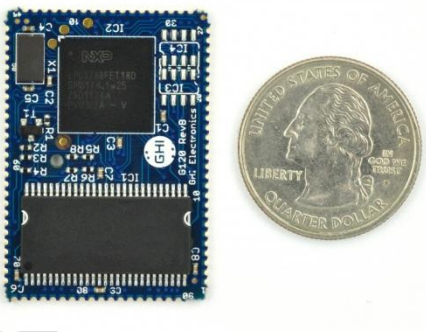
G120 Module

G120 Module is a surface-mount System on Module (SoM) that runs .NET Micro Framework software platform; a tiny version of Microsoft .NET framework. The value of G120 Module is not only in the hardware capabilities such as the Cortex-M3 processor, memory and peripherals, but also is in the integration between the hardware and the embedded software. This provides high level features such as FAT file system, TCP/IP stack, Graphics and Threading to the developer through .NET APIs. Furthermore, the embedded software includes GHI Electronics' Premium .NET Micro Framework Libraries that adds support to important features such as WiFi, USB Host, PPP, SQLite, and In-Field Update. All are provided royalty-free with G120 Module.



Benefits

Faster Time to Market
Flawless Concurrent Engineering
- Faster and easier prototyping
- Microsoft Visual Studio software development platform
- Run-time software debugging, through USB or UART

Cost Effective
- Simple integration with SMT hardware package
- Competitive volume pricing
- The same .NET developer for PC and embedded devices

Dependable Quality
Reliable features
- Software core robustness
- Continuious software package maintenance
- High quality production in Michgan, USA

Customer Satisfaction
We listen. We help
- Superior technical support
- Value-added features though GHI's Premium libraries.
- A to Z design and production services with optimized costs

Develop a leading-edge product
Get it out fast
With a competitive price

Key Features

NXP LPC17xx Cortex-M3 120MHz Processor
16Mbytes of RAM
4.5Mbytes of Flash
Embedded LCD Controller
USB Host/Device with drivers
4-bit SD card interface
Plenty of essential peripherals such as GPIO, SPI, UART, I2C, CAN, ADC, DAC and PWM.
High level features such as file system, networking (Ethernet, WiFi, PPP), SQLite database, and Graphics.
Low profile SMT SoM
Supports Visual C# and Visual Basic programming languages

Applications

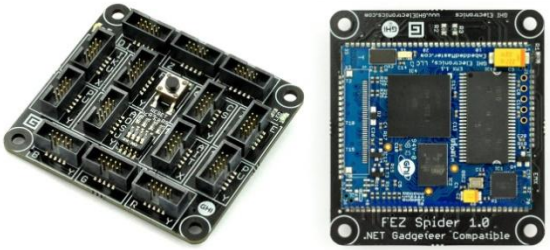
- Graphical Human Machine Interface
- Data Logger
- Hand held testers
- Internet of things applications
- Networked alarm systems
- Automation applications
- Controllers, Robotics

Specifications	
Package	SMT Module 91 pins
Dimensions WxLxH mm	26.67 x 38.1 x TBA
Processor	120MHz 32-bit ARM Cortex-M3
FLASH Available/Free	4.5MB/3.5MB
RAM Available/Free	16MB/14MB
Color TFT Display Controller	Available
Graphics (font/controls)	Complete
Image Decoder	BMP, GIF, JPG
Native Networking Support	Ethernet/WiFi/PPP with SSL
Programmable IOs	72
PWM	12
Analog Input	8
Analog Output	1
UART (COM)	5
SPI	3
I2C	Available
CAN	2
One-wire	Supported on all IOs
USB Host	HID, Mass Storage, CDC, Webcam, Raw
USB Client	HID, Mass Storage, CDC, Raw
4bit SDHC/SD/MMC	Supported
Real Time Clock	Available
Piracy Protection	Available
In-Field Update	Available
Operating Temperature	-40° to +85°
Lead Free	Yes
RoHS Compliant	Yes
Extended Library	Premium Library
Load native C/assembly	Runtime Loadable Procedures
Power Consumption	TBD
Sleep/Hibernate	TBD/TBD

Getting Starter Tools

GHI Electronics' FEZ (Fast and Easy) product line offers a wide variety of open-source products that use GHI's Premium SoMs.

