

# DDR4 DIMM Interposer

For use with Agilent Logic Analyzers

# FuturePlus Systems

Power Tools For Bus Analysis



- DDR4 2133 MT/s bus analysis
- Used with Agilent U4154A logic analyzer
- Includes protocol-decode software, probe configuration software, and automatic logic analyzer configuration software
- Interposer design does not consume a slot
- Includes Clock Qualifier feature if needed to allow accurate testing in 2 rank systems



FS2501B DDR4 DIMM 2133 Interposer

## Key Features

- Quick and easy connection between the DDR4 DIMM SDRAM memory bus connector and Agilent logic analyzers
- Complete and accurate 2133 MT/s state and timing analysis up to 12.5 GHz
- Compatible with all 284-pin DDR4 SDRAM DIMM's up to 2133 MT/s.
- All signals are probed passively.
- Does not require termination adapters; they are built-in
- Registered, unbuffered, and large register DIMMs are supported.
- Burst sizes of 2, 4, or 8 are supported.
- Monitors writes only, reads only, or writes and reads.
- Quick and easy setup using Agilent Eye Scan with 5 ps resolution

## Straightforward, Reliable DDR4 2133 Analysis

The FuturePlus® FS2501B DDR4 DIMM 2133 Interposer provides a mechanical, electrical and software interface between an Agilent logic analyzer and the DDR4 connector. The FS2501 is used to design and debug computer motherboards and DIMM's incorporating DDR4 technology.

## Helping you Design Tomorrow's Computers, Today

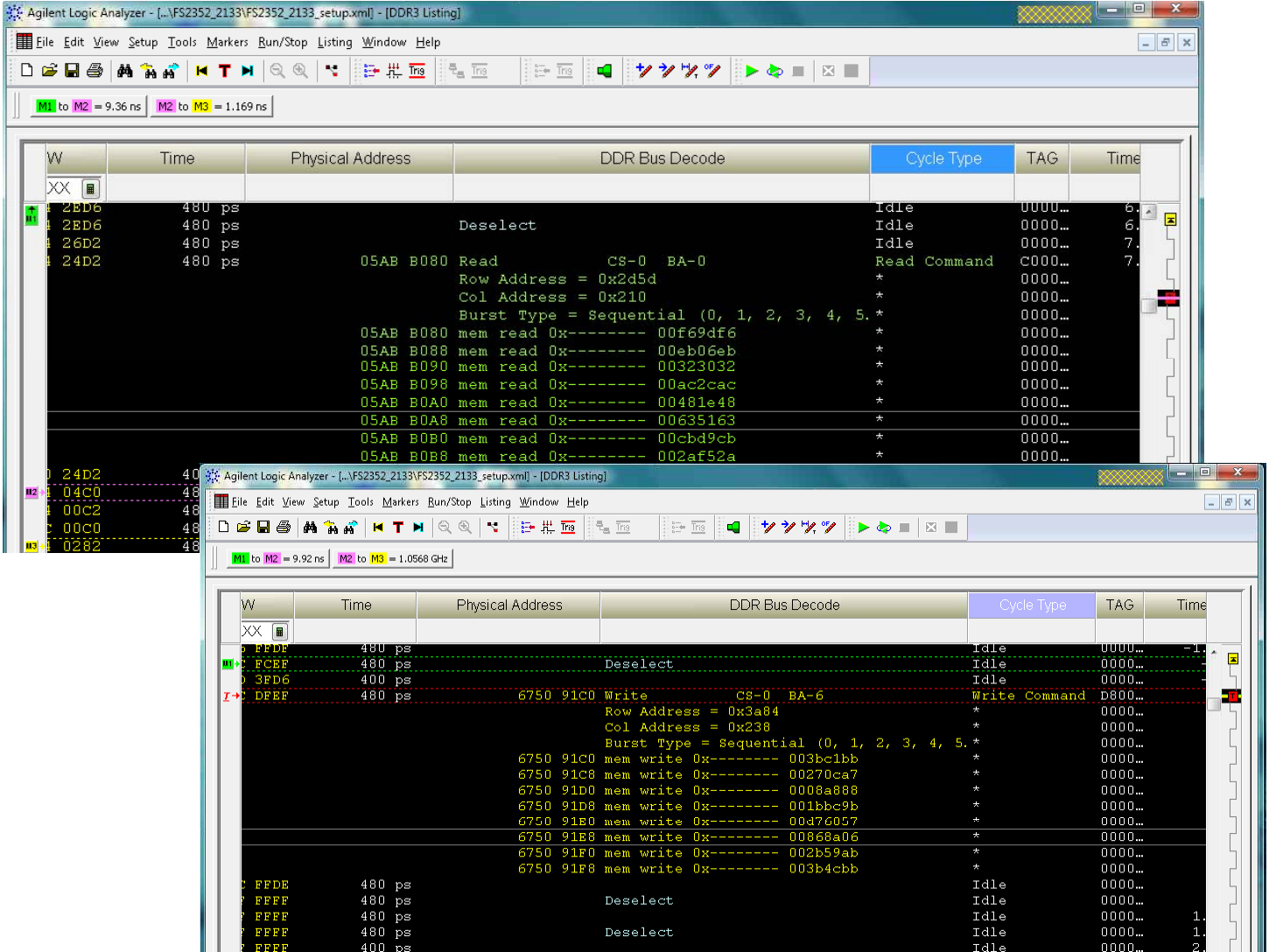
FuturePlus Systems is the technology leader in protocol analysis tools for the computer design industry. Our Interposers and software help you monitor and verify complex activities on your advanced technology computer bus design. FuturePlus systems offerings include bus-analysis solutions for most popular computer buses. Visit [www.futureplus.com](http://www.futureplus.com) for more information.



