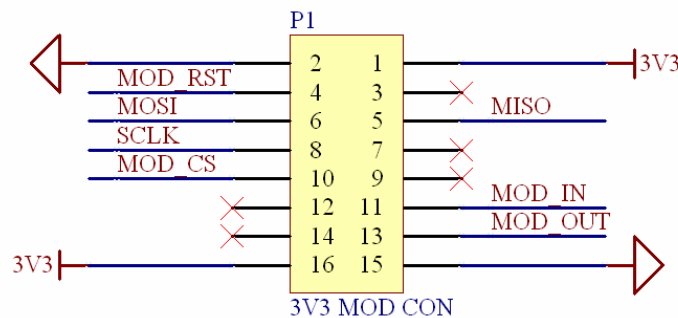# VS1011 MODULE MANUAL

1. Overview

VS1011 Module is a module for developing MP3/WAV player application with existing microcontroller board. The module comes with IC MPEG decoder VS1011e. It requires 7 pins for SPI signals, reset and data request signals. The module supplies one audio jack connector for earphone or speaker for audio output only and doesn't support sound recording.

Note that the host board to be connected with VS1011 module should have its own memory storing audio file.

2. Pin description

Pin	Description
1,16	3.3V supply voltage
2,15	Ground
3,7,9,12,14	No connection
4	Reset (XRESET)
5	SPI MISO (SO)
6	SPI MOSI (SI)
Pin	Description
8	SPI Clock (SCLK)
10	Chip select (XCS)
11	Data chip select (XDCS)
13	Data request signal (DREQ)

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3. How to use

Communication with VS1011 in 'new mode' uses same SPI bus (MISO,MOSI and SCLK) for audio and control data. It's separate with the chip select signals; use XCS for serial control interface (SCI) and XDCS for serial data interface (SDI). Both signals are active low.

VS1011's operation is very simple. What users have to do is first; do software reset and set the operation mode to 'new mode' (the code is 0x0804) then send it some zero data. There operations are done in 'VSInit()' function in the demo source code.

To play a file, users should load data from SD card or MMC card or any other source to buffer. Send it via SDI until the DREQ goes low, that means buffer in VS1011 is less than 32 bytes. Again and again, check if DREQ goes high and resend the data.

For simpler testing the module, user may call 'VSSineTest()' function. If the module can operate correctly, user should hear noisy sound generated from the module.

For more detail about VS1011 operation please see datasheet.

The picture below shows how the module connected with ThaiEasyElec's Blue Screen, the touch screen demo board with MP3 player appolication. For more detail about Blue Screen please see www.thaieasyelec.com .

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4. Drawing