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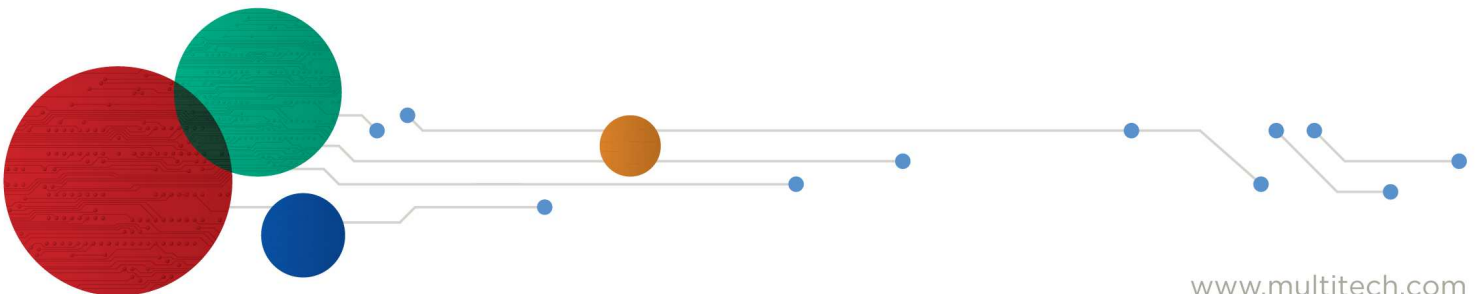
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USB Driver

Installation Guide for Cat M1 Devices



USB Driver Installation Guide

For the following devices: MTSMC-MAT1-U, MTC-MAT1, MTD-MAT1,

S000676, Version 1.0

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Chapter 1 – Installing Windows USB Drivers

Windows Release Notes

The USB driver installer supports the following 32- and 64-bit versions of the following Windows Operating Systems:

- Windows 10
- Windows 8.1
- Windows 8
- Windows 7

Downloading the Windows USB Driver

If you haven't downloaded the driver:

1. Go to multitech.com and search to find your device's model page. Your device's model number is on the product label.
2. Under **Downloads**, click on the Windows USB Driver. A popup window appears.
3. Click to **Download** the driver zip file to your computer.
4. Extract the files to your computer.

Installing on Windows 10, 8.1, 8, or 7

This process installs multiple drivers and ports. You need administrator rights to install drivers.

Note: If you previously installed USB drivers for this device, uninstall them before installing or re-installing this driver. Uninstall all existing drivers for this device. Refer to [Uninstall Windows Drivers](#) for details.

Before you connect the device (disconnect the device if you connected it):

CAUTION: If you connected the device before installing the drivers, Windows may install drivers automatically. Your device may not operate correctly with these drivers. Uninstall the drivers before proceeding. See [Remove Microsoft Installed Drivers](#) for details.

1. Go to the location where you extracted the driver and double-click on file for your system:
 - For 32-bit use **TelitModulesDriver_x86 (32 bit).msi**
 - For 64-bit use **TelitModulesDriver_x64 (64 bit).msi**
2. Click **Next** in the Welcome pane.
3. Leave the default **Complete (suggested)** Setup Type and click **Next**.
4. Click **Install** each time you are prompted. You may be prompted to allow the installer to install the program on your computer, click **Yes**.
5. Click **Finish**.
6. Connect USB cable from the device to a USB port on your computer. Windows indicates when the device is ready to use.

Uninstalling Windows USB Drivers

Windows 10

To uninstall drivers from Windows 10:

1. Open the Start Menu and click **Settings**.
2. Click **Apps**.
3. Click **Apps & Features**.
4. In the Apps & Features pane, scroll down to **TelitModulesDrivers_x##**, where ## is 64 or 86, and click Uninstall. Confirm that you want to uninstall the driver.

Uninstalling the TelitModulesDrivers, uninstalls all related Telit modems, ports, and drivers, so you don't need to uninstall these individually.

Windows 8 or 8.1

To uninstall drivers from Windows 8 or 8.1:

1. Open Windows **Programs and Features**.
2. Scroll to **TelitModulesDrivers_x##**, where ## is 64 or 86, and click Uninstall. Confirm that you want to uninstall the driver.

