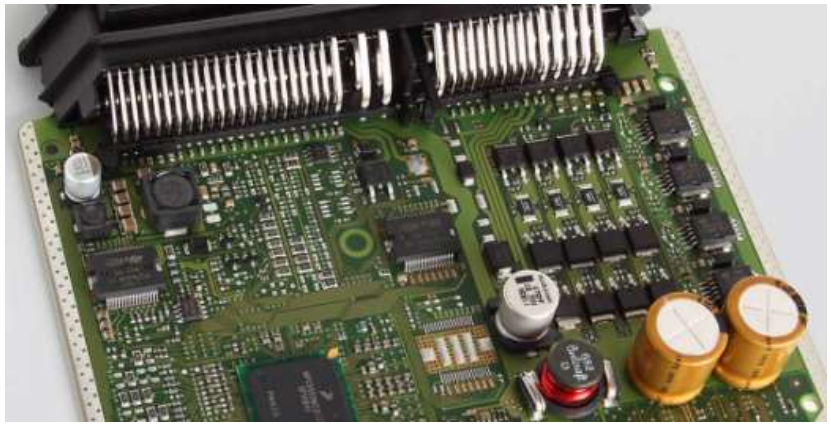
Read Data By Periodic Identifier

Purpose : Client wants to Read the periodic transmission of data from the ECU by one or more periodic Identifier

How to Read the Periodic data in ECU ?

Using Service and Periodic DID



UDS Course

Purpose : Understand each and every Concepts in UDS

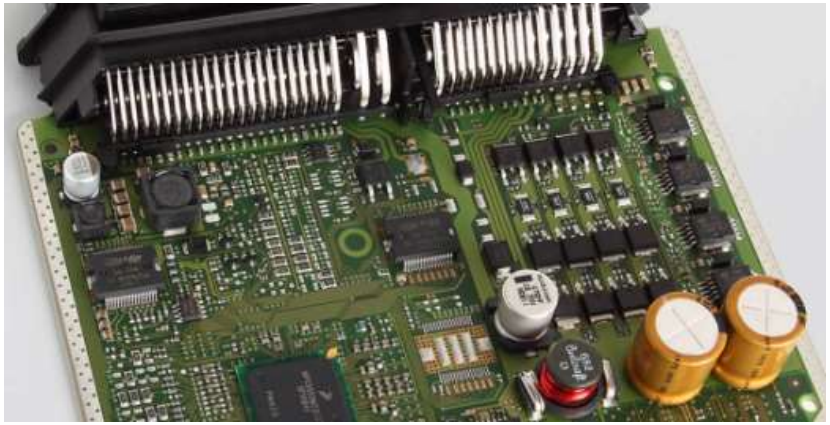
Relation between Periodic DID & DID

The periodic Data Identifier represents the low byte of a data Identifier reserved for this service.

Ex :

DID - A2 D4

Periodic DID – D4



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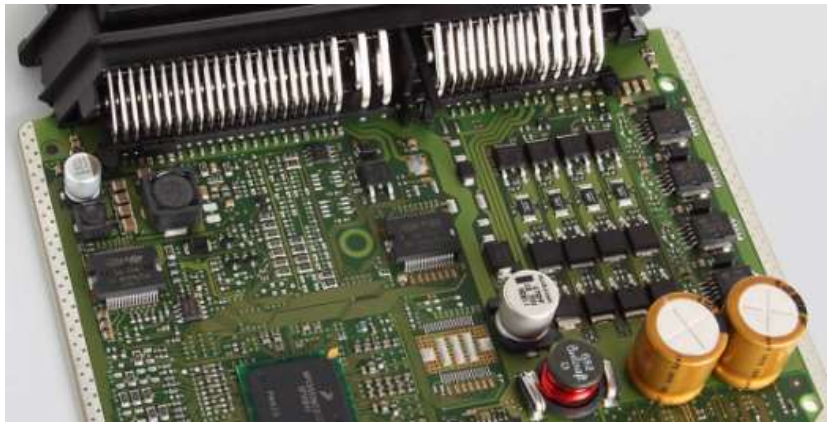

Terms –Data by Periodic ID

Data Identifier

- This parameter **identifies** the server **data record** that the tester is requesting to write some data into the server with respect with this identifier. Each data have unique Identifier that can be retrieved by the same only

