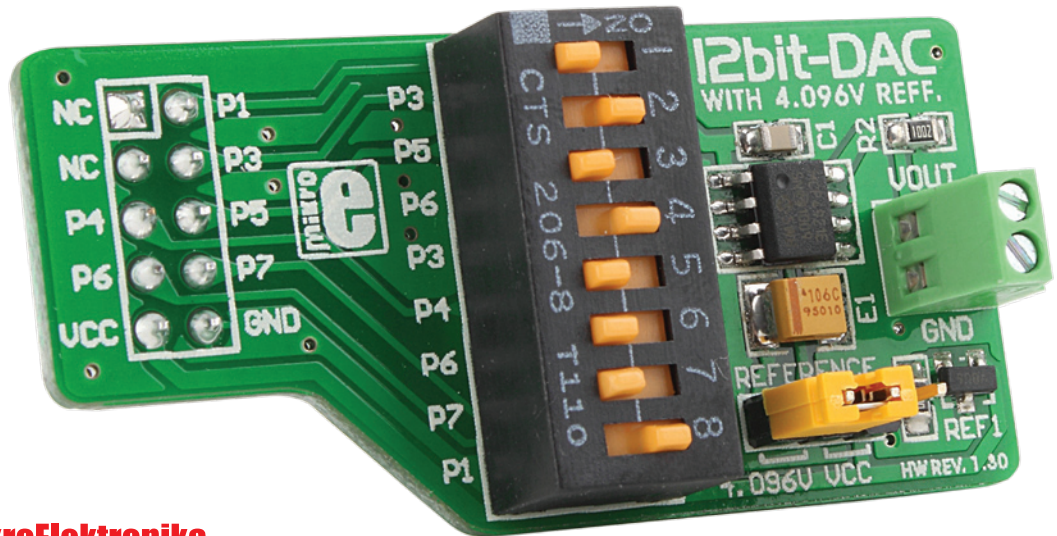
user's guide to

12bit-DAC

Expand development system capabilities by adding 12bit Digital to Analog Converter



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General Manager

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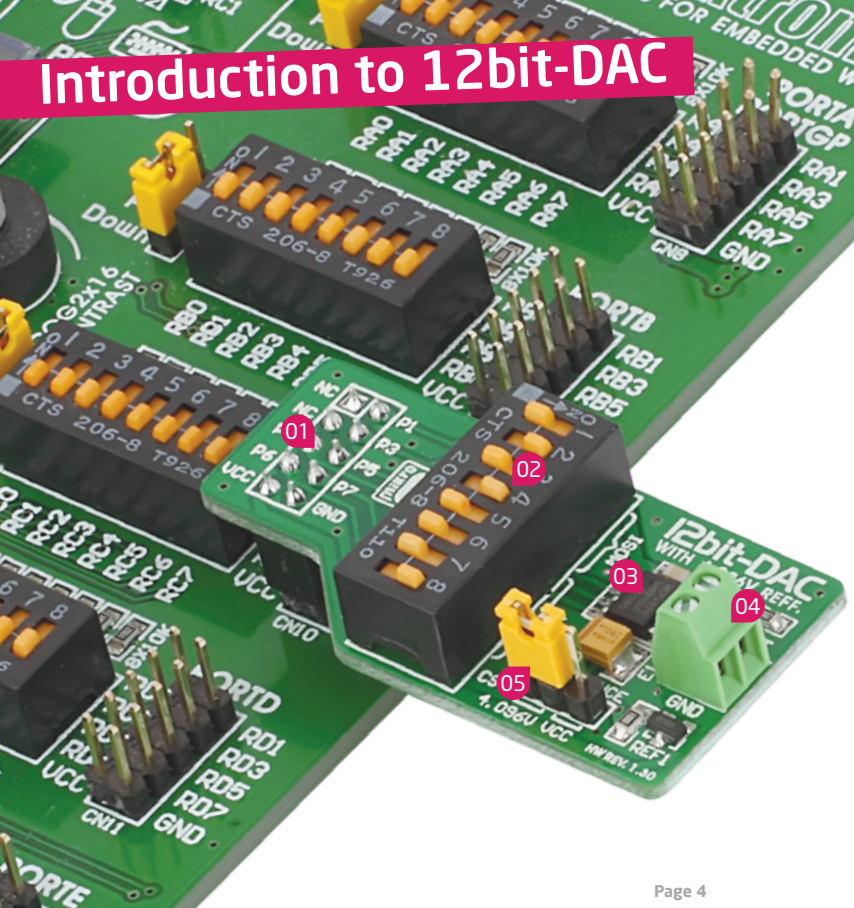
Introduction to 12bit-DAC



Accessory board is designed for usage with various development systems and other MCU device with 2x5 header. 12bit -DAC additional board is designed for Digital to Analog Conversion. To communicate with MCU accessory board use serial SPI interface.

