# ST4E1650V

Data brief

## RS485 transceiver with independent $V_{IO}$




| Maturity status link |
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| ST4E1650V |

## Features

- Meets or exceeds the requirements of the TIA/EIA-485A standard
- 3 V to 5.5 V supply voltage
- 1.65 V to $V_{CC}$ $V_{IO}$
- Up to 256 bus nodes
- Integrated protections
  - Failsafe receiver (bus open, idle, and shorted)
  - Thermal shutdown protection
  - Hot swap capability
  - Bus I/O ESD protection
    - ±16 kV IEC61000-4-2 contact discharge
    - ±30 kV HBM
    - ±4 kV IEC61000-4-4 fast transient burst
- Low quiescent current in shutdown
- Operating free air temperature range: -40 °C to +125 °C

## Applications

- Encoders
- Robotics
- Grid infrastructure

## Description

The ST4E1650V is a low-power differential line transceiver for data transmission standard RS-485 applications requiring an I/O supply voltage different from the device supply voltage, especially for 1.8 V applications.

The ST4E1650V operates up to 50 Mbps. It is ideal for multipoint applications in a constraint and difficult industrial environment. It is robust to ESD transients. In particular, the bus pins support ±16 kV IEC 61000-4-2 contact discharge. It features robust hot-swap capability during switching on and off, or during plug-in.

The ST4E1650V comes in a DFN10 package and can operate from -40 °C to +125 °C ambient temperature.

# 1 Pin description

Figure 1. **Pin connections (top view)**

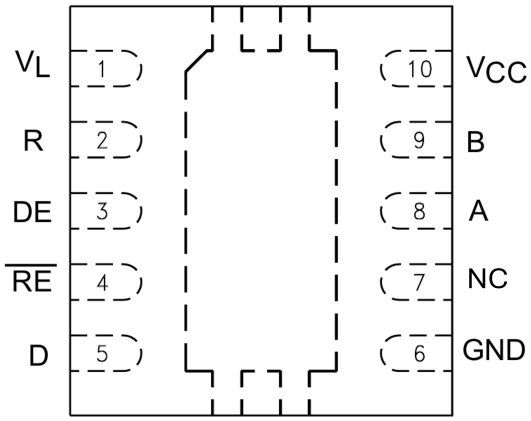



Table 1. **Pin description**

| Name | Pin DFN10 | I/O | Description |
|---|---|---|---|
| $V_L$ | 1 | I/O supply | Voltage supply of the digital part, from 1.65 V to $V_{CC}$ |
| R | 2 | Digital output | Transceiver data output |
| DE | 3 | Digital input | Driver enable input, active high (2 MΩ internal pull-down) |
| $\overline{RE}$ | 4 | Digital input | Receiver enables input, active low (2 MΩ) internal pull-up |
| D | 5 | Digital input | Transceiver data input |
| GND | 6 | Ground | |
| A | 8 | Bus connection | Connection to the line |
| B | 9 | Bus connection | Connection to the line |
| $V_{CC}$ | 10 | Device supply | 3 V to 5.5 V supply voltage |
| EP | EP | Exposed pad | Soldered to GND |

## Revision history

Table 2. **Document revision history**

| Date | Version | Changes |
|---|---|---|
| 22-Oct-2026 | 1 | Initial release. |

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