Customer Presentation
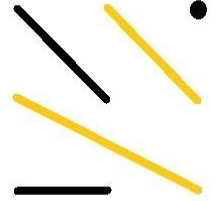
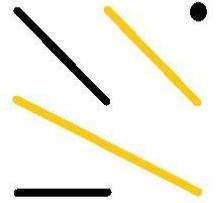# Agenda

- Mission Statement

- Product Offering

- Product Examples

- Timeline

Proprietary Confidential
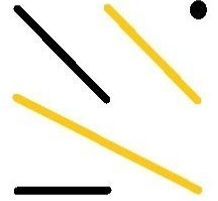
Legal Statement
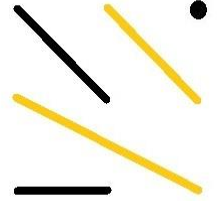
- All designs contained herein are protected under United States Patent/Copyright/Trademark/Trade Secret/Unfair Competition Laws

Mission Statement

To provide the very best
communication solutions
to customers requiring secure
communication
technologies for transmission
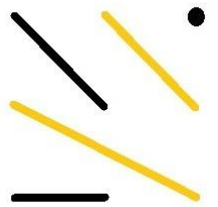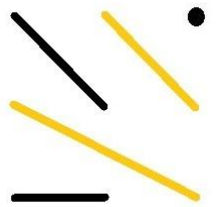over mainstream or evolving
networks.

Product Offering

Semiconductor Intellectual Property

- Gold Code Generators
- Auto-Correlation
- Cross-Correlation
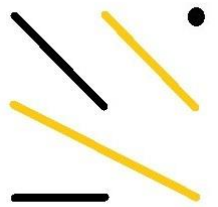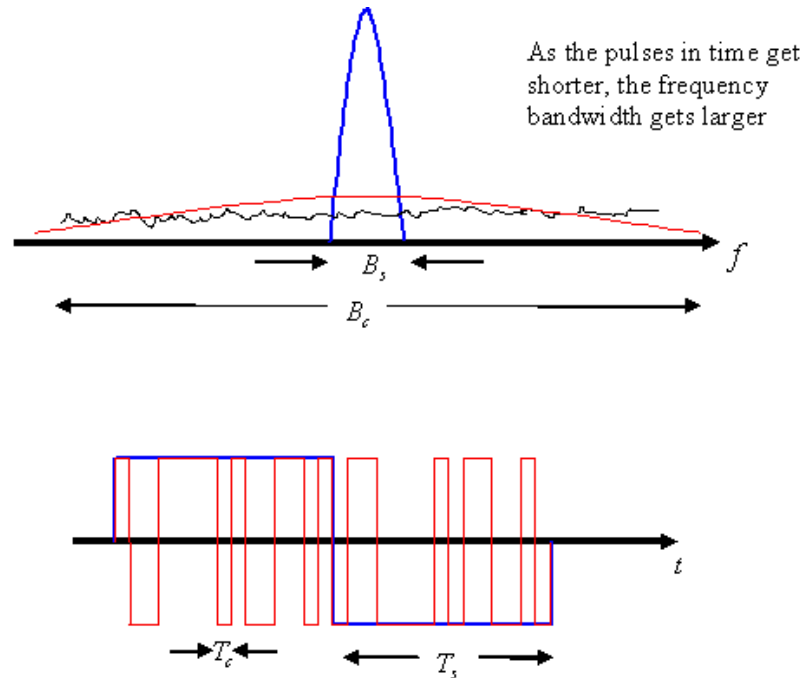
Product Offering

Gold Codes

Product Offering

- Gold Code Generator Peripheral

- Used for a variety of secure communication methods

- Widely used in Spread Spectrum Communications

    - Direct Sequence Spread Spectrum (DSSS)

    - Frequency Hopping Spread Spectrum (FHSS)

    - Code Division Multiple Access (CDMA)
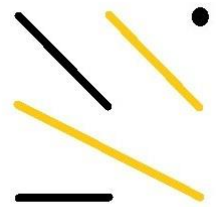
Proprietary Confidential
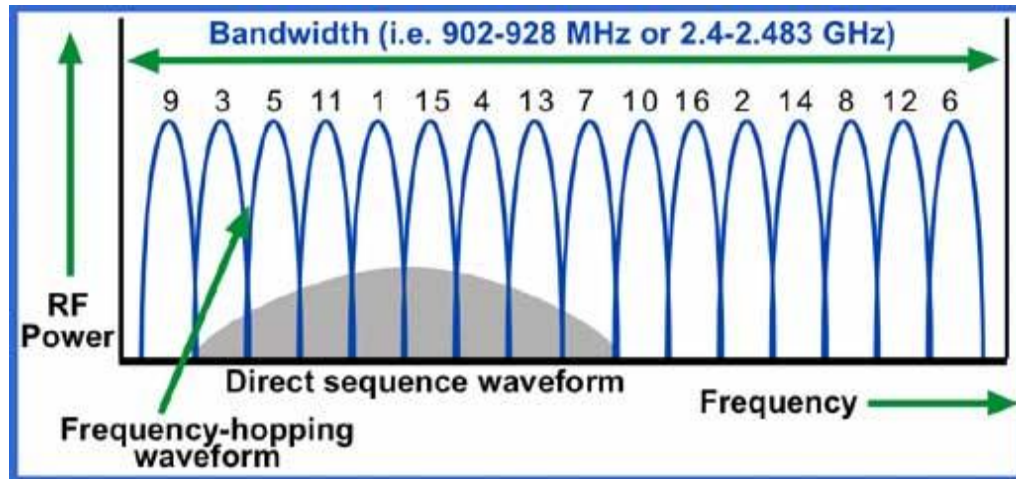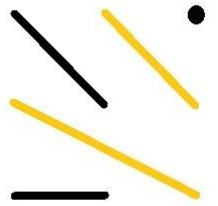
Product Offering

