

Status TU Dortmund

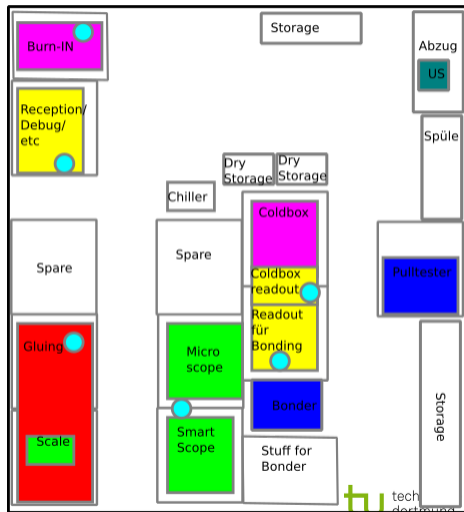
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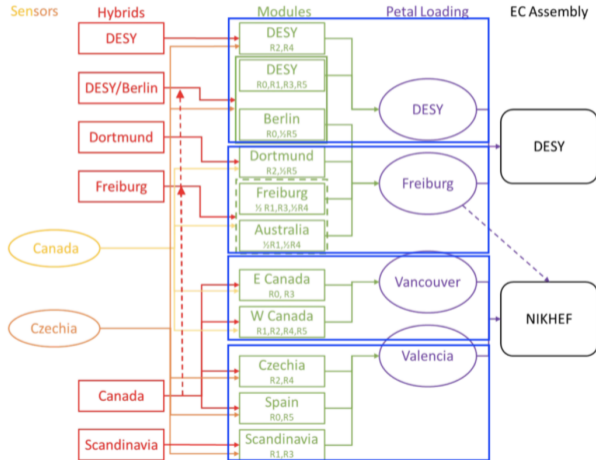
June 29th, 2020

Overview

- Building Hybrids and Modules
 - ▶ Building 192 R2 + 192 single R5
- Production planned in single cleanroom
 - ▶ Lab access possible (Covid rules apply)
- Person Power
 - ▶ 1 Postdoc (Felix Wizemann, 1 FTE, until end of 06/21)
 - ▶ 1 Permanent Technician (Mike Muschak, 0.3 to 0.5 FTE)
 - ▶ 1 Technician for production (Muzaffer Badem, 1 FTE, starting \approx 08/20)
 - ▶ Student aids to be hired to aid, e.g. for electrical testing, during production

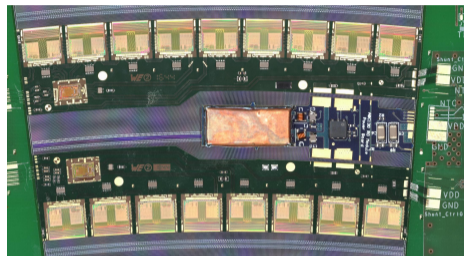


Production Flow

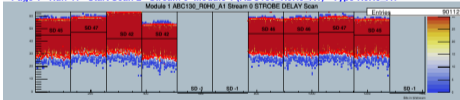


Experience

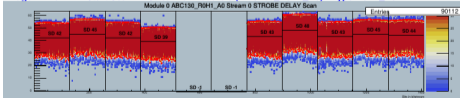
- No experience with ABCStar Hybrids and Modules
- Built a total of about 10 electrical ABC130 hybrids (including defective hybrids)
- Built one partial electrical module and one full electrical module (without HVtab, working)
- Further prototyping (dummy and electrical) planned to train new technician and improve procedures
- Material on hand for one module and additionally two without Powerboard and TestframeV4
- Are there powerboards and testframes/bare testframe PCBs left?



Page 1 Run 41 Start Scan 2 Stream 0 Module 1 (ABC130 R0H0 A1) - Type R0H0 A1



Page 1 Run 41 Start Scan 2 Stream 0 Module 0 (ABC130 R0H1 A0) - Type R0H1 A0



Setups

- Thermal Cycling setup
 - ▶ Julabo FP88-HL (920W@-20,730W@-40)
 - ▶ HV supplies as proposed by Sergio to be ordered
 - ▶ LV tbd (TENMA 72-2710,72-13330,Rohde & Schwarz HMP 4040,TTi TSX3510P,TTi TSX1820P on hand. If necessary, implemented TENMAs can be purchased)
- Burn In Crate
 - ▶ Genesys and Crate on hand
 - ▶ Any other stuff that can be ordered/prepared on site?
- General electric test setup
 - ▶ To be used for reception test (Sensor, PB) and debugging/short tests (Hybrids/Modules)
 - ▶ Light tight box and cooling under development
- Gluing, Visual Inspection, Metrology, Bonder, Weighing and Pulltesting setup in place
- Two dry flushed storage cabinets (total of 614l, estimated to be sufficient for parts of 8+ weeks)

Draft of a production week

Week One

Monday				Tuesday				Wednesday				Thursday				Friday			
Block	Batches	Duration	Worker	Block	Batches	Duration	Worker	Block	Batches	Duration	Worker	Block	Batches	Duration	Worker	Block	Batches	Duration	Worker
HVT	A B C	180	Builder	HGL	A	150	Builder	HGL	B	150	Builder	PBG	B	90	Builder				
MGL	A	120	Builder	HBD	A	180	Builder	HBD	B	180	Builder	MBD	A	330	Builder				
QA		240	Tester	PBG	A	120	Builder	MGL	B	120	Builder	HTSA	A B	120	Tester				
								MMT	A	120	Tester	REC		240	Tester				
								HTSB	C	60	Tester								
Total				Total				Total				Total				Total			
Builder		300		Builder		450		Builder		420		Builder		300		Builder		0	
Tester		240		Tester		0		Tester		180		Tester		360		Tester		0	

Week Two

Monday				Tuesday				Wednesday				Thursday				Friday			
Block	Batches	Duration	Worker	Block	Batches	Duration	Worker	Block	Batches	Duration	Worker	Block	Batches	Duration	Worker	Block	Batches	Duration	Worker
MGL	C	120	Builder	PBG	C	90	Builder	MMT	C	120	Tester	MBD	C	330	Builder	MTSB	C	120	Tester
HGL	C	150	Builder	MBD	B	330	Builder	HBD	C	180	Builder	MTSB	B	150	Tester				
MTSA	A	150	Tester	MTSB	A	120	Tester	MTSA	B	150	Tester	HTSA	C	60	Tester				
MMT	B	120	Tester	HTSB	A B	120	Tester					MTSA	C	120	Tester				
Total				Total				Total				Total				Total			
Builder		270		Builder		420		Builder		180		Builder		330		Builder		0	
Tester		270		Tester		240		Tester		270		Tester		360		Tester		120	

- Planned with 1 FTE Builder (Technician) and 1 FTE Tester (physicist/student aid)
- Draft is for up to 6 modules/week
- Time estimates to be verified in Preproduction