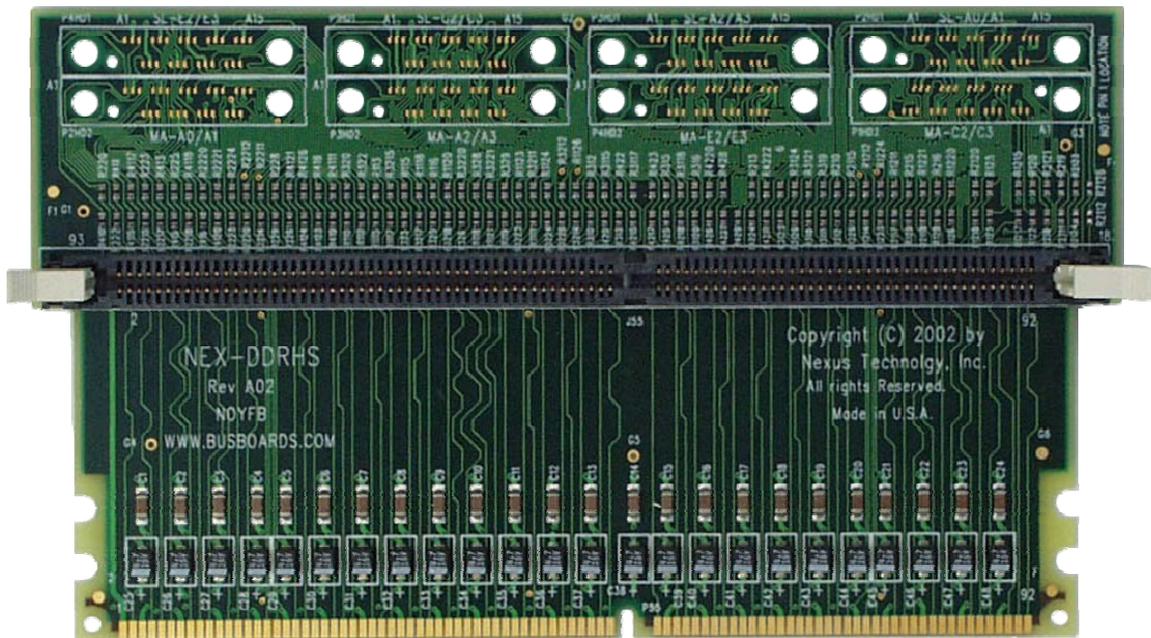


## NEX-DDRHS



- Acquisition of DDR400/333/266/200 Address/Command, Read and Write Data
- Quick and easy connection between the DDR bus and a Tektronix Logic Analyzer
- Extender design does not require a dedicated slot
- Selective Clocking reduces acquisition of idle cycles, saving acquisition memory
- Supports 184-pin Unbuffered or Registered DDR SDRAM DIMMs
- Impedance controlled
- Matched trace length design
- No active buffering of the DDR signals
- Accurate 8GHz timing analysis
- Simultaneous state and timing on every channel of the TLA
- Correlate DDR data with data from other acquisition modules
- Use the TLA's Extended iView capabilities to view any channel on an oscilloscope without re-probing

### Mirrored DDRHS Support

Use of this product along with the NEX-DDRHSM product provides the mechanical clearance necessary to simultaneously monitor two, adjacent DDR sockets. For more information please contact us or see our website at [www.nexustechnology.com/products/memory/ddr](http://www.nexustechnology.com/products/memory/ddr).

## General Description

NEX-DDRHS allows for the acquisition of Address/Command, Read and Write Data of 184-pin, unbuffered or registered DDR400/333/266/200 DIMMs.

**8Ghz Timing Analysis** available for all DDR signals

**Oscilloscope Connectivity** on any channel without re-probing via the TLA's Enhanced iView Analog Mux capability

**Selective Clocking** stores data when commands are present and for 13 clock cycles after Column Address Assertion. This results in fewer Idle cycles being stored in acquisition memory.

**Pre-Defined Symbols** for the following Command Cycles allow for easy Trigger Setup:

- Read Col Address Read
- Write Col Address Write
- Mode Register Set
- Row Address Strobe
- Precharge
- Ignore Command Data
- Burst Stop
- Refresh
- Precharge Select Bank
- No Operation

**No Dedicated Slot Required** – The logic analyzer connects above the normal DIMM height so that there is no interference with adjacent DIMMs.

