

BLE project 20 – Custom BLE for RGB LED Control

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1 Introduction

BLE comes with a set of pre-defined profiles (<https://developer.bluetooth.org/TechnologyOverview/Pages/Profiles.aspx>). The intention behind that is to establish a common interface for e.g. a thermometer device and ensure inter-operability between different vendors.

In addition to that custom profiles can be created to tailor the BLE stack for specific applications.

The custom profile that will be developed in this project features:

- Brightness and color control of a RGB LED.

2 Work packages

- Implement the custom profile to control the on-board RGB LED via BLE. (Refer to Cypress AN91162 (<http://www.cypress.com/file/140826/download> or ILIAS)).
- Check that all GAP actions are performed correctly (Advertising, Connection, Disconnection).
- Check that the light output and color can be controlled using the CySmart color field.
- Optional: A UART debug possibility needs to be added that outputs
 - Changes of the connection state.
 - New RGB channel data.