Key features

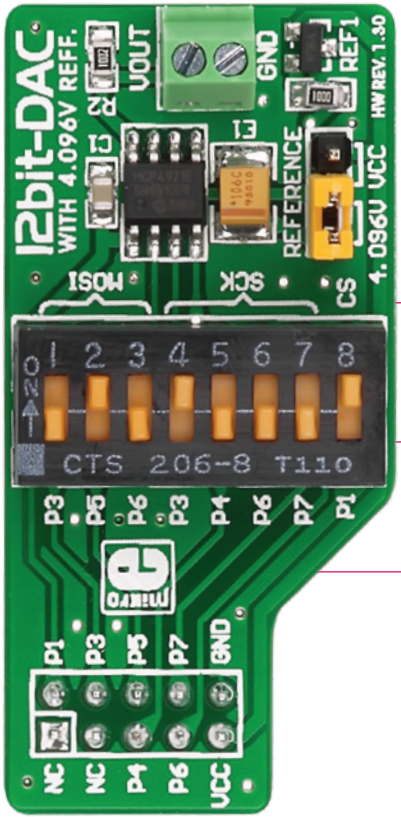
01 Pads with female 2x5 header on back side of the board

02 DIP switch for pin selection

03 MCP4921 chip

04 Two pole screw terminal CN2

05 Jumpers for selecting reference voltage



System Specification

power supply

3.3V to 5V DC depends on development system in use

power consumption

max 50mA (current at supply pins)

board dimensions

49.59 x 23.88mm (1.95 x 0.94")

weight

~9g (0.02 lbs)

1. Connecting with development system

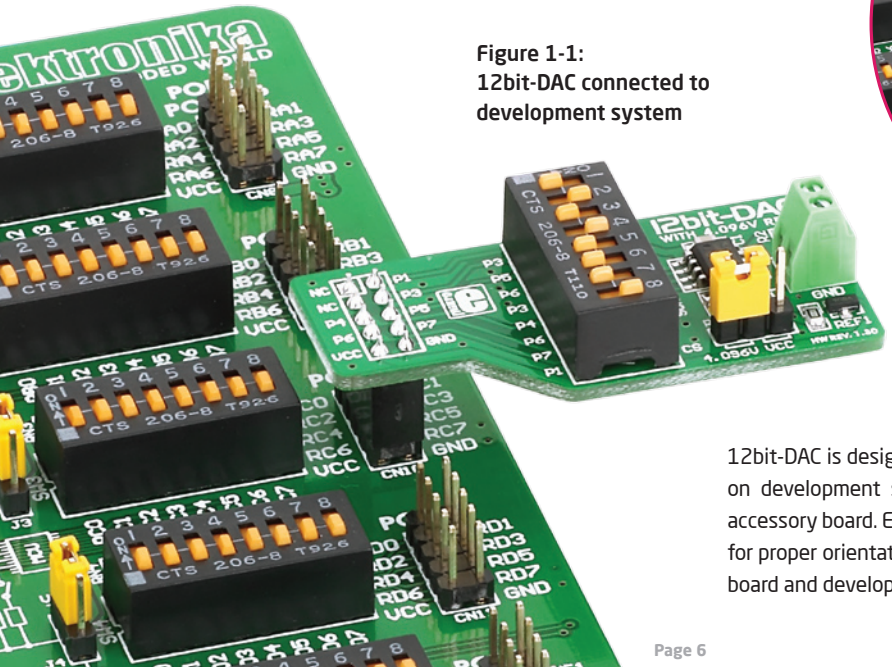


Figure 1-1:
12bit-DAC connected to development system

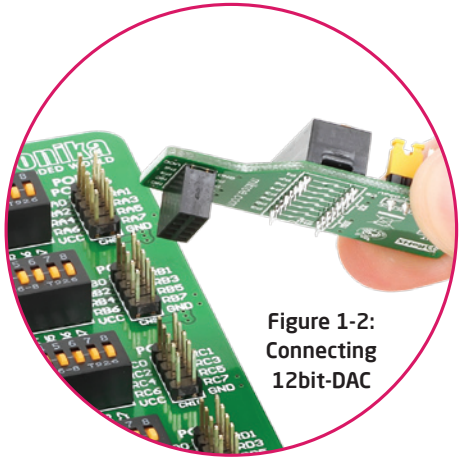


Figure 1-2:
Connecting 12bit-DAC

12bit-DAC is designed for connection with 2x5 male headers on development system port's via 2x5 female header on accessory board. Every pin on 2x5 female header is marked so for proper orientation just compare marks between accessory board and development system.

