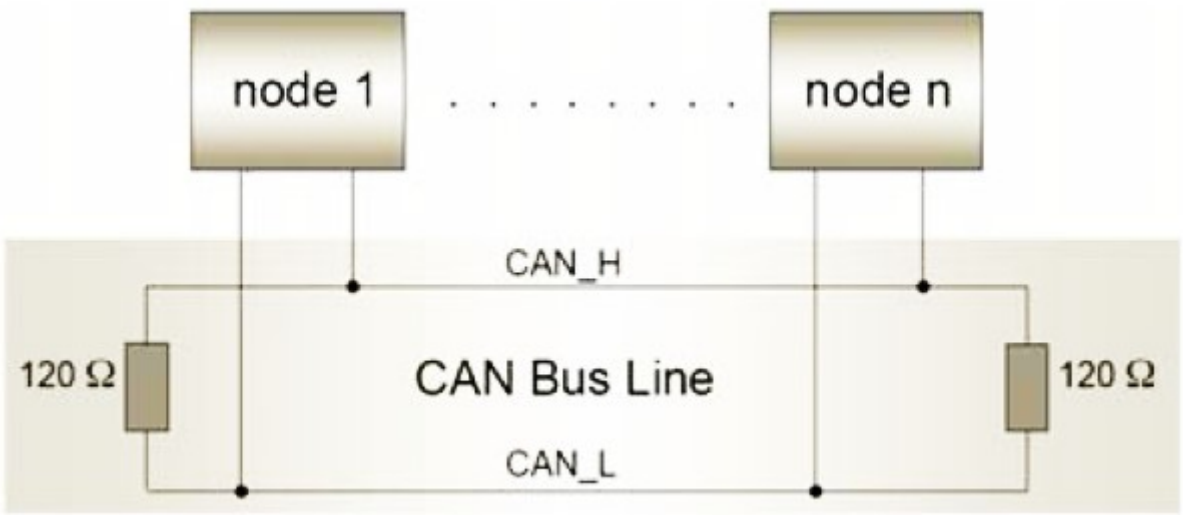
Controller Area Network

All Electronic Control Units are connected to each other via single bus.

1. Physical level Checking

- Twisted pair cable[Filter noise, Noise cancellation]

- Terminating resistor



2. Logical level Checking

Comparing sent message and received message. If both are not same then it will discard the message

Features of protocol

- Braodcast type

- Sync data comm

CSMA/CD+AMP

AMP- Aribitration on Message Priority

CAN works on differential voltage signalling.

For **HIGH-speed** CAN bus.

3.5V, 2.5V, 1.5V

If difference voltage is zero[0] then logic 1 is transmitted.

Logic 1 → Recessive

Logic 0 → Dominant

For **LOW-speed** CAN bus.

5V,3.6V,1.4V,0V

To transmit 1 CANH at 5.0V and CANL 0.0V.

To transmit 0 CANH at 3.6V and CANL 1.4V.

Logic 1 → Recessive

Logic 0 → Dominant

Frames in CAN

- DATA frame → send data
- REMOTE frame → request data
- ERROR frame → transmit an error [if any]
- OVERLOAD frame
- INTERFRAME SPACE

BIT stuffing

After 5 consecutive 1's 0 is added and 5 consecutive 0's 1 is added.

Bitwise Bus Arbitration → wired AND logic.