**AIMB-227**

AMD Merlin Falcon Quad Core Mini-ITX with DP/DVI-D/HDMI, 6COM, and

Dual LAN

**NEW**

RoHS

**COMPLIANT 2002/95/EC**

**Features**

* Supports AMD Merlin Falcon / Brown Falcon / Prairie Falcon processor
* Two 260-pin SO-DIMM up to 16GB DDR4 2400 SDRAM
* Supports triple display with DP/eDP/LVDS + DVI-D + HDMI
* Supports 1 PCIe x8 and 1 Mini-PCIe expansion slots

 6 COM, 4 USB 2.0, 4 USB 3.0

* Supports WISE-PaaS/RMM and Embedded Software APIs

**Software APIs:**

SMBus H/W Monitor Brightness Watchdog GPIO

**Utilities:**

BIOS flash Monitoring

Specifications

|  |  |  |
| --- | --- | --- |
| Processor System | SOC (28nm) | AMD Quad RX-421BD RX-216GD GX-224IJ |
| Max. Speed | 2.1GHZ (Quad Core 35W) 1.6GHz (Dual Core 15W) 2.4GHz (Dual Core 15W) |
| L2 Cache | 2 Mb 1 Mb 1Mb |
| BIOS | AMI 16 Mbit SPI AMI 16 Mbit SPI AMI 16Mbit SPI |
| Expansion Slot | M.2 | 1, E key (2230) |
| Mini-PCIe | 1, F/S x 1 support mSATA with SIM card holder |
| PCIe | 1, PCIe x8 (BF and PF support 1 PCIe x4) |
| Memory | Technology | Dual Channel DDR4 2400MHz SDRAM |
| Max. Capacity | 16 GB/8 GB per SO-DIMM |
| Socket | 2 x 260-pin DDR4 SO-SIMM with ECC Support (PF supports 1 DDR4 SO DIMM slot and no ECC function) |
| Graphics | Controller | AMD Radeon 3rd Generation GCN (Up to 8 CUs) |
| DVI-D | 1, supports up to SXGA 1920 x 1200 |
| eDP Version 1.4 | 1, 2560 x 1600 @ 60Hz Max (Optional) |
| LVDS | 1, supports dual channel 48-bit up to 1920 x colay DP 1.2 port (Optional) |
| Display Port 1.2 | 1, Supports DP++, resolution up to 4096 x 2160 @ 24Hz |
| HDMI V2.0 | 1, 4096 x 2160 @ 60Hz Max (60Hz requires re-timer) |
| Multi Display | Merlin Falcon: DP/eDP/LVDS + DVI-D +HDMIBrown Falcon & Prairie Falcon: DP/eDP/LVDS + DVI-D |
| Ethernet | Interface | 10/100/1000 Mbps |
| Controller | GbE LAN1: Realtek 8111G GbE LAN2: Realtek 8111G |
| Connector | RJ-45 x 2 |
| SATA | Max Data Transfer Rate | 600 MB/s |
| Channel | 2, SATA 2 colay mSATA (optional); SATA 1 support SATA-DOM device |
| Rear I/O | DVI-D (Default) | 1 |
| DP1.2 (Default) | 1 |
| HDMI (Default) | 1 (Brown Falcon / Prairie Falcon no support) |
| Ethernet | 2 |
| USB | 2 x USB 2.0/2 x USB 3.0 |
| Audio | 1 (Line out) |
| DC jack | 1 (2.5 mm) |
| Internal Connector | LVDS & Inverter (Optional) | 1/1 |
| eDP (Optional) | 1 |
| USB | 2 x USB3.0, 2 x USB2.0 |
| Serial | 6 (5 x RS232,1 x RS232/422/485; COM 3 support RS232/422/485 auto flow control; COM6 support 5v/12V by jumper selection; 1 COM support CCtalk ; 1 COM support TTL) |
| SATA | 2 |
| SATA PWR Connector | 2 |
| PS/2 KB & MS | 1 |
| Intrusion Protection | 1 |
| GPIO | 8-bit |
| Watchdog Timer | Output | System reset |
| Interval | Programmable 1 ~ 255 sec/min |
| Power | Power Type | Single voltage 12V DC input; 1 x External DC jack; 1 x Internal 4-pin (2x2) power connector; Supports AT/ATX mode |
| Typical Power Consumption | TBD |
| Environment | Operating Non-Operating |
| Temperature | 0 ~ 60° C (32 ~ 140° F) -40 ~ 85° C (-40 ~ 185° F) |
| Physical Characteristics | Dimensions | 170 mm x 170 mm (6.69" x 6.69") |

 **Industrial Motherboards**

All product specifications are subject to change without notice. Last updated: 26-Apr-2018

