SmartMP3™

Manual

All Mikroelektronika's development systems feature a large number of peripheral modules expanding microcontroller's range of application and making the process of program testing easier. In addition to these modules, it is also possible to use numerous additional modules linked to the development system through the I/O port connectors. Some of these additional modules can operate as stand-alone devices without being connected to the microcontroller.

Additional Board

MikroElektronika
SOFTWARE AND HARDWARE SOLUTIONS FOR EMBEDDED WORLD ...making it simple

SmartMP3

SmartMP3 is an additional board used to reproduce audio files in mp3 format. In addition to the built-in speaker, *SmartMP3* includes connectors that enable additional speakers and headphones to be connected to the board. There is also an MMC/SD card connector provided on the board. The *SmartMP3* board uses the on-board audio decoder VS1011E to convert audio files in mp3 format into an audio signal to be reproduced through speakers. Some of the board's key features are: stereo DAC, low-power consumption, headphones driver, serial SPI communication enabled, capability of operating as a stand-alone device, 4 I/O pins enabling connection with additional devices etc.

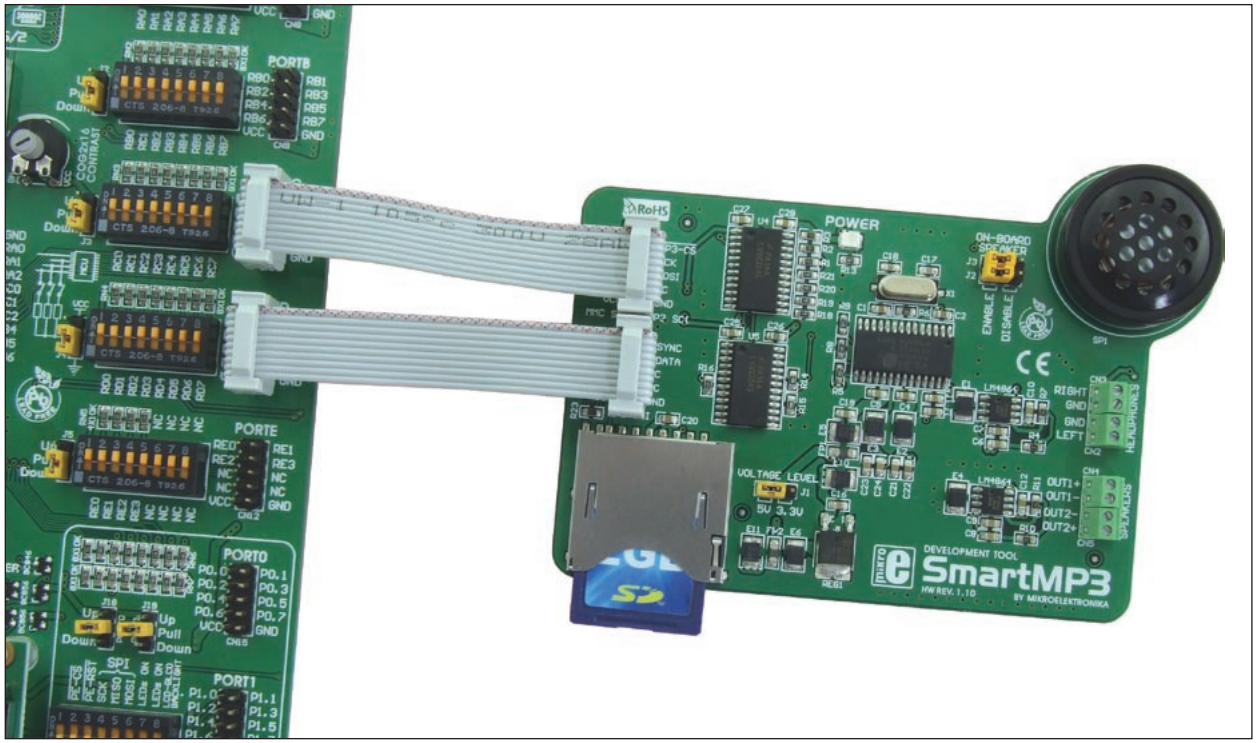
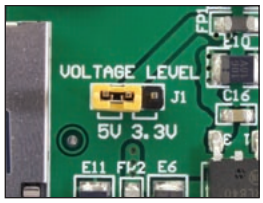


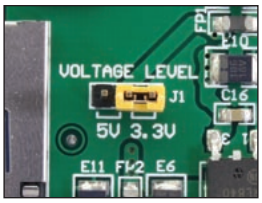
Figure 1-1: SmartMP3 connected to the development system

SmartMP3 communicates with the microcontroller via SPI, which means that this board can be connected to all development systems having the microcontroller with integrated serial communication module. The *SmartMP3* additional board is connected to the development system via flat cables with 2x5 female connector. With regard to the fact that different development systems use different power supply voltages, it is necessary to adjust *SmartMP3*'s and development system's voltage levels. It is performed through jumper J1 provided on the *SmartMP3* board. In case that development system uses 3.3V power supply voltage, it is necessary to place jumper J1 in 3.3V position. Otherwise, jumper J1 should be left in its default position (5V).



