# Active Silicon FireBird (CoaXPress)

## DCAM Version

| | | |
|---|---|---|
| DCAM Module | 26.7.4322.7190 | |
| DRIVER | 8.26.14.7190 | (for 2XCXP6-2PE8) |
| | 8.26.14.7190 | (for 4XCXP6-2PE8) |
| | 8.95.9.7190 | (for 4XCXP12-3PE4) |
| | 9.8.2.7190 | (for 2XCXP12-3PE4L) |

## Cards

| Cards | PC Bus Type | Support OS | Note |
|---|---|---|---|
| **AS-FBD-2XCXP6-2PE8-HAM** | PCI Express x8 Gen2 | **Windows 11 (*25)** 64-bit (x64) | Half Length |
| **AS-FBD-4XCXP6-2PE8-HAM** | | | |
| **AS-FBD-4XCXP12-3PE4-HAM** | PCI Express x4 Gen3 | | |
| **AS-FBD-2XCXP12-3PE4L-F-HAM** | | | Half Length Low Profile PCB - Full Height Bracket |

## Cameras

CoaXPress cameras

| Cameras | Nickname | Supported Card | Note |
|---|---|---|---|
| **C15440-20UP** | ORCA-Fusion BT | **AS-FBD-2XCXP6-2PE8-HAM** **AS-FBD-2XCXP12-3PE4L-F-HAM** AS-FBD-4XCXP6-2PE8-HAM AS-FBD-4XCXP12-3PE4-HAM | |
| **C14440-20UP** | ORCA-Fusion | | |
| **C16240-20UP/30UP** | ORCA-Fire | **AS-FBD-4XCXP6-2PE8-HAM** **AS-FBD-4XCXP12-3PE4-HAM** | |
| **C15550-23UP** | ORCA-Quest IQ | | (*New) |
| **C15550-22UP** | ORCA-Quest 2 | | |
| **C15550-20UP** | ORCA-Quest | | |
| **C14120-20P** | ORCA-Lightning | **AS-FBD-4XCXP6-2PE8-HAM** | |

## Recommendation

It is highly recommended to set the BIOS to the recommended settings, else you may get sporadic corrupted images transferred to the PC - see Note (*23). Also, please turn off hibernation, else the frame grabber and camera cannot be recovered properly from waking up or fast startup – see Note (*26).

# Active Silicon FireBird (CameraLink)

## DCAM Version

| | | |
|---|---|---|
| DCAM Module | 26.7.4322.7190 | |
| DRIVER | 8.13.3.7190 | (for FBD; 2PE4L) |

## Cards

| Cards | Camera Link Configuration | PC Bus Type | Support OS | Note |
|---|---|---|---|---|
| **AS-FBD-1XCLD-2PE4L-F-HAM** | Deca / Dual Base / Full / Medium | PCI Express x4 Gen2 | **Windows 11 (*25)** 64-bit (x64) | Half Length Low Profile PCB - Full Height Bracket |
| **AS-FBD-1XCLD-2PE4L-L-HAM** | Deca / Dual Base / Full / Medium | PCI Express x4 Gen2 | | Half Length Low Profile PCB - Low Height Bracket |

## Cameras

Fast speed CameraLink cameras

| Cameras | Nickname | Supported Card | Note |
|---|---|---|---|
| **C13440-20C(U)** | ORCA-Flash4.0 (V3) | **AS-FBD-1XCLD-2PE4L-F-HAM** **AS-FBD-1XCLD-2PE4L-L-HAM** | |
| **C10000-C01** | TDI Camera | | |
| **C10000-A01** | TDI Board Camera | | |
| **C10000-801** | TDI Camera | | |

CameraLink cameras

| Cameras | Nickname | Supported Card | Note |
|---|---|---|---|
| **C8000-30** | | **AS-FBD-1XCLD-2PE4L-F-HAM** **AS-FBD-1XCLD-2PE4L-L-HAM** | |
| **C12741-11** | InGaAs VGA Camera | | |
| **C9750-xxxx(N-C)** | X-Ray Line | | |
| **C10400-xx** | | | |
| **C12450-27FGC-C** | | | |
| **C14960-xx** | | | |
| **C10650-xx** | X-Ray TDI | | |
| **C12200-321/461** | | | |
| **C12300-121/321/322/323/461B** | | | |
| **C15400-30-50A** | | | |
| **C10800-xx-C** | X-Ray Line Dual Energy | | |

## Recommendation

It is highly recommended to set the BIOS to the recommended settings, else you may get sporadic corrupted images transferred to the PC - see Note (*23). Also, please turn off hibernation, else the frame grabber and camera cannot be recovered properly from waking up or fast startup – see Note (*26).

