

潍柴动力EDC17电控发动机CAN总线通讯技术应用规范

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1. 修改记录

修改日期	作者	修改原因及内容	版本号	备注
2010. 3. 9	张成国	初始版本	V1. 0	EEC2 (Byte4) /DEC1 /MFD1 /FanDrv 2010年6月份实现
2010. 9. 6	张成国	修改笔误	V1. 1	EEC2 (Byte4) /DEC1 /MFD1 /FanDrv V732版本实现
2011. 8. 18	张成国	修改DEC1报文第三字节和第五字节内容 删除一条DM13，报文重复 增加ETC7报文	V1. 2	

2. 参考文献

- 【1】 CAN2. 0B
- 【2】 ISO11898
- 【3】 SAEJ1939/21-CAN Data Link Layer , Issue 1994-07, Revised 2006-12
- 【4】 SAEJ1939/71-CAN Vehicle Application Layer , Issue 1994-08, Revised 2006-11
- 【5】 SAEJ1939/3-CAN Application Layer Diagnostics , Issue 1996-02, Revised 2006-09

3. 规范适用说明

【1】 本规范适用于Bosch 高压共轨系统电控单元EDC17CV44，软件版本EDC17CV44_V732，依据SAE J1939 通用协议标准，用于潍柴发动机CAN总线通讯在基于发动机/车辆中的不同电控单元之间传递、交换信息/指令的应用。

【2】 有关于CAN通讯协议和报文标准均在参考文献中有定义，本文只涉及及部分目前潍柴发动机能够支持的特征报文的信息描述，本规范介绍的协议和特征均符合OSI（开放式系统互联）标准。

【3】 本规范涉及了SAEJ1939协议的数据链路层、车辆应用层和故障诊断层的描述，标准报文部分注有参考出处，非标部分，则按照本规范的注释详细说明其特征。

【4】 潍柴发动机ECU支持高速CAN通讯网络，如有低速CAN网络接入，则需按照CAN通讯标准进行网络布线，加网关模块进行转换。

4. 术语解释

PGN-parameter group number, 参数组, SAEJ1939定义术语, 用于描述参数特性	
EEC-electronic engine controller, 电控发动机控制器	
LFE-fuel economy (liquid), 燃油经济性	
EFL/PI-engine fuel level/pressure, 发动机流体标准/压力	
EC-engine configuration, 发动机配置	
ET-engine temperature, 发动机温度	
EngR-engine retarder, 发动机缓速器	
TC01-tachograph, 仪表	
EBC-electronic brake controller, 电子刹车控制器	
DMx-diagnostic management, 故障管理	
TSC1-torque speed control, 扭矩/速度控制	
TSC1_AE-requested engine torque/speed, limits from ABS/ESP, 速度/扭矩控制, 来自于ABS/ESP	
TSC1_DE-requested engine torque/speed, limits from Driveline retarder, 速度/扭矩控制, 来自于驱动缓速系统	
TSC1_PE-requested engine torque/speed, limits from PTO, 速度/扭矩控制, 来自于PTO	
TSC1_TE-requested engine torque/speed, limits from Transmission, 速度/扭矩控制, 来自于传动系	
TSC1_VE-requested engine torque/speed, limits from Vehicle, 速度/扭矩控制, 来自于整车	
TSC1_AR-requested retarder torque, limits from ABS/ESP, 速度/扭矩控制, 来自于ABS/ESP	
TSC1_DR-requested retarder torque, limits from Driveline retarder, 速度/扭矩控制, 来自于驱动缓速系统	
TSC1_TR-requested retarder torque, limits from Transmission, 速度/扭矩控制, 来自于传动系	
TSC1_VR-requested retarder torque, limits from Vehicle, 速度/扭矩控制, 来自于整车	
PGNRQ-Parameter Group Number request, 参数组申请	
AT111-After Treatment Intake Gas 1, 上游氮氧浓度	
DEC1-Driver Engine Controller 1	
MFD1-Manufacturer Free defined 1, 用户自定义报文	

5. 节点源地址列表

表5. 1为整车CAN网络中不同电控单元或不同功能模块节点集成于同一CAN网络中的目标地址，均按照SAEJ1939协议标准划分。

表 5.1 SAE J1939 CAN 节点地址

节点地址（Hex）	节点地址（Dec）	节点名称
0x 00	0	发动机控制单元
0x 03	3	传动系控制单元（变速箱）
0x 0B	11	电控刹车系（ABS/ASR）
0x 0F	15	发动机缓速器
0x 10	16	驱动系统缓速器
0x 17	23	仪表
0x 1D	29	防盗系统
0x 21	33	车身控制单元
0x 24	36	PTO
0x 27	39	车辆智能中心
0x 29	41	排气缓速器
0x EE	238	转速表
0x F9	249	故障诊断

6. 物理层技术条件

6.1 通讯物理介质（线束）双绞线，CANH、CANL 参见 ECU 针脚图：

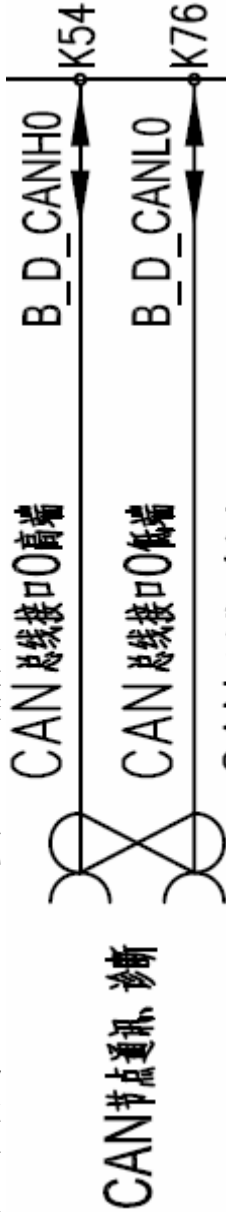


图6-1 ECU CAN针脚

线束技术要求：

- ◆ 线径： 0.6 mm²；
- ◆ 最大双绞间距： 25 twists / m， 即每隔40 mm 绞一个结 ；
- ◆ 线延迟小于 5 ns/m；
- ◆ 总线长度最大为 40 m ， 最多不超过 30 个节点， 且节点与节点间最小要相隔 0.1 m；
- ◆ 节点与总线间距离不超过 0.3 m；

6.2 控制器电阻配置 发动机电控单元已内置 120 Ω 终端电阻

6.3 协议标准

- SAE J1939
- CAN2.0B
- 29位标识符
- 支持标准/扩展帧

具体参见文献： SAEJ1939/21-data link layer（数据链路层）

SAEJ1939/71-vehicle application layer(车辆应用层)

SAEJ1939/73-diagnostics application layer(故障诊断层)

- 传输速率 250kbps
- 位采样与位定时 采样时间: 4 μ S 采样位置: 3/4 同步跳转宽度: 3 填充格式: Intel
- 总线拓扑 (总线电平) 依据 ISO11898标准高速CAN部分要求

7.发送/接收报文列表

- ✉ 发送报文 (Tx/Sending Messages)
📧 接收报文 (Rx/Receiving Messages)

报文名称	标识符ID	Tx/Rx	源地址	周期	参考文献	备注
EEC1	0CF00400	Tx	0x 00	10ms	SAEJ1939/71 5.3.7	
EEC2	0CF00300	Tx	0x 00	50ms	SAEJ1939/71 5.3.6	
EEC3	18FEDF00	Tx	0x 00	250ms	SAEJ1939/71 5.3.13	
AmbCon	18FEF500	Tx	0x 00	1000ms	SAEJ1939/71 5.3.35	
CrCtlVehSpd	18FEF100	Tx	0x 00	100ms	SAEJ1939/71 5.3.31	
CNFPBAM	18ECFF00	Tx	0x 00	1000ms		
CNFPACK	18EBFF00	Tx	0x 00	50ms		
EngTemp	18FEEE00	Tx	0x 00	1000ms	SAEJ1939/71 5.3.28	
LFE	18FEF200	Tx	0x 00	10ms	SAEJ1939/71 5.3.32	
EFL_P1	18FEEF00	Tx	0x 00	500ms		
EngRetCfg_package	18EBFF00	Tx	0x 00	On Event		
ERC1	18F0000F	Tx	0x 0F	100ms		
LFC	18FEE900	Tx	0x 00	On request	SAEJ1939/71 5.3.23	
DM1	18FECA00	Tx	0x 00	1000ms	SAEJ1939/73	
DM2	18FECB00	Tx	0x 00	On request	SAEJ1939/73	
DM3	18FECC00	Tx	0x 00	On request	SAEJ1939/73	
DM4	18FECD00	Tx	0x 00	On request	SAEJ1939/73	
DM11ACK	18E8FF00	Tx	0x 00	On request	SAEJ1939/21 5.4.4	
INCON	18FEF600	Tx	0x 00	1000ms	SAEJ1939/71 5.3.36	

TI1	18FE5600	Tx	0x 00	1000ms		
TxPGNRQ	18EA0000	Tx	0x 00	On request		
VD	18FEE000	Tx	0x 00	100ms		
VehPow	18FEF700	Tx	0x 00	1000ms	SAEJ1939/71 5.3.37	
EngHrRev	18FEE500	Tx	0x 00	On request		
MFD1	18FF0800	Tx	0x 00	100ms		
Fan drive	18FEBD00	Tx	0x 00	1000ms		
WFI	18FEFF00	Tx	0x 00	10s		