# Accurate State Analysis

The FS2501B DDR4 DIMM memory bus interposer brings bus signals to your Agilent logic analyzer via controlled impedance cables for an easy protocol analysis connection while maintaining signal fidelity.

## Accurate READ and WRITE State Capture at 2133



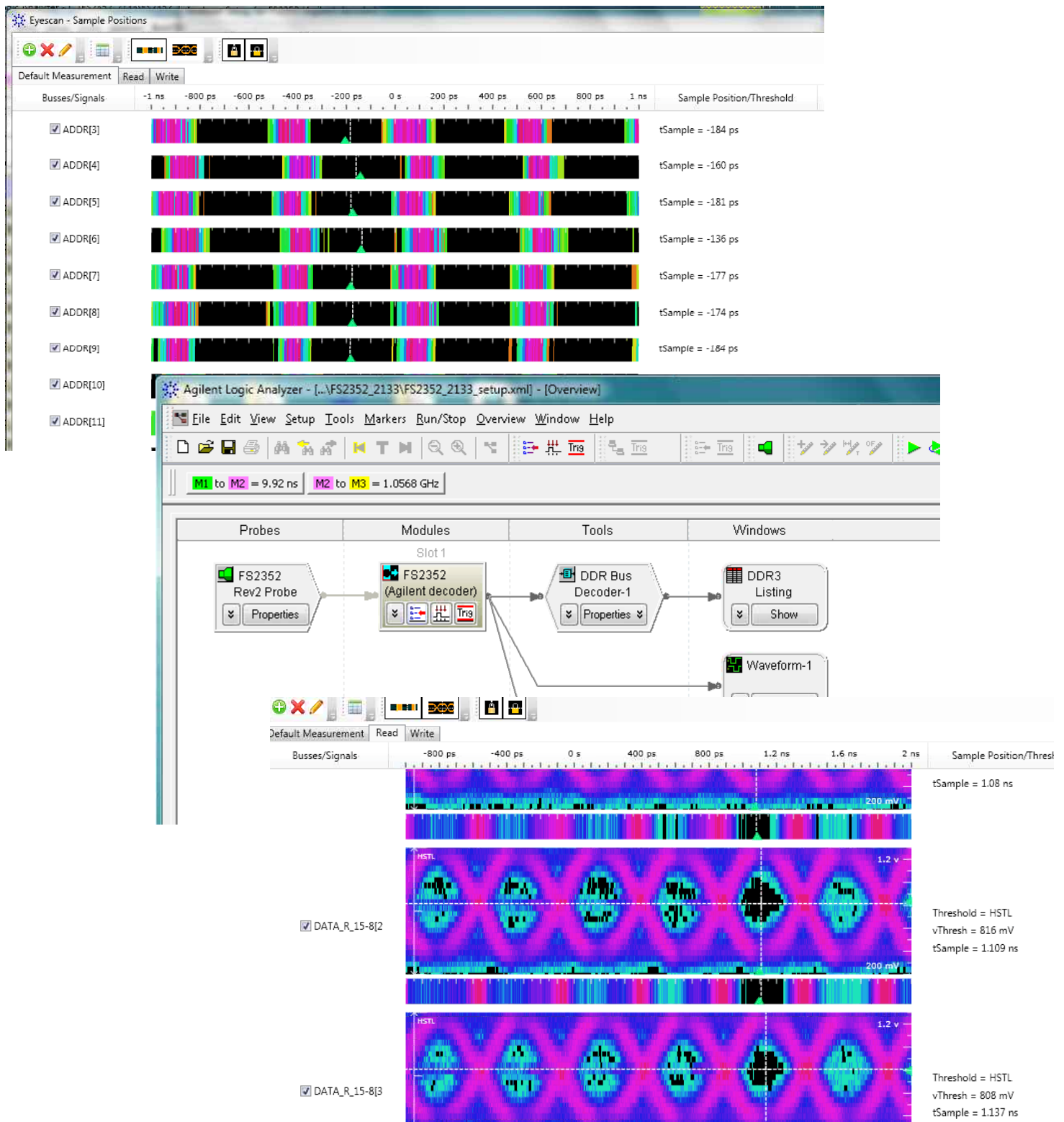
DDR3 screen shots representing the DDR4 screen shots .

The FS2501B protocol-decode software translates acquired signals into easily understood bus transactions, at the full bus speed. The Agilent logic analyzer provides extensive triggering and store qualification features. Depending on the logic analyzer's resources, the FS2501B interposer can be configured to perform State analysis of Reads or Writes, or both Reads and Writes, at 2133 MT/s.

The DDR protocol decode software executes in the logic analyzer and takes user input on system attributes such as Burst length, CAS and Additive Latency, as well as Chip Selects to decode the key DDR bus signals and present a display that lists the transaction type, address, data and command conditions. The software also supports user-defined symbols that can be easily added to the state listing display. User-selectable post-processing filters allow the acquired data to display different types of transactions indifferent colors.

