	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 Valu	ue 3			Flash Rate #2	2 Indication			

			EP	SFIrSts		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A	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:		wer Steering	Failure Status"			
Encoding type:	Size: 2	PSFIrStsET bits				
	Values: Ty	•		Offset Interpretation		
		gical Value			e(Indication off)	
	Lo	gical Value	1	EPS Light Lev	el failure indica	tion£"Orange£©
	Lo	gical Value	2	EPS Heavy Le	evel failure indic	ation£"Red£©
	Lo	gical Value	3	Invalid		

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			ESC	LFIrIndCmd					
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group N N/A	ame Update Bit No	Initial Value 0			
Timings:	Interface Mode/Fund	:VerFolder/l	Function	Sub. Late [ms]	ncy Max. Age [ms]	Read Interval [ms]			
	FM_Normal_HS 10.000 100.000								
Description:	Electronic S	Steering Colu	ımn Lock Failur	e Indication Co	mmand				
Encoding	Name:	ESCLFI	IndCmdET						
type:	Size:	2 bits							
	Description	: Electroni	c Steering Colu	mn Lock Failur	e Indication Comma	nd ET			
	Values:	Type	Value	Scale Offset	Interpretation				
		Logical \	/alue 0		No defect failure de	etected			
		Logical \	/alue 1		Defect failure detec	ted			
		Logical \	/alue 2		Steering wheel is b	locked			
		Logical \	/alue 3		Functional limitation	n failure detected			

			FasnDr	vrSbltIndCm	d		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Group Name N/A		Initial Value
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Sub. Late [ms] 30.000	ency	Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Fasten Driv	er Seatbelt I	ndication Comm	and			
Encoding type:	Name: Size:	SbltIndCm 2 bits	ndET				
	Values:	Type	Valu	e Scale	Offset	t Interpret	ation
		Logical Va	lue 0			drive lam	p OFF
		Logical Va	lue 1			drive lam	p ON
		Logical Va	lue 2			drive lam	p Flashing
		Logical Va	lue 3			Signal no	ot available

	FasnFrtPsngSbltIndCmd										
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Group Name N/A		Update Bit No	Initial Value 0			
Timings:	Interface Mode/Fund	:VerFolder/	Function		Sub. Late [ms]	Sub. Latency Max. Age [ms]		Read Interval [ms]			
	FM_Norma	I_HS			30.000		100.000				
Description:	Fasten From	nt Passenge	r Seatbelt In	dicatio	n Comman	d					
Encoding	Name:	Name: SbltIndCmdET									
type:	Size:	2 bits									
	Values:	Type		Value	Scale	Offset	Interpret	tation			
		Logical Va	lue	0			drive lam	np OFF			
		Logical Va	lue	1			drive lam	np ON			
		Logical Va	lue	2			drive lam	np Flashing			
		Logical Va	lue	3			Signal no	ot available			

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			FasnSk	oltAudRmn	ndr		
Size [bits]	Type Boolean	Info Type State	Periodic N/A		Update Bit No	Initial Value false	
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. La [ms] 10.000	atency	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:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			FasnSecR	owLSbltIndC	md	<u> </u>	
Size [bits]			Generation Type Periodic	•	Group Name N/A		Initial Value
Timings:	imings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				ncy	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Fasten Sec	ond Row Le	ft Seatbelt Indica	tion Comman	d		
Encoding type:	Name: Size:	FasnSecR 2 bits	owSbltIndCmdi	ET			
	Values:	Type Logical Va Logical Va Logical Va	lue 1 lue 2	e Scale	Offs	Off Indic On Indic Flashing	cation cation Indication
		Logical Va	lue 3			Reserve	ea

			FasnSecR	owMidSbltIn	dC		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Group Name N/A		Initial Value 0
Timings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Late [ms] 30.000	ncy	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Fasten Sec	ond Row Mi	ddle Seatbelt Ind	ication Comm	and		
Encoding type:	Name: Size:	FasnSecR 2 bits	RowSbltIndCmdI	T			
	Values:	Type Logical Va Logical Va Logical Va Logical Va	lue 1 lue 2	e Scale	Offse	Off Indic	cation cation g Indication

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			FasnSecRo	owRSbltIndC	md		
Size [bits]	Type 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				Sub. Late [ms] 30.000	ncy	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Fasten Sec	ond Row Ri	ght Seatbelt Indic	ation Comma	ınd		
Encoding type:	Name: Size:	FasnSecF 2 bits	RowSbltIndCmdI	ĒΤ			
	Values:	Type Logical Va	Valu lue 0	e Scale	Offset	t Interpre	
Logical Value 1 On Inc							
	Logical Value 2 Logical Value 3					Flashinç Reserve	g Indication ed

			FICMDis	tUnitAdjtRe	PqΑ		
Size [bits] Type Boolean State			Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value false
imings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. La [*] [ms] 30.000	tency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Front Infota	ainment Cont	rol Module Dista	nce Unit Adj	just Requ	est Active	
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			FICI	MDistUn	tAdj		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gı	Group Name N/A		Initial Value
Timings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				Suk [ms	•	Max. Ag [ms] 100.000	e Read Interval [ms]
Description:	Front Infota	inment Cont	trol Module Dist	ance Un	its Adjust		
Encoding type:	Name: Size:	1 bit	tUntAdjET				
	Values:	Type Logical Value Logical Value	alue	Value 0 1	Scale	Offset	Interpretation km miles

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			FICMFue	lCsum	pUntAdj			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	oup Name N/A Update Bit No			Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	Function	[ms	o. Latency s] 000	[1	lax. Age ns] 00.000	Read Interval [ms]	
Description:	Front Infota	inment Cont	rol Module Fuel	Consur	nption Units	Adjus	st	
Encoding type:	Name: Size:	FICMFue 2 bits	ICsumpUntAdj E	ĒΤ				
	Values:	Type	V	alue	Scale	Offs	set Int	erpretation
		Logical Va	alue 0				L/1	I00km
		Logical Va	alue 1				mp	og(UK)
		Logical Va	alue 2				mp	og(US)

			FICMFuelC	sumpUntA	djARA		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
imings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	_		Units Adjust Re	quest			
Encoding type:	Name: Size: Description	1 b	BooleanCoding 1 bit boolean value				
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

	FICMOverSpdFnCrntSts											
Size [bits] Type Unsigned State			Generation Type Periodic	Gro	Group Name N/A		Initial Value					
Timings: Interface Mode/FuncVerFolder/Function				[ms]	Latency	Max. Ag [ms]	e Read Interval [ms]					
D :	FM_Norma		114 11 0	30.00		100.000						
Description:	Front Infota	inment Con	rol Module Over	Speed F	unction Cu	rrent Status						
	Name:	OffOnCo	ding									
type:	Size:	1 bit										
	Values: Type			/alue	Scale	Offset	Interpretation					
		Logical V	alue 0)			Off					
		Logical V	alue 1				On					

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			FICMOvr	SpdThrs	hldAdj		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Front Infota	inment Cont	trol Module Over	Speed T	hreshold Ac	ljust	
Encoding type:	Name: Size: Values:	FICMOvrs 6 bits Type	SpdThrshldAdjE	ET Value	Scale	Offset	Interpretation
	values.	Physical F	Range	0 - 63	5	0	mio protation

			FICMOvrSp	dThrshld.	AdjtRA		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value false
Timings:	nings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30,000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Ficm Over	Speed Thres	shold Adjust Req	uest			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Typ Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			FICM	TemUntAc	lj				
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 0		
Timings:	Mode/FuncVerFolder/Function			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]		
Description:	Front Infota	inment Cont	trol Module Temp	erature Ur	nits Adjust				
Encoding type:	Name: Size:	FICMTemU 2 bits	JntAdjET						
	Values:	Туре	Value	Scale	Offset	Interpretation			
		Logical Val	ue 0			Celsius Deg	ree(¡æ)		
		Logical Val	ue 1			Fahrenheit Degree("H)			
		Logical Val	ue 2			Not Available			

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			FICMTer	nUntAdjtR	eqA			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Group Name N/A		Initial Value false	
Timings:	gs: Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Ficm Temp	erature Unit	s Adjust Request					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value					
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE	

			FICMTyre	Pressur	eUntAdj			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gr	roup Name N/A Update Bit No		it	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub [ms] 30.0		Max. Age [ms] 100.000		Read Interval [ms]
Description:	Ficm Tyre I	Pressure Uni	its Adjust					
Encoding type:	Name: Size:	FICMTyre 2 bits	ePressureUntA	djET				
	Values:	Type Logical V	-	'alue	Scale	Offset	Int o	erpretation
		Logical V	alue 1	'			kpa	
		Logical V	alue 2				Psi	

