EPIC SBC with AMD GX466 CPU, SATA, CRT/LVDS, LAN, USB 2.0 and Audio

NANO-GX/GXTC
Quick Installation Guide
Version 1.1

Jan. 09, 2009

Package List

NANO-GX/GXTC package includes the following items:

- 1 x NANO-GX/GXTC Single Board Computer
- 1 x ATA33 flat cable
- 2 x SATA cable (NANO-GX only)
- 1 x SATA Power cable (NANO-GX only)
- 2 x RS-232 cable
- 1 x KB/MS cable
- 1 x Audio cable
- 1 x Power cable
- 1 x Mini Jumper Pack
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)

Specifications

- CPU**:** On board AMD Geode™ GX466 (333MHz) processor
- System Chipset: AMD Geode™ GX466 + CS5536
- BIOS: AMI BIOS
- System memory:

  1x 200-pin 266/200MHz SO-DIMM DDR SDRAM DIMM supported (system max. 512MB)
- Ethernet：Realtek RTL8100C 10/100Mbps Ethernet Controller(PCI Interface)
- I/O Interface:

  4 x USB 2.0 (4 on rear side)
  2 x SATAI PCI to SATA chip: VIA® VT6421A (NANO-GX only)
  1 x LPT
  6 x RS-232
  1 x RS-422/485 (NANO-GX only)
  1 x IDE
  1 x FDD by FPC connector (Optional)
  1 x PS/2 for KB/MS, (6-pin pin-header for KB/MS)
- Expansion:

  PCI-104 slot (PCI Bus)

  PC/104 slot (ISA Bus) (NANO-GX only)
- Audio: Realtek ALC203 AC'97 Codec
- Infrared Interface: 1x Infrared Interface by pin header
- SSD: CF TypeⅡ
- Digital I/O: 8-bit digital I /O,4 input/ 4 output by super I/O
- Super I/O: First Super I/O: Winbond W83627EHG

  Second Super I/O: Fintek F81216D
- Display:

  CRT integrated in AMD Geode™ GX466

  24-bit TTL integrated in AMD Geode™ GX466 (NANO-GX only)

  18-bit Single-Channel LVDS (NANO-GX only)

  (For Dual Display, only VGA+LVDS or VGA+TTL)
- WDT: Software programmable 1-255 sec. by super I/O Winbond W83627EHG
- Power supply: +12V only, AT/ATX support

- Power Consumption:
  +12V@0.83A (AMD Geode™ GX466, DDR 400MHz, 512MB)
- Temperature: Operation:0~60°C(32~140°F)
- Humidity: Operation:5%~95% non-condensing
- Dimension: 115mm x 165mm
- Weight: GW: 950g; NW: 350g

Ordering Information

NANO-GX-466-R11:
EPIC SBC with AMD GX466 333MHz CPU, CRT/LCD, LAN, USB2.0 and Audio

NANO-GXTC-466-R11:
EPIC SBC with AMD GX466 333MHz CPU, CRT, LAN, USB2.0 and Audio

NANO-GX-466-CE050: Windows® CE5.0 Image & BSP S/W CD, Licensed Stickers (w/o CPU board, for NANO-GX/GXTC)

NANO-GX-466-XPE: Windows® XP Embedded Image & BSP S/W CD, Licensed Stickers (w/o CPU board, for NANO-GX/GXTC)

322000-015100-RS: LPT cable

32000-070301-RS: USB cable

32200-026500-RS: RS-232/422/485 cable (NANO-GX only)

Table of Jumper setting

LABEL	FUNCTION
JP1	PC104 Plus VIO Voltage select jumper & SERIRQ Select
JP2	AT/ATX Power Mode Select
JP3	CRT/LCD display Select
JP4	COM3 RS422/RS485 Select (CN19 Pin11~Pin14) (NANO-GX only)
JP5	LVDS LCD clock select (NANO-GX only)
JP6	COM1/2 (CN21/CN19) Port RI (Pin 9), and Voltage selection (Optional)
JP7	LCD Panel (LVDS/TTL) Voltage select
JP8	CF card master/slave select

