

## Direct Rambus<sup>™</sup> RIMM<sup>™</sup> Modules 512MB 256M x 18-Bit w/ECC, 800MHz (Based on 288 Megabit RDRAM 40ns (-40) Components)

### DESCRIPTION

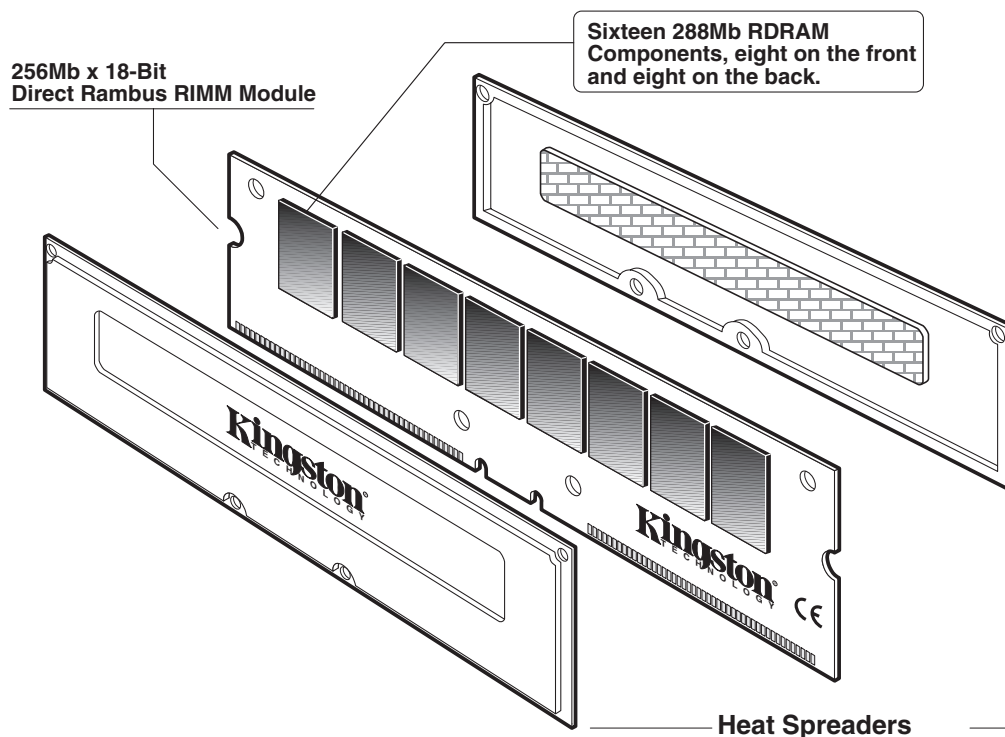
This document describes the ValueRAM<sup>™</sup> by Kingston® 256M x 18-Bit (512MB w/ECC) Direct Rambus<sup>™</sup> RIMM<sup>™</sup> Modules. The components on these modules include sixteen 40ns 288Mb Direct Rambus DRAM (Direct RDRAM<sup>™</sup>). Direct RDRAM devices are capable of sustained data transfers at 1.25ns per two bytes (10ns per sixteen bytes). I/O frequency is 800MHz. See the part number scheme below.

### FEATURES

- 184-pin 1mm pin spacing
- 512MB Direct RDRAM storage
- Gold plated contacts
- RDRAMs use Chip Scale Package (CSP)
- Serial Presence Detect support
- Operates on 2.5 volt supply (+/- 5%)
- Low power and powerdown self-refresh modes
- Separate Row and Column buses for higher efficiency

