PiEmbSysTech

Embedded Research Blog

Data Identifiers (DID) of UDS Protocol (ISO 14229)

1 Comment / Automotive Electronics / By piembsystech

Introduction To Data Identifiers (DID) of UDS Protocol

Data Identifier (DID) of UDS Protocol is a unique identifier used to represent a specific data item or group of data items within a vehicle's electronic control unit (ECU). These data items can include things like sensor readings, actuator positions, and diagnostic trouble codes (DTCs). The DID is used to access and manipulate these data items through the UDS protocol, which allows for communication between diagnostic tools and the vehicle's onboard computer.

The UDS protocol includes a range of diagnostic service requests and responses that can be used to read and write data, control inputs and outputs, and perform other diagnostic functions. The DID is an important part of the UDS protocol as it allows for the identification and manipulation of specific data items within the vehicle's systems.

Definition Of Data Identifiers (DID) of UDS RDBI 0x22 Service

A DataIdentifier (DID) is a logical representation of an object or group of objects within a vehicle's onboard computer. This parameter can be found in the computer's memory, either in fixed memory or temporarily stored in RAM if defined dynamically. It can be used in multiple diagnostic service requests such as reading and writing data by identifier, and controlling input and output by identifier.

It is also used in various diagnostic service responses, such as a positive response to reading a diagnostic trouble code (DTC) snapshot record by DTC number. In general,

dataIdentifiers allow for access and manipulation of specific information related to the vehicle's systems and components.

List Of All Data Identifiers (DID) of UDS or ISO 14229 Standard

There are lof of DIDs defined in ISO 14229 standard or UDS protocol. Theses are the DIDs used in [AUTOSAR](#). The DID number and value is different. The DID number is the identification of a particular Data which is called DID value. When we want this value like Vehicle speed, or enginee speed like this, then we should know the DID number of this vehicle speed or enginee speed to read this value by using that particular DID number. We have listed out them in below table.

DID Number	DID Name	DID Value Description
0x0000 – 0x00FF	ISO SAE Reserved	This range of values shall be reserved by this document for future definition.
0x0100 – 0xA5FF	Vehicle Manufacturer Specific	This range of values shall be used to reference vehicle manufacturer specific record data identifiers and input/output identifiers within the server.requirements.
0xA600 – 0xA7FF	Reserved For Legislative Use	This range of values is reserved for future legislative requirements.
0xA800 – 0xACFF	Vehicle Manufacturer Specific	This range of values shall be used to reference vehicle manufacturer

DID Number	DID Name	DID Value Description
		specific record data identifiers and input/output identifiers within the server.
0xAD00 – 0xAFFF	Reserved For Legislative Use	This range of values is reserved for future legislative requirements.
0xB000 – 0xB1FF	Vehicle Manufacturer Specific	This range of values shall be used to reference vehicle manufacturer specific record data identifiers and input/output identifiers within the server.
0xB200 – 0xBFFF	Reserved For Legislative Use	This range of values is reserved for future legislative requirements.
0xC000 – 0xC2FF	Vehicle Manufacturer Specific	This range of values shall be used to reference vehicle manufacturer specific record data identifiers and input/output identifiers within the server.
0xC300 – 0xCEFF	Reserved For Legislative Use	This range of values is reserved for future legislative requirements.
0xCF00 – 0xEFFF	Vehicle Manufacturer Specific	This range of values shall be used to reference vehicle manufacturer

DID Number	DID Name	DID Value Description
		specific record data identifiers and input/output identifiers within the server.
0xF000 – 0xF00F	Network Configuration Data For Tractor Trailer Application Data Identifier	This value shall be used to request the remote addresses of all trailer systems independent of their functionality.
0xF010 – 0xF0FF	Vehicle Manufacturer Specific	This range of values shall be used to reference vehicle manufacturer specific record data identifiers and input/output identifiers within the server.
0xF100 – 0xF17F	Identification Option Vehicle Manufacturer Specific Data Identifier	This range of values shall be used for vehicle manufacturer specific server/vehicle identification options.
0xF180	Boot Software Identification Data Identifier	The vehicle manufacturer's specific ECU boot software identification record will be referenced using this value. The record data's first byte will indicate the number of reported modules. The boot software identification(s)

DID Number	DID Name	DID Value Description
		will be listed after the number of modules. The ECU-specific format of the boot software identification structure is determined by the vehicle manufacturer.
0xF181	Application Software Identification Data Identifier	The vehicle manufacturer's specific ECU application software numbers will be referenced using this value. The record data's first byte will indicate the number of reported modules. The application software identification(s) will be listed after the number of modules. The ECU-specific format of the application software identification structure is determined by the vehicle manufacturer.
0xF182	Application Data Identification Data Identifier	The vehicle manufacturer's specific ECU application data identification record will be referenced using this value. The record data's first byte will indicate the number of reported