2. DIP switch settings

In order to connect 12bit-DAC to different development system it is necessary to make settings on DIP switch SW1. Every pin on DIP switch SW1 is connected to different pin of 2x5 female header. In table 1 is given list which switch on DIP switch SW1 should be turned ON for different development system.

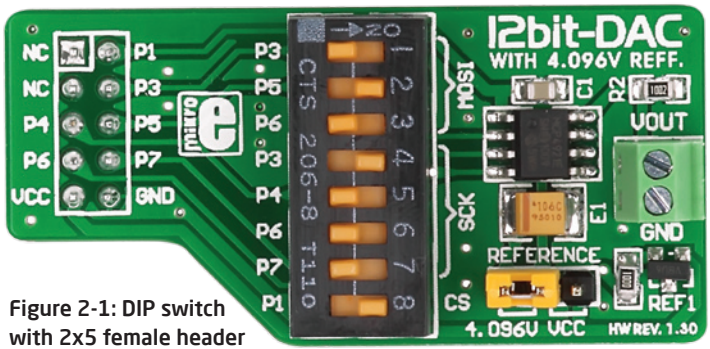


Figure 2-1: DIP switch with 2x5 female header

Table 1

Development system:	Turn ON switch number:	Pin on female 2x5 header:	Pin function:
EasyPIC, BIGPIC, LV18F, Easy LV18F, Easy 24-33	4	P3	SCK
Easy dsPIC	1	P3	MOSI
BIGdsPIC, dsPIC PRO, EasyARM	5	P4	SCK
EasyPIC, BIGPIC, LV18F, Easy LV18F, Easy 24-33, EasyAVR6, Easy 8051	2	P5	MOSI
BIGdsPIC, dsPIC PRO, EasyARM	3	P6	MOSI
EasydsPIC	3	P6	SCK
EasyAVR, Easy 8051	7	P7	SCK
All development systems	8	P1	CS

