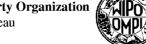
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(54) Title: FOLDED, FULLY BUFFERED MEMORY MODULE

(57) Abstract: A folded, fully buffered memory module (6) comprising: a planar flexible circuit medium (12); first and second generally quadrangular printed circuit leaves (8, 10) flexibly joined in juxtaposed, spaced disposition by the flexible circuit medium (12), the flexible circuit medium (12) including a network of conductive leads for signal communication between the leaves, the flexible medium being (12) folded to an extent that the leaves are adjacent and parallel to each other; a memory buffer (26) disposed centrally on a face of the second leaf; a plurality of memory devices (28) distributed on the leaves in a star topology about the memory buffer. Preferably the backside of the memory buffer is clear enough for close decoupling of the buffer. Preferably the memory devices are staggered to allow close decoupling of the each memory devices at its backside.



INTERNATIONAL SEARCH REPORT

International application No.

			PC1/U803/12834		
A. CLASSIFICATION OF SUBJECT MATTER					
IPC(7) : H05K 1/11 1/14, 1/18					
US CL : 361/749, 728, 736, 760					
According to International Patent Classification (IPC) or to both national classification and IPC					
B. FIELDS SEARCHED					
Minimum documentation searched (classification system followed by classification symbols)					
U.S.: 361/749, 728, 736, 748, 760; 174/250, 254, 260, 261; 257/678, 723					
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched					
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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)					
C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category *	Citation of document, with indication, where appropriate, of the relevant passages			Relevant to claim No.	
A	US 6,590,781 B2 (KOLLIPARA et al) 8 July 2003 (8.07.2003), the entire document 1-10				
Α	US 6,021,048 B2 (SMITH) 1 February 2000 (1.02.2000), the entire document			1-10	
				1 10	
Α	US 6,222,739 B1 (BHAKTA et al) 24 April 2001 (24.04.2001), the entire document			1-10	
	TID C C14 CC4 P2 (I EE) 2 September 2003 (2 00 2003), the entire document				
Α	US 6,614,664 B2 (LEE) 2 September 2003 (2.09.2003), the entire document			1.10	
Α	US 6,891,729 B2 (KO et al) 10 May 2005 (10.05.2005), the entire document			1-10	
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Α	US 6,762,942 B1 (SMITH) 13 July 2004 (13.07.2004), the entire document			1-10	
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	de la lista din the continuation of Dov. C		See patent family annex.		
	documents are listed in the continuation of Box C.		later document published after the into	emational filing date or priority	
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