The following support package(s) are included with this product:

**DDRHS** offers the ability to synchronously acquire up to 400Mhz DDR Address and Command signals on every edge of DDR CK0, CK1 or CK2. Read Data or Write Data can also be acquired - the acquisition of DDR Data requires a valid data window of approximately 625ps. This support requires one TLA7AA4 or TLA7AB4 136-channel acquisition card with the 450MHz state clocking option. Refer to Section 5.0 for further information. The DDRHS support is usable with a TLA7XX-series Logic Analyzer only, and the TLA must be running V4.2 or later of the TLA Application Software.

**DDRHS-RW** requires two merged TLA7AA4 or TLA7AB4 136-channel acquisition cards. This support is designed to give the user the ability to acquire up to 400MHz DDR Read and Write data. For this support to work, both merged cards must have the 450MHz state clocking option. Again, refer to Section 5.0 for further information. The DDRHS-RW support is usable with a TLA7XX-series Logic Analyzer only, and must be running V4.2 or later of the TLA Application Software. This software also post-processes the acquisition to display valid cycle information to the user.

## LA Support / Configuration

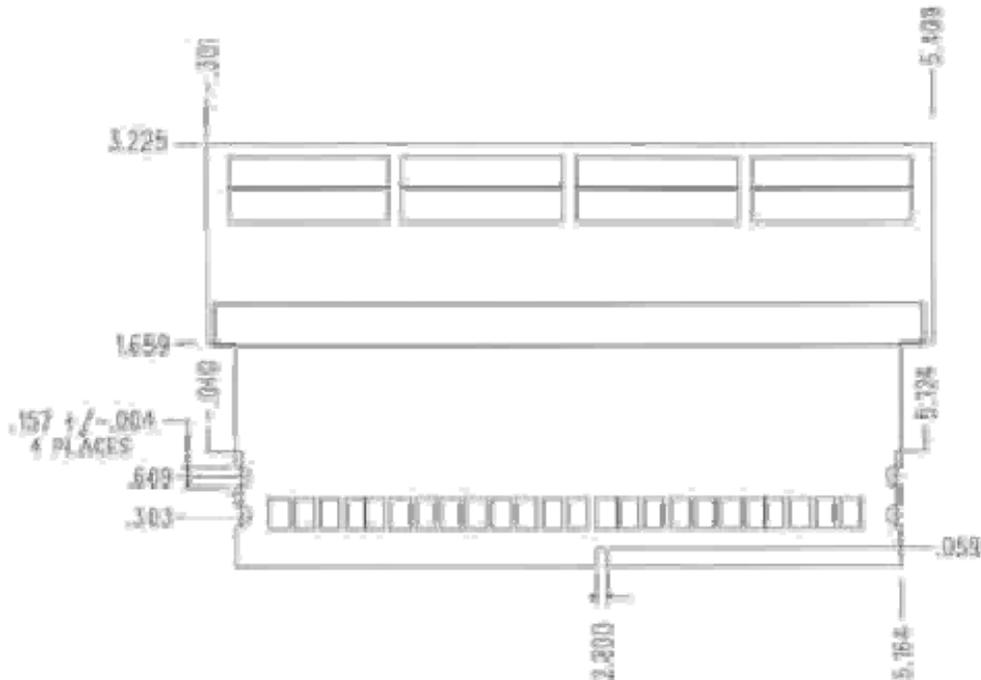
Acquisition Type	200 MHz	266 MHz	333 MHz	400 MHz	TLA7xx4 Module Count
Timing Only	X	X	X	X	1
Read <b>or</b> Write	X	X	X	X	1
Read <b>and</b> Write	X	X	X	X	2, merged

A TLA700 equipped with one 450MHz state speed acquisition module (TLA7AA4 or TLA7AB4 card) with four P6860 probes is required for DDR Read **or** Write data acquisition.