## Quick and Accurate Setup

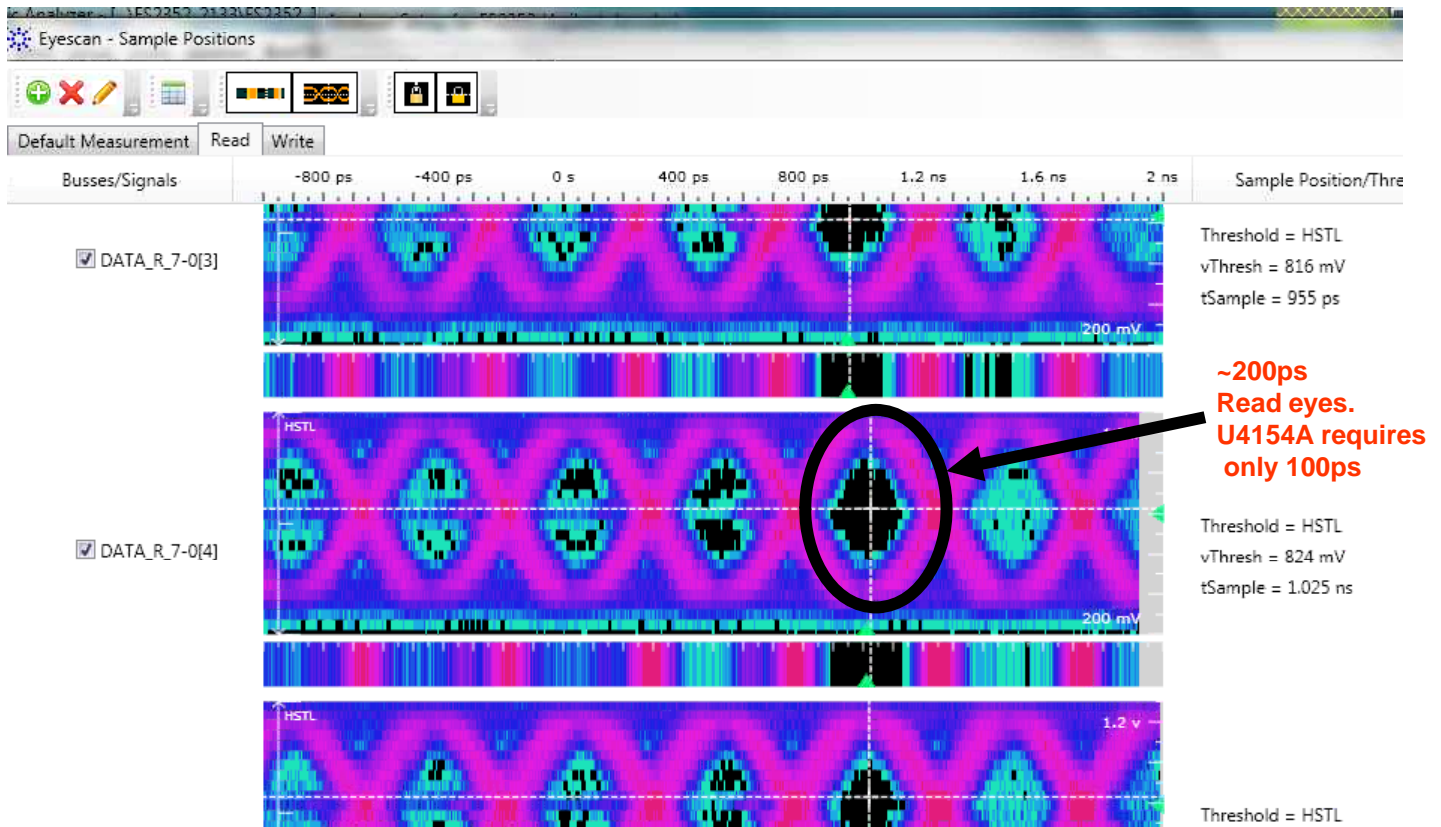
Quickly gain signal integrity insight with Agilent EyeScan technology. As timing and voltage margins continue to shrink, confidence in signal integrity becomes an increasingly vital requirement of the design verification process. EyeScan lets you quickly acquire comprehensive signal integrity information on the DDR4 bus in your design, and can provide measurements with 5 ps of resolution.



