



Module Status January 2019



Inventory January 2019

▷ Modules left

- ↳ Tested L2-bwd (OB): 15
- ↳ Tested L2-fwd (OF): 12
- ↳ Modules still to be tested, all passed already the probe card test
 - ↳ at MPP: W04_OB1, W10_OB1, W02_OF1
 - ↳ at GOE: W05_OF1
 - ↳ at BN: W45_OF2 (seems to have JTAG issues, under investigation)
 - ↳ at HLL: W04_OF1 (GOE: high currents, under investigation)

▷ Sensors left from the current production

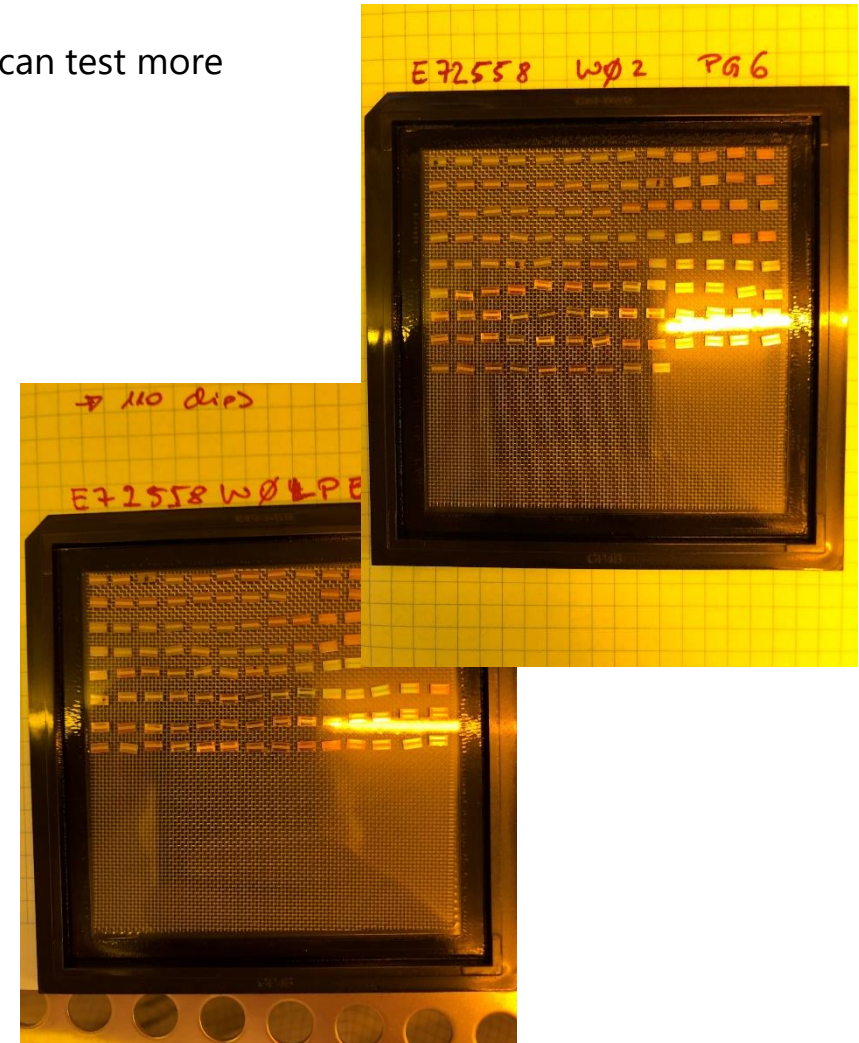
- ↳ B-grade sensors: 1 L1-fwd, 6 L2-fwd, 1 L2-bwd, 2 L1-bwd → ready for assembly
- ↳ With possible matrix shorts: 2 L1-fwd, 4 L2-fwd, 0 L2-bwd, 1 L1-bwd → tbc

	IF	OF	OB	IB	total
Final modules	15	22	20	14	71
final-P2 modules	2	2	2	2	8
Prototype modules	2	3	5	4	14
EMCM assemblies	3	3	3	3	12
used dummies (mostly ladder...)	7	10	9	7	33
stock - not usable	5	24	30	3	62
stock - b-grade	1(+2)	6(+4)	1(+0)	2(+1)	10(+6)

