HAMAMATSU

PHOTON IS OUR BUSINESS

PC Recommendation for

ORCA-Flash4.0 V3 / LT+

April 2020 (20200401)

Hamamatsu Photonics K.K.

Purpose

This document provides the recommended PC configuration for Hamamatsu ORCA-Flash4 Series cameras and Hamamatsu HCImage software.

- C13440-20CU :   ORCA-Flash4.0 V3
- C11440-42U30 :   ORCA-Flash4.0 LT+

- Notice
    - Optimum performance can be achieved under the conditions describe in this document, but it is not guaranteed.

Single Camera with CameraLink

Items	Recommended
Camera	C13440-20CU (V3)
Model	Dell Precision™ 5820 Tower Workstation
CPU	Intel Xeon W-2123
OS	Windows 10 / 8.1 Professional 64-bit
RAM	32 GB or more
Frame Grabber	Active Silicon AS-FBD-1XCLD-2PE4L-F installed in SLOT1_PCIe3x8, SLOT4_PCIe3x16 or SLOT5_PCIe3x4
Drivers	DCAM-API v20.3 or later

- To achieve full speed recording at max resolution and max 25,000+ fps speed at small regions.
- These BIOS settings may need to be adjusted:
  - Disable (uncheck) SpeedStep and C-State under the Performance section.
  - Enable (check) Turbo Boost and Hyper-Threading under the Performance section.

Single Camera with USB 3.0 (USB 3.2 Gen1)

Items	Recommended
Camera	C13440-20CU (V3) or C11440-42U30 (LT+)
Model	Dell Precision™ 5820 Tower Workstation
CPU	Intel Xeon W-2123
OS	Windows 10 / 8.1 Professional 64-bit
RAM	8 GB or more
Interface connector	Front-side USB 3.1 Gen1 interface connector
Drivers	DCAM-API v20.3 or later

- To achieve full speed recording at max resolution and max 25,000+ fps speed at small regions with frame bundle.

- These BIOS settings may need to be adjusted:
  - Disable (uncheck) SpeedStep and C-State under the Performance section.
  - Enable (check) Turbo Boost and Hyper-Threading under the Performance section.
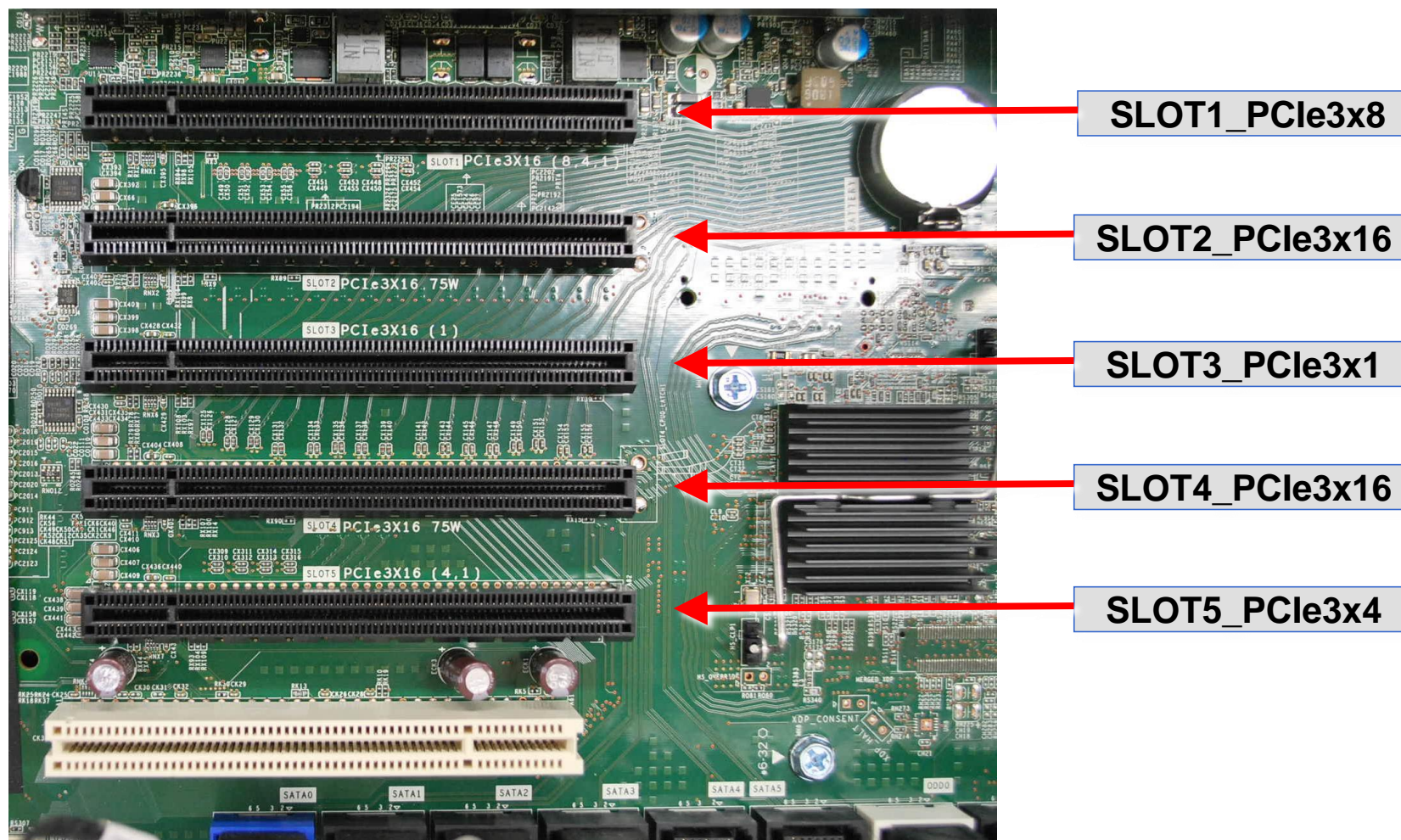
Recommended DIY PC configuration for Single Camera

