



# Memory Module Specifications

## HX421C14FB/4

4GB 512M x 64-Bit

DDR4-2133 CL14 288-Pin DIMM



### SPECIFICATIONS

CL(IDD)	14 cycles
Row Cycle Time (tRCmin)	46.5ns(min.)
Refresh to Active/Refresh Command Time (tRFCmin)	260ns(min.)
Row Active Time (tRASmin)	32.75ns(min.)
Maximum Operating Power	TBD W*
UL Rating	94 V - 0
Operating Temperature	0° C to +85° C
Storage Temperature	-55° C to +100° C

\*Power will vary depending on the SDRAM used.

### DESCRIPTION

HyperX HX421C14FB/4 is a 512M x 64-bit (4GB) DDR4-2133 CL14 SDRAM (Synchronous DRAM) 1Rx8, memory module, based on eight 512M x 8-bit FBGA components per module. Each module kit supports Intel® Extreme Memory Profiles (Intel® XMP) 2.0. Each module has been tested to run at DDR4-2133 at a low latency timing of 14-14-14 at 1.2V. Additional timing parameters are shown in the Plug-N-Play (PnP) Timing Parameters section below. The JEDEC standard electrical and mechanical specifications are as follows:

**Note:** The PnP feature offers a range of speed and timing options to support the widest variety of processors and chipsets. Your maximum speed will be determined by your BIOS.

### FEATURES

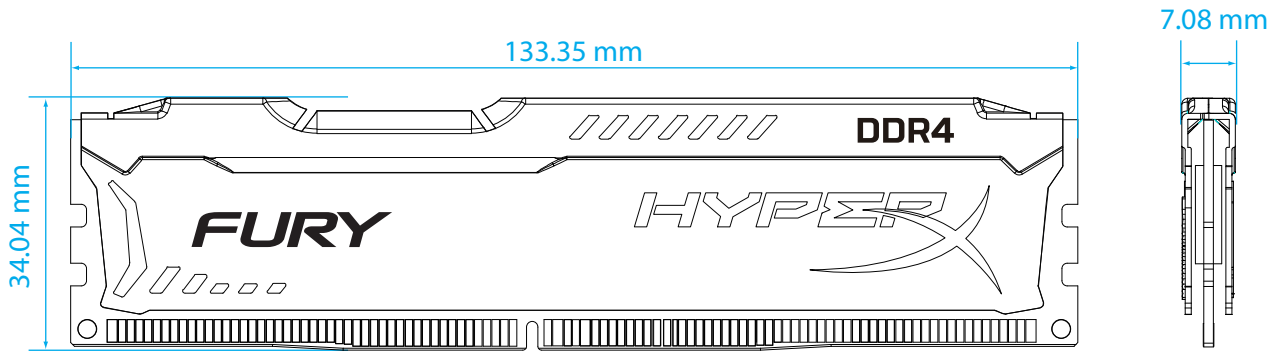
- Power Supply: VDD = 1.2V Typical
- VDDQ = 1.2V Typical
- VPP - 2.5V Typical
- VDDSPD = 2.2V to 3.6V
- Nominal and dynamic on-die termination (ODT) for data, strobe, and mask signals
- Low-power auto self refresh (LPASR)
- Data bus inversion (DBI) for data bus
- On-die VREFDQ generation and calibration
- Single-rank
- On-board I2 serial presence-detect (SPD) EEPROM
- 16 internal banks; 4 groups of 4 banks each
- Fixed burst chop (BC) of 4 and burst length (BL) of 8 via the mode register set (MRS)
- Selectable BC4 or BL8 on-the-fly (OTF)
- Fly-by topology
- Terminated control command and address bus
- Height 1.340" (34.04mm), w/heatsink

### JEDEC/XMP TIMING PARAMETERS

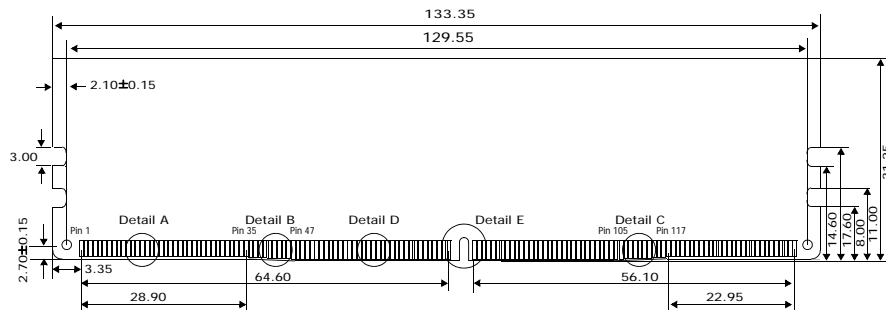
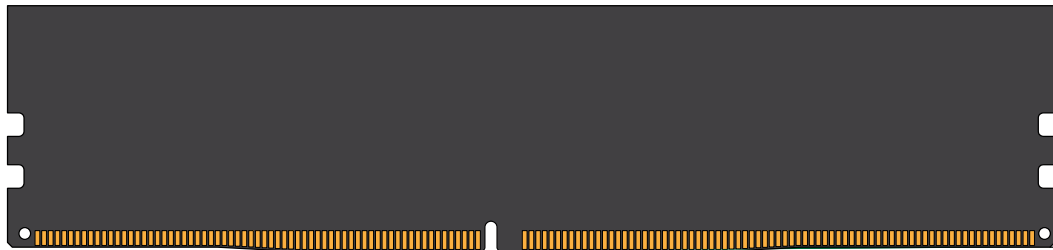
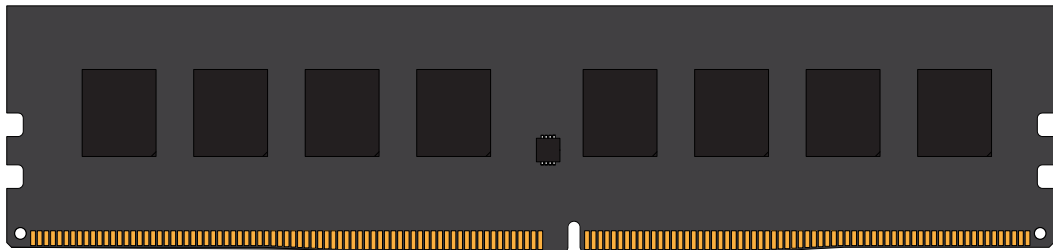
- JEDEC/PnP: DDR4-2133 CL14-14-14 @1.2V
- XMP Profile #1: DDR4-2133 CL14-14-14 @1.2V

Continued >>

### MODULE WITH HEAT SPREADER



### MODULE DIMENSIONS



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All Kingston products are tested to meet our published specifications. Some motherboards or system configurations may not operate at the published HyperX memory speeds and timing settings. Kingston does not recommend that any user attempt to run their computers faster than the published speed. Overclocking or modifying your system timing may result in damage to computer components.

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