DID Number	DID Name	DID Value Description
		modules. The application data identification(s) will be listed after the number of modules. The ECU-specific format of the application data identification structure is determined by the vehicle manufacturer.
0xF183	Boot Software Finger-print Data Identifier	This value shall be used to reference the vehicle manufacturer-specific ECU boot software fingerprint identification record. The format of the recorded data, which will be specific to the ECU, shall be defined by the vehicle manufacturer.
0xF184	Application Software Fingerprint Data Identifier	The vehicle manufacturer's specific ECU application software fingerprint identification record will be referenced using this value. The record data's content and format is determined by the vehicle manufacturer and is specific to the ECU.
0xF185	Application Data Fingerprint Data Identifier	The vehicle manufacturer's specific

DID Number	DID Name	DID Value Description
		ECU application data fingerprint identification record will be referenced using this value. The record data's content and format is determined by the vehicle manufacturer and is specific to the ECU.
0xF186	Active Diagnostic Session Data Identifier	This value will be used to indicate the current active diagnostic session on the server. The specific session type will be defined by the "diagnosticSessionType" subfunction parameter in the DiagnosticSessionControl service
0xF187	Vehicle Manufacturer Spare Part Number Data Identifier	This value will be used to reference the vehicle manufacturer's specific spare part number. The record data's content and format is determined by the server and is specific to the vehicle manufacturer
0xF188	Vehicle Manufacturer ECU Software Number Data Identifier	This value will be used to reference the vehicle manufacturer's specific

DID Number	DID Name	DID Value Description
		spare part number. The record data's content and format is determined by the server and is specific to the vehicle manufacturer
0xF189	Vehicle Manufacturer ECU Software Version Number Data Identifier	This value will be used to reference the vehicle manufacturer's specific ECU (server) software version number. The record data's content and format is determined by the server and is specific to the vehicle manufacturer.
0xF18A	System Supplier Identifier Data Identifier	This value will be used to reference the system supplier's name and address information. The record data's content and format is determined by the server and is specific to the system supplier.
0xF18B	ECU Manufacturing Date Data Identifier	This value will be used to reference the ECU (server) manufacturing date. The record data will be in the form of an unsigned numeric, ASCII or BCD format, and will be

DID Number	DID Name	DID Value Description
		arranged in the order of Year, Month, Day.
0xF18C	ECU Serial Number Data Identifier	This value will be used to reference the ECU (server) serial number. The record data's content and format is determined by the server.
0xF18D	Supported Functional Units Data Identifier	This value will be used to request the functional units that are implemented in a server.
0xF18E	Vehicle Manufacturer Kit Assembly Part Number Data Identifier	This value will be used to reference the vehicle manufacturer's order number for a kit, which is a collection of assembled parts purchased as a whole for production, such as a cockpit. The spare part number only designates the server, as in the case of after-sales. The record data's content and format is determined by the server and is specific to the vehicle manufacturer.
0xF18F	ISO SAE Reserved Standardized	This range of values shall be reserved by this document for future

DID Number	DID Name	DID Value Description
		definition of standardized server/vehicleIdentification options.
0xF190	VIN Data Identifier	This value shall be used to reference the VIN number. Record data content and format shall be specified by the vehicle manufacturer.
0xF191	Vehicle Manufacturer ECU Hardware Number Data Identifier	This value will be used by reading services to reference the vehicle manufacturer's specific ECU (server) hardware number. The record data's content and format is determined by the server and is specific to the vehicle manufacturer.
0xF192	System Supplier ECU Hardware Number Data Identifier	This value shall be used to reference the system supplier specific ECU (server) hardware number. Record data content and format shall be server specific and defined by the system supplier.
0xF193	System Supplier ECU Hardware Version Number Data Identifier	This value shall be used to reference the system supplier specific ECU (server) hardware version

DID Number	DID Name	DID Value Description
		number. Record data content and format shall be server specific and defined by the system supplier.
0xF194	System Supplier ECU Software Number Data Identifier	This value will be used to reference the system supplier's specific ECU (server) software number. The record data's content and format is determined by the server and is specific to the system supplier.
0xF195	System Supplier ECU Software Version Number Data Identifier	This value shall be used to reference the system supplier specific ECU (server) software version number. Record data content and format shall be server specific and defined by the system supplier.
0xF196	Exhaust Regulation Or Type Approval Number Data Identifier	This value shall be used to reference the exhaust regulation or type approval number (valid for those systems which require type approval). Record data content and format shall be server