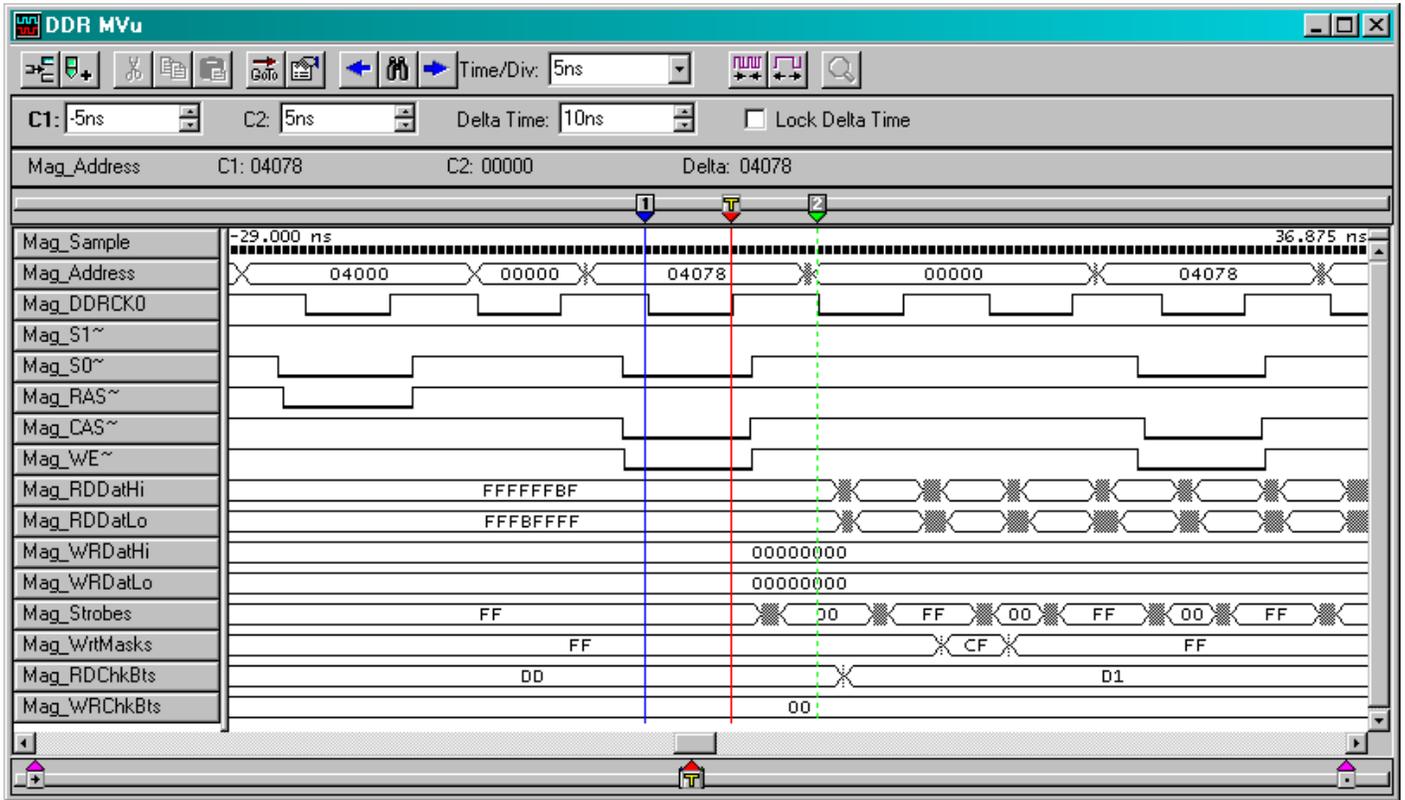
A TLA700 equipped with two, merged, 450MHz state speed acquisition modules (TLA7AA4 or TLA7AB4 cards) with eight P6860 probes are required for DDR Read **and** Write data acquisition.

8GHz MagniVu Timing and Enhanced iView Analog Mux capabilities are available with either configuration.

## Mechanical Outline



# Timing Display



# State Displays

Sample	DDRHS-RW Address	DDRHS-RW RDDatHi	DDRHS-RW RDDatLo	DDRHS-RW WRDatHi	DDRHS-RW WRDatLo	DDRHS-RW Mnemonics	Timestamp
	0002B	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF	Normal Operation Latency = 2 Burst Type = Interleaved Burst Length = 8	
	0002B	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF		
	0002B	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF		
	0002B	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF		
30	04000	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF	MRS - MODE REGISTER SET (S0~) Reserved	2.122,221,144,750 s
	04000	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF		
31	04000	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF	MRS - MODE REGISTER SET (S0~) Normal MRS	168.375 ns
	04000	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF	Operating Mode = Reserved Latency = Reserved	
	04000	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF	Burst Type = Sequential Burst Length = Reserved	
	04000	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF		
	04000	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF		
32	0002B	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF	MRS - MODE REGISTER SET (S0~) Normal MRS	24.883,125 us
	0002B	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF	Normal Operation	
	0002B	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF	Latency = 2	
	0002B	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF	Burst Type = Interleaved	
	0002B	FFFFFFFB	FFFBFFFF	FFFFFFFB	FFFBFFFF	Burst Length = 8	

