PD-IM-7504B Marketing Board

User Guide

Preliminary

Revision 1.1

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1 About this Guide

This user guide provides both a description and operation procedures for Microsemi's PD-IM-7504B Marketing Board, which is used to evaluate the performance of PD69104A/B/B1 PoE applications.

1.1 Audience

This user guide is intended for qualified personnel, meaning operators and technicians who have a background in electronics and are familiar with its basic concepts.

1.2 Organization

This guide is divided into several sections as follows:

- CHAPTER 1 **About this Guide**: Describes guide's objectives, audience, and organization.
- CHAPTER 2 **Introduction**: Describes PoE Marketing board over view, main functions, features, physical characteristics, and ordering information.
- CHAPTER 3 **Physical Description**: Provides explanation that relate to the physical description (switches, jumpers, connectors).
- CHAPTER 4 **Electrical Characteristics**: Provides electrical characteristics of the PoE Marketing board.
- CHAPTER 5 **Installation**: Describes installation process.
- CHAPTER 6 **Relevant Documents**: Details other documents relevant to the Marketing Board.

2 Introduction

Microsemi's PD-IM-7504B Marketing Board (see Figure 1) provides designers with the needed environment to evaluate the performance and implementation of PoE and PoE extended mode applications, based on PD69104A/B/B1 PoE Manager. Marketing board enables PoE designers to evaluate Microsemi's PoE solution with maximum flexibility and ease in configuration

All necessary steps and connection instructions required for installing and operating this board are provided within this document.

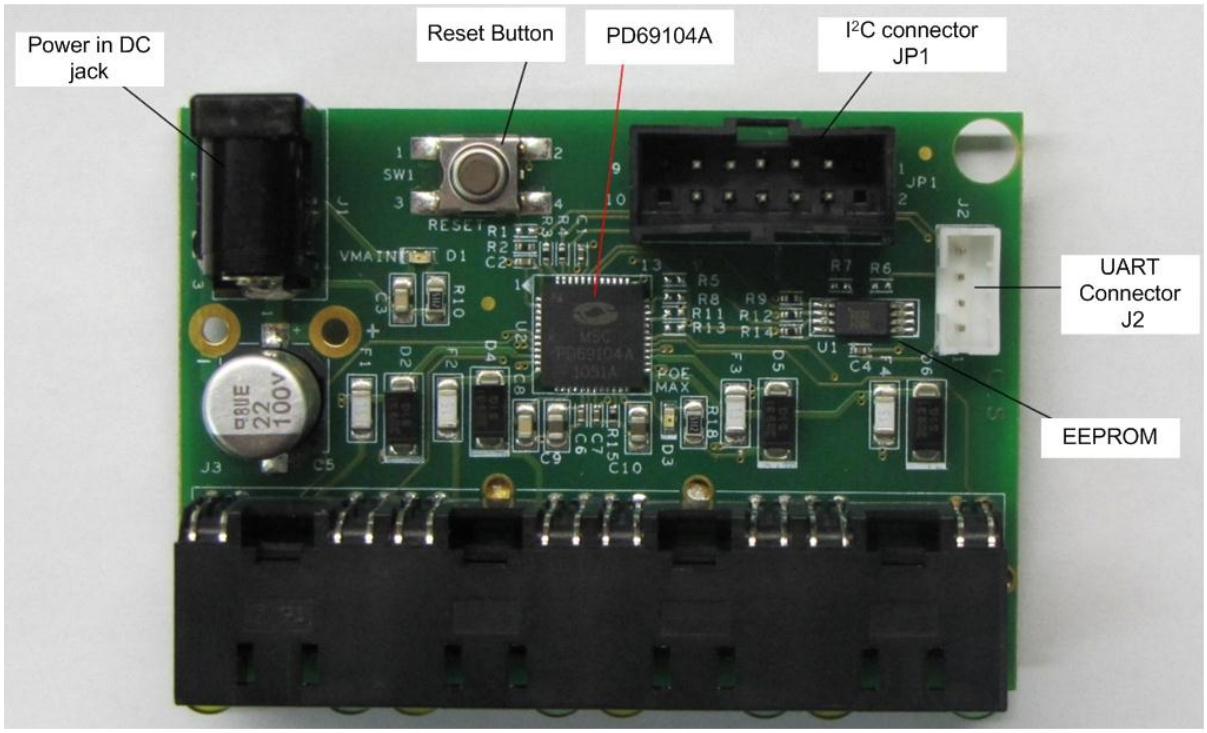

Figure 1: PD-IM-7504B Marketing Board – General View

2.1 Marketing Boards Ordering Information

Microsemi's supplies the following Marketing Boards as detailed below:

Ordering Number	Description
PD-IM-7504A	1 Marketing Board that simulates a 4 ports PoE.

