Libera

Electron Beam Position Processor

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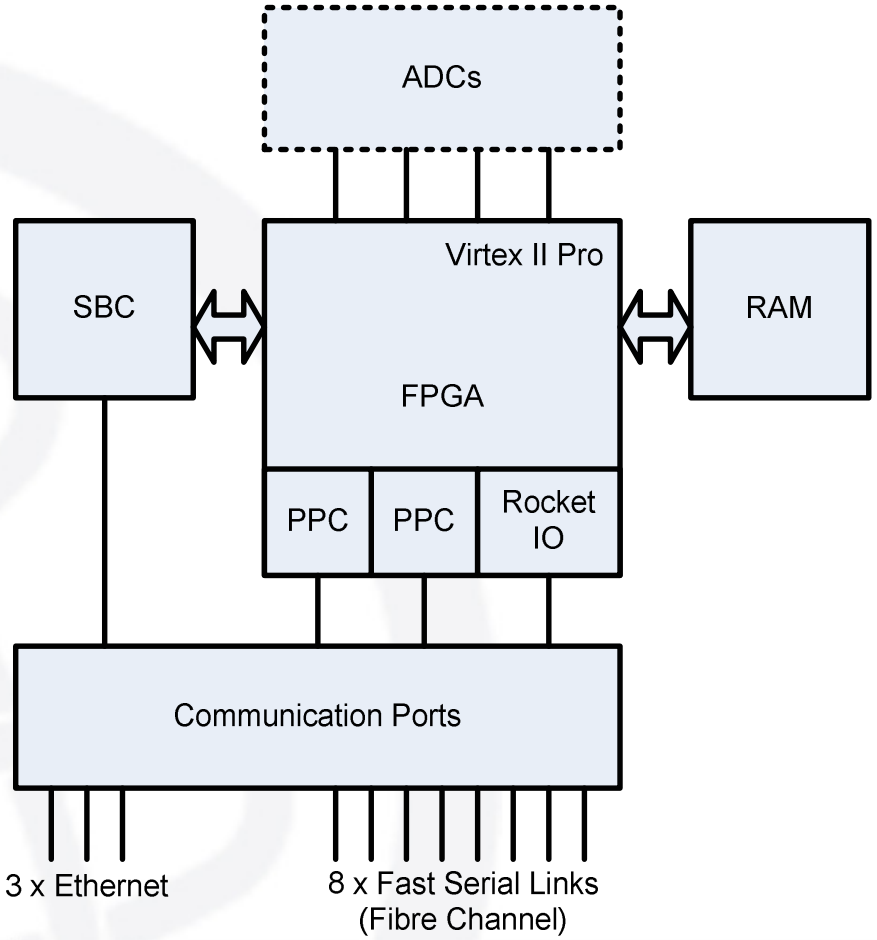
Libera

