

## JMB38X Product Family

### PCI Express to 1394a OHCI and Memory Card Host Controller

#### 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 SD/MMC/MS/xD Memory Card Reader 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   |   |   |
| Boot Function                  | None      |   | Support* |   | None    |   | None          |   | Support  |   | Support  |   |   |
| Version                        | --        | C | A        | B | --      | B | --            | C | A        | B | A        | B | C |
| On-board application           | --        | V | V        | X | --      | V | --            | V | V        | X | V        | X | V |
| Add-on/ExpressCard application | --        | X | X        | V | --      | V | --            | X | X        | V | X        | V | X |
| SDXC UHS-1                     | --        | x | v        | v | --      | x | --            | x | x        | x | v        | v | v |
| D3E                            | --        | v | v        | x | --      | v | --            | v | v        | v | v        | x | v |
| EEPROM                         | --        | x | x        | v | --      | v | --            | x | x        | v | x        | v | x |
| SPI(Boot)                      | --        | x | x        | x | --      | x | --            | x | v        | v | v        | v | x |
| CR1_CD2                        | --        | v | v        | x | --      | x | --            | v | v        | x | v        | x | v |
| Co-layout                      | Co-layout |   |          |   |         |   |               |   |          |   |          |   |   |

\*"x1 Combo" means 1 set of "4-in-1 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 1394 Open Host Controller Interface (OHCI) Release 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) and 2-port 1394a PHY (100/200/400Mbps)
- Integrated two PLL for both PCI Express bus and 1394a interface
- Output swing control and Automatic impedance calibration for both PCI Express and 1394a 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 OHCI and Memory Card (SD/MMC/MS/xD)
- All registers of Memory Card accessible in unified memory space

### 1394a

- Supports 1394a PHY hub function between 2-port
- Supports Hot Plugging on 1394a port

### 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

### Product Information

| Name   | Description   | Controller      |
|--------|---|-----------------|
| JMB380 | PCI Express to 1-port 1394a + x1 Combo Card Reader  | Host Controller |
| JMB381 | PCI Express to 2-port 1394a   | Host Controller |
| JMB385 | PCI Express to x1 Combo Card Reader   | Host Controller |
| JMB387 | PCI Express to x1 Combo Card Reader with boot function  | Host Controller |
| JMB388 | PCI Express to 1-port 1394a + x1 Combo Card Reader with boot function (SDXC/UHS-1 and MSXC compliant) | Host Controller |
| JMB389 | PCI Express to x1 Combo Card Reader with boot function (SDXC/UHS-1 and MSXC compliant)                | Host Controller |

### Supporting Document

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

### Contact Information

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