- Direct Sequence Spread Spectrum (DSSS)

Source: National Instruments

Product Offering

- Frequency Hopping Spread Spectrum (FHSS)

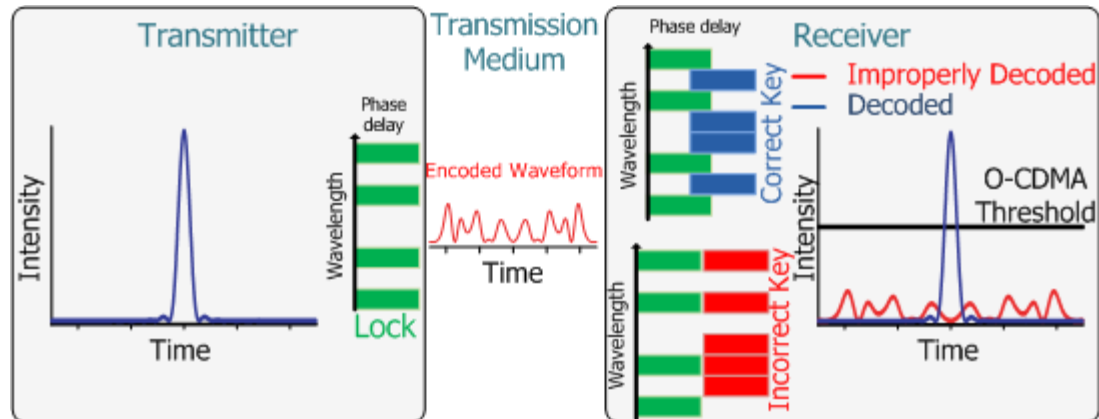http://www.data-linc.com/

Product Offering

- Code Division Multiple Access (CDMA)

http://sierra.ece.ucdavis.edu
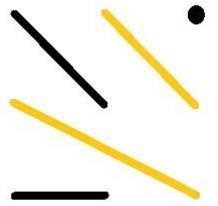
Product Offering

- Aurelii Comunications Gold Code Peripheral
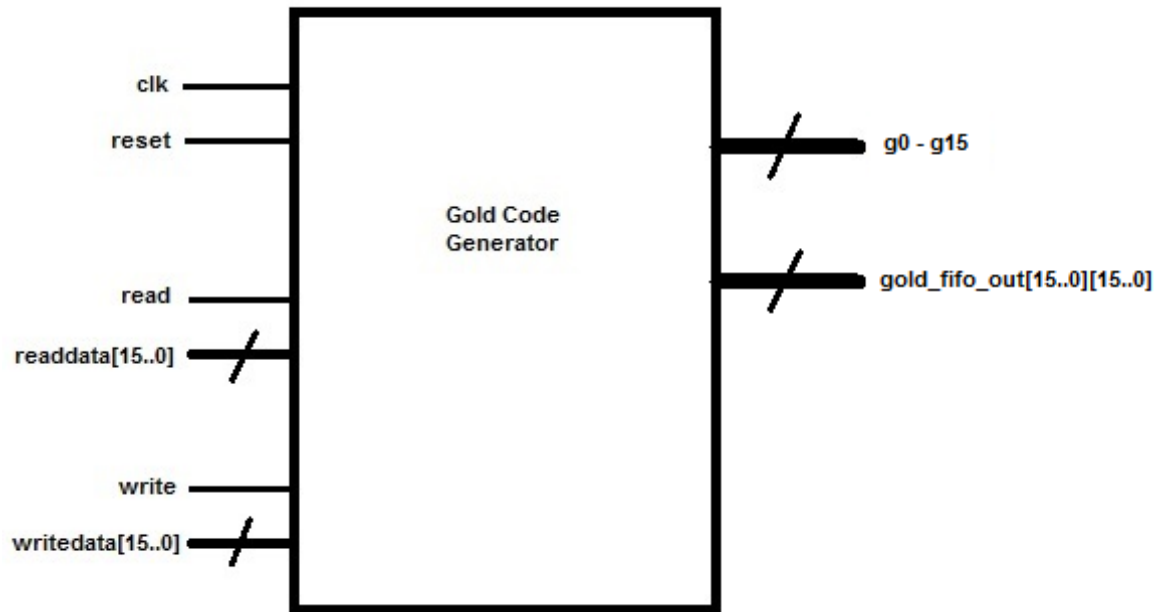
Gold Code Generator Block Diagram