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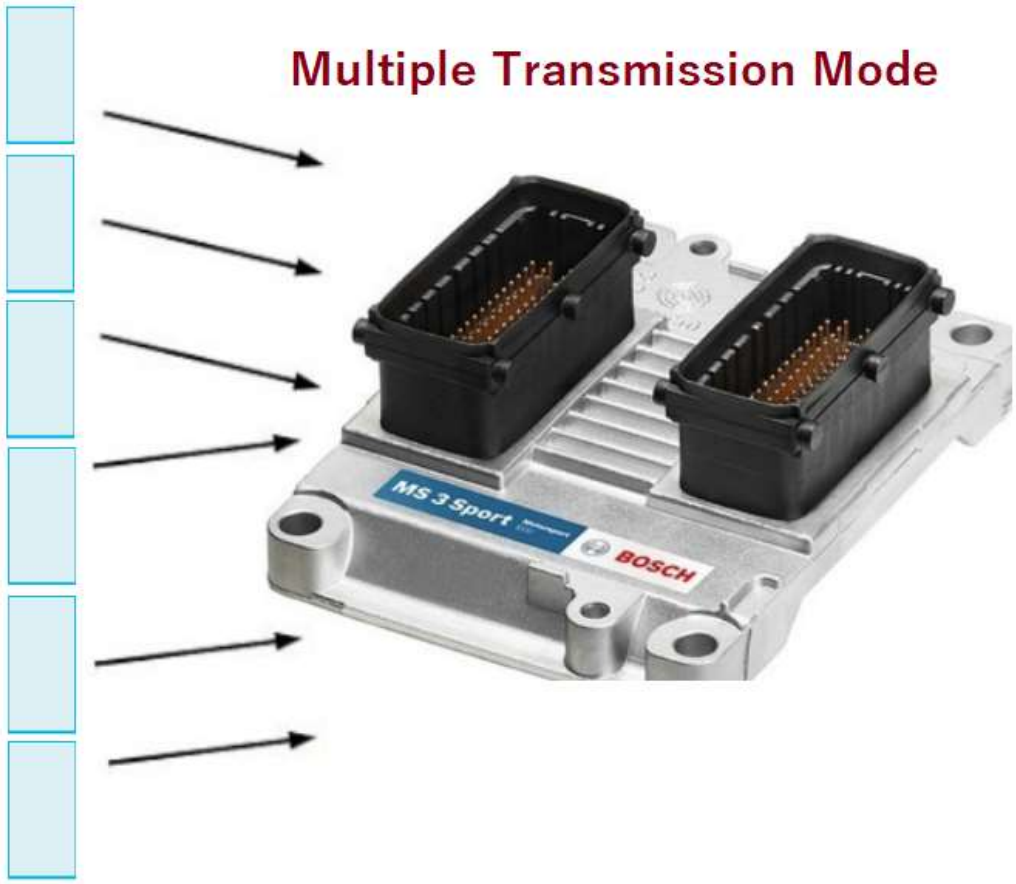
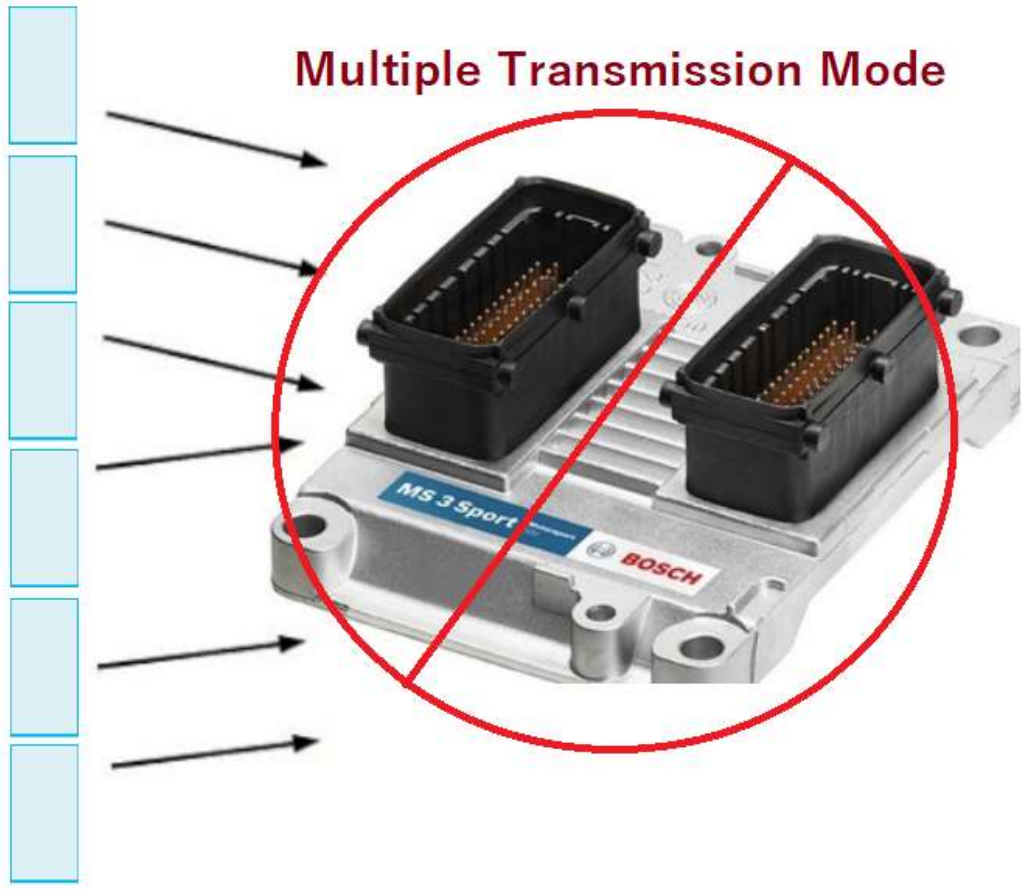
Data Record