			FICMTyrePre	ssureUntA	djtReqA		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name 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:	Ficm Tyre F	Pressure Un	its Adjust Reques	st			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			FICM	/ehMnt	nceS	ts		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	Group Name N/A		Update Bit No	Initial Value 0
Timings:	mings: Interface Mode/FuncVerFolder/Function FM_Normal_HS			[m		tency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Front Infota	inment Con	trol Module Veh	icle Ma	intena	nce Statu	S	
Encoding type:	Name: Size:	FICMVehN 2 bits	IntnceStsET					
	Values:	Туре	Valu	ie S	cale	Offset	Interpreta	tion
		Logical Val	ue 0				Status OK	
	Logical Value 1 Suggest to Maintain							
		Logical Val	ue 2				Maintain ir	nmediately
		Logical Val	ue 3				Reserved	

			F	LTirePrs			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 55
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 50.000		Max. Age [ms] 500.000	Read Interval [ms]
Description:	Front Left T	ire Pressure)				
Encoding type:	Name: Size:	FLTirePrs 7 bits	ET				
	Values:	Type Physical F	Range	Value 0 - 127	Scale 4	Offset 0	Interpretation Kpa

			FL [*]	TirePrsV			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 0
Timings:	ngs: Interface Mode/FuncVerFolder/Function FM_Normal_HS			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 id info 4				
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Valid Invalid

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				FLTireSts			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Update Bit No	Initial Value
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ ILHS	Function	Sub. Latency [ms] 50.000		Max. Age [ms] 500.000	Read Interval [ms]
Description:	Front Left T	ire Status					
Encoding type:	Name: Size:	FLTireStsE 3 bits	T				
	Values:	Type Logical Valu	ue 1 ue 2 ue 3 ue 4 ue 5 ue 6	e Scale	Offset	Interpretation Normal Unkown Pressure Low Quick leak Pressure High Temperature Axle Pressure Battery Low	n High

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

			FL1	TireTemV			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		o Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	Sub. La [ms] 30.000	atency	Max. Age [ms] 200.000	Read Interval [ms]		
Description:	Front Left T	ire Tempera	ature Validity				
Encoding type:	Name: Valid4Coding Size: 1 bit Description: valid info 4						
	Values:	_	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Valid Invalid

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			FrtF	ogLghtOn			
Size [bits]	Type 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 . La [ms] 50.000	•	Max. Age [ms] 500.000	Read Interval [ms]
Description:	Front Fog L	ight On					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			F	RTirePrs			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 55
Timings:	Interface Mode/FuncVerFolder/Function			Sub. [ms]	Sub. Latency [ms]		Read Interval [ms]
	FM_Norma	I_HS		50.00	0	500.000	
Description:	Front Right	Tire Pressu	re				
Encoding type:	Name: Size:	FLTirePrs 7 bits	ET				
	Values:	Type Physical F	Range	Value 0 - 127	Scale 4	Offset 0	Interpretation Kpa

			FR	TirePrsV				
Size [bits]	Type 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			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:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Valid Invalid	

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				FR	TireSts				
Size [bits]	Type Unsigned	Info Type State	Generatio Type Periodic		Group Name N/A			Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function		Sub. Latency [ms] 50.000		[n	lax. Age ns] 00.000	Read Interval [ms]
Description:	Front Right	Tire Status							
Encoding type:	Name: Size: Values:	FLTireStsE 3 bits Type Logical Value	Val	ue	Scale	Offset		erpretation	ı
		Logical Value Va	ue 1 ue 2 ue 3 ue 4				Unl Pre Qui Pre	cown ssure Low ck leak ssure High	
		Logical Valu	ue 6				Axle	•	imbalance

			FI	RTireTem			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Type Group Name		Update Bit No	Initial Value 45
Timings:		cVerFolder/	Function	[ms]	• •		Read Interval [ms]
Description:	FM_Norma	Tire Tempe	rature	30.000	J	200.000	
Encoding	Name:	FLTireTer					
type:	Size:	7 bits					
	Values:	Туре		Value	Scale	Offset	Interpretation
		Physical R	Range	0 - 127	2	-60	-

			FR	TireTemV			
Size [bits]	Type 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			Sub. La [ms] 30.000	•	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Front Right	Tire Tempe	rature Validity				
Encoding type:	Name: Size: Description	1 b	id4Coding it d info 4				
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Valid Invalid

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			FrtPsng	DoorOpenSts					
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A	Update Bit No	Initial Value 0			
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/ al_HS	Function	Sub. Latency [ms] 50.000	Max. Age [ms] 100.000	Read Interval [ms]			
Description: Front Passenger Door Open Status									
Encoding type:	ing Name: FrtPsngDoorOpenStsET Size: 2 bits Values: Type Value Scale Offset Interpretation								
		gical lue 0		Front Passenger Door	Closed				
		gical lue		Front Passenger Operajar statu	n(latch switch	cann _i ®t detect door			
		gical 2 lue 2		Front Passenger Door Ajar					
		gical lue		Front Passenger Door	Full Open				

			FrtS	ideLghtF			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name 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:	Front Side	Light Failed					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			Fı	ıelCsump			
Size [bits]	Type Unsigned	IVDE		1	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:	Fuel Consu	ımption					
Encoding type:	Name: Size: Values:	FuelCsum 12 bits Type Physical R		Value 0 - 4095	Scale 16	Offset 0	Interpretation microlitre

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				Gen	rSta			
Size [bits]	Type Unsigned	Info Type State	Generatio Type 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:	Size: 3 Values: 1 L L L L L L L L L L L L L L L L L L L	GenrStaET B bits Type Logical Value Logical Value	9 1 2 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

			HDO	CSysSts .			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Lat [ms] 30.000	tency	Max. Age [ms] 100.000	Read Interval [ms]
Description:	Hill Descen	t Control Sy	stem Status				
Encoding type:	Name: Size:	3 bits	CtrlSysStsET				
	Values:	Type Logical Val Logical Val Logical Val	lue 1 lue 2	Scale	Offset	Interpreta Normal Enabled Active	tion
		Logical Val				Failed Temporari	ly Inhibited

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			Hou	rOfDayA	dj		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Update Bit No	Initial Value
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS		[ms]	Sub. Latency [ms] 30.000		Read Interval [ms]	
Description:		y 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]	Type Boolean	Info Type State	Generation Type Periodic	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		10.00	0	200.000	
Description:	NM signal:	the ATC/AC	ETC uses this si	gnal whe	n it wants t	to keep the netwo	ork awake.
Encoding	Name:	• —	ork_coding				
type:	Size:	1 bit					
	Values:	Type	Value	Scale	Offset	Interpretation	
		Logical Valu	ue 0			no keep netwo	rk request
	Logical Value 1 keep network re				equest		

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

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			keep_n	etwork_F	ICM		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit Yes	Initial Value false
Timings:	mings: Interface Mode/FuncVerFolder/Function FM_Normal_HS		Function	Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]
			10.000		200.000		
Description:	NM signal:	the FICM/IC	E uses this signa	al when it	wants to k	eep the network	awake.
Encoding	Name:	keep_netw	ork_coding				
type:	Size:	1 bit					
	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]	Type Boolean	Info Type State	Generation Type Periodic	N/A Bit N/A Yes		Update Bit Yes	Initial Value false
Timings:		erface de/FuncVerFolder/Function			Latency	Max. Age [ms] 200.000	Read Interval [ms]
Description:		_	ses this signal wh	10.00 nen it war			ake.
Encoding type:	Name: Size:	keep_netw 1 bit	ork_coding				
	Values:	Type Logical Value Logical Value		Scale	Offset	Interpretation no keep netwo keep network i	rk request

			LB	rkLghtF			
Size [bits]	Type 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] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Left Brake	Light Failed					
Encoding type:	Name: Size: Descriptior	1 b	oleanCoding it olean value				
	Values:		oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			LDipd	BeamLght	:F		
Size [bits]	Type 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] 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:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			LDire	nIndLghtF	=			
Size [bits]	Type 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] 30.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Left Directi	on Indication	Light Failed					
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value							
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE	

