



<b>SURFACE VEHICLE RECOMMENDED PRACTICE</b>	<b>J2534™-2/16_0500</b>	<b>JAN2022</b>
	Issued	2022-01
Pass-Thru Extended Feature - IPv4		

RATIONALE

This specification is new functionality being added to support diagnostics over IP (DoIP, ISO 13400) and is compatible with SAE J2534-1\_0500 (API version 05.00).

TABLE OF CONTENTS

1.	SCOPE.....	3
2.	REFERENCES.....	3
2.1	Applicable Documents .....	3
2.1.1	SAE Publications.....	3
2.1.2	Other Documents .....	3
3.	DEFINITIONS .....	4
4.	ACRONYMS .....	4
5.	DOCUMENTATION CONVENTIONS.....	5
6.	PASS-THRU INTERFACE REQUIREMENTS.....	5
6.1	Specific Protocol Requirements.....	6
6.1.1	Interaction with Higher Layers .....	7
6.1.2	Interaction with Physical Channel .....	7
6.2	Pin Usage.....	7
6.3	Error Handling .....	7
6.3.1	Device Not Connected .....	7
6.3.2	Network Errors .....	7
7.	WIN32 APPLICATION PROGRAMMING INTERFACE.....	8
7.1	API Changes .....	8
7.2	Message Structure .....	8
7.3	API Functions - Detailed Information .....	8
7.3.1	PassThruLogicalConnect.....	8
7.3.2	PassThruSelect.....	10
7.3.3	PassThruIoctl .....	10
7.4	IOCTL Section.....	11
7.4.1	GET_CONFIG/SET_CONFIG.....	12
7.4.2	IP4_GET_ADDRESS_INFO .....	12

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2022 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)  
Tel: +1 724 776 4970 (outside USA)

For more information on this standard, visit [https://www.sae.org/content/J2534-2/16\\_5\\_00](https://www.sae.org/content/J2534-2/16_5_00)

This is a preview. Click here to purchase the full publication.

SAE WEB ADDRESS:

8.	DISCOVERY MECHANISM.....	12
8.1	GET_PROTOCOL_INFO.....	12
8.1.1	Called with <ProtocolID> ETHERNET.....	13
8.1.2	Called with <ProtocolID> IP4_LOGICAL.....	13
8.2	GET_RESOURCE_INFO.....	13
9.	NOTES.....	14
9.1	Revision Indicator.....	14
Figure 1	Ethernet stack construction.....	6
Table 1	OSI seven layer model.....	5
Table 2	Network errors.....	7
Table 3	SAE J2534 API functions.....	8
Table 4	Return values for PassThruLogicalConnect.....	10
Table 5	Return values for PassThruIoctl.....	11
Table 6	IOCTL details.....	11
Table 7	GET_CONFIG/SET_CONFIG.....	12
Table 8	GET_CONFIG/SET_CONFIG details.....	12
Table 9	IP4_GET_ADDRESS_INFO.....	12
Table 10	GET_PROTOCOL_INFO.....	13
Table 11	GET_PRTOTOCOL_INFO details for ethernet physical communication channel.....	13
Table 12	GET_PROTOCOL_INFO details for IP4 logical communication channel.....	13

## 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, and defines how to implement the Internet Protocol version 4 (IPv4) within the SAE J2534 API framework. This document details only the changes from SAE J2534-1\_0500 and items not specifically detailed in this document are assumed to have not changed.

An SAE J2534-2/16\_0500 interface shall be compliant to the Internet Protocol version 4 (IPv4) feature only when all the required functionality in this SAE Recommended Practice is implemented. Any functionality not required for compliance will be specifically marked as “optional” in this document.

This document must be used in conjunction with SAE J2534-2/13\_0500 (ethernet), SAE J2534-2/BA\_0500, and SAE J2534-2/RE\_0500 documents.

## 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](http://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)
SAE J2534-2/RE_0500	Pass-Thru Extended Features - Resource Document (API version 05.00)
SAE J2534-2/13_0500	Pass-Thru Extended Features - Ethernet (API version 05.00)
SAE J2534-2/15_0500	Pass-Thru Extended Features - IPv6 (API version 05.00)
SAE J2534-2/17_0500	Pass-Thru Extended Features - UDP (API version 05.00)
SAE J2534-2/18_0500	Pass-Thru Extended Features - TCP CLIENT (API version 05.00)

#### 2.1.2 Other Documents

IETF RFC 791	Internet Protocol
IETF RFC 792	Internet Control Message Protocol
IETF RFC 826	An Ethernet Address Resolution Protocol
IETF RFC 2131	Dynamic Host Configuration Protocol
IETF RFC 3927	Dynamic Configuration of IPv4 Link-Local Addresses