BPIX Module Testing Status - Week 15 (2008)

25th September 2008

Production overview

Production Status: 950 modules produced (829 / 121)

- 569/164 graded as A/B $\rightarrow$ 88% || 87/23 $\rightarrow$ 91%
- 96 graded as C $\rightarrow$ 12% || 11 $\rightarrow$ 9%

Module Testing Report of Week 15 (2008):

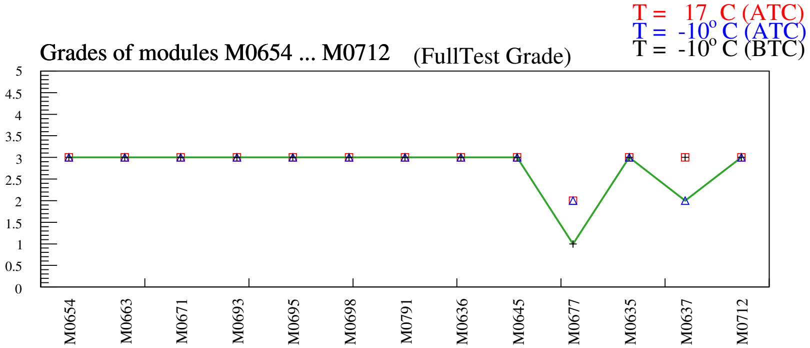
- 13/– modules fully tested and therm. cycled (0 retested)

	Modules			*Half-Modules*		
Grade	**A**	**B**	**C**	**A**	**B**	**C**
T = -10^o C, BTC*	12	0	1	–	–	–
T = -10^o C, ATC	11	2	0	–	–	–
T = $+17^o$ C, ATC	12	1	0	–	–	–
Final Grade	11	1	1	–	–	–

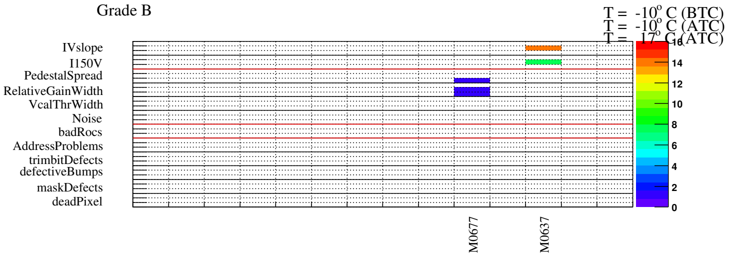
- no retests with new DAC settings

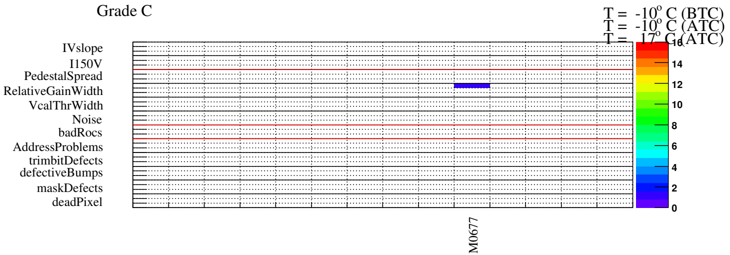
*without IV-criteria

Production summary

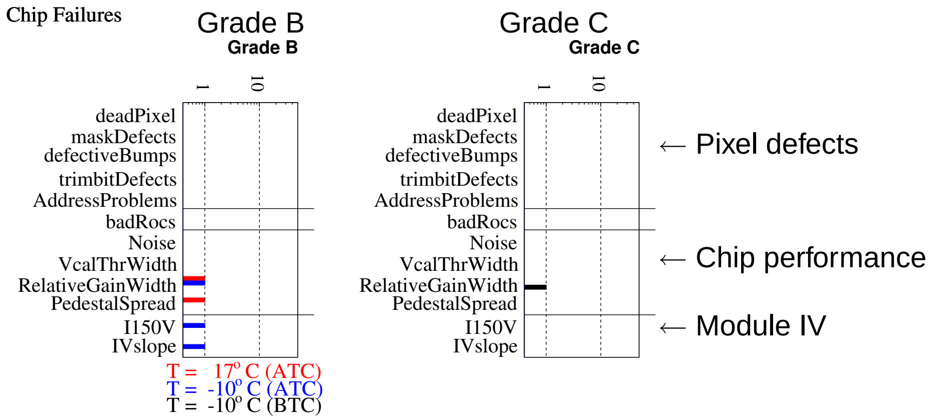


Module Failures Overview





Production quality



Defective pixel $T = 17^oC$ (ATC)

