Microcom Model 485 Series USB Serial Interface

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This document outlines the USB Serial interface available on the Model 485 series printers.

Overview

The Model 485 may be configured as a USB Serial device, allowing compatibility with legacy systems using RS-232 as their primary communication interface. To use the 485 in USB Serial mode, the user will need to use the appropriate driver provided by Microcom. This driver is separate from the *Microcom Windows Print Driver*.

Configuring the Model 485 as a USB Serial Device

This section describes how to configure the Model 485 as a USB Serial device. Configuration changes require an active connection to the printer.

FGL Commands

If the printer is configured in FGL compatibility mode, FGL commands may be used to view or change the device configuration.

- **[Set]** USB Serial <usbs> sets the USB mode *USB CDC* or *USB Serial Mode*. (Requires restart to take effect).

Web Interface

If the printer is connected to a network via Ethernet, the IP address can be determined by either printing a test ticket (button press in FGL, double-press for Windows Driver) or by using the Microcom IP Discovery application. The application will find the printer if it is connected to the same network as the PC. Once the IP address is determined, the web interface may be accessed if the computer exists on the same network/subnet by typing in the IP address in a browser window (e.g. if the IP address is 192.168.200.3 use **http://192.168.200.3**). The page that is loaded should display current configuration of the printer. On the left navigation pane, there is a button titled "Configuration Page" - click it to make changes to the printer configuration. When the configuration page is loaded, select "USB CDC" from the *Mode* menu in the section titled *USB Configuration*. Scroll to the bottom of the page, click "Submit", then click "Restart" when prompted. The printer should then restart in USB Serial mode.

Configuration Application

The configuration app may also be used to configure the USB interface on the printer. Either true RS-232 serial or Ethernet or the current USB mode may be used to connect to the printer. See configuration application documentation for more details.

Installing the USB Serial Driver

The Model 485 Series USB Serial communication interface uses a USB CDC ACM driver provided by Microcom Corporation. Windows and Linux operating systems are supported for USB Serial communication through separate drivers.

Windows

Device Driver Installer: Microcom_USBCOM_v1.28.0_2017-11-07_setup.exe

1. Run the driver installer program mentioned above.

2. Go through the installation process. At the end, the installer will prompt the user to plug the printer in. If possible, plug the printer in to complete the installation.

3. To verify the installation, go to Device Manager and expand the "Ports (COM & LPT)" section. One of the COM ports should display "Microcom 485 Thermal Printer". This will not be the case if the printer was not plugged in yet.

Communicating with the Printer

Once the appropriate drivers are installed and the printer is configured as a USB Serial device, communicating with the printer can be done using software. The ***MCT*** application may be used to communicate with the printer on Windows once the driver is installed.

MCT (Windows)

MCT is a Windows emulation program application that can be used to communicate directly with the Microcom printers using a variety of communication interfaces. To communicate with the
485 using *MCT*, follow these steps:

1. Open *MCT*.

2. At the bottom-left of the application window there is a button indicating a COM port. Click this button and select the port that is mapped to the printer.

3. Below this button, a status message indicates if the port is open or closed. If the port is open, type <S2> in the editor window. The device should respond with an output similar to 0000000 PROM=xx.xx.xx.

4. Commands may be entered one-by-one as in the case of <S2>, or entire files can be sent to the device.

5. To send a raw file to the device, simply drag a file into the editor window or use "File->Send File".

Command Prompt (Windows)

1. Open *Command Prompt*.

2. Enter copy <filename.txt> comX /b, where filename.txt is the name of the file to send to the printer and comX is the COM port of the printer.

Linux

Device Driver: *Linux Kernel ACM USB Serial driver*
Note: *The Linux host-side kernel must be configured so that USB Modem (CDC ACM) Support is built as part of the kernel. This is typically included by default in most distributions.*

1. Plug the printer in to a USB port on the Linux host machine.

2. Power on the printer.

3. Linux should automatically load and enumerate the device. To test this, run the command dmesg | tail and observe the output. It should be similar to the following:
    - usb 1-1: new high-speed USB device number 2 using ehci_pci
    - usb 1-1: New USB device found, idVendor=277d, idProduct=7001
    - usb 1-1: New USB device strings: Mfr=1, Product=2, SerialNumber=0
    - usb 1-1: Product: 485
    - usb 1-1: Manufacturer: Microcom
    - cdc_acm: 1-1:2.0: This device cannot do calls on its own. It is not a modem.
    - cdc_acm: 1-1:2.0: ttyACM0: USB ACM device
    - usbcore: registered new interface driver cdc_acm
    - cdc_acm: USB Abstract Control Model driver for USB modems and ISDN adapters

4. As seen in the output of dmesg the printer has been enumerated as /dev/ttyACM0. This would be the device path used to access the printer using a serial terminal emulation program such as *Minicom* or *GtkTerm*.!!!

WARNING: If *ModemManager* is installed and running on the Linux system, it will try to talk to the printer and prevent other applications from properly communicating with the printer (Data loss will occur). To see if *ModemManager* is running, run the command ps -e | grep ModemManager. If the program is listed as a running process, please look at your Linux distribution's documentation on how to disable *ModemManager* or blacklist the Microcom 485 Thermal printer device so that it will not try to control the printer**!!!**

Communicating with the Printer

Once the appropriate drivers are installed and the printer is configured as a USB Serial device, communicating with the printer can be done using software. *GtkTerm* is an example application that can be used to communicate with the

printer on Linux.

GtkTerm (Linux)

GtkTerm is a simple terminal application used to communicate with a serial port.
To communicate with the 485 using *GtkTerm*, follow these steps:

1. Open *GtkTerm*, or download/install as needed.

2. Click "Configuration->Port"
    - Enter /dev/ttyACM0 for the Port
    - Enter 115200 for the Baud Rate
    - Choose none for Parity, with 8 Bits, 1 Stopbit, and RTS/CTS flow control.

3. Click "OK" to apply these settings. If the port could not be opened, an error alert will be displayed. If this is the case, check that the printer is plugged in, turned on, and configured in USB Serial mode. Local echo can be turned on or off by clicking "Configuration->Local echo".

4. Type <S2> in the *GtkTerm* window and press enter. The device should respond with an output similar to 0000000 PROM=01.00.17.

5. Commands can be entered one-by-one as in the case of <S2>, or entire files can be sent to the device.

6. To send a raw file to the device, click "File->Send raw file". ***Note***: *If sending .mff update files to the 485, make sure that the "Local echo" option is disabled.*