JP1: PC104 Plus VIO Voltage select jumper & SERIRQ Select	
JP1	**Description**
1-2	PC104 Plus VIO output voltage select 5V (Default)
2-3	PC104 Plus VIO output voltage select 3.3V
5-6(short)	SERIRQ Enable (Default)
5-6(open)	SERIRQ Disable

JP2:AT/ATX Power Mode Select	
JP2	**Description**
short	AT Mode (Default)
open	ATX Mode

JP3: CRT/LCD display Select	
JP3	**Description**
1-2	Select LCD display
2-3	Select CRT display (Default)

JP4: COM3 RS422/RS485 Select (CN19 Pin11~Pin14) (NANO-GX only)	
JP4	**Description**
1-2	UART-2 RxD Signal connect to RS-422 (Default)
2-3	UART-2 RxD Signal connect to RS-485

JP5: LVDS LCD clock select (NANO-GX only)	
JP5	**Description**
1-2	LVDS Clock normal output (Default)
2-3	LVDS Clock invert output

JP6:COM1/2 (CN21/CN19) Port RI (Pin 9) and Voltage selection (Optional)	
JP6	**Description**
1-3	COM1(CN21) RI Pin Use +12V
3-5/5-7	COM1 (CN21) RI Pin Use +5V
7-9	COM1(CN21) RI Pin Use RI
2-4	COM2 (CN19) RI Pin Use +12V
4-6/6-8	COM2 (CN19) RI Pin Use +5V
8-10	COM2 (CN19) RI Pin Use RI

JP7: LCD Panel (LVDS/TTL) Voltage select	
JP7	**Description**
1-2	Panel Voltage select 3.3V (Default)
2-3	Panel Voltage select 5V

JP8: CF card master/slave select	
JP8	**Description**
1-2	Master
2-3	Slave (Default)

Table of Connectors

LABEL	FUNCTION
CN1	Main power input connector (Optional)
CN2	Main power input connector
CN3	Suspend power input connector
CN4	System FAN connector
CN5	ATX power button connector
CN6	Reset button connector
CN8	CD-IN connector
CN10, CN11	Serial ATA connectors (NANO-GX only)
CN9	Audio connector
CN12	LED Indicators and +5V Output connector
CN32	Infrared Interface connector
CN13	IDE 44pin 2.0mm connector
CN14, CN15, CN16, CN17	Internal Serial Port Connectors (RS-232) (COM4~COM7)
CN18	Digital I/O connector
CN19	Internal Serial Port Connector(RS-232/422/485) (COM2/COM3) (RS-422/485 NANO-GX only)
CN20	Parallel port connector
CN23	18-bit Single-Channel LVDS connector (NANO-GX only)
CN22	TFT LCD connector (TTL) (NANO-GX only)
CN24	VGA 15-pin Female Connector
CN27	RJ-45 LAN Connector
CN7	PC104 Plus Connector (PCI + ISA Bus, ISA Bus NANO-GX only)
CN21	COM Port Connector (COM1, RS-232)
CN34	FDD connector (Optional)
CN26	LCD Inverter connector(NANO-GX only)
CN25	PC104 –5V/-12V power input connector
CN30	6-pin Keyboard/Mouse Connector
CN31	6-pin Mini-DIN Keyboard/Mouse Connector
CN28, CN29	2 ports External USB Connectors
CN35	CF Card Interface Slot
BT1	+3V Battery Connector
CN33	DDR SO-DIMM Slot

CN1:Main power input connector (Optional)	
Pin No.	**Description**
1	+12V
2	GND

CN2: Main power input connector			
Pin No	**Description**	**Pin No**	**Description**
1	GND	2	GND
3	+12V	4	+12V

CN3: Suspend power input connector	
Pin No.	**Description**
1	+5VSB
2	NC
3	PSON#

CN4: System FAN connector	
Pin No.	**Description**
1	FAN_SPEED
2	+5V
3	GND

CN5: ATX power button connector	
Pin No.	**Description**
1	PWRBTN#
2	GND

CN6: Reset button connector	
Pin No.	**Description**
1	RESET#
2	GND

CN8: CD-IN connector	
Pin No.	**Description**
1	CD_L
2	GND
3	GND
4	CD_R

CN10, CN11: Serial ATA connectors(NANO-GX only)	
Pin No.	**Description**
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