Overlay of all fully tested modules at T = $+17^o$ C (ATC)

Grade A

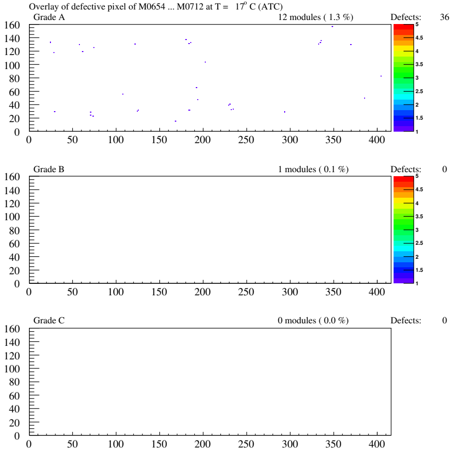
(12 modules)

Grade B

(1 modules)

Grade C

(0 modules)



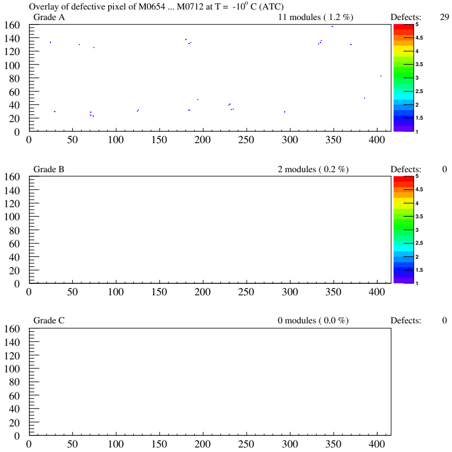
Defective pixel $T = -10^{o}C$ (ATC)

Overlay of all fully tested modules at T = -10^{o} C (ATC)

Grade A
(11 modules)

Grade B
(2 modules)

Grade C
(0 modules)



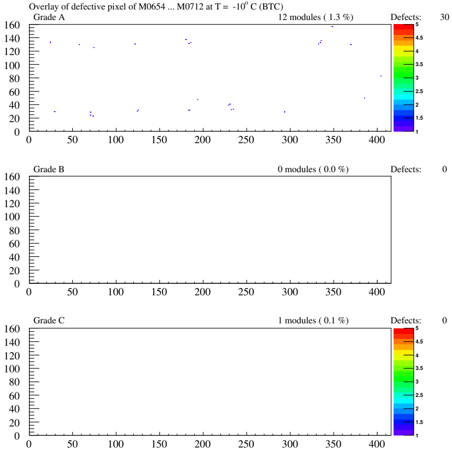
Defective pixel $T = -10^oC$ (BTC)

Overlay of all fully tested modules at T = -10^o C (BTC)

Grade A
(12 modules)

Grade B
(0 modules)

Grade C
(1 modules)



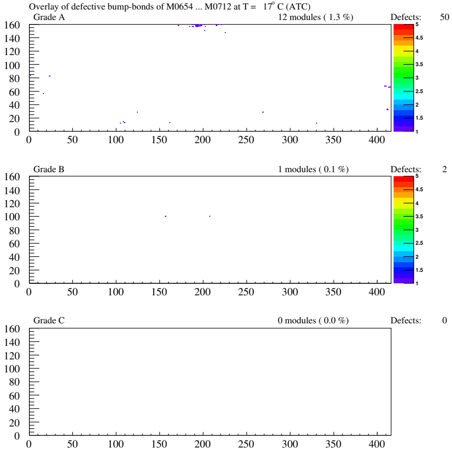
Defective bump-bonds $T = 17^o C$ (ATC)

Overlay of all fully tested modules at T = $+17^o$ C (ATC)

Grade A
(12 modules)

Grade B
(1 modules)

Grade C
(0 modules)



