



measurement
electronics platform

idFLEX

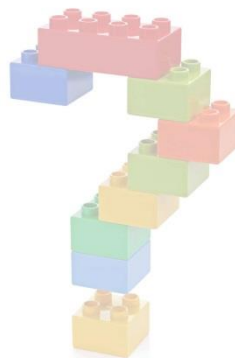
CTH (Compact Test Head)

What is CTH?

a compact test head with
analog and digital instruments
 for reconfigurable
stimulus and measurement
 of
mixed signal devices

Hardware (idFLEX)

- 4Ch Devices Power Supplies
- 16Ch Source Measurement Units
- 64Ch Digital Pattern Generator
- 24Ch Digital Control Bits
- 32Ch Digital Capture Unit
- idFLEX 4 Slot System
- Outer Dimensions ca. 15x15x8cm



Key Features

4Ch Device Power Supplies (DPS)

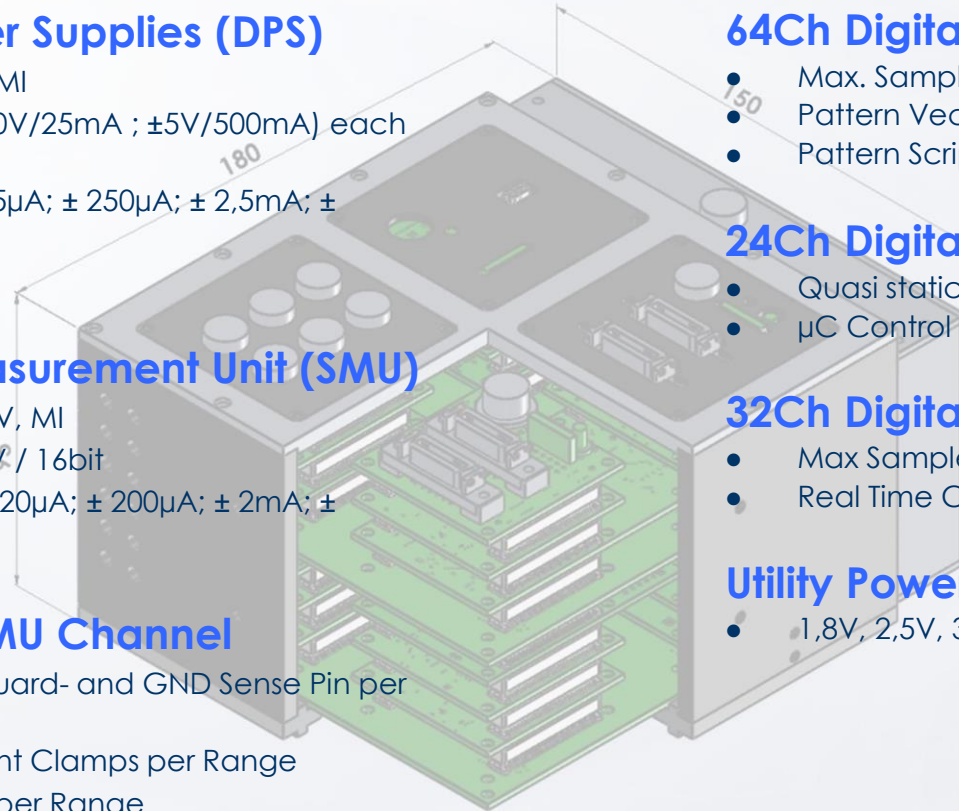
- FV, FN (high-Z), MV, MI
- Voltage Ranges ($\pm 10V/25mA$; $\pm 5V/500mA$) each 16bit
- Current Ranges ($\pm 25\mu A$; $\pm 250\mu A$; $\pm 2.5mA$; $\pm 25mA$; $\pm 500mA$) each 16 bit

16Ch Source Measurement Unit (SMU)

- FV, FI, FN (high-Z), MV, MI
- Voltage Range $\pm 10V$ / 16bit
- 4 Current Ranges ($\pm 20\mu A$; $\pm 200\mu A$; $\pm 2mA$; $\pm 50mA$) each 16 bit

For all DPS and SMU Channel

- Force-, Measure-, Guard- and GND Sense Pin per Ch
- 16bit Voltage/Current Clamps per Range
- 16bit Measurement per Range



64Ch Digital Pattern Generator

- Max. Sample Rate 100MS/s
- Pattern Vector Memory 1Gbit
- Pattern Script Instructions