DID Number	DID Name	DID Value Description
		specific and defined by the vehicle manufacturer. Refer to the relevant legislation for any applicable requirements.
0xF197	System Name Or Engine Type Data Identifier	This value will be used to reference the system name or engine type. The record data's content and format is determined by the server and is specific to the vehicle manufacturer.
0xF198	Repair Shop Code Or Tester Serial Number Data Identifier	This value shall be used to reference the repair shop code or tester (client) serial number (e.g., to indicate the most recent service client used re-program server memory). Record data content and format shall be server specific and defined by the vehicle manufacturer.
0xF199	Programming Date Data Identifier	The date of the last programming of the server shall be referenced using this value. The format of the recorded data shall be unsigned numeric, ASCII

DID Number	DID Name	DID Value Description
		or BCD, and the order shall be Year, Month, Day.
0xF19A	Calibration Repair Shop Code Or Calibration Equipment Serial Number	The repair shop code or client serial number for the most recent calibration service shall be referenced using this value. The format of the recorded data, which will be specific to the server, shall be defined by the vehicle manufacturer.
0xF19B	Calibration Date Data Identifier	The date of the last calibration of the server shall be referenced using this value. The format of the recorded data shall be unsigned numeric, ASCII or BCD, and the order shall be Year, Month, Day.
0xF19C	Calibration Equipment Software Number Data Identifier	The software version used by the client to calibrate the server shall be referenced using this value. The format of the recorded data, which will be specific to the server, shall be defined by the vehicle manufacturer.
0xF19D	ECU Installation Date Data Identifier	The date of the ECU (server) installation in the

DID Number	DID Name	DID Value Description
		vehicle shall be referenced using this value. The format of the recorded data shall be either unsigned numeric, ASCII or BCD, and the order shall be Year, Month, Day.
0xF19E	ODX File Data Identifier	This value shall be used to reference the ODX (Open Diagnostic Data Exchange) file that will be used to interpret and scale the server data.
0xF19F	Entity Data Identifier	This value shall be used to reference the entity data identifier for a secured data transmission.
0xF1A0 – 0xF1EF	Identification Option Vehicle Manufacturer Specific	This range of values shall be used to identify the server/vehicle options that are specific to the vehicle manufacturer.
0xF1F0 – 0xF1FF	Identification Option System Supplier Specific	This range of values shall be used to identify the server/vehicle system options that are specific to the system supplier.
0xF200 – 0xF2FF	Periodic Data Identifier	This range of values shall be used to reference periodic record data identifiers. Those can

DID Number	DID Name	DID Value Description
		either be statically or dynamically defined.
0xF300 – 0xF3FF	Dynamically Defined Data Identifier	This range of values shall be used for dynamically defined data identifiers.
0xF400 – 0xF4FF	OBD Data Identifier	This range of values is reserved for OBD/EOBD PIDs as defined in ISO 15031-5.
0xF500 – 0xF5FF	OBD Data Identifier	This range of values is reserved to represent future defined OBD/EOBD PIDs.
0xF600 – 0xF6FF	OBD Monitor Data Identifier	This range of values is reserved for the result values of OBD/EOBD on-board monitoring as defined in ISO 15031-5.
0xF700 – 0xF7FF	OBD Monitor Data Identifier	This range of values is reserved to represent future defined result values of OBD/EOBD on-board monitoring.
0xF800 – 0xF8FF	OBD Info Type Data Identifier	This range of values is reserved for OBD/EOBD info type values as defined in ISO 15031-5.

DID Number	DID Name	DID Value Description
0xF900 – 0xF9FF	Tachograph Data Identifier	This range of values is reserved for Tachograph Data Identifiers (DIDs) as defined in ISO 16844-7.
0xFA00 – 0xFA0F	Airbag Deployment Data Identifier	This range of values is reserved for end of life activation of on-board pyrotechnic devices as defined in ISO 26021-2.
0xFA10	Number Of EDR Devices	This value shall be used to report the number of Event Data Recorder (EDR) devices that are capable of reporting EDR data.
0xFA11	EDR Identification	This value shall be used to report the identification data of the Event Data Recorder (EDR).
0xFA12	EDR Device Address Information	This value shall be used to report the EDR device address information according to the format defined in ISO 26021-2 for the dataIdentifier 0xFA02.
0xFA13 – 0xFA18	EDR Entries	This range shall be used to report individual EDR entries. Each DID shall represent a single EDR entry with 0xFA13

DID Number	DID Name	DID Value Description
		representing the latest EDR entry.
0xFA19 – 0xFAFF	Safety System Data Identifier	This range of values is reserved to represent safety system related DIDs.
0xFB00 – 0xFCFF	Reserved For Future Legislative Requirements	This range of values is reserved for future legislative requirements.
0xFD00 – 0xFEFF	System Supplier Specific	This range of values shall be used to reference the record data identifiers and input/output identifiers within the server that are specific to the system supplier.
0xFF00	UDS Version Data Identifier	This value shall be used to reference the version of UDS (Unified Diagn Services) implemented in the server. The scaling of this Data Identifier (DID) can be found in Table C.11.
0xFF01 – 0xFFFF	ISO SAE Reserved	This range of values shall be reserved by this document for future definition.