CN9: Audio connector			
Pin No.	**Description**	**Pin No.**	**Description**
1	LINE_OUT-R	2	LINE_IN-R
3	GND	4	GND
5	LINE_OUT-L	6	LINE_IN-L
7	GND	8	GND
9	MIC-IN	10	NC

CN12: LED Indicators and +5V Output connector		
Pin No.	**Description**	
1	+5V Power Output	VCC (+5V)
2		GND
3	PWR LED	VCC (+5V)
4		GND
5	HDD LED	VCC (+5V)
6		HDD LED-

CN32: Infrared Interface connector	
Pin No.	**Description**
1	VCC (+5V)
2	NC
3	IR-RX
4	GND
5	IR-TX

CN13: IDE 44pin 2.0mm connector			
Pin No.	**Description**	**Pin No.**	**Description**
1	RESET#	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	NC
21	DRQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	RDY	28	NC
29	ACK#	30	GND
31	INT	32	NC
33	A1	34	CABLEID
35	A0	36	A2
37	CS0#	38	CS1#
39	ASP#	40	GND
41	+5V	42	+5V
43	GND	44	NC

CN14(COM4), CN15(COM5), CN16(COM7), CN17(COM6): Internal Serial Port Connectors (RS-232)			
Pin No.	**Description**	**Pin No.**	**Description**
1	DATA CARRIER DETECT (DCD#)	2	DATA SET READY (DSR#)
3	RECEIVE DATA (RXD)	4	REQUEST TO SEND (RTS#)
5	TRANSMIT DATA (TXD)	6	CLEAR TO SEND (CTS#)
7	DATA TERMINAL READY (DTR#)	8	RING INDICATOR (RI#)
9	GND	10	N/C

CN18: Digital I/O connector			
Pin No.	**Description**	**Pin No.**	**Description**
1	GND	2	+5V
3	GPO0	4	GPO1
5	GPO2	6	GPO3
7	GPI0	8	GPI1
9	GPI2	10	GPI3

CN19: COM2/COM3 Internal Serial Port Connector(RS-232/422/485) (RS-422/485 NANO-GX only)			
Pin No.	**Description**	**Pin No.**	**Description**
1	DCD#	2	DSR#
3	RxD	4	RTS#
5	TxD	6	CTS#
7	DTR#	8	RI# / Vout
9	GND	10	GND
11	TxD485+	12	TxD485#
13	RxD485+	14	RxD485#

CN20: Parallel port connector			
Pin No.	**Description**	**Pin No.**	**Description**
1	STB#	2	AFD#
3	PD0	4	ERR#
5	PD1	6	INIT#
7	PD2	8	SLIN#
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	GND
15	PD6	16	GND
17	PD7	18	GND
19	ACK#	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	NC

CN23: 18-bit Single-Channel LVDS connector (NANO-GX only)			
Pin No.	**Description**	**Pin No.**	**Description**
1	GND	2	GND
3	D0+	4	D0-
5	D1+	6	D1-
7	D2+	8	D2-
9	CLK+	10	CLK-
11	NC	12	NC
13	GND	14	GND
15	SDA	16	SCL
17	LCD_VCC	18	LCD_VCC
19	LCD_VCC	20	LCD_VCC

CN22: TFT LCD connector (TTL) (NANO-GX only)			
Pin No.	**Description**	**Pin No.**	**Description**
2	LCD_VCC	1	LCD_VCC
4	GND	3	GND
6	LCD_VCC	5	LCD_VCC
8	GND	7	SDA
10	B1	9	B0
12	B3	11	B2
14	B5	13	B4
16	B7	15	B6
18	G1	17	G0
20	G3	19	G2
22	G5	21	G4
24	G7	23	G6
26	R1	25	R0
28	R3	27	R2
30	R5	29	R4
32	R7	31	R6
34	GND	33	GND
36	VSYNC	35	CLK
38	HSYNC	37	LCD_EN
40	DISP_EN	39	SCL

