

Accelerometer

KXTJ3-1057-EVK-002 Manual

1pc

KXTJ3-1057-EVK-002 is an evaluation board for KXTJ3-1057, which is ROHM accelerometer. This User's Guide is about how to use KXTJ3-1057-EVK-002 together with ROHM Shield for Arduino *1.

*1 ROHM Shield for Arduino is sold separately or as part of ROHM sensor evaluation kit. This User's Guide uses Shield-EVK-001 of Shield for Arduino.

Preparation

- KXTJ3-1057-EVK-002 1pc
- Shield for Arduino 1pc
- Arduino Uno 1pc
- USB Cable
- Computer Installed Arduino IDE 1pc
 - Requirement: Arduino IDE 1.8.13 or higher
 - Please get Arduino IDE from the link below: <u>http://www.arduino.cc/</u>

Voltage Setting KXTJ3-1057-EVK-002

Figure 2. Board Connection and Voltage Setting

- 4. Connect Arduino Uno to Computer using USB cable.
- 5. Get KXTJ3-1057 Software *2 from the link below: https://www.rohm.com/sensor-shield-support
 *2 The software is subject to change without notice.
- 6. Launch Arduino IDE.
- Select [Sketch] -> [Include Library] -> [Add.ZIP library...], then KXTJ3-1057 Software. (Figure 3)

00	Verify/Compile Upload	Ctrl+R Ctrl+U				Ø
Examp 1 /*** 2 Ex	Upload Using Programmer Export compiled Binary	Ctrl+Shift+U Ctrl+Alt+S	∆ Manage Libraries…	Ctrl+Shift+I		í
3 4 Cop 5 6 Per 7 of tl 8 in tl 9 to u 10 copis	Show Sketch Folder Ctrl+K Include Library 2 Add File		Add .ZIP Library Arduino libraries			1
	is software and associated documen te Software without restriction, in se, copy, modify, merge, publish, d es of the Software, and to permit p		Bridge EEPROM Esplora Ethernet		deal ghts	
			GSM HID			
			Keyboard LiguidCrystal			110

Figure 3. Software Installation

 Select [File] -> [Examples] -> [Examples from custom libraries], then KXTJ3-1057 Software.

Setting

1. Connect Arduino Uno and Shield for Arduino. (Figure 1)



Figure 1. Connection of Arduino Uno and Shield for Arduino

- Connect KXTJ3-1057-EVK-002 to the socket of I2C area on Shield for Arduino. (Figure 2)
- Set the voltage of Shield for Arduino to 1.8V or 3.0V. (Figure 2)

Measurement

- Select [Tools]. Set Board to "Arduino Uno" and Port to "COMxx (Arduino Uno)" ^{*3}. (Figure 4)
 - *3 COM number is different in each environment.



Figure 4. Board and Port Setting

2. Click the write button and wait for the message "Done uploading.". (Figure 5)



Figure 5. Done Uploading

3. Select [Tools] -> [Serial Monitor]. (Figure 6)



Figure 6. Selecting Serial Monitor

 Set the baudrate to 115200 baud and check log of Serial Monitor. (Figure 7)

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	Send
KXTJ3-1057 Sample Code Version : 1.0	-
EXTJ3-1057 Driver Version : 1.0	
X(g):Y(g):Z(g) = 0.01, 0.00, 0.99	
X(g):Y(g):Z(g) = -0.02, 0.01, 1.01	
X(g):Y(g):Z(g) = -0.01, 0.02, 1.00	
X(g):Y(g):Z(g) = -0.02, 0.01, 1.01	
X(g):Y(g):Z(g) = -0.02, 0.01, 1.00	
X(g):Y(g):Z(g) = -0.01, 0.01, 1.01	
X(g):Y(g):Z(g) = -0.01, 0.02, 1.01	
X(g):Y(g):Z(g) = -0.01, 0.01, 1.01	
X(g):Y(g):Z(g) = -0.02, 0.01, 1.01	
X(g):Y(g):Z(g) = -0.01, 0.02, 1.01	
X(g):Y(g):Z(g) = -0.01, 0.01, 1.01	
X(q):Y(q):Z(q) = -0.01, 0.03, 1.01	
Autoscroll Show timestamp Newline	e → 115200 baud → Clear output

Figure 7. Example of Serial Monitor

Board Information*4

*4 Board Information is subject to change without notice.

- Digital Communication Interface: I2C
- Default Slave Address: 0x0E .
- Selectable Voltage of Shield for Arduino: 1.8V, 3V .
- Supply Voltage for VDD: 1.71V 3.6V .
- Operating Temperature Range: -40℃ +85℃



Front

Figure 8. Board Pictures

Table 1. Parts Information

Parts Number	Description	
U1	IC: KXTJ3-1057	
C1	Bypass capacitor for VDD: 0.1uF	
C2	Bypass capacitor for IO_VDD: 0.1uF	
R1	Pull-up register for SCL: N.M. *5	
R2	Pull-up register for SDA: N.M. *5	
JP1	Pad for changing slave address: L	
CN1	Pin header: 2.54 mm pitch, Φ0.8	

*5 N.M. = No Mount

Changing Slave Address

Cut the pattern on the pad for changing slave address. 1. (Figure 9)





Connect ADDR pad and GND or VDD pad by solder. 2. (Figure 10)



Figure 10. Changing Slave Address