

Introduction

This manual provides instructions on the hardware and software setup of the USB Data Logger Module.

One-off initial system configuration

1. Flash Xbee module with same firmware and Zigbee network configuration as network coordinator, by using XCTU software. This includes matching the: Pan ID, sending address, receiving address, and ensuring the firmware flashed is *Zigbee*. Whenever the Xbee module is powered or plugged into a new computer, it will retain this configuration.
2. Load Powershell 2.0 script onto lab computer. Powershell script is titled "*usb_data_analysis_powershell2*" and can be saved anywhere on computer. Recommend using a USB stick to transfer file from Github repository to lab computer.
3. Download "*Digi_USB_RF_Drivers*" on lab computer. The file is readily available from the Digi website or the Github repository (recommend transferring to lab computer via USB stick). This installs the necessary drivers on the lab computer so the Xbee module is recognised when connected through USB cable.
4. Plug Xbee module into lab computer with USB cable. Determine lab computer's COM port that Xbee module is connected to (by going to "devices and printers" settings). Determine the COM port number, then go to the "*usb_data_analysis_powershell2*" script and modify line number 261 to the actual COM port name and number of that lab computer.
5. Modify line number 2 of the Powershell script to define the actual directory path the log files are stored in on the lab computer.

USB data logger module operation

1. Connect Digi Xbee module to lab computer via USB cable.
2. Open Powershell on the lab computer. Modify the working directory to that the Powershell script is saved to by typing
 - i. `cd "path_directory_of_script"`
 - ii. Where "path_directory_of_script" is the script's path directory.
3. Run the Powershell script by typing
 - i. `.\usb_data_analysis_powershell2.ps1`
 - ii. In the command shell window, and push enter. The log files are then analysed, and desired parameters transmitted over the Zigbee network.
4. To quit/exit the file analysis script, push Ctrl+C on keyboard at any time.