- This parameter provides the data record associated with the data Identifier that the tester is requesting to write in to the server as **data**.

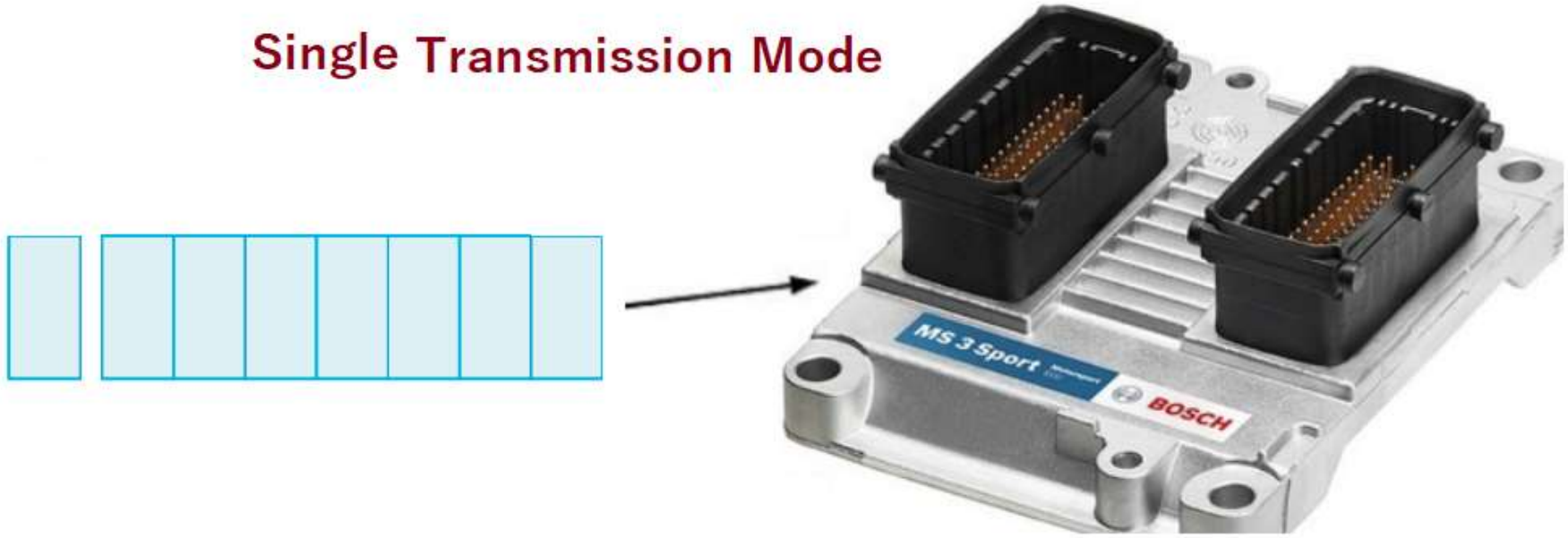
Single Transmission & Multiple Transmission



