System Features

AC Specification (Hardware)

	DDR3	DDR2	DDR1	SDRAM	pSRAM	NandFlash	NorFlash	SPI NorFlash	eMMC
Test Frequency	Up to 667Mhz	Up to 400Mhz	Up to 200Mhz	Up to 166Mhz	~	Up to 200MHz (Async) 166 MHz (Sync) 200 MHz (Toggle)	Up to 200MHz	fC up to 100MHz fR, fC2, fT2 up to 50MHz fT up to 70MHz	Up to 50MHz
Switching Data Rate	800Mbps to 1600 Mbps	400Mbps to 800Mbps	266Mbps to 400Mbps	200Mbps to 333Mbps	~	20MB/s to 166MB/s 200MB/s (Toggle)	Async: 70ns (min)	Up to 200Mbps	Up to 100MB/s
I/O Interface	SSTL_15, Class I & Class II	SSTL_18, Class I & Class II	SSTL_25, Class I & Class II (For mobile DDR1, 1.8V LVCMOS)	3V LVTTL (For mobile SDRAM, 1.8V LVCMOS)	3V LVTTL	ONFI 1.0, ONFI 2.0, ONFI 3.0, Toggle Nand Flash	CFI	SPI	MMC V4.41
Address Depth	16/16/3 per site, up to 16 sites				26bit, up to 16 sites	Device size: 65536 blocks Block size: 8192 pages Page size: 32768 columns	63 32 - Kword Main Blocks, 8 4 - Kword Boot Blocks, Top Boot/Bottom Boot	16-bit 64K-byte block 8-bit sector/block 14-bit address/sector	Device density up to 2TB Block length up to 2048 byte. 14-bit erase groups addressing 8-bit write protect group addressing

	DDR3	DDR2	DDR1	SDRAM	pSRAM	NandFlash	NorFlash	SPI NorFlash	eMMC
Data Depth	Supports 8/16/32 bit IC devices				Supports 16 bit IC devices	x8, x16 per DUT site	x8 and x16 per DUT site	x8 per DUT site	x1, x4, x8 per DUT site
Control Signal	4 CS/ RAS/ CAS/ WE/ 2 CKE/ 2 ODT/ RST/ 2ZQ	4 CS/ RAS/ CAS/ WE/ 2 CKE/ 2 ODT	4 CS/ RAS/ CAS/ WE/ 2 CKE		CE1/ CE2/ UB/ LB/ WE	Control Lines (Async): 4 CS#, 4 RYBY; 1 RE#, 1 ALE, 1 WP#, 1 CLE, 1 WE# in dual channel Control Lines (Sync): 4 CS#, 4 RYBY; 1 W/R#, 1 ALE, 1 WP#, 1 CLE, 1 CLK, 1 DQS in dual channel Control Lines (Toggle): 4CS#, 4RYBY, 1CLE, 1ALE, 1RE, 1WR, 1WP#, 1DQS in dual channel	Control Lines: 4 CE-, OE-, WE-, WP-, RST-	1 CS#, 1 SCLK, 1 SI, 1 WP	1 CLK 1 CMD

	DDR3	DDR2	DDR1	SDRAM	pSRAM	NandFlash	NorFlash	SPI NorFlash	eMMC
Programmable Timing	tRCD, tRP, tBL, tCL , tAL, tWR , tWL, tRL, tRRP, tFAW , tWTR , tRAS , tRRD , tRTP , tMRD , tRFC, tRC, tMOD, tCWL	tRCD, tRP, tBL, tCL , tAL, tWR , tWL, tRL, tRRP, tFAW , tWTR , tRAS , tRRD , tRTP , tMRD , tRFC, tRC	tRCD, tRP, tBL, tCL , tAL, tWR , tWL, tRL, tRRP, tWTR , tRAS , tRRD , tMRD , tRFC, tRC	tRCD, tRP, tBL, tCL , tWR , tRAS , tRRD , tMRD , tRC	tRC, tAA, tCO, tOE, tBA, tWC, tCW, tWR, tAS, tAW, tBW, tWP, tDW, tDH, tOW	Async Programmable Timing: tCLS, tCLH, tALS, tALH, tWP, tWH, tDS, tDH, tDS, tDH, tWC, tADL, tCH, tWW, tCS, tRP, tRC, tREA, tRR, tOH, tWHR, tAR, tWB, tREH, tRHW, tBERS, tR, tPROG Sync Programmable Timing: tADL, tCAD, tCALS, tDS, tCCS, tDQSS, tWB, tWW, tDQSCK, tRHW, tWHR, tWPRE, tWPST, tBERS, tPROG, tR Toggle Programmable Timing: tADL, tCALS, tCS, tCH, tAR, tRR, tWB, tWHR, tWC, tWP, tWW, tWHR2, tWPRE, tCDQSS, tCDQSH, tWPST, tWPSTH, tRPRE, tDQSRE, tRPST, tRPSTH, tBERS, tR, tPROG, tDS	tAVAV, tGLQV, tGHQZ, tAVQV, tWHQV1, tWHQV2, tWHQV3, tWHRH1, tWHRH2, tWP, tELWL, tDVWH, tAVWH, tWHEH, tWHDX, tWHAX, tWHWL	tSHSL_Rd, tSHSL_Wr, tWHSL, tSHWL, tDVCH_s(fc), tDVCH_S(fr), tDVCH_S(ft), tBP, tPP, tWPS, tWSR, tW, tSE, tBE32, tBE64, tCE	tISU, NCC, NCD, NCP, NRC, NSC, NWR Boot operation: tBD,tBA Identification: NID
	1 pair of clock per IC socket								

