TECHNICAL NOTE TN2021_4 - FX CAMERAS, WINDOWS AND LINUX

Introduction

This TN describes how SPECIM FX cameras can be used with windows and Linux Operating Systems (OS)

Article

SPECIM produces FX cameras for 3 different spectral ranges:

- VNIR, i.e. 400 – 1000 nm: FX10 and FX10e
- NIR, i.e. 900 – 1700 nm: FX17 and FX17e
- MWIR, i.e. 2700 – 5200 nm: FX50

For the VNIR and NIR spectral ranges, CL and GigE cameras are available, whereas for the MWIR spectral range, only GigE.

All these devices are supported by SPECIM LumoSDK and derived products, meaning LumoRecorder and LumoScanner.

LumoSDK provides the users with tools to build their own platform embedding FX cameras. It requires a C or similar compiler on a Windows 7 or 10 OS (64 bits). For the CL cameras, we recommend the grabbers Dalsa Xtium-CL_MX4 and Epix PICXi EB1 / E4 as direct compatibility is already implemented within SPECIM LumoSDK

In order to work with Linux, other protocols are available:

- For CL cameras, like FX10 and FX17: There are 2 options:
  - using a grabber with relevant Linux Libraries, such as those provided by EPIX. Here the user will be able to build his own application by using directly the EPIX commands
  - ASCII commands can also be sent to the camera. This is relevant especially where hyperspectral imaging is integrated in an existing ASCII based system or when required features are not supported by Lumo or LumoSDK Software.

- For GigE cameras, like FX10e, FX17e and FX50
  - SPECIM GigE camera are GigE vision compliant. Therefore, the user can use any SDK which is GigE vision compliant on Linux. The one provided by Pleora (eBUS) is an example.
  - For the FX50, there is in addition a SPECIM custom UDP protocol that contains JSON-RPC control features and custom data protocol. This protocol is using UDP/WebSocket for data and TCP/Websocket for controls thus making it platform independent.

Disclaimer

Version history

Version	Date	Author	Comments
1.0	Feb 18th 2022	MMA	