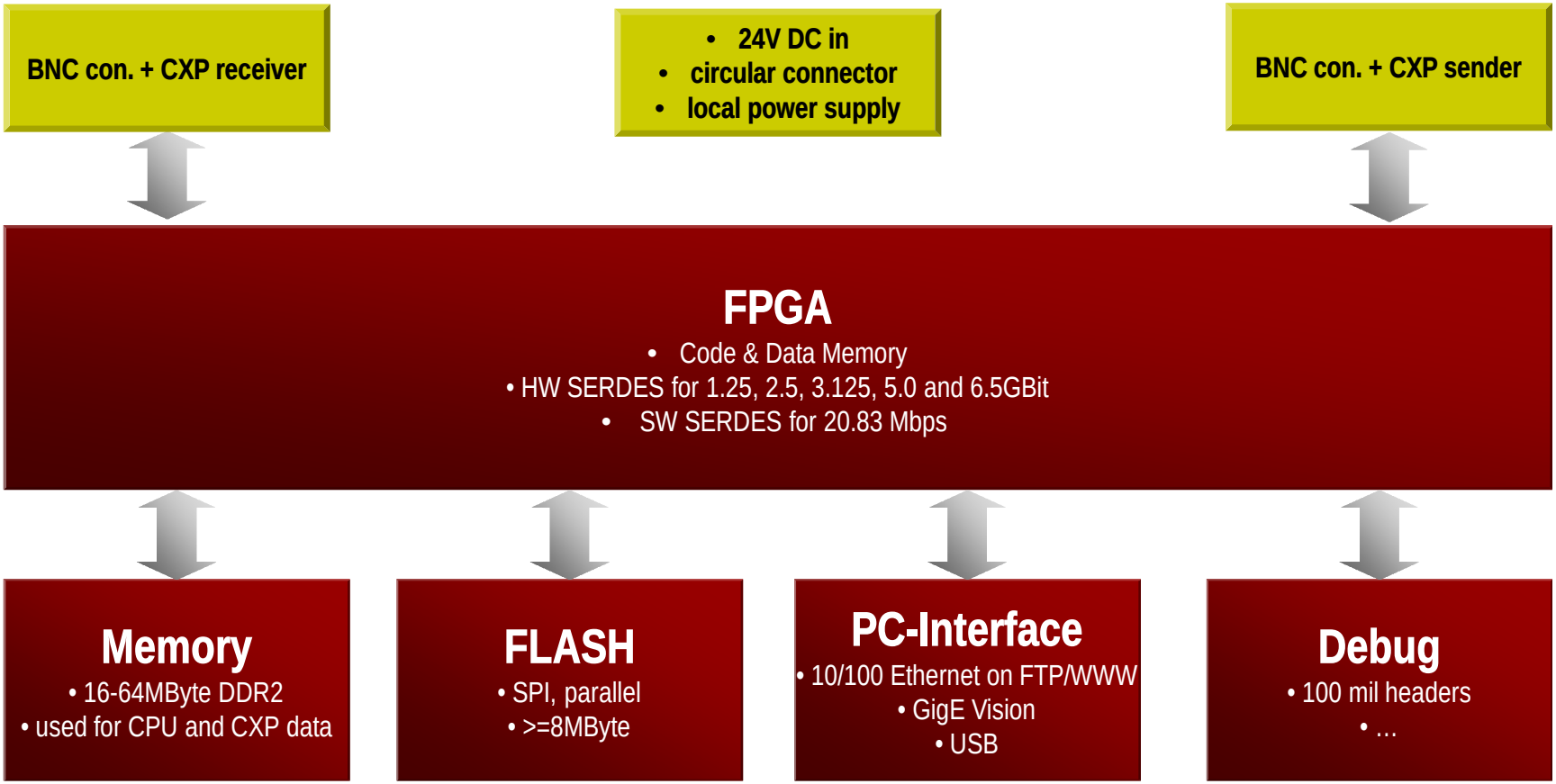