DDR400 MRS Cycle

Sample	DDRHS-RW Address	DDRHS-RW R0DatHi	DDRHS-RW R0DatLo	DDRHS-RW WRDatHi	DDRHS-RW WRDatLo	DDRHS-RW Mnemonics	Timestamp
2024	-----	-----	-----	-----	-----	(UNKNOWN)	5.125 ns
2025	00400	-----	-----	-----	-----	PRE - PRECHARGE SELECT BANK (S0~)	4.750 ns
2026	-----	-----	-----	-----	-----	DESL - IGNORE COMMAND	5.000 ns
2027	00000	-----	-----	-----	-----	ACTV - ROW ADDRESS STROBE (S0~)	94.125 ns
2028	00000	-----	-----	-----	-----	READ - COL ADDR READ (S0~)	19.750 ns
2029	-----	-----	-----	-----	-----	DESL - IGNORE COMMAND	5.125 ns
2030	-----	-----	-----	-----	-----	DESL - IGNORE COMMAND	4.750 ns
2031	-----	-----	-----	-----	-----	DESL - IGNORE COMMAND	5.000 ns
2032	-----	F000E987	F000FEA5	-----	-----	READ DATA	4.875 ns
2033	-----	F000EF2F	F000EF6F	-----	-----	READ DATA	5.125 ns
2034	-----	F000EF2F	F000EF6F	-----	-----	READ DATA	4.750 ns
2035	-----	F000EF2F	F000EF57	-----	-----	READ DATA	5.125 ns
2036	-----	F000EF2F	F000EF6F	-----	-----	READ DATA	4.875 ns
2037	-----	F000EF2F	F000E2C3	-----	-----	READ DATA	5.000 ns
2038	-----	F000FF14	F000EF6F	-----	-----	READ DATA	4.875 ns
2039	-----	F000EF2F	F0008008	-----	-----	READ DATA	5.000 ns
2040	-----	-----	-----	-----	-----	DESL - IGNORE COMMAND	4.875 ns
2041	-----	-----	-----	-----	-----	DESL - IGNORE COMMAND	5.000 ns
2042	-----	-----	-----	-----	-----	DESL - IGNORE COMMAND	4.875 ns
2043	-----	-----	-----	-----	-----	(UNKNOWN)	5.000 ns
2044	00400	-----	-----	-----	-----	PRE - PRECHARGE SELECT BANK (S0~)	4.875 ns
2045	-----	-----	-----	-----	-----	DESL - IGNORE COMMAND	5.125 ns
2046	04000	-----	-----	-----	-----	ACTV - ROW ADDRESS STROBE (S0~)	183.000 ns
2047	04078	-----	-----	-----	-----	WRITE - COL ADDR WRITE (S0~)	19.875 ns
2048	-----	-----	-----	-----	-----	DESL - IGNORE COMMAND	5.000 ns
2049	-----	-----	-----	-----	-----	WRITE DATA	4.875 ns
2050	-----	-----	-----	-----	-----	WRITE DATA	5.000 ns
2051	-----	-----	-----	-----	-----	WRITE DATA	4.875 ns
2052	-----	-----	-----	-----	-----	WRITE DATA	5.125 ns
2053	04078	-----	-----	-----	-----	WRITE - COL ADDR WRITE (S0~)	4.875 ns
2054	-----	-----	-----	-----	-----	WRITE DATA	5.000 ns
2055	-----	-----	-----	-----	-----	WRITE DATA	4.875 ns
2056	-----	-----	-----	-----	F000----	WRITE DATA	5.000 ns
2057	-----	-----	-----	-----	-----	WRITE DATA	4.875 ns
2058	-----	-----	-----	-----	-----	WRITE DATA	5.125 ns
2059	-----	-----	-----	-----	-----	WRITE DATA	4.750 ns
2060	-----	-----	-----	-----	-----	WRITE DATA	5.125 ns
2061	04078	-----	-----	-----	-----	WRITE - COL ADDR WRITE (S0~)	4.875 ns

## Ordering / Contact Information

**Part Number** NEX-DDRHS

Includes: NEX-DDRHS adapter  
Software  
Manual

**Options** include

NEX-DDRSPA - TLA Software Plug-In for determining optimum Setup & Hold sample points.

**Postal:** Nexus Technology, Inc.  
78 Northeastern Blvd. #2  
Nashua, NH 03062

**Telephone:** 877-595-8116

**Fax:** 877-595-8118

**Email:** support@nexustechnology.com  
quotes@nexustechnology.com  
techsupport@nexustechnology.com

**Website:** [www.nexustechnology.com](http://www.nexustechnology.com)

### Placing an Order

Credit Card orders can be placed directly at 877-595-8116.  
Purchase orders can be faxed to 877-595-8118.

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