报文名称	标识符ID	Rx/Tx	源地址	周期	参考文献	备注
AT1I1	18F00E51	Rx	0x 51	50ms		
AT1I2	18FDB400	Rx	0x 00	500ms		
AT1O1	18F00F52	Rx	0x 52	500ms		
DM1DCU—single	18FECA3D	Rx	0x 3D	10ms		
DM1DCU—BAM	18ECFF3D	Rx	0x 3D	10ms		
DM1DCU—packet	18EBFF3D	Rx	0x 3D	10ms		
DM13	18DFFF27	Rx	0x 27	1000ms	SAEJ1939/73 5.7.13	
EBC1	18F0010B	Rx	0x 03	100ms	SAEJ1939/71 5.3.4	
ERC1—DR	18F00010	Rx	0x 10	100ms	SAEJ1939/71 5.3.3	
ETC1	0CF00203	Rx	0x 03	10ms	SAEJ1939/71 5.3.5	
ETC2	18F00503	Rx	0x 03	100ms		
ETC7	18FE4A03	Rx	0x 03	100ms		
HRWS	18FE6E0B	Rx	0x 0B	20ms		
RxCCVS	18FEF121	Rx	0x 21	1000ms	SAEJ1939/71 5.3.31	
VDHR	18FEC1EE	Rx	0x EE	1000ms	SAEJ1939/71 5.3.54	
PGNRQ	18EA0021	Rx	0x 21	On request	SAEJ1939/21 5.4.2	
RxAMCON	01FEF521	Rx	0x 21	1000ms	SAEJ1939/71 5.3.35	
TC01	0CFE6CEE	Rx	0x EE	50ms	SAEJ1939/71 5.3.43	
TimeDate	18FEE600	Rx	0x 00	1000ms		
TSC1AE	0C00000B	Rx	0x 0B	10 ms	SAEJ1939/71 5.3.1	
TSC1AR	0C000F0B	Rx	0x 0B	50ms		
TSC1DE	0C000010	Rx	0x 10	10 ms	SAEJ1939/71 5.3.1	
TSC1DR	0C000F10	Rx	0x 10	50ms		

TSC1PE	0C000024	Rx	0x 24	10 ms	SAEJ1939/71 5.3.1	
TSC1TE	0C000003	Rx	0x 03	10 ms	SAEJ1939/71 5.3.1	
TSC1TR	0C000F03	Rx	0x 03	50ms		
TSC1VE	0C000021	Rx	0x 21	10 ms	SAEJ1939/71 5.3.1	
TSC1VR	0C000F21	Rx	0x 21	50ms		
WSI	18FEBF0B	Rx	0x 0B	50ms	SAEJ1939/71 5.3.56	
DEC1	0CFF0431	Rx	0x 31	20ms		

8.报文信息格式详解

- ☒ 发送报文 (Tx/Sending Messages)
☒ 接收报文 (Rx/Receiving Messages)

Message/报文				Parameter definition/参数定义			备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit / 位	Parameter/参数	CAN Resolution
EEC1 发动机控制器 # 1	0x0CF00400	10ms	Tx	Byte 1	8-5	Actual engine - percent torque high resolution	Scale:0.125%/bit
				Byte 2	4-1	Engine Torque Mode/发动机扭矩模式	Scale:16 states/4Bit
					8-1	Driver's Demand Engine - Percent Torque/驾驶指令百分比扭矩	Scale:1%/bit Offset:-125%
				Byte 3	8-1	Actual Engine - Percent Torque/发动机实际扭矩百分比	Scale:1%/bit Offset:-125%
				Byte 4-5		Engine Speed/发动机转速	Scale:0.125rpm/bit
				Byte 6	8-1	Source Address of Controlling Device for Engine Control 控制发动机设备源地址	1 Source address/bit
				Byte 7	8-5	Not Used/未用	
					4-1	Engine Starter Mode/起动机模式	Scale:16 states/4Bit
EEC2 发动机控制器 # 2	0x0CF00300	50ms	Tx	Byte 8	8-1	Engine Demand - Percent Torque/发动机需求扭矩百分比	Scale:1%/bit Offset:-125%
					8-7	Not Used/未用	
					6-5	Road speed limit status/速度限制状态	00:active 01:Not active 10>Error(Not managed by ECU) 11:Not available
				Byte 1	4-3	Accelerator pedal kick-down switch/踏板开关	00:Kick-down not active 01:Kick-down active 11:Not available
					2-1	Accelerator pedal low idle switch/加速踏板低怠速开关	00:Low idle switch signal not active 01:Low idle switch signal active 10>Error

ERC1 电控缓速器1	0x18F0000F	100ms	Tx	Byte 2	8-1	Accelerator pedal position/ 踏板位置	11:Not available
				Byte 3	8-1	percent load at current speed/当前转速下负荷百分比	Scale:0.4%/bit
				Byte 4	8-1	Remote accelerator position	Scale:1%/bit
				Byte 5	8-1	Remote accelerator position 2	
				Byte 7	8-1	Actual maximum available engine percentage torque	Scale:0.4%/bit
				Byte 6-8		Not used / 未定义	
				Byte 1	4-1	Retarder Torque Mode/缓速器扭矩模式	0000:No request 0101:ASR control 0110:Transmission control 1010:DR control 1110:VM control
				Byte 2	8-1	Actual Retarder Torque Percentage/缓速器实际扭矩百分比	Scale:1%/bit Offset:-125%
ERC3 发动机控制器 # 3	0x18FEDF00	250ms	Tx	Byte 3	8-1	Intended Retarder percent Torque/缓速器需求扭矩	Scale:1%/bit Offset:-125%
				Byte 4	2-1	Coolant Load Increase/	Not available
				Byte 4	4-3	Retarder Requesting Brake Light/缓速器需求灯	Not available
				Byte 4	8-5	Not defined/未用	Not available
				Byte 5	8-1	Source Address of controlling device for retarder control/ 缓速器控制单元地址	Realized
				Byte 6	8-1	Driver' s Demand Retarder Percent Torque/ 缓速器需求扭矩百分比	Scale:1%/bit Offset:-125%
				Byte 7	8-1	Retarder Switch Percent Torque/缓速器开关扭矩百分比	0xFF
				Byte 8	8-1	Actual Maximum Available retarder Percent Torque/ 实际最大缓速器扭矩百分比	Scale:1%/bit Offset:-125%
EEC3 发动机控制器 # 3	0x18FEDF00	250ms	Tx	Byte 1	8-1	nominal friction percent torque/摩擦扭矩百分比	Scale:1%/bit Offset:-125%
				Byte 2-3		engine' s desired operating speed/发动机目标运行速度	Scale:0.125rpm/bit

DM1DCU single	0x18ECFF3D	10ms	Tx	Byte 4	8-1	engine's operating speed asymmetry adjustment/发动机 平稳调整	1 ratio
				Byte 5	8-1	Estimated Engine Parasitic Losses	Scale:1%/bit
				Byte 6-7		Exhaust gas mass flow	Scale:0.2Kg/h/bit
				Byte 8	2-1	Aftertreatment 1 Intake Dew Point	00:Not exceeded the dew point
					4-3	Aftertreatment 1 Exhaust Dew Point	01:Exceeded the dew point
					6-5	Aftertreatment 2 Intake Dew Point	10>Error
					8-7	Aftertreatment 2 Exhaust Dew Point	11:Not available
				Byte 1	2-1	Malfunction indicator Lamp status	
					4-3	Amber Warning Lamp status	
					6-5	Red stop Lamp status	
					8-7	Not used	
				Byte 2		Not used	
				Byte 3		Low byte of SPN	
				Byte 4		High Byte of SPN	
				Byte 5	5-1	Failure mode Indicator	
				8-6		Most significant bits of SPN	
DM1DCU BAM				7-1		Occurrence Count	
				8		SPN conversion Method	
				Byte 8-7		Not used	
				Byte 1	8-1	Control byte	0x20
				Byte 2	8-1	Total message size, number of bytes(Low byte)	X=2+4*(number of active errors)
				Byte 3	8-1	Total message size, number of bytes(High byte)	0x00
				Byte 4	8-1	Total number of packets	Y=2 (if X=10, 14-for 2, 3errors) ; Y=3 (if X=18) Y=4 (if X=22, 26) Y=5 (if X=30)
				Byte 5	8-1	Reserved for SAE assignment	0xFF
				Byte 6	8-1	PGN of packet message (low byte)	0xCA
				Byte 7	8-1	PGN of packet message (middle byte)	0xFE
				Byte 8	8-1	PGN of packet message (high byte)	0x00
				Byte 1	8-1	Packed ID	0x01

				Byte 2	8-1	Lamp status		0xFF
				Byte 3	8-1	Reserved		
				Byte 4	8-1	DTC #1		
				Byte 5	8-1	DTC #1		
				Byte 6	8-1	DTC #1		
				Byte 7	8-1	DTC #1		
				Byte 8	8-1	DTC #2		
				DM1DCU pack2				Byte 1
Byte 2	8-1	DTC #2						
Byte 3	8-1	DTC #2						
Byte 4	8-1	DTC #2						
Byte 5	8-1	DTC #3						
Byte 6	8-1	DTC #3						
Byte 7	8-1	DTC #3						
Byte 8	8-1	DTC #3						
DM1DCU pack3				Byte 1	8-1	Packed ID		0x03
				Byte 2	8-1	DTC #4		
				Byte 3	8-1	DTC #4		
				Byte 4	8-1	DTC #4		
				Byte 5	8-1	DTC #4		
				Byte 6	8-1	DTC #5		
				Byte 7	8-1	DTC #5		
				Byte 8	8-1	DTC #5		
DM1DCU pack4				Byte 1	8-1	Packed ID		0x04
				Byte 2	8-1	DTC #5		
				Byte 3	8-1	DTC #6		
				Byte 4	8-1	DTC #6		
				Byte 5	8-1	DTC #6		
				Byte 6	8-1	DTC #6		
				Byte 7	8-1	DTC #7		
				Byte 8	8-1	DTC #7		
DM1DCU pack5				Byte 1	8-1	Packed ID		0x05
				Byte 2	8-1	DTC #7		
				Byte 3	8-1	DTC #7		