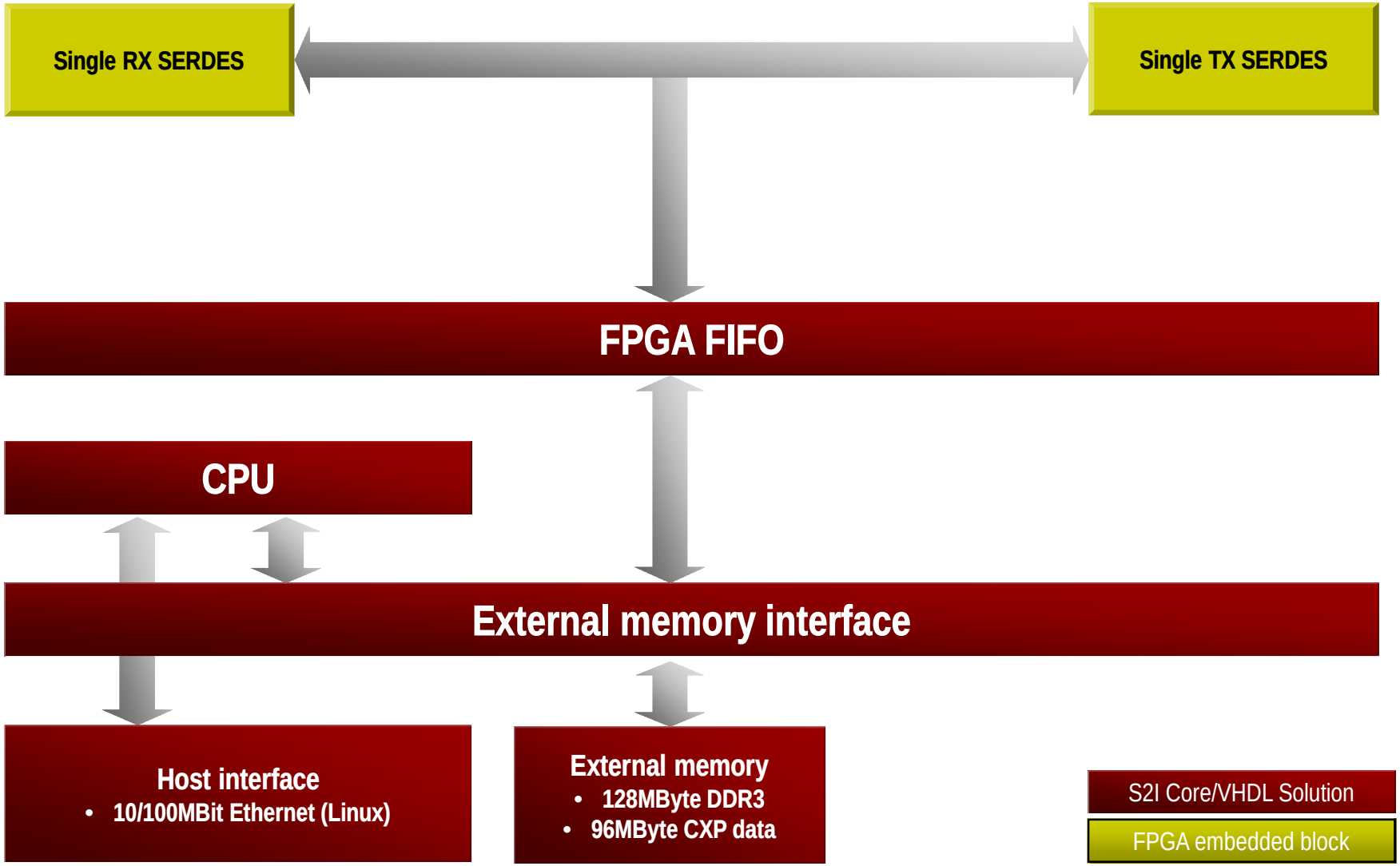
CXP Protocol viewer