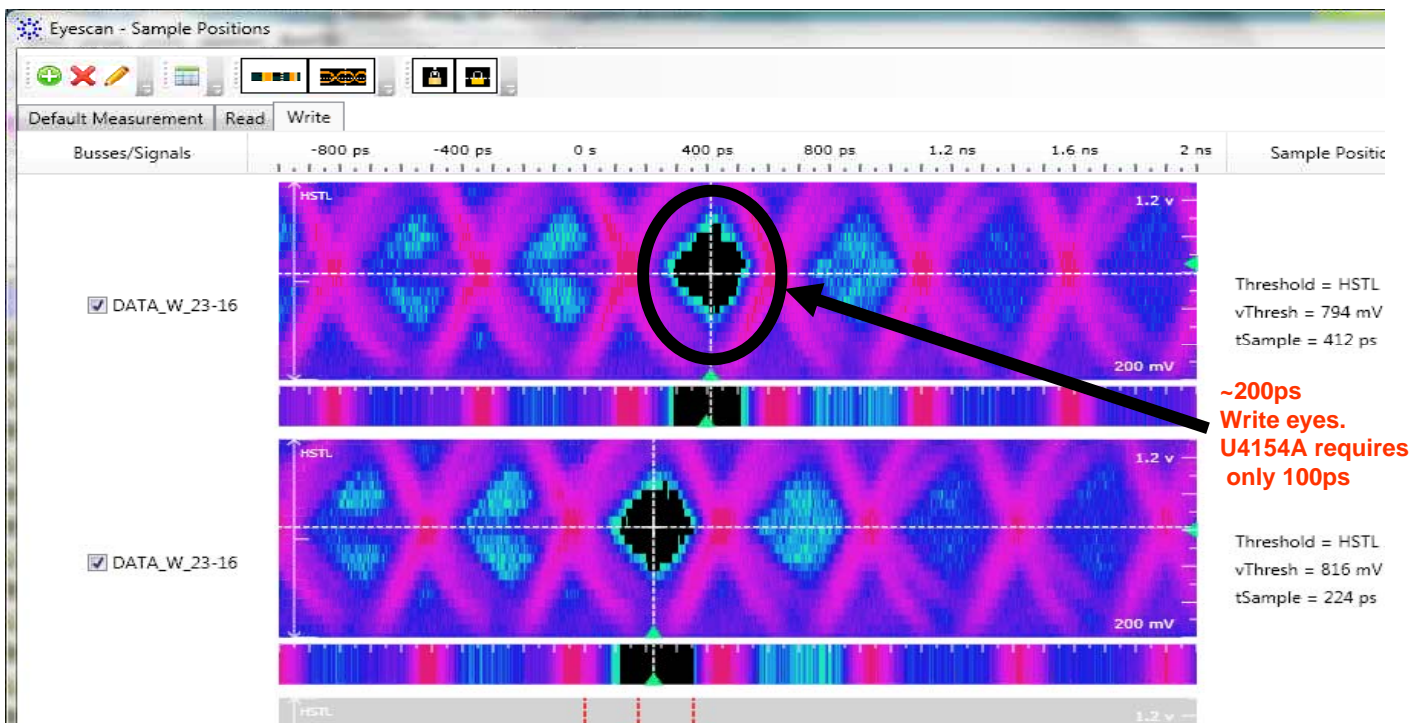
DDR3 screen shots representing the DDR4 screen shots .