2.2 Marketing Board Features

- Designed to support four RJ45 ports, PoE application, and PoE extended mode (2-pairs)
- V_{in} connector – DC jack
- On-board LEDs indicators
- Reset button
- EEPROM support
- I^2C and UART communication connectors.
- Marketing Board working temperature: 0°c to +50°c
- RoHS compliant

2.3 Marketing Board Interfaces and Connections

Board has several interfaces:

- **RJ45 interface**: Running from PD69104A/B/B1 to 4 PDs (powered devices)
- **V_{in} connectors**: DC in (V_{main}) connection (J1)
- **LEDs indication**: V_{main} power OK, Power limit LEDs
- **UART connector**: for UART communication.
- **I^2C connector**: for I^2C communication or EEPROM configuration.

2.4 Physical Characteristics

The following table lists the Marketing Board's physical characteristics.

Physical Characteristics

Parameter	Value
Mechanical dimensions	66 x 45 x 16 mm (L x W x H)

2.5 Communication

- **I^2C** –Marketing Board is set to work with I2C communication through connector JP1, with Aardvark (http://www.totalphase.com/products/aardvark_i2cspi/) or any other I^2C master.

Pin	JP1 Description
1	SCL
2	GND
3	SDA
4	
5	
6	
7	
8	
9	
10	WP **

** When configuring EEPROM, connect this pin to GND.

- **UART**- connecting through J2 pins:

Pin	J2 Description
1	3.3V (out)
2	Tx
3	Rx
4	GND

- **E^2PROM** – When no host controls the IC and configuration should be other then default, an EEPROM may be used for uploading new configurations. EEPROM can be burn by JP1.

3 Physical Description

3.1 Package Contents

Upon opening the Marketing Board package, verify all parts itemized in the packing list are included. If any part is missing or seems damaged; contact local representative or Microsemi's Headquarters. Package contents for standard shipments are as follows:

- PD-IM-7504B Marketing Board
- 55V power supply Adapter + AC cord

3.2 Reset Button

The dedicated Reset button SW1 (see Figure 1) is utilized to reset PD69104A/B/B1 PoE manager.

3.3 Connectors

The following sections provide both general and detailed information regarding unit connectors.

3.3.1 Connectors Table

The following table lists Marketing Board's connectors.

Table 1: Connectors List

#	Connector	Name	Description
1	J1	V_{in} DC jack	44V-57V DC input (V_{main}) connection used for powering the Marketing Board
2	J2	UART connector	UART communication connector. (3.3V compatible) Can use PD-0600 (Microsemi USB to UART converter) or any equivalent equipment
3	J3	RJ45 connectors	Four RJ45 ports for connecting to powered device
4	JP1	I2C connector	Connection to I^2C communication through AARDVARK or any other equivalent equipment (3.3V compatible)

3.4 V_{in} DC jack connectors (J1)

See Figure 2.

DC in (V_{main}) connection, used to power Marketing Board, 44V > V_{main} > 57V_{DC}.

Table 2: V_{in} Connectors

Pin No.	Signal Name	Description
1	V_{main} (V_{in} +)	Positive main voltage (referenced to AGND)
Hole 1(right)	V_{main} (V_{in} +)	Used for soldering wires to external power supply
Hole 2(left)	GND(V_{in} -)	Used for soldering wires to external power supply

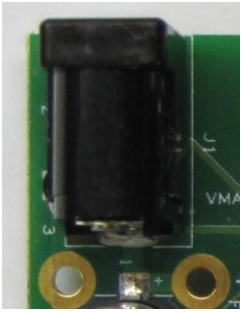

Figure 2

Since provided power supply can't support four ports PoE + full load (4*0.6A=2.4A), a wired connection can be used for connecting laboratory power supply directly to PCB using the holes located near J1.

3.5 LEDs Indication

- **D1 –** V_{MAIN} indication **.**
- **D3 –** MAX power indication**.** (Indicates power budget is reaching its limit)
- **Port Status LED–** in front of each port in the RJ45 connector there is a green LED that indicates whether port is operating. See Figure 4