All-In-One
Customizable
Feedback-Ready

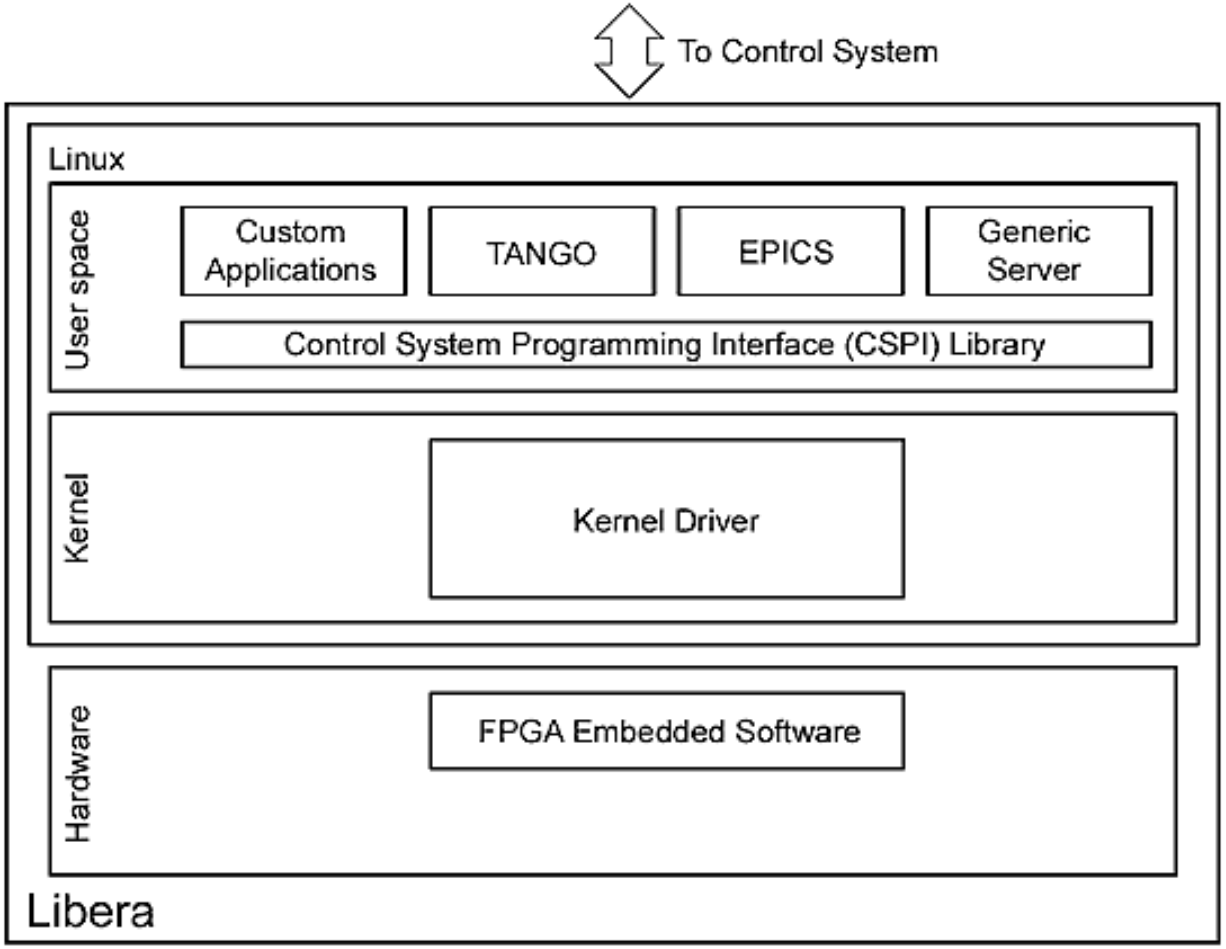
Libera Family

- Common to all members
  - Digital Board
  - Core Software
- Specific for each Member
  - Analog Board
  - Member specific Virtex II Pro embedded software
    - Member and user specific Virtex II Pro embedded software
  - Member specific SBC software
    - Member and user specific SBC software
- Electron beam position processor is the first member (see references for details)

