P0029B Theory of Operation

Rev 1

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1 Introduction

This document describes how the system operates as a UWB (Ultra-wideband) device.
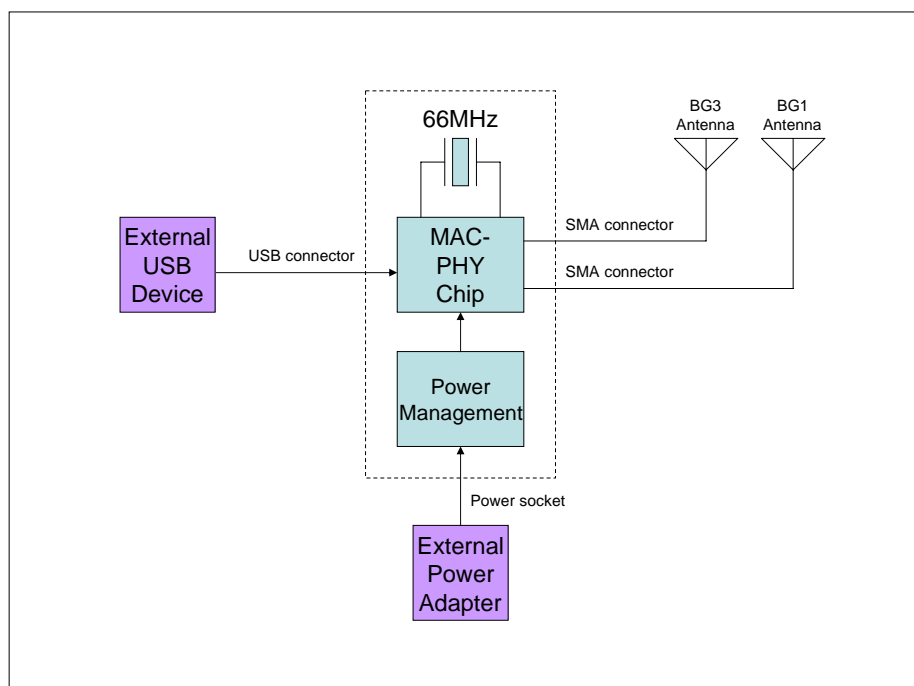
2 System Operation

2.1 General Description

P0029B is a one-port DWA (Device Wire Adater) to which a USB device can be attached. It converts the wired interface of the device to Wireless USB over UWB.

2.2 System Block Diagram

The following figure shows the system block diagram of P0029B. It accepts +5V from a power adapter and converts it to various voltages required by the MAC-PHY chip. Only one crystal is used in the system, which is of 66MHz. The system is designed to support both BG1 (Band Group 1) and BG3 (Band Group 3) UWB bands as defined in the WiMedia standard.

2.3 Operation

The one-port DWA can operate in both BG1 and BG3. Only one of the band groups will be operating at a given time and this is determined by the MAC-PHY chip. It searches for WiMedia standard-compliant UWB hosts that have associated relationship with it. Once such a host is found, the communication link will be set up and the USB device, e.g. a flash drive, attached to the one-port DWA can be accessed by the host (computer).