



MICROCHIP

PD69200/PD69210/PD69220/PD69200M
Firmware 3.55 Release Notes

1. General

- **Affected Part Numbers:** PD692x0 which includes PD69200/PD69210/PD69220/PD69200M
- **Distinction:** According to package label, software version read from the device.
- **Effective Date:** July 1st, 2021

2. Introduction

The following release note describes the firmware release (3.55), which is to be used on the Microchip PD692x0 Controller. PD692x0 Version 3.55 supports the following Microchip PoE Managers:

- PD39208
- PD69208M
- PD69208T4
- PD69204T4

See *PD692x0 Serial Communication Protocol User Guide version 3.31* for more information.

To load a new firmware version into an existing PD692x0 device, use the UART/I²C interface, follow the procedure outlined in [AN3497 “Software Download Algorithm for PSE Controllers”](#)

All Firmware is available at [Microchip’s Software Library](#)

3. New Features

3.1. Improvement - Ignore autoclass request in 4 existing operational modes

Added in version 3.55 !

The PD's autoclass request is ignored in operational modes 0x20, 0x22, 0x24, 0x26

These 4 modes are not IEEE compliant, and therefore it is not recommended to support autoclass.
(POE10XX-175).

3.2. Improvement - POR value was updated in PD69210, PD69220

Valid only to PD69210 and PD69220.

The threshold level of the POR (Power On Reset) was changed from 1.7V to 2.77V.

This new threshold improves the controller's immunity to unstable 3.3V supply.
(POE10XX-174).

3.3. Improvement - Updating the Icut thresholds to meet unbalance requirements.

The maximum Icut threshold for each pairset was updated in firmware 3.55, to meet the IEEE802.3bt requirement for unbalance in high current.

The table below shows the thresholds in firmware 3.54, compare to the new thresholds in version 3.55.

Each level is related to a single pairset of the 4 pair port.

Changes are marked in red.

PSE Assigned Class pse_allocated_pwr	Up to firmware 3.5400 [mA]	Firmware 3.55 [mA]
0	379	379
1	379	379
2	379	379
3	379	379
4	648	648
5 – Single signature	570	608
6	705	740
7	825	858
8	976	980
5 – Dual signature	976	980

(POE10XX-173).

3.4. The option to ignore autoclass request was added

The PD's autoclass request can be ignored by the PSE system.

The command "Set BT port parameters" was updated, and now bit 4 of CFG1 sets the autoclass ignore functionality.

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

CFG1/ Bit [4] – Ignore PD Auto-class Request:

When this bit is set, if a PD request for Autoclass was found during the LCE event, the Autoclass power measurement will not be performed after port powerup.

Instead, a regular assigned class power will be performed, as if Autoclass was never requested.

In any case the PD requested bit that was found will be reported in the

Auto class support: Bits[15..12] field, at "Error! Reference source not found.Get BT Port Class" telemetry.

(POE10XX-170).

4. Bugs Fix

4.1. Bug Description: I²C module is not reset after 10 Sec.

This bug fix is related only to PD69210 and PD69220 (In the PD69200 this bug does not exist).

When Mask 0x1B is set to 1, the internal I2C module should be reset after 10 Sec of inactivity.

In earlier versions, the I2C module did not reset as it should.

This bug was fixed in 3.55.

(POE10XX-169).

5. Known Bugs/Limitations

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.

To avoid such issue, the user should not execute the command for undefined ports.

(POE10XX-20)

5.2. **DSPD port is limited to 60W in LLDP commands, in certain condition.**

When DSPD is connected to the port, Mask 0x2C functions as it is set to 1, even it is set to 0.

(POE10XX-144)

5.3. **When port is set to type 4, and the PD is removed from the port port by the user, the port might report as OVT.**

This limitation is actual only in type 4 ports setting and might be seen once a while.

1. Collateral

- a) *All features and commands are described in the PD692x0 Communication Protocol user guide version 3.30, and “PD69200M Shared Memory Protocol” version 4.00 (PD69200M only).*
- b) *PD69208M + PD69200 Data-Sheet - Document number PD-000303451*
- c) *PD69208T4 + PD69200 Data-Sheet - Document number PD-000303603.*
- d) *PD69204T4 + PD69200 Data-Sheet - Document number PD-000303601*
- e) *PD69208M + PD69210 Data-Sheet - Document number PD-000359833*
- f) *PD69208T4 + PD69210 Data-Sheet - Document number PD-000357193*
- g) *PD69204T4 + PD69210 Data-Sheet - Document number PD-000359832*
- h) *PD-IM-7604-4M/T4 EVB User guide - Document number PD-000354473*
- i) *PD-IM-7608-2 EVB User Guide - Document number PD-000303240*

2. Ordering Options

To order PoE controller programmed with 3.55 firmware, please mark "PD692x0R-035500" in the purchase order.

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

Example:

- PD69210R-035500 is PD69210 pre programmed with firmware 3.55 (R: Detection Method = IEEE802.3at/bt compliant PD's only)

3. Default parameters setting version 3.55

This section describes the default configuration.

8.1 General Parameters

- Ports enable/disable – Enable
- Ports type – Type 4 (90Watt)
- Ports 2 pair/4 pair – 4 pair
- Private label - 0x00
- User Byte – 0xFF

8.2 Power Parameters

- Power Banks:
 - Bank 0= 2000W
 - Bank 1= 2000W
 - Bank 2= 2000W
 - Bank 3= 2000W
 - Bank 4= 2000W
 - Bank 5= 2000W
 - Bank 6= 2000W
 - Bank 7= 2000W
 - Bank 8= 2000W
 - Bank 9= 2000W
 - Bank 10= 2000W
 - Bank 11= 2000W
 - Bank 12= 2000W
 - Bank 13= 2000W
 - Bank 14= 2000W
 - Bank 15= 2000W
- GB = 1
- Vmin=48
- Vmax=58.5
- Power Indication LED: 82-85% for percentage mode, 32-34 Watts for power mode.

8.3 IC Status

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

8.4 Interrupt

All interrupt events are masked (not generating interrupt signal).

8.5 Matrix

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

Logic port	Physical A	Physical B
0	0	8
1	1	9
2	2	10
3	3	11
4	4	12
..
47	87	95

8.6 Ports Priority

All ports are set to Low (Priority =3).

8.7 Class Power limit

- Class 0 - 16.4W
- Class 1 – 5W
- Class 2 – 8W
- Class 3 - 16.4W
- Class 4 AF – 16.4W
- Class 4 AT – 33W
- Max Port Power AT – 33W

8.8 BT Port Parameters:

- CFG1= 0x01 (Port Enable, auticlass is not ignored)
- 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] = 3.7 Watt
 - Class [6] = 5.0 Watt
 - Class [7] = 7.0 Watt
 - Class [8] = 7.5 Watt

8.9 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 ² 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	N.A
0x33	Temperature Derating Negative\Positive Delta	N.A
0x40	xSystem OK pin behavior	0
0x46	Single detection fail event	0
0x49	Auto Zone2 port activation	N.A
0x4F	Adding half priority for LLDP ports	1
0x50	HOCPP - High Over Current Pulse Protection	2
0x53	LER – Long Error Recovery	0

Identifying the assembled PoE Controller

4. 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	Prod#	SW_Version		Param#	Build#	Internal SW#		0x0000	

Prod# (Decimal)	PoE Controller Type
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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