# USB

## DCAM Version

| | |
|---|---|
| DCAM Module | 26.7.4322.7190 |
| DRIVER | 1.2.6.7190 |

## Cameras

| Cameras | Nickname | USB3.0 | Support OS | Note |
|---|---|---|---|---|
| **C17440-20U** | ORCA-Halo | ✓ | **Windows 11 (*25) 64-bit (x64)** | |
| **C16240-20UP/30UP** | ORCA-Fire | ✓ | | |
| **C15550-23UP** | ORCA-Quest IQ | ✓ | | (*New) |
| **C15550-22UP** | ORCA-Quest 2 | ✓ | | |
| **C15550-20UP** | ORCA-Quest | ✓ | | |
| **C15440-20UP** | ORCA-Fusion BT | ✓ | | |
| **C14440-20UP** | ORCA-Fusion | ✓ | | |
| **C13440-20CU** | ORCA-Flash4.0 (V3) | ✓ | | |
| **C13949-50U** | Global Shutter CMOS Board Camera (12M) | ✓ | | |
| **C13770-50U** | Global Shutter CMOS Board Camera (5M) | ✓ | | |
| **C13752-50U** | Global Shutter CMOS Board Camera (3M) | ✓ | | |
| **C16741-40U** | InGaAs SXGA Camera | ✓ | | |
| **C14041-10U** | InGaAs QVGA Camera | ✓ | | |
| **C14041-20U** | InGaAs QVGA Camera | ✓ | | |
| **C12741-03** | InGaAs VGA Camera | ✓ | | |
| **C11440-62U** | ORCA-Flash4.0 Board | ✓ | | |
| **C11440-52U** | ORCA-Flash4.0 Board | ✓ | | (*24) |
| **C11440-52U30** | | | | |
| **C11440-42U** | ORCA-Flash4.0 LT | ✓ | | (*24) |
| **C11440-42U30** | | | | |
| **C11440-42U40** | ORCA-Flash4.0 LT3 | ✓ | | |
| **C11440-36U** | Global Shutter CMOS Camera | ✓ | | |
| **C17290** | MAICO | ✓ | | |
| **C15890** | MAICO | ✓ | | |
| **C17300-30U**<br>**C17300-40U**<br>**C17300-60U** | X-Ray | ✓ | | |
| **C14300** | X-Ray | ✓ | | |
| **C11800** | X-Ray Line Dual Energy | ✓ | | |
| **C12849-111U**<br>**C12849-112U** | X-Ray CMOS | ✓ | | |
| **C12849-101U**<br>**C12849-102U** | X-Ray CMOS | ✓ | | (*24) |

## Recommendation

It is highly recommended to set the BIOS to the recommended settings, else you may get sporadic corrupted images transferred to the PC. See Note (*23).

# GigE

## DCAM Version

| | | |
|---|---|---|
| DCAM Module | 26.7.4322.7190 | |
| DRIVER | 6.3.06343.7190 | (for fgiport) |
| | 2.2.00.7190 | (for fggige2) |

## Cameras

| Camera or Sensors | Nickname | fgiport | fggige2 | Support OS | Note |
|---|---|---|---|---|---|
| **C15333-10E** | InGaAs Line Camera | ✓ | | **Windows 11 (*25)** 64-bit (x64) | |
| **C15333-10E04** | | ✓ | | | |
| **C12450-27FGC-G** | X-Ray Line | ✓ | | | |
| **C14406DK-8x** | Flat Panel Sensor | ✓ | | | |
| **C14401DK-4x** | | ✓ | | | |
| **C14400DK-4x** | | ✓ | | | |
| **C12903D-40** | | ✓ | | | |
| **C12902D-40** | | ✓ | | | |
| **C10901D-40** | | ✓ | | | |
| **C10900D-40** | | ✓ | | | |
| **C10502D-43** | | ✓ | | | |
| **C10500D-43** | | ✓ | | | |
| **C16402DK-81** | | ✓ | | | |
| **C16401SK-51** | | | ✓ | | |
| **C14409DK-5x** | | | ✓ | | |
| **C14408DK-5x** | | | ✓ | | |
| **C14400DK-5x** | | | ✓ | | |
| **C12505D-56** | | | ✓ | | |
| **C12504D-56** | | | ✓ | | |
| **C10502D-70** | | | ✓ | | |
| **C10500D-70** | | | ✓ | | |

## Recommendations

- It is highly recommended to set the BIOS to the recommended settings, else you may get sporadic corrupted images transferred to the PC. See Note (*23).
- It is highly recommended to tweak the settings for the Gigabit Network Adapter for which the GigE device is connected. See the next pages.