When jumper J1 is placed in 5V position, the *SmartMP3* board can be connected to development sysem with 5V power supply voltage such as: EasyPIC6, EasydsPIC6, EasyAVR6, EasyPSoC4, Easy8051 v6 etc.

Figure 1-2: J1 in 5V position



When jumper J1 is placed in 3.3V position, the *SmartMP3* board can be connected to development sysem with 3.3V power supply voltage such as: LV18F v6, EasyLV-18Fv6, LV24-22 v6, LV-32MX v6 etc.

Figure 1-3: J1 in 3.3V position

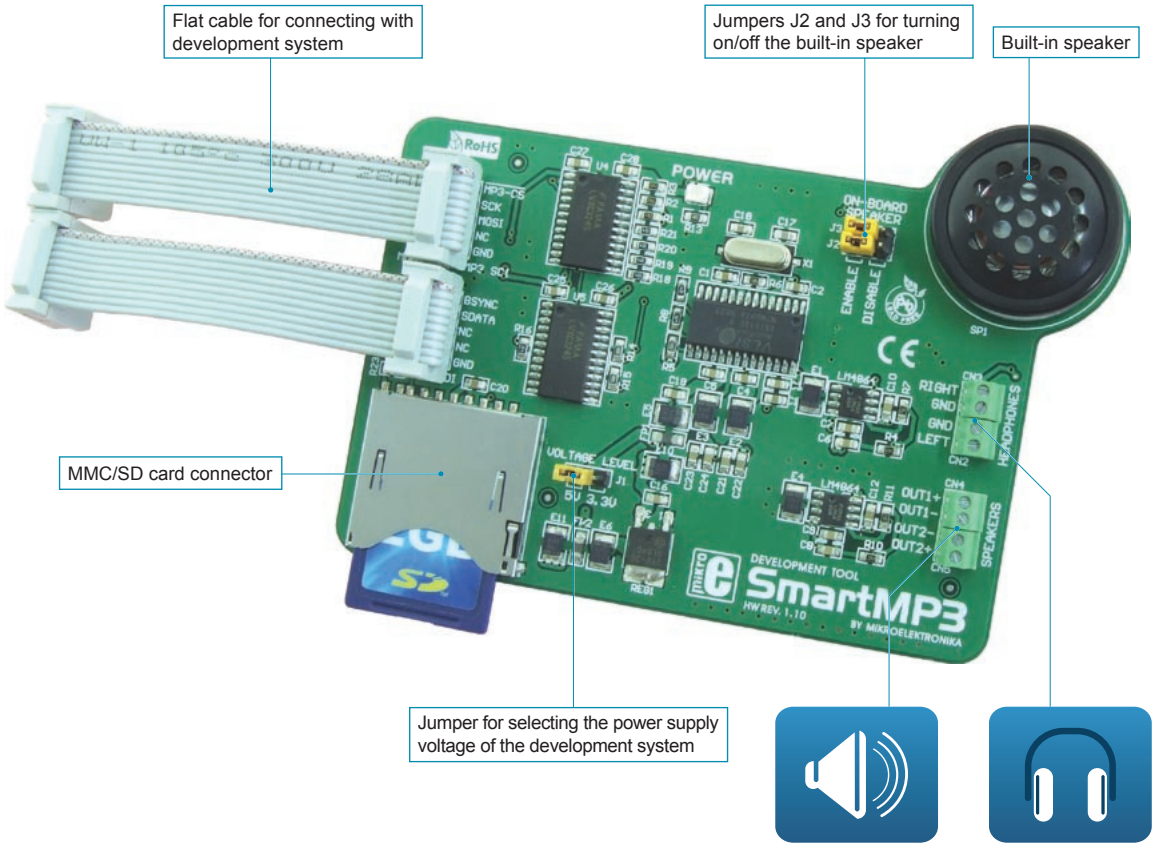
In addition to jumper J1, the *SmartMP3* board includes jumpers J2 and J3 used to turn on/off the built-in speaker as well as additional one connected to the board via the CN4 connector. The *SmartMP3* board also enables you to connect another additional speaker via the CN5 connector. The built-in speaker is turned on by placing jumpers J2 and J3 in ENABLE position. When jumpers J2 and J3 are placed in DISABLE position, the built-in speker is turned off, thus enabling the additional speaker to be connected through the CN4 connector. The speaker connected to the board through the CN5 connector can be used along with the built-in speaker.