			Byte 4	8-1	Not used	0xFF
			Byte 5	8-1	DTC #6	0xFF
			Byte 6	8-1	DTC #6	0xFF
			Byte 7	8-1	DTC #7	0xFF
			Byte 8	8-1	DTC #7	0xFF

Message/报文				Parameter definition/参数定义			备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit / 位	Parameter/参数	CAN Resolution
CrCtlVehSpd 巡航控制	0x18FEF100	100ms	Tx	Byte 1	8-5	Not defined/未定义	Not realized
					6-5	Cruise control Pause Switch	Not used in EDC
					4-3	Status of parking brake/刹车状态	00:Not actuated 01:Actuated 10>Error 11:Not available
				Byte 2-3	2-1	Not defined/未定义	Not realized
						Wheel based vehicle Speed/ 车速	Scale:1/256km/h/bit Offset:0
				Byte 4	8-7	Status of clutch switch/离合开关状态	00:Not actuated 01:Actuated 10>Error 11:Not available
					6-5	Status of brake switch/刹车开关状态	00:Not actuated 01:Actuated (Brk_st=0x03) 10>Error 11:Not available
					4-3	Cruise control enable/巡航控制使能	Not used in EDC(set to 01b)
				Byte 5	2-1	Cruise control active/巡航控制激活状态标识	00:Not active 01:active
					8-7	Cruise Control Accelerate Switch	00:Not actuated 01:Actuated
					6-5	Cruise Control Resume Switch	00:Not actuated 01:Actuated

					4-3	Cruise Control Coast (Decelerate) Switch	00: Not actuated 01: Actuated
					2-1	Cruise Control Set Switch	00: Not actuated 01: Actuated
					8-1	Cruise control set speed/巡航控制设定速度	Scale: 1km/h/bit 000: Off/Disable 001: Hold 010: Acc 011: Dec 100: Resume 101: Set 110: Acc Override
					8-6	Cruise control state/巡航控制状态	00000: Disable/Off 00001: Hold 00010: Not used 00011: Standby/Neutral 00100: Not used 00101: Set 00110: Decelerate 00111: Resume 01000: Acc 01001: Not used 01010: Programmed set speed 0 01011: Programmed set speed 1 01100: Programmed set speed 2 01101: Programmed set speed 3 01110-11110: Not used 11111: Not available
				Byte 7	5-1	PTO state/PTO 状态	Not used in EDC
							00: Off 01: On
							00: Idle-down request off 01: Idle-down request on
							00: Idle-up request off 01: Idle-up request on
				Byte 8	8-7	Engine shut down override switch	
					6-5	Engine Test Mode Switch	
					4-3	Engine Idle decrement Switch	
					2-1	Engine Idle increment switch	

EngRetCfg BAM 广播	0x18ECFF00	Tx		Byte 1	8-1	Control Byte		0x20
				Byte 2	8-1	Total message size, number of bytes (Low byte)		0x13
				Byte 3	8-1	Total message size, number of bytes (hige byte)		0x00
				Byte 4	8-1	Total number of packets		0x03
				Byte 5	8-1	Reserved for assignment by SAE		0xFF
				Byte 6	8-1	Parameter Group Number of the Packet Message		0xE1
				Byte 7	8-1	Parameter Group Number of the Packet Message		0xFE
				Byte 8	8-1	Parameter Group Number of the Packet Message		0x00
EngRetCfg package 1	0x18EBFF00	On event	Tx	Byte 1	8-1	Package identification/数据包识别		0000: Engine compression Release 0001: Engine Exhaust Brake 0010-1110: Not used 1111: not available
				Byte 2	8-5	Retarder Location/缓速器位置		0011: compression Release 0100: Exhaust 1111: Not available Others: Not used
				Byte 3	4-1	Retarder Type/缓速器类型		1step/bit 0:continuous control 1:On/Off control 2to250: Number of steps
				Byte 4-5	8-1	Retarder Control Method/缓速器控制方式		
				Byte 6		Retarder Speed at Idle - Point 1/缓速器低怠速		
				Byte 7-8	8-1	Retarder Percent Torque Idle/缓速器怠速扭矩百分比		
				Byte 1		Maximum Retarder Speed Point 2/最大速度2		
				Byte 2		Package identification/数据包识别		
				Byte 3-4	8-1	Retarder Percent Torque at Maximum Speed, Point 2/转速2缓速器扭矩百分比		
				Byte 5		Engine Speed Point 3/转速3		
EngRetCfg package 2	0x18EBFF00	On event	Tx	Byte 6-7		Retarder Percent Torque - Point 3/转速3扭矩百分比		
						Engine Speed Point 4/转速4		

					Byte 8	8-1	Retarder Percent Torque, Point 4/转速4扭矩百分比
					Byte 1	8-1	Package identification/数据包识别
EngRetCfg package 3	0x18EBFF00	On event	Tx	Byte 2-3			Retarder Speed at peak torque Point 5/最大扭矩转速5
				Byte 4-5			Reference Retarder Torque/缓速器参考扭矩
				Byte 6	8-1		Retarder Percent Torque - Point 5/转速5扭矩百分比
				Byte 7-8			Not Used

Message/报文				Parameter definition/参数定义			备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit / 位	Parameter/参数	CAN Resolution
EFL_P1 发动机液位/压力	0x18FEFF00	500ms	Tx	Byte 1	8-1	Fuel Deliver y Pressure/燃油压力	Scale:4Kpa/bit
				Byte 2	8-1	Extended Crankcase Blow-by Pressure/ (未用)	Scale:0.4%/bit
				Byte 3	8-1	Engine Oil Level/机油液位	Scale:0.4%/bit
				Byte 4	8-1	Engine Oil Pressure/机油压力	Scale:4Kpa/bit
				Byte 5-7		Not Used	
EngTemp 发动机温度	0x18FEEF00	1000ms	Tx	Byte 8	8-1	Engine Coolant Level/冷却液液位	Scale:0.4%/bit
				Byte 1	8-1	Engine Coolant Temperature/发动机冷却水温度	Scale:1℃/bit Offset:-40℃
				Byte 2	8-1	Fuel Temperature/燃油温度	Scale:1℃/bit Offset:-40℃
				Byte 3-4		Engine Oil Temperature /机油温度	Scale:0.03125℃/bit Offset:-273℃
				Byte 5-6		Turbo Oil Temperature/增压器机油温度 (未用)	0xFFFF
TI1 尿素箱信息	0x18FE5600	1000ms	Tx	Byte 7-8		Engine Intercooler Temperature/ (未用)	0xFFFF
				Byte 1	8-1	Urea tank level/尿素箱液位	Scale:0.4%/bit Offset:0
				Byte 2	8-1	Urea tank temperature/尿素箱温度	Scale:1℃/bit

									Offset: -40°C	
								Byte 3-8	Not used	0xFFFFFFFF
Vehicle Power 整车电源	0x18FEF700	1000ms	Tx					Byte 1-4	Not Realized/未实现	0xFFFFFFFF
								Byte 5-6	Battery Potential/Power Input 1 (SPN 168)	Scale:0.05/bit Offset:0
								Byte 8	Battery Potential (SPN 158)	Scale:0.05/bit Offset:0
								Byte 1-4	Total engine hours/发动机累计运行时间	Scale:0.05h/bit
EngHrRev 发动机运行时间	0x18FEE500	on request	Tx					Byte 5-8	Total engine revolutions/发动机累计转数	Scale:1000rpm/bit
								Byte 1-2	Engine Fuel Rate/发动机燃油消耗率	Scale:0.05L/h/bit
FIEco 燃油消耗率	0x18FEF200	100ms	Tx					Byte 3-4	Engine Instantaneous Fuel Economy/发动机瞬时油耗率	Scale:0.001953125Km/L/bit
								Byte 5-6	Engine average Fuel Economy/平均燃油消耗率	Scale:0.001953125Km/L/bit
								Byte 7-8	Not used	0xFFFF
								Byte 1	Control Byte	0x20
STOD BAM 广播	0x18ECFF00	On request	Tx					Byte 2	Total message size, number of bytes (Low byte)	0x6F
								Byte 3	Total message size, number of bytes (hige byte)	0x02
								Byte 4	Total number of packets	0x59
								Byte 5	Reserved for assignment by SAE	0xFF
								Byte 6	Parameter Group Number of the Packet Message	0x00
								Byte 7	Parameter Group Number of the Packet Message	0xFF
								Byte 8	Parameter Group Number of the Packet Message	0x00