AIMB-227

LPC

SPI

1 PCIe x 1 / 1 USB 2.0

HD Audio

1 PCIe x 1

USB 3.0

1 PCIe x 1

USB 2.0

1 PCIe x 1

SATA III

PCIe x 8

BF & PF only support PCIe x 4

DDI 3

DDR4 2133 MHz SODIMM

Channel

PF only support 1 SODIMM

DDI 2

DDR4 2133 MHz SODIMM

DDI 1

Colay eDP/LVDS

**Block Diagram**

PS2 KB/MS, WDT, 8bit GPIO,

Smart Fan, HW.M, 6COM ports

NCT6106D

Infineon TPM 2.0 (optional)

BIOS

M.2 E key (2230)

Realtek Audio codec ALC892

1 F/S mPCIe colay mSATA /SIM card holder

4 USB 3.0

GbE LAN2:

Realtek RTL8111G

4 USB 2.0

GbE LAN1:

Realtek RTL8111G

2 SATAIII ports

1 PCIex8 Slot

HDMI (BF/PF no support)

DVI-D

AMD Merlin Falcon / Brown Falcon / Prairie Falcon Platform

DP++

Ordering Information

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Part Number** | **CPU** | **Display** | **TPM** | **eDP/LVDS** | **PCIe Slot** | **USB 3.0/2.0** | **GbE** | **SATA** | **COM** | **Thermal Solution** |
| AIMB-227MG2-00A1E | RX-421BD | DP/eDP/LVDS, DVI-D, HDMI | (1) | (1) | x8 | 4/4 | 2 | 2 | 6 | Active |
| AIMB-227MG2-01A1E | RX-216GD | DP/eDP/LVDS, DVI-D, HDMI | (1) | (1) | x8 | 4/4 | 2 | 2 | 6 | Passive |
| AIMB-227PG2-02A1E | GX-224IJ | DP/eDP/LVDS, DVI-D | (1) | (1) | x4 | 4/4 | 2 | 2 | 6 | Passive |

Note: Passive = fanless; Active = with fan

\*() BOM options available on MP version.

Packing List

|  |  |  |
| --- | --- | --- |
| **Part Number** | **Description** | **Quantity** |
| 1700003194 | SATA HDD cable | 1 |
| 1700018785 | SATA power cable | 1 |
| 1700008876 | 1-to-4 serial ports cable kit, 35 cm | 1 |
| 1700100250 | 1-to-1 serial ports cable kit, 25 cm | 2 |
| 1960078398T000 | I/O port bracket | 1 |
| 1960054541N031 | CPU Cooler (CPU TDP 35W); RX-421BD | 1 |
| 1960083981N001 | CPU Heatsink (CPU TDP<= 15W); RX-216GD, GX-224IJ | 1 |
| 2006022700 | Startup manual | 1 |

Optional Chassis

|  |  |
| --- | --- |
| **Part Number** | **Description** |
| AIMB-B22270G-00YE | EPC-B2227 W/ RX-421BD Barebone system |
| AIMB-T1227A-00YE | EPC-T1227 W/ RX-216GD Barebone system |

I/O View

Optional Accessories

|  |  |
| --- | --- |
| **Part Number** | **Description** |
| 1700020277-01 | Dual port USB 3.0 cable 30cm with IO bracket |
| 1700026162-01 | USB 2.0 cable with two ports, 30 cm with bracket |
| 1700023474-01 | 2 port USB cable, F10p/2.0, lock 10-pin(right-up), 345 mm |
| 1700025573-01 | USB 3.0 Cable A CABLE USB 3.0 A/M\*2/2\*10P 2.0 90D 20CM |
| 1700023082-11 | A cable 2\*10P-4.2/1\*3P-2.0 15cm |
| 96PSA-A84W12V1 | ADAPTER AC100~240V 84W +12V/7A (FSP) |
| 96PSA-A60W12V1-1 | ADAPTER AC100~240V 60W +12V/5A (FSP) |
| 1702002600 | Power cable 3-pin 180 cm,USA type |
| 1702002605 | Power cable 3-pin 180 cm, Europe type |
| 1702031801 | Power cable 3-pin 180 cm, UK type |
| 1700000237 | Power cable 3-pin PSE Mark 183 cm |
| 1700000596-11 | Power cable 3-pin 180 cm, China type |

Embedded OS

|  |  |
| --- | --- |
| **Part Number** | **Description** |
| 20706WX6VS0002 | img W10 16VL AIMB-227 64b 1709 ENU(Merlin Falcon) |
| 20706WX6ES0003 | img W10 16EL AIMB-227 64b 1709 ENU(Brown Falcon, Prairie Falcon) |



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