			L	DircnIO			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name 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					200.000	
•		on Indication Driver that	On Left Hand Directi	on Indicate	Light was	s On	
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	i: boo	lean value				
	Values:	Тур	oe	Value	Scale	Offset	Interpretation
		Log	jical Value	0			FALSE
		Log	jical Value	1			TRUE

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Type Unsigned Interface Iode/Func	Info Type State	Generatio Type Periodic		Group N N/A		Update Bit No	Initial Value 0
	.\/ Г а. - /Г						
M_Normal		unction		Sub. Late [ms] 30.000	ncy	Max. Age [ms] 200.000	Read Interval [ms]
oadspace	Open Status)					
lame:	LdspcOpe 2 bits	nStsET					
alues:	Logical Val Logical Val	ue 0 ue 1 ue 2) 	Scale	Offset	Load Spa Load Spa Reserved	ace Closed ace Open d
		ues: Type Logical Val Logical Val Logical Val	ues: Type V Logical Value 1 Logical Value 2	ues: Type Value Logical Value 0 Logical Value 1 Logical Value 2	ues: Type Value Scale Logical Value 0 Logical Value 1 Logical Value 2	ues: Type Value Scale Offset Logical Value 0 Logical Value 1 Logical Value 2	ues: Type Value Scale Offset Interpret Logical Value 0 Load Spa Logical Value 1 Load Spa Logical Value 2 Reserved

			Lgh	tSwPos	Sts			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gr	Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub [ms 30.0	-	[Max. Age [ms] 200.000	Read Interval [ms]
Description:		n Position St Posistion o						
Encoding type:	l	LghtSwPos 3 bits	StsET					
		Type Logical Valu	e 1 e 2 e 3 e 4 e 5 e 6	Scale	Offset	Swite Swite Side Dipp	rved	to" position

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

			Minut	eOfHour	Adj		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Update Bit No	Initial Value
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS			Sub. Latency [ms] 30.000		Max. Age [ms] 2000.000	[ms]
Description:	Minute Of H	- Hour Adjustn	nent ent from infotain	ment			
Encoding type:	Name: Size: Values:	MinuteOf 6 bits Type	HourET	Value	Scale	Offset	Interpretation
		Physical F	Range	0 - 59	1	0	

			M	lusSrcN	ld				
Size [bits]	Type Unsigned	d Info Type State Generation Type Periodic		G	Group Name N/A		date Bit No	Initial Value 15	
Timings:		erface de/FuncVerFolder/Function _Normal_HS			Sub. Latency Ma [ms] [m 30.000 10			Read Interval [ms]	
Description:	Music Sour	ce Mode							
Encoding type:	Name: Size: Values:	MusicSo 4 bits Type		Value	Scale	Offset	Inte	erpretation	
		Logical V	alue () 1	23.0		OF AM	F 	
		Logical Value Logical Value		<u>2</u> 15			FM inva		

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				Na	vDircn			
Size [bits]	Type Unsigned	Info Type State	Genera Type Period	e	Group Name N/A		Update Bit No	Initial Value 63
Timings:	Interface Mode/Fund FM_Norma	ncVerFolder/Function al_HS			Sub. La ² [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			Right After	
		Logical Val		7			Back	i an la 4
		Logical Val		8 9			Driver Strai Arrive Midd	•
		Logical Val		9 10			into Circle 2	
		Logical Val		11			Out Cirle Z	
		Logical Val		12			Arrive Srvice	
		Logical Val		13			Arrive Toll	
		Logical Val		14			Arrive the D	
		Logical Val		15			into tube	Jostifiation
		Logical Val		63			invalid	

			ı	NavDist			
Size [bits] 15	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A Bi		Initial Value 32767	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Ag [ms] 100.000	[ms]
Description:	Navigation	Distance					
Encoding type:	Name: Size: Values:	NavDistE 15 bits Type Logical Va	V	/alue 2767	Scale	Offset	Interpretation invalid

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			N	avDistU	nit				
Size [bits]	Type Unsigned State Generation Type Periodic			G	Group Name N/A		ite	Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms	Sub. Latency [ms] 30.000		ge)	Read Interval [ms]	
Description:	Navigation	Distance Un	it						
Encoding type:	Name: Size:	NavDistU	JnitET						
	Values:	Type Logical Value Val	alue	Value 0 1	Scale	Offset	Interp m 0.1km	oretation	

			netw	vork_m	ode				
Size [bits]	Type Unsigned	Info Type State	Generation Type Sporadic	1	Group Name BCM_HSC1_FrI01		late it	Initial Value	
Timings:	ings: Interface Mode/FuncVerFolder/Function				o. Latency	Max. A	\ge	Read Interval [ms]	
	FM_Normal_HS				10.000)	0.000	
	FM_Silent_HS				000	50.000)	0.000	
Description:		this signal co		ded mo	de of the netv	vork. This	signal	controls the frame	
Encoding	Name:	network	modeET						
type:	Size:	8 bits							
	Values:	Type	V	/alue	Scale	Offset	Inte	erpretation	
		Logical Va	alue 0)			star	t-up	
	Logical Value		alue 1	1			shu	tdown	
	Logical Value) -			nori	mal	

				OdoSecy			
Size [bits]	Type Bytes	Info Type State	· IVDe		Name ⁄A	Update Bit No	Initial Value 0x00 0x00 0x00
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency Max. Age ms] [ms] 00.000 300.000		Read Interval [ms]
Description:	Odometer Odo Backu	,					
Encoding type:	Name: Size: Values:	OdoSecyE 24 bits Type Physical Ra	V	alue - 16777215	Scale	Offset	Interpretation km

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			PE	PSAntFlt			
Size [bits]	Type 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] 30.000		Max. Age [ms] 200.000	Read Interval [ms]
Description:	Passive En	try Passive S	Start Antenna Fa	ult			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			PwrMo	MstrAccry	/A		
Size [bits]	Type 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			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:	Typ Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Inactive Active

			PwrMdMs	strAccryW	kupA		
Size [bits]	Type Boolean State Generation Type State Periodic		Group Name N/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:	Power Mod	le Master Ac	cessory Wakeup	Active			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			PwrN	ldMstrlgn <i>l</i>	4		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				atency	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:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			PwrMdl	MstrRunCr	kA		
Size [bits]	Type 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			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:	Typ Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Inactive Active

			RE	rkLghtF			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	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:	Right Brake	Light Failed	k				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	-	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			RDipd	BeamLght	:F		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name N/A Update Bit No		Initial Value false	
Timings:	imings: Interface Mode/FuncVerFolder/Function FM_Normal_HS				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:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			RDire	nIndLghtF	=		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name 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:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			R	DircnIO			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund	Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]		
	FM_Normal_HS			30.000 200		200.000	
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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			R	doFrqcVal			
Size [bits] 16	Type Unsigned	I IVNA			Group Name N/A		Initial Value 65535
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS		Sub. La [ms] 30.000			Read Interval [ms]	
Description:	Radio Freq	uency Value					
Encoding type:	Name: Size: Values:	RdoFrqcV 16 bits Type Physical R Logical Val	ange	Value 0 - 65534 65535	Scale 0.1	Offset 0	Interpretation invalid

			Re	vsLghtF			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	· -	Name I/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:	Reverse Li	ght Failed					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	,	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			R	LTirePrs			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	1	u p Name N/A	Update Bit No	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		Value 0 - 127	Scale 4	Offset 0	Interpretation Kpa

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			RL	TirePrsV			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value 0
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	Validity				
Encoding type:	Name: Size: Description	1 b	id4Coding it id info 4				
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Valid Invalid

		RI	TireSts			
Type Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Update Bit No	Initial Value 0
Interface Mode/FuncVerFolder/Function FM_Normal_HS		[ms]	Sub. Latency Max. Age [ms] [ms] 30.000 500.000		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	1	Scale	Offset	Interpretation Normal Unkown Pressure Low Quick leak Pressure High Temperature Hi Axle Pressure in Battery Low	J
	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 State Periodic Interface Mode/FuncVerFolder/Function FM_Normal_HS Rear Left Tire Status Name: FLTireStsET Size: 3 bits Values: Type Value Logical Value 1 Logical Value 2 Logical Value 2 Logical Value 3 Logical Value 4 Logical Value 5 Logical Value 5 Logical Value 6	Interface Sub. Mode/FuncVerFolder/Function [ms] FM_Normal_HS 30.00 Rear Left Tire Status Name: FLTireStsET Size: 3 bits Values: Type Value Scale Logical Value 1 Logical Value 2 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 Sub. Latency N/A Interface Mode/Func Ver Folder / 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 2 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/Func Ver Folder/Function FM_Normal_HS Sub. Latency [ms] [ms] [ms] 500.000 Rear Left Tire Status Name: FLTireStsET Size: 3 bits Values: Type Value Scale Offset Interpretation Logical Value 1 Unkown Logical Value 2 Logical Value 3 Logical Value 3 Logical Value 4 Pressure Low Logical Value 5 Temperature Hi Logical Value 5 Temperature Hi Logical Value 6 Axle Pressure is