CN24: VGA 15-pin Female Connector			
Pin No.	**Description**	**Pin No.**	**Description**
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	CRT_PLUG#
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

CN27: RJ-45 LAN Connector			
Pin No.	**Description**	**Pin No.**	**Description**
1	MDIA3-	5	MDIA1+
2	MDIA3+	6	MDIA2+-
3.	MDIA2-	7	MDIA0-
4.	MDIA1-	8	MDIA0+

CN7: PC104 Plus Connector (PCI + ISA Bus, ISA Bus NANO-GX only)							
Pin	**Description**	**Pin**	**Description**	**Pin**	**Description**	**Pin**	**Description**
A1	GND	B1	SERIRQ#	C1	VCC5	D1	AD0
A2	VIO	B2	AD2	C2	AD1	D2	VCC5
A3	AD5	B3	GND	C3	AD4	D3	AD3
A4	BE0#	B4	AD7	C4	GND	D4	AD6
A5	GND	B5	AD9	C5	AD8	D5	GND
A6	AD11	B6	VIO	C6	AD10	D6	GND
A7	AD14	B7	AD13	C7	GND	D7	AD12
A8	VCC3	B8	BE1#	C8	AD15	D8	VCC3
A9	PULL 3V	B9	GND	C9	PULL 3V	D9	PAR
A10	GND	B10	PULL 3V	C10	VCC3	D10	PULL 3V
A11	STOP#	B11	VCC3	C11	PULL 3V	D11	GND
A12	VCC3	B12	TRDY#	C12	GND	D12	DEVSEL#
A13	FRAME#	B13	GND	C13	IRDY#	D13	VCC3
A14	GND	B14	AD16	C14	VCC3	D14	BE2#
A15	AD18	B15	VCC3	C15	AD17	D15	GND
A16	AD21	B16	AD20	C16	GND	D16	AD19
A17	VCC3	B17	AD23	C17	AD22	D17	VCC3
A18	IDSEL0	B18	GND	C18	IDSEL1	D18	IDSEL2
A19	AD24	B19	BE3#	C19	VIO	D19	IDSEL3
A20	GND	B20	AD26	C20	AD25	D20	GND
A21	AD29	B21	VCC5	C21	AD28	D21	AD27
A22	VCC5	B22	AD30	C22	GND	D22	AD31
A23	REQ0	B23	GND	C23	REQ1	D23	VIO
A24	GND	B24	REQ2	C24	VCC5	D24	GNT0
A25	GNT1	B25	VIO	C25	GNT2	D25	GND
A26	VCC5	B26	CLOCK0	C26	GND	D26	CLOCK1
A27	CLOCK2	B27	VCC5	C27	CLOCK3	D27	GND
A28	GND	B28	INTD#	C28	VCC5	D28	RESET
A29	+12V	B29	INTA#	C29	INTB#	D29	INTC#
A30	-12V	B30	REQ4	C30	GNT4	D30	GND