# Demonstrated 2133 operation

## DDR4 READ Eyes from Eyescan Display on the FS2501B



## DDR4 WRITE Eyes from Eyescan Display on the FS2501B

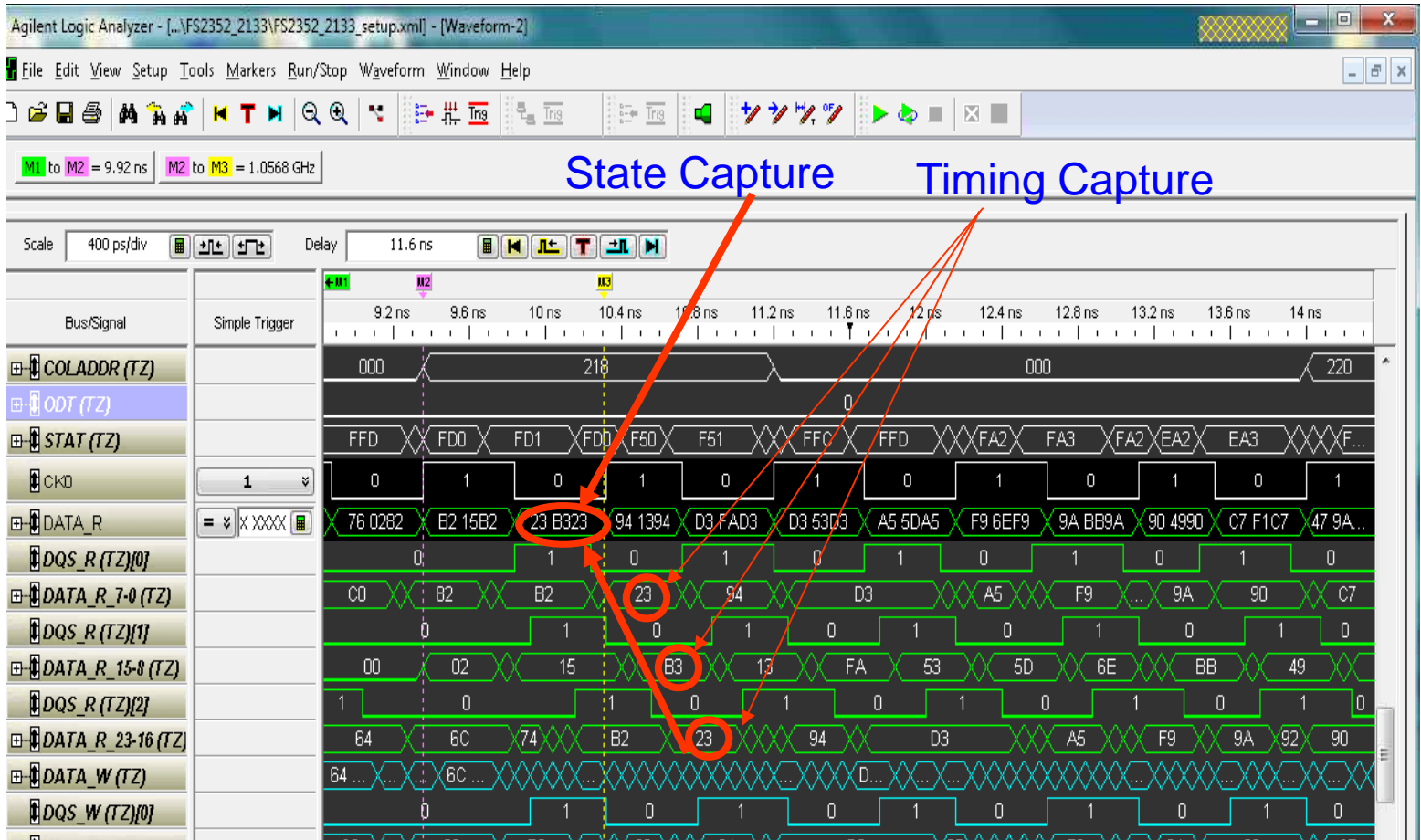


DDR3 screen shots representing the DDR4 screen shots .