Message/报文				Parameter definition/参数定义			备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit / 位	Parameter/参数	CAN Resolution
INCON 发动机进气状况	0x18FEF600	500ms	Tx	Byte 1	8-1	Particulate trap inlet pressure/颗粒捕集器进气压力	Scale:0.5kPa/bit
				Byte 2	8-1	Boost pressure-atmosphere pressure/相对增压压力	Scale:2kPa/bit
				Byte 3	8-1	Intake manifold temperature/ 进气温度	Scale:1℃/bit Offset:-40℃
				Byte 4	8-1	Air inlet pressure (absolute boost pressure)/绝对增压压力	Scale:2kPa/bit
				Byte 5	8-1	Air filter 1 differential pressure/空滤器压差(未用)	0xFF
				Byte 6-7		Exhaust gas temperature/排气温度	Scale:0.03125℃/bit Offset:-273℃
				Byte 8	8-1	Coolant filter differential temperature/冷却器温差(未用)	0xFF
				Byte 1	8-1	Barometric pressure/大气压力	Scale:0.5kPa/bit Offset:0hPa
AMCON 环境条件	0x18FEF500	1000ms	Tx	Byte 2-3		Cab interior temperature/发动机舱内部温度	Not realized, Set 0xFFFF
				Byte 4-5		Ambient air temperature/ 大气温度	Scale:0.03125℃/bit Offset:-273℃
				Byte 6	8-1	Air inlet temperature/进气温度	Scale:1℃/bit Offset:-40℃
				Byte 7-8		Road surface temperature/路面温度	Not realized, Set 0xFFFF
				Byte 1-3		Not used	
ShutDwn	0x18FEE400	1000ms	Tx	Byte 4	2-1	Engine Wait to Start Lamp/冷启动灯	00:Lamp OFF 01:Lamp ON
					8-3	Not Used	
				Byte 5	2-1	Engine protection system has shutdown engine	00:shutdown not active 01:shutdown active
					8-3	Not Used	

DM11ACK 故障清除	0x18E8FF00	On request	Tx	Byte 1	8-1	Control Byte/控制字节	
				Byte 2-5		Not defined/未定义, 设为FFFFFFFF	
				Byte 6	8-1	PGN LSB	
				Byte 7	8-1	PGN	
				Byte 8	8-1	PGN MSB	
				Byte 1	8-1	Control Byte/控制字节	
				Byte 2	8-1	Total messages size, number of Bytes/总信息字节数 (低字节)	
				Byte 3	8-1	Total messages size, number of Bytes/总信息字节数 (高字节)	
DM1/ DM2 BAM 当前/历史信息通告	0x18ECFF00	DM1: 1000ms DM2: On request	Tx	Byte 4	8-1	Total number of packets/总包数	
				Byte 5	8-1	Reserved /保留, 设为FF	
				Byte 6-8		PGN, DM1 为CAFE00, DM2 为CBFE00	

Message/报文				Parameter definition/参数定义			备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit / 位	Parameter/参数	CAN Resolution
DM1/DM2 (SINGLE)	DM1: 0x18FECA00 DM2: 0x18FECB00	DM1: 1000ms DM2: on request	Tx	Byte 1	8-7	Malfunction Indicator Lamp State/MIL 灯状态	00: lamp Off 01: lamp on
					6-5	Red Stop Lamp State /红色停止灯状态	00: lamp Off 01: lamp on
					4-3	Amber Warning Lamp State/环境警告灯状态	00: lamp Off 01: lamp on
					2-1	Protect Lamp State (SVS lamp)	00: lamp Off 01: lamp on
				Byte 2	8-7	Flash Malfunction Indicator Lamp Status	00: Slow Flash (1Hz) 01: Fast Flash (2Hz) 10: Class C DTC 11: Unavailable
					6-5	Flash Red stop status	
					4-3	Flash Amber warning lamp status	
					2-1	Flash SVS Lamp status	
				Byte 3	8-1	SPN 第一字节	
				Byte 4	8-1	SPN 第二字节	
				Byte 5	8-6	SPN MSB	
					5-1	FMI 码	
					8	SPN 转换模式, 设为0	
DM1/DM2 PACK 1	DM1: 50ms DM2: on request	Tx		Byte 6	7-1	Occurrence count for faults, limited to 128/当前故障计数	
				Byte 7	8-1	Not defined/未定义	0xFF
				Byte 8	8-1	Not defined/未定义	0xFF
				Byte 1	8-1	Package identification, set to 0x 01	
				Byte 2	8-1	Diagnostic lamp	
				Byte 3	8-1	Reserved, set to 0x FF	
				Byte 4	8-1	Diagnostic trouble code#1(Byte1)	
				Byte 5	8-1	Diagnostic trouble code#1(Byte2)	
				Byte 6	8-1	Diagnostic trouble code#1(Byte3)	
				Byte 7	8-1	Diagnostic trouble code#1(Byte4)	
				Byte 8	8-1	Diagnostic trouble code#2(Byte1)	

DM1/DM2 PACK 2	0x18EBFF00	DM1: 50ms DM2: on request	Tx	Byte 1	8-1	Package identification , set to 0x 02	CAN Resolution
				Byte 2	8-1	Diagnostic trouble code#2(Byte2)	
				Byte 3	8-1	Diagnostic trouble code#2(Byte3)	
				Byte 4	8-1	Diagnostic trouble code#2(Byte4)	
				Byte 5	8-1	Diagnostic trouble code#3(Byte1)	
				Byte 6	8-1	Diagnostic trouble code#3(Byte2)	
				Byte 7	8-1	Diagnostic trouble code#3(Byte3)	
				Byte 8	8-1	Diagnostic trouble code#3(Byte4)	
Parameter definition/参数定义							
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit / 位	Parameter/ 参数	CAN Resolution
DM1/DM2 PACK 3	0x18EBFF00	DM1: 50ms DM2: on request	Tx	Byte 1	8-1	Package identification , set to 0x 03	
				Byte 2	8-1	Diagnostic trouble code#4(Byte1)	
				Byte 3	8-1	Diagnostic trouble code#4(Byte2)	
				Byte 4	8-1	Diagnostic trouble code#4(Byte3)	
				Byte 5	8-1	Diagnostic trouble code#4(Byte4)	
DM4BAM 内存故障通告	0x18ECFF00	100ms	Tx	Byte 1	8-1	Control Byte , set to 0x20/控制字节	
				Byte 2	8-1	Total messages size , number of Bytes(low Byte)	
				Byte 3	8-1	Total messages size , number of Bytes(high Byte)	
				Byte 4	8-1	Total number of packages	
				Byte 5	8-1	Reserved for Assignment by SAE , set to 0x FF	
DM4 SINGLE	0x18FECF00	On request	Tx	Byte 6-8		PGN of the package messages , set to 0x CDFE00	
				Byte 1	8-1	Freeze frame length/冻结帧长度	
				Byte 2	8-1	SPN 低字节	
				Byte 3	8-1	SPN 第二字节	
				Byte 4	8-6	SPN 高字节, 设为100b	
				5-1	FMI		
				Byte 5	8	SPN 转换模式	
				7-1	故障计数, 限制到126		
DM4 PACK 1	0x18EBFF00	50ms	Tx	Byte 6-8		Not defined/未定义	
				Byte 1	8-1	Package identification , set to 0x 01	

				Byte 2	8-1	Freeze frame length (1 _{st} DTC) /冻结帧长度, 0x04	
				Byte 3-4		SPN number(low Byte +second Byte)	
				Byte 5	8-1	SPN number (MSB)+FMI	
				Byte 6	8-1	Faults status	
				Byte 7	8-1	Freeze frame length (2 _{nd} DTC) /冻结帧长度, 0x04	
				Byte 8	8-1	SPN number	

Message/报文				Parameter definition/参数定义			备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit / 位	Parameter/参数	CAN Resolution
DM4 PACK 2	0x18EBFF00	50ms	Tx	Byte 1	8-1	Package identification , set to 0x 02	
				Byte 2	8-1	SPN number	
				Byte 3	8-1	SPN number (MSB)+FMI	
				Byte 4	8-1	Faults status	
				Byte 5	8-1	Freeze frame length (3 _{st} DTC) /冻结帧长度, 0x04	
				Byte 6-7		SPN number	
				Byte 8	8-1	SPN number (MSB)+FMI	
				Byte 1	8-1	Package identification , set to 0x 03	
DM4 PACK 3	0x18EBFF00	50ms	Tx	Byte 2	8-1	Faults status	
				Byte 3	8-1	Freeze frame length (4th DTC) /冻结帧长度, 0x04	
				Byte 4-5		SPN number	
				Byte 6	8-1	SPN number (MSB)+FMI	
				Byte 7	8-1	Faults status	
				Byte 1	8-1	Control Byte , set to 0x20/控制字节	
				Byte 2	8-1	Total messages size , number of Bytes(low Byte), set to 0x1C	
				Byte 3	8-1	Total messages size , number of Bytes(high Byte), SET TO 0x00	
EngConf BAM 发动机配置通告	0x18ECFF00	5000ms	Tx	Byte 4	8-1	Total number of packages , set to 0x 04	

				Byte 5	8-1	Reserved for Assignment by SAE , set to 0x FF	
				Byte 6	8-1	PGN of the package messages , set to 0x E3	
				Byte 7	8-1	PGN of the package messages , set to 0x FE	
				Byte 8	8-1	PGN of the package messages , set to 0x 00	
VD 整车里程信息	0x18FEE000	100ms	Tx	Byte 1-4		Trip Distance/本次驾驶循环里程	Scale:0.125Km/bit Offset:0
				Byte 5-8		Vehicle Distance/总行驶里程	Scale:0.125Km/bit Offset:0
EngConf PACK 1 发动机配置	0x18EBFF00	50ms	Tx	Byte 1	8-1	Package identification, set to 1	Scale:0.125rpm/bit Offset:0
				Byte 2-3		Point 1-engine speed at idle/怠速转速	Scale:1%/bit Offset:125%
				Byte 4	8-1	Point 1-percent torque at idle/怠速扭矩	Scale:0.125rpm/bit Offset:0
				Byte 5-6		Point 2-highest possible engine speed	Scale:1%/bit Offset:125%
				Byte 7	8-1	Point 2-percent torque at highest speed	Scale:0.125rpm/bit Offset:0
				Byte 8	8-1	Point 3-low Byte of engine speed	Scale:0.125rpm/bit Offset:0
WFI/ 油中有水指示	0x18FEFF00	10s	Tx	Byte 1	2-1	Water in fuel indicator	00:No water present in the fuel 01:water present in the fuel 10>Error Value 11:Not available
					8-3		Not defined
				Byte 2-8		Not defined	0xFFFFFFFFFFFF

