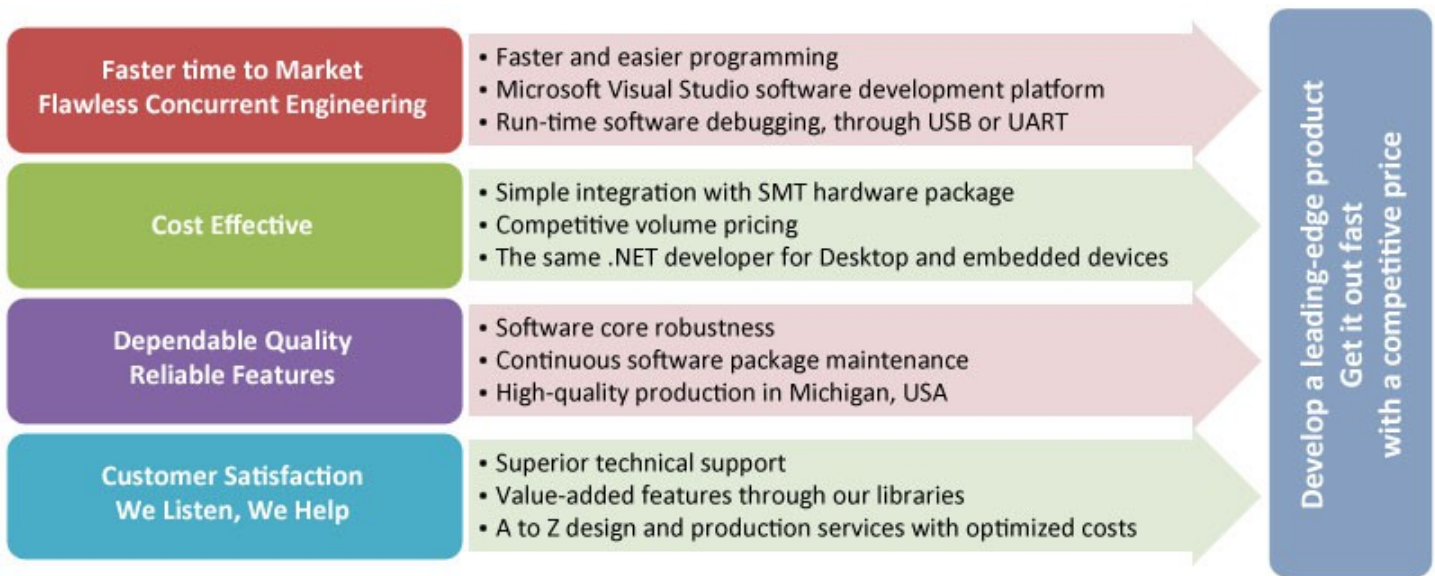


G400-D Module Specifications

The G400-D Module is a DIMM socket System on Module (SoM) that runs the .NET Micro Framework software platform, the most compact version of Microsoft .NET framework. The value of the G400-D Module is not only in the hardware capabilities such as the ARM 926EJ-S core processor, memory and peripherals, but also is in the integration between the hardware and the embedded software. This provides high level features such as a FAT file system, TCP/IP stack, Graphics and Threading to the developer through .NET APIs. Furthermore, the embedded software includes GHI Electronics' extensions to the core .NET Micro Framework. Extensions support important features such as WiFi, USB Host, SQLite, PPP, and In-Field Update. All are provided royalty-free with the G400-D System on Module.

Benefits



Key Features

Atmel AT91SAM9X35 400MHz MPU
 128 MBytes DDR SDRAM
 4 Mbytes of Serial Flash
 Embedded LCD Controller
 USB Host/Device with drivers
 4-bit SD card interface

Plenty of essential peripherals such as GPIO, SPI, UART, I2C, I2S, CAN, ADC, DAC and PWM.
 High level features such as file system, networking (Ethernet, WiFi), SQLite database, and Graphics.
 Low profile SODIMM
 Supports Visual C# and Visual Basic programming languages

G400-D Module Specifications

Applications

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

Specifications

Package	SODIMM 200 PINS
Dimensions Length x Height x Thickness	67.49mm x 32.05mm x 4.84mm
Processor	400MHz 32-bit ARM 926EJ-S Core
Serial FLASH	4 MBytes
DDR2 SDRAM	128 MBytes
Color TFT Display Controller	Available, Multilayer
Graphics (font/controls)	Complete
Image Decoder	BMP, GIF, JPG
Native Networking Support	Ethernet/WiFi/PPP with SSL
Programmable IOs	102
PWM	4
Analog Input	8 (12 on G400-S)
UART (COM)	6
SPI	2
CAN	2
I2C	Available
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 RoHS Compliant	Yes
Load native C/assembly	Yes
Power Consumption	Runtime Loadable Procedures
Sleep/Hibernate	150 mA
	See on-line specifications



Boot Control

LDR0	LDR1	Boot Access
X	HIGH	Firmware (user code)
HIGH	LOW	TinyBooter
LOW	LOW	SAM-BA ^{N3}