CN7: PC104 Plus Connector(PCI + ISA Bus, ISA Bus NANO-GX only)							
Pin	**Description**	**Pin**	**Description**	**Pin**	**Description**	**Pin**	**Description**
A1	IOCHCK#	B1	GND	C1	GND	D1	GND
A2	SD7	B2	RESET	C2	SBHE#	D2	MEMCS16#
A3	SD6	B3	VCC5	C3	LA23	D3	IOCS16#
A4	SD5	B4	IRQ9	C4	LA22	D4	IRQ10
A5	SD4	B5	-5V	C5	LA21	D5	IRQ11
A6	SD3	B6	DRQ2	C6	LA20	D6	IRQ12
A7	SD2	B7	-12V	C7	SA19	D7	IRQ15
A8	SD1	B8	OWS#	C8	SA18	D8	IRQ14
A9	SD0	B9	+12V	C9	SA17	D9	DACK0#
A10	IOCHRDY	B10	GND	C10	MEMR#	D10	DRQ0#
A11	AEN	B11	SMEMW#	C11	MEMW#	D11	DACK5#
A12	SA19	B12	SMEMR#	C12	SD8	D12	DRQ5#
A13	SA18	B13	IOW#	C13	SD9	D13	DACK6#
A14	SA17	B14	IOR#	C14	SD10	D14	DRQ6#
A15	SA16	B15	DACK3#	C15	SD11	D15	DACK7#
A16	SA15	B16	DRQ3	C16	SD12	D16	DRQ7#
A17	SA14	B17	DACK1#	C17	SD13	D17	VCC5
A18	SA13	B18	DRQ1	C18	SD14	D18	MASTER#
A19	SA12	B19	REFRESH#	C19	SD15	D19	GND
A20	SA11	B20	SYSCLK	C20	NC	D20	GND
A21	SA10	B21	IRQ7				
A22	SA9	B22	IRQ6				
A23	SA8	B23	IRQ5				
A24	SA7	B24	IRQ4				
A25	SA6	B25	IRQ3				
A26	SA5	B26	DACK2#				
A27	SA4	B27	TC				
A28	SA3	B28	ALE				
A29	SA2	B29	VCC5				
A30	SA1	B30	OSC				

CN21: COM port connector (COM1, RS-232)	
Pin	**Description**
1	DCD#
2	RxD
3	TxD
4	DTR#
5	GND
6	DSR#
7	RTS#
8	CTS#
9	RI# / Vout

CN34: FDD connector (Optional)	
Pin No.	**Description**
1	+5V
2	INDEX#
3	+5V
4	DSA#
5	+5V
6	DSKCHG#
7	NC
8	NC
9	NC
10	MOTO0#
11	NC
12	DIR#
13	NC
14	STEP#
15	GND
16	WDATA#
17	GND
18	WGATE#
19	GND
20	TRACK0#
21	GND
22	WP#
23	GND
24	RDATA#
25	GND
26	HEAD#

CN26: LCD Inverter connector (NANO-GX only)	
Pin No.	**Description**
1	ADJ (Def : GND)
2	GND
3	+12V
4	GND
5	BL_EN

CN25: PC104 -5V/-12V power input connector	
Pin No.	**Description**
1	-5V
2	GND
3	-12V

CN30: 6-pin Keyboard/Mouse Connector	
Pin No.	**Description**
1	VCC (+5V)
2	Mouse Data
3	Mouse Clock
4	Keyboard Data
5	Keyboard Clock
6	GND

CN31: 6-pin Mini-DIN Keyboard/Mouse Connector	
Pin No.	**Description**
1	VCC (+5V)
2	Mouse Data
3	Mouse Clock
4	Keyboard Data
5	Keyboard Clock
6	GND

CN28, CN29: 2 ports External USB Connectors			
Pin No.	**Description**	**Pin No.**	**Description**
1	VCC (+5V)	5	VCC (+5V)
2	DATA-	6	DATA-
3	DATA+	7	DATA+
4	GND	8	GND

CN35 : CF Card Interface Slot			
Pin No.	**Description**	**Pin No.**	**Description**
1	GND	2	D3
3	D4	4	D5
5	D6	6	D7
7	CE#	8	GND
9	GND	10	GND
11	GND	12	GND
13	VCC (+5V)	14	GND
15	GND	16	GND
17	GND	18	A2
19	A1	20	A0
21	D0	22	D1
23	D2	24	NC
25	CD2#	26	CD1#
27	D11	28	D12
29	D13	30	D14
31	D15	32	CE2#
33	NC	34	IOR#
35	IOW#	36	WE#
37	IRQ	38	VCC(+5V)
39	CSEL#	40	NC
41	RESET#	42	WAIT#
43	INPACK#	44	REG#
45	BVD2	46	BVD1
47	D8	48	D9
49	D10	50	GND

BT1 : +3V Battery Connector			
Pin No.	**Description**	**Pin No.**	**Description**
1	BAT (+3V)	2	GND

Board Layout: Jumper and Connector Locations