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µPac-535



CPU: Infineon CMOS 80C535 with 11.0592 MHz. crystal speed.

DIGITAL I/O: 18 TTL level, bit programmable I/O lines, with an additional 3 input and 3 output lines available with the purchase of the upgrade option. The 24 I/O lines, 8 of which can be optionally configured as high drive outputs, terminate to a standard 50 pin I/O rack header connector.

ANALOG INPUTS: Fast 8 channel, 8 bit analog to digital converter with an 18 microsecond conversion rate. The A/D has user programmable references allowing 10 bit resolution through software.

ANALOG OUTPUTS: The optional D/A has 4 channels with 8 bit resolution.

COUNTER/TIMERS/PWM: Three, 16 bit counter/timers are included standard. One of these has four I/O lines which can be used as compare outputs, or capture inputs (for Pulse Width Modulation/Demodulation). A watchdog timer is also provided. An additional 16 bit counter/timer is included with purchase of the upgrade option.

COMMUNICATION: A total of 3 RS232 serial ports, 1 of which is standard and 2 of which are provided with purchase of the upgrade option. Conversion of any port from RS232 to RS422/485 is available optionally.

INTERFACES: A Backlit LCD interface is provided, standard, with an optional 20 key, keypad interface available. Also included is a 50 pin bus expansion header.

PERIPHERAL EXPANSION: The address bus, data bus, reset and interrupt lines are available on a 50 pin bus expansion header for connecting to external peripherals from EMAC, or to peripherals of your own design.

MEMORY: Memory space for up to 128K of EPROM/FLASH and up to 128K of RAM. Total memory capacity is 256K bytes.

DISTRIBUTION CD: A CD is included with a demo program in assembly language and both assembly and C drivers for the on-board peripherals.

THIRD PARTY SOFTWARE: The 80C535 is supported by Keil Software's C-compiler and their RTOS. A more economical DDS ANSI C subset compiler is also available as an alternative. There are C drivers for the on-board peripherals.

The MICROPAC series of Single Board Computers feature micro size with micro power consumption at a micro price. The MICROPAC 535 has dimensions of 5.375" by 3.675" with a power requirement of 45 ma. typical and 80 ma. with the upgrade option installed. The MICROPAC 535 is ideally suited for controller applications requiring an on board Liquid Crystal Display (LCD) and/or keypad interface circuitry. The MICROPAC 535 Single Board Computer utilizes the Infineon 80C535 microprocessor. This high integration processor features an enhanced 8051 instruction set, programmable I/O ports, Boolean processor, interrupt controller, watchdog timer, A/D converter, Pulse Width Modulation, and timer/counters. You can think of this processor as being a next generation 8051. EMAC integrated this powerful processor onto a board that contains up to 24 digital I/O lines, 3 serial RS-232/485 ports, EEPROM, LCD interface, keypad interface, 8 channels of A/D, and 4 channels of D/A. The MICROPAC 535 comes complete with an 8051 assembler and complete driver source code written in assembly language on a PC compatible CD. A Monitor/Debugger EPROM that allows you to upload HEX files into RAM as well as a Flash Bootloader are optionally available. If you do not desire to program it in assembler, an optional EPROM containing BASIC 52 with high level drivers can be purchased as well as third party C compilers. The MICROPAC 535 is ideal for low cost data acquisition and control applications that require a display and keypad entry. The 8 channels of A/D allow the board to be connected to temperature sensors, pressure sensors, strain gauges, and LVDTs. Conditioned signals from these sensors can be used to make decisions in controlling motors, lights, heaters, etc. Try this board in your application for 30 days risk free.

Specifications

SBC Type:

Single Board Computer Microcontroller

Processor

Processor:

Infineon 80C535 (8051) 8-Bit

Clock Speed:

11.0592 MHz

Real Time Clock:

Processor Misc.:

CPU: Infineon CMOS 80C535 with 11.0592 MHz. crystal speed.

Memory

BIOS/ Bootloader:

OPTION AVAILABLE

Memory Misc.:

MEMORY: Memory space for up to 128 K of EPROM/FLASH and up to 128 K of RAM. Total memory capacity is 256K bytes. The 535 directly accesses 128 K of memory (64 K EPROM and 64 K RAM) with the 64 K balance being Banked Selected memory. A 32 K ROM Monitor and a 32 K RAM is included. In addition to the EPROM/RAM memory is a 1K bit serial EEPROM. The EEPROM is a nonvolatile memory organized into 64, 16 bit words with over 10,000 write cycles guaranteed and unlimited read cycles.

Primary I/O

GPIO:

4x 16 bit with PWM

Watchdog

SDIO:

24x digital I/O lines

Video Out:

LCD interface

Serial Ports:

3x RS232

Watchdog:
Primary I/O Misc.:
SERIAL PORTS: A total of 3 RS232 serial ports, 1 of which is standard and 2 of which are provided with purchase of the upgrade option. Conversion of any port from RS232 to RS422/485 is available optionally.