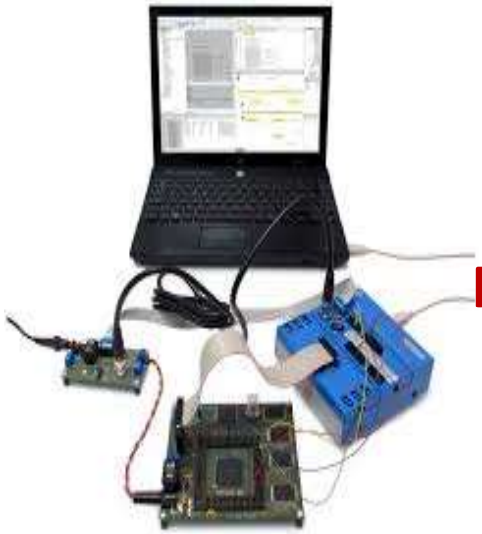
Single Transmission & Multiple Transmission



Single Transmission

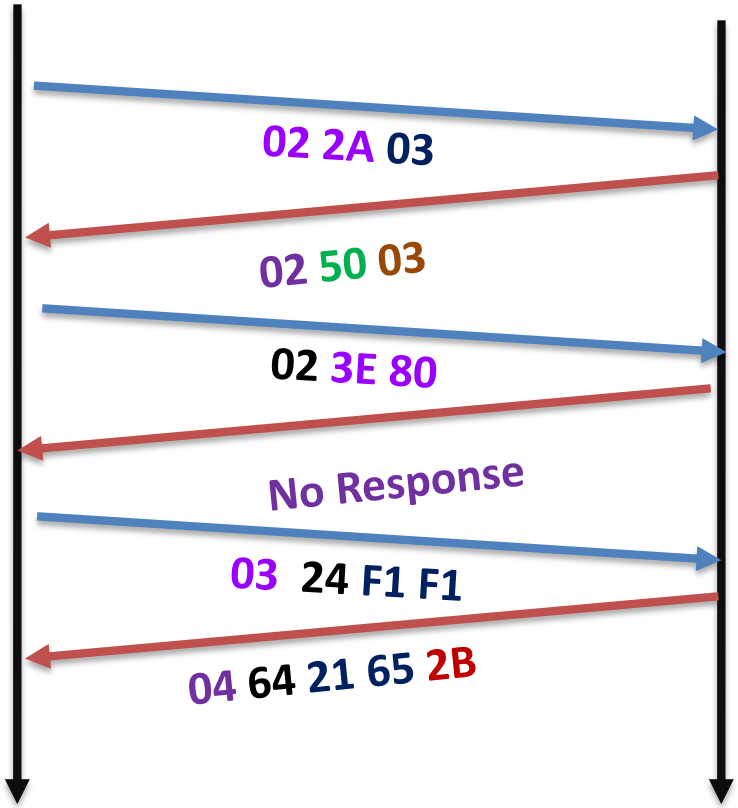


Single Transmission is the only allowed in Read Data Period data Identifier



Request & Response
for
Read Data By Periodic Identifier

24 - Service ID
F1 F1 -
Vehicle Speed
03 - PCI Length

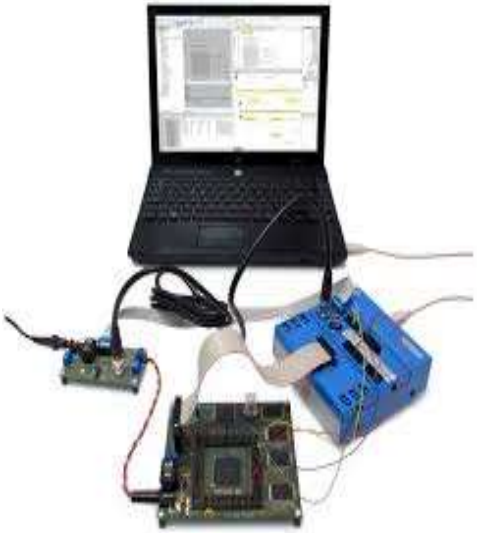


21 65 -
Scaling Byte
2B -
Scaling Byte Extension

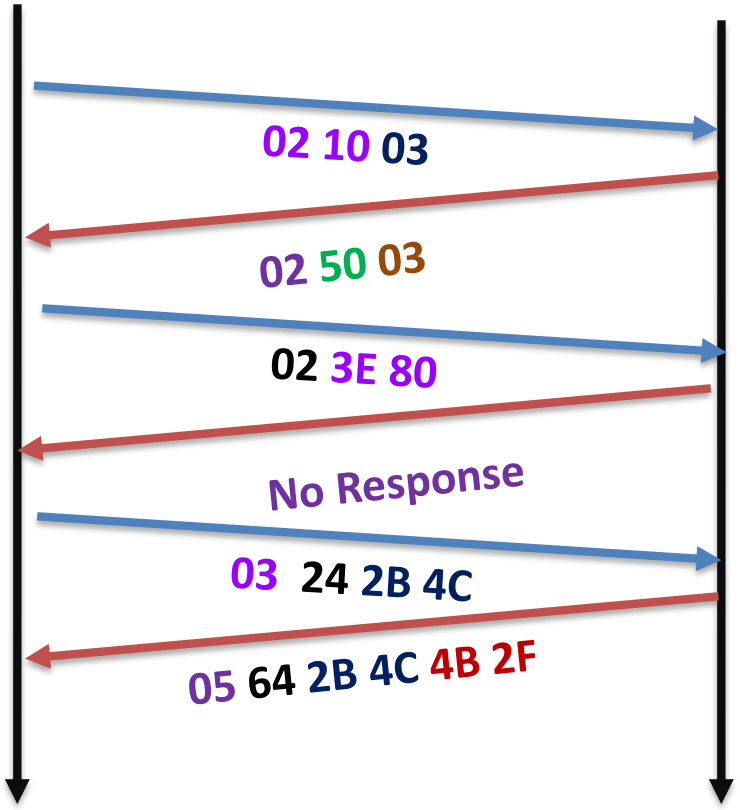
2. Constant Data (Indirectly Accessible) Ex : S/w number

Usually, the constant data like software number can be **read by Service (0x22**), but due to some reasons the data can be readable using this service also

