

PI5USB68 / PI5USB68A PI5USB68/PI5USB68A EVB Rev.A User Manual by Noyes Mok

Introduction

Pericom's PI5USB68 and PI5USB68A are the USB sleep & charge switch with Vbus switch control function which provides multimode supports auto-detection and auto-switching between modes by detecting correctly plugged in device.

The PI5USB68 series evaluation board (EVB) is designed to demonstrate the benefits, performance and key features of PI5USB68 and PI5USB68A. This user manual describes the usage of this EVB and it will be divided into following sections:

- Overview
- Quick start
- Board Design information
 - PI5USB68/PI5USB68A EVB Schematic
 - PCB Layout
 - PCB Layout Reference
 - BOM List

Overview

Figure 1(a) & 1(b) are the block diagrams of Pericom PI5USB68/PI5USB68A Evaluation board (EVB) and Figures 2 is the EVB photo. PI5USB68 / PI5USB68A EVB are power up with +5V external power supply, the +5V and GND signal should be applied to header pin JP2 (+5V) and JP3 (GND). After the EVB power up, it's ready to charge the device. The USB receptacle connector (J1) is used to connect mobile devices.

An external Vbus switch PI5PD2068/PI5PD2069 is assembled on EVB which is controlled by the INT# / INT pin of PI5USB68/PI5USB68A.

The LED D1 is the warning signal from the OC# of PI5PD2068 / PI5PD2069. It will turn on when the circuit is over-current or over-temperature.