### Part Number Configuration

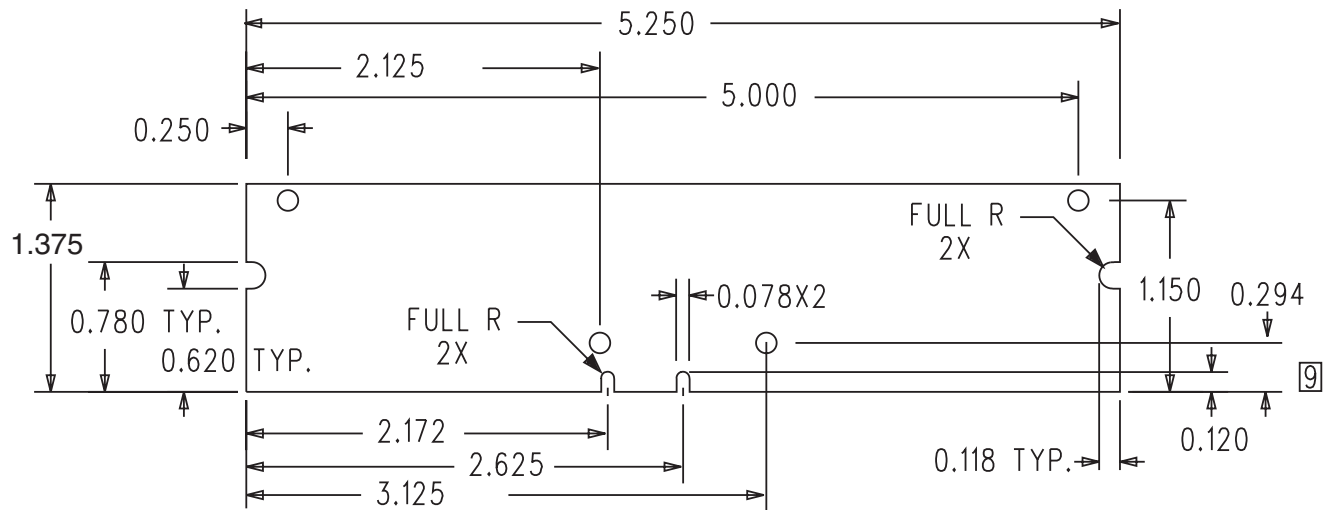
| Part Numbers     | Description                         | Components      |
|------------------|-------------------------------------|-----------------|
| KVR800A18-16/512 | 512MB, 18-Bit <b>w/ECC</b> , 800MHz | 288Mb x 16 pcs. |