Note : There is no constraint to use the data in this service and its completely depends on the manufacturer or supplier specific



Request & Response
for
Read Scaling Data
Software Number



24 - Service ID
2B 4C -
Data Identifier
03 - PCI Length

4B 2F - Software Number (ASCII)

3. Maskable Ex : Flags / Indicators

Flags and Indicators are represented explicitly in bits !!

For Example :

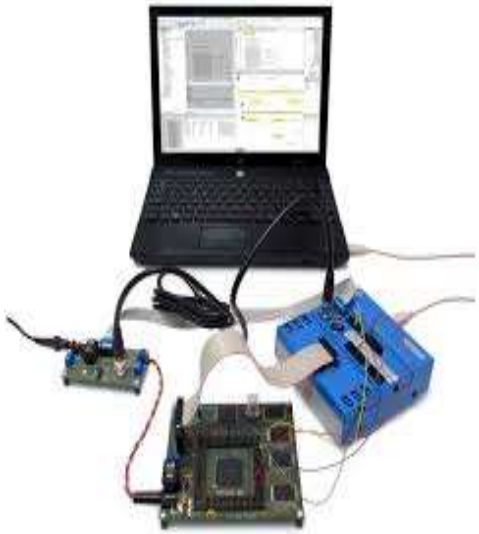
If a Scaling Extension Byte is encoded for the Scaling extension 1, then it contains 8 flags as 8 bits

Scaling Extension Byte 1 : 31 (Binary 0011 0001)

