

AFE-E420

NXP® i.MX 93 4" SBC

NEW



yocto
PROJECT



Features

- NXP® i.MX 93 with Dual Arm® Cortex-A55
- Onboard LPDDR4x-3733 up to 2GB, eMMC
- Display: LVDS or HDMI
- Dual GbE, 3 USB, 6 COM, 4 CANBus, 2 PLC, RTD 4-CH
- Expansion: M.2 E-Key, M.2 B-Key
- Supports Yocto BSP

Specifications

Platform	Processor	NXP® i.MX 93 with Dual Arm® Cortex-A55
	Max. Frequency	1.70 GHz
	Core	Dual
Memory	Technology	LPDDR4x-3733MT/s
	Max. Capacity	Up to 2GB
	Channel/Socket	Single Channel/ Onboard LPDDR4x
	ECC Support	Inline ECC
Display I/F	LCD	1 x LVDS, Single Channel 18/24-bit, up to 1366 x 768 or 1280 x 800 (*other LVDS panel)
	*HDMI	1 x HDMI 1.3, up to 1920 x 1080 (*HDMI Support by request)
	Display	Single Display, LVDS or HDMI
Ethernet	Controller	2 x LAN: Realtek 8211 (PHY)
	Speed	GbE
External I/O	Ethernet	2 x RJ-45
	HDMI	*1
	USB2.0	1
	Micro-USB	1 (for debug only)
Internal I/O	USB2.0	2
	Serial Bus	2 x I2C
	COM Port	6x RS-232/422/485 (COM5 & COM6 with isolation)
	GPIO	16-bit general purpose input output
	CANBus	4xCAN-FD (CAN1 & CAN2 with isolation)
	Audio	NXP SGT5000, Line-in/Line-out/MIC
	Amplifier	YES (Stereo, 2.5W)
	RTD	4-CH (3-wire), PT1000/PT100 compatible Sampling Rate 100Hz
	Fan	2 x Fan, 12V, 0.3A (4-wire)
	Front Panel Control	Power Button, Reset Button, 5V/3.3V Power Indicator
Power Line Communication	PLC Controller	2 x QCA7006
	Control Pilot	Dual ports with PWM & ADC
Storage	eMMC	16GB
Expansion	M.2 E-Key	1 x E-Key 2230 (SDHC x1, UART x1)
	M.2 B-Key	1 x B-Key 3042 (USB2.0 x1) w/ Nano-SIM
	SD Card	1 x SD slot
Power	Supply Voltage	Vin: DC 12-24V ± 10%; RTC Battery: Lithium 3V/210mAH
	Connector	2-pin phoenix connector, optional ATX 4pin 180D
	Power Management	AT, ATX
	Max. Consumption	13.29W (12V), 42.94W (24V)
	Idle Consumption	13.22W (12V), 42.33W (24V)
Environment	Temperature	Operating: Standard: 0 ~ 60 °C (32 ~ 140 °F) for HDMI with 0.7m/s airflow Extend: -40 ~ 85 °C (-40 ~ 185 °F) for LVDS with 0.7m/s airflow Storage: -40 ~ 85 °C (-40 ~ 185 °F)
	Humidity	Operating: 40° C @ 95% relative humidity, non-condensing Storage: 60° C @ 95%relative humidity, non-condensing
	Vibration Resistance	3.5 Grms
Certification	EMC	CE, FCC Class B
Mechanical	Dimensions	165 x 115 mm (6.5" x 4.5")
	Net Weight	150g