3. Connecting 12bit-DAC with analog device

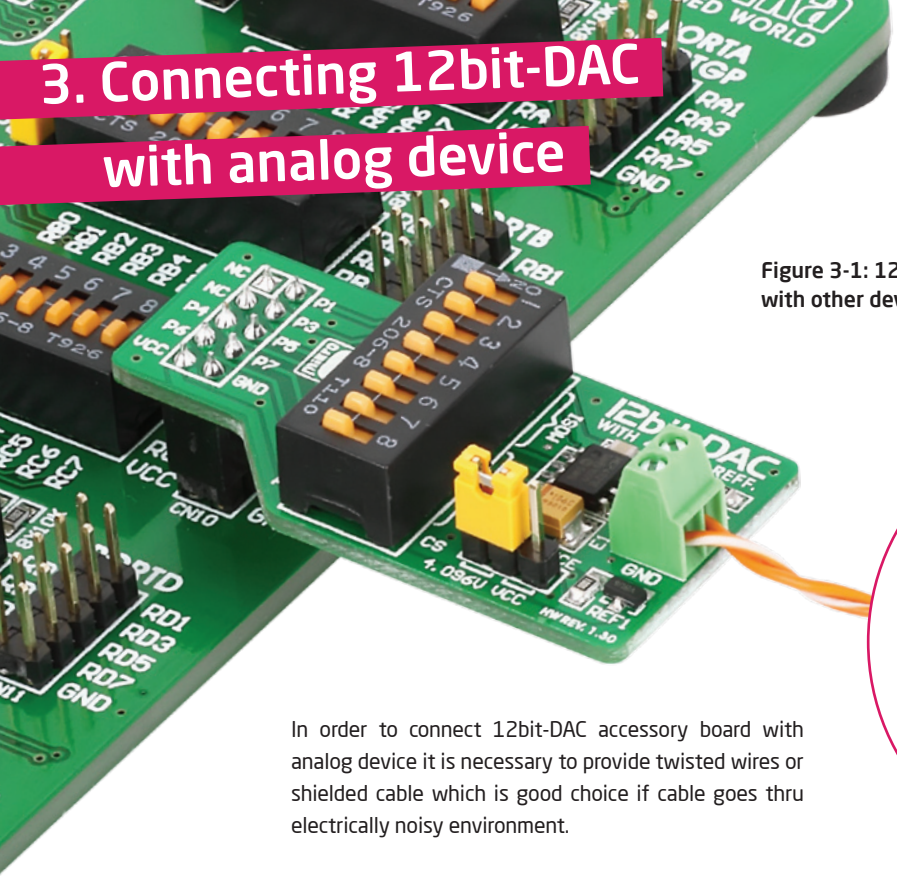


Figure 3-1: 12bit-DAC connected with other device via wire

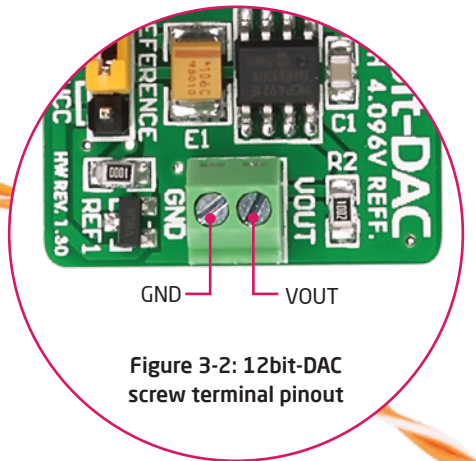


Figure 3-2: 12bit-DAC screw terminal pinout

In order to connect 12bit-DAC accessory board with analog device it is necessary to provide twisted wires or shielded cable which is good choice if cable goes thru electrically noisy environment.

4. Jumper settings for reference voltage

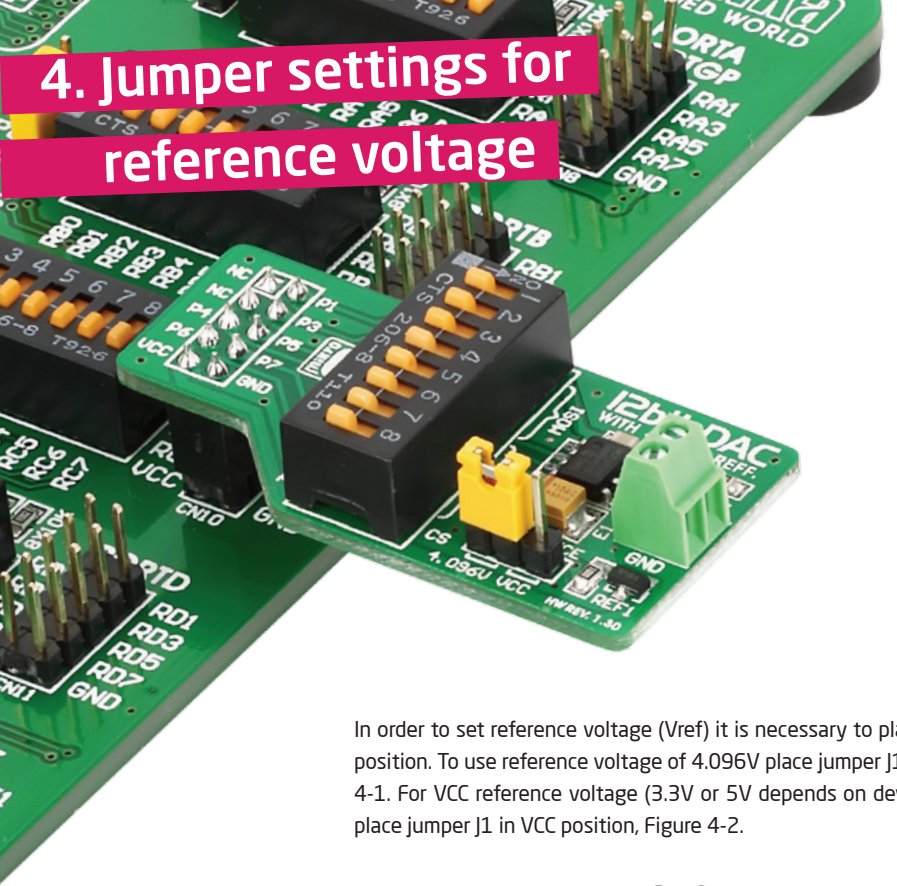


Figure 4-1: Ref. voltage is 4.096V

Figure 4-2: Ref. voltage is VCC

In order to set reference voltage (Vref) it is necessary to place jumper J1 in adequate position. To use reference voltage of 4.096V place jumper J1 to 4.096 position, Figure 4-1. For VCC reference voltage (3.3V or 5V depends on development system in use) place jumper J1 in VCC position, Figure 4-2.

