

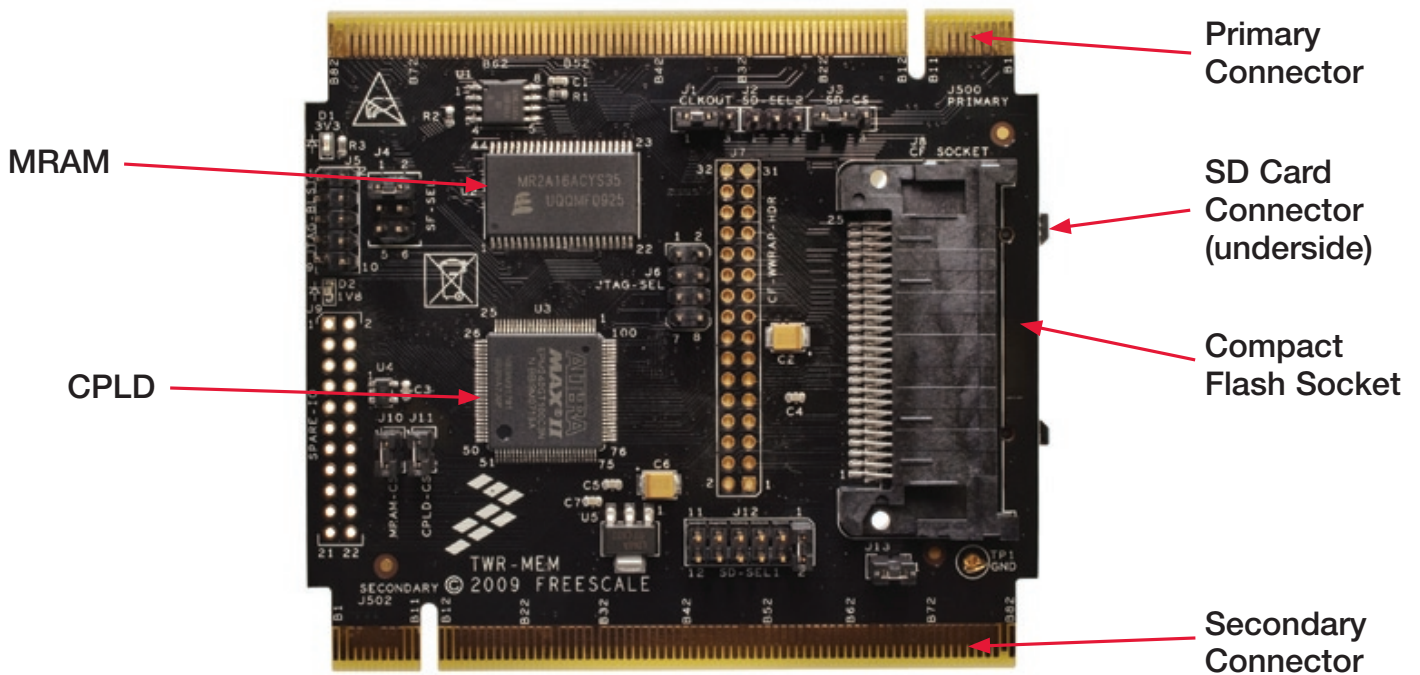


TWR-MEM

Memory Module



Get to know the TWR-MEM



TWR-MEM Freescale Tower System

The TWR-MEM module is part of the Freescale Tower System, a modular development platform that enables rapid prototyping and tool re-use through reconfigurable hardware. Take your design to the next level and begin constructing your Tower System today.

How to build your Tower

**STEP
1**

Locate the Elevator modules, identifiable by the four card edge connectors on each.

**STEP
2**

Identify each Elevator module as either “Functional” or “Dummy” (written on the outward facing side of the board).

**STEP
3**

Locate the other modules you will use in your Tower System.

**STEP
4**

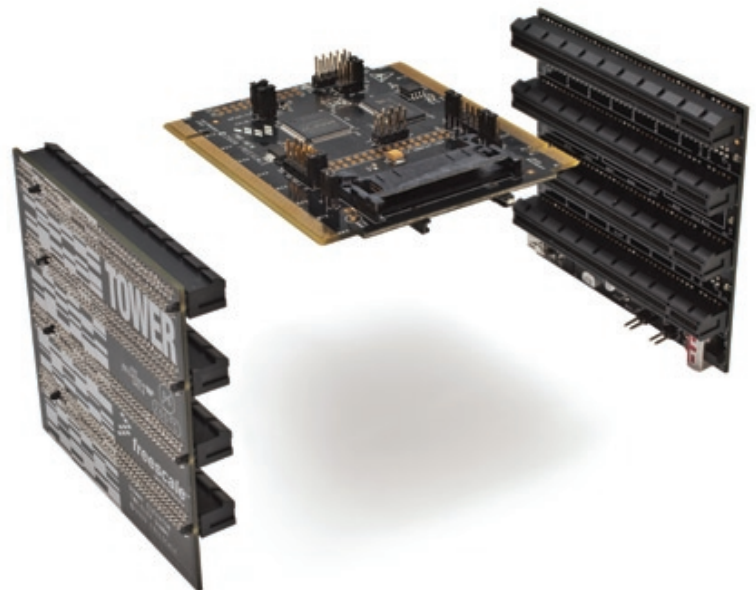
Identify the “primary” and “secondary” card edges for each module (written along the edge).