*Note: Support by request

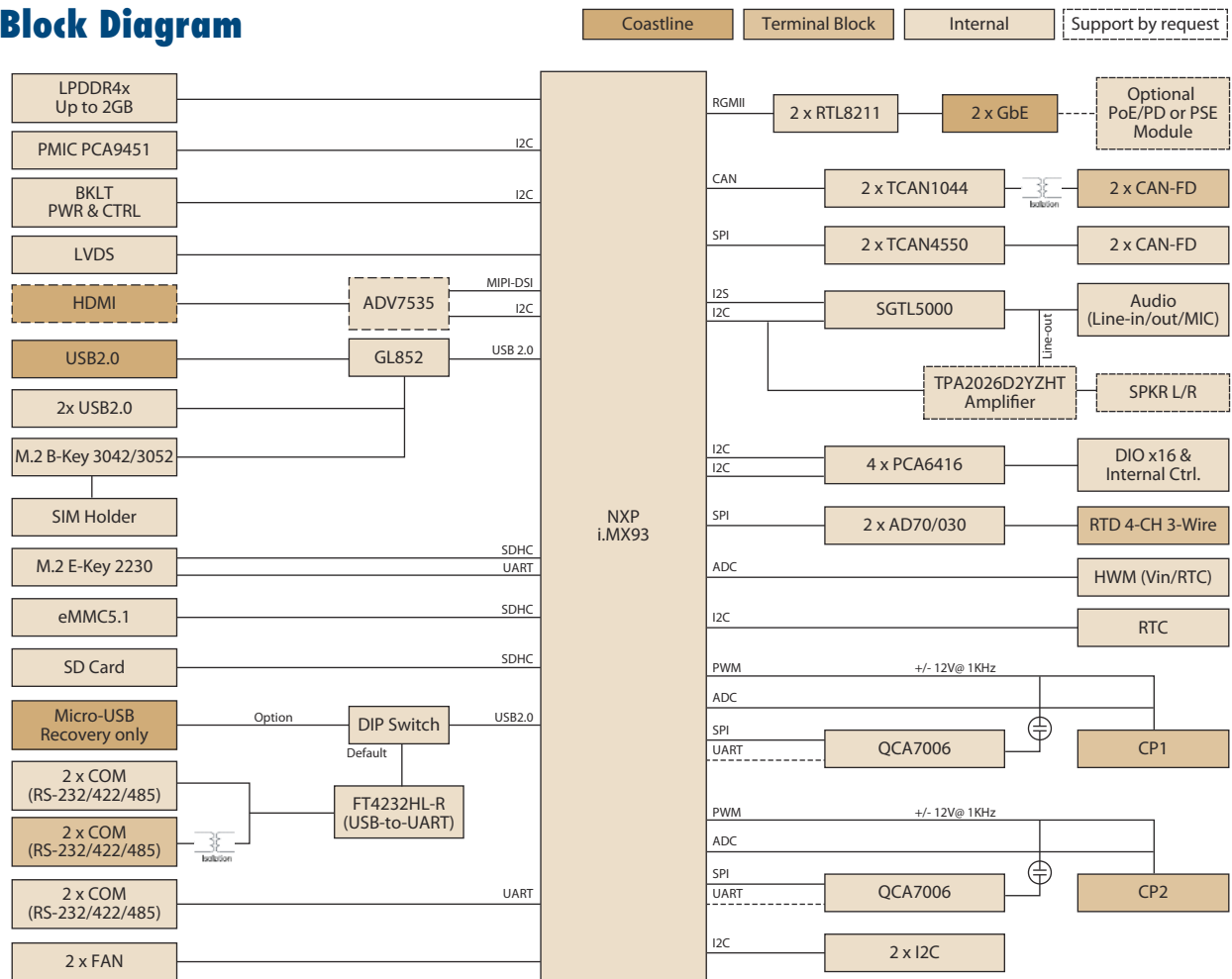
ADVANTECH

MI/O Extension SBCs, Modules and Chassis

All product specifications are subject to change without notice.

Last updated: 16-Jul-2026

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash	LVDS	HDMI	COM Port	CANBus	Power Line Communication (PLC)	Operating Temperature
AFE-E420LPW-S7A1	i.MX 93 Dual Core	2GB	16GB	Y	*	6	4	2	-40 ~ 85 °C

*Note: Support by request and operating temperature for HDMI is 0 ~ 85 °C

Packing List

Part No.	Description	Quantity
	AFE-E420 SBC	1
1930005673-01	M.2 screws	2

Rear IO View



Optional Accessories

Part No.	Description
1700031582-01	RS-232 only Cable D-SUB 9P(M)/1*5P-1.25 20cm
1700035016-01	RS-422/485 Cable D-SUB 9P(M)/1x5P-1.25 20cm
1700019584-01	Audio Cable 2*5P-2.0/Audio JACK*3 20cm
1700030406-01	USB Cable 2*5P-2.0/USB-A 4P(F)*2 20cm
1700030405-01	GPIO Cable D-SUB 9P(F)/1*10P-1.25 20cm
1700030518-01	CANBus Cable D-SUB 9P(M)/1x5P-1.25 20cm
EWM-C401CQE01	Cellular 4G M.2 3042 Key B, no simslot, no GNSS
TBD	WiFi Module
96LCM-G070WV40L-A0	7" LCD, 400nits, 800x480
1700021883-01	LVDS cable 1x20P-1.0/2x20P-1.25 50cm
1700021882-01	BKL cable 1x4P-1.25/1x5P-2.0 50cm