			RI	_TireTem			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit No	Initial Value 45
Timings:	Interface Mode/FuncVerFolder/Function				Sub. Latency [ms]		Read Interval [ms]
	FM_Normal_HS			30.000		200.000	
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	TireTemV			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. La [ms] 30.000	atency	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Rear Left T	ire Tempera	ture Validity				
Encoding type:	Name: Size: Description	1 b	id4Coding it id info 4				
	Values:	-	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Valid Invalid

			RRDo	orOpenSts				
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A	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:	Rear Right	Door Open	Status					
Encoding type:	Name: RRDoorOpenStsET Size: 2 bits Values: Type Value Scale Offset Interpretation							
	Log Val	gical ue 0		Rear left and right Do	or Closed			
	Log Val	n(For latch swit	tch cannot detect					
	Log Val	gical ue 2		Rear left or right Door Ajar				
	Log Val	gical ue 3		Rear left or right Door	r Full open			

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			RrF	ogLghtF			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name 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:	Rear Fog L	ight Failed					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			RrF	ogLghtOn			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name I/A	Update Bit No	Initial Value false
Timings:	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: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			RrS	ideLghtF			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		o Name I/A	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:	Rear Side L	ight Failed					
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	-	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			R	RTirePrs			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit No	Initial Value 55
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. I [ms] 30.00	Latency	Max. Age [ms] 500.000	Read Interval [ms]
Description:	Rear Right	Tire Pressur	е				
Encoding type:	Name: Size: Values:	FLTirePrs 7 bits Type		Value	Scale	Offset	Interpretation
		Physical R	Range	0 - 127	4	0	Kpa

			RR	TirePrsV				
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	I -	p Name N/A	Update Bit No	Initial Value 0	
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 500.000	Read Interval [ms]	
Description:	Rear Right	Tire Pressui	re Validity					
Encoding type:	Name: Valid4Coding Size: 1 bit Description: valid info 4							
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Valid Invalid	

	RRTireSts										
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Update Bit No	Initial Value 0				
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/l	Function	Sub. [ms] 30.00	Latency 0	Max. Age [ms] 500.000	Read Interval [ms]				
Description:	Rear Right	Tire Status									
Encoding type:	Name: Size:	FLTireStsE									
	Values:	Type Logical Valu	1	Scale	Offset	Interpretation Normal Unkown Pressure Low Quick leak Pressure High Temperature H Axle Pressure Battery Low	ligh				

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Type Unsigned Interface Iode/Fund	Info Type State	Generation Type Periodic	1	up Name N/A	Update Bit No	45
	·VerFolder/		Sub. I	atoncy	May Aga	Dood Intonial
M_Normal		Function	[ms] 30.000	•	Max. Age [ms] 200.000	Read Interval [ms]
ear Right	Tire Temper	ature				
lame: iize: 'alues:	7 bits Type		Value	Scale	Offset	Interpretation
la Siz	me: ze:	me: FLTireTer ze: 7 bits lues: Type	ze: 7 bits	me: FLTireTemET ze: 7 bits lues: Type Value	me: FLTireTemET ze: 7 bits lues: Type Value Scale	me: FLTireTemET ze: 7 bits lues: Type Value Scale Offset

			RR ⁻	FireTemV				
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		o Name I/A	Update Bit No	Initial Value	
Timings:	Mode/FuncVerFolder/Function		Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]		
FM_Normal_HS			30.000		200.000			
Description:	Rear Right	Tire Tempe	rature Validity					
Encoding	Name: Va		lid4Coding					
type:	Size:	Size: 1 bit						
	Description	: val	llid info 4					
	Values: Tyl		ре	Value	Scale	Offset	Interpretation	
			gical Value	0			Valid	
		Logical Value		1			nvalid	

			Sc	urtAlrn	nSts			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	(Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/I	Function	[m	ib. Latend is] .000		Max. Age [ms] 300.000	Read Interval [ms]
Description:	Security Ala	arm Status						
Encoding type:		ScurtAlrmSt 3 bits	tsET					
		Type Logical Value	e 1 e 2 e 3 e 4 e 5 e 6	Scale	Offset	off part a full ala not us not us part a	ed larm with voluarm with volu	olumetrics

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			Scurt	KeyBatLo _\	N		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/ al_HS	Function	Sub . La [ms] 30.000	•	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Security Ke	ey Battery Lo	W				
Encoding type:	Size: 1 bit		oleanCoding it olean value				
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			Scu	rtKeylnvd				
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		o Name 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] 200.000	Read Interval [ms]	
Description:	Security Ke	ey Invalid						
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value							
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE	

			Secs	OfMinute	Adj		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Update Bit No	Initial Value
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS		Sub. Latency [ms] 30.000		Max. Age [ms] 2000.000	[ms]	
Description:	Seconds O	f Minute Adji	ustment Istment from info			2000.000	
Encoding type:	Name: Size: Values:	SecsOfM 6 bits Type Physical F		Value 0 - 59	Scale	Offset 0	Interpretation

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			ShifterLc	kRIseBrkF	ReqA		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]		
Description:	Shifter Lock	k Release Br	ake Request Act	ive			
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			SIA	OdoSecy			
Size [bits]	Type Bytes	Info Type State	Group Nam N/A	ne	Update Bit No	Initial Value 0x00 0x00 0x00	
Timings:	Interface Mode/Fur FM_Norm	ncVerFolder/l al_HS	Function	Sub. Latency [ms] 30.000	y ! [Read Interval [ms]	
Description:	Service In	terval Announ	cement Odomet	er Secondary			
Encoding type:	Name: Size: Values:	OdoSecyE 24 bits Type Physical Ra	Val	u e 16777215	Scale	Offset 0	Interpretation km

	signal_config_id									
Size [bits]	Type Unsigned	Info Type State	Generation Type Sporadic	Group Nan BCM_HSC1_I	BIT	Initial Value 28673				
Timings:	Interface Mode/Fund FM Norma	cVerFolder/	Function	Sub. Latence [ms] 10.000	y Max. Age [ms] 50.000	Read Interval [ms] 0.000				
	FM_Silent_	_		10.000	50.000	0.000				
			entification numb ey have the corre		configuration used. I or not	Read by the slave				
Encoding type:	Name: Size: Values:	signal_con 16 bits Type Logical Valu	Value	Scale Offs	et Interpretatior config: NMC/0					

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	SpdAstSysStsECM									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A			Update Bit No	Initial Value 0		
Timings:		rerface ode/FuncVerFolder/Function /I_Normal_HS		Sub. [ms] 30.00		Max. Age [ms] 100.000		Read Interval [ms]		
Description:	Description: Speed Assist System Status Engine Control Module									
Encoding type:		SpdAstSys 3 bits Type	StsECMET Value	Scale	Offset	Intori	pretation			
	values.	Logical Value Lo	ue 0 ue 1 ue 2 ue 3 ue 4 ue 5 ue 6	Scarc	Oliset	Off Active Stand Entry Overs Fault	e (Limiting dby Condition speed e (Passive	s Incorrect		

	SpdAstSysTrgtSpd								
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	up Name N/A	Update Bit No	Initial Value 0		
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS			Sub. [ms] 30.00	Latency	Max. Age [ms] 100.000	Read Interval [ms]		
Description:	Speed Assi	ist System T	arget Speed						
Encoding type:	Name: Size: Values:	SpdAstSys 15 bits Type Physical Ra		alue - 32767	Scale 0.015625	Offset 0	Interpretation		

			Srflr	nitnRmndr			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	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:	Sunroof Init	tialization Re	eminder				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			SrfO	penRmndr	•		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name 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:	Sunroof Op	en Reminde	er				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			SSBE	nOffRmndr						
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A	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 I	Button Engir	e OFF Reminde	r						
Encoding	Name: SS	BEnOffRmr	ndrET							
type:	Size: 2 b	its								
	Values: Ty	oe V	alue Scale Offse	t Interpretation						
	Log Val	gical ue 0		no warning request						
	Log Val	gical ue 1		Press Button Again	To Turn Engine	e Off Reminder				
	Log Val	gical ue 2		Long Press Button To Turn Engine Off Reminder						
	Log Val	gical ue 3		Double Press Button Again To Turn Engine Off Reminder						