Proprietary Confidential

Product Offering
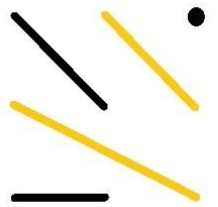
Gold Code Generator Peripheral
Features

- 5 bit Fibonacci Linear Feedback Shift Registers
- Fixed 5 bit Register Contents for Pseudorandom (PN) Sequence 0
- Variable 5 bit Register Contents for Pseudorandom (PN) Sequence 1
- 16 Channel Serial Gold Code Output
- Global Output Enable for all Gold Code Channels
- Local Output Enable for all Gold Code Channels
- Global Enable for all Gold Code Channels
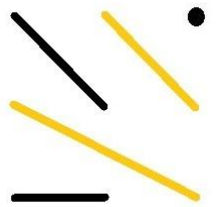- Local Enable for all Gold Code Channels

Product Offering
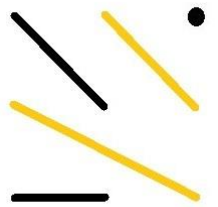
Gold Code Generator Peripheral
Features

- 5 bit Address and 16 bit Microprocessor Interface

    - 4 bit PN Sequence 1 Initial Contents
    - 4 bit Control and Status Register
    - 5 bit PN 0 Readback
    - 5 bit PN 1 Readback
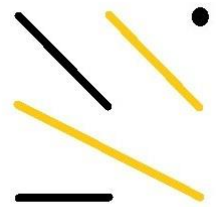   - Global Enable
    - Global Output Enable
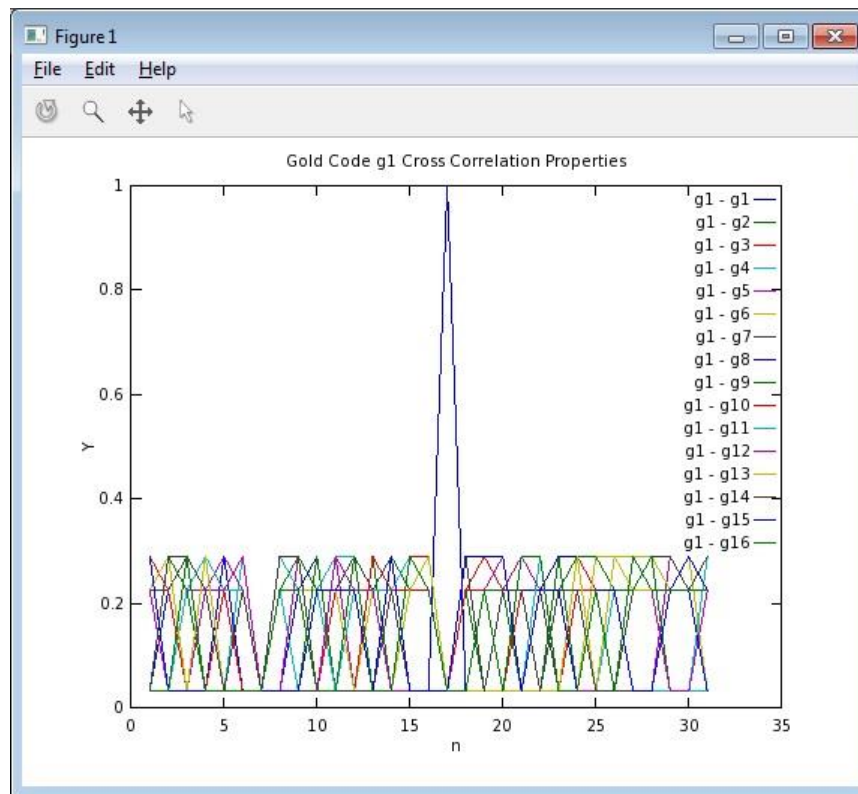
Proprietary Confidential

Product Offering

Gold Code Generator Peripheral
Features

- 16 bit Output for FIFO Interface

  – 5 bit PN Sequence 0 Registers
  – 5 bit PN Sequence 1 Registers
  – 5 bit Gold Code Registers
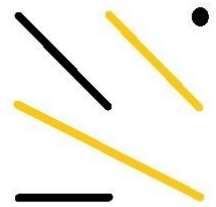 – 1 bit Gold Code Output