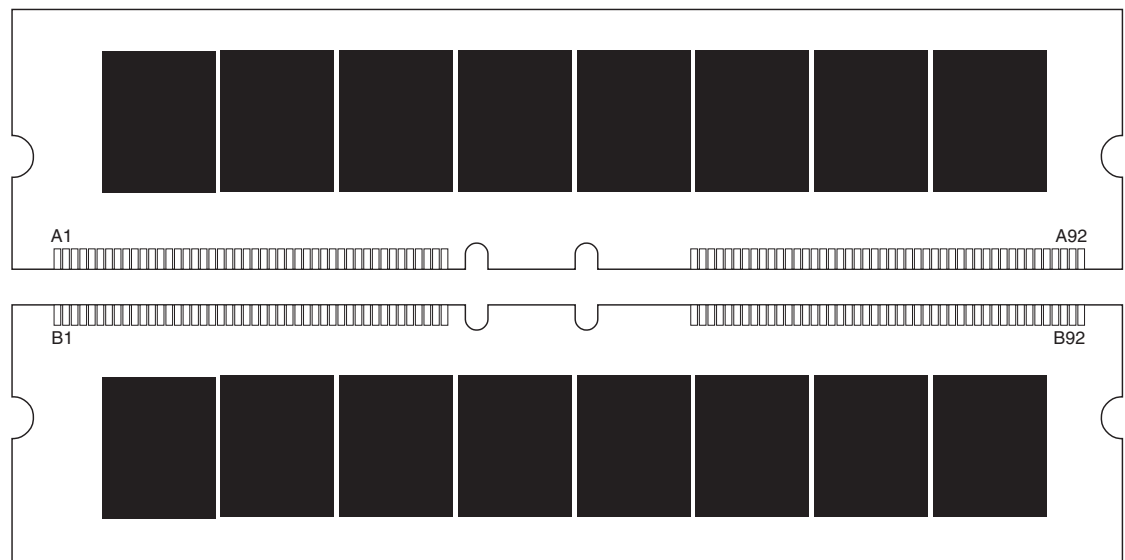
### Direct Rambus RIMM Module Assembly

## CONNECTOR PIN ASSIGNMENTS

| Pin | Pin Name | Pin | Pin Name | Pin | Pin Name | Pin | Pin Name |
|-----|----------|-----|----------|-----|----------|-----|----------|
| A1  | Gnd      | B1  | Gnd      | A47 | NC       | B47 | NC       |
| A2  | LDQA8    | B2  | LDQA7    | A48 | NC       | B48 | NC       |
| A3  | Gnd      | B3  | Gnd      | A49 | NC       | B49 | NC       |
| A4  | LDQA6    | B4  | LDQA5    | A50 | NC       | B50 | NC       |
| A5  | Gnd      | B5  | Gnd      | A51 | Vref     | B51 | Vref     |
| A6  | LDQA4    | B6  | LDQA3    | A52 | Gnd      | B52 | Gnd      |
| A7  | Gnd      | B7  | Gnd      | A53 | SCL      | B53 | SA0      |
| A8  | LDQA2    | B8  | LDQA1    | A54 | Vdd      | B54 | Vdd      |
| A9  | Gnd      | B9  | Gnd      | A55 | SDA      | B55 | SA1      |
| A10 | LDQA0    | B10 | LCFM     | A56 | SVdd     | B56 | SVdd     |
| A11 | Gnd      | B11 | Gnd      | A57 | SWP      | B57 | SA2      |
| A12 | LCTMN    | B12 | LCFMN    | A58 | Vdd      | B58 | Vdd      |
| A13 | Gnd      | B13 | Gnd      | A59 | RSCK     | B59 | RCMD     |
| A14 | LCTM     | B14 | NC       | A60 | Gnd      | B60 | Gnd      |
| A15 | Gnd      | B15 | Gnd      | A61 | RDQB7    | B61 | RDQB8    |
| A16 | NC       | B16 | LROW2    | A62 | Gnd      | B62 | Gnd      |
| A17 | Gnd      | B17 | Gnd      | A63 | RDQB5    | B63 | RDQB6    |
| A18 | LROW1    | B18 | LROW0    | A64 | Gnd      | B64 | Gnd      |
| A19 | Gnd      | B19 | Gnd      | A65 | RDQB3    | B65 | RDQB4    |
| A20 | LCOL4    | B20 | LCOL3    | A66 | Gnd      | B66 | Gnd      |
| A21 | Gnd      | B21 | Gnd      | A67 | RDQB1    | B67 | RDQB2    |
| A22 | LCOL2    | B22 | LCOL1    | A68 | Gnd      | B68 | Gnd      |
| A23 | Gnd      | B23 | Gnd      | A69 | RCOL0    | B69 | RDQB0    |
| A24 | LCOL0    | B24 | LDQB0    | A70 | Gnd      | B70 | Gnd      |
| A25 | Gnd      | B25 | Gnd      | A71 | RCOL2    | B71 | RCOL1    |
| A26 | LDQB1    | B26 | LDQB2    | A72 | Gnd      | B72 | Gnd      |
| A27 | Gnd      | B27 | Gnd      | A73 | RCOL4    | B73 | RCOL3    |
| A28 | LDQB3    | B28 | LDQB4    | A74 | Gnd      | B74 | Gnd      |
| A29 | Gnd      | B29 | Gnd      | A75 | RROW1    | B75 | RROW0    |
| A30 | LDQB5    | B30 | LDQB6    | A76 | Gnd      | B76 | Gnd      |
| A31 | Gnd      | B31 | Gnd      | A77 | NC       | B77 | RROW2    |
| A32 | LDQB7    | B32 | LDQB8    | A78 | Gnd      | B78 | Gnd      |
| A33 | Gnd      | B33 | Gnd      | A79 | RCTM     | B79 | NC       |
| A34 | LSCK     | B34 | LCMD     | A80 | Gnd      | B80 | Gnd      |
| A35 | Vcmos    | B35 | Vcmos    | A81 | RCTMN    | B81 | RCFMN    |
| A36 | SOUT     | B36 | SIN      | A82 | Gnd      | B82 | Gnd      |
| A37 | Vcmos    | B37 | Vcmos    | A83 | RDQA0    | B83 | RCFM     |
| A38 | NC       | B38 | NC       | A84 | Gnd      | B84 | Gnd      |
| A39 | Gnd      | B39 | Gnd      | A85 | RDQA2    | B85 | RDQA1    |
| A40 | NC       | B40 | NC       | A86 | Gnd      | B86 | Gnd      |
| A41 | Vdd      | B41 | Vdd      | A87 | RDQA4    | B87 | RDQA3    |
| A42 | Vdd      | B42 | Vdd      | A88 | Gnd      | B88 | Gnd      |
| A43 | NC       | B43 | NC       | A89 | RDQA6    | B89 | RDQA5    |
| A44 | NC       | B44 | NC       | A90 | Gnd      | B90 | Gnd      |
| A45 | NC       | B45 | NC       | A91 | RDQA8    | B91 | RDQA7    |
| A46 | NC       | B46 | NC       | A92 | Gnd      | B92 | Gnd      |