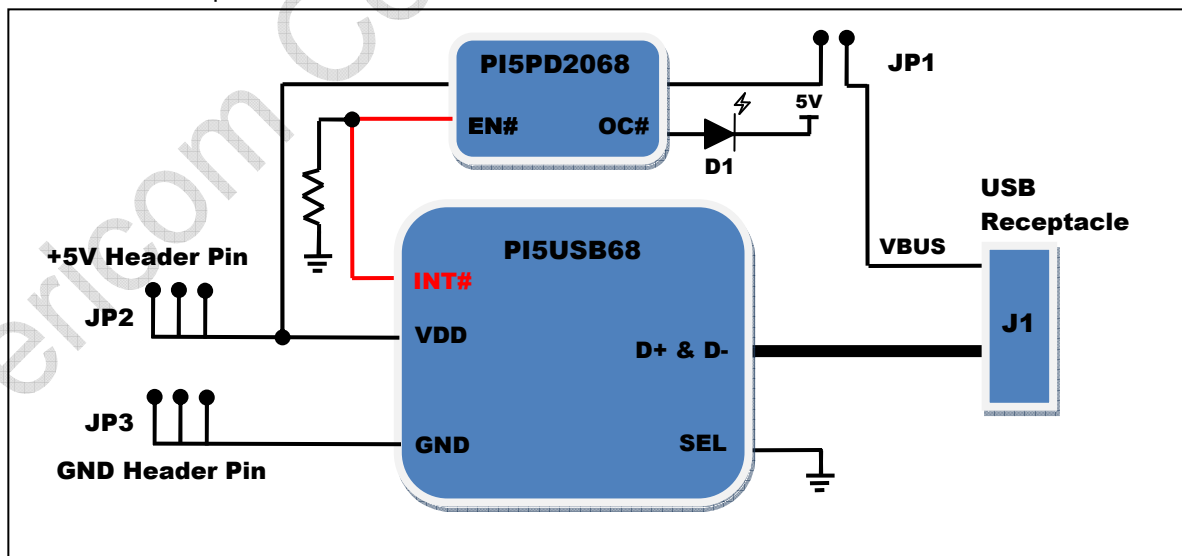


Figure 1a, block diagram of PI5USB68 EVB

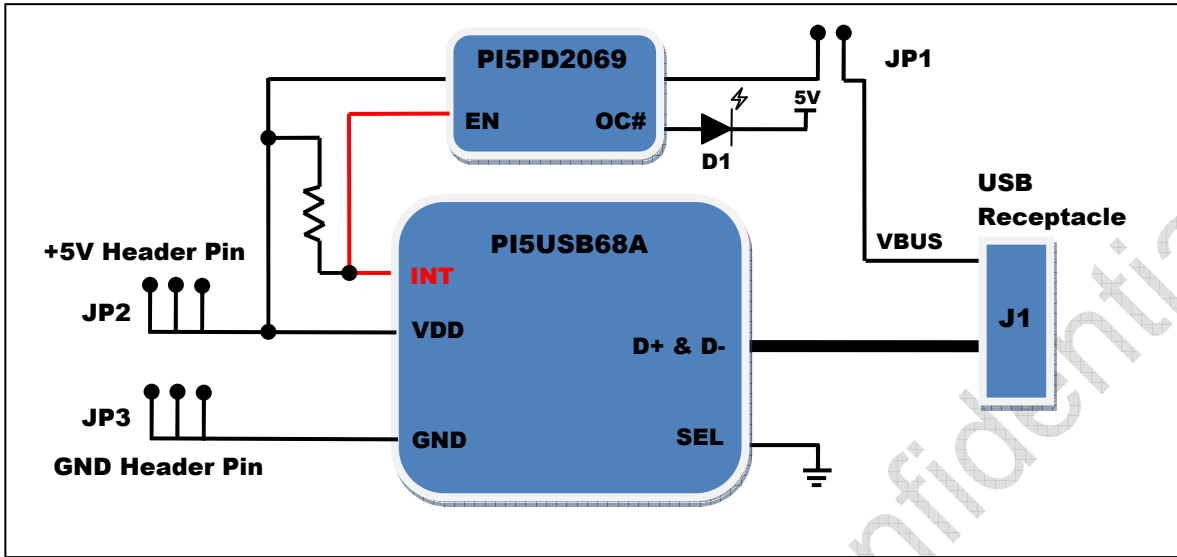


Figure 1b, block diagram of PI5USB68A EVB

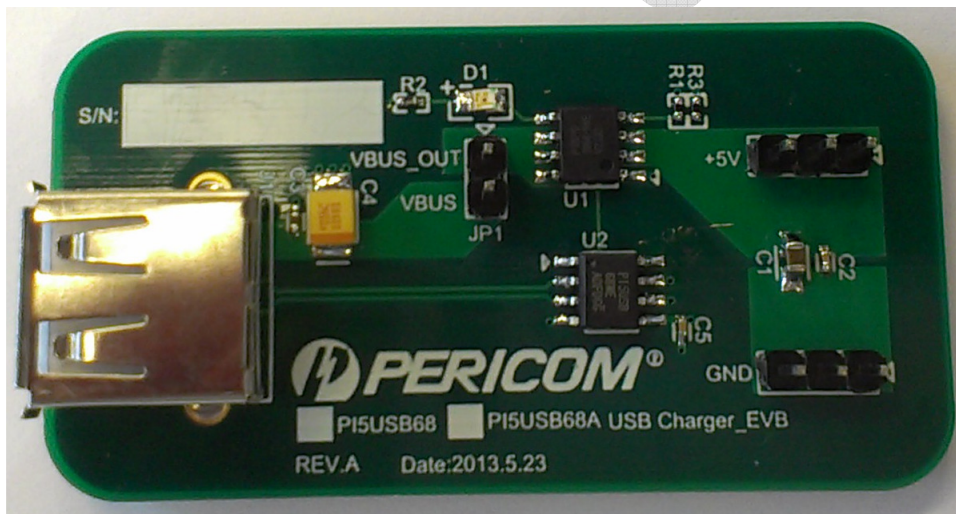


Figure 2, Photo of PI5USB68/PI5USB68A EVB

Quick Start

To start-up the PI5USB68 / PI5USB68A EVB, complete the following steps:

1. Power up the EVB (+5V connect to JP2, GND connect to JP3)
2. Plug the portable device into EVB USB connector J1

Header pin is set as defaulted on EVB.

Header pin #	Pin name for PI5USB68	Pin name for PI5USB68A	Header pin status
JP1	VBUS_OUT	VBUS_OUT	Short
JP2	VDD	VDD	Connect to +5V power supply
JP3	GND	GND	Connect to the GND of the power supply

Table 1, Header pin settings for EVB (header pins location refers to Figure 4)

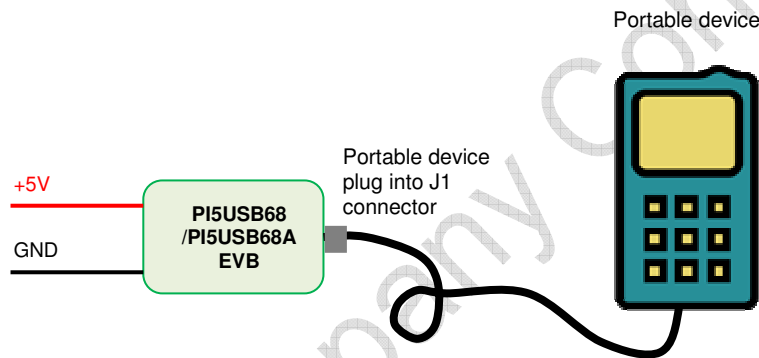


Figure 3, Connection of PI5USB68 / PI5USB68A EVB

Detail Description

The functionality of header pins, switch are detail described in this section.