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	StrgWhlAngSnsrCalSts									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	U	pdate Bit No	Initial Value 0		
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS		[ms	o. Latency 6] 000	Max. Age [ms] 100.000		Read Interval [ms]			
Description:	Steering W	heel Angle S	Sensor Calibratio	n Statu	S					
Encoding type:	Name: Size:	StrgWhl/ 2 bits	AngSnsrCalStsE	ĒΤ						
	Values:	Type	V	alue	Scale	Offset	Int	erpretation		
		Logical V	alue 0				Un	konw		
		Logical V	alue 1				Es	timated		
		Logical V	alue 2				Ca	llibrated		
		Logical V	alue 3				Un	konw		

			StrgWh	nIAngSnsr	Flt		
Size [bits]	Type Boolean	Info Type State	· · I VDe		p Name N/A	Update Bit No	Initial Value false
Timings:	Mode/FuncVerFolder/Function			Sub. La [ms]	•	Max. Age [ms]	Read Interval [ms]
D i - ti	FM_Norma		Nama	30.000		100.000	
Description:	Steering vv	neel Angle S	Sensor Fault				
Encoding	Name:	Во	oleanCoding				
type:	Size:	1 b	it				
	Description	i: boo	olean value				
	Values: Ty		oe	Value	Scale	Offset	Interpretation
		Log	gical Value	0			FALSE
		Log	gical Value	1			TRUE

			Sys	OpnlMd			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/F al_HS	unction	Sub. [ms] 30.00	L atency	Max. Age [ms] 300.000	Read Interval [ms]
Description:	System Op	erational Mod	le				
Encoding type:		SysOpnIMdET bits	Ī				
	L L L	ogical Value ogical Value ogical Value ogical Value ogical Value ogical Value	Value Scale 0 1 2 3 4 5	Offset	Normal Mo Manufactur Transit Moo Show Roor Storage Mo	de ring Mode de m	ning(Reserve)

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			Sys	sPwrMd			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	Sub. Latency [ms] 20.000		Max. Age [ms] 100.000	Read Interval [ms]		
Description:	System Pov	wer Mode					
Encoding	Name:	Sy	sPwrMd				
type:	Size:	2 b	its				
	Description	: Sys	stem Power Mode)			
	Values:	Ty	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

			SysF	wrMdV				
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Name	Update Bit No	Initial Value 1	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 20.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	System Po	wer Mode V	alidity					
Encoding type:	Name: Size: Description	1 b	lidityCoding it lidity Encode Type					
	Values:	,	pe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation Valid Invalid	

			;	SysVol			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit No	Initial Value
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000		Max. Age [ms] 300.000	Read Interval [ms]
Description:	Battery Vol	tage					
Encoding type:	Name: Size: Values:	SysVolET 8 bits Type Physical F		Value 0 - 255	Scale 0.1	Offset 3	Interpretation V

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				Sys	VolMd			
Size [bits]	Type Unsigned	Info Type State	Generati Type Periodi		Group Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	ncVerFolder/Function			Sub. Latency [ms] 30.000		Max. Age [ms] 300.000	Read Interval [ms]
Description:	System Vol	Itage Mode						
Encoding type:	Name: Size:	SysVolMd 2 bits	ET					
	Values:	Туре	\	/alue	Scale	Offset	Interpretati	ion
		Logical Val	ue ()			Normal	
		Logical Val	ue 1				Low System	n Voltage
		Logical Val	ue 2	2			High Syster	n Voltage
		Logical Val	ue 3	3			em Voltage	

			Sys	VolMdV				
Size [bits]	Type Unsigned	Info Type State	· I IVDE		Group Name N/A		Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 300.000	Read Interval [ms]	
Description:	System Vol	tage Mode \	/alidity					
Encoding type:	Name: Size: Description	1 b	idityCoding it idity Encode Type	,				
	Values:	Tyj Log	, ,,	Value 0 1	Scale	Offset	Interpretation Valid Invalid	

			;	SysVolV			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gı	roup Name N/A	Upda Bit No	initiai value
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			[ms	Sub. Latency Max. Ag [ms] [ms] 30.000 300.000		[ms]
Description:	Battery Vol	tage Validity					
Encoding type:	Name: Size: Values:	InvalidE1 1 bit Type Logical Volume Logical Volume	alue	Value 0 1	Scale	Offset	Interpretation Valid Invalid

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			TakeK	eyOutRmn	dr		
Size [bits]	Type 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 . La [ms] 30.000	atency	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Take Key C	Out Reminde	r				
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			TC	SOpngl	V Id				
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gı	roup Name N/A	Upd Bi	t	Initial Value 0	
Timings:		rerface ode/FuncVerFolder/Function /I_Normal_HS			b. Latency [] []	Max. A [ms] 100.00	•	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	alue	1			Nor	mal	
		Logical Value				Off		Road	

			TC	SOpng\$	Sts			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Suk [ms	-	[r	lax. Age ns] 00.000	Read Interval [ms]
Description:	Traction Co	ontrol System	Operating Stat	us				
Encoding type:	Name: Size:	TCSOpno 3 bits						
	Values:	Type	V	/alue	Scale	Offs	set Int	terpretation
		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]	Type 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] 30.000		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:	-	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			Time	DspFm	tAdj			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gı	oup Name N/A	l Bit		Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS				ub. Latency Max. Age [ms] .000 2000.000			Read Interval [ms]
Description:		ay Format Aday Format Ad	djustment djustment from i	nfotainm	ent			
Encoding type:	Name: Size: Values:	TimeDsp 1 bit Type Logical Value Logical Value	\ alue (/alue)	Scale	Offset	12 l	erpretation hour mode hour mode

