EPIC SBC supports AMD® Embedded G-Series SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.2 Gen 1, PCIe Mini, SATA 6Gb/s, mSATA, COM, HD Audio and RoHS

NANO-SE-i1/KBN-i1/GLX

Quick Installation Guide

Version 1.1

August 6, 2020

Package List

NANO-SE-i1/KBN-i1/GLX package includes the following items:

- 1 x NANO-SE-i1/KBN-i1/GLX single board computer
- 1 x Power cable
- 2 x RS-232 cable
- 2 x SATA with power cable kit
- 1 x Audio cable
- 1 x QIG

Specifications

- SoC:

  » AMD® Embedded G-Series "Steppe Eagle" SoC

  GX-424CC on-board Soc (2.4GHz, quad-core, 2MB cache, TDP=25W)

  » AMD® Embedded G-Series "eKabini" SoC

  GX-415GA on-board Soc (1.5GHz, quad-core, 2MB cache, TDP=15W)

  » AMD® Embedded G-Series "LX" SoC

  GX-210KL on-board Soc (1.0GHz, dual-core, 1MB cache, TDP=4.5W)

- Memory:

  One 204-pin 1600/1333 MHz single-channel DDR3/DDR3L SO-DIMM supported (system max. 8GB)

- BIOS: UEFI BIOS

- Ethernet:

  LAN1: Intel® I210-AT PCIe controller with NCSI support

  LAN2: intel® I211-AT PCIe controller

- Graphics Engine:

  Support DX11.1; support DirectX® 11.2, OpenGL 4.1 and OpenCL1.2

  UVD4.2 decode for H.264, MPEG2/4, VC1, MVC

  VCE 2.0 encode for H.264, VCE

- Display Output:

  VGA (up to 2048x 1536@60HZ)

  HDMI (up to 3840x2160@60Hz)

  18/24-bit dual-channel LVDS by CH7511B DP to LVDS converter(up to up to 1920x 1200@60Hz)

- Super IO: Fintek F81866

- Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)

- Audio:

  Realtek ALC892 HD audio codec

1 x SPDIF by 4-pin (1x4) header for digital audio

1 x Analog audio by 10-pin (2x5) header

- I/O Interface:

  2 x SATA 6Gb/s with 5V SATA power connector (RAID 0,1,5,10)

  2 x USB 3.2 Gen 1 (5Gb/s, on rear I/O)

  6 x USB 2.0 (2 on rear IO, 4 by pin header)

  ** For NANO-SE-i1-4241-R11, NANO-KBN-i1-4151-R11, NANO-GLX-2101-R11*

  4 x USB 2.0 (2 on rear IO, 2 by pin header)

  ** For NANO-GLX-2101-ECO-R11*

  5 x RS-232 (pin header)

  1 x RS-422/485 (pin header)

  1 x 6-pin wafer for PS/2 KB/MS

- Watchdog Timer:

  Software programmable, supports 1~255 sec. system reset

- iRIS Remote Management module: 1 x iRIS-1010 slot

  ** NANO-GLX-2101-ECO SKU does not support iRIS.*

- TPM: 1 x 20-pin (2x10) header
- SMBus: 1 x 4-pin (1x4) wafer
- I^2C: 1 x 4-pin (1x4) wafer
- Fan:

  1 x 4-pin CPU fan connector

  1 x 4-pin system fan connector

- LAN LED: 2 x 2-pin (1x2) header
- Front Panel:

  1 x 6-pin (1x6) wafer for power LED & HDD LED

  1 x 2-pin (1x2) wafer for power button

  1 x 2-pin (1x2) wafer for power reset

- Expansion:

  1 x Full-size PCIe Mini card slot (supports mSATA, co-lay SATA port2)

- Power Supply:
  12V only, AT/ATX support
  1 x Internal 4-pin (2x2) power connector
- Operation Temperature: 0°C ~ 60°C
- Storage Temperature: -10°C ~ 70°C
- Operation Humidity: 5% ~ 95%, non-condensing
- Dimensions: 115mm x 165mm
- Weight GW/NW: 850g / 350g

Ordering Information

- **NANO-SE-i1-4241-R11:**
  EPIC SBC supports AMD® 28nm quad core GX-424CC 2.4GHz (25W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.2 Gen 1, Dual PCIe Mini, SATA 6Gb/s, mSATA , COM and Audio, iRIS-1010 and RoHS
- **NANO-KBN-i1-4151-R11:**
  EPIC SBC supports AMD® 28nm quad-core GX-415GA 1.5GHz (15W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.2 Gen 1, PCIe Mini, SATA 6Gb/s, mSATA, COM, iRIS-1010, HD Audio and RoHS
- **NANO-GLX-2101-R11:**
  EPIC SBC supports AMD® 28nm dual core GX-210KL 1.0GHz (4.5W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.2 Gen 1, Dual PCIe Mini, SATA 6Gb/s, mSATA , COM and Audio and RoHS
- **NANO-GLX-2101-ECO-R11:**
  EPIC SBC supports AMD® 28nm dual core GX-210KL 1.0GHz (4.5W) on-board SoC with VGA/HDMI/LVDS, Dual PCIe GbE, USB 3.2 Gen 1, Dual PCIe Mini, SATA 6Gb/s, mSATA, COM and Audio, ECO

packing and RoHS

- **iRIS-1010-R10:**
  IPMI 2.0 adapter card with AST1010 BMC chip (w/o KVM over IP function) for PCIe Mini socket interface

