

XSLOTS

Slot Machine Controller

ELEC 423

April 23, 2003

Michael Calhoun

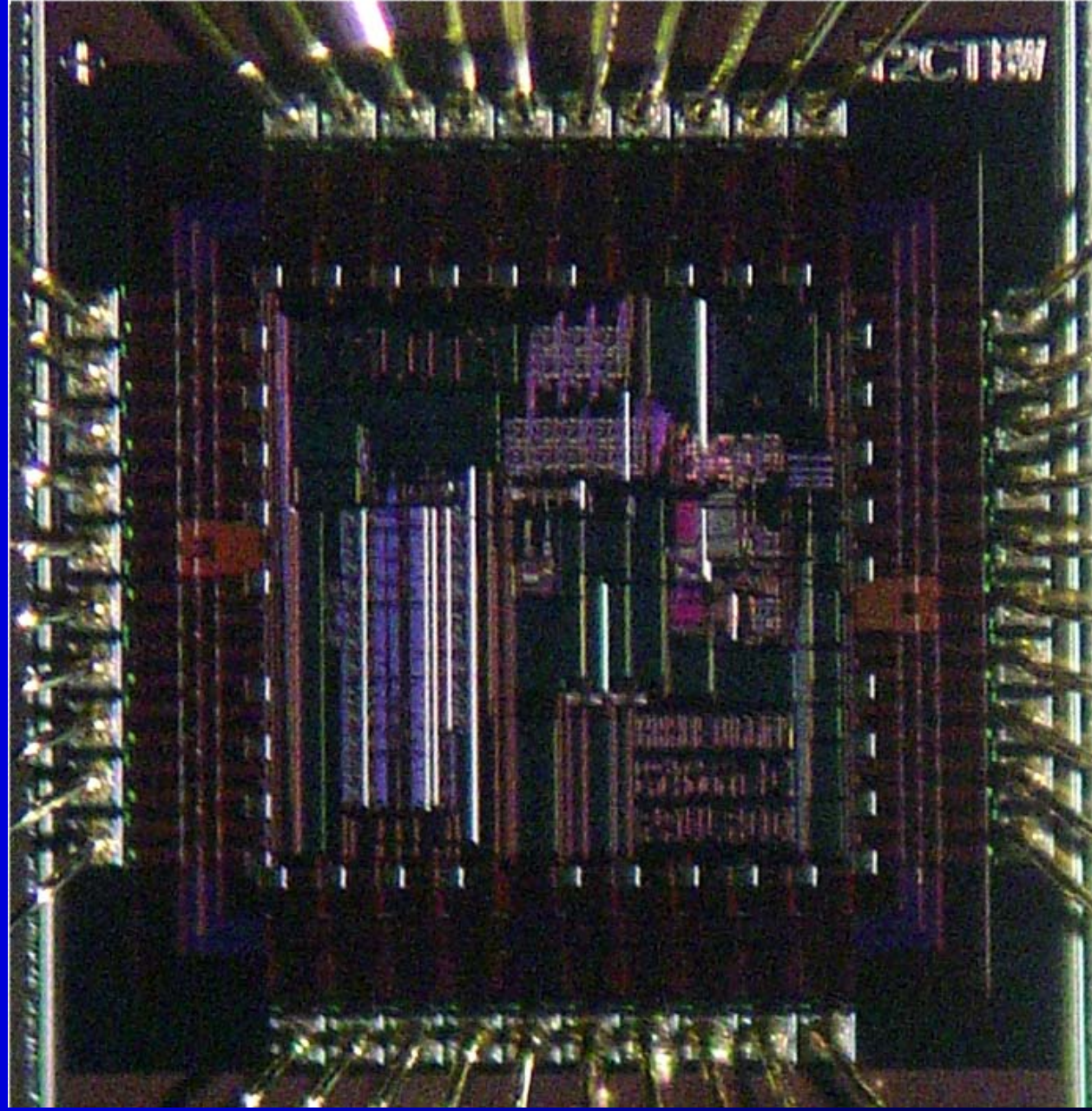
Charles Coggins

Paul Rodriguez

Description of Project

- Slot-Machine controller ASIC
- System Flow
 - User Inputs Credits (10)
 - Reels Spin (Lights Flash)
 - Reels Stop, Result is Assessed
 - Winnings are paid
 - Jackpot is incremented or reset appropriately