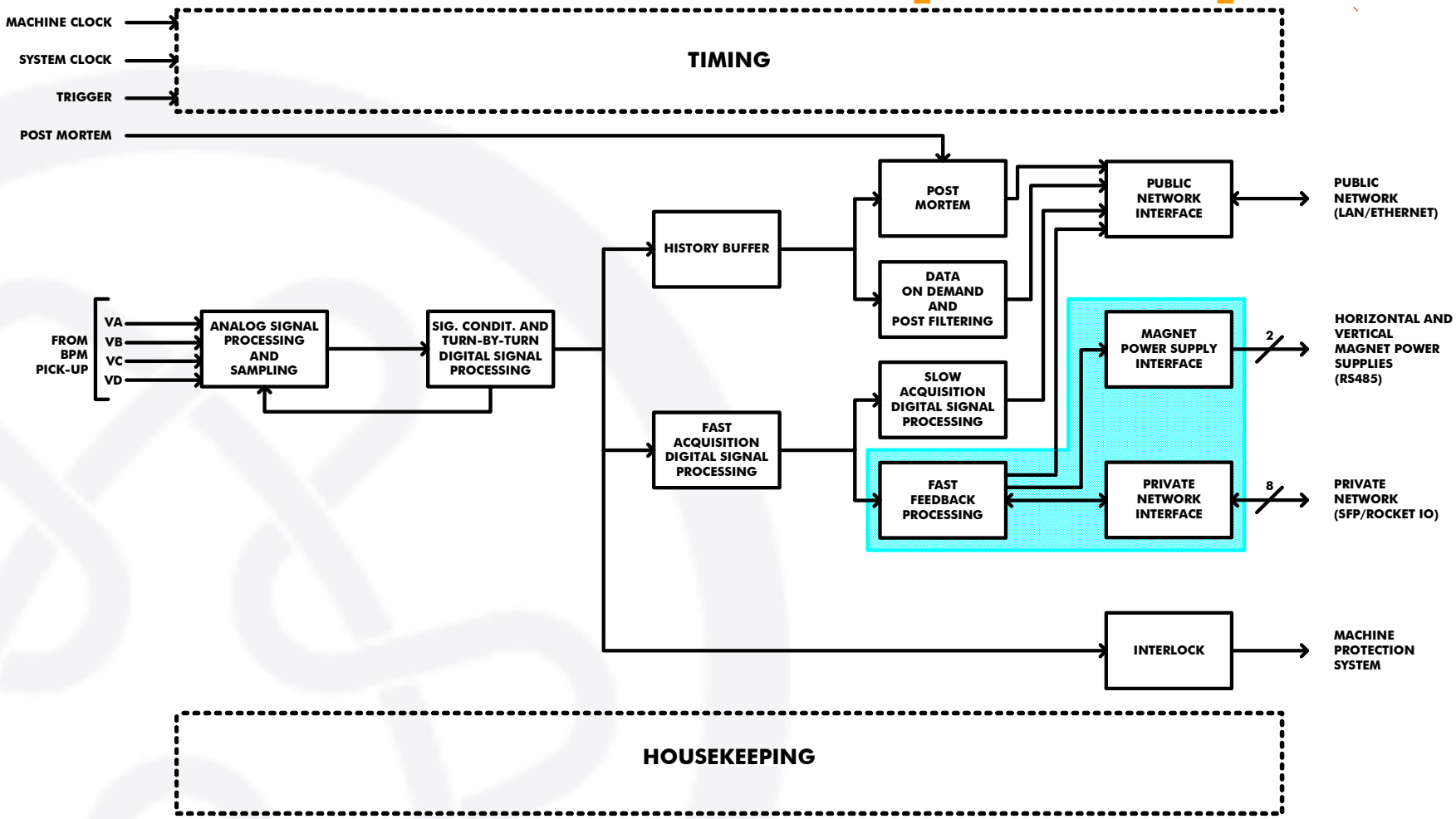
Programming Modules



SBC Software Architecture



Functional Block Diagram Electron beam position proc.



