

**PD69200/PD69210/PD69220/PD69200M**  
**IEEE802.3BT Firmware 3.52 Release Notes**

**Doc Version 2.0**

**Document Number PD-00395307**

**June, 2020**

## 1 General

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- **Affected Part Number/s:** PD69200, PD69210, PD69220, PD69200M
- **Distinction:** Software version read from the device, please refer to section 9.
- **Effective Date:** June, 2020

## 2 Introduction

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The following release note describes the firmware release version 3.52 which is programmed on Microsemi PD692x0.

Firmware version 3.52 controller supports:

- **Microsemi PoE device: PD69208M**
- **Microsemi PoE device: PD69208T4**
- **Microsemi PoE device: PD69204T4**

### 3 Release Content – New Features:

#### 3.1 Adding the option to Force power with 90Watt power limitation

A new Force-power mode was added, with 90Watt limitation.

The command “**Set BT Port Parameters**” was updated, and now CFG1 has additional setting 0x04

**Set BT Port Parameters**

[0] KEY	[1] ECHO	[2] SUB	[3] SUB1	[4] SUB2	[5] DATA	[6] DATA	[7] DATA	[8] DATA	[9] DATA	[10] DATA	[11] DATA	[12] DATA
0x00	##	0x05	0xC0	Val	Val	Val	Val	Val	0x4E	0x4E	0x4E	0x4E
Command		Channel	BT Port Config1	Port Num	Port Mode CFG1	Port Mode CFG2	Port Operation Mode	Add Power for Port Mode	Priority	N	N	N

##### ▪ Port Mode CFG1

This field is used to enable/disable the port, to Enable/Disable recovery feature per port or to enter force power mode.

Setting this field to 0xF will leave the port with the last configuration untouched. Any other value is reserved for future use and will be ignored without generating an error.

##### bits[3..0] – Port Enable Modes:

0x0 – Port Disable

0x1 – Port Enable

0x2 – Port Enable with ignored inrush check

At the end of port power up flow, ILIM state is ignored and the port will continue to regular ON state.

0x3 – Port Force Power 4P-60w / 2P-30w

0x4 – Port Force Power 4P-90w / 2P-45w

0xF – Do not change settings

(POE10XX-118).

#### 3.2 System behavior change – An LLDP PD request above IEEE802.3bt limit

An LLDP request will be limited according to actual port operation (2 or 4Pair) and the actual cable length setting, instead of the 100m cable length limitation.

**Example:** In previous firmware, if a PD class 4 requested above 25.5Watt \*, even with shorter than 100meter cable, this request was rejected.

In version 3.52, this request is approved according to the cable length.

(\* 25.5Watt is the maximum allowed for 100m cable length).

(POE10XX-120).

### 3.3 System behavior change – 2 pair port will power DSPD

When the PSE port is set to 2 pair, it will power normally a PD class 1-3 with a classification code of DSPS:

- A DSPD with a classification code of 1,1,0 will be powered as a SSPD class 1.
- A DSPD with a classification code of 2,2,0 will be powered as a SSPD class 2.
- A DSPD with a classification code of 3,3,0 will be powered as a SSPD class 3.

In previous firmware, 2 pair PSE port rejected a DSPD classification code, and reported class error.

(POE10XX-132).

### 3.4 System behavior change – Device refresh and reset was changed

Refresh and reset logic was changed to the following:

<b>Mask 0x14</b>	<b>Mask 0x2A</b>	<b>Result</b>
0	0	Refresh
x	1	Refresh
1	0	Reset

(POE10XX-123, POE10XX-122).

### 3.5 System behavior change – delay between port disconnection to the next detection cycle was updated.

The delay between port disconnection due to error event\*, to the next detection cycle was updated in normal operation mode (New mask 0x53 is set to "0"):

Updated delay after short-circuit is 10 Sec, in previous version 8 Sec.

Updated delay after overload is 5 Sec, in previous version 1 Sec.

\* Error event is: Short-circuit, Overload

(POE10XX-146).

### 3.6 Adding new individual mask LER (Long Error Recovery) - 0x53

A new mask allowing longer delay between port disconnection due to error event\*, to the next detection cycle.

This mask is intended to be used when the PSE system is operated in hot temperature environment, where the PD69208/4's junction temperature is above 135C.

\* Error event is: Short-circuit, Overload

Num	Name	Val	Description
0x53	LER – Long Error Recovery	'0'	Systems with regular error recovery timing: <ul style="list-style-type: none"> <li>• Delay after short circuit 10 Sec</li> <li>• Delay after Overload 5 Sec</li> </ul>
		'1'	Long error recovery timing: <ul style="list-style-type: none"> <li>• Delay after short circuit 45 Sec</li> <li>• Delay after Overload 5 Sec</li> </ul>

(POE10XX-146).