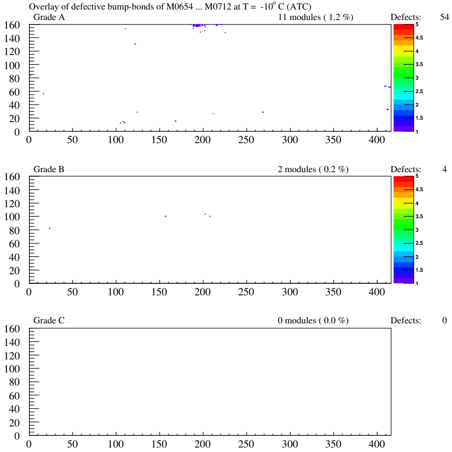
Defective bump-bonds $T = -10^{o}C$ (ATC)

Overlay of all fully tested modules at T = -10^{o} C (ATC)

Grade A
(11 modules)

Grade B
(2 modules)

Grade C
(0 modules)



Defective bump-bonds $T = -10^oC$ (BTC)

Overlay of all fully tested modules at T = -10^o C (BTC)

Grade A

(12 modules)

Grade B

(0 modules)

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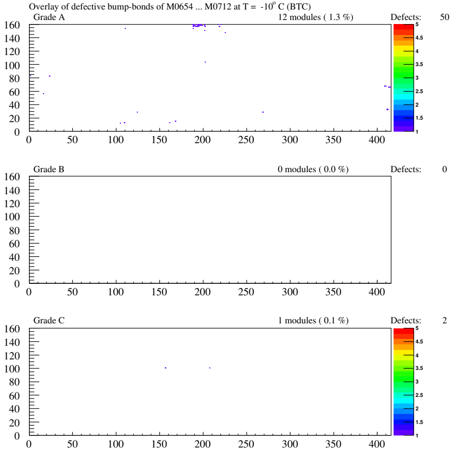
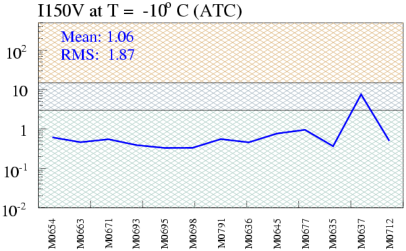
(1 modules)

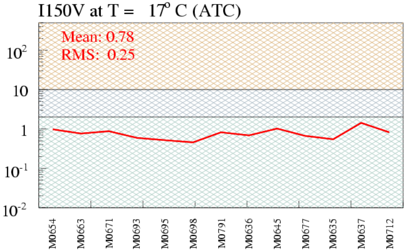


Current at 150 V

Current at 150 V (in μA) at $T = 17^o C$ and $T = -10^o C$



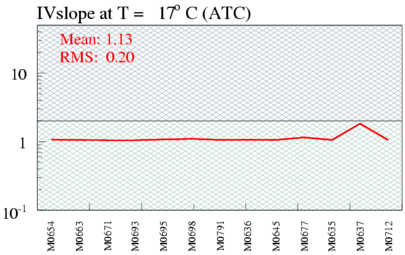
recalculated

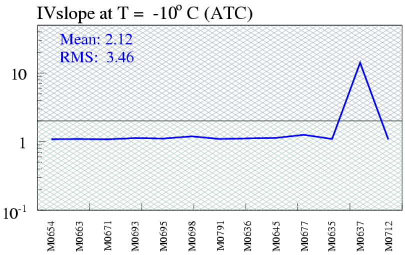


measured

Slope of IV-Curve

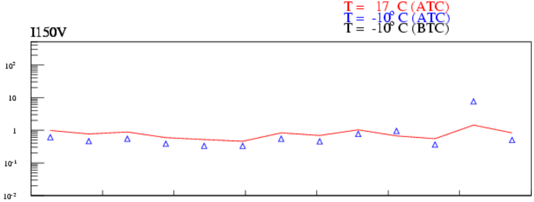
Slope of IV-Curveat $T = 17^o C$ and $T = -10^o C$