Product Offering

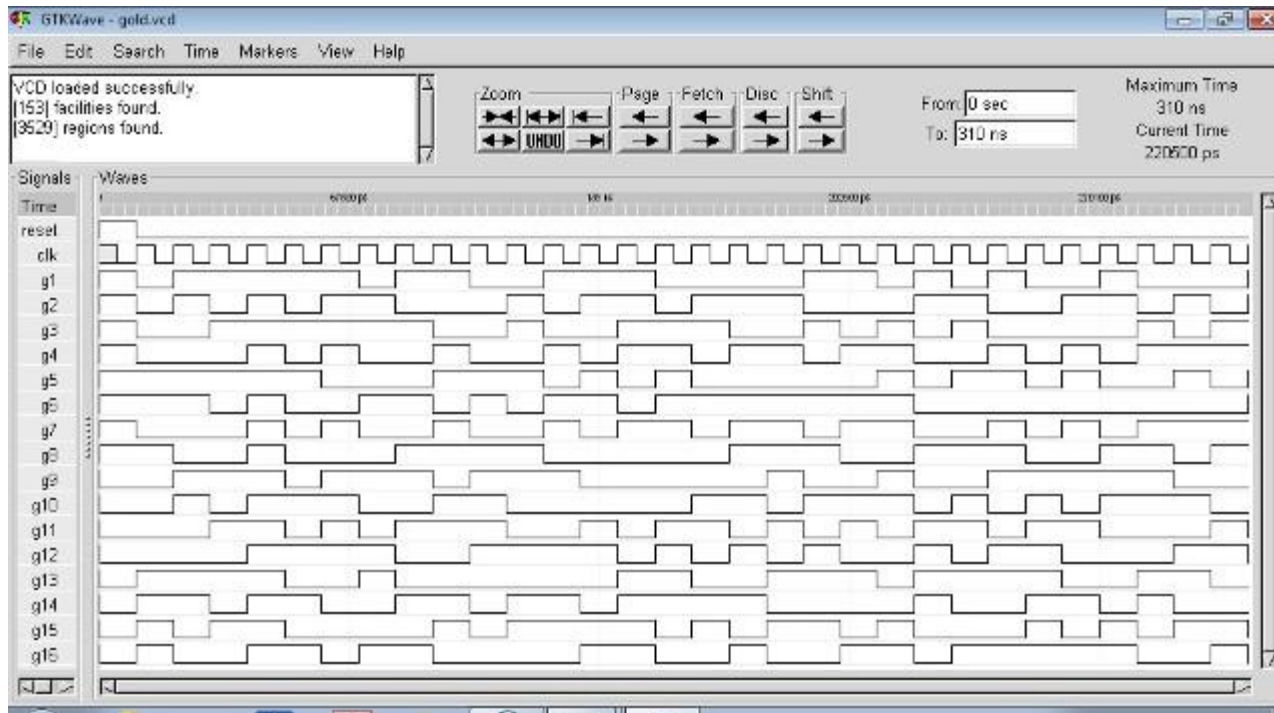## Aurelii Comunications Gold Code Peripheral

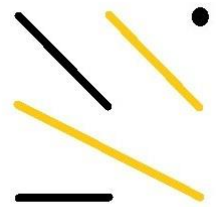Gold Code g1 Cross Correlation Properties

Product Offering

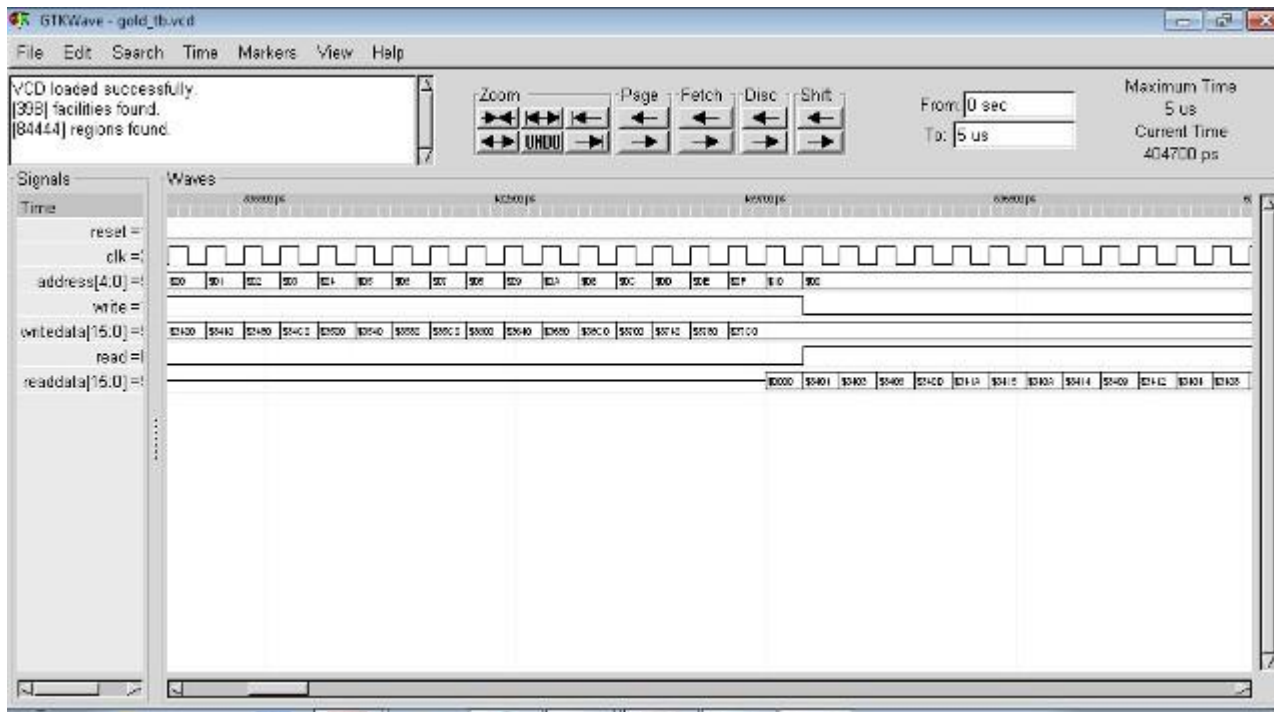## Aurelii Comunications Gold Code Peripheral