  ** NANO-GLX-2101-ECO SKU does not support iRIS.*
- **32006-001100-201-RS:** PS/2 KB/MS cable, 135mm/110mm, P=2.0
- **32001-008600-200-RS:** Dual-port USB cable, 210mm, P=2.0
- **32205-003800-300-RS:** RS-422/485 cable, 200mm, P=2.0
- **TPM-IN01-R20:** 20-Pin Infineon TPM module, software management tool, firmware V4.4

All the drivers and utilities for the NANO-SE-i1/KBN-i1/GLX are available on IEI Resource Download Center. Type NANO-SE-i1 (or NANO-KBN-i1 or NANO-GLX) and press Enter to find all the relevant software, utilities, and documentation. To install software from the downloaded ISO file, mount the file as a virtual drive to view its content.

IEI Resource Download Center

https://download.ieiworld.com

Jumpers setting and connectors

LABEL	FUNCTION
J_ATX_AT1	AT/ATX mode select switch
J_CMOS1	Clear CMOS button
JP1	LCD voltage selection
SW1	LVDS panel resolution selection
AUDIO1	Audio connector
BAT1	Battery connector
CN6	Brightness button connector
CHASSIS1	Chassis intrusion connector
DIMM1	DDR3 SO-DIMM slot
DIO1	Digital I/O connector
F_PANEL1	Front panel connector
IPMI1	IPMI iRIS-1010 module slot ** NANO-GLX-2101-ECO SKU does not have IPMI (not support iRIS)* .
ID_LED1	IPMI LED connector ** NANO-GLX-2101-ECO SKU does not have IPMI (not support iRIS)* .
KB_MS1	Keyboard and mouse connector
LED_LAN2, LED_LAN3	LAN LED connectors
LVDS1	LVDS LCD connector
CN5	LVDS LED connector
INV1	LVDS backlight inverter connector
M_PCIE2	PCIe Mini card slot
PWR_BTN1	Power button connector
CN1	Power connector (12V)
RST_BTN1	Reset button connector
COM1, COM2, COM3, COM4, COM5	RS-232 serial port connectors
COM6	RS-422/485 serial port connector
SATA1, SATA2	SATA 6Gb/s connectors
SATA_PWR1, SATA_PWR2	SATA power connectors
CN3, CN4	SMBus connectors
SPDIF1	SPDIF connector

SPI1	SPI Flash connector
SYS_FAN	System fan connector
TPM1	TPM connector
USB3, USB4	Internal USB 2.0 connectors ** NANO-GLX-2101-ECO SKU only has USB3, Please refer to page 2 (I/O Interface) for more details.*
HDMI1	HDMI connector
LAN1, LAN2	LAN connectors
USB1	USB 3.2 Gen 1 (5Gb/s) connectors
USB2	USB 2.0 connectors
VGA1	VGA connector

J_ATX_AT1: AT/ATX mode select switch	
PIN NO.	**DESCRIPTION**
Short A - B	ATX Mode (default)
Short B - C	AT Mode

J_CMOS1: Clear CMOS button	
PIN NO.	**DESCRIPTION**
Open	Normal Operation (default)
Push	Clear CMOS Setup

JP1: LCD voltage selection	
PIN NO.	**DESCRIPTION**
Short 1 - 2	+3.3 V
Short 2 - 3	+5 V (Default)

AUDIO1: Audio connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	LINEOUT1R	2	LINE1R
3	GND	4	GND
5	LINEOUT1L	6	LINE1L
7	GND	8	GND
9	FMIC1R	10	FMIC1L

BAT1: Battery connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	VBATT	2	GND

CN6: Brightness button connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	PWRON	2	GND
3	BLUP	4	GND
5	BLDN	6	GND

CHASSIS1: Chassis intrusion connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	+V3.3A_EC	2	CHASSIE_EC

DIO1: Digital I/O connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+5V
3	DOUT3	4	DOUT2
5	DOUT1	6	DOUT0
7	DIN3	8	DIN2
9	DIN1	10	DIN0

CN2: Front panel connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	VCC	2	GND
3	PWR_LED+	4	PWR_LED-
5	HDD_LED+	6	HDD_LED-

ID_LED1: IPMI LED connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	ID_LED+	2	ID_LED-

KB_MS1: Keyboard and mouse connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	VCC5_KBMS	2	MSDATA
3	MSCLK	4	KBDATA
5	KBCLK	6	KBMS_GND

CN5: LVDS LED connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	VCC33	2	OLED
3	VCC33	4	GLED

INV1: LVDS backlight inverter connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	BRIGHTNESS2	2	GND
3	12V	4	GND
5	ENABKL2		

PWR_BTN1: Power button connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PWRBTSW#	2	GND

CN1: Power connector (12V)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	12V-IN	4	12V-IN

