

# Laser Scanner Barcode Reader via Light-Emitting Diode (LED)

## Low Power Reconfigurable Fabric-Based Implementation

### Introduction

Smartphone usage continues to increase, and become more a part of consumer's daily lives. Point-of-sale retailers have reacted to this by moving coupons, loyalty cards, and gift cards from their usual paper and plastic format to a smartphone-based format. However, one hurdle to mass implementation of this is that laser-based barcode scanners (unlike LED-based) cannot read barcodes shown on smartphone displays.

Through the implementation of Mobeam's® patented Light-Based Communication (LBC) technology on programmable devices, QuickLogic has solved this issue. LBC technology uses an LED light source present on the smartphone to "beam" the barcode data to the laser scanner receiver, allowing the coupon code to be read into the retailer's system.

Smartphone OEMs implement a programmable logic device from QuickLogic, featuring the LBC technology, during the design stage of a new product. The device can be customized for individual OEM needs, and can have additional technologies added without increasing product footprint to maximize usage of board space.

### Features

The Barcode Proven System Block (PSB) provides a number of features, including:

- I<sup>2</sup>C Slave Interface
  - Primary interface from the host application processor to the Coupon Code interface
- Register Module
  - Provides a set of general purpose I/O registers for monitoring and/or controlling external devices
- Works with a variety of bar code types
  - UPC-A, EAN-13, EAN-8, Code 39, Code 128, Interleaved 2 of 5, Codabar

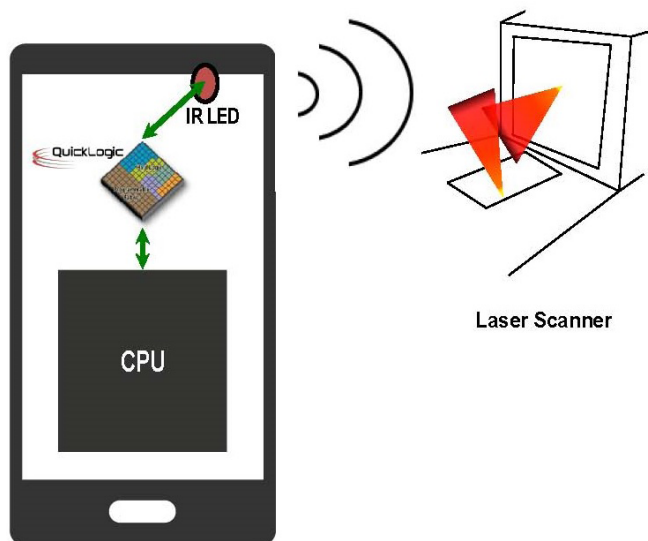


Figure 1: System Block Diagram

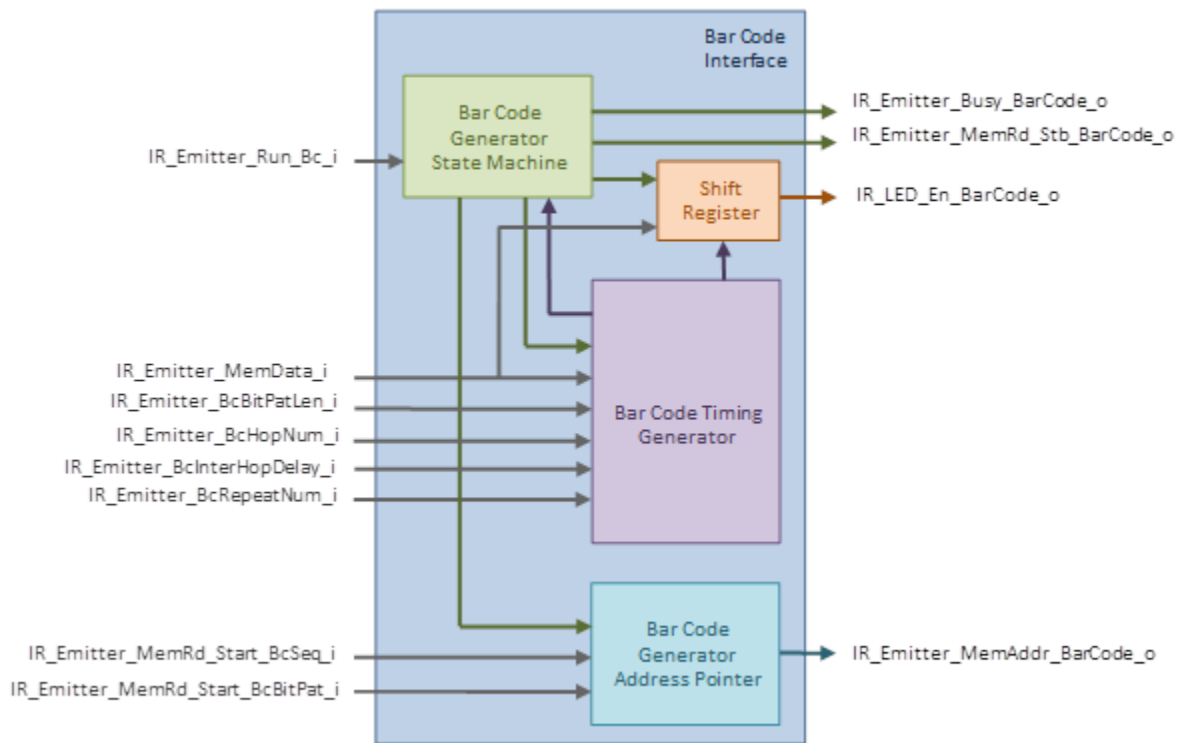


Figure 2: Bar Code Interface

### Availability

The Barcode PSB is available on QuickLogic’s PolarPro 3 and ArcticLink 3 S1 family of Customer Specific Standard Products (CSSPs). Contact QuickLogic for design options, and for information on additional technologies which can be implemented on the same device, saving PCB space and providing hardware differentiation.



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