

## Release Note

### PD69100 Firmware Version 2.3.9

#### 1 areneGI

- **Affected Part Number/s:** PD69100 family.
- **Distinction:** According to chip label
- **Effective Date:** Aug 26, 2012

#### 2 Introduction

The following release note describes the firmware release (2.3.9) which is to be used on Microsemi Enhanced mode controller – the PD69100

PD69100 Enhanced mode RELEASE 2.3.6 controller supports:

**2.1 Microsemi™ PoE devices: PD69108 v1r2 and above**

**2.2 Microsemi™ PoE devices: PD69104 v1r2 and above**

Loading a new firmware version into an existing PD69100 is to be done using the UART / I<sup>2</sup>C interface, utilizing the 'Firmware Download' procedure.

#### 3 Release Content – New Features

##### 3.1 Addition of communication command: Set specific class power level

The following communication commands were added to protocol. These commands allows the user to set/read the power per Class. This value is used for setting PPL (port power level) in class mode.

##### Set Class Power

[1] KEY	[2] ECHO	[3] Subject	[4] Subject1	[5] Subject2	[6] DATA	[7] DATA	[8] DATA
Command (0x00)	##	Global (0x07)	ClassPower (0xBB)	Class Type	Class power		N
[9] DATA	[10] DATA	[11] DATA	[12] DATA	[13] DATA	[14] CSum H	[15] CSum L	
N	N	N	N	N	##	##	

This command reads the class power of a specific class type.

##### **Class Type:**

- 0 – Class power for class 0.
- 1 – Class power for class 1.
- 2 – Class power for class 2.
- 3 – Class power for class 3.
- 7 – Class power for class 4 AT.

##### **Class power** (in DeciWatts):

For example: if reading class power = 320, it means 32W.

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### Get class power

[1] KEY	[2] ECHO	[3] Subject	[4] Subject1	[5] Subject2	[6] DATA	[7] DATA	[8] DATA
<i>Request (0x02)</i>	##	<i>Global (0x07)</i>	<i>ClassPower (0xBB)</i>	Class Type	N	N	N
[9] DATA	[10] DATA	[11] DATA	[12] DATA	[13] DATA	[14] CSum H	[15] CSum L	
N	N	N	N	N	##	##	

Controller response							
[1]KEY	[2]ECHO	[3]DATA	[4]DATA	[5]DATA	[6]DATA	[7]DATA	[8]DATA
<i>Telemetry (0x03)</i>	##	Class Power		N	N	N	N
[9]DATA	[10]DATA	[11]DATA	[12]DATA	[13]DATA	[14]CSum H	[15]CSum L	
N	N	N	N	N	##	##	

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## **4 Bug fixes:**

### **4.1 PG Disconnect Table**

Ports were not disconnected according to logical priority.  
On PG pins change event ports disconnection time was too long.

### **4.2 Program Global Matrix**

Wrong behavior was seen when programming matrix, ports should be turned off immediately to prevent wrong behavior.

### **4.3 System\_OK/LED pin Behavior**

System\_OK/LED pin was blinking when the current power bank index was odd.

### **4.4 Class Value reported through communication**

Class reported to the user was the class at the input stage, according to 802.3 reported class should be the system is using (after internal manipulation). From version 2.39 the reported class is the vclass used by the system internally.

### **4.5 Back off Time**

When enabled port time out is ~8s, when disabled port time out is ~4s.

### **4.6 Class Out Error**

When 4 pair port class results were incompatible, 2 pairs had different result, the status was #28 (PortIsOff) instead of #67 (CustomerClassError).

### **4.7 Class/TPPL**

Did not work according to PM definition.

### **4.8 Set Temporary Matrix**

When setting 2pair matrix while PortB exceeded MAX\_PORT\_NUM, the command was failed.

### **4.9 Get Physical Port From Temporary Matrix**

When matrix was in 2 pair mode, PortB at temporary matrix was not showing "N" as its value.

### **4.10 Get Physical Port From Active Matrix**

When matrix was in 2 pair mode, PortB at active matrix was not showing "N" as its value.