Message/报文			Parameter definition/参数定义				备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/字 节	Bit/ 位	Parameter/参数	CAN Resolution
TxPGNRQ	0x18EA0000	On request	Tx	Byte 1	8-1	PGN number low byte	
				Byte 2	8-1	PGN number mid byte	
				Byte 3	8-1	PGN number high byte	
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/字节		Parameter/参数	备注
TxPGNRQG1b	0x18EAF3D	On request	Tx	Byte 1 PGN LSB	Byte 2 PGN PGN MSB	Kind of request	
				0x00	0xD3	ComRx_DM19Ds	
				0x00	0xD3	ComRx_DM19Us	
				0x00	0xFD	ComRx_AT10GC1	
				0x00	0xFD	ComRx_AT10GC2	
				0x00	0xFD	ComRx_AT11GC1	
				0x00	0xFD	ComRx_AT11GC2	

Message/报文			Parameter definition/参数定义				备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit / 位	Parameter/参数	CAN Resolution
EngConf PACK 2 发动机配置	0x18EBFF00	50ms	Tx	Byte 1	8-1	Package identification , set to 2	
				Byte 2	8-1	Point 3-high Byte of engine speed	Scale:0.125rpm/bit Offset:0
				Byte 3	8-1	Point 3-percent torque	Scale:1%/bit Offset:125%
				Byte 4-5		Point 4-engine speed	Scale:0.125rpm/bit Offset:0
				Byte 6	8-1	Point 4-percent torque	Scale:1%/bit Offset:125%
				Byte		Point 5-engine speed	Scale:0.125rpm/bit

				7-8					
EngConf PACK 3 发动机配置	0x18EBFF00	50ms	Tx	Byte 1	8-1	Package identification , set to 3			Offset:0
				Byte 2	8-1	Point 5-percent torque			Scale:1%/bit Offset:125%
				Byte 3-4		Point 6-engine speed			Scale:0.125rpm/bit Offset:0
				Byte 5-6		Byte of gain of end-speed governor			Scale:0.0007813%/rpm Offset:0
				Byte 7-8		Reference engine torque/参考扭矩			Scale:1Nm/bit Offset:0
				Byte 1	8-1	Package identification			0x04
EngConf PACK 4 发动机配置	0x18EBFF00	50ms	Tx	Byte 2-3		Point 7-Byte of max momentary engine override speed limit			Scale:0.125rpm/bit
				Byte 4	8-1	Maximum momentary engine override time limit			Scale:0.1s/bit
				Byte 5	8-1	Engine Requested speed control Range Lower limit			Scale:10rpm/bit
				Byte 6	8-1	Engine Requested speed control Range Upper limit			Scale:10rpm/bit
				Byte 7	8-1	Engine Requested Torque control Range Lower limit			Scale:1%/bit offset:-125%
				Byte 8	8-1	Engine Requested Torque control Range Upper limit			Scale:1%/bit offset:+125%
EngConf PACK 5 发动机配置	0x18EBFF00	50ms	Tx	Byte 1	8-1	Package identification			0x05
				Byte 2-3		Engine Requested speed control Range Upper limit			Scale:0.125rpm/bit
				Byte 4-5		Engine Moment of Inertia			Scale:0.004Kg • m²/bit
				Byte 6-8		Not Used			0xFFFF
				Byte 1	8-1	Package identification			0x06
				Byte 2-8		Not Used			0xFFFFFFFF
EngConf PACK 6 发动机配置	0x18EBFF00	50ms	Tx	Byte 1	8-1	Relative Engine oil pressure			Scale: 4kPa/bit Offset:0
				Byte 2	8-7	Engine Oil Pressure Low			Remarks:Oil_p VS Oil_pMinP_mp 00 Normal

									01 Below operating range 11 Not available
									00 Normal 01 Pre-warning 11 Warning (Engine Max Power is limited)
									Not defined
									0000:Off phase (heater off, lamp off) 0001:Pre-heating phase (heater on, lamp on) 0010:Stand by phase with heating (heater on, lamp blinking), cranking recommended. 0011:Stand by phase without heating (heater off, lamp off) 0100:Crank with extra heating phase (heater on, lamp off) 0101:Crank phase (heater off, lamp off) 0110:Post heating phase (heater on, lamp off) 0111:Heating phase end (heater off, lamp off) 1000:After run phase (heater off, lamp off) 1001 – 1111:Not defined
									Not defined
									Engine Over Coolant Temperature
									6-5
									4-1
									Cold Start Heater Status
									8-5
									Byte 3
									Not defined
									Byte 4
									8-1
									Exhaust flap valve output
									Byte 5
									8-1
									00:Lamp Off 01:Lamp On 10:Lamp Blinking 11:Not Available
									Scale: 0.4%/bit Offset:0%

									Data Range: 0~100%
								Not defined	
					Byte 1			Estimated percent Fan speed	Scale:0.4%/bit
FanDrv	0x18FEBD00	1000ms	Tx	Byte 2	Fan Drive state				0000:Fan off 0001:Engine system 0010:Excessive engine air temp 0011:Excessive engine oil temp 0100:Excessive engine Coolant temp 0101-1000:Not defined 1001>manual control 1010:Transmission retarder 1011:A/C system 1100:Timer 1101:Engine brake 1110:other 1111:Not available
					Fan speed-low byte				Scale:0.125rpm/bit
					Fan speed-high byte				
					Not Used				0xFFFFFFFF
Message/报文			Parameter definition/参数定义				备注		
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit / 位	Parameter/参数			
AT111/上游氮氧浓度	0x18F00E51	50ms	Rx	Byte 1-2		Aftertreatment 1 Intake NOx			
				Byte 3-4		Aftertreatment 1 Intake %O2			
				Byte 5	2-1	Aftertreatment 1 Intake Gas Sensor Power In Range			
						Scale:0.05ppm/bit Offset:-200		CAN Resolution	
						Scale:0.000514%/bit Offset:-12%			

AT11GC1	0x0CFD1151	Rx			4-3	Aftertreatment 1 Intake Gas Sensor at Temperature	4-3	Aftertreatment 1 Intake Gas Sensor at Temperature
					6-5	Aftertreatment 1 Intake NOx Reading Stable	6-5	Aftertreatment 1 Intake NOx Reading Stable
					8-7	Aftertreatment 1 Intake Wide-Range % O2 Reading Stable	8-7	Aftertreatment 1 Intake Wide-Range % O2 Reading Stable
					5-1	Aftertreatment 1 Intake Gas Sensor Heater Preliminary FMI	5-1	Aftertreatment 1 Intake Gas Sensor Heater Preliminary FMI
					7-6	Aftertreatment 1 Intake Gas Sensor Heater Control	7-6	Aftertreatment 1 Intake Gas Sensor Heater Control
					5-1	Aftertreatment 1 Intake NOx Sensor Preliminary FMI	5-1	Aftertreatment 1 Intake NOx Sensor Preliminary FMI
					5-1	Aftertreatment 1 Intake Oxygen Sensor Preliminary FMI	5-1	Aftertreatment 1 Intake Oxygen Sensor Preliminary FMI
					Byte 1-2	Aftertreatment 1 Inlet Gas NOx sensor Heater Ratio	Byte 1-2	Aftertreatment 1 Inlet Gas NOx sensor Heater Ratio
					Byte 3-4	Aftertreatment 1 Inlet Gas NOx sensor New part deviation NOx gain	Byte 3-4	Aftertreatment 1 Inlet Gas NOx sensor New part deviation NOx gain
					Byte 5	Aftertreatment 1 Inlet Gas NOx sensor New part deviation NOx offset	Byte 5	Aftertreatment 1 Inlet Gas NOx sensor New part deviation NOx offset
AT11GC2	0x0CFD1051	Rx			Byte 6-8	Not processed by ECU	Byte 6-8	Not processed by ECU
					Byte 1	Aftertreatment 1 Inlet Gas NOx sensor Correction of pressure Lambda	Byte 1	Aftertreatment 1 Inlet Gas NOx sensor Correction of pressure Lambda
					Byte 2	Aftertreatment 1 Inlet Gas NOx sensor Correction of pressure NOx	Byte 2	Aftertreatment 1 Inlet Gas NOx sensor Correction of pressure NOx
					Byte 3	Aftertreatment 1 Inlet Gas NOx sensor NO2 Correction	Byte 3	Aftertreatment 1 Inlet Gas NOx sensor NO2 Correction
					Byte 4	Aftertreatment 1 Inlet Gas NOx sensor NH3 Correction	Byte 4	Aftertreatment 1 Inlet Gas NOx sensor NH3 Correction
					Byte 5-8	Not processed by ECU	Byte 5-8	Not processed by ECU
					Byte 1-2	Aftertreatment 1 outlet NOx	Byte 1-2	Aftertreatment 1 outlet NOx
					Byte 3-4	Aftertreatment 1 outlet %O2	Byte 3-4	Aftertreatment 1 outlet %O2
					2-1	Aftertreatment 1 outlet Gas Sensor Power in range	2-1	Aftertreatment 1 outlet Gas Sensor Power in range
					4-3	Aftertreatment 1 outlet Gas Sensor at temperature	4-3	Aftertreatment 1 outlet Gas Sensor at temperature
AT101 Reception of AT10G1	0x18F00F52	Rx	50ms		6-5	Aftertreatment 1 outlet NOx reading stable	6-5	Aftertreatment 1 outlet NOx reading stable
					8-7	Aftertreatment 1 outlet Wide-Range %O2 reading stable	8-7	Aftertreatment 1 outlet Wide-Range %O2 reading stable
					Byte 6	Aftertreatment 1 outlet Gas Sensor Heater preliminary FMI	Byte 6	Aftertreatment 1 outlet Gas Sensor Heater preliminary FMI
					Scale:0.05ppm/bit Offset:-200	Scale:0.05ppm/bit Offset:-200	Scale:0.05ppm/bit Offset:-200	Scale:0.05ppm/bit Offset:-200
					Scale:0.000514%/bit Offset:-12%	Scale:0.000514%/bit Offset:-12%	Scale:0.000514%/bit Offset:-12%	Scale:0.000514%/bit Offset:-12%