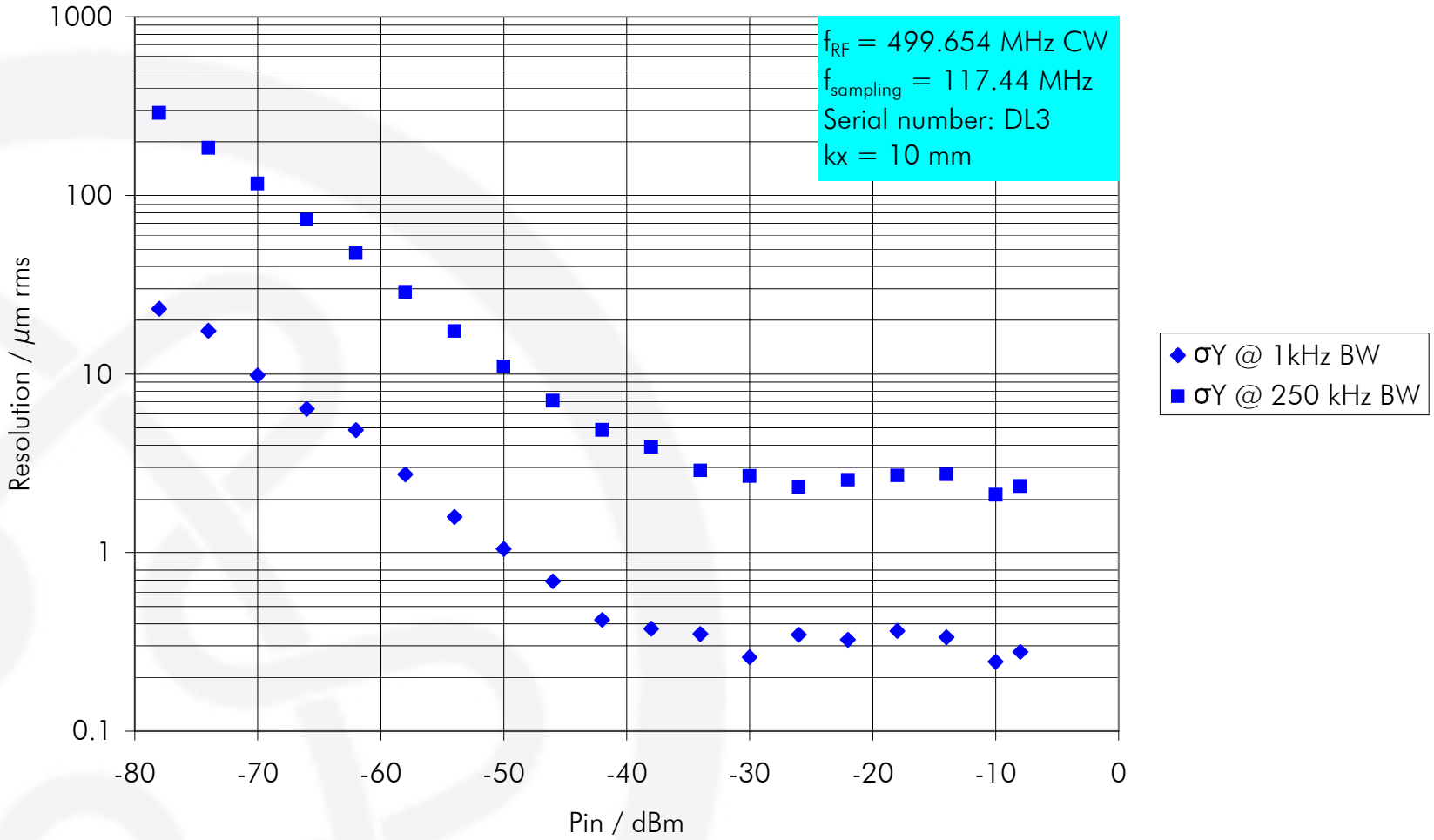
Feedback Building

- Rich connectivity
  - Public network (3 x Ethernet)
  - Private Network (8 x reconfigurable Rocket IO via front panel SFP connectors)
- A variety of architectures possible
  - Soleil
  - Diamond
  - ... your choice