All Data Identifiers (DID) list defined in ISO14229 standard

The above table is the list off all the DIDs used in Automotive vehicles to store the data in flash memory. To read the data from the ECU, we use the Read Data by Identifier (RDBI) service (0x22). To Write the data onto memory of any DID, we use the Write Data By Identifier (WDBI) Service (0x2E). This is also called as Decentralized Identifier in UDS Protocol or Vehicle Diagnostic DIDs in UDS Protocol.

I hope this will help you in your company or service center for development, testing, or diagnostic data analysis. Please add your comments or feedback to motivate PiEmbSysTech to write more articles like this.

← Previous Post   Next Post →

Equivalent Technical Articles
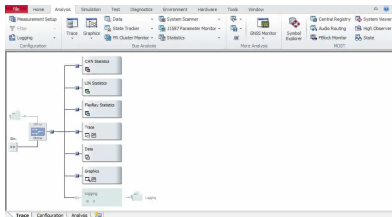
How to send the CAN message in Canalyzer or canoe?

By piembsystech
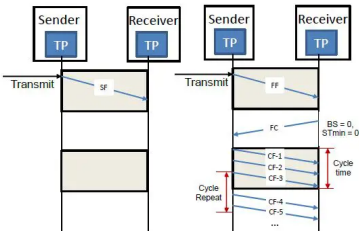
Periodic Messages in UDS Protocol

By piembsystech
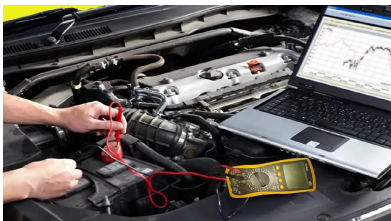
How to detect a fault in a Vehicle?

By piembsystech

✉ Subscribe ▼   Connect with G | Login

Please login to comment

1 COMMENT   ⚡ 🔥   Most Voted ▾

Veerendra N n

Best article on UDS Data Identifier and list of all UDS Data Identifiers are available here.

👍 0 👎

Piest Forum - Android App Link

Gift A Cup Of Coffee To PiEmbSystech

JOIN TELEGRAM FOR TECH. DISCUSSION

Recent Posts

Automatic Dependent Surveillance – Broadcast (ADS-B)

Mastering Encapsulation in CPP Programming language

Understanding the Advanced Encryption Standard (AES)

Different Types of Cybersecurity

Understanding Inheritance in CPP Programming Language

Archives

Select Month

Embedded Research Forum

Table Of Contents

Guest Post

Home

HTTP (Hypertext Transfer Protocol): An Overview of the Internet's Most Widely Used Protocol

Hw/Sw Interface

I2C Protocol

INTEGRITY Operating System

IoT

ISO-15031 Protocol

Joint Test Action Group (JTAG) Protocol

K-Line Protocol

KWP-2000 Protocol

LIN Protocol

Linux Basics

Linux Device Driver

Linux IPC

Linux Kernel

Linux System Architecture

Login

Long Range Wide Area Network (LoRaWAN) Protocol

Mastering MIPI I3C Protocol: A Comprehensive Guide to Efficient Communication Between Devices

Mbed OS: Arm's Open-Source OS for IoT Devices

Message Queuing Telemetry Transport (MQTT) Protocol

Microcontroller

MODBUS Protocol

MOST Protocol

Motor Design

Nucleus RTOS

NuttX RTOS

OBD-II

Operating System

Order Received

OSAL

OSEK

Payment

WI-R Protocol

Windows OS: An Evolution in GUI Based OS

XBEE Protocol

XCP Protocol

Zephyr RTOS

Aerospace Engineering

Automotive Electronics

Avionics Engineering

Computer Science

Electronics Technology

Linux System

Programming Language

    C

    C++

    Python

Robotics Technology

VLSI

Privacy Policy   Terms and Conditions   Disclaimer   Cookie Policy   About Us   Contact Us   Payment

We and our partners share information on your use of this website to help improve your   ×
experience.
Do not sell my info:

Okay