Motion Sensor

NW-MOT-MPU6500

Evaluation Board for the TDK InvenSense MPU-6500 Motion Sensor

Description:

The 6DOF MPU-6500 is one of the world's smallest 6-axis MotionTracking MEMS device designed for the low power, low cost, and high performance requirements of consumer electronics equipment including smartphones, tablets and wearable sensors.

The NW-MOT-MPU6500 makes it easy to prototype with the TDK InvenSense MPU-6500 by having all the pins mapped to 2.54mm/0.1" headers. The board also provides I^2C pull-up resistors, zero ohm jumpers to switch the I^2C address of the device, switchable between I^2C and SPI mode, and enable/disable frame synch.

The MPU-6500 contains a 3-axis gyroscope, and 3-axis accelerometer. The part is offered in a 3x3x.9mm LGA package and is upgrade-compatible with the MPU-6500 integrated 6-axis MotionTracking device, providing a simple upgrade path and making it easy to fit on space constrained boards. The NW-MOT-MPU6500 pins are all mapped to standard 2.54mm/0.1" headers. The distance between the headers is 500mil.

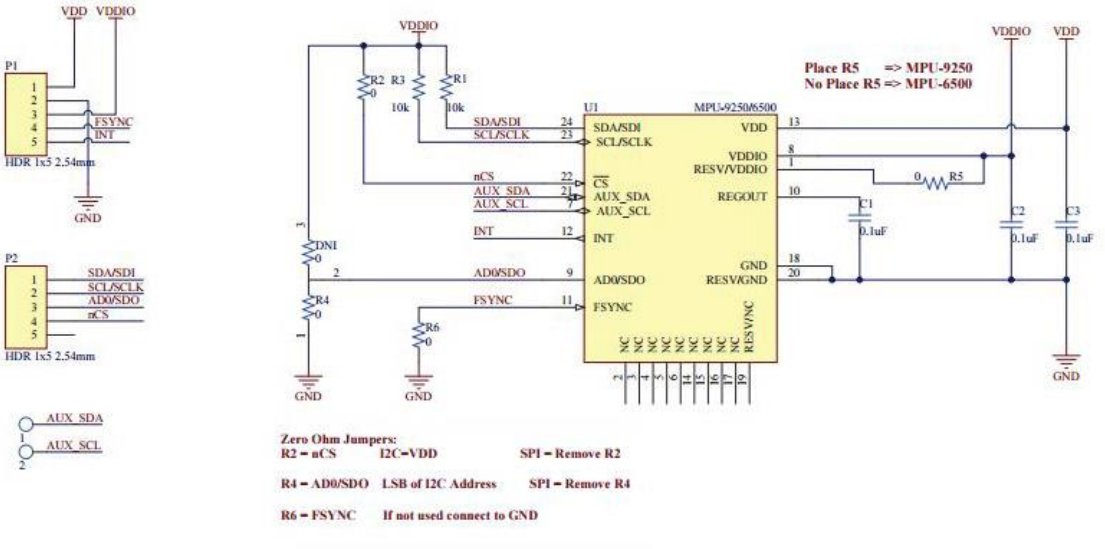
Additional Information:

For more information on the MPU-6500 users can get the complete datasheet from the link below.
https://www.cdiweb.com/datasheets/invensense/MPU_6500_Rev1.0.pdf

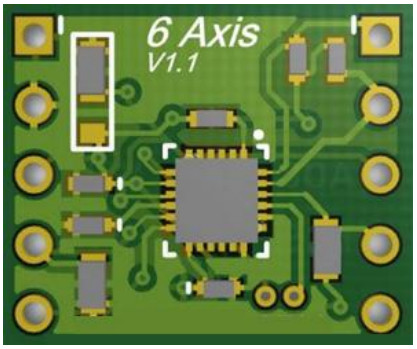
Features:

- Ultra-small 15.0x12.7 mm (0.59"x0.5") Breakout board with .1"/2.54mm header spacing that can be directly soldered into a prototype or used with breadboard
- 500mil header-header spacing
- VDD Supply voltage range of 1.71-3.45V; Optional separate VDDIO of 1.71-3.45V
- Tri-Axis angular rate sensor (gyro) with a sensitivity up to 131 LSBs/dps and a full-scale range of ±250, ±500, ±1000, and ±2000dps
- Tri-Axis accelerometer with a programmable full scale range of ±2g, ±4g, ±8g and ±16g
- Reduced settling effects and sensor drift by elimination of board-level cross-axis alignment errors between accelerometer, gyroscope, and compass
- Gyro operating current: 3.2mA
- Gyro + Accel operating current: 3.4mA
- Accel low power mode operating current: 7.27uA at 0.98Hz, 18.65uA at 31.25Hz
- Full-Chip Sleep Mode: 6uA

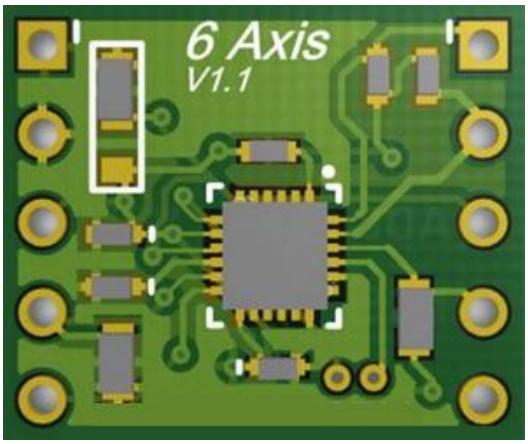
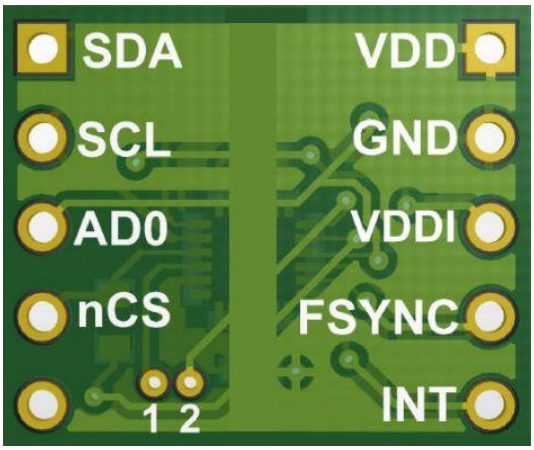
NW-MOT-MPU6500 Schematic



NW-MOT-MPU6500 Pin Descriptions



Pin	Name	Type	Function
P1 1	VDD	Input	Power Supply, 1.71-3.45 V
P1 2	Gnd	Ground	Ground. Connect to ground on the PCB
P1 3	VDDIO	Input/Output	Digital I/O Supply Voltage, 1.71-3.45 V
P1 4	FSYNC	Input	Synchronization digital input (optional). Connect to GND if unused.
P1 5	INT	Input	Interrupt digital output (totem pole or open-drain)
P2 1	SDA/SDI	Output	I2C serial data (SDA); SPI serial data input (SDI)
P2 2	SCL/SCLK	Output	I2C serial clock (SCL); SPI serial clock (SCLK)
P2 3	ADO/SDO	Output	I2C slave address LSB (AD0); SPI serial data output (SDO)
P2 4	nCS	Input	Chip Select (o=SPI mode, 1=I2C Mode)
P2 5	NC	NC	Not Used

NW-MOT-MPU6500 3D PCB – Top	NW-MOT-MPU6500 3D PCB – Bottom
	

NW-MOT-MPU6500 PCB – Top	NW-MOT-MPU6500 PCB – Bottom