# GigE – Cont'd

## Recommendations

It is highly recommended to tweak these settings for the Gigabit Network Adapter for which the GigE device is connected, provided they are available for adjustment in Device Manager \ Properties for the adapter driver:

| Property *1 | Value |
|---|---|
| Flow Control | Rx & Tx Enabled |
| Interrupt Moderation | Disabled |
| Interrupt Moderation Rate | Adaptive |
| Jumbo Packet | Maximum Value *2 |
| Maximum Number of RSS Queues | 2 Queues |
| Packet Priority & VLAN | Packet Priority Enabled |
| Receive Buffers | Maximum Value *2 |
| Speed & Duplex | Auto Negotiation |

Notables:
*1 Because not all of these Properties may be present, set properties that can be set.
*2 Set the maximum value that can be set, at least Jumbo Packet: 9014 and Receive Buffers: 2048.

Notes

*New: New supported hardware or OS from the 25.8.7190 release.

*1: This note is deprecated.
*2: This note is deprecated.
*3: This note is deprecated.
*4: This note is deprecated.
*5: This note is deprecated.
*6: This note is deprecated.
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*18: This note is deprecated.
*19: This note is deprecated.
*20 This note is deprecated.
*21 This note is deprecated.

*22 The FireBird 2PE8 cards operate optimally with PCIe x8 Gen2 slots. Please make sure you install this card into an electrically compatible PCIe x8 Gen2 slot.

*23 For all PCIe interface options, it is highly recommended to set the BIOS to the recommended settings.
For examples,

If you have a DELL Precision 5860, please follow the settings below:

(1) Power
Confirm the settings especially for the following 1 item in the “Settings-Power” options. Click the item in “Settings – Power” to confirm.

| Item | Setting name | Setting |
|---|---|---|
| Intel Speed Shift Technology | Intel Speed Shift Technology | OFF |

(2) Virtualization Support
Confirm the settings especially for the following 1 item in the “Settings-Virtualization Support” options. Click the item in “Settings –Virtualization Support” to confirm.

| Item | Setting name | Setting |
|---|---|---|
| Intel® Trusted Execution Technology (TXT) | Enable Intel® Trusted Execution Technology (TXT) | ON |

(3) Performance
Confirm the settings especially for the following 4 items in the “Settings-Performance” options. Click the item in “Settings – Performance” to confirm.

| Items | Setting names | Settings |
|---|---|---|
| Intel® Speed Step | Enable Intel® Speed Step Technology | OFF |
| C-States Control | Enable C-State Control | OFF |
| Intel® Turbo Boost Technology | Enable Intel® Turbo Boost Technology | ON |
| Intel® Hyper-Threading Technology | Enable Intel® Hyper-Threading Technology | ON |

If your settings are different from the settings shown in the above table, change your settings to be the same as the above and click “Apply”.

If you have a PC other than a DELL Precision 5860, you should use the above settings as a guide to adjust your BIOS settings to have similar effect.

The most important setting is to disable CPU C-state control.

You can refer to this article as reference:

The key point in this article is this statement: C-State Residencies (intel.com)

> **As the C-States get deeper, the exit latency duration becomes longer (the time to transition to C0)** and the power savings become greater.

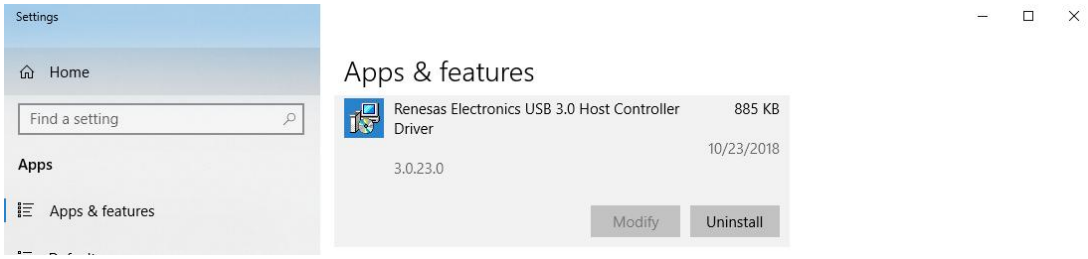
By disabling CPU C-state control in the BIOS, it normally causes the CPU cores in the system to always reside no higher than C1 state which is required for reliable image data transfer.

