Hybrid 7z6 Traveler

January 13, 2000

1 Connectivity

Repairs on shorts:

Fixes for opens:

2 Chips

The following chips were assembled on this hybrid (in the order that the chips get read out):
Hybrid 7Z6 has die: 085-032 085-036 085-037 085-057 085-085 085-106 085-120

3 Data Analysis Summary

The following summarizes the findings of the Burn-in data analysis program. The first chip in the readout name is numbered 0.

```
% Hybrid 7z6 classification info. Created 15:59:15 10/12/99

Hybrid 7z6 quality: fair
Chip classification: fair fair fair fair fair fair fair
Bad channels (chip-channel): 0-117 1-78 2-29 2-104 5-72 6-7 6-85
Bad cells: none
Random bad capacitors (chip-cell-channel): 0-21-116 0-21-117 0-22-117 0-26-117 0-27-117 0-29-116 0-29-117 0-31-116 0-31-117 0-33-116 0-33-117 0-42-116 0-42-117 0-43-117 0-9-117 1-1-78 1-1-79 1-10-78 1-10-79 1-11-78 1-23-78 1-36-78 1-40-78 1-41-78 1-43-78 1-43-79 1-45-78 1-45-79 2-43-29 3-43-25 4-29-71 6-0-6 6-0-7 6-11-6 6-11-7 6-12-7 6-2-6 6-2-7 6-36-7 6-37-7 6-41-7 6-42-7 6-44-6 6-44-7
Channels at pedestal needed for DCMS: 32.6 31.6 33.3 35.6 35.6 35.6 39.5
```

4 Comments

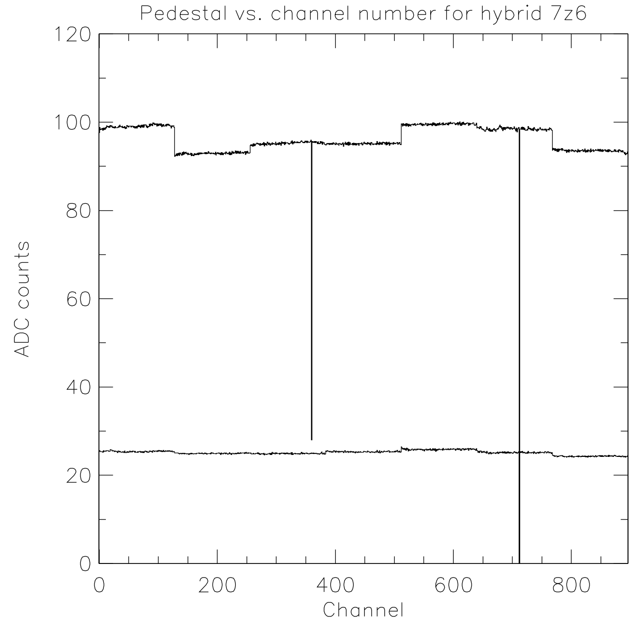
Wirebonds got squashed while being shipped. Repaired.
Has 4.7μF digital Caps.
Has redundant Au FE DVDD, DGND bonds.

Has 43Ω clock termination on hybrid.
HV test.

5 Pedestal

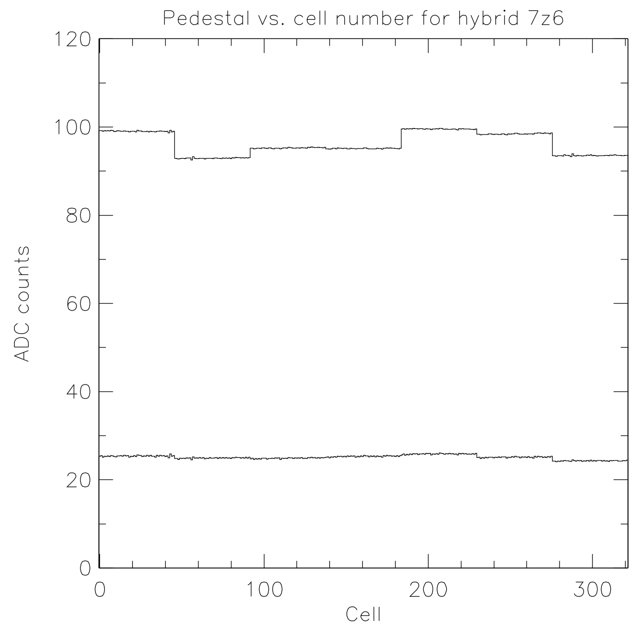
The following plot shows the pedestals vs. channel number with and without charge injection:

Pedestal for each Channel



The following plot shows the average pedestal vs. pipeline cell ID with and without charge injection. The x-axis is cell ID offset by 46 for each chip. Thus cell ID 5 for chip 1 is at x=5, chip 2 at x=51, chip 3 at x=97, etc.

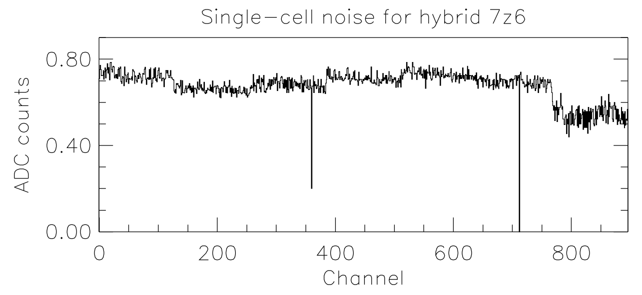
Pedestal vs. Pipeline Cell ID

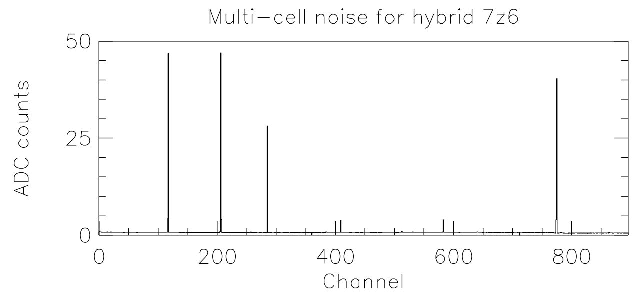


6 Noise

The following plots show the single-cell and multi-cell RMS noise:

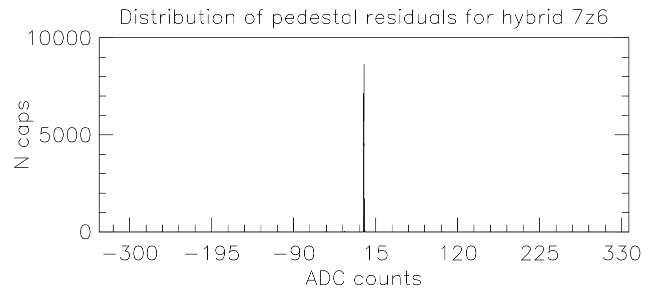
RMS Noise

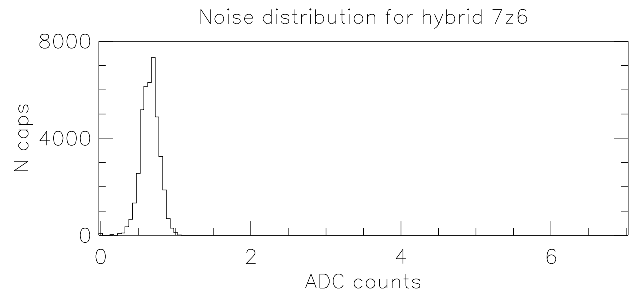




The following are histograms of the pedestal of each pipeline capacitor relative to the chip average (top); and the RMS noise of each capacitor (bottom):

Distribution of Pedestals and Noise





7 Currents

The following plots show the supply currents per chip as a function of measurment number. Currents are measured approximately every 10 minutes:

Supply Currents During Burn-in