HW external components



TestHW basic system

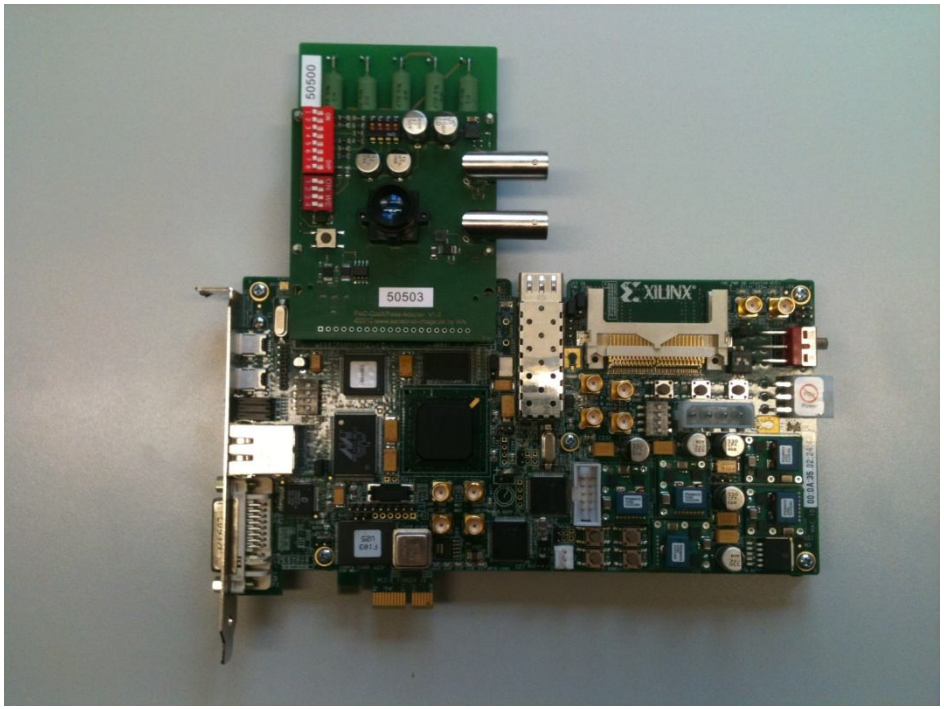


S2I Core/VHDL Solution

FPGA embedded block

Current status Vision 2011

- reference LINUX implementation from S2I on SP605 done
- Snooper board 1.1 physically tested
- CXP dump, FTP transfer, console interface done
- CXP dump data import to Whireshark done