Gold Code Peripherial Output Waveforms (16 Channels – 5 Bit LFSR)
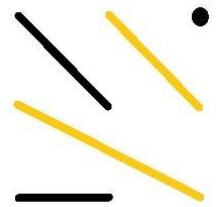
Product Offering

Aurelii Comunications Gold Code Peripheral
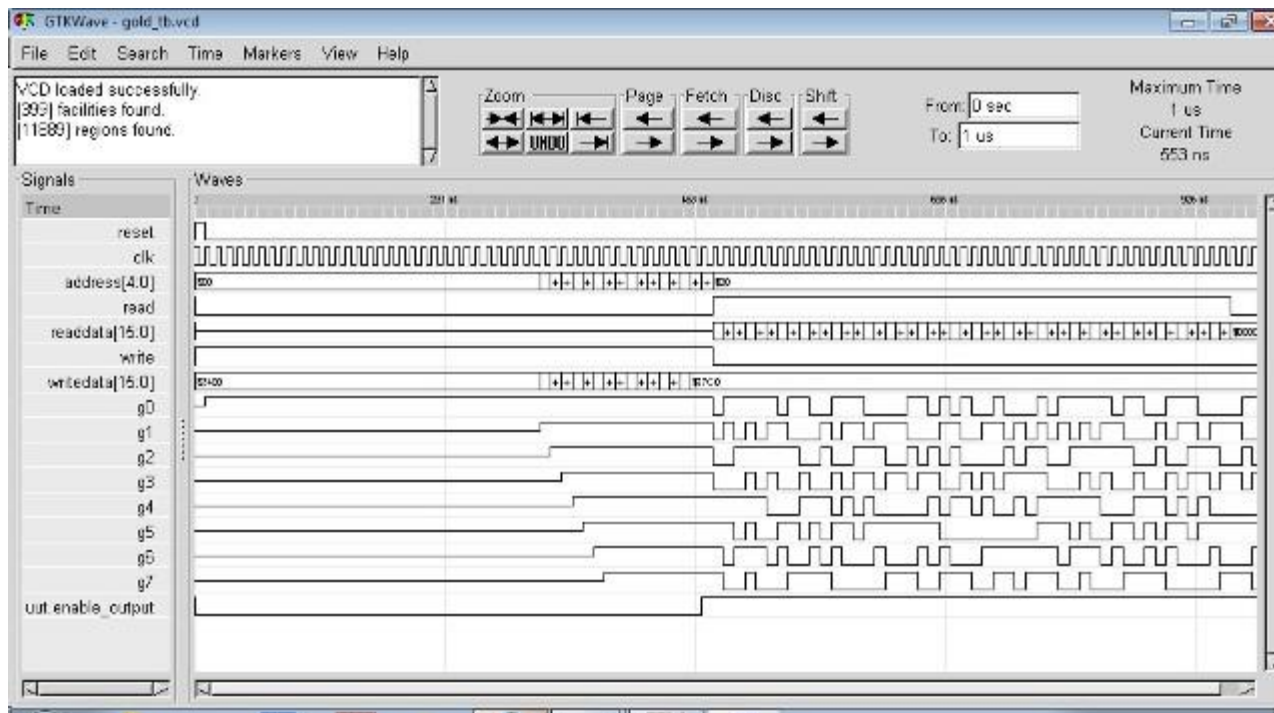

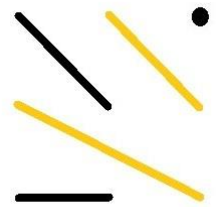Microprocessor Interface with Read/Write illustrations