### **4.11 Get All HIP Ports Power**

Wrong user returned value, the returned value was limited to 25W.

### **4.12 PM3 Startup Condition**

Startup condition did not work with Class4 & PoH.

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## 5 Known Limitations:

### 5.1 ***Does not operate with PD69108 and PD69104 v1r1***

See the PD69108 and PD69104 Errata for limitations related to PD69108 and PD69104 v1r1.

### 5.2 ***Hot Swap control signal support***

To be supported by PD69100x-0240

### 5.3 ***Reset cause and smart recovery***

To be supported by PD69100x-0300

### 5.4 ***Support for systems with a mix of PD69108 and PD69104***

To be supported by PD69100x-0240

### 5.5 ***User Data feature not implemented***

The feature of saving 9 bytes of user data is not implemented. The relevant commands "Save Non-Volatile Memory" and "Get Non-Volatile Memory" are not implemented.

### 5.6 ***Set PoE Device Parameters command not supported***

The 15 byte protocol command "Set PoE Device parameters" is not implemented since it cannot be supported by PD69108 technology.

### 5.7 ***Get all ports power***

In the Command Get all ports power, the value received is divided by 5, 1 bit is 0.2w.

### 5.8 ***Port Max power***

Port max power is 15.4w in AF, 32w in AT and 36w in AT Extra power, instead of Icut\_Max limit for each mode.

### 5.9 ***Class4 is not getting 5% additional power***

Class 0-3 get up to ~5% above the power level of the class, class 4 is limited to max value of 32W (w/o additional 5%).

### 5.10 ***"No more connect" interrupt isn't working as defined***

### 5.11 ***Force Power Reported Staus***

When a port is set to "Force Power" and the system is in "Power Management" status (crossed the GB and no available power). The reported status is #32:Port is Off: power budget exceeded, instead of Port is off: "Out of power budget" during Force On. The port behavior is correct.

### 5.12 ***Port status in static mode and "Power Management" Reported Staus***

When a port in static mode and the system is in "Power Management" status (crossed the GB and no available power), the reported status is: #32: port is off: Power budget exceeded. Port status should be: Standard port: #60: Power Management- static.

Forced power port #62: Force power Error Management static.

The port behavior is correct.

### 5.13 ***Interrupt report issues***

"Port Fault" should be activated when Overload is discovered

No interrupt on "detection failed" error when working on ALT B

### 5.14 ***when power bank is set to above 6553W, the actual value configured is wrong***

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**5.15 System OK pin blinks on "vmain out of range" condition**

Upon entering "Vmain out of range" value, the Sys\_OK pin blinks at 1 Hz between 0-3.3V. it should go up to 3.3V until Vmain returns to the defined working range.

**5.16 Need to use Class 7 instead of Class 4**

See the new feature defined above.

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## 6 Label Change

Firmware version changed to 2.3.9 (previous version: 2.3.6). See Figure 1.

### 6.1 Communication Protocol User Guide:

All features and commands are described in the PD69100 Communication Protocol user guide.

### 6.2 EVB's

- PD-IM-7548E – for PD69108 evaluation (48 ports)
- PD-IM-7524E – for PD69108 evaluation (24 ports)

### 6.3 Applicable Documents

- PD69100 Serial Communication Protocol
- PD69100 CPU Data-Sheet
- PD69108 Data-Sheet
- PD69104 Data-Sheet
- User Guide for the PD-IM-7548E EVB
- User Guide for the PD-IM-7524E EVB
- AN 160 - Designing an IEEE802.3at PD interface
- AN 185 - Designing a PD69108/PD69104 48-port PoE System (802.3af/802.3at Compliant)
- AN 186 - Layout Design Guidelines for PD69108 PoE Systems

## 7 Ordering Options

To order PD69100 with Rel 2.3.6 firmware, please mark "**PD69100x-0239**" in the purchase order. Where,

**x** stands for the default parameters setting as following:

- **C**: Detection Method = IEEE802.3at & Pre-standard
- **R**: Detection Method = IEEE802.3at

**y** stands for firmware parameters option which is different than the default parameters

## 8 Label Information



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