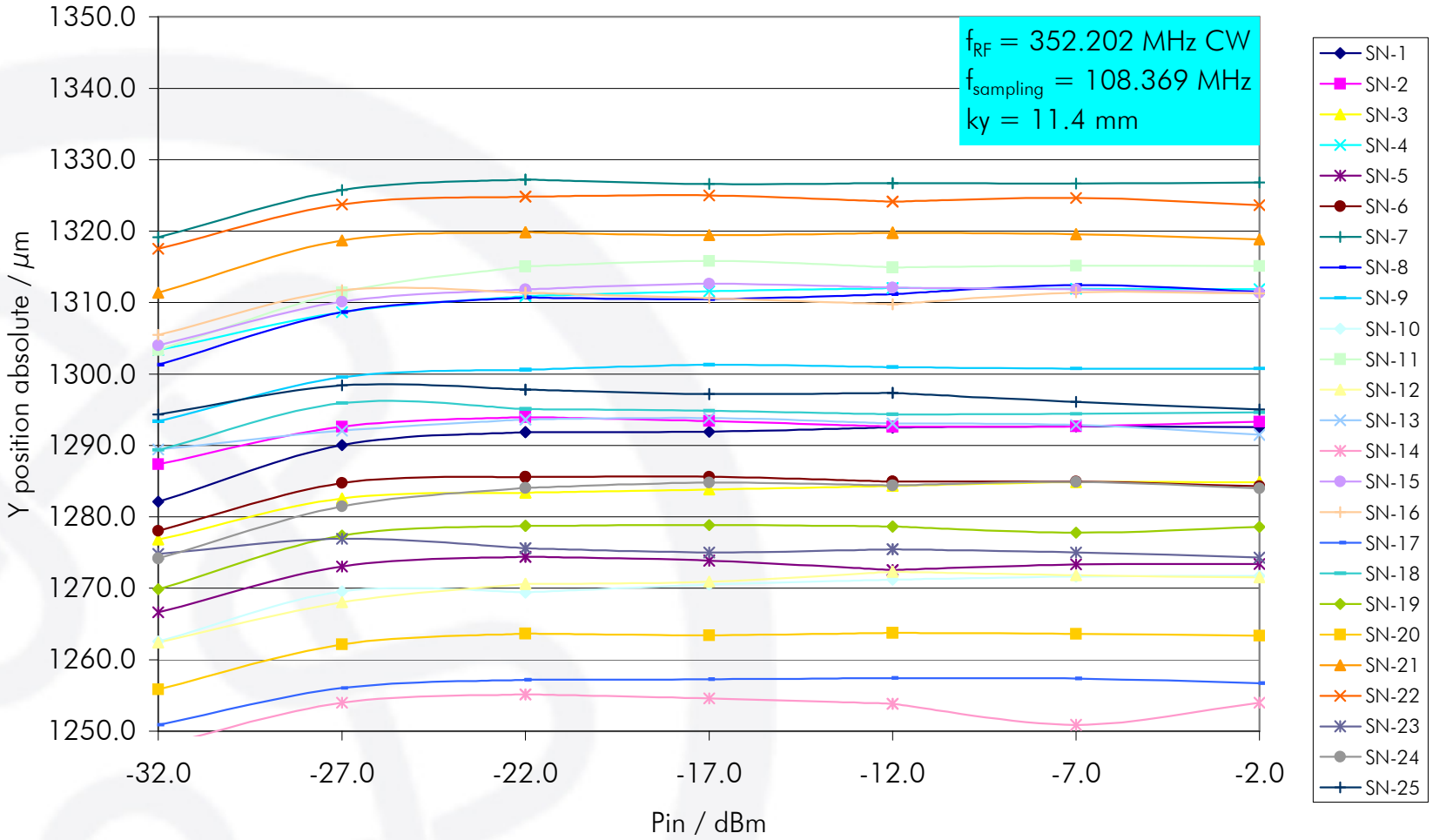
Performance Results

- The results that follow are preliminary with no signal conditioning
- Final performance results will be:
  - Based on statistics of 100+ modules,
  - with signal conditioning.
- CE certified
  - LVD
  - EMC
    - Emission
    - Immunity, test level: special 50 V/m up to 1 GHz