Figure 1-4: Built-in speaker is on

Figure 1-5: Built-in speaker is off

In addition to the above mentioned speakers, the *SmartMP3* board enables you to connect headphones via CN2 and CN3 connectors. They can be used along with additonal speakers.

A LED POWER is used to indicate the operation of the *SmartMP3* board. When the *SmartMP3* board connects to the development system, the POWER LED illuminates, which means that the board is turned on and can be used.



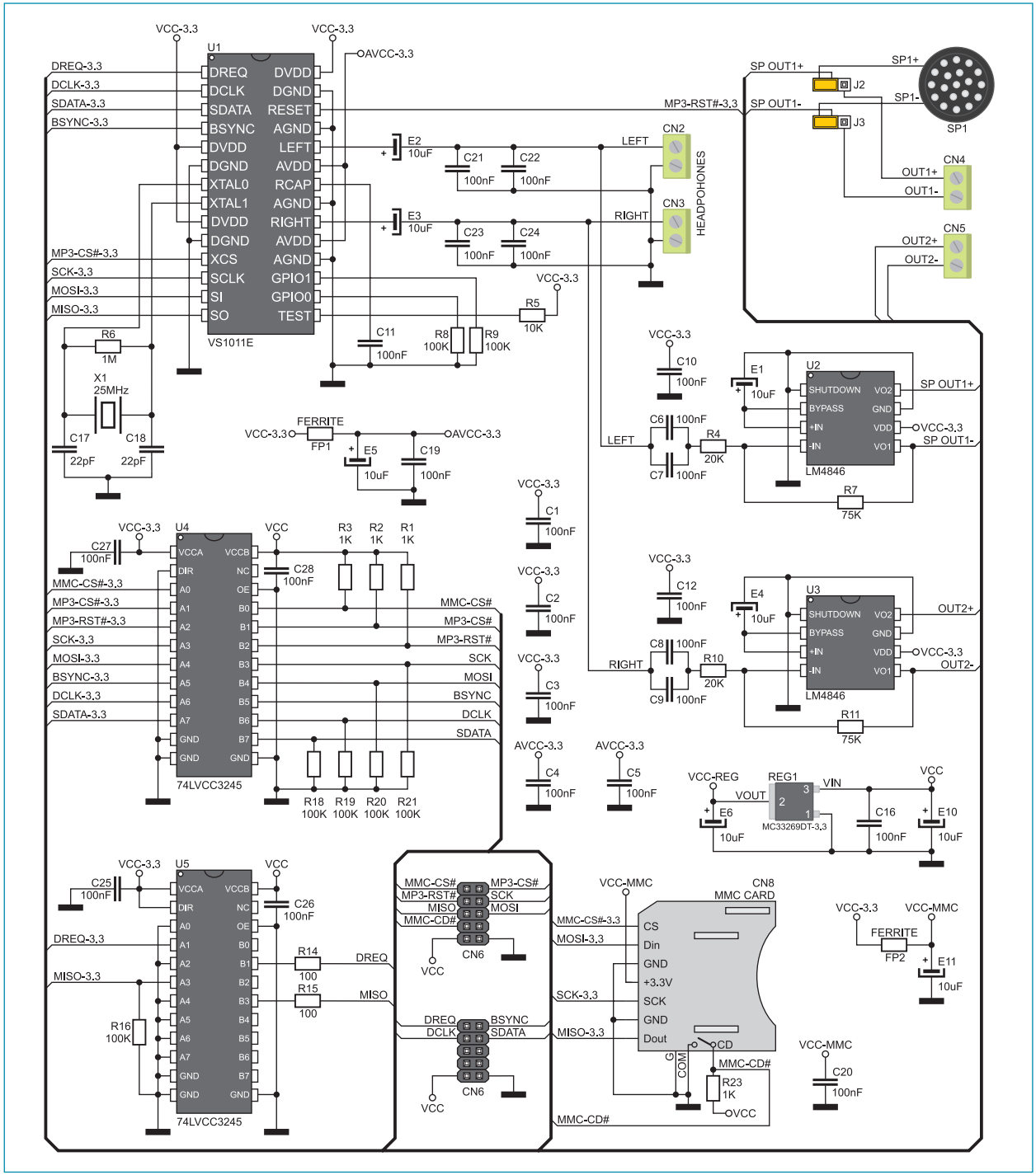


Figure 1-6: SmartMP3 additional board connection schematic