# RS-530 to X.21 Adapter Cable

## Part # 2515FM

MicroGate Systems, Ltd

http://www.microgate.com

# Overview

This document describes the Microgate RS-530 to X.21 adapter cable, part number 2515FM. This cable converts the RS-530 serial interface (DB-25 plug) on Microgate serial products to the X.21 standard (DA-15 plug). The cable's DB-25 receptacle mates to the DB-25 plug of Microgate serial products (DTE) and a DA-15 plug mates to a DCE device with a DA-15 receptacle. The cable is 6 feet (1.8 meters) in length.

# DTE and DCE

Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) are designations applied to end points of a serial connection. DTE is a source or destination of data. DCE is a device, such as a MODEM, that converts data to a form for transmission. These designations determine which signals are considered inputs or outputs from the perspective of the attached equipment. For example, the transmit data signal is a DTE output and a DCE input.

Microgate serial products are DTE devices and the table below specifies input/output from the perspective of the DTE.

DTE devices connect directly to DCE devices. This adapter cable is intended for direct connection of a DTE to a DCE. Connecting two DTE devices directly requires a separate cross over cable or intermediate device (Null MODEM) to connect outputs to the appropriate inputs. For example, a cross over cable would connect the transmit data signal of one DTE to the receive data signal of the other DTE.

# D-Subminiature Connectors

D-Subminiature (D-Sub) connectors are a class of connectors with a D shaped metal shell used for I/O applications such as serial communications. The connectors come in plug and receptacle versions. D-Sub naming depends on the shell size and number of pins.

| | | |
|---|---|---|
| DB-25 | B Size Shell | 25 pins |
| DA-15 | A Size Shell | 15 pins |

The DA-15 connector is sometimes incorrectly referred to as DB-15.

# Electrical and Pin Assignment Standards

RS-422, RS-485 and ITU V.11 define electrical properties of differential signals.
RS-232 and ITU V.28 define electrical properties of single ended signals.
RS-530 defines pin assignments for a DB-25 connector.
X.21 defines pin assignments for a DA-15 connector.

| RS-530 to X.21 Adapter Cable Pin Assignments | | | | |
|---|---|---|---|---|
| **Signal** | **Electrical** | **RS-530 DB-25 Pin** | **X.21 DA-15 Pin** | **Direction** |
| T(-/A), Transmit Data | RS-422/V.11 | 2 | 2 | Output |
| R(-/A), Receive Data | RS-422/V.11 | 3 | 4 | Input |
| I(-/A), Indicator (DSR/DCD) | RS-422/V.11 | 6,8 | 5 | Input |
| Signal Ground | | 7 | 8 | |
| S(+/B), Clock Input (TxC, RxC) | RS-422/V.11 | 9,12 | 13 | Input |
| I(+/B), Indicator (DSR/DCD) | RS-422/V.11 | 10,22 | 12 | Input |
| X(+/B), Clock Output (AuxClk) | RS-422/V.11 | 11 | 14 | Output |
| T(+/B), Transmit Data | RS-422/V.11 | 14 | 9 | Output |
| S(-/A), Clock Input (TxC, RxC) | RS-422/V.11 | 15,17 | 6 | Input |
| R(+/B), Receive Data | RS-422/V.11 | 16 | 11 | Input |
| C(-/A), Control (DTR) | RS-422/V.11 | 20 | 3 | Output |
| C(+/B), Control (DTR) | RS-422/V.11 | 23 | 10 | Output |
| X(-/A), Clock Output (AuxClk) | RS-422/V.11 | 24 | 7 | Output |