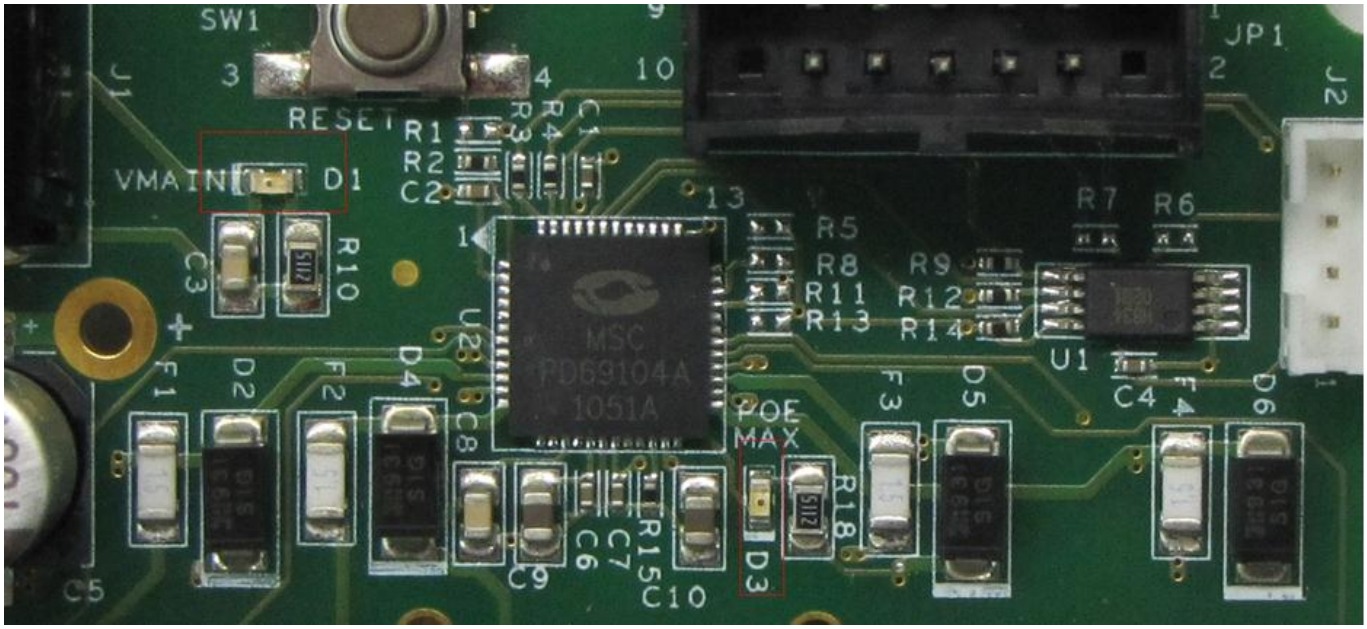

Figure 3: LEDs Indication

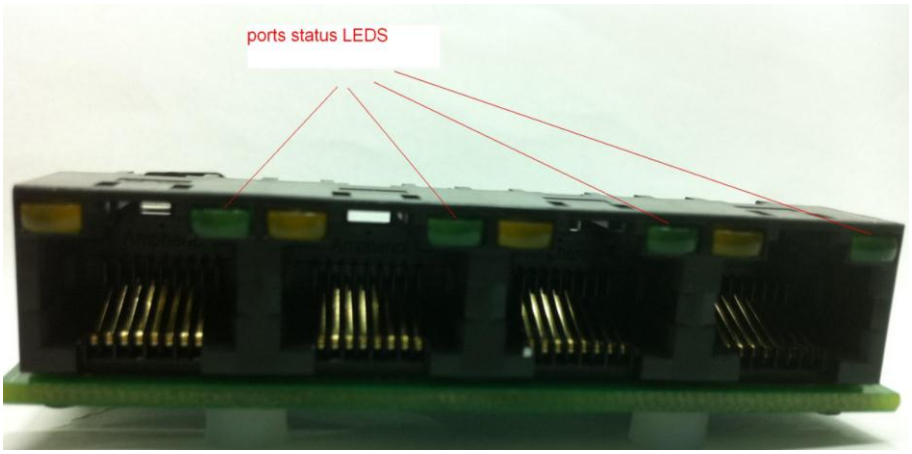

Figure 4: LEDs Indication

4 Electrical Characteristics

Marketing board's electrical characteristics are listed below:

Table 3: Electrical Characteristics

Parameter	Symbol	Min.	Max.	Units
Main DC supply V_{main}	V_{in}	44	57	V
Port current	I_{out}		0.6	A

5 Installation

This chapter describes the steps required for installing and operating the Marketing Board with any PoE application.

5.1 Preliminary Considerations and Safety Precautions

- Prior to powering the board, connect all required peripherals.
- Never hot swap peripherals units!
- Verify board is properly configured prior to turning on power supply.

5.2 Default Configuration

- Current set configured to AT mode (600mA).
  If "AF" current (350mA) has to be changed, load 0Ω to R11.
- Communication mode set to I^2C (R5 is loaded with 0Ω).
  If UART is required, disconnect R5 and connect 0Ω to R8.
- PoE Automode.

  All configurations can be set by communication or EEPROM.

6 Relevant Documents

- PD69104A datasheet, catalogue number DS_PD69104A
- PD69104B datasheet, catalogue number DS_PD69104B
- PD69104B1 datasheet, catalogue number DS_PD69104B1
- Serial Communication Protocol user guide PD63000_UG
- PD69104A reg. map user guide, catalogue number 06-0480-056
- PD69104B reg. map user guide, catalogue number PD69104B_GENERIC_UG_REG_MAP
- Marketing board schema PD-1358G201
- PD69104B Based Design of a 4-port Auto Mode System AN-198, catalogue number 06-0134-080

Revision History

Revision Level / Date	Para. Affected/Page	Description
1.0 / 10-Feb-11		Initial revision
1.1 / 09-June-13		Update to support PD69104B/1

For support contact: sales_AMSG@microsemi.com

Visit our web site at: www.microsemi.com **Catalog Number: PD69104B_UG_EVB**