Camera Interface	Camera Link	USB 3.0	Note
CPU	Intel Xeon E5-1630 v4 or better		We recommend that you use at least a single 3.2Ghz Quad (or more) Core High End CPU with a CPU Mark equal or higher than the E5-1630 v4 from this benchmark table: High End CPU's - Intel vs AMD Frequency is more important than the number of CPU cores.
OS	Windows 10 / 8.1 Professional 64-bit		32-bit Edition is not recommended because of performance and memory size limitations
RAM	32 GB or more	8 GB or more	DDR4 2400MHz or higher-speed
Chipset	Intel C610 series chipset or newer		e.g. C612, C236, C422
Free Slot	PCIe2(3) x4 wired	PCIe2(3)	PCIe Gen2 is mandatory but Gen3 should cover Gen2.
BIOS	Latest		PCIe slot performance sometimes is improved in the latest BIOS. We highly recommend to adjust the following BIOS settings: 1. Disable Processor C-state control to force C0 state for all processors. 2. Enable Intel Turbo Boost. 3. Disable Intel SpeedStep if allowed with Turbo Boost Enabled. Enable Turbo Boost may mutually exclude disabling SpeedStep. 4. Enable Intel Hyper-Threading.

Storage Size vs. Number of Recorded Images

Free space	Number of Recorded Images[1]	Time in seconds[2] (Approx.)		
		30 fps[3]	40 fps[3]	100 fps[3]
8 GB	1,024	34	25	10
16 GB	2,048	68 (~1 min)	51	20
32 GB	4,096	136 (~2 min)	102 (~1 min)	40
64 GB	8,192	273 (~4 min)	204 (~3 min)	81 (~1 min)
128 GB	1,6384	546 (~9 min)	409 (~6 min)	163 (~2 min)
256 GB	3,2768	1,092 (~18 min)	819 (~13 min)	327 (~5 min)
512 GB	65,536	2,184 (~36 min)	1,638 (~27 min)	655 (~10 min)
1 TB	131,072	4,369 (~72 min)	3,276 (~54 min)	1,310 (~21 min)

1. In case of 1x1 binning, full size.

2. Numbers are rounded down.

3. Depends on storage writing speed and application writing to storage performance. Writing frame rate is sometimes slower than camera capturing speed.

SLOT1_PCIe3x8

SLOT2_PCIe3x16

SLOT3_PCIe3x1

SLOT4_PCIe3x16

SLOT5_PCIe3x4

www.hamamatsu.com