Software requirement :

Diag Services :

$10 - (Diag session control) - completed for positive response and negative response

$11- (ECU Reset)- completed for positive and negative response except power down

$14 -( Clear DTC)

$19 –(Read DTC)

$22-(Read data by Identifier)

$2E – (Write data by identifier)

$27 –(security Access)

$28 – (Communication control)

$31 (Routine control)

$3E (Tester present)

**Diag session control ($10)**

|  |  |  |
| --- | --- | --- |
| Service Name | SID | Sub function |
| Default session | 10 | 01 |

|  |  |  |
| --- | --- | --- |
| Service Name | SID | Sub function |
| Programming session | 10 | 02 |

|  |  |  |
| --- | --- | --- |
| Service Name | SID | Sub function |
| Extended session | 10 | 03 |

Supported NRC for Session control :

NRC 13, 12, 22

Implemented : NRC 13, 12, 22

Service 10 should process when speed less than 5km /h

**ECUReset service($11)**

|  |  |  |
| --- | --- | --- |
| Service Name | SID | Sub function |
| Hard reset | 11 | 01 |

|  |  |  |
| --- | --- | --- |
| Service Name | SID | Sub function |
| KeyOffOn | 11 | 02 |

|  |  |  |
| --- | --- | --- |
| Service Name | SID | Sub function |
| SoftReset | 11 | 03 |

**Supported NRC for ECU Reset**

**NRC12,NRC13,NRC22,NRC33**

**Implemented NRC :** NRC12,NRC13,NRC22,NRC33

**$22-(Read data by Identifier)**

|  |  |  |
| --- | --- | --- |
| Service Name | SID | DID |
| Read voltage | 22 | 0x010A |

DID –> 010A , DID size 2 byte.

Operated voltage 12V

Minimum communication voltage : 6.1V

Maximum communication voltage : 17.9V

Threshold voltage for max : 16V, for minimum 7V

Malfunction : low\_voltage\_malfunction ,High\_voltage\_malfunction

|  |  |
| --- | --- |
| DTC Name | DTC number |
| low\_voltage\_malfunction | 0x112211 |
| High\_voltage\_malfunction | 0x112222 |

low\_voltage\_malfunction [if voltage <= 6V ]

High\_voltage\_malfunction[if voltage>= 18V]

|  |  |  |
| --- | --- | --- |
| Service Name | SID | DID |
| Read Vehicle speed | 22 | 0x010B |

**DID -> 010B,** DID size 2 byte**.**

**IF speed is more than 350 km ,create a malfunction**

|  |  |
| --- | --- |
| DTC Name | DTC number |
| **High\_speed\_malfunction** | **0x112233** |

**$2E-(Write data by Identifier)**

|  |  |  |
| --- | --- | --- |
| Service Name | SID | DID |
| Vehicle speed limit | 2E | 0x010C |