Full Plot of Chip

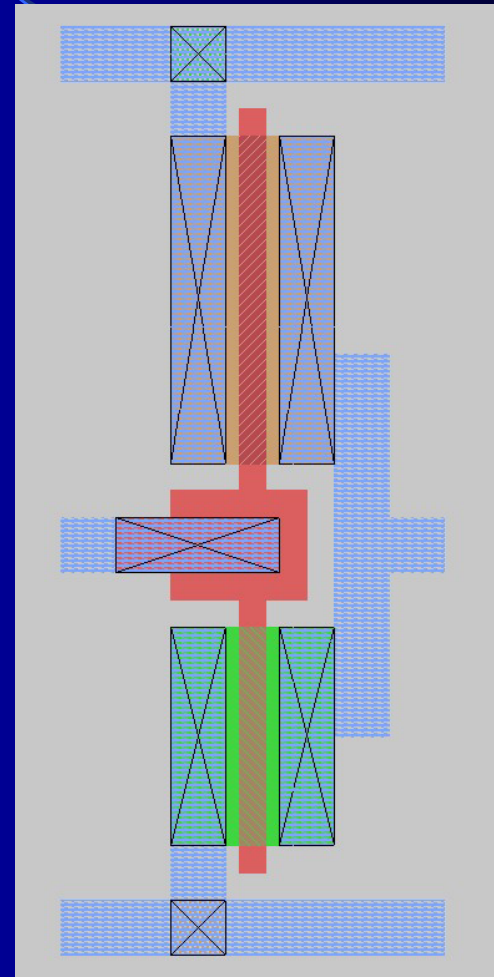


Functional Testing

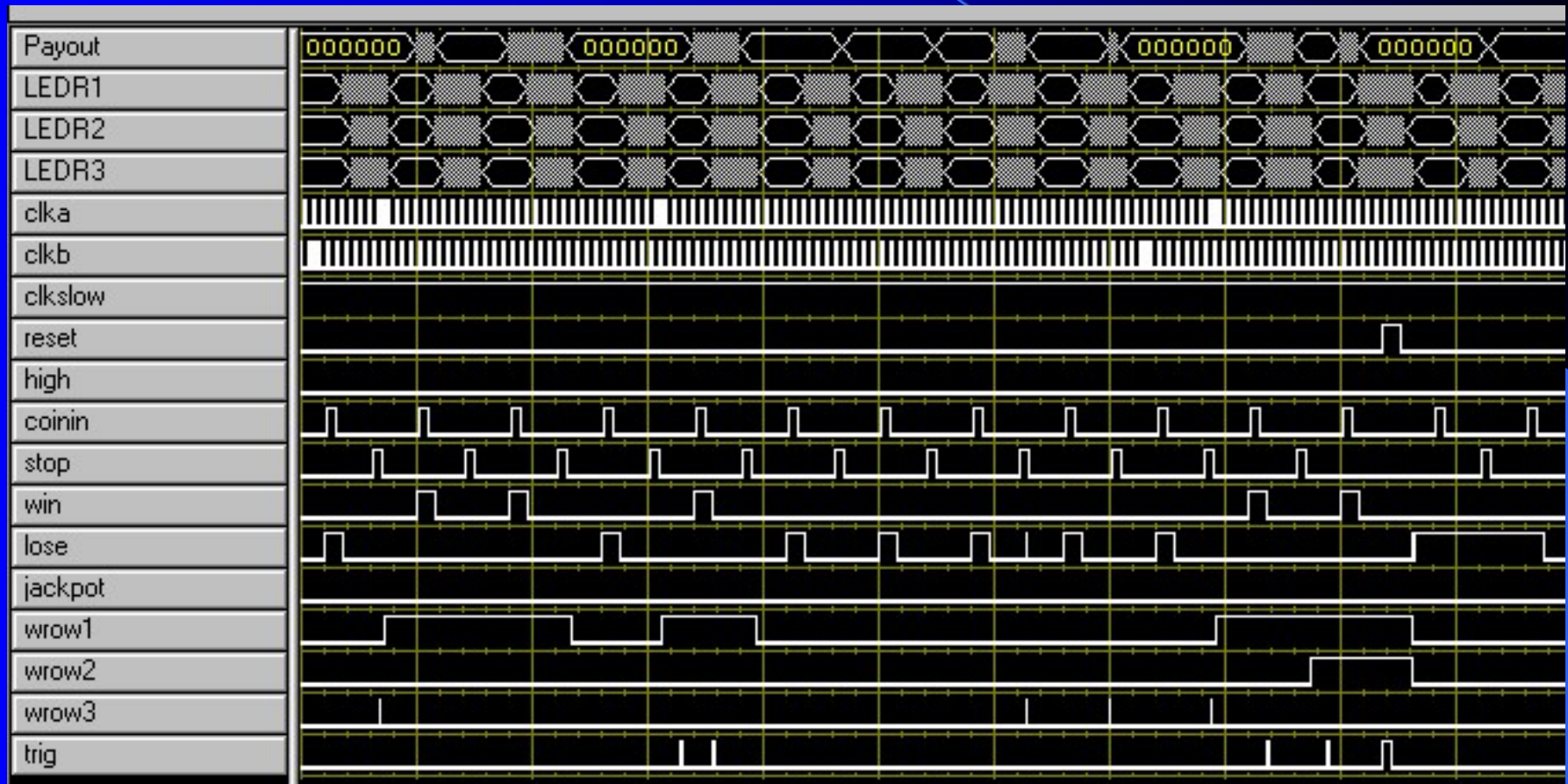
- Success! All chips work
- 6 Test Vectors on Omnilab
- Agreement with previous results
- Able to run at max. Omnilab frequency
- Control
- RNG
- Jackpot and Payout PLA

Speed Testing

- Designed for Speed
- Standard Inverter
 - L 20λ , W 2λ (N)
 - L 32λ , W 2λ (P)
- 0.1 ns rise/fall
- Fall Semester Speed
Estimate: 40-60 MHz



Tektronix Output



Speed Testing (Continued)

- Omnilab tested at max speed successfully
- Tektronix Testing:
 - 8ns per event (32ns per clock period)
 - 31.25 MHz
 - Full Functionality of Outputs
- Removal of non-overlap periods

Demonstration

- 21 LEDs, 3 Octal Buffers, 4 Switches
- 2 Phase Clocking
 - 481 Hz Astable Multivibrator
 - No Non-Overlap Period
- Slow Clock for LED flasher
 - Astable Multivibrator
 - Variable Speed (1-10Hz usable range)

Conclusion

- Functional Test...Success
- Speed Test...Success
- Visual Output...Success

- Questions?