**STEP
5**

Plug the “primary” card edge of each module into the “functional” elevator.

**STEP
6**

Place the remaining “dummy” or “functional” Elevator module onto the “secondary” card edges.



TWR-MEM Jumper Options

The following is a list of all the jumper options. The ***default*** installed jumper settings are shown in bold with asterisks.

| Jumper | Option | Setting | Description |
|--------|-------------------------------------|--------------|---|
| J1 | CPLD GCLK3 Selection | *1-2* | Connect GCLK3 to Tower CLKOUT1 (B25) |
| | | 2-3 | Connect GCLK3 to Tower CLKOUT0 (A64) |
| J2 | SD Card SPI Mode Select Pull Option | 1-2 | Pull-up on SD Card DAT3/SS signal (SPI Mode Select) |
| | | 2-3 | Pull-down on SD Card DAT3/SS signal (SPI Mode Select) |
| | | *OFF* | No pull resistor applied |
| J3 | SD Card SPI Mode Chip-Select | *1-2* | Connect SD Card DAT3/SS signal to SPI1_CS0 (B9) |
| | | 2-3 | Connect SD Card DAT3/SS signal to SPI1_CS1 (B8) |
| J4 | Serial Flash Configuration Options | *1-2* | Connect Serial Flash Chip-Select to Tower SPI Chip-Select |
| | | 2-3 | Enable Serial Flash Write Protect |
| | | 5-6 | Connect Serial Flash HOLD signal to Tower GPIO5 (B52) |
| J6 | JTAG/GPIO Connections | 1-2 | Connect GPIO8 (A10) to CPLD JTAG TMS signal |
| | | 3-4 | Connect GPIO9 (A9) to CPLD JTAG TDO signal |
| | | 5-6 | Connect GPIO1 (B21) to CPLD JTAG TDI signal |
| | | 7-8 | Connect GPIO3 (B23) to CPLD JTAG TCK signal |
| J10 | MRAM Chip-Select Isolation | *ON* | Connect Flexbus CS0 to MRAM Chip-Select |
| | | OFF | Disconnect Flexbus CS0 from MRAM Chip-Select |
| J11 | CPLD Flexbus CS0 Isolation | *ON* | Connect Flexbus CS0 to CPLD pin 48 |
| | | OFF | Disconnect Flexbus CS0 from CPLD |

| Jumper | Option | Setting | Description |
|--------|--|---------|--|
| J12 | SD Card Configuration Options | *1-2* | Connect SD Card Detect to IRQH (B55) |
| | | 3-4 | Connect SD Card Detect to IRQA (B62) |
| | | 5-6 | Connect SD_D[1] to GPIO2 (B22) |
| | | 7-8 | Connect SD_D[2] to GPIO8 (A10) |
| | | 9-10 | Apply pull-up to SD_CMD/MOSI |
| | | 11-12 | Apply pull-up to SD_D[0]/MISO |
| J13 | SD Card Write Protect Detect Isolation | *ON* | Connect SD Card Write Protect Detection to Tower GPIO7 (A11) |
| | | OFF | Disconnect SD Card Write Protect Detection from Tower |
| J14 | Serial Flash Chip-Select | *1-2* | Connect Serial Flash Chip-Select to SPI0_CS0 (B46) |
| | | 2-3 | Connect Serial Flash Chip-Select to SPI0_CS1 (B47) |
| J15 | MRAM Write Protect | *ON* | Normal MRAM operation (R/W) |
| | | OFF | Write protect MRAM |
| J16 | CPLD Chip-Select Selection | *1-2* | Use Flexbus CS0 as CPLD chip-select (pin 50) |
| | | 2-3 | Use Flexbus CS1 as CPLD chip-select (pin 50) |

TWR-MEM Features

- 1 MB Serial Flash
- 512 KB MRAM
- SD Card Slot for Memory Expansion or SDIO Modules
- Programmable CPLD
- Compact Flash Interface (via CPLD)



TOWER SYSTEM

To learn more about the TWR-MEM and other modules within the Tower System, go to www.freescale.com/tower. To become a member of the online Tower Geeks community, go to www.towergeeks.org.

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