What is CAN bus?

Controller Area Network (CAN) is a serial communication protocol that lets microcontrollers and devices talk to each other without a central host computer. Developed by Bosch in the 1980s, it is now the standard in automotive and heavy vehicle electronics.

Why buses use it

In a **MAN Lion's City**, dozens of ECUs (Electronic Control Units) share data in real time: the engine tells the instrument cluster the RPM, the EBS reports brake air pressure, the tachograph transmits vehicle speed — all over **two wires** (CAN_H and CAN_L).

The J1939 standard

Heavy vehicles (buses, trucks) use **SAE J1939**, an application layer built on top of CAN. It defines:

Element	Description
29-bit ID	Extended identifier (vs 11-bit basic CAN)
PGN	Parameter Group Number — identifies the data type
SA	Source Address — address of the sending ECU (0x00–0xFE)
SPN	Suspect Parameter Number — each signal within a PGN

Implementation parameters

Parameter	Value
Bus speed	250 kbps
ID type	Extended (29-bit)
Send cycle	20 ms (50 Hz)
Transceiver	MCP2515 + TJA1050
MCP2515 oscillator	8 MHz

Note

`0xFF` bytes in unused positions are the J1939 default for "parameter not available" (SNA — Specific Not Available).

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