

Powerful Multiprocessor System:

Up to eight of these 68HC11 boards can be mapped into the 68HC12's address space, providing sophisticated data acquisition and control capabilities

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Recipe for Processing Power. Take a 68HC11 running in expanded mode, add a port replacement unit, and a block of dual-port RAM. Then connect the second port of the RAM to the memory expansion bus of a 68HC12A4 running in expanded mode. The result is a powerful, flexible system, with the 68HC12 running as a master, and up to 8 of the 68HC11 systems working as autonomous slaves, each mapped into a unique address range of the 68HC12A4's Extra Page Window. Communication between the master and each slave is accomplished via an interrupt-driven semaphore function provided by the dual-port RAM. The result is a powerful, easy-to-use data-sharing system in which a host of sensor-reading and device control tasks can be off-loaded to the slaves. This architecture lends itself to a very powerful distributed control system, useful in a number of robotics and instrumentation applications.

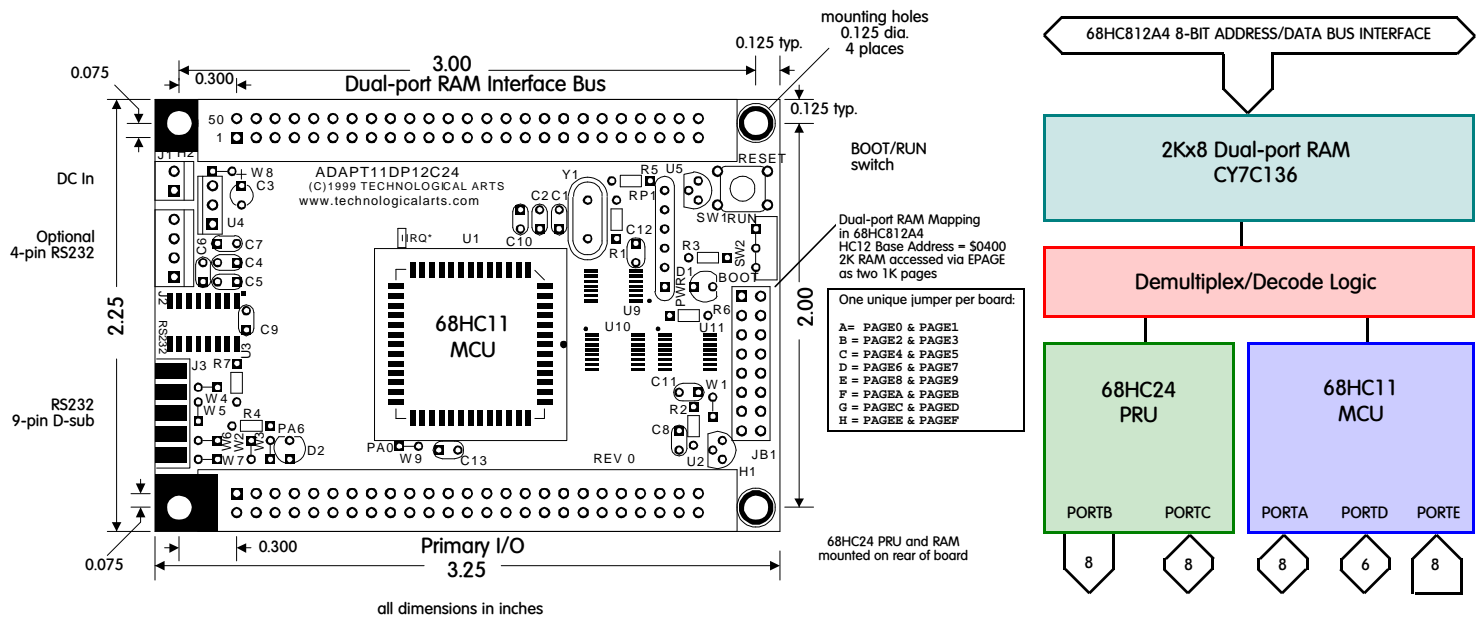
Multi-legged Robot Example. Imagine a scenario where each slave is responsible for a limb in a multi-legged walking robot. Each slave works autonomously, acquiring data from sensors (pressure, temperature, acceleration, etc.), processing it (averaging, scaling, filtering, etc.), and making decisions to activate various control devices. The limb-slave would signal the master whenever an out-of-bounds sensor reading occurred, alerting it of a possibly dangerous situation. All the while, the master monitors limb status simply by accessing designated memory blocks. It also issues commands at any time to any limb simply by writing them to designated memory locations. The master could, for example, establish a gait and overall direction of travel. Furthermore, the master could combine data from all the slaves' sensors and integrate it into a system-wide picture of the robot's environment at any given point in time.