Product Offering
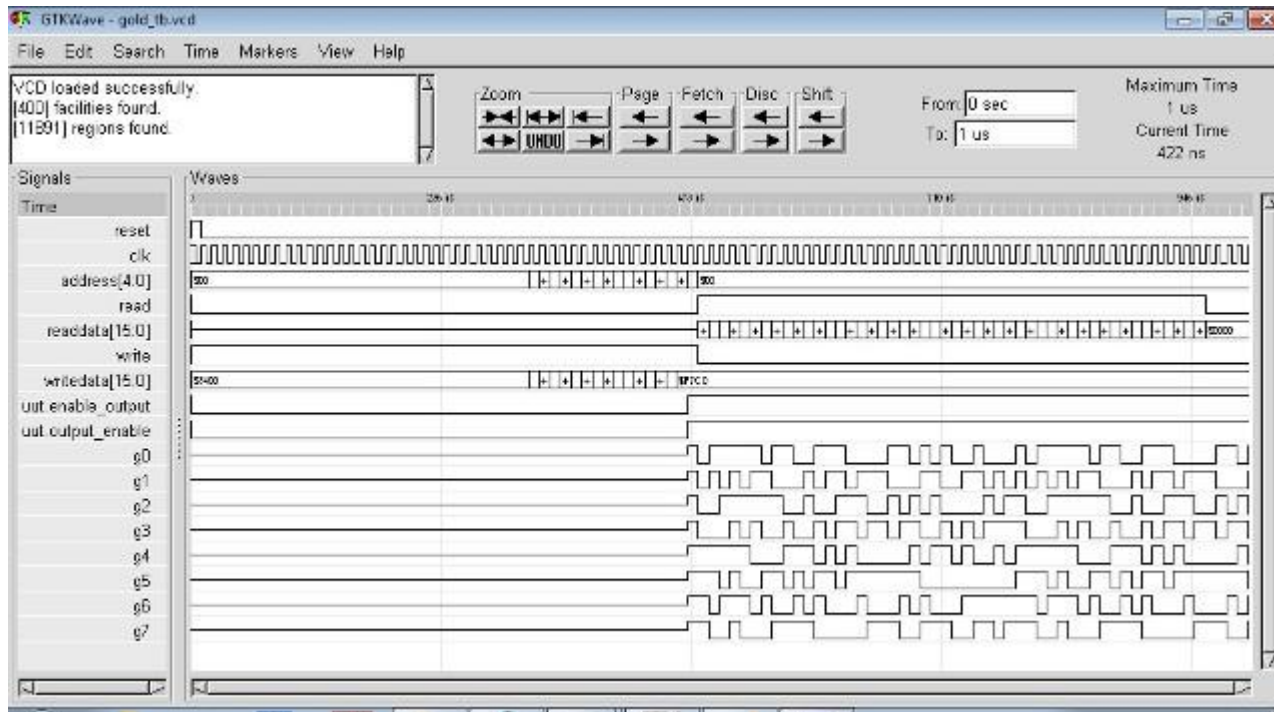
Aurelii Comunications Gold Code Peripheral

Gold Codes being enabled as a group and tri stated individually
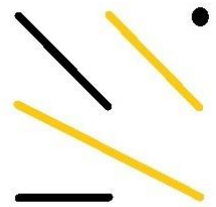
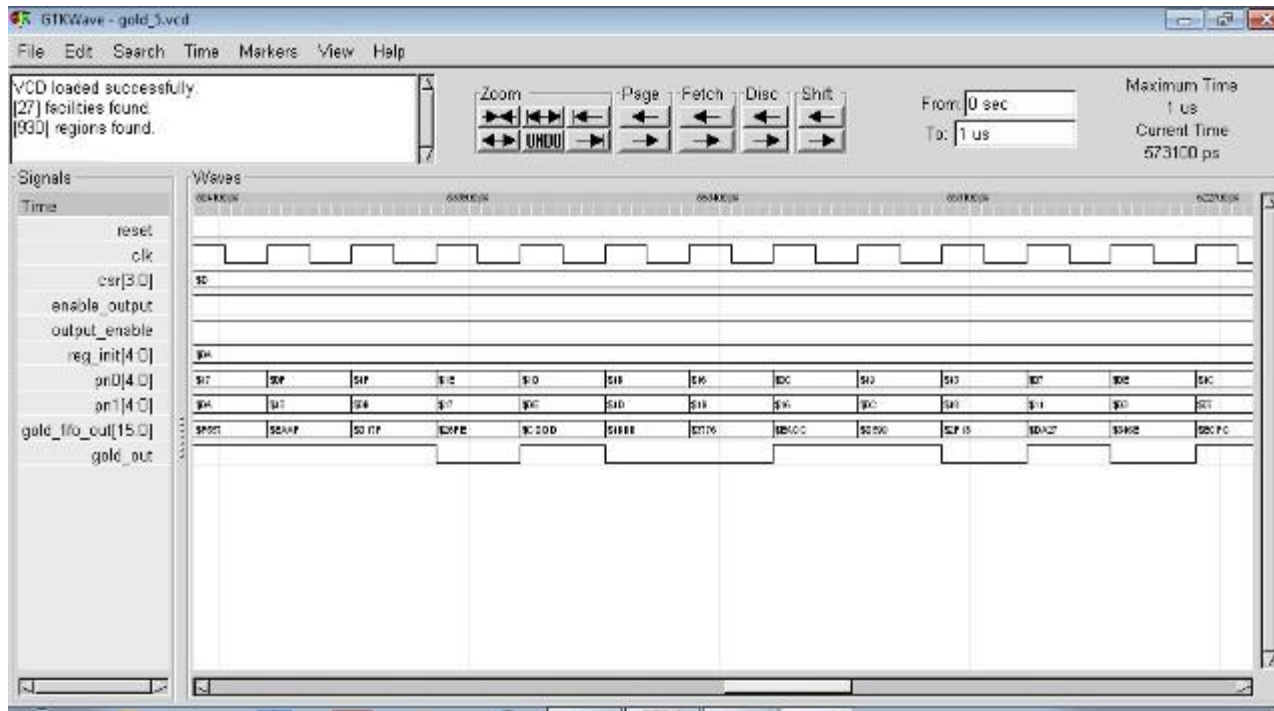# Product Offering