3. Maskable Ex : Flags / Indicators

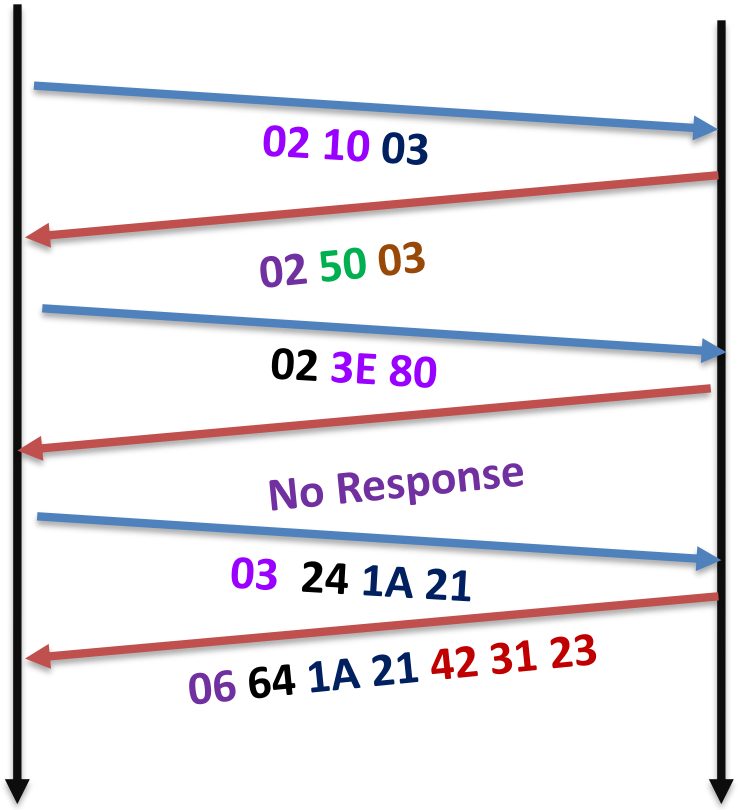
Scaling Extension Byte 1 : 31 (Binary 0011 0001)

0 - Coolant System is not faulty
0 - Cylinder 1 misfiring not faulty
1 - TPMS error detected
1 - Yaw Rate Sensor fault detected
0 - SAS plausibility flag not set
0 - Cylinder2 misfiring not faulty
0 - Wheel Speed Sensor Fault not detected
1 - Fuel Exhaust Fault detected



Request & Response
for
Read Scaling Data
Maskable data

24 - Service ID
1A 21 -
Data Identifier
03 - PCI Length



42 - Scaling Byte
31 23 - Scaling Byte Extension1 & 2

Scaling Extension Byte 1 : 31 (Binary 0011 0001)

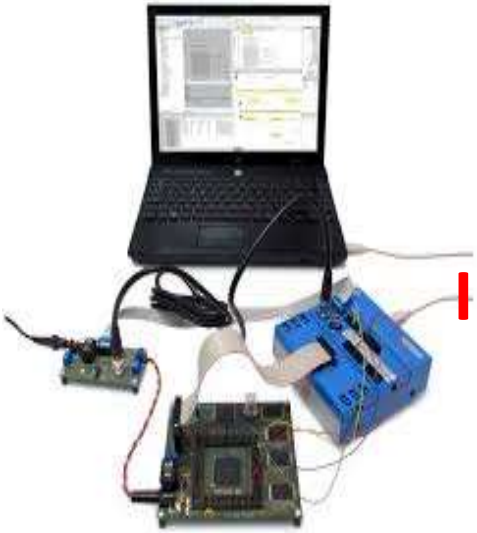
0 - Coolant System is not faulty
0 - Cylinder 1 misfiring not faulty
1 - TPMS error detected
1 - Yaw Rate Sensor fault detected
0 - SAS plausibility flag not set
0 - Cylinder2 misfiring not faulty
0 - Wheel Speed Sensor Fault not detected
1 - Fuel Exhaust Fault detected

Scaling Extension Byte 1 : 23 (Binary 0010 0011)