Uninstalling the TelitModulesDrivers, uninstalls all related Telit modems, ports, and drivers, so you don't need to uninstall these individually.

Windows 7

To uninstall drivers from Windows 7:

1. Open **Programs and Features** from the Windows Control Panel.
2. Scroll to **TelitModulesDrivers_x##**, where ## is 64 or 86, and click Uninstall. Confirm that you want to uninstall the driver.

Uninstalling the TelitModulesDrivers, uninstalls all related Telit modems, ports, and drivers, so you don't need to uninstall these individually.

Chapter 2 – Installing Linux USB Drivers

Installing on Linux

Cat M1 devices use the option driver. If support for the ME910C1 module is built into the option driver, the OS automatically creates 4 tty device nodes named `/dev/ttyUSBx` when the modem enumerates (typically `/dev/ttyUSB0 --> /dev/ttyUSB3`). Use device nodes `ttyUSB2` and `ttyUSB3` to establish a ppp link or issue AT commands.

If the option driver doesn't include the ME910C1 module, load it manually by issuing the following commands or including them in the Linux startup scripts:

```
modprobe option
echo 1bc7 1101 > /sys/bus/usb-serial/drivers/option1/new_id
```

Patching the Option Driver to Include ME910

In the `option.c` source file:

1. Verify the following `#define` statement exists:


```
#define TELIT_PRODUCT_ME910 0x1101
```

 If the `#define` statement does not exist, add it.
2. Add the following struct:


```
static const struct
option_blacklist_info telit_me910_blacklist = {
    .sendsetup = BIT(0),
    .reserved = BIT(1) | BIT(2)
};
```
3. Add the following line to `usb_device_id option_ids[]` structure:


```
{ USB_DEVICE(TELIT_VENDOR_ID, TELIT_PRODUCT_ME910),
    .driver_info = (kernel_ulong_t)&telit_me910_blacklist},
```

Reference example at <https://github.com/torvalds/linux/commit/40dd46048c155b8f0683f468c950a1c107f77a7c>

Note: The PID for the ME910C1 variant used in the Cat M1 is 0x1101 not 0x1100 shown in the github example.

Building a Linux Driver

Note: This example is provided to demonstrate basic steps generally involved in building/patching the driver, the procedure for your distribution may differ.

1. Download latest stable kernel. Check <http://www.kernel.org> for the latest stable kernel. In the terminal window, enter the following:
 - a. `sudo su`
and then enter the password to put it into root mode.
 - b. `cd /usr/src`
 - c. `wget https://www.kernel.org/pub/linux/kernel/v3.x/linux-x.x.x.tar.xz`
where X.X.X equals the version number for the latest stable kernel

2. Untar the kernel. To do this, enter:

```
tar -xvJf linu-x.x.x.x.tar.xz
```
3. Check option.c source file for the ME910 module:
 - a. `gedit linux-x.x.x/drivers/usb/serial/option.c`
 - b. Verify that the file is patched as described in the previous section.
4. Compile the drivers.
 - a. `cd linux-x.x.x`
 - b. `make menuconfig`
If a menu window was not made. Install ncurses library.
 - `apt-get install libncurses5`
 - `apt-get install libncurses5-dev`
 - c. Go to **Device Drivers** ---> **USB Support** ---> **USB Serial Converter Support**.
 - d. Choose **USB driver for GSM and CDMA modems** and press the **M** key to make as a module.
 - e. Go to **Device Drivers** ---> **Network Device Support** ---> **USB Network Adapters**.
 - f. Scroll to Option **USB High Speed Mobile Devices** and press the **M** key to make as a module..
 - g. Exit out of the menus until prompted, **Do you wish to save your new configuration?** Select **Yes**.
To exit a menu, highlight Exit on the bottom of the page, and press Enter.
5. Start building the kernel. This process may take several hours.
 - a. `make`
 - b. `make modules`
 - c. `make modules_install`
6. Install the new kernel:
`make install`
7. Reboot the system:
`reboot`
8. Verify that the installed kernel version matches the version you downloaded:
`uname -r`