

# P3H244x/P3H284x

I3C Hub with Two Controller Ports and Four/Eight Target Ports

Rev. 1.0 — 26 May 2025

Product brief

## Document information

Information	Content
Keywords	P3H244X_P3H284X_PB, P3H2840HN, P3H2440HN, P3H2841HN, P3H2441HN, I3C Hub, I3C, I2C, SMBus
Abstract	The P3H244x/P3H284x are multiport I3C hub devices that connect to a host CPU via I3C/I2C/SMBus bus on one side and connect to multiple peripheral devices on the other side.



## 1 General description

The P3H244x/P3H284x are multiport I3C hub devices that connect to a host CPU via I3C/I2C/SMBus bus on one side and connect to multiple peripheral devices on the other side. The hub ICs have two controller ports and up to eight target ports to expand bus connectivity to multiple devices. These hub devices also support highly flexible voltage level translation. The controller ports support either I2C/SMBus or I3C buses and connect to a CPU, BMC, or SOC. The target ports can be configured as I2C/SMBus, I3C, or GPIO and connect to peripherals.

Each controller port can be connected to different IO voltages, independent of each other. Depending on the controller port mode, this can be I2C/SMBus mode (3.3 V open drain tolerant IO port) or I3C mode (1.0 V, 1.2 V, or 1.8 V push/pull IO port).

Each target port can be connected to different IO voltages, independent of each other. Depending on the target port mode, this can be I2C/SMBus mode (3.3 V open drain tolerant IO port.), I3C mode (1.0 V, 1.2 V, or 1.8 V push/pull IO port) or be configured as a Agile GPIO pins.

## 2 Features and benefits

Main features and benefits are listed as follows.

- Two controller ports to connect to I3C or I2C/SMBus controller devices: Controller port 0 (CP0) and controller port 1 (CP1)
- An I3C target device to provide hub control/configuration and data buffer access for each controller port
- A register map for hub device, controller ports, and target ports configuration/control/status
- Up to eight target ports (TP); each port can be used to connect to I3C only devices, I2C only devices, mixed I3C and I2C devices, SMBus devices only, or be used as GPIOs
- A hub network/circuitry to communicate between controller ports to target ports in a transparent bridge manner
- A multiplexer to connect one controller port to the hub network
- VDDIN = 3.3 V  $\pm$  10 %
- Integrated LDO regulators provide two target port VCCIO voltage domains, two controller port VCCIO domains, and internal core logic power. The voltages supported are 1.0 V, 1.2 V, or 1.8 V
- ESD protection
- Package HVQFN28 lead package, 0.4 mm pitch in 4 mm x 4 mm
- Operating temperature range: T<sub>amb</sub> -40 °C to +85 °C