					7-6	Aftertreatment 1 outlet NOx Sensor Heater Control	
				Byte 7	5-1	Aftertreatment 1 outlet NOx Sensor preliminary FMI	
				Byte 8	5-1	Aftertreatment 1 outlet O2 Sensor preliminary FMI	
				Byte 1-2		Aftertreatment 1 outlet Gas NOx Sensor Heater Ratio	
				Byte 3-4		Aftertreatment 1 outlet Gas NOx Sensor New part deviation NOx Gain	
				Byte 5	8-1	Aftertreatment 1 outlet Gas NOx Sensor New part deviation NOx Offset	
				Byte 6-8		Not realized	
				Byte 1	8-1	Aftertreatment 1 outlet Gas NOx Sensor Correction of pressure Lambda	
				Byte 2	8-1	Aftertreatment 1 outlet Gas NOx Sensor Correction of pressure NOx	
				Byte 3	8-1	Aftertreatment 1 outlet Gas NOx Sensor NO2 Correction	
				Byte 4	8-1	Aftertreatment 1 outlet Gas NOx Sensor NH3 Correction	
				Byte 5-8		Not realize	
					2-1	J1939 Network #1, Primary Vehicle Network Com_stNet1	00: Stop Broadcast on J1939 Network #1 01: Start Broadcast on J1939 Network #1 02: Reserved 03: Don't care
				Byte 1	6-3	Not Realized	00: Stop Broadcast on CCurrent Data Link 01: Start Broadcast on CCurrent Data Link 02: Reserved 03: Don't care
					8-7	Current Data link Com_stCurr	
				Byte 2	6-1	Not Realized	
AT10GC1 Reception of Aftertreatment 1 Outlet Gas NOx Sensor frame	0x0CFD0F52					Rx	
AT10GC2 Reception of Outlet Gas Correction 2 frame	0x0CFD0E52					Rx	
DM13 启动/停止广播	0x18DFFF27					Rx	

					8-7	J1939 Network #2 Com_stNet2	00:Stop Broadcast on J1939 Network #2 01: Start Broadcast on J1939 Network #2 02: Reserved 03:Don' t care
							SAE Reserved
							00:Stop Broadcast on J1939 Network #3 01: Start Broadcast on J1939 Network #3 02: Reserved 03:Don' t care
							Not Realized
							00:All Devices 01:Devices whose broadcast state has been modified 02:Reserved 03:Not available
							Not realized
							Not realized
							Control Byte 0x20
							Total messages size , number of Bytes(low Byte) 0x14
							Total messages size , number of Bytes(high Byte) 0x00
DM19Ds BAM	0x0CECFF52	Rx			8-1	Control Byte	0x03
							Reserved for Assignment by SAE 0xFF
							PGN of the package messages (Low byte) 0x00
							PGN of the package messages (Middle byte) 0xD3
							PGN of the package messages (high byte) 0x00
							Package Indicator 0x01
							Checksum CVN byte 0
							Checksum CVN byte 1
DM19Ds packet1	0x0CEBFF52	On request	Rx		8-1	Package Indicator	0x01
							Checksum CVN byte 0
							Checksum CVN byte 1

				Byte 4	8-1	Checksum CVN byte 2	
				Byte 5	8-1	Checksum CVN byte 3	
				Byte 6	8-1	CALID byte 1, ASCII	0x4E
				Byte 7	8-1	CALID byte 2, ASCII	0x4F
				Byte 8	8-1	CALID byte 3, ASCII	0x78
				Byte 1	8-1	Package Indicator	0x02
				Byte 2	8-1	CALID byte 4, ASCII	0x20
				Byte 3	8-1	CALID byte 5, ASCII	0x41
DM19Ds packet2	0x0CEBFF52	On request	Rx	Byte 4	8-1	CALID byte 6, ASCII	0x54
				Byte 5	8-1	CALID byte 7, ASCII	0x4F
				Byte 6	8-1	CALID byte 8, ASCII	0x31
				Byte 7	8-1	CALID byte 9, ASCII	0x20
				Byte 8	8-1	CALID byte 10, ASCII	0x53
				Byte 1	8-1	Package Indicator	0x03
				Byte 2	8-1	CALID byte 11, ASCII	0x57
				Byte 3	8-1	CALID byte 12, ASCII	0x36
DM19Ds packet3	0x0CEBFF52	On request	Rx	Byte 4	8-1	CALID byte 13, ASCII	0x35
				Byte 5	8-1	CALID byte 14, ASCII	0x30
				Byte 6	8-1	CALID byte 15, ASCII	0x42
				Byte 7	8-1	Not used	0x00
				Byte 8	8-1	Not used	0xFF
				Byte 1	8-1	Control Byte	0x20
				Byte 2	8-1	Total messages size , number of Bytes(low Byte)	0x14
				Byte 3	8-1	Total messages size , number of Bytes(high Byte)	0x00
DM19Us BAM	0x0CECFF51	On request	Rx	Byte 4	8-1	Total number of packages	0x03
				Byte 5	8-1	Reserved for Assignment by SAE	0xFF
				Byte 6	8-1	PGN of the package messages (Low byte)	0x00
				Byte 7	8-1	PGN of the package messages (Middle byte)	0xD3
				Byte 8	8-1	PGN of the package messages (high byte)	0x00
				Byte 1	8-1	Package Indicator	0x01
				Byte 2	8-1	Checksum CVN byte 0	
				Byte 3	8-1	Checksum CVN byte 1	
DM19Us packet1	0x0CEBFF51	On request	Rx	Byte 4	8-1	Checksum CVN byte 2	
				Byte 5	8-1	Checksum CVN byte 3	

					Byte 6	8-1	CALID byte 1, ASCII	0x4E
					Byte 7	8-1	CALID byte 2, ASCII	0x4F
					Byte 8	8-1	CALID byte 3, ASCII	0x78
					Byte 1	8-1	Package Indicator	0x02
					Byte 2	8-1	CALID byte 4, ASCII	0x20
					Byte 3	8-1	CALID byte 5, ASCII	0x41
					Byte 4	8-1	CALID byte 6, ASCII	0x54
					Byte 5	8-1	CALID byte 7, ASCII	0x4F
					Byte 6	8-1	CALID byte 8, ASCII	0x31
					Byte 7	8-1	CALID byte 9, ASCII	0x20
					Byte 8	8-1	CALID byte 10, ASCII	0x53
					Byte 1	8-1	Package Indicator	0x03
					Byte 2	8-1	CALID byte 11, ASCII	0x57
					Byte 3	8-1	CALID byte 12, ASCII	0x36
					Byte 4	8-1	CALID byte 13, ASCII	0x35
					Byte 5	8-1	CALID byte 14, ASCII	0x30
					Byte 6	8-1	CALID byte 15, ASCII	0x42
					Byte 7	8-1	Not used	0x00
					Byte 8	8-1	Not used	0xFF
						8-7	EBS brake switch/电子刹车系统开关	00:Brake not depressed and not defect 01:Brake depressed and no defect 10:Brake plausibility NOT OK 11:Brake switch status not available
EBC1 电子刹车控制器 #1					Byte 1	6-5	Anti-Lock Braking(ABS) active	00:ABS passive but installed 01:ABS active 10:ABS signal Not OK 11:Not available
						4-3	ASR brake control active/ASR 刹车控制激活	00:ASR brake control passive but installed 01:ASR brake control active 10:ASR brake control Not OK

									11:Not available
									00:ASR engine control passive but installed
					2-1		ASR engine control active/ ASR 控制发动机状态激活		01:ASR engine control active
									10:ASR engine control not OK
									11:Not available
		Byte 2	8-1				Brake Pedal Position /未用		Not realized
		Byte 3	8-1				Status_EBC2/未用		Not realized
			8-7				Measured_aux_1/未用		Not realized
		Byte 4	6-5				Auxiliary engine shut down/辅助发动机停机		00:OFF, No shut off request
									01:ON, shut off request active
									10>Error
									11:Not available
			4-1				Not defined /未用		Not realized
		Byte 5	8-1				Engine retarder selection		Not realized
			2-1				ABS Fully Operational		Not realized
			4-3				EBS Red Warning Signal		Not realized
			6-5				ABS/EBS Amber Warning Signal (Powered Vehicle)		Not realized
		Byte 6	8-7						00:Off
							ATC/ASR Driver Information Signal		01:On
									10:reserved
									11:Take no action
		Byte 7-8							Not defined

