Welcome to E-XFL.COM

Understanding Embedded - Microcontroller, Microprocessor, FPGA Modules

Embedded - Microcontroller, Microprocessor, and FPGA Modules are fundamental components in modern electronic systems, offering a wide range of functionalities and capabilities. Microcontrollers are compact integrated circuits designed to execute specific control tasks within an embedded system. They typically include a processor, memory, and input/output peripherals on a single chip. Microprocessors, on the other hand, are more powerful processing units used in complex computing tasks, often requiring external memory and peripherals. FPGAs (Field Programmable Gate Arrays) are highly flexible devices that can be configured by the user to perform specific logic functions, making them invaluable in applications requiring customization and adaptability.

Applications of Embedded - Microcontroller,

Details

Product Status	Obsolete
Module/Board Type	MCU Core
Core Processor	SX28AC
Co-Processor	-
Speed	20MHz
Flash Size	16KB EEPROM
RAM Size	32B
Connector Type	-
Size / Dimension	1.2" x 0.6" (30mm x 15mm)
Operating Temperature	0°C ~ 70°C
Purchase URL	https://www.e-xfl.com/product-detail/parallax/bs2e-ic

Stamp Specifications (revised 02/10)

Released Products	Rev.Dx / BS1-IC	BS2-IC	BS2e-IC	BS2sx-IC
Package	PCB w/Proto / 14-pin SIP	24-pin DIP	24-pin DIP	24-pin DIP
Package Size (L x W x H)	2.5" x 1.5" x .5" / 1.4" x .6" x .1"	1.2" x 0.6" x 0.4"	1.2" x 0.6" x 0.4"	1.2" x 0.6" x 0.4"
Environment *	-40º to + 85º C (-40º to + 185º F) **	-40º to + 85º C (-40º to + 185º F) **	-40º to + 85º C (-40º to + 185º F) **	-40º to + 85º C (-40º to + 185º F) **
Microcontroller	Microchip PIC'56	Microchip PIC'57	Parallax SX28	Parallax SX28
Processor Speed	4 MHz	20 MHz	20 MHz	50 MHz
Program Execution Speed	~2,000 instructions/sec.	~4,000 instructions/sec.	~4,000 instructions/sec.	~10,000 instructions/sec.
RAM Size	16 Bytes (2 I/O, 14 Variable)	32 Bytes (6 I/O, 26 Variable)	32 Bytes (6 I/O, 26 Variable)	32 Bytes (6 I/O, 26 Variable)
Scratch Pad RAM	N/A	N/A	64 Bytes	64 Bytes
EEPROM (Program) Size	256 Bytes, ~80 instructions	2K Bytes, ~500 instructions	8 x 2K Bytes, ~4,000 inst.	8 x 2K Bytes, ~4,000 inst.
Number of I/O pins	8	16 + 2 Dedicated Serial	16 + 2 Dedicated Serial	16 + 2 Dedicated Serial
Voltage Requirements	5 - 15 vdc	5 - 15 vdc	5 - 12 vdc	5 - 12 vdc
Current Draw @ 5V	1 mA Run / 25 µA Sleep	3 mA Run / 50 µA Sleep	25 mA Run / 200 µA Sleep	60 mA Run / 500 µA Sleep
Source / Sink Current per I/O	20 mA / 25 mA	20 mA / 25 mA	30 mA / 30 mA	30 mA / 30 mA
Source / Sink Current per unit	40 mA / 50 mA	40 mA / 50 mA per 8 I/O pins	60 mA / 60 mA per 8 I/O pins	60 mA / 60 mA per 8 I/O pins
PBASIC Commands***	32	42	45	45
PC Programming Interface	Serial (w/BS1 Serial Adapter)	Serial (9600 baud)	Serial (9600 baud)	Serial (9600 baud)
Windows Text Editor	Stampw.exe (v2.1 and up)	Stampw.exe (v1.04 and up)	Stampw.exe (v1.096 and up)	Stampw.exe (v1.091 and up)

Released Products	BS2p24-IC	BS2p40-IC	BS2pe-IC	BS2px-IC
Package	24-pin DIP	40-pin DIP	24-pin DIP	24-pin DIP
Package Size (L x W x H)	1.2" x 0.6" x 0.4"	2.1" x 0.6" x 0.4"	1.2" x 0.6" x 0.4"	1.2" x 0.6" x 0.4"
Environment *	-40º to + 85º C (-40º to + 185º F) **	0º - 70º C (32º - 158º F) **	0º - 70º C (32º - 158º F) **	0º - 70º C (32º - 158º F) **
Microcontroller	Parallax SX48	Parallax SX48	Parallax SX48	Parallax SX48
Processor Speed	20 MHz Turbo	20 MHz Turbo	8 MHz Turbo	32 MHz Turbo
Program Execution Speed	~12,000 instructions/sec.	~12,000 instructions/sec.	~6000/sec.	~19,000 instructions/sec.
RAM Size	38 Bytes (12 I/O, 26 Variable)	38 Bytes (12 I/O, 26 Variable)	38 Bytes (12 I/O, 26 Variable)	38 Bytes (12 I/O, 26 Variable)
Scratch Pad RAM	128 Bytes	128 Bytes	128 Bytes	128 Bytes
EEPROM (Program) Size	8 x 2K Bytes, ~4,000 inst.	8 x 2K Bytes, ~4,000 inst.	16 x 2K Bytes (16 K for source)	8 x 2K Bytes, ~4,000 inst.
Number of I/O pins	16 + 2 Dedicated Serial	32 + 2 Dedicated Serial	16 + 2 Dedicated Serial	16 + 2 Dedicated Serial
Voltage Requirements	5 - 12 vdc	5 - 12 vdc	5 - 12 vdc	5 - 12 vdc
Current Draw @ 5V	40 mA Run / 350 µA Sleep	40 mA Run / 350 µA Sleep	15 mA Run / 150 µA Sleep	55 mA Run / 450 µA Sleep
Source / Sink Current per I/O	30 mA / 30 mA	30 mA / 30 mA	30 mA / 30 mA	30 mA / 30 mA
Source / Sink Current per unit	60 mA / 60 mA per 8 I/O pins	60 mA / 60 mA per 8 I/O pins	60 mA / 60 mA per 8 I/O pins	60 mA / 60 mA per 8 I/O pins
PBASIC Commands***	61	61	61	63
PC Programming Interface	Serial (9600 baud)	Serial (9600 baud)	Serial (9600 baud)	Serial (19200 baud)
Windows Text Editor	Stampw.exe (v1.1 and up)	Stampw.exe (v1.1 and up)	Stampw.exe (v1.33 and up)	Stampw.exe (v2.2 and up)

* 70% Non-Condensing Humidity

** Environment ratings may change with future hardware revisions; please contact support@parallax.com for more information.

*** Using PBASIC 2.5 for BS2-type models.