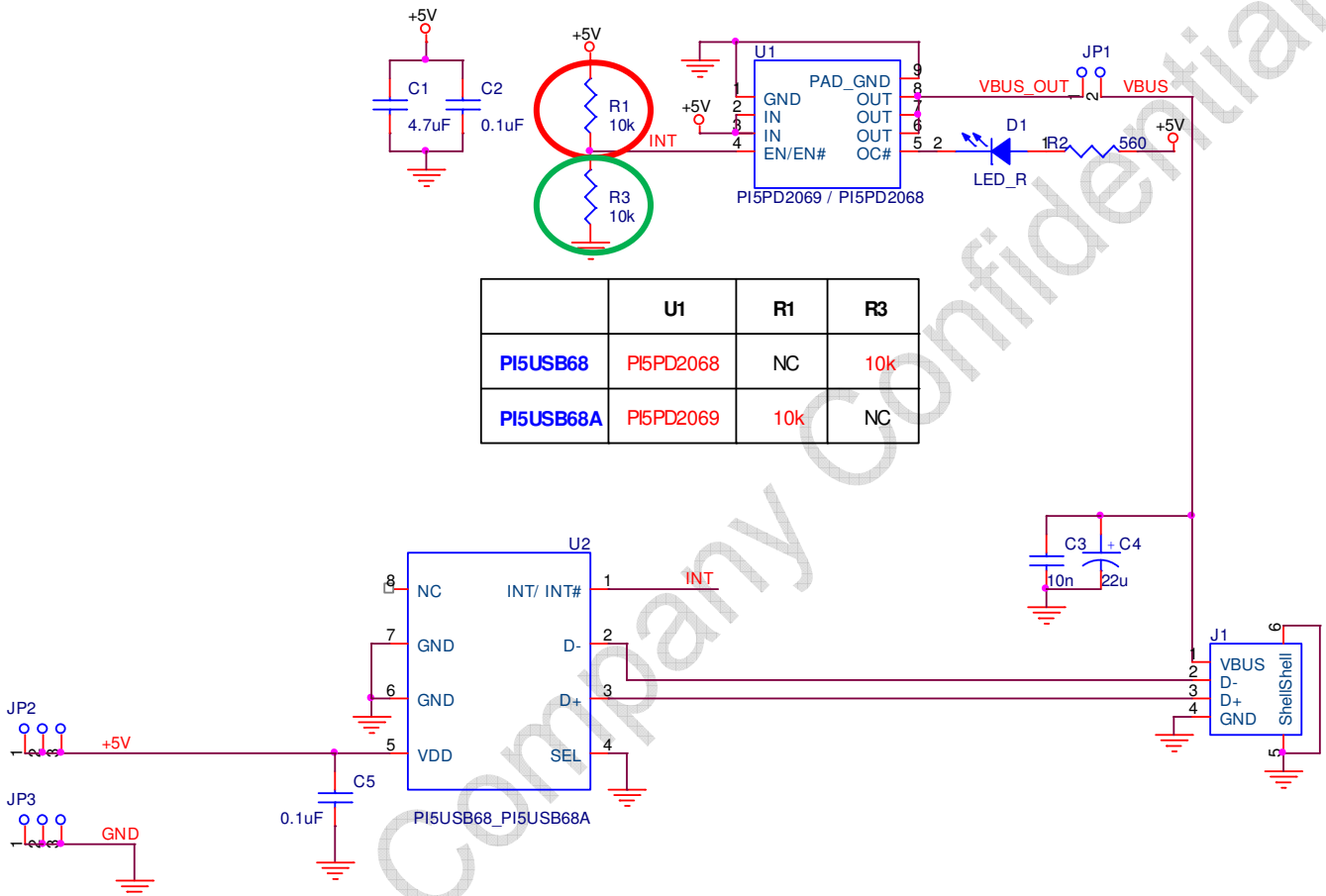
Functionality of Header Pins

Header Pin	Description		Remark
	PI5USB68	PI5USB68A	
JP1	Pin 1 = PI5PD2068 output Pin 2 = Vbus pin of USB receptacle connector	Pin 1 = PI5PD2069 output Pin 2 = Vbus pin of USB receptacle connector	Short = connect the +5V output to USB receptacle connector
JP2	VDD of PI5USB68	VDD of PI5USB68	EVB need to power up by +5V external power supply
JP3	GND of PI5USB68	GND of PI5USB68A	Need to connect to GND of external power supply

Table 2, Detail description of the header pin

Board Design Information:

➤ PI5USB68/PI5USB68A EVB Schematic



➤ PCB Layout

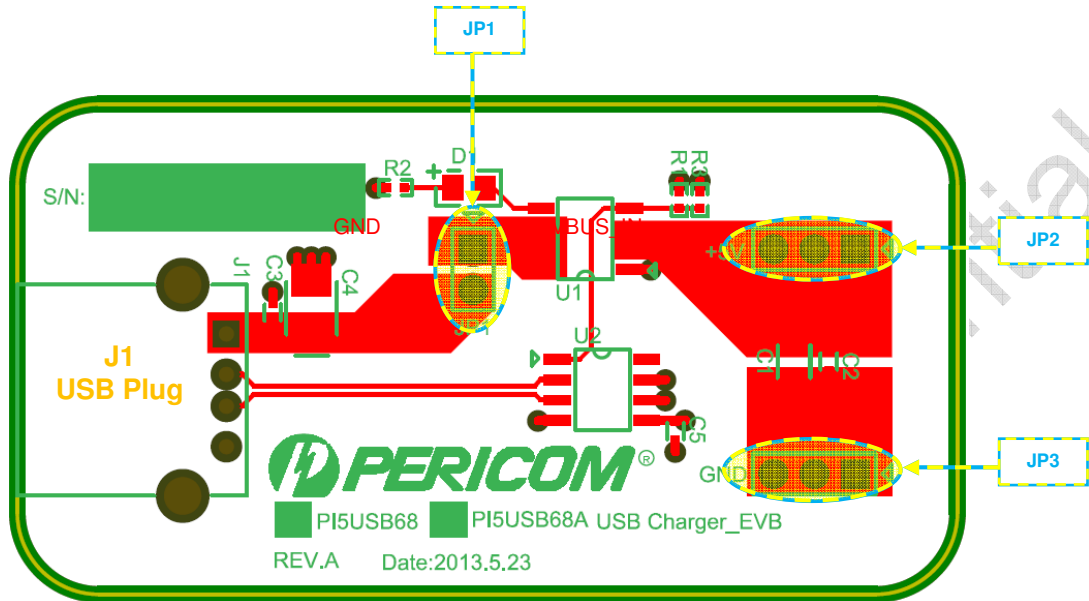


Figure 4, Top view of PI5USB68/PI5USB68A EVB Layout

➤ PCB Layout Requirements

a. Stack Up:

Layer #	Plane	Material Type	Thickness (mil)
	Solder Mask		0.4
Layer 1	Signal		1.2
	Prepreg	FR4 1080 FR4 2216	7.3
Layer 2	GND		1.2
	Core		44
Layer 3	Power		1.2
	Prepreg	FR4 2216 FR4 1080	7.3
Layer 4	Signal		1.2
	Solder Mask		0.4

b. Isolation Spacing = 30 mil

c. Width & Spacing (W/S) of 90Ω Differential Trace = 11 / 10 / 11 mil

➤ BOM List

Item	Quantity	Reference	Description
1	1	C1	4.7uF Capacitor
2	2	C2, C5	0.1uF Capacitor
3	1	C3	10uF Capacitor
4	1	C4	22uF Capacitor
5	1	D1	Red LED
6	1	JP1	2 x 1 header pin
7	2	JP2, JP3	3 x 1 header pin
8	1	J1	USB 2.0 Receptacle connector
9	1	R1, R3	10k Ω Resistor
10	1	R2	560 Ω Resistor
12	1	U1	PI5PD2068 / PI5PD2069
13	1	U2	PI5USB68 / PI5USB68A