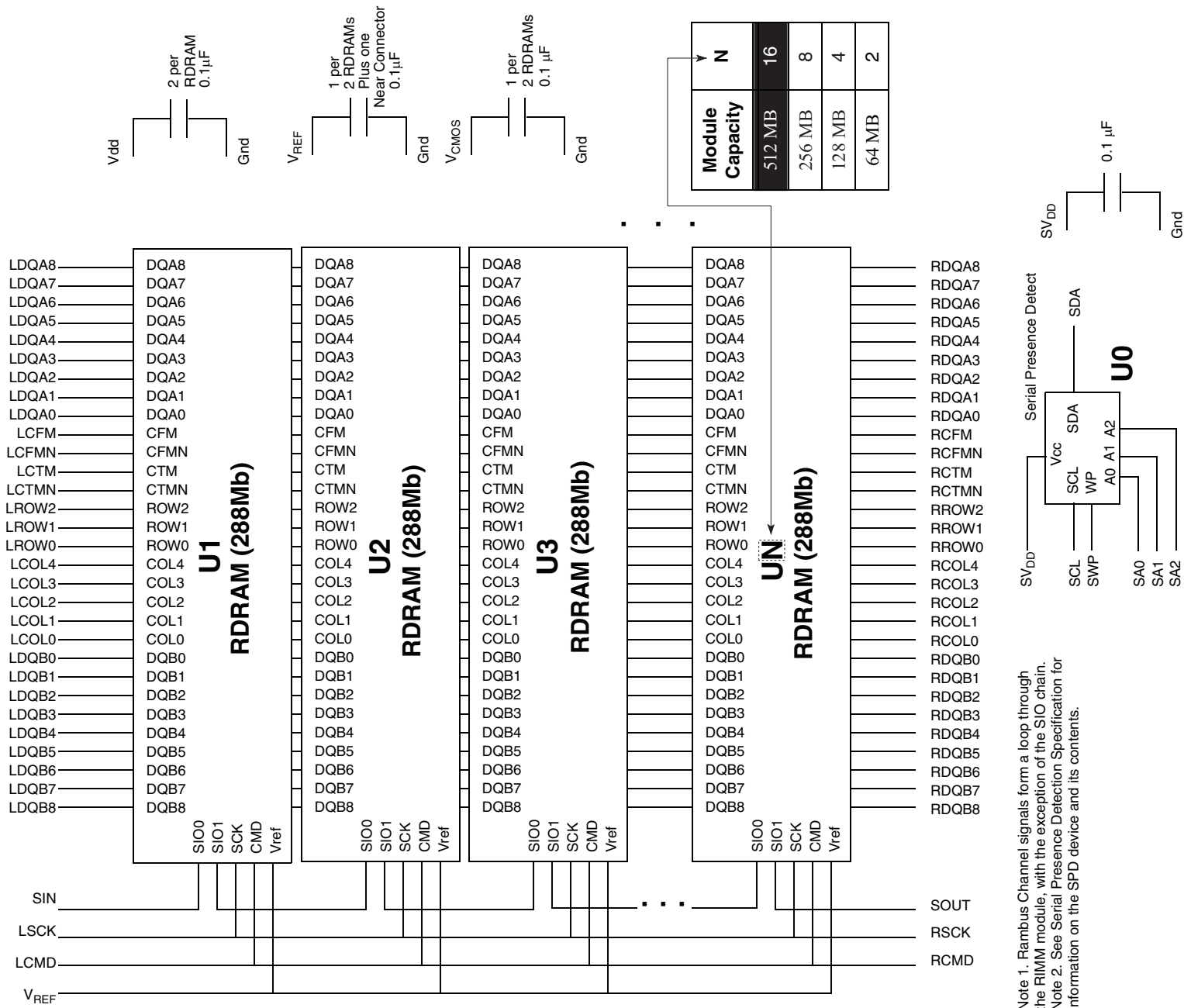


**Direct Rambus RIMM Module Dimensions**



**Direct Rambus RIMM Pin Configuration (288 Megabit RDRAM)**

# RIMM MODULE FUNCTIONAL BLOCK DIAGRAM



Note 1. Rambus Channel signals form a loop through the RIMM module, with the exception of the SIO chain.  
Note 2. See Serial Presence Detection Specification for information on the SPD device and its contents.