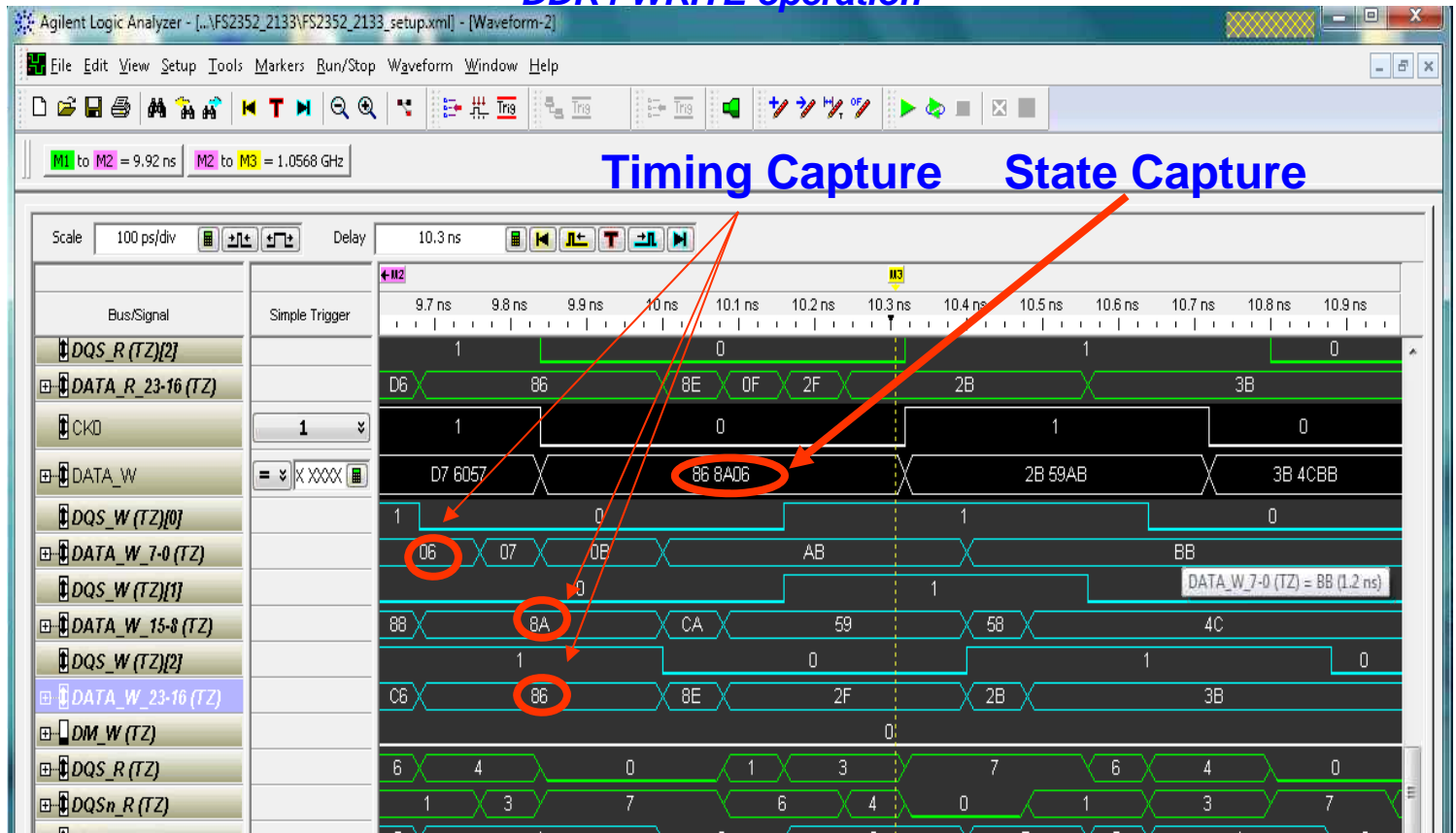
# 2133 State Capture Verified

## DDR4 READ operation

DDR3 screen shots representing the DDR4 screen shots .



## DDR4 WRITE operation



# Ordering Information

**FS2501B** – DDR4 Interposer for use with Agilent Logic Analyzers

**Software included with the FS2501B:**

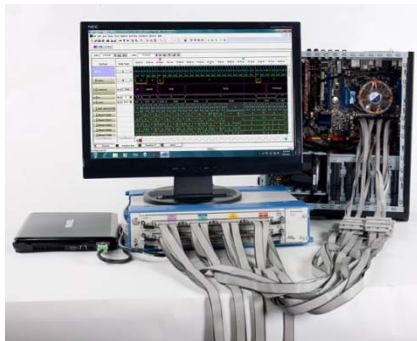
Configuration files for the Agilent logic analyzer

Protocol Decoder software, runs on the Agilent logic analyzer

## Agilent Logic Analyzer Requirements

**The FS2501B requires**

- 1 ea M9502A two-slot AXIe chassis
- 2 ea U4154A 136-channel Logic Analyzer Modules



M9502A



U4154A

### FuturePlus Systems Corporation

P.O. Box 88155  
Colorado Springs, CO 80909-8155  
Tel: 719 278 3540  
Fax: 719 278-9586  
Website: [www.futureplus.com](http://www.futureplus.com)