

Appendix C - Raw Card C

DDR3 72b-SO-DIMM Design File

Specification Revision	Applicable Design File	Applicable BOM
0.70	EP3-72b-SO-DIMM_V070_RC_C0_20110427.BRD	EP3-72b-SO-DIMM_V070_RC_C0_20100215_BOM.xls
1.30	EP3-72b-SO-DIMM_V130_RC_C1_20121126.BRD	EP3-72b-SO-DIMM_V130_RC_C1_20121126_BOM.xls

Note: "Reference" design file updates will be released as needed. This ECC SO-UDIMM specification will reflect the most recent design files, but may also be updated to reflect clarifications to the specification only; in these cases the design files will not be updated.

Module Configuration

DIMM		SDRAM		# of SDRAMs	# of Physical Ranks	# of Address bits Row/Col/Bank	MO-269 variation
Capacity	Organization	Density	Organization				
512MB	64M x 72	512Mbit	64M x 8	9	1	13/10/3	AB
1GB	128M x 72	1Gbit	128M x 8	9	1	14/10/3	AB
2GB	256M x 72	2Gbit	256M x 8	9	1	15/10/3	AB
4GB	512M x 72	4Gbit	512M x 8	9	1	16/10/3	AB
8GB	1G x 72	8Gbit	1G x 8	9	1	16/11/3	AB

SDRAM Configuration

Supported DRAM Outline (Width x Length) max.	# of Banks in SDRAM	SDRAM Package Type	Package Type	MO-207 variation
11 mm x 14 mm	9	78 Ball FBGA	Planar	DT-z

Supported Speeds

Raw Card	Config	EP3-6400	EP3-8500	EP3-10600	EP3-12800	EP3-14900	Notes
C0	DDR3	X	X	X			1
C1	DDR3	P	P	P	P		1
	DDR3L	P	P	P	P		1

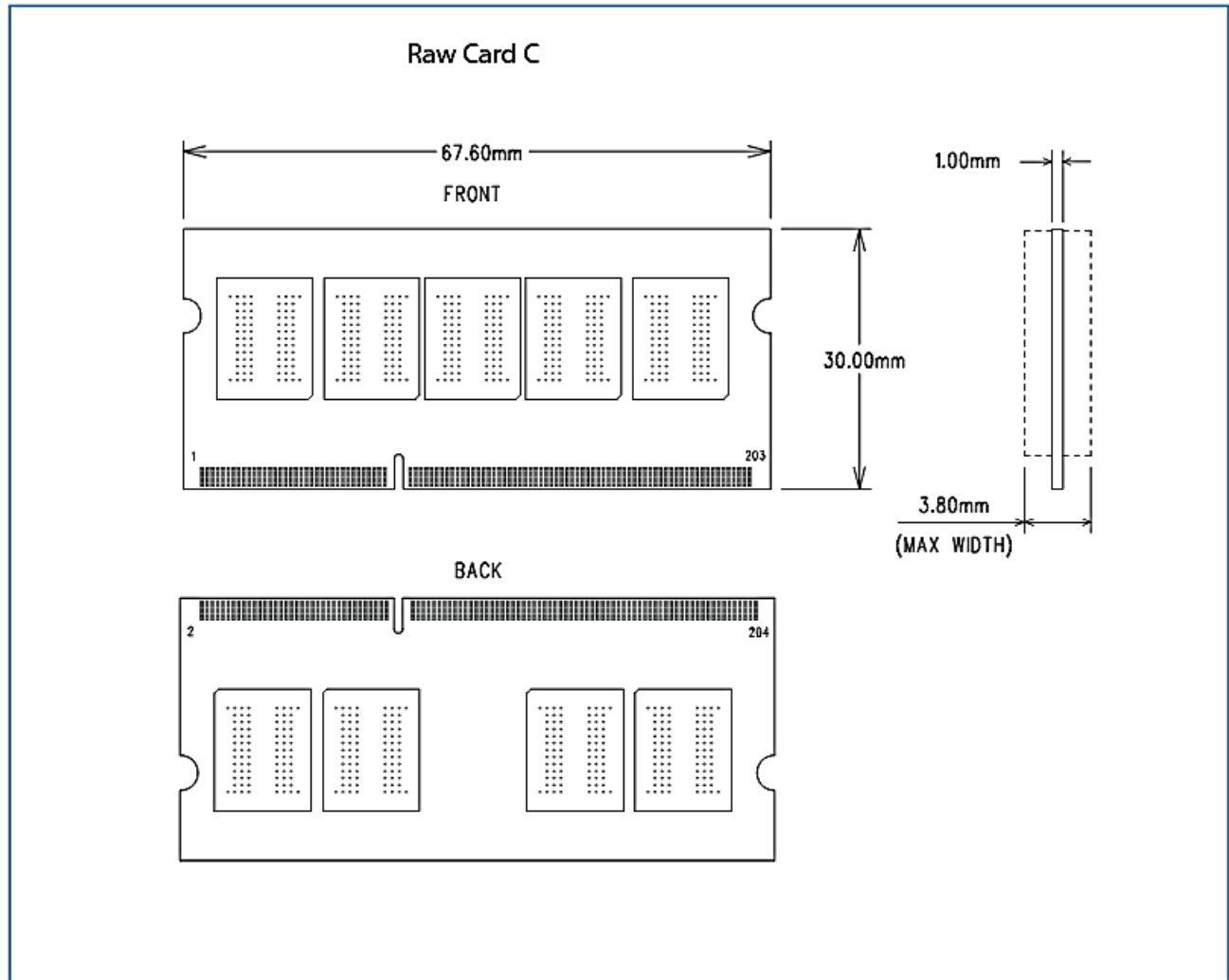
Note 1: "X" reflects speed grades approved from previous ballots. "P" reflects speed grades for this ballot. JEDEC office to replace "P" with "X" before publication.