## 4 Release Content – Bug fixes

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### 4.1 Bug description: 2 Pair port with requested class 8, can be assigned with class 5 via LLDP

Bug description: When a 2 pair PSE port receives a request for class 8, the port can be wrongly assigned to class5 via the LLDP, while it should be assigned to class4.

This issue was fixed in version 3.52, and such port will be assigned to class4

(POE10XX-133).

### 4.2 Bug description: Max limit of added-power in few operations mode was incorrect.

Bug description: The maximum limits of added-power in few port operation modes were incorrect.

This issue was fixed in version 3.52.

(POE10XX-134).

### 4.3 Bug description: Icut and Ilim were not set correctly on an SSPD with assigned class4.

Bug description: When a PSE port set to Type 3 or Type 4, and an SSPD class5-8 is connected and power demoted to class4, the Icut and Ilim of pairset B were set wrongly to 375mA, instead the limits of Type3 or Type4.

This issue was fixed in version 3.52.

(POE10XX-139).

### 4.4 Bug description: LLDP in Port operation mode 0x14 wrong port type

Bug description: In port operation mode 0x14, an LLDP command wrongly set the port to type3 instead type4.

This issue was fixed in version 3.52.

(POE10XX-142).

## 5 Release Content – Known Bugs/Limitations

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### 5.1 “Get BT Port Class” returns wrong values after programming a new matrix, and defined ports set to undefined with the new matrix

Undefined port (Alt A & Alt B set to 0xFF) should return 0 Watt in requested power, but the value returned by the firmware is above 0 Watt.

In order to avoid such issue, the user should not execute the command for undefined ports.

(POE10XX-20).

### 5.2 When CFG2 is set to ignore class error, and a dual-signature PD with class error is connected, the port is not powered as it should.

When a dual signature with class error is connected to the port, and CFG2 is set to ignore class error (please refer to section 3.1 in that document), the port is not powered as it should.

This known bug is related only to a dual signature PD, and does not influence a single signature PD with class error.

(POE10XX-94).



## 6 Collateral

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### 6.1 Communication Protocol User Guide:

All features and commands are described in the “PD692x0 Communication Protocol” user guide version 3.29 (for PD69200 and PD69210 POE controllers) and “PD69200M Shared Memory Protocol” version 4.00 (PD69200M only).

### 6.2 Applicable Documents

- **PD692x0 Communication Protocol User Guide** - Document number PD-000361126
- **PD69200M Shared Memory Protocol** - Document number 000361127
- **PD69208M + PD69200 Data-Sheet** - Document number PD-000303451
- **PD69208T4 + PD69200 Data-Sheet** - Document number PD-000303603.
- **PD69204T4 + PD69200 Data-Sheet** - Document number PD-000303601
- **PD69208M + PD69210 Data-Sheet** - Document number PD-000359833
- **PD69208T4 + PD69210 Data-Sheet** - Document number PD-000357193
- **PD69204T4 + PD69210 Data-Sheet** - Document number PD-000359832
- **PD-IM-7604-4M/T4 EVB User guide** - Document number PD-000354473
- **PD-IM-7608-2 EVB User Guide** - Document number PD-000303240
- **AN 250 - Designing a PD692x0/PD69208 48-port PoE System** - Document number PD-000392301

## 7 Ordering Options

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To order PoE controller programmed with 3.52 firmware, please mark "PD69xx0R-035200" in the purchase order.

xx: Controller P/N (i.e PD69200, PD69210, PD69220)

Example:

- PD69210R-035200 is PD69210 pre programmed with firmware 3.52

(R: Detection Method = IEEE802.3at/bt compliant PD's only)

## 8 Default parameters setting for version 3.52

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### 8.1 General parameters

- Maximum supported PoE type – Type 4 (90Watt)  
(Systems based PD69208M, the port is still defined as Type 4, but is limited to 60Watt).
- Ports 2 pair/4 pair – 4 pair
- Private label - 0x00
- User Byte – 0xFF

### 8.2 Power parameters

- Power Banks:  
Banks 0-15 = 2000Watt  
Vmin=48V  
Vmax=58.5V
- Power Indication LED: 82-85% for percentage mode, 32-34 Watts for power mode.

### 8.3 IC status

TSH (Temperature Alarm): The temperature alarm threshold per each PoE device - 110°C

### 8.4 Interrupt

All interrupt events are masked.

