



SURFACE VEHICLE RECOMMENDED PRACTICE

J2534™-2/RE_0500

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Pass-Thru Extended Feature - Resource Document

RATIONALE

Each of the features contained in the original SAE J2534-2 document (API version 04.04) is being published as a separate document for ease of maintenance and extensibility. At the same time, these features are being updated to be compatible with SAE J2534-1_0500 (API version 05.00) and to address feedback received from the field.

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Documents

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1. SCOPE

This SAE Recommended Practice is part of the SAE J2534-2/X_0500 set of documents that extends the SAE J2534-1_0500 API (version 05.00) specification. It defines the common data structures and constants that will be used to implement the extension to the SAE J2534 API.

This document will only include the items that are used by the V05.00 API and that are NOT included in SAE J2534-1_0500. It will not include items from older API versions unless they are used by the V05.00 API.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J2534-1_0500 Recommended Practice for Pass-Thru Vehicle Programming (API version 05.00)

SAE J2534-2/BA_0500 Pass-Thru Extended Features - Base Document (API version 05.00)

3. DOCUMENTATION CONVENTIONS

In the document body and in tables:

- All SAE J2534 API functions shall be in bold print (for example, **PassThruOpen**).
- All SAE J2534 API variables shall be enclosed in "<>" (for example, <DeviceID>).
- All SAE J2534 API DEFINES shall be in upper-case print (for example, STATUS_NOERROR).
- All number shall be in decimal unless otherwise indicated. (Hexadecimal values shall have a leading "0x"; for example, 0x7AF or 0x800 are hexadecimal values.)

4. #DEFINE VALUES

4.1 RxStatus Bit #defines

[Table 1](#) identifies the additional RxStatus bits for the PASSTHRU_MSG structure.

Table 1 - RxStatus bit definitions

Name	Bit(s)	Bit Mask	Protocol(s)
J1939_ADDRESS_CLAIMED	16	0x00010000	J1939
WAKEUP_FLAG	16	0x00010000	SWCAN
CONNECTION_ESTABLISHED	16	0x00010000	TP2.0
J1939_ADDRESS_LOST	17	0x00020000	J1939
LINK_FAULT	17	0x00020000	FTCAN, CANFD
SW_CAN_HS_RX	17	0x00020000	SWCAN
CONNECTION_LOST	17	0x00020000	TP2.0
SW_CAN_NS_RX	18	0x00040000	SWCAN
FD_CAN_BRS	19	0x00080000	CANFD
FD_CAN_FORMAT	20	0x00100000	CANFD
FD_CAN_ESI	21	0x00200000	CANFD
Reserved for SAE J2534-2	23-22	0x00C00000	
Tool Manufacturer Specific	31-24	0xFF000000	

4.2 TxFlags Bit #defines

[Table 2](#) identifies the additional TxFlags bits for the PASSTHRU_MSG structure.

Table 2 - TxFlags bit definitions

Name	Bit(s)	Bit Mask	Protocol(s)
WAKEUP_TX	10	0x00000400	SWCAN
MSG_PRIORITY_1	16	0x00010000	J1708
MSG_PRIORITY_2	17	0x00020000	J1708
MSG_PRIORITY_3	17-16	0x00030000	J1708
MSG_PRIORITY_4	18	0x00040000	J1708
MSG_PRIORITY_5	18,16	0x00050000	J1708
MSG_PRIORITY_6	18-17	0x00060000	J1708
MSG_PRIORITY_7	18-16	0x00070000	J1708
MSG_PRIORITY_8	19	0x00080000	J1708
TP2_0_BROADCAST_MSG	16	0x00010000	TP2.0
Reserved for SAE J2534-2	18-17	0x00060000	
FD_CAN_BRS	19	0x00080000	CANFD
FD_CAN_FORMAT	20	0x00100000	CANFD
Reserved for SAE J2534-2	21	0x00200000	
Defined in SAE J2534-1	22	0x00400000	J2610
Defined in SAE J2534-1	23	0x00800000	J2610
Tool Manufacturer Specific	31-24	0xFF000000	

4.3 Protocol IDs #defines

[Table 3](#) identifies the additional values defined for protocol IDs.