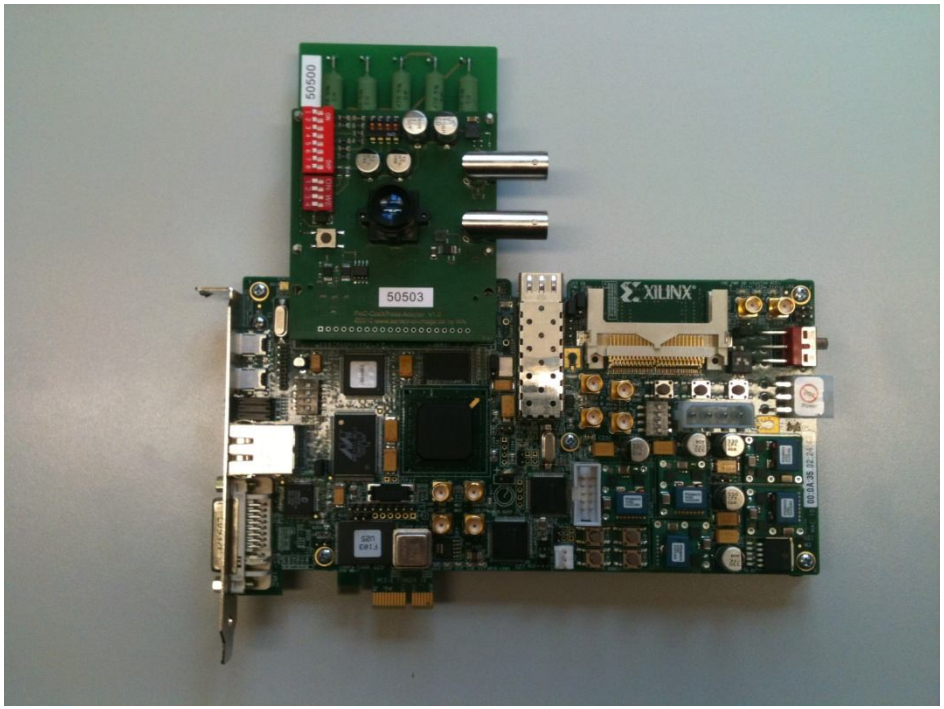
SNOOPER in action

- Software on SP605: - FTP server for PC data transfer
  - CXP controller
- CXP controller features: - CXP line speed
  - CXP trigger conditions: uplink data/trigger/GPIO/IO-Ack.
  - CXP trigger conditions: downlink frame start
  - CXP data capture with 8% pretrigger
- PC software project1: - PC Data2PCAP data transfer and Wireshark format conv.
- PC software project2: - cxp.dll, Wireshark Plugin ➔ protocol analyzer
  - is a viewer today, can be a analyzer tomorrow

How to use it :	Putty to SP605:	cxpctl cap
	cmd window:	data2pcap ➔ convert cxp.dum to cxp.pcap
	Wireshark:	Import cxp.pcap to display the dump data

Current status Vision 2012

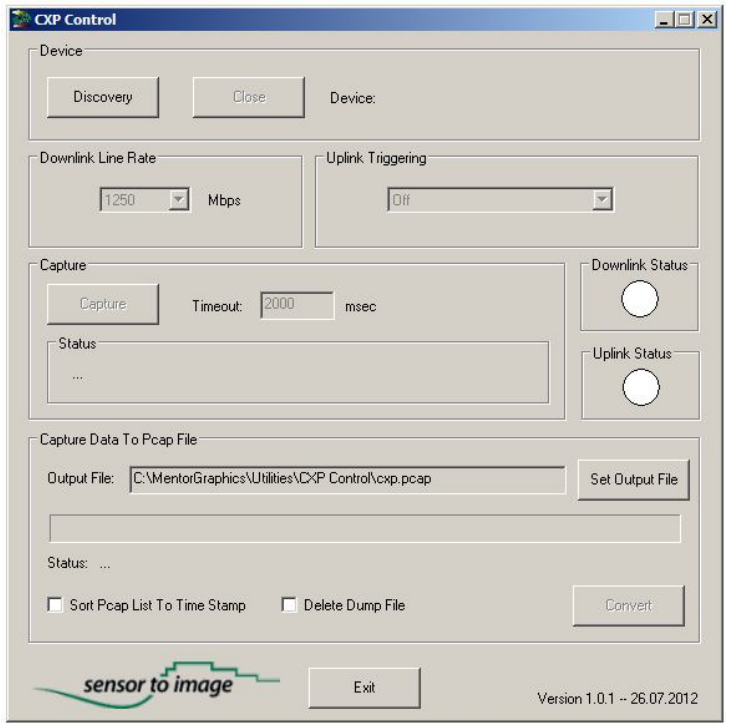
- reference LINUX implementation from S2I on SP605 done
- Snooper board 1.2 physically tested, passed ECT testing
- Simplified WIN user interface, dropped LINUX
- CXP dump data import to Whireshark done