FEZ products are an excellent starting point to evaluate any of GHI's SoMs. FEZ provides a wide variety of Mainboards and peripherals in a standard modular platform that help accelerate your next product's design process, such as WiFi, Ethernet, Motor Drivers, MEMS modules and sensors.



Main Board (with SoM)

WiFi Module

7" Display with Multi-touch Capacitive Screen

Pin-out

Pin	Port	Function
01		Ground
02		VCC 3.3V
03	P2_4	PWM11, LCD Enable
04	P2_8	LCD Red3
05	P0_0	CAN1 RD
06	P0_10	COM3 TXD
07	P2_11	ENT1#
08	P2_10	LDR0
09	P0_11	COM3 RXD
10	P0_1	CAN1 TD
11	P0_18	SPI1 MOSI
12	P0_16	COM2 RXD
13	P0_15	SPI1 SCK
14	P0_22	LDR1
15	P0_17	COM2 CTS, SPI1 MISO
16	P2_1	LMODE (USB/COM1)
17	P0_6	COM2 RTS/OE
18	P2_0	COM2 TXD
19		SPI2 SCK
20		SPI2 MISO
21		SPI2 MOSI
22	P1_12	SD D3
23	P1_11	PWM6, SD D2
24	P1_7	PWM5, SD D1
25	P1_2	PWM1, SD CLK
26	P1_6	PWM4, SD D0
27		Ground
28	P1_3	SD CMD, PWM2
29	P0_5	CAN2 TD
30	P0_4	CAN2 RD
31	P4_28	COM4 TXD
32	P4_29	COM4 RXD
33	P1_14	
34	P1_17	
35	P1_16	
36	P1_15	
37	P1_9	
38	P1_10	
39	P1_4	SPI3 MISO
40	P1_8	
41	P1_1	SPI3 MOSI
42	P1_0	SPI3 SCK
43		JTAG SWDCLK\TCK
44		JTAG SWDIO/TMS
45		Ground
46		VCC 3.3V
47	P0_3	COM1 RXD
48	P0_2	COM1 TXD
49	P0_26	AD4/AOUT
50	P0_24	AD2
51	P0_25	AD3
52	P0_23	AD1
53		Reset#
54	P3_26	PWM9
55	P0_13	AD8
56	P0_12	AD7
57		RTC Crystal 1
58		RTC Crystal 2
59	P1_30	AD5, COM4 OE
60		RTC VBAT
61	P0_28	I2C SCL*
62	P1_31	AD6
63	P0_27	I2C SDA*
64	P3_25	PWM8
65	P3_24	PWM7
66		USB Client D+
67		USB Client D-
68		USB Host D-
69		USB Host D+
70	P2_21	
71	P1_22	LCD Green2
72	P1_21	LCD Green1
73	P1_19	COM3 OE
74	P1_23	LCD Green3
75	P1_24	LCD Green4
76	P1_20	LCD Green0
77	P1_25	LCD Green5
78	P1_26	LCD Blue1
79	P1_28	LCD Blue3
80	P1_29	Blue4, TXD5
81		Ground
82	P1_27	LCD Blue2
83	P2_13	LCD Blue0
84	P2_12	LCD Red0
85	P2_5	HSync, PWM12
86	P2_2	LCD CLK
87	P2_7	LCD Red2
88	P2_9	Red4, RXD5
89	P2_6	LCD Red1
90	P2_3	VSync, PWM10
91	P1_5	PWM3

* Open drain ports

GPIOs P0_x and P2_x are Interrupt Capable.
All pins are 5 volt tolerant.