Mastermind Testing: A Success

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Presentation Outline

- Functional description
- Test patterns
- Functional test results
- Speed test results

Functional Description

- Key and guess
- Scoring
- Guess counter
- Low score (no. of guesses)
- MUXing of output
- Resets: game vs. lowscore

Test Patterns

Three concatenated games

- Win in two guesses
  - Low score is two
- Lose after exhausting guest counter
  - White and black score combinations
- Win in one guess
  - Low score is one
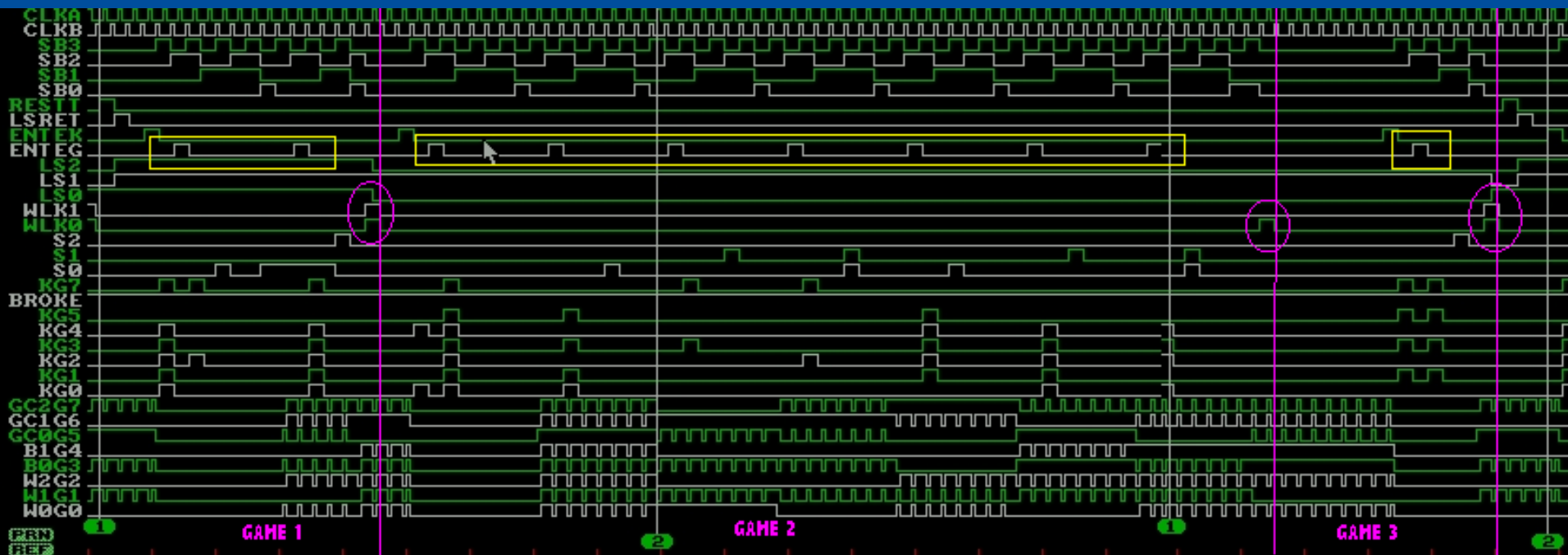
Functional Test Results

All five chips fully functional

Guess counter

Win/lose/keep guessing

Score pins

Low score 7-->2-->1

Speed Test Results

- Non-overlapping clocking scheme
  - Multiplexer fails at 8.5 MHz (34 MHz)

- Aggressive clocking scheme
  - Fails at 8.5 MHz (17 MHz)

Spice simulation predicted 67 MHz

Possible Improvements

- Redesign multiplexer

- Develop graphical user interface