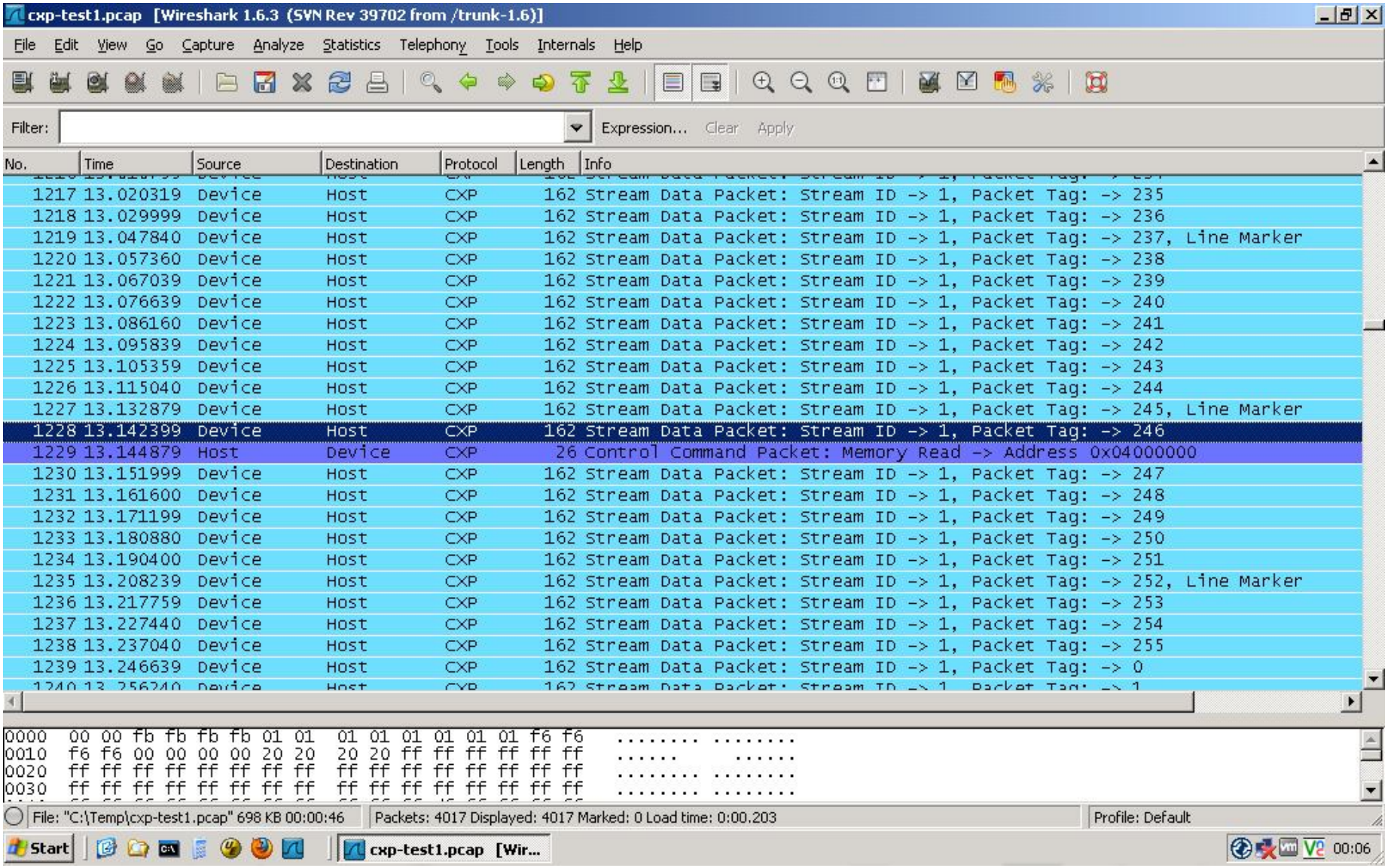
SNOOPER in action

- Software on SP605: - FTP server for PC data transfer (invisible)
  - CXP controller (invisible)
- CXP controller features: - CXP line speed
  - CXP trigger conditions: uplink data/trigger/GPIO/IO-Ack.
  - CXP data capture with 8% pretrigger
- PC software project1: - CXPControl.exe:

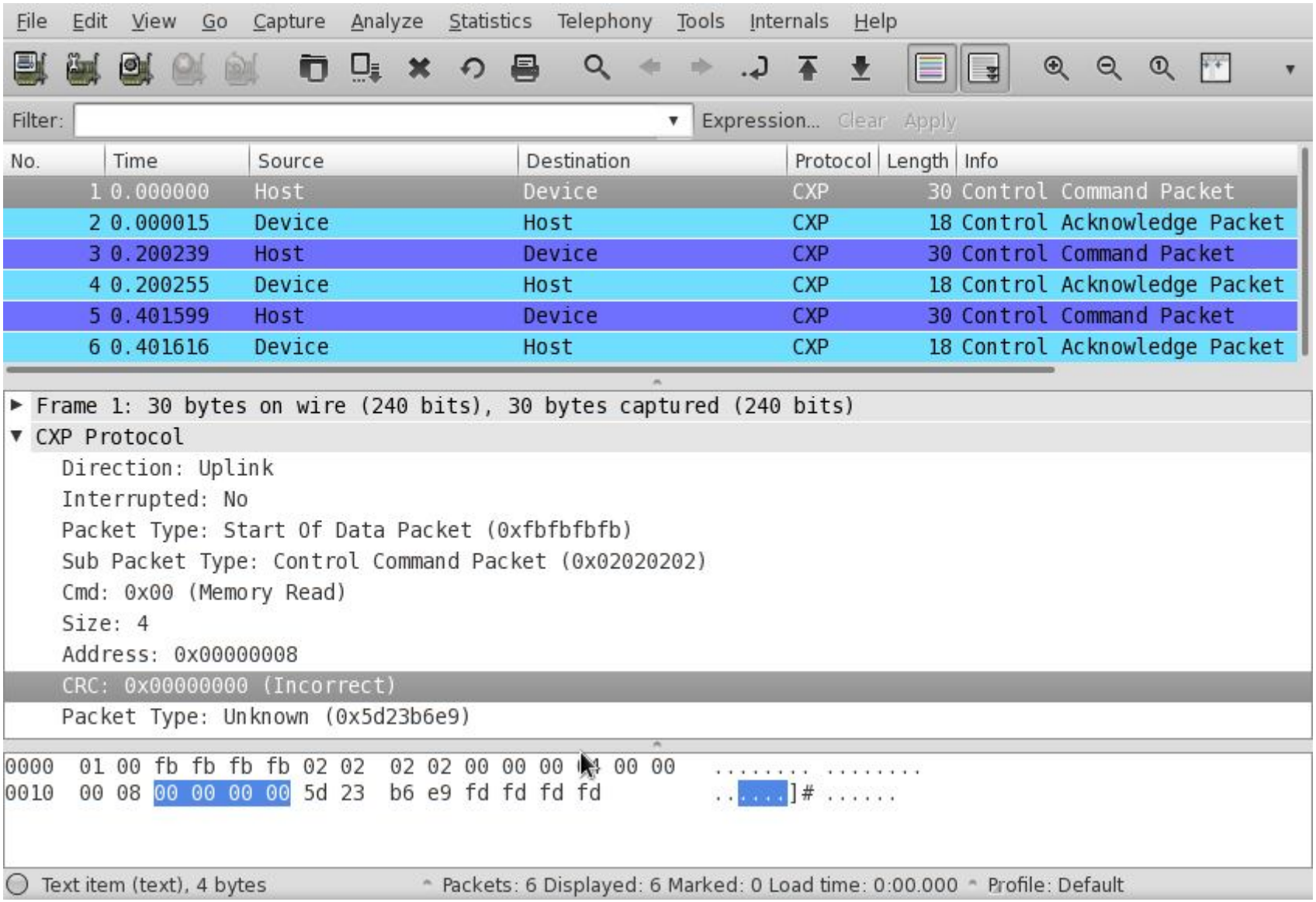
1. operate SNOOPER
2. transfer data
3. converter data to PCAP format



