LIN Module Requirements

The LIN module is the responsible for the communication between a master and a slave; the master sends commands for various actions for a led and receives a response for one of the slaves.

The LIN version used for this implementation shall be LIN 2.0 (for more information you can go to <http://www.intron-tech.com/downfile%5CCANcriterion%5CLIN%20v2.0_L.pdf>)

The baud rate used for the LIN protocol shall be 19 200 kilobits per second.

For this implementation it shall be 1 master and 4 slaves.

The messages Data Base is composed by the next table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Msg ID** | **Msg Name** | **Msg Data Len** | **Msg Publisher** | **Msg Subscribers** | **Msg Callback** |
| CF | MASTER\_CMD\_ALL | 1 | MASTER | SLAVE1, SLAVE2, SLAVE3, SLAVE4 | Auto |
| 50 | MASTER\_CMD\_SLV1 | 1 | MASTER | SLAVE1 | Auto |
| 11 | MASTER\_CMD\_SLV2 | 1 | MASTER | SLAVE2 | Auto |
| 92 | MASTER\_CMD\_SLV3 | 1 | MASTER | SLAVE3 | Auto |
| D3 | MASTER\_CMD\_SLV4 | 1 | MASTER | SLAVE4 | Auto |
| 20 | SLAVE1\_RSP | 2 | SLAVE1 | MASTER | Auto |
| 61 | SLAVE2\_RSP | 2 | SLAVE2 | MASTER | Auto |
| E2 | SLAVE3\_RSP | 2 | SLAVE3 | MASTER | Auto |
| A3 | SLAVE4\_RSP | 2 | SLAVE4 | MASTER | Auto |
| F0 | SLAVE1\_ID | 7 | SLAVE1 | MASTER | Auto |
| B1 | SLAVE2\_ID | 7 | SLAVE2 | MASTER | Auto |
| 32 | SLAVE3\_ID | 7 | SLAVE3 | MASTER | Auto |
| 73 | SLAVE4\_ID | 7 | SLAVE4 | MASTER | Auto |

There are 5 signal types:

* Stat: Enabled or disabled
* Command: None command, LED on, LED off, LED toggle, Slave disable and Slave enabled
* LED stat: LED is ON, LED is OFF and LED is Toggling
* Target active: ACTIVE or INACTIVE
* Boolean: TRUE and FALSE

There are 21 possible signals including the 4 slaves

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Signal Name** | **Signal Msg** | **Signal Start Byte** | **Signal Start Bit** | **Signal Len (bits)** | **Signal Type** |
| master\_cmdForAll | MASTER\_CMD\_ALL | 0 | 0 | 4 | t\_cmdType |
| master\_cmdForSlave1 | MASTER\_CMD\_SLV1 | 0 | 0 | 4 | t\_cmdType |
| master\_cmdForSlave2 | MASTER\_CMD\_SLV2 | 0 | 0 | 4 | t\_cmdType |
| master\_cmdForSlave3 | MASTER\_CMD\_SLV3 | 0 | 0 | 4 | t\_cmdType |
| master\_cmdForSlave4 | MASTER\_CMD\_SLV4 | 0 | 0 | 4 | t\_cmdType |
| slave1\_LEDstat | SLAVE1\_RSP | 0 | 0 | 2 | t\_LEDstat |
| slave1\_enabled | SLAVE1\_RSP | 1 | 0 | 1 | t\_boolean |
| slave1\_supplier | SLAVE1\_ID | 0 | 0 | 8 | Scalar |
| slave1\_serial | SLAVE1\_ID | 1 | 0 | 48 | Array |
| slave2\_LEDstat | SLAVE2\_RSP | 0 | 0 | 2 | t\_LEDstat |
| slave2\_enabled | SLAVE2\_RSP | 1 | 0 | 1 | t\_boolean |
| slave2\_supplier | SLAVE2\_ID | 0 | 0 | 8 | Scalar |
| slave2\_serial | SLAVE2\_ID | 1 | 0 | 48 | Array |
| slave3\_LEDstat | SLAVE3\_RSP | 0 | 0 | 2 | t\_LEDstat |
| slave3\_enabled | SLAVE3\_RSP | 1 | 0 | 1 | t\_boolean |
| slave3\_supplier | SLAVE3\_ID | 0 | 0 | 8 | Scalar |
| slave3\_serial | SLAVE3\_ID | 1 | 0 | 48 | Array |
| slave4\_LEDstat | SLAVE4\_RSP | 0 | 0 | 2 | t\_LEDstat |
| slave4\_enabled | SLAVE4\_RSP | 1 | 0 | 1 | t\_boolean |
| slave4\_supplier | SLAVE4\_ID | 0 | 0 | 8 | Scalar |
| slave4\_serial | SLAVE4\_ID | 1 | 0 | 48 | Array |

The endianess for the module shall be Little Endian.