Aurelii Comunications Gold Code Peripheral
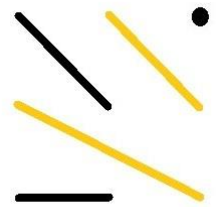

Gold Code channels being tri stated as a group

Proprietary Confidential

Product Offering

Aurelii Comunications Gold Code Peripheral

Parallel FIFO Interface – Single Channel

Proprietary Confidential
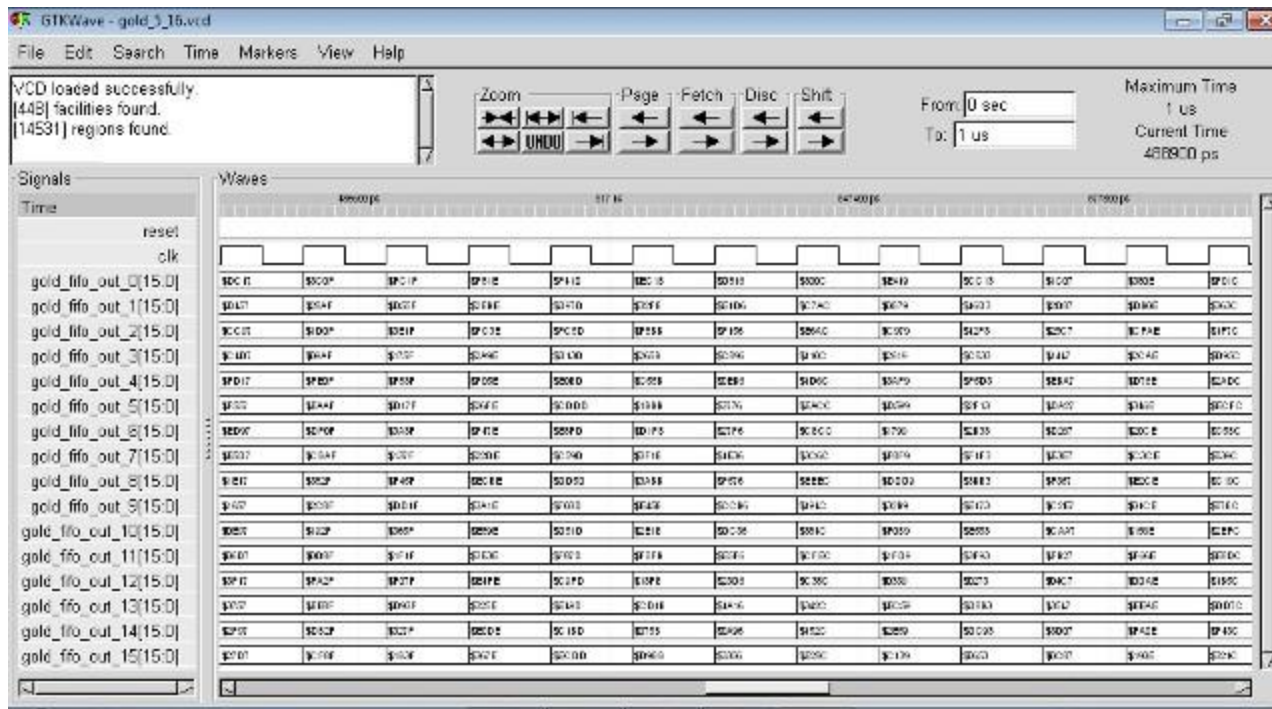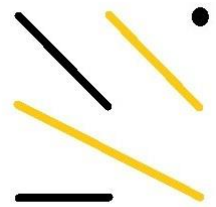
Product Offering

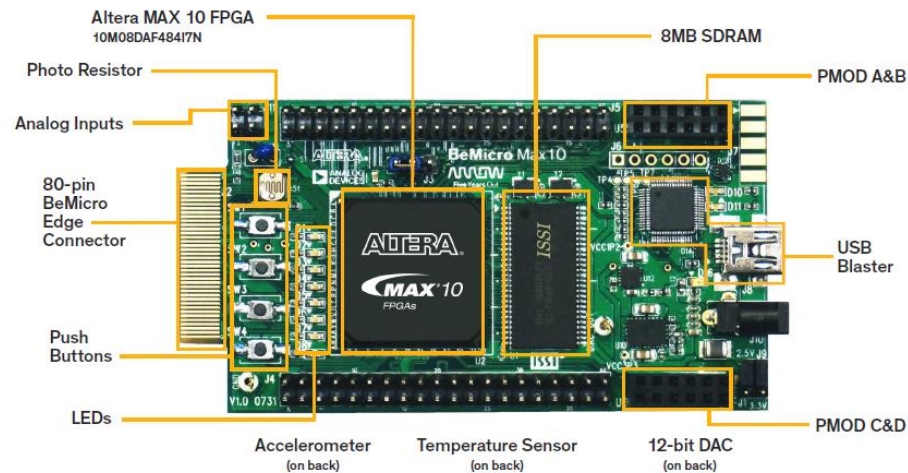## Aurelii Comunications Gold Code Peripheral