Table 3 - ProtocolID definitions

Definition	Value(s)
Used by SAE J2534-2 (API Version 04.04)	0x00008000 - 0x00008007
SW_CAN	0x00008008
GM_UART	0x00008009
UART_ECHO_BYTE	0x0000800A
HONDA_DIAGH	0x0000800B
Used by SAE J2534-2 (API Version 04.04)	0x0000800C
SAE J1708	0x0000800D
Used by SAE J2534-2 (API Version 04.04)	0x0000800E
FT_CAN	0x0000800F
Used by SAE J2534-2 (API Version 04.04)	0x00008010
FD_CAN	0x00008011
Used by SAE J2534-2 (API Version 04.04)	0x00008012
ETHERNET_NDIS	0x00008013
Reserved for SAE J2534-2	0x00008014
ETHERNET	0x00008015
Reserved for SAE J2534-2	0x00008016 - 0x000081FF
J1939_LOGICAL	0x00008200
TP2_0_LOGICAL	0x00008201
Reserved for SAE J2534-2	0x00008202
IP4_LOGICAL	0x00008203
IP6_LOGICAL	0x00008204
UDP_LOGICAL	0x00008205
TCP_CLIENT_LOGICAL	0x00008206
Reserved for SAE J2534-2	0x00008207 - 0x00008FFF
Used by SAE J2534-2 (API Version 04.04)	0x00009000 - 0x0000997F
Reserved for SAE J2534-2	0x00009980 - 0x0000BFFF
ANALOG_IN	0x0000C000
Used by SAE J2534-2 (API Version 04.04)	0x0000C001 - 0x0000C01F
Reserved for SAE J2534-2	0x0000C020 - 0x0000FFFF
Tool Manufacturer Specific	0x00010000 - 0xFFFFFFFF

4.4 Connect Flags #defines

[Table 4](#) identifies the additional <Flags> values for the function PassThruConnect.

Table 4 - Connect flags definitions

Definition	Flag Bit(s)	Bit Mask	Protocol(s)
RECEIVE_BROADCAST	16	0x00010000	SAE J1939, TP2.0
ETH_FLAG_MANUAL_NEGOTIATE	16	0x00010000	ETHERNET
NDIS_PINS_OPTION1	16	0x00010000	ETHERNET_NDIS
NDIS_PINS_OPTION2	17	0x00020000	ETHERNET_NDIS
ETH_FLAG_HALF_DUPLEX	17	0x00020000	ETHERNET
ISO15765_ON_J1939	17	0x00020000	ISO15765
Reserved for SAE J2534-2	22-18	0x007C0000	
LISTEN_ONLY	23	0x00800000	
Tool Manufacturer Specific	31-24	0xFF000000	

4.5 Filter Type #defines

[Table 5](#) identifies the additional values defined for filter types.

Table 5 - Filter type definitions

Definition	Value(s)
Reserved for SAE J2534-2	0x00008000 - 0x0000FFFF
Tool Manufacturer Specific	0x00010000 - 0xFFFFFFFF

4.6 ioctl ID #defines

[Table 6](#) identifies the additional values defined for ioctl IDs.

Table 6 - IOCTL ID definitions

Definition	Value(s)
Used by SAE J2534-2 (API Version 04.04)	0x00008000 - 0x00008003
START_REPEAT_MESSAGE	0x00008004
QUERY_REPEAT_MESSAGE	0x00008005
STOP_REPEAT_MESSAGE	0x00008006
GET_DEVICE_CONFIG	0x00008007
SET_DEVICE_CONFIG	0x00008008
PROTECT_J1939_ADDR	0x00008009
REQUEST_CONNECTION	0x0000800A
TEARDOWN_CONNECTION	0x0000800B
GET_DEVICE_INFO	0x0000800C
GET_PROTOCOL_INFO	0x0000800D
Used by SAE J2534-2 (API Version 04.04)	0x0000800E - 0x0000800E
GET_NDIS_ADAPTER_INFO	0x0000800F
GET_RESOURCE_INFO	0x00008010
NS_AUTO_CHANGE_MSG	0x00008011
HS_AUTO_CHANGE_MSG	0x00008012
NON_BLOCKING_FIVE_BAUD_INIT	0x00008013
NON_BLOCKING_FAST_INIT	0x00008014
GET_ANALOG_CHANNEL_INFO	0x00008015
Reserved for SAE J2534-2	0x00008016 - 0x0000801F
SET_MAC_ADDRESS	0x00008020
GET_MAC_ADDRESS	0x00008021
ETH_ACTIVATION_PULLUP	0x00008022
GET_SOCKET_STATE	0x00008023
GET_DATALENGTH_IN_FIRST_PTMSG	0x00008024
IP4_GET_ADDRESS_INFO	0x00008025
IP6_GET_ADDRESS_INFO	0x00008026
GET_DEVICE_NAME	0x00008027
Reserved for SAE J2534-2	0x00008028 - 0x0000FFFF
Tool Manufacturer Specific	0x00010000 - 0xFFFFFFFF

4.7 GET_CONFIG/SET_CONFIG #defines

[Table 7](#) identifies the additional values defined for GET_CONFIG/SET_CONFIG.