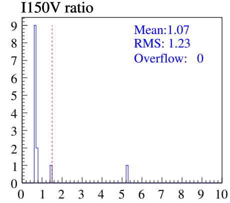


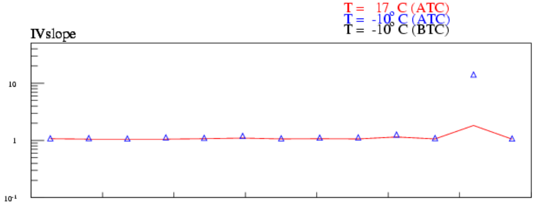


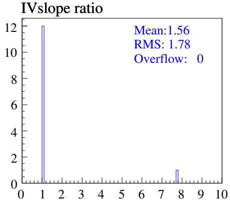
Current recalculation to $T = 17^o C$

Cross check of recalculated values with measured values



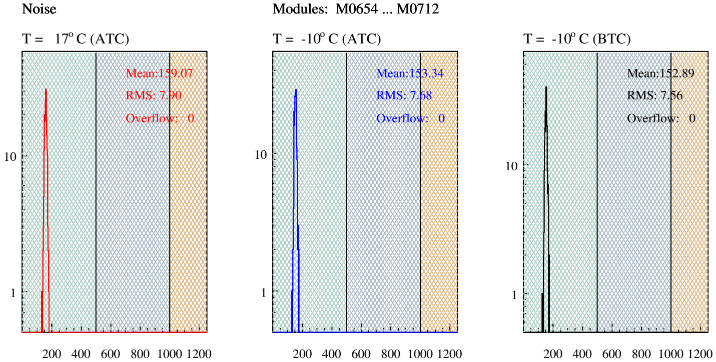






Noise

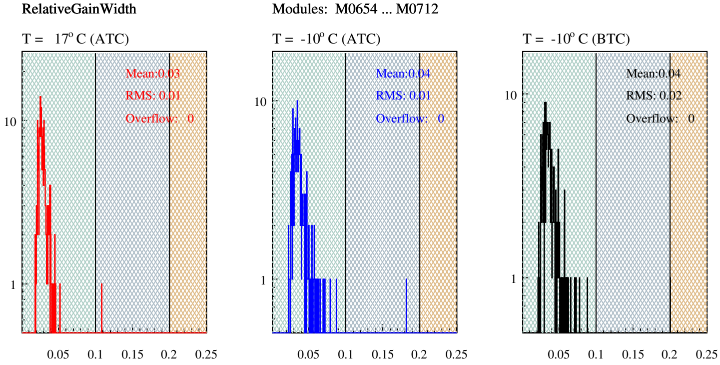
MeanNoise of chips



Noise in e^{-}

Relative Gain Width

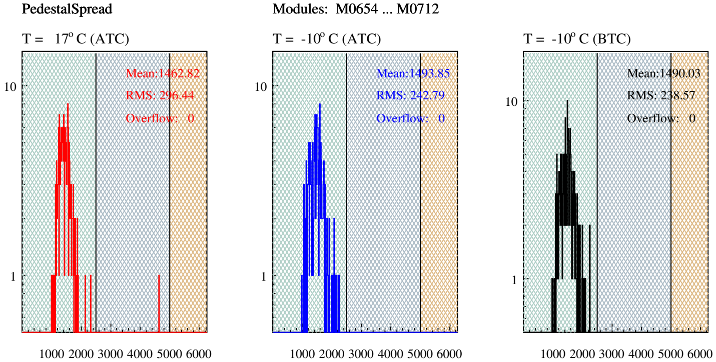
RelativeGainWidth of chips



Rel. Gain Width in %

Pedestal Spread

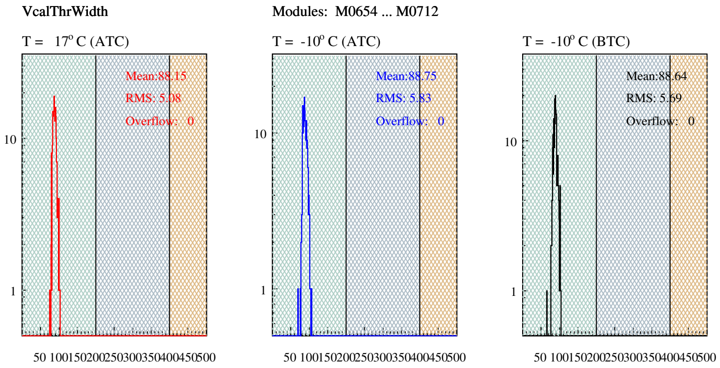
PedestalSpread of chips



Pedestal Spread in e^-

Vcal Threshold Width

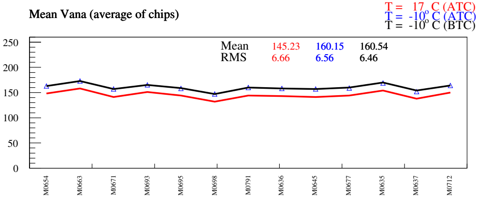
VcalThresholdWidth of chips