24Ch Digital Control Bits

- Quasi static
- μC Control

32Ch Digital Data Acquisition

- Max Sample Rate 170MS/s
- Real Time Capturing into PC RAM

Utility Power Supplies

- 1,8V, 2,5V, 3,3V, 5V, 15V, -5V, -15V

Typical CTH System Config



idMATE
(Software)



idLAB
(industrial PC)



e.g. NI-PCIe1433



USB



Camera Link



Custom Interface Board
test socket or cable interface

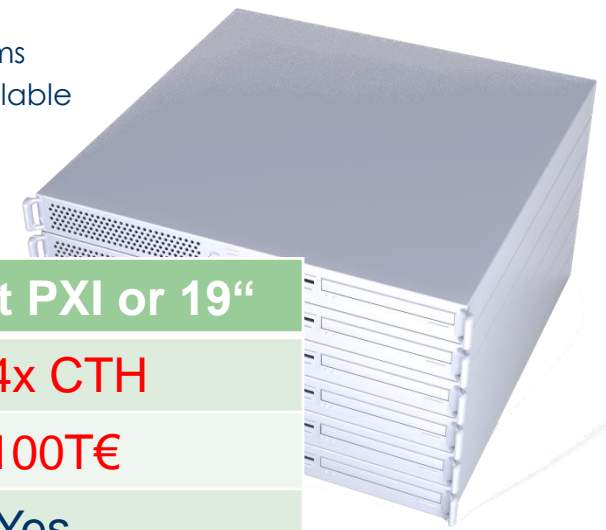
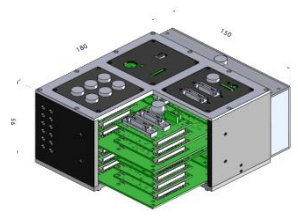
Winner

- ✓ higher performance
- ✓ lower cost
- ✓ Small footprint

Benchmark

Small Form Factor

- CTH can be installed into embedded systems
- direct adaption with test socket board available
- direct docking to probe card possible
- no cables = min noise



	CTH	Compact PXI or 19"
Foot Print (mm ²)	150 x 150	>> 4x CTH
Cost	< 40T€	> 100T€
Cable Interface	Yes	Yes
Direct Docking	Yes	No
Custom Instruments	Easy	Expensive

Power Concept

General

Power management within the tester is separated into three major groups.

Utility PWR Supplies

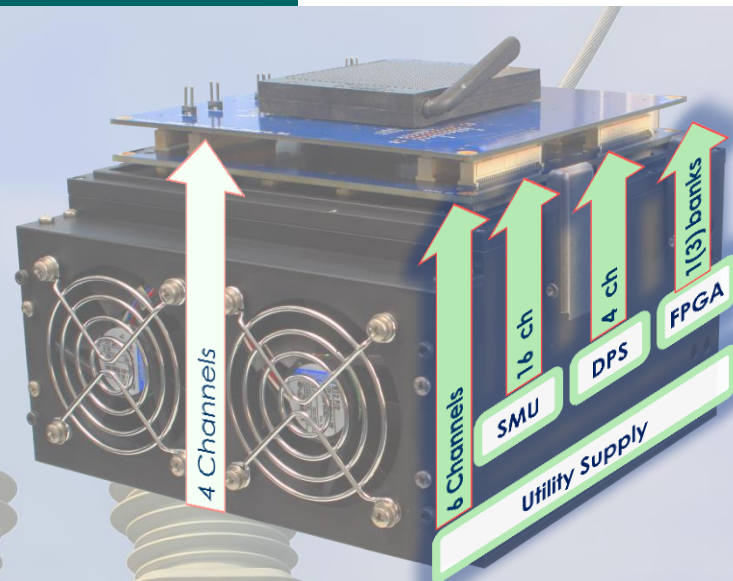
- -5V / -15V / 1,8V / 2,5V / 3,3V / 5V / 15V these supplies are used for idFLEX module supply but they can also be used for the application
- two idFLEX 1Slot PWR #2 modules support 4Ch variable supplies for the FPGA IO Banks

DPS & SMU

- 4Ch DPS
- 16Ch SMU (can be used as low power supplies ca. 50mA)

External Supplies

- Support of 4 external supplies from customer



- ✓ 4-quadrant resources
- ✓ supply and measure
- ✓ voltage and current

SMU and DPS

General

- 16 Source Measurement Units (SMU)
- 4 Device Power Supplies (DPS)

SMU Operation Modes

- max. current: 50mA
- FV: Force Voltage
- FI: Force Current
- MV: Measure Voltage
- MI: Measure Current

4 Pins per Channel

- Force
- Measure
- Guard
- Ground Sense

DPS Operation Modes

- max. current: 500mA
- FV: Force Voltage
- MV: Measure Voltage
- MI: Measure Current