

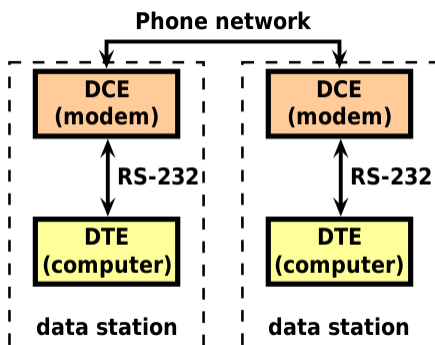
Data circuit-terminating equipment

A **data circuit-terminating equipment**^[1] (**DCE**) is a device that sits between the data terminal equipment (DTE) and a data transmission circuit. It is also called **data communication(s) equipment**^{[2][3][4]} and **data carrier equipment**. Usually, the DTE

device is the terminal (or computer), and the DCE is a modem.



Terminal adapter for X.21



Two data stations (terminals, stations) each comprising a DCE and a DTE, connected via a network.

In a *data station*, the DCE performs functions such as signal conversion, coding, and line clocking and may be a

part of the DTE or intermediate equipment.^[3] Interfacing equipment may be required to couple the DTE into a transmission circuit or channel and from a transmission circuit or channel into the DTE.

Usage

Although the terms are most commonly used with RS-232, several data communication standards define different types of interfaces between a DCE and a DTE. The DCE is a device that communicates with a DTE device in these standards. Standards that use this nomenclature include:

- Federal Standard 1037C, MIL-STD-188
- RS-232
- Certain ITU-T standards in the V series (notably V.24 and V.35)
- Certain ITU-T standards in the X series (notably X.21 and X.25)

A general rule is that DCE devices provide the clock signal (internal clocking) and the DTE device synchronizes on the provided clock (external clocking). D-sub connectors follow another rule for pin assignment. DTE devices usually transmit on pin connector number 2 and receive on pin connector number 3. DCE devices are just the opposite: pin connector number 2

receives and pin connector number 3 transmits the signals.

When two devices, that are both DTE or both DCE, must be connected together without a modem or a similar media translator between them, a crossover cable must be used, e.g. a null modem for RS-232 or an Ethernet crossover cable/body

See also

- Networking hardware

References

1. *TIA-232-F Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange*. 1997.
2. *EIA standard RS-232-C: Interface between Data Terminal Equipment and Data Communication Equipment Employing Serial Binary Data Interchange*. Washington: Electronic Industries Association. Engineering Dept. 1969. OCLC 38637094 (<https://www.worldcat.org/oclc/38637094>) .
3. *DIN 44302 Datenübertragung - Begriffe*. *it - Information Technology*. Vol. 8. 1966. pp. 244–246.

doi:10.1524/itit.1966.8.16.244 (<https://doi.org/10.1524%2Fitit.1966.8.16.244>) .

4. MIL-STD-188-100, pg. 24, Fig 4.3-1, 1972. (https://www.google.de/books/edition/Military_Standard/Xqj6VxVvWXEC?gbpv=1&pg=PA24)

External links



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- [Data Terminating Equipment or Data Circuit-Terminating Equipment speeds](https://www.ibm.com/support/knowledgecenter/ssw_aix_71/com.ibm.aix.networkcomm/asynch_modems_dataterm.htm) (https://www.ibm.com/support/knowledgecenter/ssw_aix_71/com.ibm.aix.networkcomm/asynch_modems_dataterm.htm), IBM

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This page was last edited on 29 December 2022, at 08:26 (UTC). •

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