Design Rules and Deviations

None

General Layout

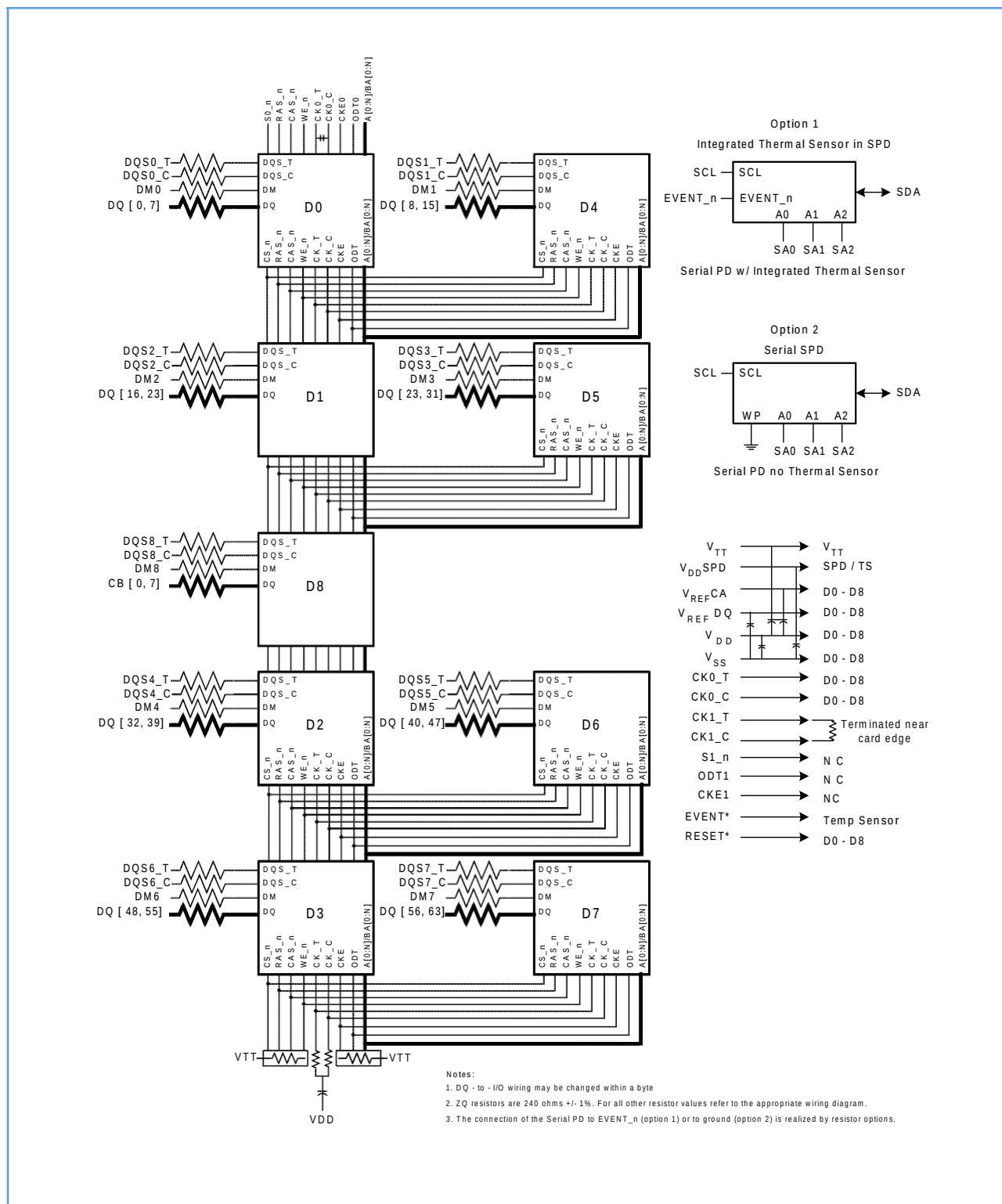
x72 DIMM, populated as one physical ranks of x8 DDR3 SDRAMs



Note 1: All dimensions are typical unless otherwise stated. (Millimeters)

Functional Block Diagram

x72 DIMM, populated as one physical rank of x8 DDR3 SDRAMs



Input Loading Matrix

Signal Names	Input Device	Loads
CK0_t, CK0_c	SDRAM	9
RESET_n	SDRAM	9
CKE0, ODT0, S0_n	SDRAM	9
Addr, BA, RAS_n, CAS_n, WE_n	SDRAM	9
DQ, CB, DQS_t, DQS_c	SDRAM	1
DM, TDQS_t, TDQS_c	SDRAM	1
SCL, SDA, SA	EEPROM	1
EVENT_n	Thermal sensor	1*
*Integrated thermal sensor optional. When optional thermal sensor is not present loading is 0.		