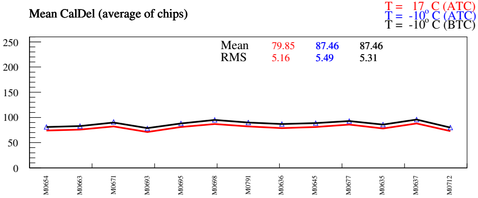


Vcal Thr. Width in e^{-}

Operational parameters I

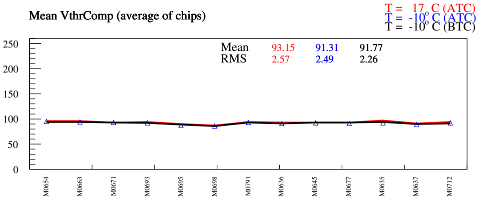
Mean DACs I

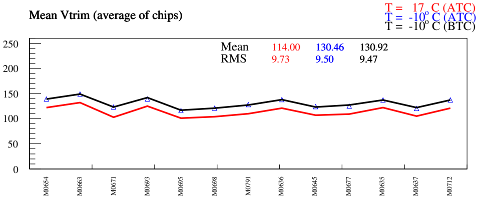




Operational parameters II

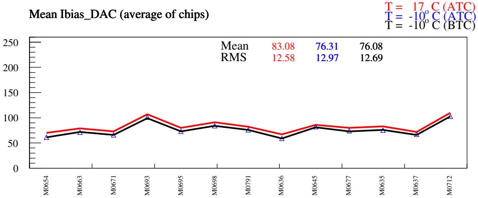
Mean DACs II

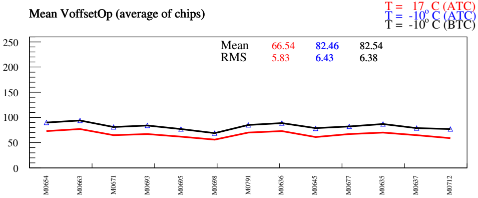




Operational parameters III

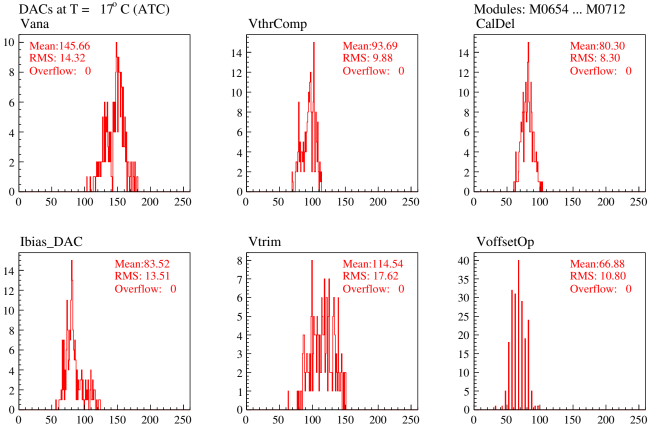
Mean DACs III





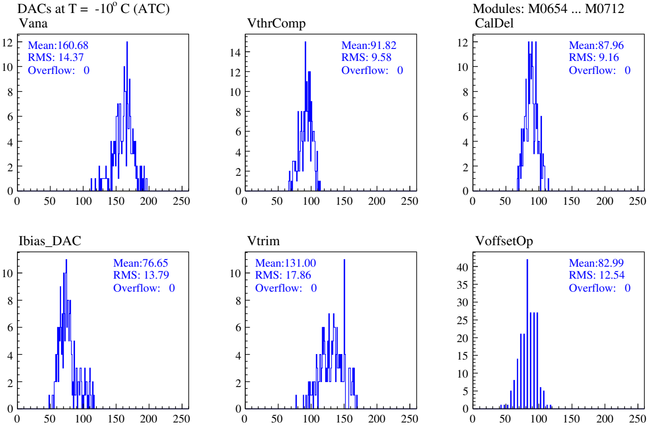
Operational parameters at $T = +17^oC$ (ATC)

DAC distribution (of chips)



Operational parameters at $T = -10^{o}C$ (ATC)

DAC distribution (of chips)



Operational parameters at $T = +17^o C$ (BTC)

DAC distribution (of chips)