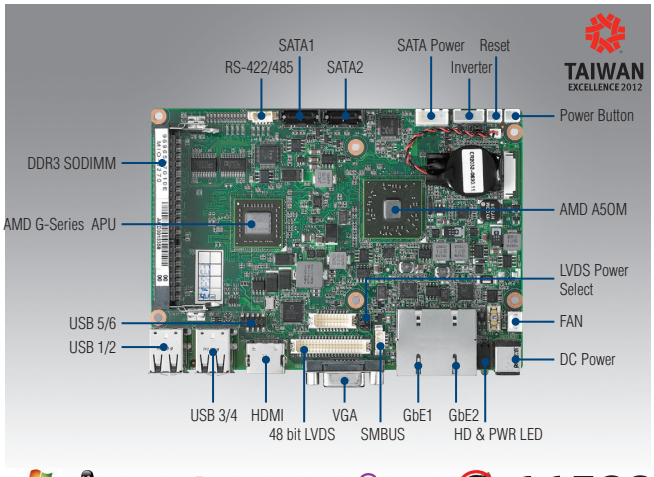
MIO-5270

AMD® G- Series 3.5" MI/O-Compact SBC, DDR3, HDMI, 48-bit LVDS, VGA, 2 GbE, CFast, iManager, MIOe



Features

- Embedded AMD® G- Series Single Core/ Dual Core APU + AMD A50M FCH, 1 x DDR3 memory up to 4 GB capacity
- DirectX® 11, 2D/3D Acceleration, multiple display: 48-bit LVDS, HDMI, VGA
- Flexible design using integrated multiple I/O:MIOe to approach vertical applications & keep domain knowhow.
- 2 GbE support, HD Audio, Rich I/O interface with 4 COM, 2 SATA, 6 USB and 8-bit GPIO
- Supports iManager, SUSIAccess and Embedded Software APIs

Software APIs: GPIO, H/W Monitor, Brightness, Watchdog, Backlight On/Off, SMBus, CPU Speed, System Throttling

Utilities: Monitoring

Specifications

Processor System	CPU	AMD G- Series T40R	AMD G-Series T40E	AMD G-Series T56N
	Frequency	1.0GHz (single-core)	1.0GHz (dual-core)	1.65GHz (dual-core)
	L2 Cache	512 KB	512 KB	1 MB
	System Chipset	AMD G-Series APU + A50M FCH		
	BIOS	AMI EFI 32Mbit		
Memory	Technology	DDR3 1066 MHz, 1333MHz only for T56N		
	Max. Capacity	4 GB		
	Socket	1 x 204-pin SODIMM		
	Recommended memory	SQR-SD3M-2G1K6SNLB		
Display	Chipset	AMD Radeon™ HD 6320/6250 (T40E & T40R)		
	Graphic Engine	DirectX® 11 graphics with UVD 3.0 2D Acceleration, 3D Acceleration, Motion Video Acceleration, Supports DVD, Blu-ray* Hardware decode (UVD 3):H.264, VC-1 & MPEG2		
	LVDS	LVDS: Supports single channel 24-bit or dual channel 48-bit LVDS T56N up to 2560 x 1600 at 60 Hz, T40R & T40E up to 1920 x 1200 at 60 Hz (pixel clock rate = 80 MHz)		
	VGA	T56N up to 2560 x 1600, T40R & T40E up to 1920 x 1200		
	HDMI	Supports 1920 x 1080p at 60 Hz, 36 bpp, Supports HDMI 1.3, using TMDS data encoding		
	eDP	Option (supported by request) T56N up to 2560 x 1600, T40R & T40E up to 1920 x 1200		
	Multi-Display	VGA+LVDS or VGA + HDMI or HDMI + LVDS		
Ethernet	Speed	10/100/1000Mbps		
	Controller	GbE1: Realtek RTL8111E-VB-GR 10/100/1000Mbps, GbE2: Realtek RTL8111E-VB-GR 10/100/1000Mbps		
	Connector	2 RJ45 on Rear I/O		
Audio	Chipset	Realtek ALC892, High Definition Audio (HD),Line-in, Line out, Mic-in		
	Amplifier	Optional via MIOe		
WatchDog Timer		Output System reset, Programmable counter from 1 ~ 255 minutes/ seconds		
Storage	CFast	1		
	mSATA	Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe		
	SATA	2, up to 3Gb/s (300 MB/s)		
Rear I/O	Ethernet	2		
	VGA	1		
	HDMI	1		
	USB	4 x USB 2.0		
	LED	Power, HDD		
	DC Jack	1 (Supported only on MIO-5270S-S0A1E & MIO-5270D-S0A1E)		
Internal I/O	USB	2 x USB 2.0		
	Serial	3 x RS-232 from COM1/3/4, 1 x RS-232/422/485 from COM2 with auto flow control (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)		
	SMBus	1		
	GPIO	8-bit general purpose input/output		
Expansion	MiniPCIe	1 x Full-size		
	MIOe	SMBus, 3 x USB2.0, LPC, 4 x PCIe x1, line out, DisplayPort (optional), +5 Vsb/+12 Vsb power, Power On, Rest		
Power	Power Type	Single 12V DC power input		
	Power Supply Voltage	Supports single 12V input, ± 10%		
	Power Consumption (Typical)	MIO-5270S-S0A1E: 0.59 A @ 12 V (7.08 W) MIO-5270D-S0A1E: 0.53 A @ 12 V (6.36 W) MIO-5270D-S6A1E: 0.65 A @ 12 V (7.8 W)		
	Power Consumption (Max, test in HCT)	MIO-5270S-S0A1E: 0.8 A @ 12 V (9.6 W) MIO-5270D-S0A1E: 0.82 A @ 12 V (9.84 W) MIO-5270D-S6A1E: 1.35 A @ 12 V (16.2 W)		
	Power Management	ACPI		
	Battery	Lithium 3 V / 210 mAH		
Environment	Operational	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)		
	Non-Operational	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing		
Physical Characteristics	Dimensions (L x W)	146 x 102 mm (5.7" x 4"), same as 3.5"		
	Weight	0.78 kg (1.72 lb), weight of total package		
	Total Height	34.5 mm		