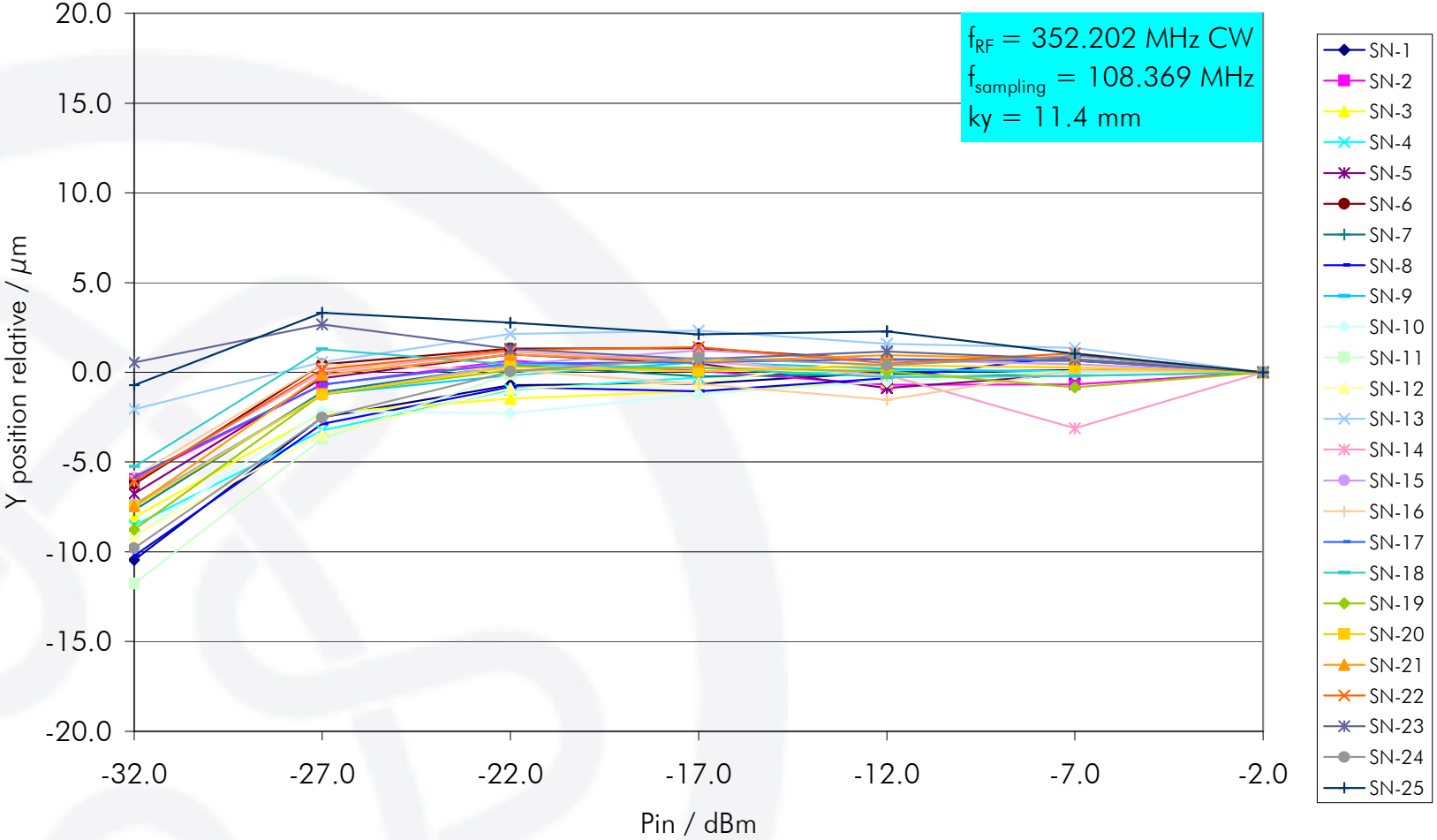
Resolution - CW



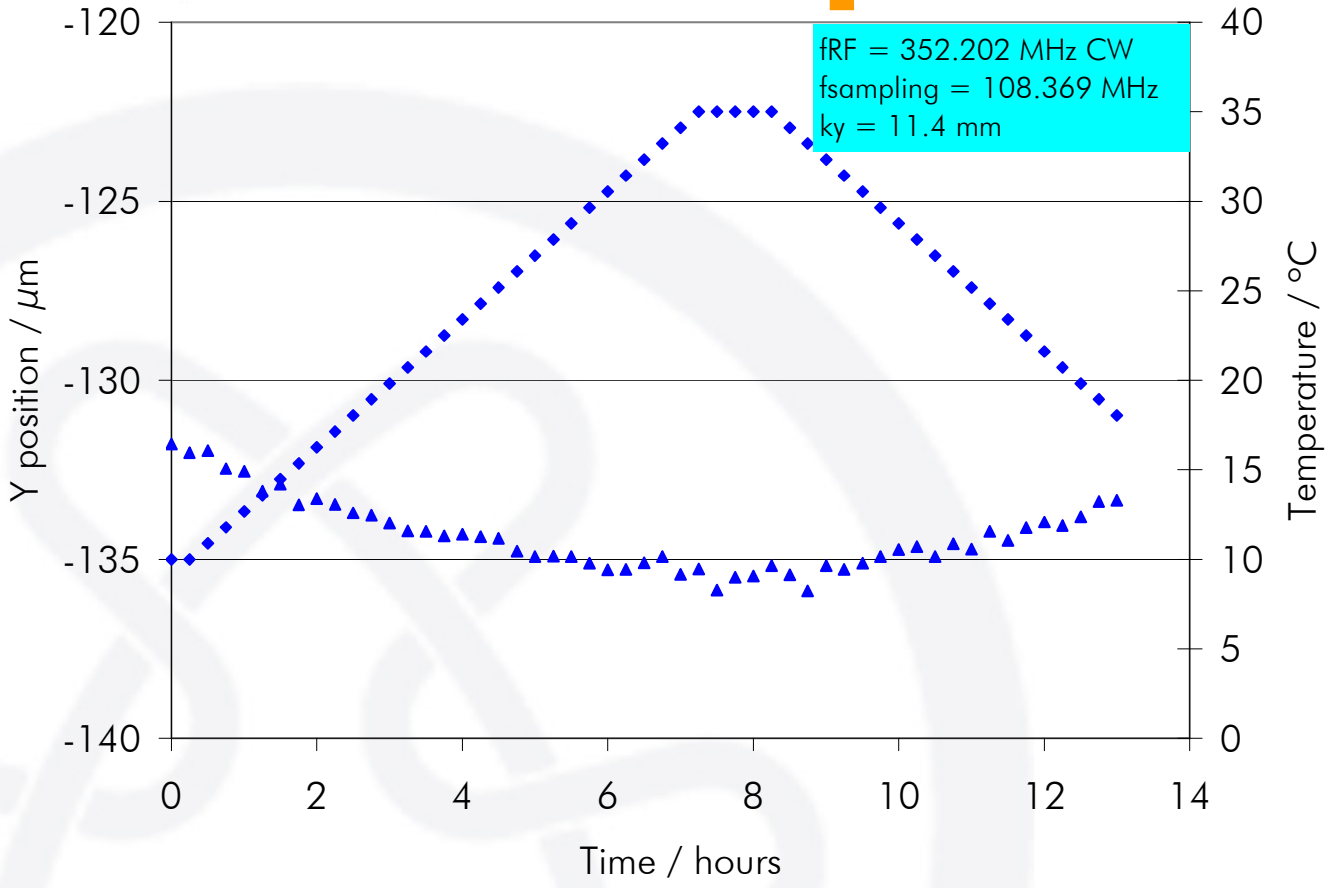
Beam current dependence - absolute

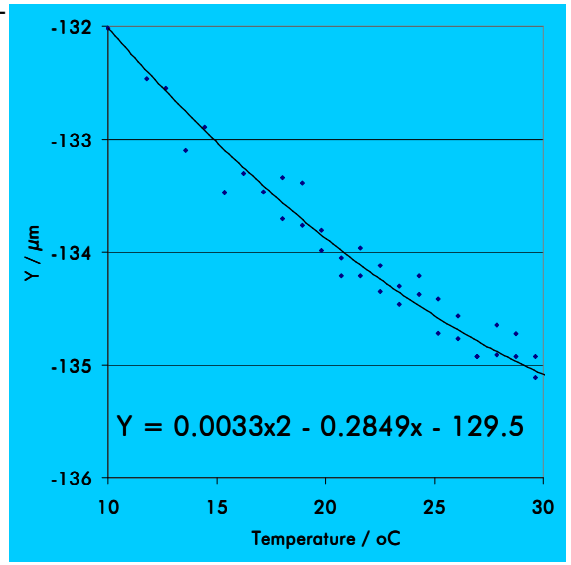


Beam current dependence - relative



Temperature stability





Summary

- Libera is a product family
- Most of performance requirements of electron beam position processor already met without signal conditioning including EM immunity
- Feedback building block with rich connectivity – variety of architectures possible
- 100 + production units fabricated and tested
  - Very good manufacturing yield
  - Excellent module to module reproducibility
- First deliveries to clients
  - 150 units: Dec 2004
  - First round of Tryouts: Jan 2005