

JMS578

USB 3.1 Gen1 to SATA 6Gb/s

Bridge Controller

Overview

The JMS578 is a USB 3.1 Gen1 to SATA 6Gb/s bridge controller. It provides a low power and high-performance solution for external solid state drive (SSD), hard disk drive (HDD), and optical disc drive (ODD).

The JMS578 supports higher data transmission rate and lower power consumption than its predecessors ever, meanwhile, a two-layer printed circuit board (PCB) design for a cost-sensitive data storage solution.

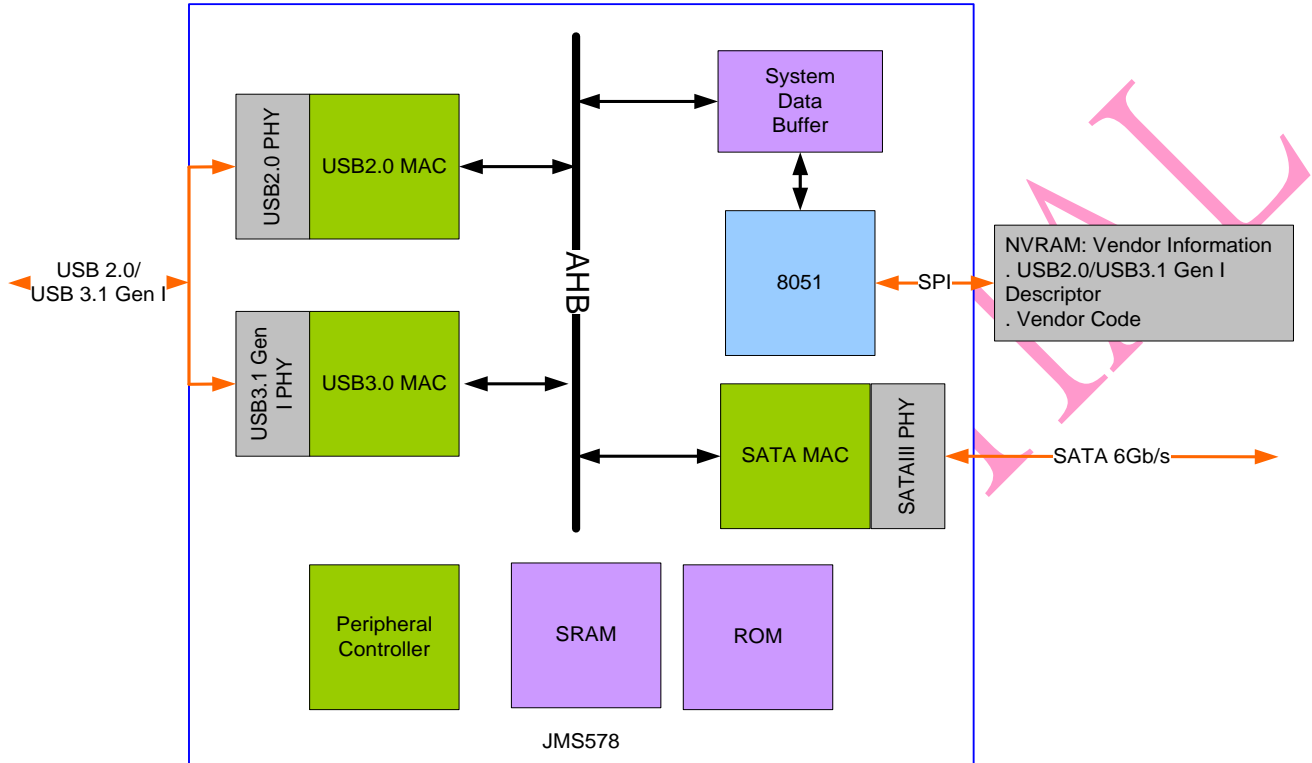
Moreover, the JMS578 can combine with JMicron's SATA port multipliers to construct a data storage device with multiple bays of HDDs to meet the requirement for large capacity data storage applications.

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Features

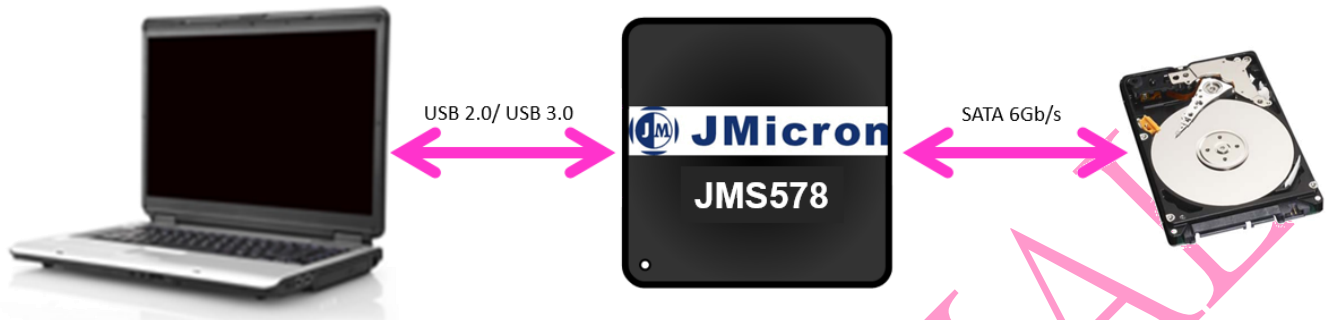
- Complies with Gen 2i/Gen 2m of Serial ATA II Electrical Specification 2.6
- Complies with Gen 3 of Serial ATA III Electrical Specification 3.2
- Complies with USB 3.0 Specification, USB Mass Storage Class, Bulk-Only Transport Specification
- Complies with USB Attached SCSI Protocol (UASP) Specification
- Supports USB Super-Speed/High-Speed/Full-Speed Operation
- Supports USB 2.0 and USB 3.0 power saving modes
- Supports SHA-1/SHA-256 for IEEE-1667 digest calculation
- Supports external SPI NVRAM for Vendor VID/PID of USB 2.0/USB 3.0 device controller
- Supports ATA/ATAPI PACKET command set
- Supports ten GPIOs for customization
- Provides hardware controlled PWM
- Provides software utilities for downloading the upgraded firmware code under USB 2.0/USB 3.0
- Designed for Windows XP, Windows 7, Windows 8.1, Windows 10 and MAC 10.7.4 or later versions
- Supports 30MHz external crystal
- Embedded 5V to 1.2V voltage regulator
- Embedded 5V to 3.3V voltage regulator (LDO)
- QFN48 package (6x6)