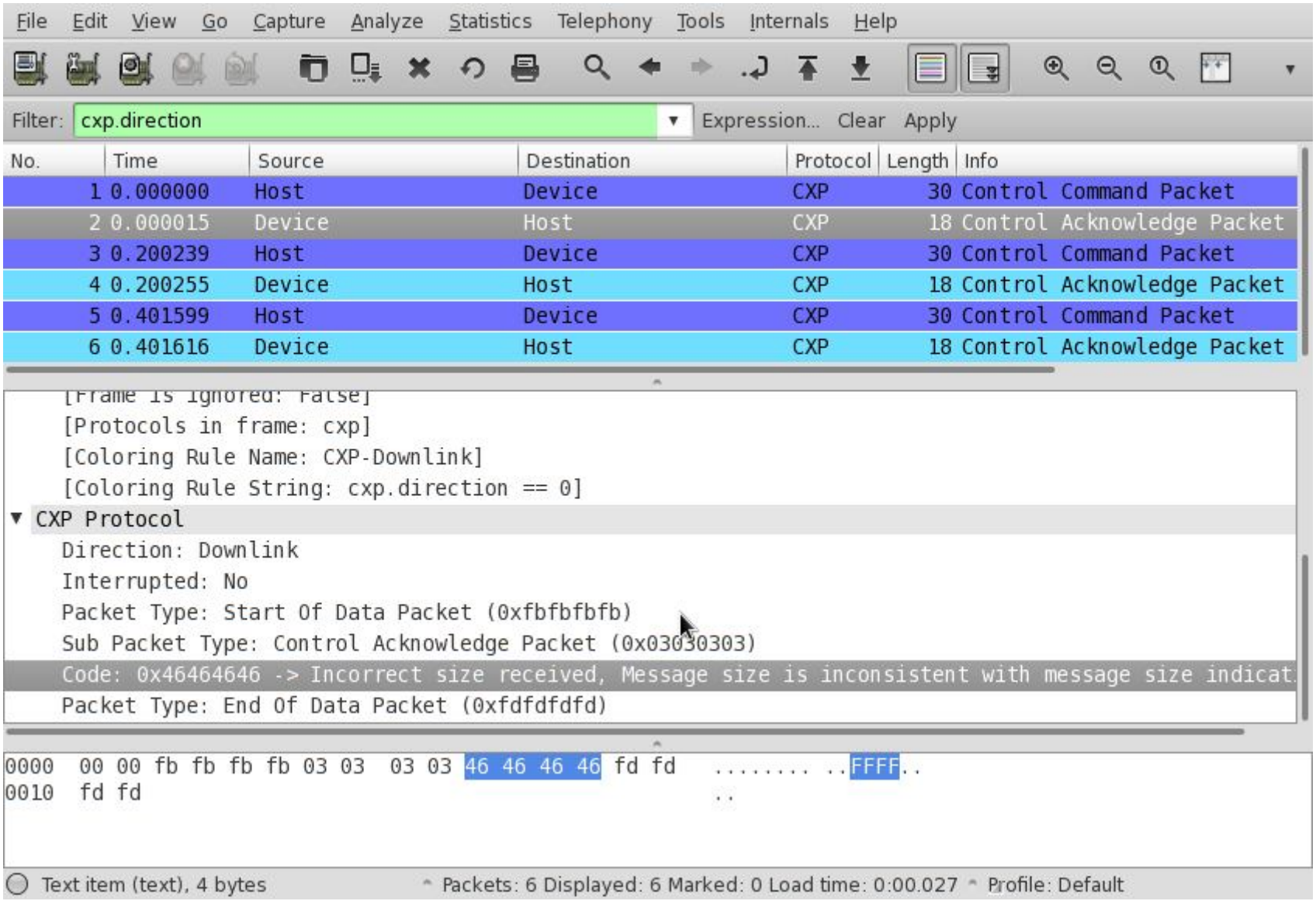
Wireshark display



SNOOPER sample 1 of compliant product



SNOOPER sample 2 of compliant product



SNOOPER ToDo list

- Downlink trigger modes ?
- Link speed detection -> missing part in CXP specification!
- Multiple connections ?
- Speed ?
- Price ?

Feature feedback from CXP meeting 6. December 2012:

- Trigger on wrong uplink/downlink CRC
- Trigger on wrong uplink/downlink packets
- … more input is welcome!