Message/报文				Parameter definition/参数定义			备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit / 位	Parameter/参数	CAN Resolution
WSI 轮速信息	0x18FEBF0B	50ms	Rx	Byte 1	8-1	Front axle speed, low Byte/前轴速度, 低字节	
				Byte 2	8-1	Front axle speed, high Byte/前轴速度, 高字节	
				Byte 3-8		Not defined/未定义	
					8-7	Not defined/未定义	
ETC1 电子传动控制1	0x0CF00203	10ms	Rx		6-5	Shift in process/换挡过程	00:Gear shift not Active 01: Gear shift Active
					4-3	Torque converter lockup engaged/扭矩转换锁定/结合	00:Torque Converter lockup is disengaged 01: Torque Converter lockup is engaged
					2-1	Driveline Engaged	00:Driveline is Disengaged 01:Driveline is engaged
				Byte 2-3		Transmission output shaft speed	Scale:0.125rpm/bit Offset:0rpm
				Byte 4	8-1	Percent Clutch Slip	Not realized
					8-3	Not defined/未定义	Not realized
				Byte 5	2-1	Momentary engine overspeed enable/发动机瞬时超速使能	00: Momentary overspeed request not allowed 01: Momentary overspeed request allowed
						Not defined/未定义	Not realized
				Byte 6-8			
				Byte 1	8-1	Selected gear	Scale:1 gear/bit Offset:-125
ETC2 电子传动控制2	0x18F00503	10ms	Rx	Byte 2	8-1	Actual gear ratio low byte	Scale:0.001/bit Offset:0
				Byte 3	8-1	Actual gear ratio high byte	
				Byte 4	8-1	Current gear	cale:1 gear/bit Offset:-125
				Byte		Not in use	

					5-8					
HRWS 轮边转速	0x18FE6E0B	20ms	Rx	Byte 1-2	8-1	Front Axle Left Wheel Speed				
				Byte 3-4	8-1	Front Axle Right Wheel Speed				
				Byte 5-6	8-1	Rear Axle Left Wheel Speed				
				Byte 7-8	8-1	Rear Axle Right Wheel Speed				
TimeDate 时间	0x18FEE600	1000ms	Rx	Byte 1	8-1	Second				
				Byte 2	8-1	Minute				
				Byte 3	8-1	Hour				
				Byte 4	8-1	Month				
				Byte 5	8-1	Day				
				Byte 6	8-1	Year				
TC01	0x0CFE6CEE	50ms	Rx	Byte 1-4		Not realized				
				Byte 5	8-1	Tachograph output shaft speed (LSB)				
				Byte 6	8-1	Tachograph output shaft speed (MSB)				
				Byte 7	8-1	Tachograph vehicle speed (LSB)				
				Byte 8	8-1	Tachograph vehicle speed (MSB)				
Message/报文				Parameter definition/参数定义				备注		
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit/ 位	Parameter/参数			CAN Resolution	
RxAMCON 环境信息接收	0x18FEF521	1000ms	Rx	Byte 1-3		Not defined/未定义				
				Byte 4-5		Ambient air temperature/空气温度				
				Byte 6-8		Not defined/未定义				
RxCCVS 巡航控制接收信息	0x18FEF121	100ms	Rx	Byte 1	7-8	Not defined/未定义				
					6-5	Cruise control Pause Switch				
						00:Switch not actuated 01:Switch actuated				

								10:Error 11:Switch status not available
								00:Switch not actuated 01:Switch actuated 10:Error 11:Switch status not available
	4-3							Status of parking brake/手刹开关状态
								Not defined/未定义
	2-1							Scale:0.00390625Km/h/bit Offset:0
	8-7							00:Clutch not actuated 01:Clutch actuated 10:Error 11:Not available
								00:Brake not Depressed and no defect 01:Brake Depressed and no defect 10:Brake plausibility not ok 11:brake switch status not available
	6-5							Status of brake switch/刹车开关状态
	2-1							Cruise Control Active Status/巡航状态
								00:Button is not pressed 01:Button is pressed 10:Error 11:Not available
	8-7							Cruise Control ACC Button status
								00:Button is not pressed 01:Button is pressed 10:Error 11:Not available
	6-5							Cruise Control Res Button status
								00:Button is not pressed 01:Button is pressed 10:Error 11:Not available
	4-3							Cruise Control Dec Button status
								00:Button is not pressed 01:Button is pressed 10:Error 11:Not available
	2-1							Cruise Control Off Button status
								00:Button is not pressed 01:Button is pressed

PGNRQ PGN请求	0x18EA0021	On Request	Rx	Type / 类型	Cycle time/ 频率	ID/ 地址	Byte/字节	Parameter/参数	备注				
										Byte 5	8-1	Not used	10:Error 11:Not available
										Byte 7	8-6	Not used/未定义	0000:Disable/Off 00001:Hold 00011:Standby/Neutral 00101:Set 00110:Decelerate 00111:Resume 01000:Accelerate 01010:Preprogrammed set speed 1 01011:Preprogrammed set speed 2 01100:Preprogrammed set speed 3 01110:Preprogrammed set speed 4 11111:Not available
										Byte 8	Not defined/未定义		
										Byte 1 PGN LSB	Byte 2 PGN	Byte3 PGN MSB	Kind of request
										0xCB	0xFE	0x00	DM2 Request/DM2 申请发送
										0xCC	0xFE	0x00	DM3 Request/DM3 申请发送
										0xCD	0xFE	0x00	DM4 Request/DM4 申请发送
										0xCE	0xFE	0x00	DM5 Request/DM5 申请发送
										0xCF	0xFE	0x00	DM6 Request/DM6 申请发送
0xD5	0xFD	0x00	EEC5 Request /EEC5 申请发送										
0xD3	0xFE	0x00	DM11 Request/DM11 申请发送										
0x00	0xEF	0x00	STOD Request/STOD 申请发送										
0xE5	0xFE	0x00	Engine Hours Revolution/发动机运转时间 申请发送										

				0xE9	0xFE	0x00	Fuel Consumption/总油耗申请发送	
				0xDA	0xFE	0x00	Software identification/软件版本申请发送	
				0xEB	0xFE	0x00	Component identification/组件确认申请发送	
				0xF0	0xFF	0x00	Security Check	
Message/报文				Parameter definition/参数定义				备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit/ 位	Parameter/参数		
TSC1_AE 扭矩/速度控制 (刹车系统)	0x0C00000B	10ms	Rx	Byte 1	8-7	Not defined/未定义		
					6-5	Override control mode priority/override 控制模式优先级		
					4-3	Engine Requested speed control conditions/请求速度控制条件		
				Byte 2-3	2-1	Override control modes/override 控制模式		
						Requested speed/speed limit/ 目标转速/转速限制		
				Byte 4	8-1	Requested torque/torque limit/目标扭矩/扭矩限制		
						Scale:1%/bit Offset:-125%		
						CAN Resolution		
						00:Hi ghest Priority 01:High priority 10:Medium priority 11:Low priority 00:Transient Optimized for driveline disengaged and non-lockup conditions 01:Stability Optimized for driveline disengaged and non-lockup conditions 10:Stability Optimized for driveline engaged and/or in lockup condition 1 11: Stability Optimized for driveline engaged and/or in lockup condition 2 00:Override disabled 01:Speed control 10:Torque control 11:Speed/torque limit control Scale:0.125rpm/bit Offset:0 Scale:1%/bit Offset:-125%		

TSC1_TE 扭矩/速度控制 (传动系统)	0x0C000003	10ms	Rx	Byte 5	8-1	Not Realized/未定义	
				Byte 6	4-1	Engine Requested Torque-High Resolution	Along with Byte4(Byte4+Byte6) Scale:0.125%/bit Offset:0 If bit4=1,Byte 4 solely decides the engine requested torque
					8-5	Not Defined	
					8-1	Not Defined	
					4-1	Message counter	Scale:1 count/bit
				Byte 8	8-5	Message Checksum	Scale:1 count/bit
					8-7	Not defined/未定义	
				Byte 1	6-5	Override control mode priority/override 控制模式 优先级	00: Highest Priority 01: High priority 10: Medium priority 11: Low priority
					4-3	Requested speed control conditions/请求速度控制 条件	00: Transient Optimized for driveline disengaged and non-lockup conditions 01: Stability Optimized for driveline disengaged and non-lockup conditions 10: Stability Optimized for driveline engaged and/or in lockup condition 1 11: Stability Optimized for driveline engaged and/or in lockup condition 2
					2-1	Override control modes/override 控制模式	00: Override disabled 01: Speed control 10: Torque control 11: Speed/torque limit control
				Byte 2-3		Requested speed/speed limit/ 目标转速/转速限制	Scale:0.125rpm/bit Offset:0
				Byte 4	8-1	Requested torque/torque limit/目标扭矩/扭矩限制	Scale:1%/bit Offset:-125%

TSC1_DE 扭矩/速度控制 (缓速器系统)	0x0C000010	10ms	Rx	Byte 5	8-1	Not defined/未定义	Used with Byte4(Byte4+Byte6) Scale:0.125%/bit Offset:0 If bit4=1,Byte 4 solely decides the engine requested troque
				Byte 6	4-1	Engine requested Torque-High Resolution	
					8-5	Not defined/未定义	
					8-1	Not defined/未定义	
					4-1	Message counter	
				Byte 8	8-5	Message Checksum	Scale:1 count/bit
					8-7	Not defined/未定义	Scale:1 count/bit
				Byte 1	6-5	Override control mode priority/override 控制模式 优先级	00:Highest Priority 01:High priority 10:Medium priority 11:Low priority
					4-3	Requested speed control conditions/请求速度控制 条件	00:Transient Optimized for driveline disengaged and non-lockup conditions 01:Stability Optimized for driveline disengaged and non-lockup conditions 10:Stability Optimized for driveline engaged and/or in lockup condition 1 11: Stability Optimized for driveline engaged and/or in lockup condition 2
							00:Override disabled 01:Speed control 10:Torque control 11:Speed/torque limit control
							Scale:0.125rpm/bit Offset:0
							Scale:1%/bit Offset:-125%