RST_BTN1: Reset button connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PM_SYSRST#	2	GND

COM1: RS-232 serial port connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD1	2	NDSR1
3	NRX1	4	NRTS1
5	NTX1	6	NCTS1
7	NDTR1	8	NRI1
9	GND	10	GND

COM2: RS-232 serial port connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD2	2	NDSR2
3	NRX2	4	NRTS2
5	NTX2	6	NCTS2
7	NDTR2	8	NRI2
9	GND	10	GND

COM3: RS-232 serial port connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD3	2	NDSR3
3	NRX3	4	NRTS3
5	NTX3	6	NCTS3
7	NDTR3	8	NRI3
9	GND	10	GND

COM4: RS-232 serial port connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD4	2	NDSR4
3	NRX4	4	NRTS4
5	NTX4	6	NCTS4
7	NDTR4	8	NRI4
9	GND	10	GND

COM5: RS-232 serial port connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD5	2	NDSR5
3	NRX5	4	NRTS5
5	NTX5	6	NCTS5
7	NDTR5	8	NRI5
9	GND	10	GND

COM6: RS-422/485 serial port connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	RXD485#	2	RXD485+
3	TXD485+	4	TXD485#

SATA1, SATA2: SATA 6Gb/s connectors

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SATA_TX+
3	SATA_TX-	4	GND
5	SATA_RX-	6	SATA RX+
7	GND		

SATA_PWR1, SATA_PWR2: SATA power connectors			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	+5V	2	GND

CN3, CN4: SMBus connectors

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SDATA
3	SCLK	4	+5V

SPDIF1: SPDIF connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V	2	NC
3	SPDIF OUT	4	GND
5	SPDIF IN		

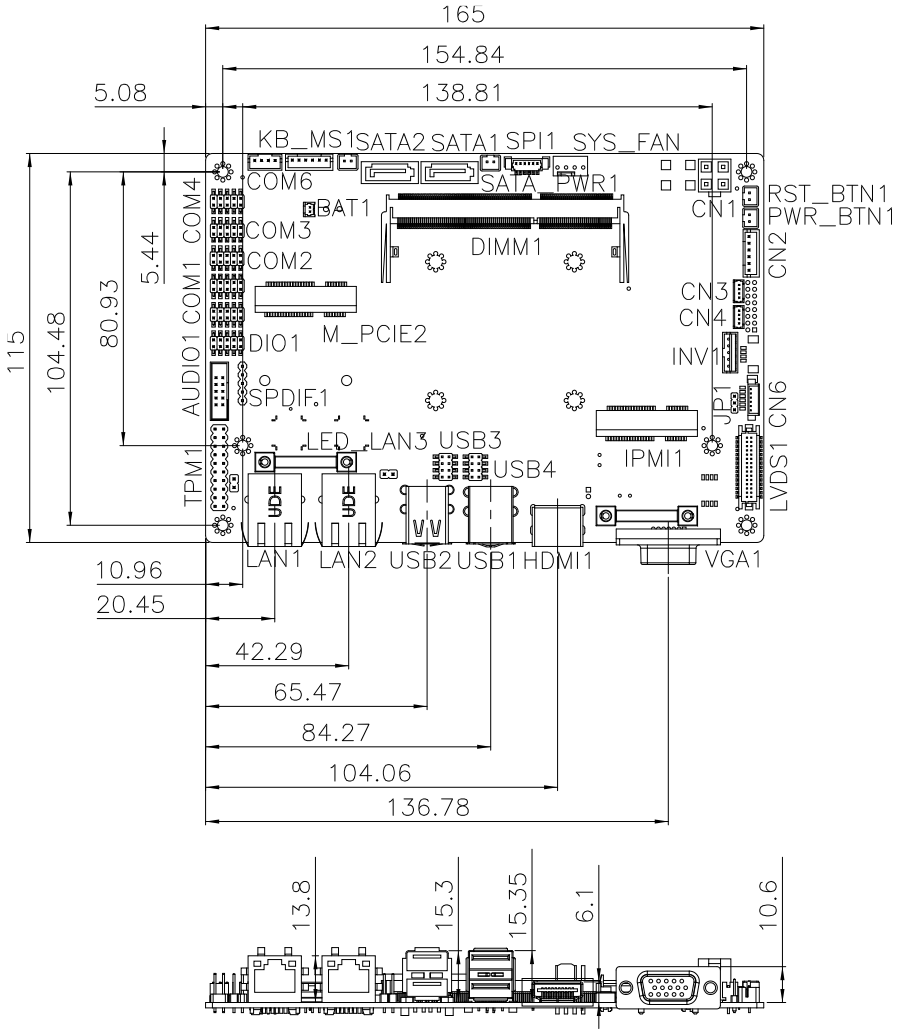
SPI1: SPI Flash connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	SPI_POWER	2	SPI_CS#
3	SPI_DATAIN	4	SPI_CLK
5	SPI_DATAOUT	6	GND

SYS_FAN: System fan connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+12V
3	FANIN	4	FANOUT

Board Layout: Jumper and Connector Locations



(Unit: mm)