DIGITAL I/O: 18 TTL level, bit programmable I/O lines, with an additional 3 input and 3 output lines available with the purchase of the upgrade option. The 24 I/O lines, 8 of which can be optionally configured as high drive outputs, terminate to a standard 50 pin I/O rack header connector.

Secondary I/O

Timers/ Counters/ PWM:
3x 16 bit counter/timers
LPT Port:
Keypad:
PS/2:
Secondary I/O Misc.:
COUNTER/TIMERS/PWM: Three, 16 bit counter/timers are included standard. One of these has four I/O lines which can be used as compare outputs, or capture inputs (for Pulse Width Modulation/Demodulation). A watchdog timer is also provided. An additional 16 bit counter/timer is included with purchase of the upgrade option.

INTERFACES: A Backlit LCD interface is provided, standard, with an optional 20 key, keypad interface available. Also included is a 50 pin bus expansion header.

Expansion

Bus Misc.:
PERIPHERAL EXPANSION: The address bus, data bus, reset and interrupt lines are available on a 50 pin bus expansion header for connecting to external peripherals from EMAC, or to peripherals of your own design.

Analog

A/D:
A/D Channels:
8
A/D Channels:
8x 8/10 bit
A/D Resolution:
8/10 bit
D/A:
D/A Channels:
4
D/A Channels:
4x 8 bit
D/A Resolution:
8 bit
Analog Misc.:
ANALOG INPUTS: Fast 8 channel, 8 bit analog to digital converter with an 18 microsecond conversion rate. The A/D has user programmable references allowing 10 bit resolution through software.

ANALOG OUTPUTS: The optional D/A has 4 channels with 8 bit resolution.

Dimensions

Dimensions:

5.375 × 3.675 in
Form Factor:
uPac

Power Requirements

Voltage:
7 V
Typical Current:
45 mA
Power Misc.:
POWER REQUIREMENTS: Single Voltage supply operation from +7 Vdc to +15 Vdc with on board regulation. Typical current draw is 45 ma standard, or 85 ma with upgrade.

Environmental

Low Operating Temperature:
0 C
High Operating Temperature:
70 C
Upper Operating Humidity:
90%
Environmental Misc.:
OPERATING TEMPERATURE: 0 to 70 degrees Centigrade. Humidity range, without condensation, 0% to 90% RH.

Pricing

E331-01-10000
535 SBC, 1x RS232
$120.00
E331-01-10020
535 SBC, 3x RS232
$169.00
E331-01-10133
535 SBC, Keypad, D/A, HIDrive, 1x RS422/485, 3x RS232
$262.00
E331-01-10010
535 SBC, 1x RS422/485
Non-Stock
$139.00
E331-01-10030
535 SBC, 1x RS422/485, 2x RS232
Non-Stock
$183.00
E331-01-10040
535 SBC, 1x RS232, 2x RS422/485
Non-Stock
$202.00
E331-01-10021
535 SBC, 4 RS232, Keypad
Non-Stock
$179.00
Keypads:
E020-25
12 KEY MEM TELEPHONE STYLE KEYPAD
$25.00

E020-21
16 KEY MEMBRANE HEX STYLE KEYPAD
$30.00
Cables & Adapters:
CAB-35-004-1
6" 10 PIN HEADER TO DB9 SERIAL ADAPTER CABLE
$5.00
CAB-35-002-1
6" DB9 TO DB9 EXTENSION CABLE
$10.00
Date/Time Clocks:
E010-03
REAL TIME CLOCK/CALENDAR 32K BATTERY BACKED PROVISION (REQUIRES 32K RAM, 06-0723 OPTION)
$39.00
E010-04
REAL TIME CLOCK/CALENDAR 128K BATTERY BACKED PROVISION (REQUIRES 128K RAM, 06-0724 OPTION)
$50.00
Power Supply:
E010-11
WALL TRANSFORMER 110V - 9 V 500 MA
$10.00
E010-15
WALL TRANSFORMER 110V - 9 V 1 A
$18.00
E010-10
WALL TRANSFORMER 110V - 12 V 800 MA
$10.00
Memory:
06-0723
32K BY 8 STATIC RAM
$10.00
06-0724
128K BY 8 STATIC RAM
$15.00
06-90072
128K BY 8 BLANK PLCC FLASH
$15.00
E010-05
32K BY 8 BATTERY BACKED SOCKET (REQUIRES 32K RAM, 06-0723 OPTION)
$24.00
E010-07
128K BY 8 BATTERY BACKED SOCKET (REQUIRES 128K RAM, 06-0724 OPTION)
$29.00
Displays:
E020-30
20 CHAR. X 2 Line LCD Display
$49.00
E020-31
20 CHAR. X 2 Line LCD backlit display
$65.00
E020-32
20 char. X 4 line LCD
$74.00

E020-33
20 Char. X 4 line backlit LCD (EOL, LIMITED AVAILABILITY)
$0.00

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