				Byte 5	8-1	Not defined/未定义	
				Byte 6	4-1	Engine requested Torque-High Resolution	Used with Byte4(Byte4+Byte6) Scale:0.125%/bit Offset:0 If bit4=1,Byte 4 solely decides the engine requested torque
					8-5	Not defined/未定义	
				Byte 7	8-1	Not defined/未定义	
					4-1	Message counter	
				Byte 8	8-5	Message Checksum	Scale:1 count/bit Scale:1 count/bit
Message/报文							
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit/ 位	Parameter/参数	CAN Resolution
TSC1_PE 扭矩/速度控制 (PT0 系统)	0x0C000024	10ms	Rx	Byte 1	8-7	Not defined/未定义	00: Highest Priority 01: High priority 10: Medium priority 11: Low priority
					6-5	Override control mode priority/override 控制模式 优先级	00: Transient Optimized for driveline disengaged and non-lockup conditions 01: Stability Optimized for driveline disengaged and non-lockup conditions 10: Stability Optimized for driveline engaged and/or in lockup condition 1 11: Stability Optimized for driveline engaged and/or in lockup condition 2
					4-3	Requested speed control conditions/请求速度控制 条件	
					2-1	Override control modes/override 控制模式	00: Override disabled 01: Speed control 10: Torque control 11: Speed/torque limit control

TSCI_VE 扭矩/速度控制 (车身系统)	0x0C000021	10ms	Rx	Byte 2-3	Requested speed/speed limit/ 目标转速/转速限制	Scale:0.125rpm/bit Offset:0
				Byte 4	Requested torque/torque limit/目标扭矩/扭矩限制	Scale:1%/bit Offset:-125%
				Byte 5	Not defined/未定义	
				Byte 6	Engine requested Torque-High Resolution	Used with Byte4 (Byte4+Byte6) Scale:0.125%/bit Offset:0 If bit4=1, Byte 4 solely decides the engine requested torque
				Byte 7	Not defined/未定义	
				Byte 8	Message counter	
					Message Checksum	Scale:1 count/bit
					Not defined/未定义	Scale:1 count/bit
				6-5	Override control mode priority/override 控制模式 优先级	00: Highest Priority 01: High priority 10: Medium priority 11: Low priority
				4-3	Requested speed control conditions/请求速度控制 条件	00: Transient Optimized for driveline disengaged and non-lockup conditions 01: Stability Optimized for driveline disengaged and non-lockup conditions 10: Stability Optimized for driveline engaged and/or in lockup condition 1 11: Stability Optimized for driveline engaged and/or in lockup condition 2
				2-1	Override control modes/override 控制模式	00: Override disabled 01: Speed control 10: Torque control 11: Speed/torque limit control

TSC1_AR 扭矩限制 (刹车系统)	0x0C000F0B	50ms	Rx	Byte 2-3		Requested speed/speed limit/ 目标转速/转速限制	Scale:0.125rpm/bit Offset:0
				Byte 4	8-1	Requested torque/torque limit/目标扭矩/扭矩限制	Scale:1%/bit Offset:-125%
				Byte 5	8-1	Not defined/未定义	
				Byte 6	4-1	Engine requested Torque-High Resolution	Used with Byte4 (Byte4+Byte6) Scale:0.125%/bit Offset:0 If bit4=1, Byte 4 solely decides the engine requested torque
				Byte 7	8-5	Not defined/未定义	
				Byte 8	8-1	Not defined/未定义	
				Byte 8	4-1	Message counter	Scale:1 count/bit
				Byte 8	8-5	Message Checksum	Scale:1 count/bit
				Byte 8	8-7	Not defined/未定义	
				Byte 6-5	6-5	Override control mode priority/override 控制模式 优先级	00: Highest Priority 01: High priority 10: Medium priority 11: Low priority
				Byte 1	4-3	Requested speed control conditions/请求速度控制 条件	00: Transient Optimized for driveline disengaged and non-lockup conditions 01: Stability Optimized for driveline disengaged and non-lockup conditions 10: Stability Optimized for driveline engaged and/or in lockup condition 1 11: Stability Optimized for driveline engaged and/or in lockup condition 2
				Byte 2-1	2-1	Override control modes/override 控制模式	00: Override disabled 01: Speed control 10: Torque control 11: Speed/torque limit control

TSC1_DR 扭矩限制 (缓速器系统)	0x0C000F10	50ms	Rx	Byte 2-3	Requested speed/speed limit/ 目标转速/转速限制	Not realized
				Byte 4	Requested torque/torque limit/目标扭矩/扭矩限制	Scale:1%/bit Offset:-125%
				Byte 5	Not defined/未定义	
				Byte 6	Engine requested Torque-High Resolution	Used with Byte4 (Byte4+Byte6) Scale:0.125%/bit Offset:0 If bit4=1, Byte 4 solely decides the engine requested torque
				Byte 7	Not defined/未定义	
				Byte 8	Message counter	
					Message Checksum	Scale:1 count/bit
				Byte 1	Not defined/未定义	Scale:1 count/bit
				Byte 2	Override control mode priority/override 控制模式优先级	
				Byte 3	Requested speed control conditions/请求速度控制条件	
				Byte 4	Override control modes/override 控制模式	
				Byte 5	Requested speed/speed limit/ 目标转速/转速限制	
				Byte 6	Requested torque/torque limit/目标扭矩/扭矩限制	
				Byte 7	Not defined/未定义	
				Byte 8	Engine requested Torque-High Resolution	
					Not defined/未定义	
					Not defined/未定义	
					Message counter	
					Message Checksum	
						同TSC1_AR

Message/报文				Parameter definition/参数定义			备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit/ 位	Parameter/参数	CAN Resolution
TSC1_TR 扭矩限制 (传动系统)	0x0C000F03	50ms	Rx	Byte 1	8-7	Not defined/未定义	同TSC1_AR
					6-5	Override control mode priority/override 控制模式 优先级	
					4-3	Requested speed control conditions/请求速度控制 条件	
					2-1	Override control modes/override 控制模式	
				Byte 2-3		Requested speed/speed limit/ 目标转速/ 转速限制	
				Byte 4	8-1	Requested torque/torque limit/目标扭矩/扭矩限制	
				Byte 5	8-1	Not defined/未定义	
				Byte 6	4-1	Engine requested Torque-High Resolution	
					8-5	Not defined/未定义	
				Byte 7	8-1	Not defined/未定义	
TSC1_VR 扭矩限制 (车身系统)	0x0C000F21	50ms	Rx	Byte 1	4-1	Message counter	同TSC1_AR
					8-5	Message Checksum	
					8-7	Not defined/未定义	
					6-5	Override control mode priority/override 控制模式 优先级	
					4-3	Requested speed control conditions/请求速度控制 条件	
					2-1	Override control modes/override 控制模式	
				Byte 2-3		Requested speed/speed limit/ 目标转速/ 转速限制	
				Byte 4	8-1	Requested torque/torque limit/目标扭矩/扭矩限制	
				Byte 5	8-1	Not defined/未定义	
				Byte 6	4-1	Engine requested Torque-High Resolution	
					8-5	Not defined/未定义	
				Byte 7	8-1	Not defined/未定义	
					4-1	Message counter	
				Byte 8	8-5	Message Checksum	

Message/报文				Parameter definition/参数定义		备注
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit/ 位	Parameter/参数
DEC1 整车控制模块	0x0CF0431	20ms	Rx	Byte 1	8-7	T50 switch
					6-3	00:T50 switch released 01:T50 switch pressed 10:not available 11:MAX error
						0000:position 0 0001:position 1 0010:position 2 0011:position 3 1011:NPL error 1100:MAX error 1101:Min error 1110:SIG error
						00:Air heating switch off request 01:Air heating switch on request 10:Reserved 11:not available
				Byte 2	8-7	00:inactive 01:active 10:not available 11:SIG error
					6-5	00:inactive 01:active 10:not available 11:SIG error
					4-3	00:inactive 01:active 10:not available 11:not available
					2-1	00:inactive 01:active 10:not available

									11:not available
					8-7			Engine exhaust brake switch	00:Released 01:Depressed 10:not available 11:not available
			Byte 3		6-3			Not in use	
					2-1			Diagnostic request switch	00:inactive 01:active 10:not available 11:not available
			Byte 4		8-1			Not in use	
					8-7			Not in use	
					6-5			A/C switch	00:AC switch OFF 01:AC switch ON 10:not available 11:not available
			Byte 5		4-3			Neutral gear switch	00:Neutral switch OFF 01:Neutral switch ON 10:not available 11:not available
					2-1			Not in use	
			Byte 6-8					Not Defined	
Message/报文				Parameter definition/参数定义			备注		
Name/ 报文名称	ID/ 地址	Cycle time/ 频率	Type / 类型	Byte/ 字节	Bit/ 位	Parameter/参数			CAN Resolution
ETC7	0x18FE4A03	100ms	Rx	Byte 1	8-7	Transmission request Range display Flash state			
					6-5	Transmission request Range display Blank state			
					4-1	Not evaluated			
				Byte 2	8-7	Transmission shift inhibit Indicator			

					6-5	Transmission Engine Crank Enable	
					4-3	Active shift console indicator	
					2-1	Not evaluated	
					8-7	Transmission Mode1 indicator	
					6-5	Transmission Mode2 indicator	
					4-3	Transmission Mode3 indicator	
					2-1	Transmission Mode4 indicator	
					8-1	Not in Use	
					Byte 3		
					Byte 4-8		