

# EZ App Lynx Library

Part Number: SW500025

The CCS EZ App Lynx Library is a software library for users of [MPLAB XC Compilers](#) allowing the developer to create an interface between a Bluetooth-enabled, PIC MCU-based project and a smartphone or tablet. Then, using the free EZ App Lynx App (for Android or iOS), users can view the status of gauges, LEDs, switches, buttons, sensors, and also remotely control LEDs, relays, etc. This is possible because the code programmed on the PIC MCU using the EZ App Lynx Library essentially defines the GUI on the smartphone App and creates it at runtime. Simply open the app, scan for and select a nearby device, and you're ready to go!

All you need to get your EZ App Lynx Library up and running is:

- The EZ App Lynx Development Board ([TDKEZWDB](#)) or any board setup containing:
  - A PIC microcontroller of your choice (programmed with code that uses the CCS EZ App Lynx Library)
  - A Bluetooth module (more about supported modules below)
  - Your choice of LEDs, switches, buttons, potentiometers, etc.
- An Android or iOS phone or tablet with the EZ App Lynx App
- The appropriate [MPLAB XC Compiler](#) in [MPLAB X IDE](#)



## Features

### Bluetooth Modules Supported

The library supports Bluetooth modules that use SPP or MLDP (Microchip Low-energy Data Profile) modes for data communication. SPP is the Classic Bluetooth mode for serial data streaming, while MLDP is Microchip's implementation of an SPP-like serial data streaming protocol for BLE (Bluetooth Low Energy). Note that the Android App supports SPP and MLDP, while the iOS App supports only MLDP. Out of the box, the CCS EZ App Lynx library supports the Microchip RN42 module for SPP and the Microchip RN4020 module for MLDP. Note, however, that the compatible Development Board ([TDKEZWDB](#)) sold on [microchipDIRECT](#) comes only with the RN4020 module.

### No App Development Experience Required

Developers using this EZ App Lynx Library don't have to worry about creating App Developer accounts or publishing a mobile app to the Google Play or Apple App Store because CCS has already created the EZ App Lynx mobile apps for iOS and Android, downloadable from their respective App stores. The Android and iOS apps both support Microchip's RN4020 Bluetooth Low Energy (BLE) module in MLDP mode. The Android app additionally supports any Bluetooth Classic module that uses SPP protocol, such as Microchip's RN42 module.

### How it Works

Using the Bluetooth connection between the PIC MCU and the App, the EZ App Lynx library controls all aspects of what is displayed on the App and what data is sent between the App and the PIC MCU. That means the GUI in the App is created at run time from the Bluetooth connection and can be tailored to the device that is being developed. Included in the library are drivers and examples for CCS's compatible development board ([TDKEZWDB](#)) to make learning to use EZ App library as simple as following a step-by-step guide.

The library allows for customization and personalization of GUI and Style components listed below:

### GUI Components:

- Status Bar
- Gas Gauges
- Sliders
- Buttons
- Text Edit Fields
- Drop-down List

### Style Components:

- Text Sizes
- Colors
- Spacing
- Margins and Alignment