5. Schematic

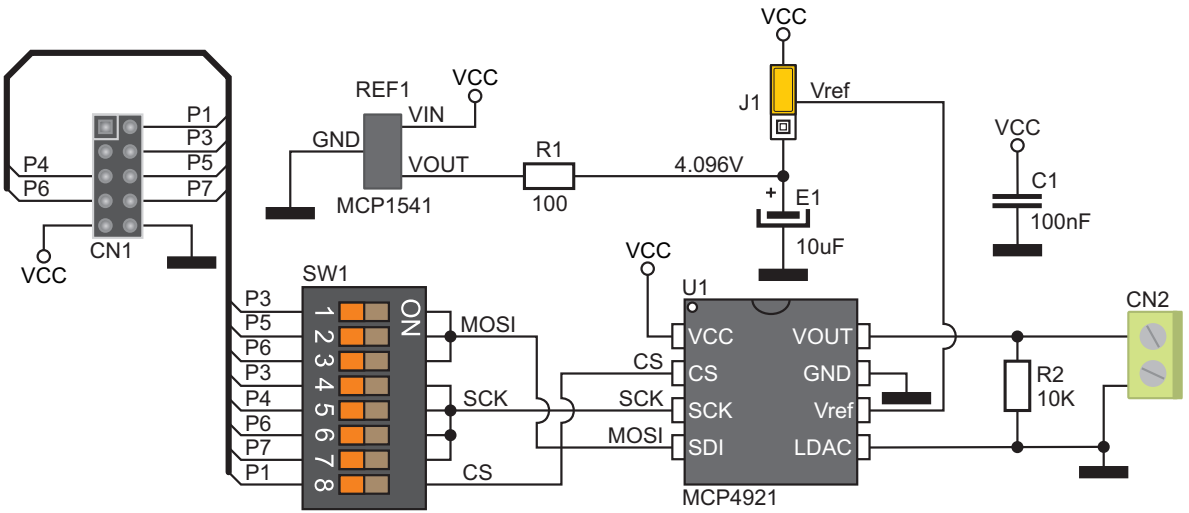


Figure 5-1: Connection schematic

6. Dimensions

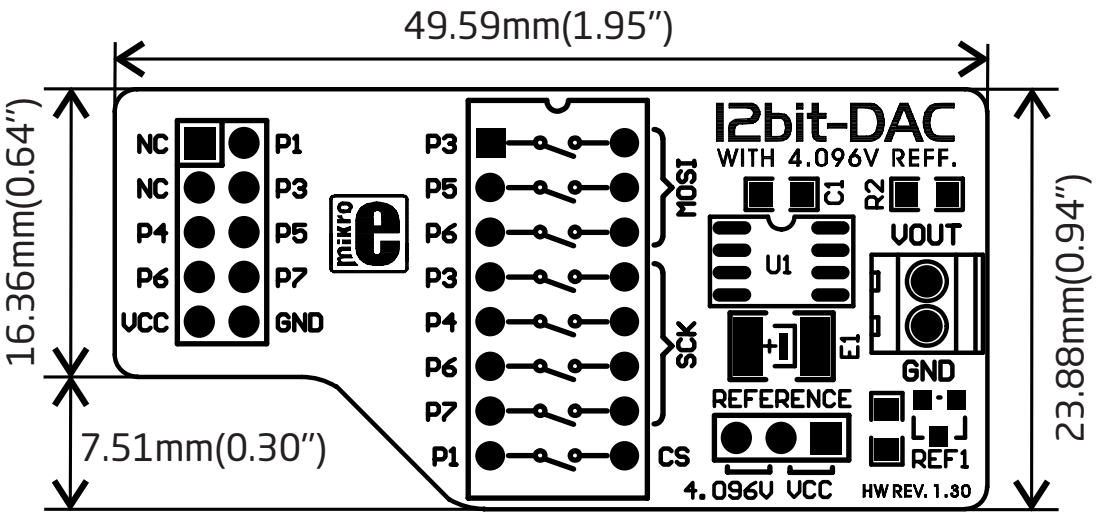


Figure 6-1: Dimensions

Notes:

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