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What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "Embedded - Microcontrollers"

Details	
Product Status	Obsolete
Core Processor	8051
Core Size	8-Bit
Speed	12MHz
Connectivity	SIO, UART/USART
Peripherals	Brown-out Detect/Reset, LCD, LVD, POR, PWM, WDT
Number of I/O	54
Program Memory Size	32KB (32K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	1.25K x 8
Voltage - Supply (Vcc/Vdd)	1.8V ~ 5.5V
Data Converters	A/D 5x12b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	64-LQFP
Supplier Device Package	-
Purchase URL	https://www.e-xfl.com/product-detail/zilog/z51f3221arx

P0DB (P0 Debounce Enable Register): E9H

7	6	5	4	3	2	1	0
P07DB	P06DB	P05DB	P04DB	P03DB	P02DB	P01DB	P00DB
R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W

Initial value: 00H

P0DB[7:0] Configure Debounce of P0 Port

0 Disable

1 Enable

NOTES) 1. If the same level is not detected on enabled pin three or four times in a row at the sampling clock, the signal is eliminated as noise.

2. A pulse level should be input for the duration of 3 clock or more to be actually detected as a valid edge.

3. The port debounce is automatically disabled at stop mode and recovered after stop mode release.

4. Refer to the port 1 debounce enable register (P1DB) for the debounce clock of port 0.

9.7 P4 Port

9.7.1 P4 Port Description

P4 is 8-bit I/O port. P4 control registers consist of P4 data register (P4), P4 direction register (P4IO), P4 pull-up resistor selection register (P4PU) and P4 open-drain selection register (P4OD). Refer to the port function selection registers for the P4 function selection.

9.7.2 Register description for P4

P4 (P4 Data Register) : A0H

7	6	5	4	3	2	1	0
P47	P46	P45	P44	P43	P42	P41	P40
R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W

Initial value : 00H

P4[7:0] I/O Data

P4IO (P4 Direction Register) : B1H

7	6	5	4	3	2	1	0
P47IO	P46IO	P45IO	P44IO	P43IO	P42IO	P41IO	P40IO
R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W

Initial value : 00H

P4IO[7:0] P4 Data I/O Direction
0 Input
1 Output

P4PU (P4 Pull-up Resistor Selection Register) : DAH

7	6	5	4	3	2	1	0
P47PU	P46PU	P45PU	P44PU	P43PU	P42PU	P41PU	P40PU
R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W

Initial value : 00H

P4PU[7:0] Configure Pull-up Resistor of P4 Port
0 Disable
1 Enable

P4OD (P4 Open-drain Selection Register) : 96H

7	6	5	4	3	2	1	0
P47OD	P46OD	P45OD	P44OD	P43OD	P42OD	P41OD	P40OD
R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W

Initial value : 00H

P4OD[7:0] Configure Open-drain of P4 Port
0 Push-pull output
1 Open-drain output

PFSR2 (Port Function Selection Register 2) : EFH

7	6	5	4	3	2	1	0
PFSR27	PFSR26	PFSR25	PFSR24	PFSR23	PFSR22	PFSR21	PFSR20
R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W

Initial value : 00H

PFSR27 P43 Function select
- 0 Port
- 1 COM5/SEG3 Function

PFSR26 P42 Function Select
- 0 Port
- 1 COM4/SEG2 Function

PFSR25 P41 Function select
- 0 Port
- 1 COM3/SEG1 Function

PFSR24 P40 Function Select
- 0 Port
- 1 COM2/SEG0 Function

PFSR23 P36 Function select
- 0 Port
- 1 COM1 Function

PFSR22 P35 Function Select
- 0 Port
- 1 COM0 Function

PFSR2[1:0] P27 Function Select

PFSR21	PFSR20	Description
0	0	Port
0	1	AN7 Function
1	0	LVIREF Function
1	1	Not used

PFSR3 (Port Function Selection Register 3) : F1H

7	6	5	4	3	2	1	0
PFSR37	PFSR36	PFSR35	PFSR34	PFSR33	PFSR32	PFSR31	PFSR30
R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W

Initial value : 00H

PFSR37 P53 Function select
- 0 Port
- 1 SEG11 Function

PFSR36 P52 Function Select
- 0 Port
- 1 SEG10 Function

PFSR35 P51 Function select
- 0 Port
- 1 SEG9 Function

PFSR34 P50 Function Select
- 0 Port
- 1 SEG8 Function

PFSR33 P47 Function select
- 0 Port
- 1 SEG7 Function

PFSR32 P46 Function Select
- 0 Port
- 1 SEG6 Function

PFSR31 P45 Function select
- 0 Port
- 1 COM7/SEG5 Function

PFSR30 P44 Function Select
- 0 Port
- 1 COM6/SEG4 Function

PFSR4 (Port Function Selection Register 4) : F2H

7	6	5	4	3	2	1	0
PFSR47	PFSR46	PFSR45	PFSR44	PFSR43	PFSR42	PFSR41	PFSR40
R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W

Initial value : 00H

PFSR47 P63 Function select
- 0 Port
- 1 SEG19 Function

PFSR46 P62 Function Select
- 0 Port
- 1 SEG18 Function

PFSR45 P61 Function select
- 0 Port
- 1 SEG17 Function

PFSR44 P60 Function Select
- 0 Port
- 1 SEG16 Function

PFSR43 P57 Function select
- 0 Port
- 1 SEG15 Function

PFSR42 P56 Function Select
- 0 Port
- 1 SEG14 Function

PFSR41 P55 Function select
- 0 Port
- 1 SEG13 Function

PFSR40 P54 Function Select
- 0 Port
- 1 SEG12 Function