## 8.5 Default Matrix:

- 4 pairs 48-ports system
- Each logic port is constructed by two PD69208x physical ports

<i>Logic port</i>	<i>Physical A</i>	<i>Physical B</i>
<b>0</b>	0	8
<b>1</b>	1	9
<b>2</b>	2	10
<b>3</b>	3	11
<b>4</b>	4	12
<b>5</b>	5	13
<b>6</b>	6	14
<b>7</b>	7	15
<b>8</b>	16	24
<b>9</b>	17	25
<b>10</b>	18	26
<b>11</b>	19	27
<b>12</b>	20	28
<b>13</b>	21	29
<b>14</b>	22	30
<b>15</b>	23	31
<b>16</b>	32	40
<b>17</b>	33	41
<b>18</b>	34	42
<b>19</b>	35	43
<b>20</b>	36	44
<b>21</b>	37	45
<b>22</b>	38	46
<b>23</b>	39	47

<i>Logic port</i>	<i>Physical A</i>	<i>Physical B</i>
<b>24</b>	48	56
<b>25</b>	49	57
<b>26</b>	50	58
<b>27</b>	51	59
<b>28</b>	52	60
<b>29</b>	53	61
<b>30</b>	54	62
<b>31</b>	55	63
<b>32</b>	64	72
<b>33</b>	65	73
<b>34</b>	66	74
<b>35</b>	67	75
<b>36</b>	68	76
<b>37</b>	69	77
<b>38</b>	70	78
<b>39</b>	71	79
<b>40</b>	80	88
<b>41</b>	81	89
<b>42</b>	82	90
<b>43</b>	83	91
<b>44</b>	84	92
<b>45</b>	85	93
<b>46</b>	86	94
<b>47</b>	87	95

## 8.6 BT Port Parameters:

- CFG1= 0x01 (Port Enable)
- CFG2= 0x01 (Port TPPL\_BT)
- Port Operation Mode 0x00 (90W 4P, 30W 2P, no legacy)
- Add power for port mode = 0Watt
- Priority: Low
- BT Class Additional Power = 0Watt

- Maximum power user can add to BT class additional power:

Class [1] = 2.5 Watt

Class [2] = 2.5 Watt

Class [3] = 3.1 Watt

Class [4] = 8.0 Watt

Class [5] = 2.5 Watt

Class [6] = 5.0 Watt

Class [7] = 7.0 Watt

Class [8] = 7.5 Watt

## 8.7 Individual mask

Number	Name	Value
0x00	Ignore higher priority	1
0x10	Support High res detection	0
0x14	Hardware reset on ASIC error	1
0x1B	I <sup>2</sup> C restart enable	1
0x1F	PSE powering PSE checking	1
0x20	Led Stream Type	0
0x2A	Enable ASIC Refresh	0
0x2C	Layer2 Power Allocation Limit	1
0x30	Blinks in Connection check Error & Invalid Sig	1
0x32	Temperature Derating enable	0
0x33	Temperature Derating Negative\Positive Delta	0
0x40	xSystem OK pin behavior	0
0x46	Single detection fail event	0
0x49	Auto Zone2 port activation	1
0x4F	Adding half priority for LLDP ports	1
0x50	HOCPP - High Over Current Pulse Protection	2
0x53	LER – Long Error Recovery	0

## 9 Identifying the assembled PoE Controller.

This document is valid to all 4 PoE controllers: PD69200, PD69210, PD69220, PD69200M.

In order to identify which PoE controller is assembled, please execute the command “Get Software Version”, as described in section 4.1.19 of the **PD692x0 Communication Protocol User Guide**.

The response from the PoE controller includes the **Prod#**, which indicates the PoE controller type.

Please refer to the PoE controller type list below.

### 4.1.19 Get Software Version

[0] KEY	[1] ECHO	[2] SUB	[3] SUB1	[4] SUB2	[5] DATA	[6] DATA	[7] DATA	[8] DATA	[9] DATA	[10] DATA	[11] DATA	[12] DATA
0x02	##	0x07	0x1E	0x21	0x4E	0x4E	0x4E	0x4E	0x4E	0x4E	0x4E	0x4E
Request		Global	Versionz	SW Version	N	N	N	N	N	N	N	N
0x03	##	Val	0x4E	Val	Val		Val	Val	Val		Val	
Telemetry		HW Version	N	<b>Prod#</b>	SW_Version		Param#	Build#	Internal SW#		0x0000	

<b>Prod# (Decimal)</b>	<b>PoE Controller Type</b>
22	PD69200 Programed with IEEE802.3at Firmware
24	PD69200 Programed with IEEE802.3bt Firmware
27	PD69210 Programed with IEEE802.3at Firmware
26	PD69210 Programed with IEEE802.3bt Firmware
28	PD69220 Programed with IEEE802.3at Firmware
29	PD69220 Programed with IEEE802.3bt Firmware
23	PD69200M Programed with IEEE802.3at Firmware
25	PD69200M Programed with IEEE802.3bt Firmware



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