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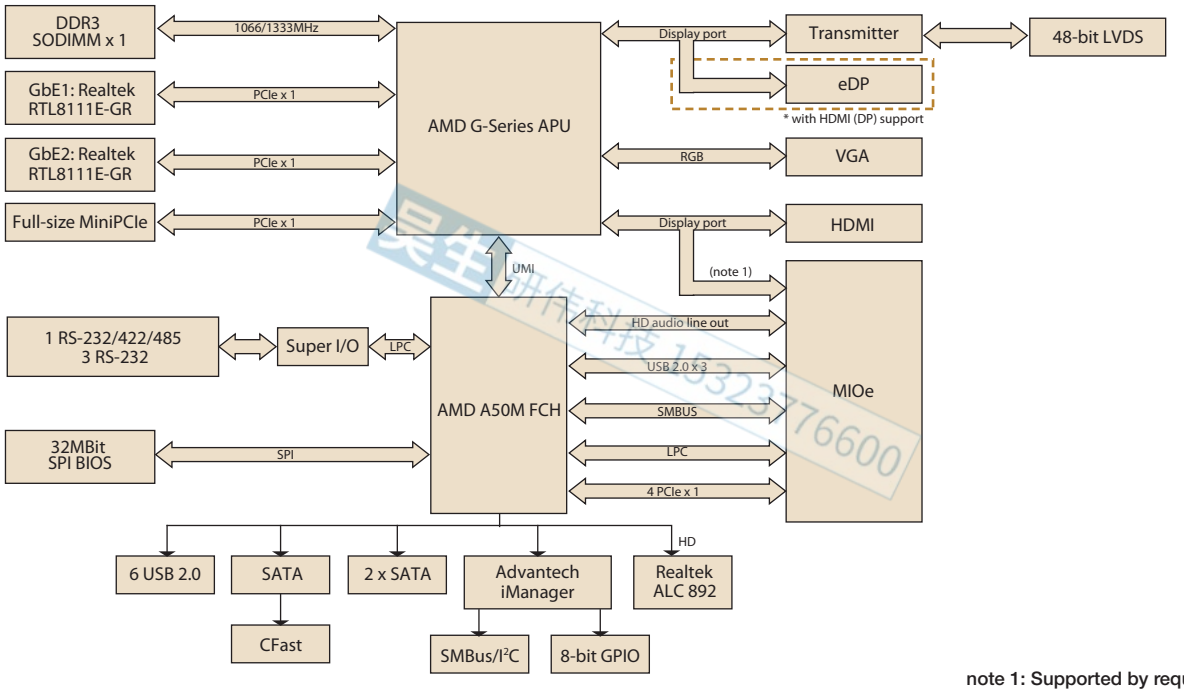
All product specifications are subject to change without notice.

Block Diagram



note 1: Supported by request

Ordering Information

Part No.	CPU	L2 Cache	Memory	LVDS	VGA & HDMI	GbE	Audio	RS-232/ 422/485	RS-232	USB 2.0	SATA	CFast	Mini PCIe	MIOe	Power Connector	Thermal Solution	Operational Temp.
MIO-5270S-S0A1E	AMD T40R 1.0G SC	512 KB	SO-DIMM	48-bit	Yes	2	Yes	1	3	6	2	1	1	Yes	DC Jack	Passive	0 ~ 60° C
MIO-5270D-S0A1E	AMD T40E 1.0G DC	512 KB	SO-DIMM	48-bit	Yes	2	Yes	1	3	6	2	1	1	Yes	DC Jack	Passive	0 ~ 60° C
MIO-5270D-S6A1E	AMD T56N 1.65G DC	1 MB	SO-DIMM	48-bit	Yes	2	Yes	1	3	6	2	1	1	Yes	2x2 type	Active	0 ~ 60° C
MIO-5270DZ-2GS0A1E	AMD T40E 1.0G DC	512 KB	2GB bundle	48-bit	Yes	2	Yes	1	3	6	2	1	1	Yes	DC Jack	Passive	-20 ~ 80° C
MIO-5270DZ22GS0A1E	AMD T40E 1.0G DC	512 KB	2GB bundle	48-bit	Yes	2	Yes	1	3	6	2	1	1	Yes	DC Jack	Passive	-40 ~ 85° C

Note: Passive = fanless; Active = with fan

Note: Wide temperature range version has been bundled with industrial-grade memory module.