			TPMSA	utoLoctn	Cm		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value true
Timings:	Interface Mode/Fund FM_Norma	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:	Typ Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			٦	ΓPMSF			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	Sub. Latency [ms] 50.000		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:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			TPMSI	dficnLrnC	m		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value true
Timings:	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 C	Complete		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			TPMST	irePrsLow	·IO		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 50.000		Max. Age [ms] 500.000	Read Interval [ms]
Description:	Tire Pressu	re Monitor S	System Tire Press	sure Low In	dication O	n	
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	-	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			TPMS	SWntrMdA			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name 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	de Active			
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	•	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			TrNonE	msnRltdMa	alfA		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		o Name I/A	Update Bit No	Initial Value false
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. La [ms] 30.000	atency	Max. Age [ms] 2000.000	Read Interval [ms]
Description:	Transmissi	on Non Emis	sions Related M	alfunction A	Active		
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value				
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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			ITSI	nftLvrPos			
Size [bits] 4	Type Unsigned	Info Type State	Generation Type Periodic	Group Nam N/A	ne L	lpdate Bit No	Initial Value 0
Timings:	1	cVerFolder/	Function	Sub. Latency [ms]	[ms	-	Read Interval [ms]
	FM_Norma	ม_HS on Shift Leve		30.000	200	.000	
	\$0=Betwee \$1=Park R \$2=Revers \$3=Neutral \$4=Forwar \$5=Forwar \$6=Forwar \$7=Forwar \$8=Forwar \$4=Forwar	ange e Range l Range d Range A d Range B d Range C d Range D d Range E d Range F rd Range G	on :				
	For Manua \$2=Revers \$3=Neutral	Position Unkr I Transmission e Range I Range (Vali	on: only below sta		ted for Ne	utral ranç	ge)
	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F	Position Unkr I Transmission e Range I Range (Vali Position Unkr	on: only below standity on MT vehicl		ted for Ne	utral ranç	ge)
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name:	Position Unkr I Transmission e Range I Range (Valit Position Unkr TrShftLvrP	on: only below standity on MT vehicl		ted for Ne	utral ranç	ge)
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkr I Transmisside Range I Range (Vali Position Unkr TrShftLvrP 4 bits	on: only below standing on MT vehicles	es is only protect			
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name:	Position Unkr I Transmission e Range I Range (Valit Position Unkr TrShftLvrP 4 bits Type	on: only below standity on MT vehicles oown cosCoding Value		et Inter	pretatio	n
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkr I Transmissic e Range I Range (Vali Position Unkr TrShftLvrP 4 bits Type Logical Valu	on: only below standity on MT vehicles own cosCoding Value ue 0	es is only protect	et Inter Betw	pretatio leen Ran	n
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkr I Transmisside Range I Range (Vali Position Unkr TrShftLvrP 4 bits Type Logical Valu	on: only below standing on MT vehicle own cosCoding Value ue 0 ue 1	es is only protect	et Inter Betw Park	pretatio een Ran Range	n ges
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkr I Transmission e Range (Valide Position Unkrender TrShftLvrP 4 bits Type Logical Valud Logical Valud	on: only below standing on MT vehicle own CosCoding Value ue 0 ue 1 ue 2	es is only protect	et Inter Betw Park Reve	pretation een Ran Range erse Ran	n ges ge
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkr I Transmission e Range (Valide Position Unkrede TrShftLvrPer 4 bits Type Logical Valud Logical Valud	on: only below standing on MT vehicle own rosCoding Value ue 0 ue 1 ue 2 ue 2 ue 3	es is only protect	et Inter Betw Park Reve Neut	pretation een Ran Range erse Rang ral Rang	n ges ge
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkroll Transmission Range (Valide Range (Valide Range) Range (Valide Range) Range (Valide Range) TrShftLvrP 4 bits Type Logical Valide Range (Valide Range) Logical Valide Range (Valide Range) Logical Valide Range (Valide Range)	con: only below stated the control of the control o	es is only protect	et Inter Betw Park Reve Neut Forw	pretation een Ran Range erse Rang ral Rang ard Rang	n ges ge e ge A
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkronistic Plansmission Enange (Valiposition Unkronistro) TrShftLvrP 4 bits Type Logical Value Logical	on: only below standing on MT vehicle own CosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5	es is only protect	et Inter Betw Park Reve Neut Forw	pretation een Ran Range erse Rang ral Rang ard Rang ard Rang	n ges ge e ge A ge B
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkronical Transmission Enange (Valide Range (Valide Position Unkronical Valudogical Valudogi	on: only below standing on MT vehicle own CosCoding Value ue 0 ue 1 ue 2 ue 3 ue 3 ue 4 ue 5 ue 6	es is only protect	Park Park Reve Neut Forw Forw	pretation een Ran Range erse Rang ral Rang ard Rang ard Rang ard Rang	n ges ge e ge A ge B ge C
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkroll Transmission e Range (Valide Range (Valide Range) Valide Range (Valide Rang	on: only below standity on MT vehicle nown rosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5 ue 5 ue 6 ue 7	es is only protect	et Inter Betw Park Reve Neut Forw Forw Forw	pretation een Range erse Rang ral Rang ard Rang ard Rang ard Rang	n ges ge e ge A ge B ge C
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkramission of Range (Valide Range) Range (Valide Range) Range (Valide Range) Range (Valide Range) A bits Type Logical Value	on: only below standity on MT vehicle nown vosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5 ue 6 ue 7 ue 8	es is only protect	et Inter Betw Park Reve Neut Forw Forw Forw Forw	pretation een Range erse Range ral Range ard Range ard Range ard Range ard Range	n ges ge e ge A ge B ge C ge D ge E
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkrological Value Logical Value Lo	on: only below standing on MT vehicle own PosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5 ue 6 ue 7 ue 8 ue 9	es is only protect	et Inter Betw Park Reve Neut Forw Forw Forw Forw Forw Forw	pretation een Range rase Range ard Range ard Range ard Range ard Range ard Range ard Range	n ges ge e ge A ge B ge C ge D ge E
Encoding type:	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkroosition Value Logical Valu	on: only below standing on MT vehicle own PosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5 ue 6 ue 7 ue 8 ue 9 ue 10	es is only protect	Pat Inter Betw Park Reve Neut Forw Forw Forw Forw Forw Forw Forw Forw	pretation een Range erse Range ard Range ard Range ard Range ard Range ard Range ard Range	n ges ge e ge A ge B ge C ge D ge E ge F
•	\$F=Lever F For Manua \$2=Revers \$3=Neutral \$F=Lever F Name: Size:	Position Unkrological Value Logical Value Lo	on: only below standity on MT vehicle nown rosCoding Value ue 0 ue 1 ue 2 ue 3 ue 4 ue 5 ue 6 ue 7 ue 8 ue 9 ue 10 ue 11	es is only protect	et Inter Betw Park Reve Neut Forw Forw Forw Forw Forw Forw Forw Forw	pretationeen Rangerse Rangard	n ges ge e ge A ge B ge C ge D ge E ge F

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			TrShf	tLvrPosV	,		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	c VerFolder/ IL_HS	Function	Sub. La [ms] 30.000	•	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Transmissi	on Shift Leve	er Position Validity	/			
Encoding type:	Name: Size: Description	1 b	lidityCoding it idity Encode Type	;			
	Values:	Ty Log	, , ,	Value 0 1	Scale	Offset	Interpretation Valid Invalid

			Т	rShftP	trnASts			
Size [bits]	Type Unsigned	Info Type State	Generatio Type Periodic		Group I		Update Bit No	Initial Value 0
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/l al_HS	unction		Sub. Late [ms] 30.000	ency	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Transmissi	on Shift Patte	ern Active St	atus				
Encoding type:		TrShftPtrnA\$ 3 bits	StsET					
		Type Logical Value Logical Value Logical Value Logical Value Logical Value Logical Value	1 2 2 3 4 4 5 5	Scale	Offset	Default Shift Pa Shift Pa Shift Pa Shift Pa PT Nor	retation t Shift Pattern A attern 1 Active attern 2 Active attern 3 Active attern 4 Active n-Protection Pa	attern Active
		Logical Value	e 6			PT Pro	tection Pattern	Active

			TrTapU	JpTapD	wnMdSts	5		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Group Na N/A	ame	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_HS	Function	[n	ub. Laten ns] 0.000	су	Max. Age [ms] 200.000	Read Interval [ms]
Description:	Transmissi	on Tap Up T	ap Down Mode	e Status				
Encoding type:		TrTapUpTa p 2 bits	oDwnMdSts					
	Values:	Туре	Value	Scale	Offset	Interp	retation	
		Logical Valu	e 0			No Ac	tivation	
		Logical Valu	e 1			Driver	Shift Control	Active
		Logical Valu	e 2			Electro	onic Range S	elect Active

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	VehLckngSta								
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	1	Group N a N/A	ame	Update Bit No	Initial Value 7	
Timings:	Interface Mode/Fund FM_Norma	e IncVerFolder/Function		[n	[ms] [ms]		Max. Age [ms] 200.000	Read Interval [ms]	
Description:	Vehicle Loc	cking State							
Encoding type:	Size: Values:	VehLckngS 3 bits Type Logical Valu Logical Valu Logical Valu Logical Valu Logical Valu	Value e 0 e 1 e 2 e 3 e 4	Scale	Offset	Unlock Signal Interior Exterio Super	Position Ent Locked r Locked ocked	ry Unlocked	
		Logical Valu Logical Valu Logical Valu	e 6			Reserv Reserv Unknow	red		

			Vehl	LdShedLvI		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fur FM_Norm	ncVerFolder/ al_HS	/Function	Sub. Latency [ms] 30.000	Max. Age [ms] 4000.000	Read Interval [ms]
Description:		ad Shed Lev for load she				
Encoding type:	Size: 3	ehLdShedLv bits				
	Values: Ty	/pe V	alue Scale Offse	t Interpretation		
		ogical 0 alue		No Power Risk		
	I	ogical alue 1		Low Power Risk		
		ogical alue 2		Middle Power Risk		
		ogical alue 3		High Power Risk		
		ogical alue 4		Power management broken	direct current	converter(PMDC)-
		ogical alue 5		reserved		
		ogical alue 6		reserved		
		ogical alue 7		reserved		

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			•	VehOdo				
Size [bits]	Type Bytes	Info Type State	Generation Type Periodic	Group Na N/A	ame	Update Bit No	Initial Value 0x00 0x00 0x00	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Laten [ms] 500.000	су	Max. Age [ms] 10000.000	Read Interval [ms]	
Description:	Vehicle Oc	dometer						
Encoding type:	Name: Size: Values:	VehOdoET 24 bits Type Physical Ra	Va	lue 16777215	Scale	Offset 0	Interpretation	

			Veh	OdoV				
Size [bits]	Type 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			Sub. Latency [ms] 500.000		Max. Age [ms] 10000.000	Read Interval [ms]	
Description:	Vehicle Od	ometer Valid	lity					
Encoding type:	Name: ValidityCoding Size: 1 bit Description: Validity Encode Type							
	Values: Type Logical Value Logical Value		Value 0 1	Scale	Offset	Interpretation Valid Invalid		

