

JEDEC STANDARD

DDR5 UDIMM Raw Card Annex E

JESD308-U4-RCE Version 1.0

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JEDEC SOLID STATE TECHNOLOGY ASSOCIATION



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DDR5 UDIMM Raw Card Annex E

Contents

	Page
1 Scope.....	1
2 DDR5 Small Outline DIMM Design File	1
3 Module Configuration.....	1
4 SDRAM Configuration	2
5 Supported Speeds.....	2
6 Design Deviations	2
7 General Layout.....	3
8 Functional Block Diagram	4
9 SMBus Net Structure	7
10 Clock Net Structure.....	8
11 Data Net Structure – DQ, DM, CB, DQS_t, DQS_c	9
12 Address and Command Net Structure Routing	10
13 Control Net Structure Routing	11
14 DIMM Impedance Profile	12
15 RESET_n Net Structure Routing	13
16 ALERT_n Net Structure Routing.....	14
17 Cross Section Recommendations.....	15

Tables

Table 1 — DDR5 UDIMM Design File.....	1
Table 2 — Module Configuration.....	1
Table 3 — SDRAM Configuration	2
Table 4 — Supported Speeds	2
Table 5 — Design Deviations	2
Table 6 — Trace Lengths for Host and Local Signals	7
Table 7 — Trace Lengths for Clock to SDRAM Load Net Structures	8
Table 8 — Trace Lengths for DQ_A, DM_A_n, CB_A, DQS_t_A, DQS_c_A.....	9
Table 9 — Trace Lengths for Address and Command Net Structures	10
Table 10 — Trace Lengths for Control Net Structures	11
Table 11 — Voltage Operating Conditions	12

Contents (cont'd)

Table 12 — Trace Lengths for RESET_n and Net Structures.....	13
Table 13 — Trace Lengths for ALERT_n Net Structures	14
Table 14 — PCB Fabrication Table	15

Figures

Figure 1 — General Layout	3
Figure 2 — X72 DIMM, Populated as Two Package Ranks of x8 DDR5 SDRAMs (Part 1 of 4).....	4
Figure 3 — X72 DIMM, Populated as Two Package Ranks of x8 DDR5 SDRAMs (Part 2 of 4).....	5
Figure 4 — X72 DIMM, Populated as Two Package Ranks of x8 DDR5 SDRAMs (Part 3 of 4).....	6
Figure 5 — X72 DIMM, Populated as Two Package Ranks of x8 DDR5 SDRAMs (Part 4 of 4).....	7
Figure 6 — Net Structure Routing for Clock to SDRAM Load CK00_C_[B:A], CK00_T_[B:A], CK01_C_[B:A], CK01_T_[B:A]	8
Figure 7 — Net Structure Routing for DQ, DM, CB, DQS_t, DQS_c	9
Figure 8 — Net Structure Routing for CA[12:00]_[B:A]	10
Figure 9 — Net Structure Routing for CS[01:00]_[B:A]	11
Figure 10 — DIMM Impedance Profile	12
Figure 11 — Net Structure Routing for RESET_n	13
Figure 12 — Net Structure Routing for ALERT_n	14

DDR5 UDIMM RAW CARD ANNEX E

From JEDEC Board Ballet JCB-22-20, formulated under the cognizance of the JC-45.3 Subcommittee on Unbuffered DRAM Modules, item 2265.12A.

1 Scope

This annex JESD308-U4-RCE, DDR5 Unbuffered Dual Inline Memory Module (UDIMM) with 4-bit ECC (EC4 SODIMM) Raw Card E Annex" defines the design detail of x8, 2 Package Ranks DDR5 ECC UDIMM. The common feature of DDR5 UDIMM such as the connector pinout can be found in the JESD308, DDR5 Unbuffered Dual Inline Memory Module (UDIMM) Common Standard.

2 DDR5 Small Outline DIMM Design File

Table 1 — DDR5 UDIMM Design File

Raw Card	Applicable Design File	Applicable BOM
E0	PC5_UDIMM_RC_E0_R100_20210720.brd	PC5_UDIMM_RC_E0_R100_20210720_BOM.xlsx
NOTE "Reference" design file updates will be released as needed. This DIMM 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.		

3 Module Configuration

Table 2 — Module Configuration

SDRAM				DIMM											
Die Density	Die Organization	Package Type	# of Logical Ranks ¹ per PKG. Rank		# of PKG. Rank 1,2 per DIMM	# of Logical Ranks ¹ per DIMM		# of SDRAM die per DIMM		Capacity per DIMM (GB)		DIMM Organization		# of Address bits row/col	MO-329 variation
			Min.	Max.		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
16 Gb	2G x 8	SDP	-	-	2	2	2	20	20	32	32	4Gx72	4Gx72	16/10	ABxB
24 Gb	3G x 8	SDP	-	-	2	2	2	20	20	48	48	6Gx72	6Gx72	17/10	ABxB
32 Gb	4Gx8	SDP	-	-	2	2	2	20	20	64	64	8Gx72	8Gx72	17/10	ABxB
Note 1 When populated with single die package (SDP), package ranks per DIMM = 2.															

4 SDRAM Configuration

Table 3 — SDRAM Configuration

Raw Card	Supported DRAM Outline (Width x Length) max. (mm)	# of Bank Groups/ # of Banks per Bank Group	SDRAM Package Type	Package Type	MO-210 Variation
E0	10.1 x 11.1	8/4	82 Ball FBGA	SDP	AN
NOTE 1 SDP is a single die package.					
NOTE 2 MO-210 variation AL is a 78-ball FBGA and is acceptable for placement.					

5 Supported Speeds

Table 4 — Supported Speeds

Raw Card	Speed	PC5-4400	PC5-4800	PC5-5600	PC5-6400	Notes
E0	DDR5	Y	Y			1, 2
NOTE 1 X reflects speed grades approved from previous ballots.						
NOTE 2 Y denotes speed grades newly supported.						

6 Design Deviations

Table 5 — Design Deviations

None.