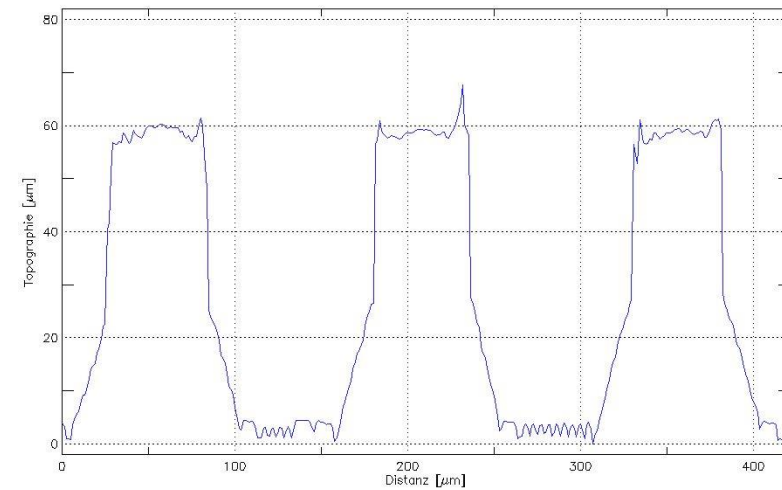
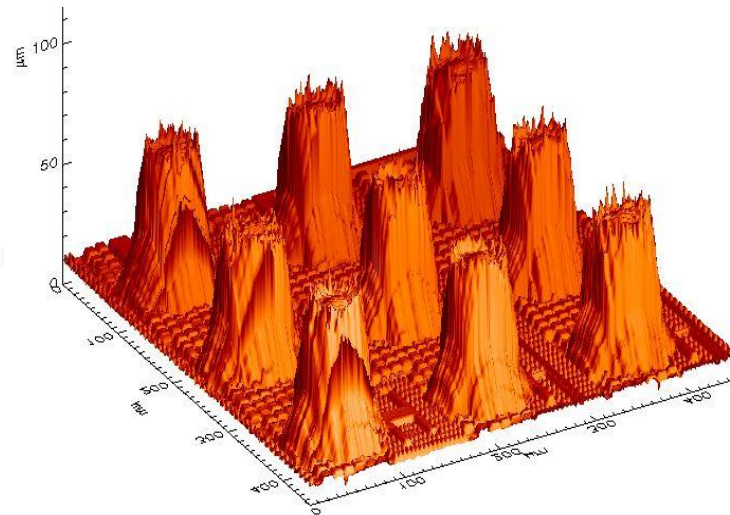
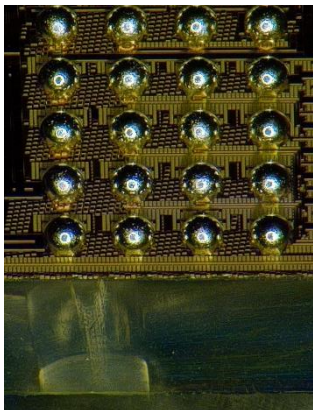
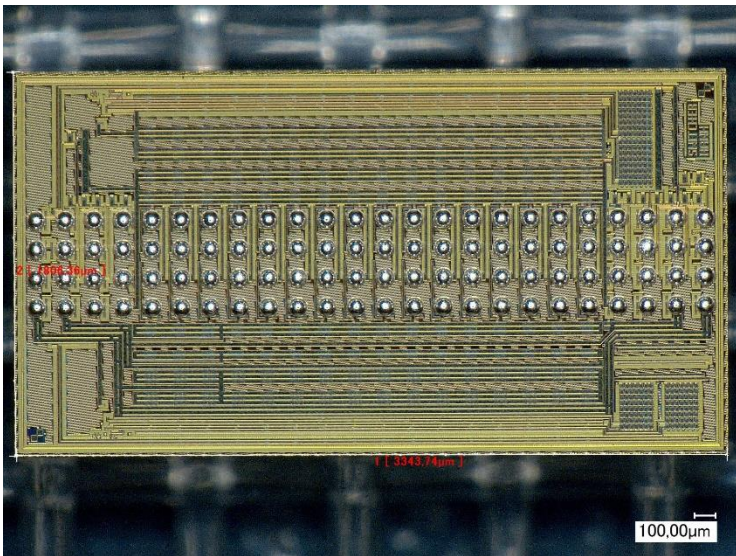
- ▷ DHPT1.2b (Bonn)
 - ↳ Need ~100 ASICs for L1 including 50% spares
 - ↳ Currently available at Bonn: 252 tested and 300 untested → 2x safety, if needed can test more

- ▷ DCDB4.2 (KIT)
 - ↳ Need ~100 ASICs for L1 including 50% spares
 - ↳ Available at KIT: 800 **untested** chips
 - ↳ KIT agreed to test the required number of chips, not critical

- ▷ No SwitcherB18v2.1 left → SwitcherB18v2.2
 - ↳ Slightly improved version of the currently used SwitcherB18v2.1
 - ↳ Reduced power in V_{sub} node
 - ↳ Clamp circuit added between V_{dd} and GND and between V_{ddRef} and V_{SUB}
 - ↳ Changes in termination to allow default operation without JTAG
 - ↳ 4 wafers with about 400 chips in total available
 - ↳ Bumping on wafer level at IZM
 - ↳ 2 wafers already bumped and cut and (~200) chips are at HLL



- ▷ ~100 chips for EDET, ~100 chips for PXD → very nice bumps!



- ▷ Flip-chip ~5 untested chips to adapters, test on hybrid level at HLL, BN(?)
- ▷ All other chips for series testing on probe station to KIT

Next steps - assembly of more modules

- ▷ Check L1 sensors with DS shorts on probe station, make them usable ...
 - ↳ W06-IF (98.8%): 6 DS shorts
 - ↳ W11-IB (98.7%): 2 DS shorts, "repaired"
 - ↳ W11-IF (99.3%): 6 DS shorts, "repaired"
- ▷ W05-IB (98.4%), W06-IB (99.5%), W10-IF (99.0%)

- ▷ W13-OB2 (98.4%), W12-OF2 (98.9%)

- ▷ As soon as first tested SWBs (and DCDs, DHPTs already tested okay): assemble 3 L1 pairs, 1 L2 pair
 - ↳ **Place new order to IZM → MPP?**

- ▷ What else?
 - ↳ Kapton cables? How many are available? **Need to order more ... → MPP?**
 - ↳ **Jigs?** Please send all your module jigs to HLL, we will clean them ..
 - ↳ Need to revive module probe card setup
 - ↳ Restart test setups for modules ..

- ▷ 2 L1 ladders at DESY
 - ↳ One with broken EOS → backup
 - ↳ One with possibly broken Switcher L1-035 → rework!
 - ↳ **Rework, also on ladder level, now possible at HLL**
- ▷ 1 spare L1 ladder at KEK: L1-037
- ▷ Even without PXD9-20 and -21 → ½ of PXD2020 L1 in reach
 - ↳ We have one L1 ladders in hand and if we repair L1-035 one more
 - ↳ Modules for three more L1 ladders are being prepared in the next months