16 Channel 16 bit Gold Code Output FIFO Interface
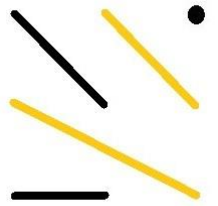
Product Implementation
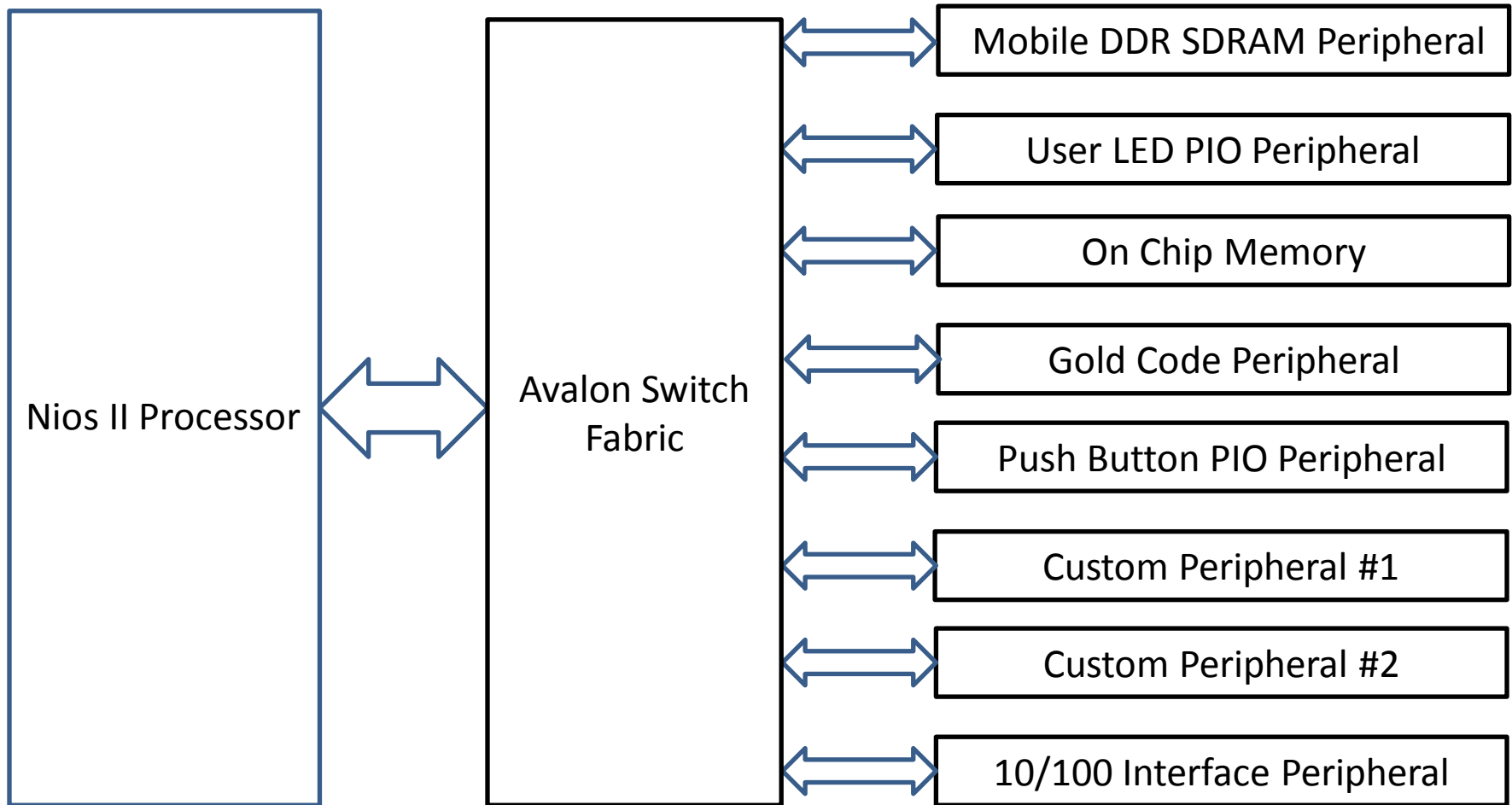
Altera FPGAs

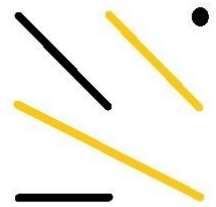Altera BeMicro MAX 10 Development Kit

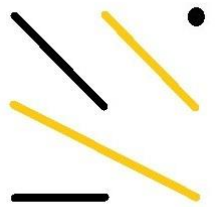# Product Implementation

Altera FPGAs

Altera DECA MAX 10 Development Kit

Product Implementation

Example Gold Code Peripheral System

Aurelii Communications

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info@aureliicommunications.com