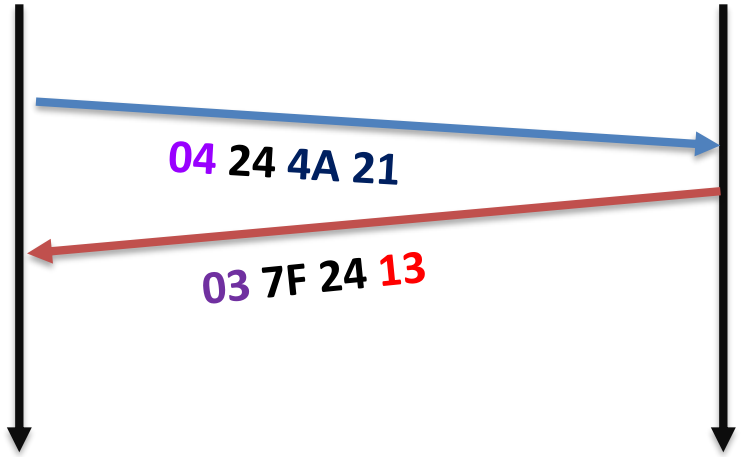
0 - Airbag System is not faulty
0 - Cylinder 3 misfiring not faulty
1 - WSS1 error detected
0 - Longitudinal Sensor no fault detected
0 - SAS plausibility flag not set
0 - Cylinder 4 misfiring not faulty
1 - WSS2 Fault detected
1 - Compressor Fault detected

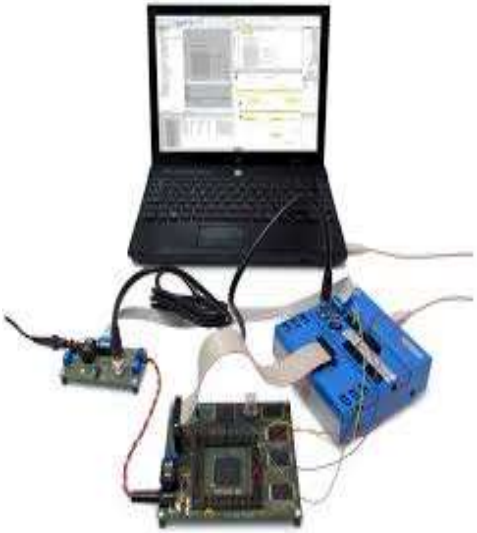
List of NRCs Supported – 0x22

- 0x13 Incorrect Message Length
- 0x22 Conditions Not Correct
- 0x31 Request Out of Range
- 0x33 Security Access Denied