## 3 Ordering options

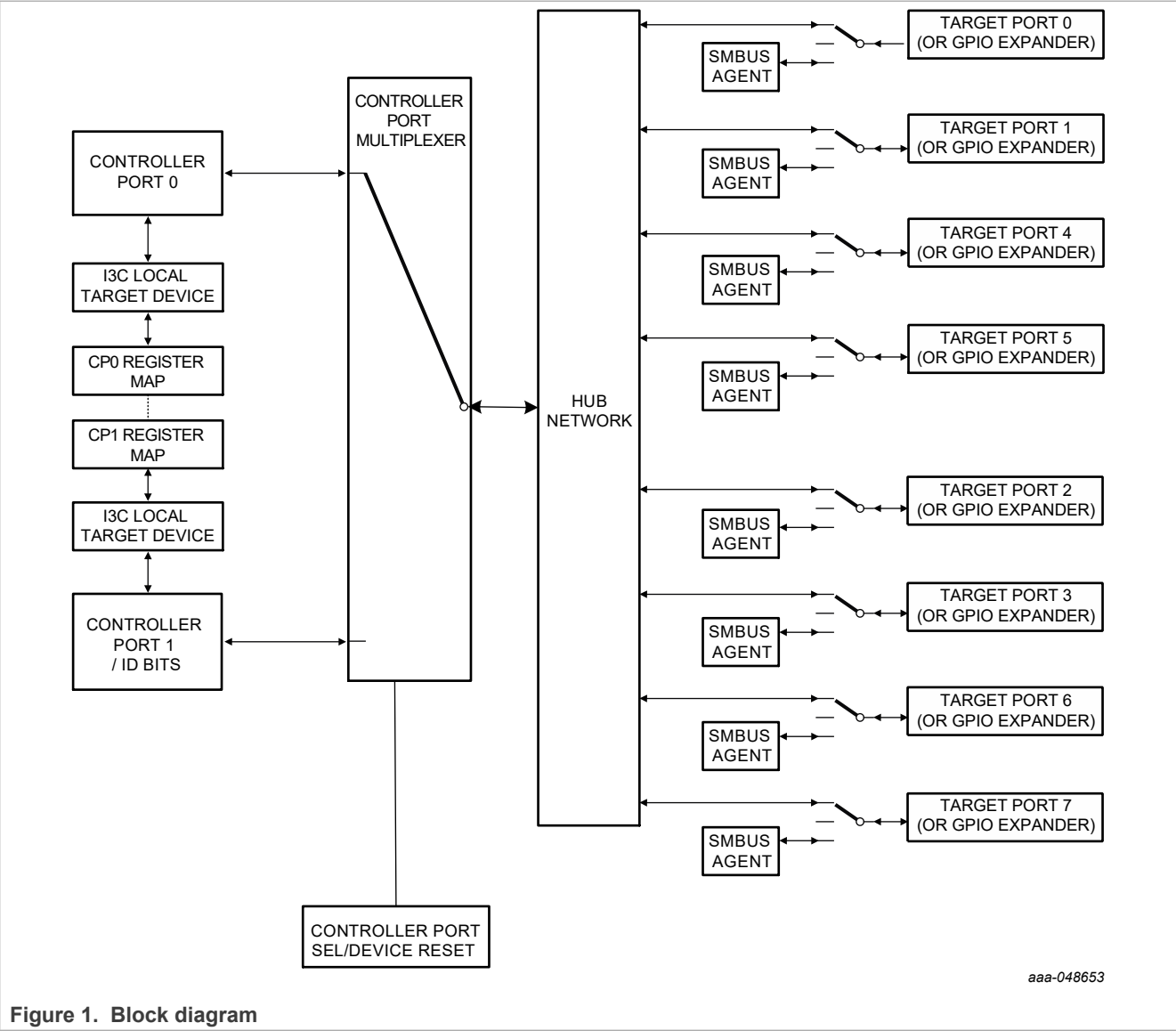
[Table 1](#) describes various ordering options.

Table 1. Ordering options

Type number	Orderable part number	Package	Packing method	Minimum order quantity	Temperature
P3H2440HN	P3H2440HNHP	HVQFN28	REEL 13" Q2 NDP	6000	T <sub>amb</sub> = -40 °C to +85 °C
P3H2840HN	P3H2840HNHP	HVQFN28	REEL 13" Q2 NDP	6000	T <sub>amb</sub> = -40 °C to +85 °C
P3H2441HN	P3H2441HNHP	HVQFN28	REEL 13" Q2 NDP	6000	T <sub>amb</sub> = -40 °C to +85 °C
P3H2841HN	P3H2841HNHP	HVQFN28	REEL 13" Q2 NDP	6000	T <sub>amb</sub> = -40 °C to +85 °C

4 Block diagram

Figure 1 shows the block diagram of P3H244x/P3H284x.



5 Revision history

Table 2 summarizes the revisions to this document.

Table 2. Revision history

Document ID	Release date	Description
P3H244X_P3H284X_PB v.1.0	26 May 2025	Initial release

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