VehSideLghtSts									
Size [bits]	Type Unsigned	Info Type State	Generat Type Period	Group Nam		•	Update Bit No	Initial Value 0	
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				Sub. Latency [ms] 30.000		Max. Age [ms] 200.000	Read Interval [ms]	
Description:	Vehicle Si	de Light Statu	ıs						
Encoding type:		VehSideLght 2 bits							
		Type Logical Value Logical Value Logical Value Logical Value	0 1 2	Scale	Offset	No side li Left side l Right side		plate light on	

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			Veh	SpdAvgD	rvn		
Size [bits] 15	Type Unsigned	I IVDE		Gro	oup Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS				Latency 00	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	ilue · 32767	Scale 0.015625	Offset 0	Interpretation km/h

			VehSpo	AvgDrvn	١V		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency [ms] 30.000		Max. Age [ms] 100.000	Read Interval [ms]
Description:	Vehicle Spe	eed Average	Driven Validity				
Encoding type:	Name: Size: Description	1 b	idityCoding it idity Encode Type				
	Values:	Tyj Log		Value 0 1	Scale	Offset	Interpretation Valid Invalid

	VINBCM									
Size [bits]	Type Bytes	Info Type State	Generation Type Periodic	Group Name N/A	Update Bit No	Initial Value 0xff 0x00 0x00 0x00 0x00 0x00 0x00 0x00				
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. Latency [ms] 30.000	Max. Age [ms] 1000.000	Read Interval [ms]				
Description:	Description: VIN Code Record in BCM									

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				VSEM d					
Size [bits]	Type Unsigned	Info Type State	Generation Type 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. A [ms] 100.00	•	Read Interval [ms]	
Description:	Vehicle Sta	bility Enhand	cement Mode						
Encoding type:	Name: Size:	VSEMdE 3 bits		Val	Casla	Officer	leste		
	Values:	Type Logical Va Logical Va Logical Va	alue alue	Value 0 1 2	Scale	Offset	Off No	erpretation rmal mpetitive	

			,	/SESts				
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	Update Bit No		Initial Value 0
Timings:	Interface Mode/FuncVerFolder/Function FM_Normal_HS			Sub. Latency Max. Age [ms] [ms] 30.000 100.000		l	Read Interval [ms]	
Description:	Vehicle Sta	bility Enhan	cement Status					
Encoding type:	Name: Size:	VSEStsE 3 bits	Т					
	Values:	Type Logical V Logical V Logical V Logical V Logical V	alue 0 alue 1 alue 2 alue 3		Scale	Offset	Ina Act Fai Wa	erpretation ctive tive ult arming Up t Ready

	wake_network_AC											
Size [bits]	Type Boolean	Info Type State	Generation Type Sporadic	Group Name N/A		Update Bit Yes	Initial Value false					
Timings:	Interface Mode/Fund FM_Norma FM_Silent	_	Function	[ms] 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_ı	network	_ESCL			
Size [bits]	Type Boolean	Info Type State	Generation Type Sporadic	Group Name N/A		Update Bit Yes	Initial Value false	
Timings:	Interface Mode/FuncVerFolder/Function FM Normal HS			Sub. Latency [ms]			Max. Age [ms]	Read Interval [ms]
	FM_Norma FM_Silent_	_		10.000 10.000			200.000 200.000	
Description:	NM signal:	the ESCL us	ses this signal w	hen it w	ants to wa	ake-up	the network	
Encoding type:		wake_netwo	ork_coding					
		Type Logical Valu Logical Valu		Scale	Offset	no w	pretation ake-up netw e-up network	•

			wake_	network	_FICM			
Size [bits]	Type Boolean	Info Type State	Generation Type Sporadic	Group Name N/A		Update Bit Yes	Initial Value false	
Timings:	Interface Mode/Fun	cVerFolder/	Function	Sul [ms	o. Latency	/ Max. Age [ms]	Read Interval [ms]	
	FM_Normal_HS 10.000		200.000					
	FM_Silent_	_HS		10.000		200.000		
Description:	NM signal:	the FICM/IC	E uses this sigr	nal when	it wants to	wake-up the netw	vork	
Encoding	Name:	wake_netwo	ork_coding					
type:	Size:	1 bit						
	Values:	Туре	Value	Scale	Offset	Interpretation		
		Logical Valu	e 0			no wake-up netw	ork request	
		Logical Value 1				wake-up network request		

			wake_i	network	TPMS			
Size [bits]	Type Boolean	Info Type State	Generation Type Sporadic	Group Name N/A		пе	Update Bit Yes	Initial Value false
Timings: Interface Mode/FuncVerFolder/Function		Function	Sub. Latency [ms]			ax. Age ns]	Read Interval [ms]	
	FM_Norma	al_HS		10.000 10.000		20	200.000	
	FM_Silent_	_HS				20	00.00	
Description:	NM signal:	the TPMS us	ses this signal v	when it w	ants to wa	ake-up th	ne networl	K
Encoding	Name:	wake_netw	ork_coding					
type:	Size:	1 bit	_					
	Values:	Туре	Value	Scale	Offset	Interp	etation	
		Logical Valu	e 0			no wak	e-up netw	vork request
		Logical Valu	e 1			wake-up network request		

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			Whic	3ndVeILD	vn			
Size [bits]	Type 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			Sub. [ms] 10.00	Latency 0	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	V	alue - 16383	Scale 0.03125	Offset 0	Interpretation km/h	

			WhlGno	VelLDrvr	٦V		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	N/A		Update Bit No	Initial Value
Timings:	s: 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 Validit	ty			
Encoding type:	Name: ValidityCoding Size: 1 bit Description: Validity Encode Typ		, ,)			
	Values:	Typ Log		Value 0 1	Scale	Offset	Interpretation Valid Invalid

	WhlGndVelLNonDrvn									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value			
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ nl_HS	Function	Sub. La [ms] 10.000			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	Scale 0.03125	Offset 0	Interpretation km/h			

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			WhlGnd\	/eILNonDr	٧nV		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		Name	Update Bit No	Initial Value 1
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	Left Non Driven	Validity			
Encoding type:	Name: ValidityCoding Size: 1 bit Description: Validity Encode To		, ,	e			
	Values:	Tyj Log		Value 0 1	Scale	Offset	Interpretation Valid Invalid

			WhlG	indVelRDr	vn		
Size [bits]	Type Unsigned	Info Type State	y IVDe		Group Name N/A		Initial Value 0
Timings:	Interface Mode/Fund	Function	Sub. L [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:	Type Physical Ra		alue - 16383	Scale 0.03125	Offset 0	Interpretation km/h

			WhlGn	dVelRDrvr	ıV		
Size [bits]	Type Unsigned	Info Type State	Generation Type 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: ValidityCoding Size: 1 bit Description: Validity Encode Type		e				
	Values:	Tyj Log		Value 0 1	Scale	Offset	Interpretation Valid Invalid

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			WhlGnd	VelRNonE	Orvn			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	Initial Value 0	
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/ al_HS	Function	Sub. Latency [ms] 10.000		Max. Age [ms] 100.000	Read Interval [ms]	
Description:	Wheel Gro	und Velocity	Right Non Drive	n				
Encoding type:	Name: Size: Values:	WhiGndVe	Va	lue	Scale	Offset	Interpretation	
		Physical Ra	ange 0 -	16383	0.03125	0	km/h	

			WhlGnd\	/eIRNonDr	vnV		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value 1
Timings: Interface Mode/FuncVerFolder/Function FM_Normal_HS		Sub. Latency [ms]		Max. Age [ms]	Read Interval [ms]		
		10.000		100.000			
Description:	Wheel Grou	und Velocity	Right Non Drive	n Validity			
Encoding	Name:	Val	idityCoding				
type:	Size: 1 bit						
	Description	ı: Val	dity Encode Type				
	Values: Typ		oe	Value	Scale	Offset	Interpretation
		Log	jical Value	0			Valid
		Log	jical Value	1			Invalid