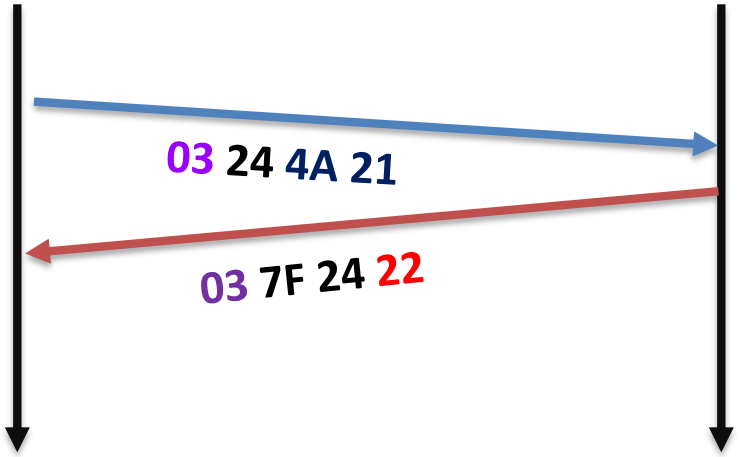


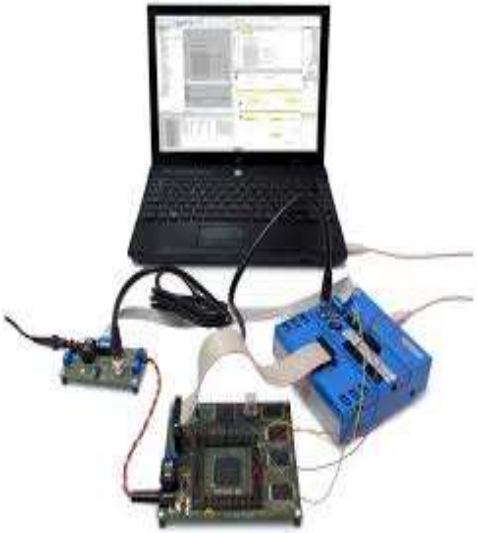
Incorrect Message Length



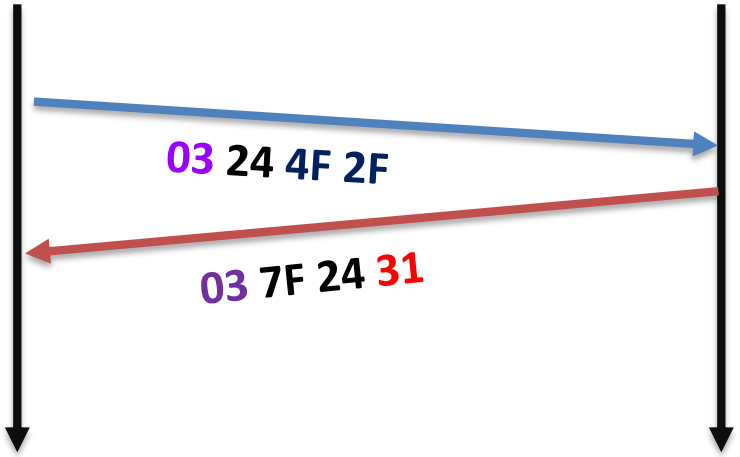


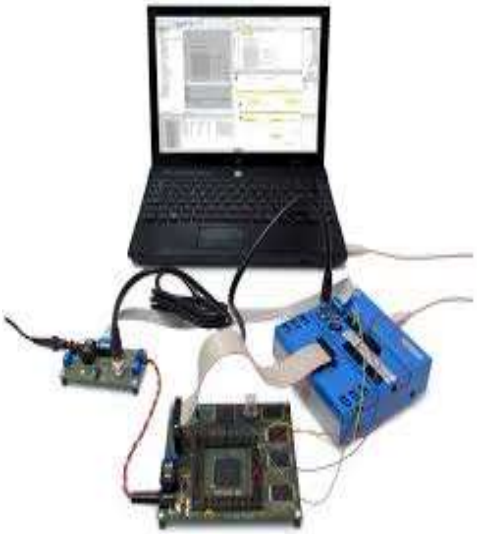
Conditions not correct



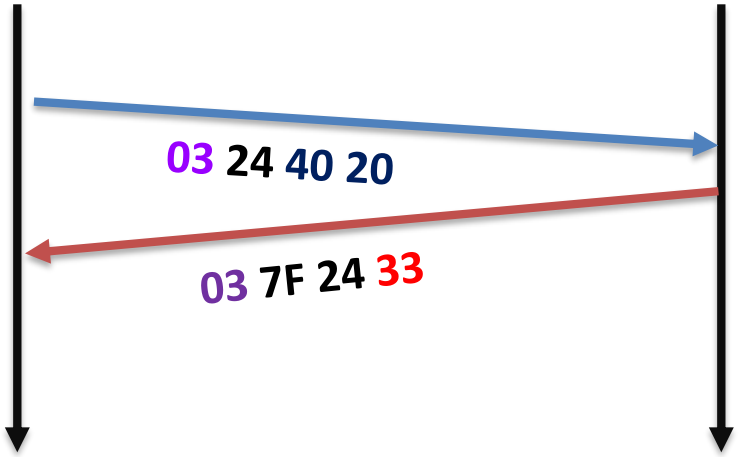


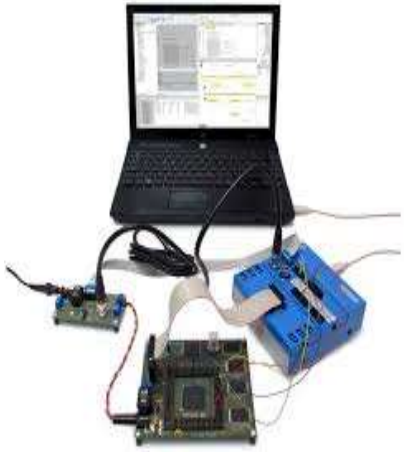
Request Out of Range





Security Access Denied





NRC Priority for Read Periodic Data Identifier

13 (Length Check) ---> 31 ---> 13 (Scaling Information data Bytes)--- > 33 -----> 22 ----> Other NRCs


The
End