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Revision History			
Rev	Description	Date	APPROVED
X1	Initial draft	07-Sept 2021	

Memory Daughter Card



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Drawn by:
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Approved:
Antonio Quiroz

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Rev
X1

Date: Wednesday, February 02, 2022

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GENERAL DESIGN NOTES

- Unless Otherwise Specified:
 - All resistors are in ohms, 5%, 1/16 Watt
 - All capacitors are in uF, 20%, 50V
 - All voltages are DC
- Critical components that require tolerances tighter than listed in Note 1 are labeled with required tolerance on schematic. Non-critical components may be filled with tighter tolerance parts for BOM consolidation purposes, but may be changed to meet the general tolerances of Note 1 if desired.
- Interrupted lines coded with the same letter or letter combinations are electrically connected.
- Device type number is for reference only. The number varies with the manufacturer.
- Special signal usage:
 - _B or 'n' Denotes - Active-Low Signal
 - <> or [] Denotes - Vectored Signals
- Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.

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DETAIL A
LAYER STACKUP
SCALE: NONE

.062" THK +/- 10%



FINISHED Cu WEIGHT

LAYER 1	COMPONENT SIDE	1/2oz+plating
LAYER 2	GROUND PLANE	1 oz.
LAYER 3	POWER PLANE	1 oz.
LAYER 4	SOLDER SIDE	1/2oz+plating

DETAIL B
IMPEDANCE REQUIREMENTS
IMPEDANCE TOLERANCE IS 10%

Layers	Single Ended		Differential			Differential		
	Trace Width (Mils)	Impedance (Ohms)	Trace Width (Mils)	Trace Spacing "Airgap" (Mils)	Impedance (Ohms)	Trace Width (Mils)	Trace Spacing "Airgap" (Mils)	Impedance (Ohms)
L1	5.00	50	4.2	6.00	100	4.70	5.00	90
L4	5.00	50				4.70	5.00	90



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U1 Compatible Parts	
Octal	RAM
MicroB1	MT25QL128ABBE12
MicroB1	MT25QL128ABBE12
MicroB1	MT25QL128ABBE12
Adaleo	AT25P012B-CCUE-T
Adaleo	AT25P012B-CCUE-T
Cypress	S26B2254SD080V02
Octal RAM's	
Cypress	S26B2254SD080V02
APMemory	APM154001

U2/U3 Compatible Parts	
U2/U3	RAM
MicroB1	MT25QL128ABBE12
MicroB1	MT25QL128ABBE12
Winbond	W25Q40FV
Note: This is not a complete list. These are the most common parts used in these designs. More recent parts with more capability may work, as may other parts with compatible footprints and pinouts.	

Configurations	
Primary (default)	Supports Octal part in U1 (Socket) or a quad part in U2 (socket)
High Speed Octal	For highest performance, remove U1 socket and solder-down part. Remove R21 thru R26.
High Speed Quad	For highest performance, remove R3 thru R20 and add capacitors at R27 thru R32 and solder down part at U3.

U1 Pinout Definitions and Differences

A	B	C	D	E	F	G	H	I	J
1	Octal	Octal	Octal	Octal	RAM Part	Octal	Octal		
2	Flash	Flash	Flash	Flash	RAM	RAM			
3	Flash	Flash	Flash	Flash	RAM	RAM			
4	Flash	Flash	Flash	Flash	RAM	RAM			
5	Flash	Flash	Flash	Flash	RAM	RAM			
6	Flash	Flash	Flash	Flash	RAM	RAM			
7	Flash	Flash	Flash	Flash	RAM	RAM			
8	Flash	Flash	Flash	Flash	RAM	RAM			
9	Flash	Flash	Flash	Flash	RAM	RAM			
10	Flash	Flash	Flash	Flash	RAM	RAM			
11	Flash	Flash	Flash	Flash	RAM	RAM			
12	Flash	Flash	Flash	Flash	RAM	RAM			
13	Flash	Flash	Flash	Flash	RAM	RAM			
14	Flash	Flash	Flash	Flash	RAM	RAM			
15	Flash	Flash	Flash	Flash	RAM	RAM			
16	Flash	Flash	Flash	Flash	RAM	RAM			
17	Flash	Flash	Flash	Flash	RAM	RAM			
18	Flash	Flash	Flash	Flash	RAM	RAM			
19	Flash	Flash	Flash	Flash	RAM	RAM			
20	Flash	Flash	Flash	Flash	RAM	RAM			
21	Flash	Flash	Flash	Flash	RAM	RAM			
22	Flash	Flash	Flash	Flash	RAM	RAM			
23	Flash	Flash	Flash	Flash	RAM	RAM			
24	Flash	Flash	Flash	Flash	RAM	RAM			
25	Flash	Flash	Flash	Flash	RAM	RAM			
26	Flash	Flash	Flash	Flash	RAM	RAM			
27	Flash	Flash	Flash	Flash	RAM	RAM			
28	Flash	Flash	Flash	Flash	RAM	RAM			
29	Flash	Flash	Flash	Flash	RAM	RAM			
30	Flash	Flash	Flash	Flash	RAM	RAM			
31	Flash	Flash	Flash	Flash	RAM	RAM			
32	Flash	Flash	Flash	Flash	RAM	RAM			
33	Flash	Flash	Flash	Flash	RAM	RAM			
34	Flash	Flash	Flash	Flash	RAM	RAM			
35	Flash	Flash	Flash	Flash	RAM	RAM			
36	Flash	Flash	Flash	Flash	RAM	RAM			
37	Flash	Flash	Flash	Flash	RAM	RAM			