Packing List

Part No.	Description	Quantity
	MIO-5270 SBC	
	Startup Manual	
	Utility CD	
1700006291	SATA1 cable 7P/ 7P 30cm C=R 180/90	1
1700018785	SATA Power Cable 35cm	1
1700019435	COM1 RS-485 D-SUB 9P (M)/1*5P 1.25 25cm cable	1
1701200220	COM RS232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM	2
1700019584	Audio Cable 2*5P-2.0/ JACK*3 20cm	1
9689000002	mini Jumper pack	1
1960053507N001	Heatsink (137 x 84 x 25 mm) for T40R/ T40E series	
1960053508N001	Cooler (137 x 84 x 25 mm) for T56N series	

Optional Accessories

Part No.	Description
1960054266T001	Heat spreader for MIO-5270 (137 x 84.2 x 16.7mm)
1700006291	SATA2 cable 7P/ 7P 30cm C=R 180/90
1703100260	Internal USB cable
1757003934	Adaptor 100-240V 60W 12V 5A W/O PFC

Embedded OS/API

Embedded OS/API	Description
2070010844	WES2009 MIO-5270 V4.0 24MUI
2070010845	WES7E SP1 MIO-5270 V5.1 ENG
Linux	Ubuntu 12.04
Software API	iManager 2.0

Rear I/O View

MIO-5270S-S0A1E
MIO-5270D-S0A1E

MIO-5270D-S6A1E

Memory Compatible List

Brand	Size	Speed	Type	ECC	Vendor PN	Memory
Transcend	1GB	DDR3 1066	SODIMM DDR3	N	TS128MSK64V1U/	SEC K4B1G0846D-HCF8(128x8)
					TS2KSU28200-1S	
	1GB	DDR3 1066	SODIMM DDR3	N	TS128MSK64V1U	SEC HCH9 K4B1G0846D(128x8)
	2GB	DDR3 1066	SODIMM DDR3	N	TS256MSK64V1U	SEC K4B1G0846D-HCF8(128x8)
					TS5KSU28400-1S	
	2GB	DDR3 1066	SODIMM DDR3	N	TS128MSK64V1U	SEC HCH9 K4B1G0846D (128x8)
	4GB	DDR3 1066	SODIMM DDR3	N	TS7KSN28420-1Y	HYNIX H5TQ2G83BFR (256x8)
Apacer	1GB	DDR3 1066	SODIMM DDR3	N	78.02GC3.420	ELPIDA J1108BDBG-DJ-F (128x8)
	2GB	DDR3 1066	SODIMM DDR3	N	78.A2GC3.421	ELPIDA J1108BABG-AE-E(128x8)
	4GB	DDR3 1066	SODIMM DDR3	N	78.B2GC8.AF1	HYNIX H5TQ2G83BFR (256x8)
Kingston	2GB	DDR3 1066	SODIMM DDR3	N	KVR1066D3S7/2G	
DSL	1GB	DDR3 1066	SODIMM DDR3	N		
	4GB	DDR3 1066	SODIMM DDR3	N	D3SH56082XH18AB	
Micron	1GB	DDR3 1066	SODIMM DDR3	N	MT8JSF12864HZ-1G1F1	
Samsung	2GB	DDR3 1066	SODIMM DDR3	N	M471B5673DH1-CF8	
G.SKILL	4GB	DDR3 1066	SODIMM DDR3	N	F3-8500CL7S-4GBSQ	
Transcend	1GB	DDR3 1333	SODIMM DDR3	N	TS128MSK64V3U	
	2GB	DDR3 1333	SODIMM DDR3	N	TS256MSK64V3U	
	4GB	DDR3 1333	SODIMM DDR3	N	TS512MSK64V3N	
Apacer	1GB	DDR3 1333	SODIMM DDR3	N	78.02GC6.420	ELPIDA J1108BDBG-DJ-F (128x8)
	2GB	DDR3 1333	SODIMM DDR3	N	78.A2GC6.421	ELPIDA J1108BDBG-DJ-F (128x8)
	4GB	DDR3 1333	SODIMM DDR3	N	78.B2GC9.AF1	
DSL	1GB	DDR3 1333	SODIMM DDR3	N	D3SE28081XH15AA	
	2GB	DDR3 1333	SODIMM DDR3	N	D3SE28082XH15AA	
	4GB	DDR3 1333	SODIMM DDR3	N	D3SH56082XH15AA	
Kingston	1GB	DDR3 1333	SODIMM DDR3	N	KVR1333D3S9/1G	
	2GB	DDR3 1333	SODIMM DDR3	N	KVR1333D3S9/2G	
ATP	4GB	DDR3 1333	SODIMM DDR3	N	AW12M64F8BKH9S	