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Interface: IPK_LIN3

			PDCC	ofignSts	_ L		
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Gro	u p Name N/A	Update Bit No	Initial Value 0
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/F al_L3	unction	Sub. [ms] 50.00	Latency 0	Max. Age [ms] 400.000	Read Interval [ms]
Description:	Park Distar	nce Control C	onfiguration Sta	tus			
Encoding type:	Size: 3 Values: T L L L L L L	PDCCofignSt bits Type ogical Value ogical Value ogical Value ogical Value ogical Value ogical Value ogical Value	Value Scale 0 1 2 3 4 5 6	e Offset	3 rear sense 4 rear sense 4 rear sense	ors ors ors and 2 front ors and 4 front	

	PDCOverVolFlt_L										
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Group Name N/A		Initial Value false				
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ nl_L3	Function	Sub. La [ms] 50.000	atency	Max. Age [ms] 400.000	Read Interval [ms]				
Description:	Park Distar	nce Control (Over Voltage Fau	lt							
Encoding type:	Name: Size: Description	1 b	oleanCoding it olean value								
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE				

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			PDC	RespEr_L			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund FM_Norma	Sub. La [ms] 50.000	•	Max. Age [ms] 400.000	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:	Tyr Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

			PDCR	LSnsrFlt_	L			
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false	
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/ al_L3	Function	Sub. Latency [ms] 50.000		Max. Age [ms] 400.000	Read Interval [ms]	
Description:	Park Distar	nce Control F	Rear Left Sensor	Fault				
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value							
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE	

			PDCRrM	lidLSnsrF	lt_L		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		p Name N/A	Update Bit No	Initial Value false
Timings:	Interface Mode/Fund	Sub. La [ms]	atency	Max. Age [ms]	Read Interval [ms]		
	FM_Norma	l_L3		50.000		400.000	
Description:	Park Distar	nce Control F	Rear Middle Left	Sensor Fau	ılt		
Encoding type:	Name: BooleanCod		oleanCoding it				
	Description: boo		olean value				
	Values: Typ		ре	Value	Scale	Offset	Interpretation
		Log	jical Value	0			FALSE
		Log	jical Value	1			TRUE

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	PDCRrMidRSnsrFlt_L										
Size [bits]	Type Boolean	Info Type State	· IVNA		Group Name N/A		Initial Value false				
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	Sub. La [ms] 50.000	•	Max. Age [ms] 400.000	Read Interval [ms]				
Description:	Park Distar	nce Control F	Rear Middle Righ	t Sensor Fa	ault						
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value										
	Values:		oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE				

			PDCR	RSnsrFlt_	L		
Size [bits]	Type Boolean	Info Type State	Generation Type Periodic		Name	Update Bit No	Initial Value false
Timings:	Interface Mode/Fun FM_Norma	cVerFolder/ al_L3	Function	Sub. Latency			Read Interval [ms]
Description:	Park Distar	nce Control F	Rear Right Senso	r Fault			
Encoding type:	Name: BooleanCoding Size: 1 bit Description: boolean value						
	Values:	Tyj Log	oe gical Value gical Value	Value 0 1	Scale	Offset	Interpretation FALSE TRUE

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PDCSysSts_L										
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	C	Group Na N/A	me	Update Bit No	Initial Value 0		
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_L3	Function	[m	lb. Latend s] .000		Max. Age [ms] 400.000	Read Interval [ms]		
Description:	Description: Park Distance Control System Status									
Encoding type:	Size:	PDCSysSts 4 bits								
		Type Logical Valu	e 1 e 2 e 3 e 4 e 5 e 6	Scale	Offset	Syster Syster Syster Syster Front Front	retation m OK m initialization m Failed m Disabled PDC Disable PDC Failed PDC Failed PDC Failed	ed		

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

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			R	LObsRn	g_L			
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	iroup Name N/A	В	date Bit lo	Initial Value 0
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/	Function	[m	b. Latency s] .000	Max. / [ms] 400.00		Read Interval [ms]
Description:	Rear Left C	bstacle Ran	ige					
Encoding type:	Name: Size:	ObsRngI 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			Rar	nge 2
		Logical V	alue	3			Rar	nge 3
		Logical V	alue	4			Rar	nge 4
		Logical V	alue	5			Rar	nge 5
		Logical V	alue	6			Rar	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			Rar	nge 15

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Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	iroup Name N/A	E	date Bit lo	Initial Value 0	
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ nl_L3	Function	[m	b. Latency s] 000	Max. [ms]		Read Interval [ms]	
Description:	Rear Middle	e Left Obsta	cle Range						
Encoding type:	Name: Size:	ObsRngl 4 bits	ΕT						
	Values:	Type		Value	Scale	Offset		rpretation	
		Logical V		0			_	Obstacle	
		Logical V		1				ge 1	
		Logical V		2				ge 2	
		Logical V		3				ge 3	
		Logical V		4				ge 4	
		Logical V		5			Range 5 Range 6		
		Logical V		6				-	
		Logical V		7				ge 7	
		Logical V		8				ge 8	
		Logical V		9 10				ge 9	
		Logical V Logical V		10				ge 10 ge 11	
		Logical V		12				ge 12	
		Logical V		13				ge 12 ge 13	
		Logical V		14				ge 14	
		Logical V		15				ge 15	

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	RrMidRObsRng_L									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	Broup Name N/A		Update Bit No	Initial Value 0		
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ nl_L3	Function	[m	b. Latency s] .000	[m	ax. Age ns] 10.000	Read Interval [ms]		
Description:	Rear Middle	e Right Obst	acle Range							
Encoding	Name:	ObsRngl	ET							
type:	Size:	4 bits								
	Values:	Type		Value	Scale	Offse	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		

	RrObsDist_L									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	Group Name N/A		Update Bit No	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	Value	Caala	Officer	Internactation			
	Values:	Type Physical F	Range	Value 0 - 255	Scale 1	Offset 0	Interpretation cm			

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RRObsRng_L									
Size [bits]	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	E	date Bit No	Initial Value 0	
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_L3	Function	[m	b. Latency s] 000	Max. [ms] 400.0	J	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			Rai	nge 1	
		Logical V	alue	2				nge 2	
		Logical V		3				nge 3	
		Logical V	alue	4				nge 4	
		Logical V		5			Range 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 13				nge 12	
		Logical Value						nge 13	
		Logical V		14				nge 14	
		Logical V	alue	15			Rai	nge 15	

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RrPDCAudWrnng_L									
Size [bits] 4	Type Unsigned	Info Type State	Generation Type Periodic	G	roup Name N/A	U	pdate Bit No	Initial Value	
Timings:	Interface Mode/Fund FM_Norma	cVerFolder/ al_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	alue	0			No	Obstacle	
		Logical V	alue	1			Ra	nge 1	
		Logical V	alue	2			Ra	nge 2	
		Logical V	alue	3			Ra	nge 3	
		Logical V	alue	4			Ra	nge 4	
		Logical V	alue	5		F	Ra	nge 5	
		Logical V	alue	6				nge 6	
		Logical V	alue	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	Type Unsigned	Info Type State	Initial Value 200					
Description:	escription: The bus counter is decremented by one after this time if there is communication without any bus errors							

busoff_max					
Size [bits]TypeInfo TypeInitial Value8UnsignedState15					
Description: The number of bus-off errors that make the node silent during the time BUSOFF_WAIT_TIME					

busoff_time					
Size [bits]TypeInfo TypeInitial Value8UnsignedState50					
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]TypeInfo TypeInitial Value16UnsignedState200					
Description: The time the node is silent after the BUSOFF_MAX busoff errors have occurred					

communication_timeout_time_slave					
Size [bits]TypeInfo TypeInitial Value16UnsignedState1500					
Description: A slave node should stop comminicating after this time if no NetworkMode signal received					

fixed_frame_normal_period					
Size [bits]TypeInfo TypeInitial Value8UnsignedState12					
Description:					
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-up					

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keep_network_timeout_time_slave					
Size [bits]TypeInfo TypeInitial Value16UnsignedState100					
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	Type Unsigned	Info Type State	Initial Value 28673
Description: NM signal: this is the identification number of the signal configuration used.			

m			
Size [bits] 16	Type 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	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	Type 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	Type Bytes	Info Type State	Initial Value 0x34 0x01 0x06 0x10 0x31 0x22 0x58 0x08
Description: Network Reference Number for IPK			

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

stay_in_busoff				
Size [bits]	Type 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]	Туре	Info Type	Initial Value
1	Boolean	State	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:	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] Type 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]TypeInfo TypeInitial Value8UnsignedState14				
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	Type Unsigned	Info Type State	Initial Value 20
Description:	tion: 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]TypeInfo TypeInitial Value8UnsignedState4					
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		
Description:	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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