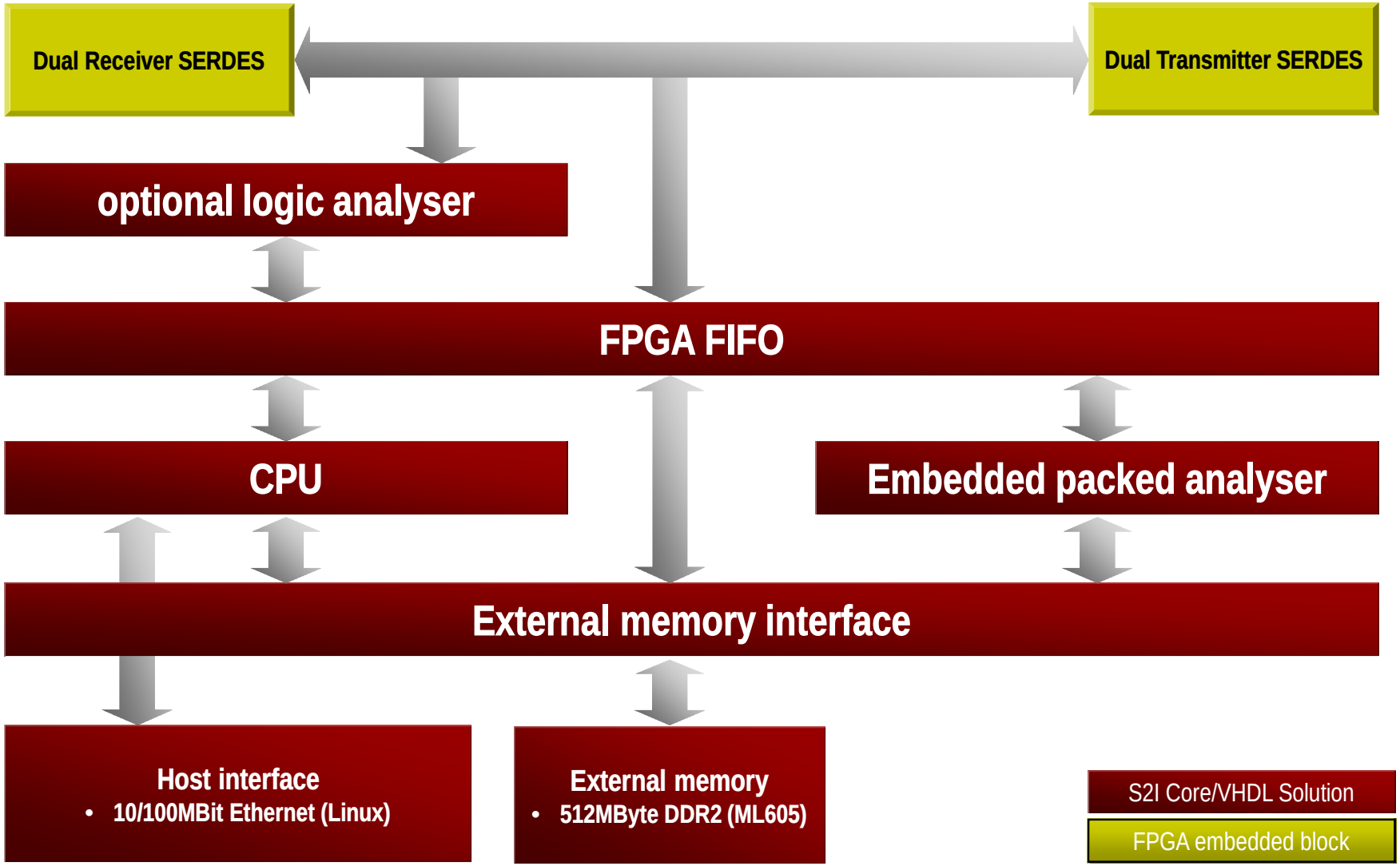
Roadmap from S2I for 2013:

- new FMC board with 2/4 CXP In/Out based on ML605 or KC705 -> more speed/multi lane cameras
- with new FMC port SNOOPER to ML605 or KC705, but not as the same price as board is 1000US$ more expensive than SP605
- !! Volunteers are welcome at any time to work on the project to make it open source !!

SNOOPER in compliance testing !?

- Basic Read/Write on CMD channel
- Basic image headers
- Reason for this is work with several camera and frame grabber vendors since Plugfest Yokohama December 2012
- Reason for this is work with products which passed a Plugfest, but do in a obvious way do not comply with the standard
- Reason for this is to get well working products which can interact well in the field

TestHW advanced system



S2I Core/VHDL Solution

FPGA embedded block

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