If your PC has multiple physical CPUs installed, you should also Disable “Non-Uniform Memory Access”.

*24 These hardware must be connected to a USB 3.0 compliant bus. Windows 10 and higher ship with in-box USB chip compliant drivers from Microsoft that can work with any known USB3 chipset controller), and the USB 3.0 chipset controller must be installed/operating on a PCI Express / ExpressCard **Gen2** (5GT/s) capable slot / bus. Renesas µPD720202 is the most compatible USB host controller chipset with these hardware. When using the Renesas µPD720202 controller and these hardware, download this Renesas driver, **even if you are using Windows 10 or higher** – the Microsoft in-box drivers do not work as well as the Renesas drivers when coupled with these hardware:

http://www.ioi.com.tw/downloads/cat_106/30230_dr.zip

(a) After you download this driver set, extract the contents to a folder on your PC.
(b) Go to Add or remove programs, scroll down and look for this entry, and if you see it, Uninstall it:




(c) Install this driver set with this exact command line (including switches) from within the folder you extracted the driver set:

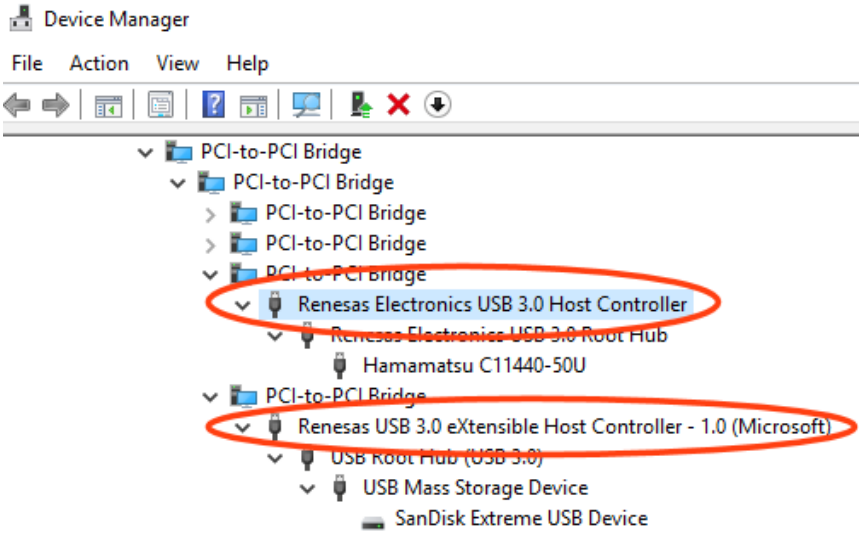
RENESAS-30230-setup.exe /s /v"NO_MONITOR=1 NO_UTILITY=1 SET_SELSUS_MODE1=1 U1U2_DISABLE=1 U1U2_UTL_DISABLE=1 U1U2_PROPERTY_DISABLE=1"

Please use Windows Command Prompt. Do not use PowerShell.

This exact command line can be downloaded from this link:
https://ftp.hostedftp.com/~hamamatsu/DCAM-API/Renesas/RENESAS-30230-setup.cmd

If you download this .CMD file to the same folder as RENESAS-30230-setup.exe from step (a), you should be able to execute it AsAdmin to run with the exact noted command line with switches to install the driver properly.

If you install the Renesas driver to Windows 10 or higher, it will change the driver for every Renesas µPD720201/2 controller present in your system during the time of installation. If you have multiple USB 3.0 devices (ex – a C13440-20CU ORCA-Flash4.0 (V3)) in the same system connected to independent Renesas µPD720202 controllers than the hardware mentioned above, that hardware may work with better performance if the Microsoft in-box drivers are used. For those other USB 3.0 devices, you can use Device Manager with View devices by connection, then Update Driver to the Renesas controller connected to the other devices manually to switch those controllers back to the Microsoft in-box driver. Device Manager could then look like this example with the Renesas driver for one controller, and the Microsoft in-box driver for the other:



*25 This DCAM-API can install on Windows Windows 11.
This DCAM-API is validated on Windows 11 Version 24H2.

*26 For Active Silicon FireBird, please disable / make unavailable hibernation for Windows 10/11. Please follow the instructions here:
English
https://learn.microsoft.com/en-us/troubleshoot/windows-client/deployment/disable-and-re-enable-hibernation
Japanese:
https://learn.microsoft.com/ja-jp/troubleshoot/windows-client/deployment/disable-and-re-enable-hibernation

*27 This note is deprecated.
*28 This note is deprecated.