



# MDT Electronics

## ASD Development

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### ASD Specifications

#### 1996: Integrated 1.2 u CMOS Preamp + Disc prototyped

Proved basic specs:                    6200 e's enc, 1.4mV/fC sens.  
   Simultaneous operation of preamp, disc  
   Disc Time Walk < 500ps

#### 1997: Change to HP 0.5u process, Amp+Shaper+Disc+LVDS

Confirmed specs in new process, evaluate LVDS outputs

#### 1998: Develop "ASD Lite" full 4-channel chip

Reduce crosstalk from 5% -> 0.3% (unmeasurable)  
Demonstrate stable operation on-chamber, meet all specs  
Change baseline design to accomodate new gas (bipolar shaping)

#### 1999: Package+test 4400 ASD Lites, prototype ADC, logic

Demonstrate high yield (> 95%), tight parameter control in production  
Build and test (on chamber) Wilkinson ADC prototype  
Develop and submit "programmable ASD Lite"

#### 2000: Beam Test Validation of analog path, first full Octal ASD

Submit, test bipolar-shaping test chip (beam test)  
Test "programmable ASD Lite"  
Full, programmable Octal prototype development underway (Posch)

#### 2001: Second Octal Prototype (production prototype)

#### 2002: Finish ASD Production

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