ADAPT11DP12C24 TECHNICAL SPECIFICATIONS

- compact (2.25" x 3.25") expanded-mode implementation of the 68HC11
- socketed 68HC24 Port Replacement Unit
- socketed 2Kx8 dual-port RAM
- supports 68HC811E2, 68HC711E9, or 68HC711E20 (socketed)
- 8 jumper-selectable dual-port RAM chip selects for uniquely mapping up to 8 modules into 68HC812A4 EPAGE space
- 2 MHz bus speed (8 MHz crystal)
- includes RS232 interface (9-pin), 5V regulator, reset circuit and button
- Adapt12-style dual 50-pin connector arrangement
- compatible with most Adapt11- and Adapt12-family MCU modules, prototyping cards, and application boards

- available with several connector options, to support vertical or horizontal stacking, use with a backplane, or with a solderless breadboard
- primary 50-pin connector for dedicated I/O
- secondary 50-pin connector for dual-port RAM interface to Adapt812-family memory expansion bus
- programmable in C, BASIC, Forth, or assembler
- in-circuit programming/debugging via RS232 in 68HC11 Bootstrap mode (RUN/BOOT switch provided)
- includes full schematic, documentation, and application notes
- available fully populated with 68HC811E2FN, RAM, and 68HC24FN
- available semi-populated with 68HC24FN and RAM only (no MCU)

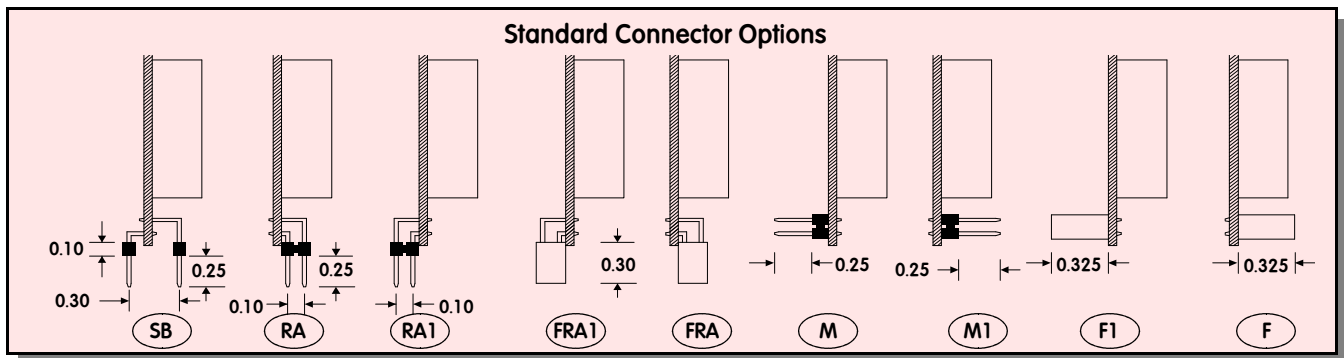
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Adapt11DP12C24 Connector Pinouts

H1				H2			
PIN	SIGNAL NAME	PIN	SIGNAL NAME	PIN	SIGNAL NAME	PIN	SIGNAL NAME
1	PD2/MISO	50	GROUND	1	DATA15	50	RESERVED
2	PD3/MOSI	49	GROUND	2	DATA14	49	RESERVED
3	PD4/SCK	48	PD0/RXD	3	DATA13	48	RESERVED
4	PD5/SS*	47	+5VDC	4	DATA12	47	RESERVED
5	PD1/TXD0	46	IRQ*	5	DATA11	46	RESERVED
6	PA7/OC7/PAI	45	XIRQ*	6	DATA10	45	CS3*/PF3
7	PA6/OC6	44	RESET*	7	DATA9	44	RESERVED
8	PA5/OC5	43	STRB	8	DATA8	43	CS1*/PF1
9	PA4/OC4	42	PC7	9	RESERVED	42	CS0*/PF0
10	PA3/OC3	41	PC6	10	RESERVED	41	RESERVED
11	PA2/OC2	40	PC5	11	RESERVED	40	RESERVED
12	PA1/OC1	39	PC4	12	RESERVED	39	RESERVED
13	PA0/OC0	38	PC3	13	RESERVED	38	RESERVED
14	PB7	37	PC2	14	RESERVED	37	RESERVED
15	PB6	36	PC1	15	RESERVED	36	RESERVED
16	PB5	35	PC0	16	RESERVED	35	ADDR6
17	PB4	34	RESERVED	17	RD*/WR*	34	ADDR7
18	PB3	33	E	18	RESERVED	33	ADDR8
19	PB2	32	STRA	19	RESERVED	32	ADDR9
20	PB1	31	VRL	20	ADDR0	31	ADDR10
21	PB0	30	VRH	21	ADDR1	30	ADDR11
22	PE0/AN0	29	PE4/AN4	22	ADDR2	29	ADDR12
23	PE1/AN1	28	PE5/AN5	23	ADDR3	28	ADDR13
24	PE2/AN2	27	PE6/AN6	24	ADDR4	27	RESERVED
25	PE3/AN3	26	PE7/AN7	25	ADDR5	26	RESERVED

NOTES: * indicates active low signal



Module: #AD11DP12C24M-□-□

Population options:

RAM + 68HC24 only: add /R24 to part #

RAM + 68HC24 + 68HC811E2: add /FP to part #