DC Specification (Hardware)

	DDR3/ DDR2/ DDR1	SDRAM	pSRAM	NandFlash/ NorFlash/SPI NorFlash/ eMMC
Variable Power Supplies	Vdd: 1.2V to 4.0V, resolution 0.01V, 15A, +/- 2% Vtt: ½ of Vdd, 3A Vref: 0.6V to 2.0V, resolution 0.01V, 30mA, +/- 2%	Vdd: 1.2V to 4.0V, resolution 0.01V, 15A, +/- 2% Vref: 0.6V to 2.0V, resolution 0.01V, 30mA, +/- 2%	Vdd: 1.2V to 4.0V, resolution 0.01V, 15A, +/- 2%	Vdd: 1.20V to 3.8V, resolution 0.01V, 4A, +/- 2%, per DUT site
Icc Measurement (Based on measurement of each site)	Operating Icc Measurement: R1: 0 - 3A (+/- 50mA) R2: 3 - 10A (+/- 100 mA) Stand-by Icc Measurement: R1: 0uA - 10uA, +/- 1uA R2: 10uA - 100uA, +/- 2uA R3: 100uA - 1mA, +/- 25uA R4: 1mA - 40mA, +/- 450uA			
Leakage Current Measurement	R1: 0uA – 10uA, + /- 1uA R2: 10uA – 100uA, +/- 2uA R3: 100uA – 1mA, +/- 25uA R4: 1mA – 40mA, +/- 450uA (Based on measurement of each site)			
DC Tests	DC Open, Shorts/Leakage, Icc			DC Shorts/Leakage, Icc

System and Software Features

	DDR3/ DDR2/ DDR1	SDRAM	pSRAM	NandFlash	NorFlash	SPI NorFlash	eMMC
System and Software Features	AC/ Icc tests			AC/ DC parametric tests			
	~			Built in Icc patterns include sequential read operating current, program operating current, erase operating current and stand-by current (TTL)	Built in Icc patterns include read operating current, program operating current, erase operating current and stand-by current	Built in Icc patterns include block erase, fast read, page program and stand-by current	Built in Icc patterns include block erase, fast read, page program
	Support leakage test						TBD
	~			Supports both large block and small block architecture Supports Block/ Page/ Column modes Supports cache read, sequential read and copy back Flexible bad block management available for read bad block	Supports both top boot and bottom boot architecture Supports Block/Column modes	Supports serial 1x, 2x, 4x and parallel I/O mode Supports both SDR and DDR	Support 1x, 2x, 4x data width Supports both SDR and DDR
	~				Supports 12V fast production programming	~	

<table>
<tr><th></th><th colspan="2">DDR3/ DDR2/ DDR1</th><th>SDRAM</th><th>pSRAM</th><th>NandFlash</th><th>NorFlash</th><th>SPI NorFlash</th><th>eMMC</th></tr>
<tr><td rowspan="8">System and Software Features</td><td colspan="3" rowspan="2">Over 35 industry standard AC test patterns available</td><td rowspan="2">Over 35 industry standard AC test patterns available

Over 20 AC timing parameters for AC parametric testing (Async)

Over 15 AC timing parameters for AC parametric testing (Sync)</td><td rowspan="2">Over 15 industry standard AC test patterns available

Over 15 AC timing parameters for AC parametric testing</td><td rowspan="2">Over 10 industry standard AC test patterns available

Over 15 AC timing parameters for AC parametric testing</td><td rowspan="2">TBD</td></tr>
<tr></tr>
<tr><td colspan="5">Support both text and graphical result display</td><td>Support both text and graphical result display</td></tr>
<tr><td colspan="2">Support Auto Calibration Feature</td><td colspan="4">~</td><td></td></tr>
<tr><td colspan="5">Support Single IC and MCP device form factors</td><td>Support Single IC and MCP device form factors</td></tr>
<tr><td colspan="5">For TCII-1200 MCP, support 16 DUT Sites in x8, 8 DUT Sites in x16, 4 DUT Sites in x32 parallel tests
For TCIII-1200 MCP, support 64 DUT Sites in x8, 32 DUT Sites in x16,16 DUT Sites in x32 parallel tests</td><td>For TCII-1200 MCP, support 16 DUT Sites in x8, 8 DUT Sites in x16, 4 DUT Sites in x32 parallel tests
For TCIII-1200 MCP, support 64 DUT Sites in x8, 32 DUT Sites in x16,16 DUT Sites in x32 parallel tests</td></tr>
<tr><td>S.A.T. optional</td><td colspan="5">~</td><td></td></tr>
<tr><td colspan="5">Hot Chamber and Handler Interface optional</td><td>Hot Chamber and Handler</td></tr>
</table>

		Interface optional
Min. Control PC	Windows XP+ and networking interface	Windows XP+ and networking interface
Test Unit Dimensions	For TCII-1200 MCP: 450mm x 295mm x 245mm (W x D x H) For TCIII-1200 MCP: 1000mm x 600mm x 360mm (W x D x H)	For TCII-1200 MCP: 450mm x 295mm x 245mm (W x D x H) For TCIII-1200 MCP: 1000mm x 600mm x 360mm (W x D x H)
AC Power Supply	110 – 240 VAC, 50/60 Hz	110 – 240 VAC, 50/60 Hz