Block Diagram



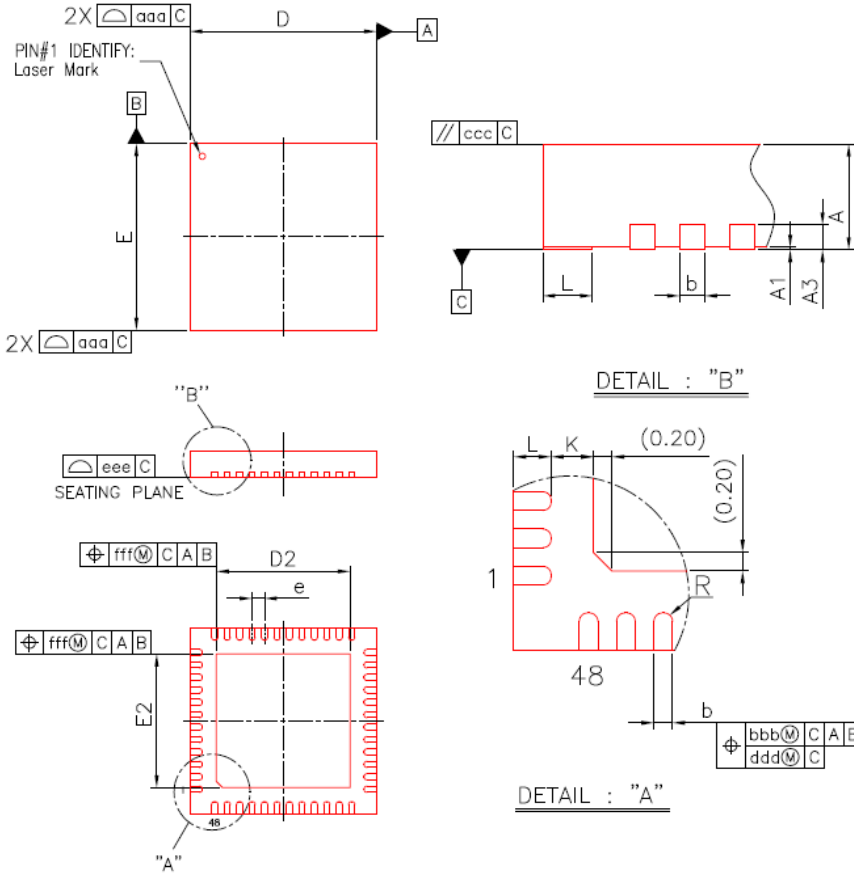
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Application



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Package Information (QFN48 6x6)



Symbol	Dimension in mm			Dimension in inch		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.85	0.90	0.031	0.033	0.035
A1	0.00	0.02	0.05	0.000	0.001	0.002
A3	0.20 REF			0.008 REF		
b	0.15	0.20	0.25	0.006	0.008	0.010
D/E	5.90	6.00	6.10	0.232	0.236	0.240
D2/E2	4.15	4.30	4.45	0.163	0.169	0.175
e	0.40 BSC			0.016 BSC		
L	0.30	0.40	0.50	0.012	0.016	0.020
K	0.20	---	---	0.008	---	---
R	0.075	---	---	0.003	---	---
aaa	0.10			0.004		
bbb	0.07			0.003		
ccc	0.10			0.004		
ddd	0.05			0.002		
eee	0.08			0.003		
fff	0.10			0.004		

NOTE:
 1. CONTROLLING DIMENSION : MILLIMETER
 2. REFERENCE DOCUMENT: JEDEC MO-220.

TITLE : 48LD MQFN (6X6 mm) PACKAGE OUTLINE			
APPR.	Mark Hung	L/F	MATERIAL : A194 FH
PE. <small>(W/B/P/S/P/S/G)</small>		DWG NO.	CJ048-SW7
PD.	Joe Yang Mask Tsan	REV NO.	A
QM.	Horton Tsai	DATE	01/25/'11
CHK.	G.F. Chen	DWG.	Mechane SieChang

Note: The ground pad size is (D2*E2).

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