

JMB389

PCI Express to x1 Combo Memory Card Host Controller (SDXC UHS-1 compliant)

Overview

JMB38X is product family that includes 1394a OHCI and Memory Card Reader Host Controller. They are all 1-lane PCI Express to 1/2-port 1394a and 1-slot Combo Memory Card Reader (SD/MMC/MS/xD) Host Controller. The table below shows the brief feature lists of JMB38X product family.

	JMB380			JMB388			JMB381			JMB385			JMB387			JMB389			
Host IF	PCIe			PCIe			PCIe			PCIe			PCIe			PCIe			
1394a IF	x1 Port			x1 Port			x2 Port			None			None			None			
Card Reader	x1 Combo**			x1 Combo**			None			x1 Combo**			x1 Combo**			x1 Combo**			
Package	QFN48			QFN48			LQFP48			LQFP48 /QFN48			LQFP48			LQFP48 /QFN48			
Version	--	C	A	B	--	C	B	C	A	B	A	B	C	D					
On-board Application	--	V	V	X	--	V	V	V	V	X	V	X	V	X	V	X	V	X	
Add-on / Express Card Application	--	X	X	V	--	V	X	X	X	V	X	V	X	V	X	V	X	V	
SDXC UHS-1	--	X	V	V	--	X	X	X	X	X	V	V	V	V	V	V	V	V	
D3E	--	V	V	X	--	X	V	V	V	X	V	X	V	X	V	X	V	X	
EEPROM	--	X	X	V	--	V	X	X	X	V	X	V	X	V	X	V	X	V	
Boot Function	--	X	V*	X	--	X	X	X	V	V	V	X	X	V	X	X	V	X	
CR1_CD2	--	V	V	X	--	X	X	V	V	X	V	X	V	X	V	X	V	X	
Co-layout	Co-layout																		

(*): JMB388 has no SPI interface on chip, it needs BIOS support

(**): "Combo Memory Card Reader Mechanism" supporting SD/MMC/MS/MS Duo/MS-HG (1/4/8-bit) & xD.

Feature

Compliance

- Compliant with PCI Express Base Spec. Revision 1.1
- Compliant with SD Spec. Part 1 Physical Layer Spec. Version 3.00
- Compliant with SD Spec. Part A2 SD Host Controller Standard Spec. Version 2.00
- Compliant with SD Spec. Part E1 SDIO Spec. Version 2.00
- Compliant with SD Spec. Part 2 File System Spec. Version 2.00
- Compliant with MultiMediaCard System Spec. Version 4.2
- Compliant with Memory Stick Standard Format Spec. Version 1.43-00
- Compliant with Memory Stick Standard Memory Stick PRO Format Spec. – without security spec. – Version 1.02-00
- Compliant with Memory Stick Pro-HG Duo Spec. Version 1.00
- Compliant with xD-Picture Card™ Card Spec. Version 1.20
- Compliant with xD-Picture Card™ Host Guideline Version 1.20
- Compliant with xD-Picture Card™ Format Spec. Version 1.11

Overall

- Integrated 1-Lane PCI Express PHY (2.5Gbps)
- Integrated PLL for PCI Express bus
- Output swing control and Automatic impedance calibration for PCI Express PHY
- Fabricated 0.18um/3.3V CMOS Standard Logic Process with single 3.3V power source

PCI Express

- Supports 1-Lane 2.5Gbps PCI Express bus
- Internal native interface multiplexed to Memory Card (SD/MMC/MS/xD)
- All registers of Memory Card accessible in unified memory space

Memory Card

- Support Extended Capacity SD Memory Card (SDXC): more than 32GB and up to and including 2TB
 - Default speed mode: 3.3v signaling, Frequency up to 25MHz
 - High speed mode: 3.3v signaling, Frequency up to 50MHz
 - SDR12/25/50/104, DDR50: 1.8v signaling, Frequency from 25MHz to 208MHz
- Support MSXC memory card: more than 32GB and up to and including 2TB
- Supports 1 set of “4-in-1 Combo Card Reader”
- Programmable IO driving to adjust signal trace length
- Programmable pull high/low control for different memory card bus topology
- Support MSPRO-HG Duo 8-bit mode
- Support xD-Picture Card™ (xD) including Type M+, Type M and Type H

Peripherals Components

- Supports External Serial EEPROM
- Integrate 3.3v-to-1.8v regulator for code power
- Integrate 3.3v-to-3.3/1.8v power switch for SDA3.0 IO power
- Integrate Power Switch for power control of memory card

DOS Utility

- Provide Serial EEPROM DOS Update Utility
- Provide GUID Setting DOS Program Utility for Main BIOS

Related Product Information

Name	Description	Controller
JMB380	PCI Express to x1 Combo Memory Card and x1 1394a	Host Controller
JMB381	PCI Express to x2 1394a	Host Controller
JMB385	PCI Express to x1 Combo Memory Card	Host Controller
JMB387	PCI Express to x1 Combo Memory Card (with SD Boot function)	Host Controller
JMB388	PCI Express to x1 Combo Memory Card and x1 1394a (SDXC UHS-1 compliant)	Host Controller
JMB389	PCI Express to x1 Combo Memory Card (SDXC UHS-1 compliant)	Host Controller

Supporting Document

1	Product Brief
2	Data Sheet
3	Hardware Design Guide
4	Application Schematic

Contact Information

Department	Email
Sales	sales@jmicron.com
Tech. Support	fae@jmicron.com