



Microchip - DV330021 - DV330021 dsPICDEM MCSM Development Board Kit

Product Overview:

The Microchip dsPICDEM™ MCSM Development Board is targeted to control both unipolar and bipolar stepper motors in open-loop or closed-loop (current control) mode. The hardware is designed in such a way that no hardware changes are necessary for 8-, 6- or 4-wire stepper motors in either bipolar or unipolar configurations. Software to run motors in open-loop or closed-loop with full or variable micro-stepping is provided. A GUI for controlling step commands, motor parameter input, and operation modes is included. This flexible and cost-effective board can be configured in different ways for use with Microchip's specialized dsPIC33F Motor Control Digital Signal Controllers (DSCs). The dsPICDEM MCSM Development Board offers a mounting option to connect either a 28-pin SOIC device or a generic 100-pin Plug-In Module (PIM).



The dsPICDEM MCSM Development Board supports terminal voltages up to 80V and currents up to 3A. The dsPIC33F device uses the MOSFET driver to drive the two full-bridge inverters that power the motor windings.

Kit Content:

- dsPICDEM MCSM Development Board
- dsPIC33FJ32MC204 Plug-In-Module (PIM)
- USB-to-mini-USB cable
- Screwdriver
- dsPICDEM MCSM Development Board CD ROM, which includes:
 - This user's guide
 - Data sheets for dsPIC DSC families

- Example programs for use with the dsPIC DSC devices

- 24V Power Supply
- Leadshine Stepping Motor (P/N 42HS03)

Key Features:

- Devices supported:
 - 28-pin to 100-pin dsPIC33FJ12MC202 PIM (MA330014) with a dsPIC33F
 - 44-pin to 100-pin dsPIC33FJ32MC204 PIM (MA330017) and dsPIC33FJ128MC804 PIM (MA330018) with a dsPIC33F motor control device (U2) socket
 - 100-pin to 100-pin dsPIC33FJ256MC710 PIM (MA330013) with a dsPIC33F
- Motor control device (U2) socket
 - The dsPIC33FJ12MC202 Motor Control device in SOIC package (U3) footprint
- Motor control interfaces:
 - Two full-bridge inverters
 - Two phase current sense resistors
 - DC bus voltage sense resistor
 - Overcurrent protection
- Input/output control switches:
 - One push button (S1)
 - Reset push button (RESET)
 - 10 k Ω potentiometer (POT)
 - LED indicators for PWM outputs arranged in a full-bridge format
 - LED indicator for overcurrent
- Communication Ports:
 - UART communication via USB (J4)

- Built-in power supplies
 - 15V power supply, maximum power available 11 W
 - 3.3V power supply, maximum power available 2 W
- Power supply connectors:
 - 24V power input connector (J6) for the controller and power stage
 - Auxiliary Power Tab Fast-On connectors (BP1 and BP2) for the power stage
- Programming Connectors:
 - ICSP™ connector for programming a dsPIC DSC device (J2)
 - RJ11 connector for programming a dsPIC DSC device (J1)
 - ICSP connector for programming the PIC18LF2450 USB-to-UART Bridge (J3)

Ordering Information:

Products:

Part Number	Manufacturer	Farnell P/N	Newark P/N
DV330021	Microchip	1814887	63R7711

Associated Products:

Part Number	Manufacturer	Description	Farnell P/N	Newark P/N
DSPIC33FJ12MC202-I/SO	Microchip	16-Bit Digital Signal Controller	1439609	88K3898
DSPIC33FJ128MC804-I/ML	Microchip	DSC, 16BIT,128K FLASH,40MIPS,44QFN	1576809	39M8145
DSPIC33FJ256MC710-I/PF	Microchip	16BIT MCU-DSP, 256KB FLASH, SMD	1332045	74K4959

Similar Products:

Part Number	Manufacturer	Description	Support Device	Farnell P/N	Newark P/N
DV164035	Microchip	MPLAB ICD 3 In-Circuit Debugger Kit	Flash PIC MCUs / dsPIC DSCs (8/16/32-bit)	1664878	19P0223
DV164005	Microchip	MPLAB ICD 2 In-Circuit Debugger/Programmer Only	Flash PIC MCUs / dsPIC DSCs (8/16/32-bit)	4156924	51M8733
DM163014	Microchip	DEMO BOARD, KIT-PICDEM4	PIC18F1320 / PIC16F627A	4418098	29H5732
DM240001	Microchip	EXPLORER KIT, PICDEM, PIC24/DSPIC33	PIC24FJ128GA010 / dsPIC33FJ256GP710	1146554	04M6008

Document List:

Datasheets:

Part Number	Description	Size
DV330021	dsPICDEM MCSM Development Board Users Guide	1484 KB
dsPIC33FJ12MC202	16-Bit Digital Signal Controller	4.11MB
dsPIC33FJ128MC804	DSC, 16BIT, 128K FLASH, 40MIPS, 44QFN	5.69MB
dsPIC33FJ256MC710	16BIT MCU-DSP, 256KB FLASH, SMD	4.65MB

Application Notes:

File Name	Size
AN1307 - Stepper Motor Control with dsPIC DSCs	311 KB
dsPICDEM MCSM Development Board Demonstration Software	1172 KB
AN907 - Stepping Motors Fundamentals	386 KB
AN906 - Stepper Motor Control Using the PIC16F684	213 KB
AN822 - Stepper Motor Microstepping with PIC18C452	468 KB

Hardware & Software:

File Name	Size
dsPIC DSC Acoustic Echo Cancellation Library	612 KB
dsPIC DSC DSP Algorithm Library	43 KB

dsPIC30F Embedded Encryption Libraries User's Guide	1186 KB
dsPIC DSC Automatic Gain Control (AGC) User's Guide	751 KB
Software Solutions and Tools for the 16-bit and 32-bit Designer	2399 KB
AN1094 - Bootloader for dsPIC30F/33F and PIC24F/24H Devices	413.94KB
Getting Started with Development Tools	
AN1157 - A Serial Bootloader for PIC24F Devices	498.01KB

Others Resources:

File Name	Size
Corporate Product Selector Guide	536Kb
MPLAB Integrated Development Environment (IDE) Brochure	371Kb
AN914 - Dynamic Memory Allocation for the MPLAB® C18 C Compiler	244KB