G400-D Module Specifications

Pins are not 5V Tolerant

01	Ground	51	Ground	101	PC31		151	Ground				
02	Ethernet TX -	52	PB1 ^{N1}	ERX1	102	PA0	COM2 TX	152	PC0	LCD Blue 0		
03		53			103	PA1	COM2 RX	153	PC1	LCD Blue 1		
04	Ethernet TX +	54			104	PB12	AD1	154	PC2	LCD Blue 2		
05	Ground	55			105	PC18	PWM0	155	PC3	LCD Blue 3		
06	Ethernet RX -	56			106		VCC 3.3V	156	PC4	LCD Blue 4		
07		57	PD18		107	PA11 ^{N3}	SPI1 MISO	157	PB13	AD2		
08	Ethernet RX +	58	PD17		108	PA12 ^{N3}	SPI1 MOSI	158	PB14	AD3		
09		59	PD16		109	PA13 ^{N3}	SPI1 CLK	159	PB15	AD4		
10	Ethernet Speed	60		VCC 3.3V	110	PB17	AD6	160		VCC 3.3V		
11	Ethernet Link	61	PD15		111	PA4	LDR1	161	PC5	LCD Green 0		
12		62	PD14		112	PC19	PWM1	162	PC6	LCD Green 1		
13	Ground	63	PD13		113		Ground	163	PC7	LCD Green 2		
14		64	PD12		114	PB16	AD5	164	PC8	LCD Green 3	COM5 TX	
15		65		Ground	115	PA30 ^{N2}	I2C SDA	165	PC9	LCD Green 4	COM5 RX	
16		66	PD11		116	PA31 ^{N2}	I2C SCL	166	PD1			
17		67	PD10		117	PA9 ^{N4}	COM1 RX	CAN1 RX	167	PA8	COM4 RX	
18		68	PD9		118	PA10	COM1 TX	CAN1 TX	168	PC15	LCD Red 4	
19		69	PD8		119	PC24		169		Ground		
20	VCC 3.3V	70			120	PA2	COM2 RTS	170	PC10	LCD Green 5		
21		71			121	PA3	COM2 CTS	171	PC11	LCD Red 0		
22		72		VCC 3.3V	122	PD7		172	PC12	LCD Red 1		
23		73			123	PA15	SD D0	173	PC13	LCD Red 2		
24		74			124		VCC 3.3V	174	PC14	LCD Red 3		
25		75			125	PA16	SD CMD	175	PA23	SPI2 CLK		
26		76			126	PA17	SD CLK	176	PA21	SPI2 MISO		
27	Ground	77			127	PA18	SD D1	177		WKUP		
28		78			128	PA19	SD D2	178	PA22	SPI2 MOSI		
29		79		Ground	129	PA20	SD D3	179		SHDN		
30		80			130	PC21	PWM3	180		VCC 3.3V		
31		81			131		Ground	181		PWR_EN		
32	VCC 3.3V	82			132	PC26		182		USB3 HOST D+		
33		83	PA14 ^{N1}		133	PC20	PWM2	183		VDDBU (VBAT)		
34		84			134	PA24	LDR0	184		USB3 HOST D-		
35	PB3 ^{N1}	ERXDV	85	PC25 ^{N1}	DO NOT USE.	135	PA25	MODE(USB/COM1#)	185		Ground	
36	PB4 ^{N1}	ETXCK	86			136	PA26		186		Ground	
37	PB5 ^{N1}	EMDIO	87			137	PA27		187		NRST	
38	PB6 ^{N1}	EMDC	88		VCC 3.3V	138	PA28		188		USB2 HOST D+	
39	PB7 ^{N1}	ETXEN	89			139	PA29		189		RTCK	
40	Ground		90			140	PC16	COM6 TX	190		USB2 HOST D-	
41	Ground		91	PB8	AD9	141	PC17	COM6 RX	191		TDO	
42	DIBN		92	PD2		142		VCC 3.3V	192		VCC 3.3V	
43	DIBP		93	PC23		143	PC27	LCD V Sync	COM3 RTS	193		NTRST
44	BMS		94	PD0		144	PC28	LCD H Sync	COM3 CTS	194		USB1 CLIENT D+
45	JTAGSEL		95		Ground	145	PC30	LCD Clock	195		TDI	
46	VCC 3.3V		96	PB18		146	PC29	LCD Data Enable	196		USB1 CLIENT D-	
47	PB2 ^{N1}	ERXER	97	PB11	AD0	147	PD3		197		TCK	
48	PB9 ^{N1}	ETX0	98	PA5	COM3 TX	CAN2 TX	148	PD4		198		Ground
49	PB10 ^{N1}	ETX1	99	PA6	COM3 RX	CAN2 RX	149	PD5		199		TMS
50	PB0 ^{N1}	ERX0	100	PC22		150	PD6		200	PA7		COM4 TX

^{N1} N/C, leave floating

^{N2} Open drain ports

^{N3} SPI Only. Pull PA11 low when resetting to enter SAM-BA mode; limit low state to 2 seconds.

^{N4} set PA9 HIGH when entering SAM-BA

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