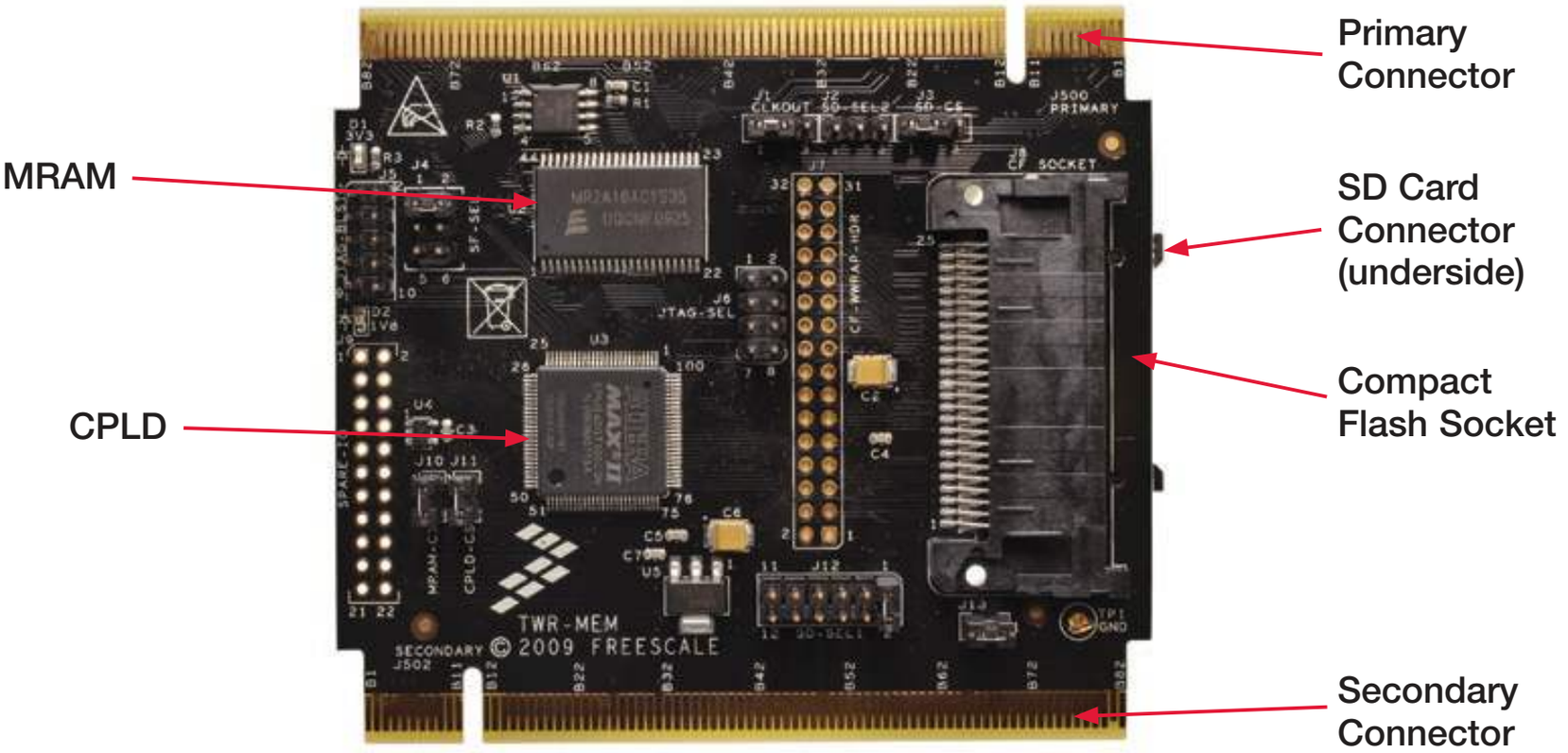
ide for TWR-MEM

TOWER SYSTEM

TWR-MEM
Memory Module

freescale™
semiconductor

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.

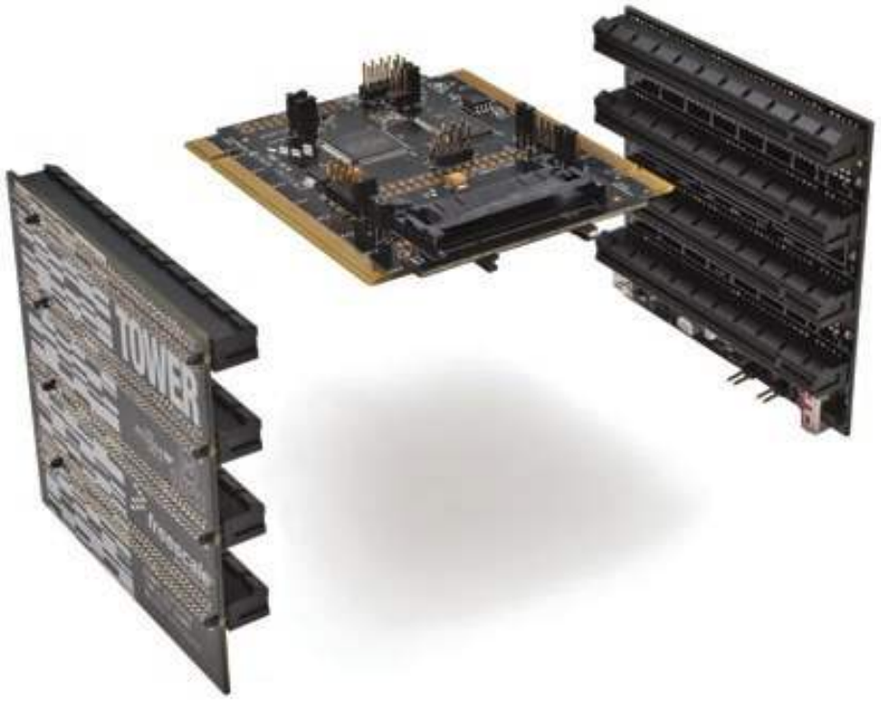
STEP 2 Identify each Elevator module as either “Functional” or “Dummy” (written on the outward facing side of the board).

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
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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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