

Matrox 4SightM, Solios and GEViCAM Cameras

GigE Drivers

GigE Vision cameras require efficient GigE driver to transport the giga-bit data and receive it reliably. Each API supplier provides own drivers besides original manufacturer's driver (Windows Stack). In general, the Windows stack drivers work for majority of suppliers in the image capture and demonstration. However, the performance and CPU load is not the best for demanding applications. Therefore, dedicated drivers are developed and replace or installed over the original Windows stack drivers. In this Tech-note, we will discuss Matrox driver and Pleora driver.

GEViCAM Driver

Since GEViCAM uses Pleora GigE core, the driver is Pleora GigE drivers. The latest SDK ver. 2.3.1 contains different drivers and the installation tool. The main driver selections are;

- Windows stack (original Ethernet adapter driver)
- eBus Universal driver
- eBus Optimal driver (Intel chipset)
- iPort High Performance driver (Intel chipset)

eBus Optimal driver and High Performance driver are the best performance driver but must installed in GigE adapters with Intel gigE PHY chipset only. Universal driver and Windows stack work with any GigE adapter cards.

Matrox drivers are also dedicated driver for general Ethernet adapter cards (NIC) and its own Solios GigE card. The MIL-GigE drivers are similar for the performance but cannot be mixed. Here we tested the latest (pre-released) versions of each driver (M800DU14_41 and Solios DU15_21).

GigE Driver Installation

Since dedicated drivers are looking into replacing or editing the original Window stack driver and especially, Intel driver is commonly shared. If one driver is already installed for the place of Intel driver, any attempt to install other driver, it create conflict and get into serious driver crash of the computer. Quite often you may have to rescue the PC in order to restore Ethernet adapter card function.

Do not install High performance or Optimal driver if the system has Matrox driver already installed.

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If two API are used in a system, we suggest to keep Universal driver for Pleora SDK.

4SightM and Solios driver

If the latest version of software is used, the GigE driver (GigE-MIL) is automatically installed in the Matrox file. There is no way to remove the driver independently from MIL software. In 4SightM, MIL is embedded and cannot uninstall the driver. Therefore, we have no choice of installing Pleora High Performance driver or Optimal driver into 4SightM or Solios with GigE driver installed. (in old version of 4SightM without GigE driver is OK to install High Performance but does not perform the perfect functions).

We strongly recommend to use Universal driver with 4SightM and Solios application.

4SightM with iPort-MIL Interface

4SightM operates with Windows XP embedded version and the update must use the rescue CD. In some of older version, Windows has known deficiency of allowing some of Ethernet installation tools. When the SP2 is not updated, PC goes to restart mode or warning screen. The latest rescue CD (ver. 2.5_B2) has all these fixed and GigE driver built-in (similar to DU14). We can operate iPort SDK and MIL process in this environment using IPEngineAndMIL. We must use eBus Universal driver for this. Because of the latest fix of SP2, Pleora eBus driver installation tool works and we can select the adequate driver for Pleora SDK. In case you need to use rescue CD, the first boot up order dialog is tricky. We had to press F2 key multiple times while powering up the 4sightM. Because we cannot uninstall MIL from 4SightM, this process may be important.

GigE Vision

Both Solios and 4SightM with new version work well with GigE Vision compliant cameras. Only problem we saw is for advanced features, there are some minor bugs. For DU14, it must be updated with the latest version. Also XML saving and opening may see limitation of functions that can save and restore from the XML. We saw successful operations with GEViCAM-GEV (GigE compliant version) both 4sightM and Solios. Again, it must be noted that this test was done successfully because;

1. We could update 4SightM with the latest rescue CD
2. We used the latest unreleased version of DU14_21
3. We used also the latest Solios DU15.

With these, we can implement part of advance features and camera controls. It contains PLC programming functions but may be difficult to implement in the current version.