■ DIFFERENCES BETWEEN CAN, LIN, AVC-LAN AND BEAN

General

- The protocols, which are the rules for establishing data communication, differ between the CAN, LIN, AVC-LAN, and BEAN. If the ECUs in the networks use different frameworks for their data, such as communication speed, communication wire, and signals, they will be unable to understand each other. Therefore, protocols (rules) must be established between them.
- Compared to the LIN, AVC-LAN and BEAN, the CAN features high-speed data transmission. Therefore, the CAN is able to transmit larger amounts of data faster than other protocols. This feature makes it possible to transmit data accurately in the power train and chassis control system, which requires large amounts of data to be transmitted in short periods of time.

Protocol	CAN (ISO Standard)	LIN (LIN Consortium)	AVC-LAN (Toyota Original)	BEAN (Toyota Original)
Communication Speed	500 kbps*/ HS-CAN 250 kbps*/ MS-CAN (Max. 1 Mbps)	Max. 20 kbps*	Max. 17.8 kbps*/ AVC-LAN 7.5 Mbps*/ AVC-LAN plus	Max. 10 kbps*
Communication Wire	Twisted-pair Wire	AV Single Wire	Twisted-pair Wire	AV Single Wire
Drive Type	Differential Voltage Drive	Single Wire Voltage Drive	Differential Voltage Drive	Single Wire Voltage Drive
Data Length	1–8 Byte(s) (Variable)	2, 4, 8 Bytes (Variable)	0–32 Byte(s) (Variable)	1–11 Byte(s) (Variable)

*: bps: Abbreviation for “Bits Per Second”, indicating the number of bits that can be transmitted per second.