ATM I/O CHIP

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Basic Overview

• Our chip handles the Input/Output functions of an Automatic Teller Machine:
  – Takes input from a 12-button keypad
  – Sends output to the ATM Controller Chip and a Video Display Unit
  – Accepts input from the ATM Controller Chip
Overall “Flow” for Video Output

Introductory Screen → Account # / Password Entry → Main Menu → User Mode

Manager Mode

Deposit / Withdrawal
Balance Inquiry
Add / Remove User
Change Password
Interactivity with ATM Controller Chip

• We send them:
  – (Processed) 8-bit keypad input

• They send us:
  – 8-bit dollar amounts in binary (later converted to BCD for output to video display)
  – 8-bit passwords and checksums
Operational Overview
Components

• Major components used in design:
  → – BCD/Binary Converters
  – Control PLAs
  – Off-board Memory
  → – Communication Logic
  → – Multiplexors
  → – Shift Registers
States

• Overall “flow” of design:
Timing

- Critical Component: Video Screen
- Internal Clocking is controlled by stable clock signals
- Stable clock signals generated from CPU PLA
Current Progress

• Where we are
• What’s left to do