

PSL-iECG2

Small Sized 2-Channel ECG Module with Isolation Power & Signal

[Overview]

PSL-iECG2 is a small 2-channel ECG module that outputs ECG waveforms and heart beats.

DC 5V input power can be used the power of the Arduino board without any other power supply which is very convenient. Amplification is a 750 V/V. The notch filter can be adjusted to 50Hz or 60Hz by the notch filter selectable switch. The module outputs a high-quality ECG signal by applying the low noise and optimal filter design.

PSL-iECG2 guarantees electrical safety through isolation power and signal during measuring. For the high quality signal input the premium lead cable with shield is provided, and the cable adopts a stereo jack to connect simply.

[Features]

- Analog ECG 2-channel amplifier module (Ch.1 ECG, Ch.2 Beat)
- DC 5V power input
- Isolation power and signal
- Current consumption 50mA or less
- Amplification 750V/V
- Selectable 50Hz or 60Hz by the notch filter switch
- Optimized HPF and LPF design for ECG
- Output signal 0~3.3V(center 1.65V)
- Size 56mm X 35mm
- Lead cable with shield and stereo jack

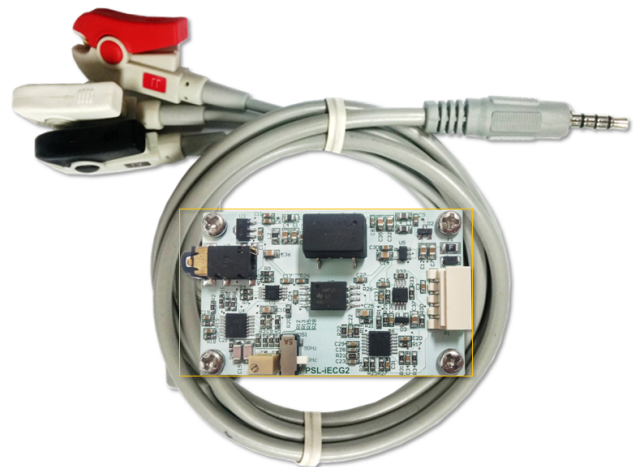


Figure 1. PSL-iECG2

[Block Diagram]

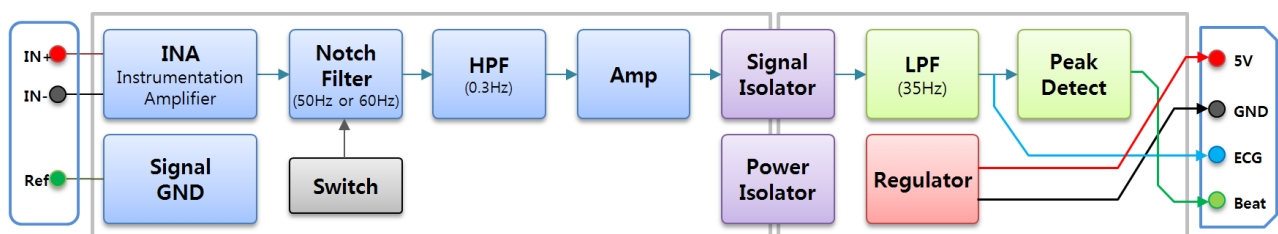


Figure 2. Block diagram of PSL-iECG2

[Specification]

Item		PSL-iECG2	Item		PSL-iECG2
Output signal		ECG, Beat(2 channel)	Input power		DC 4.5V~5.5V
Output signal range		0~3.3V(Center 1.65V)	Power consumption		≤ 50mA
Amplification		750V/V(±2%)	Isolation		Power & Signal
CMRR		60dB	Insulation voltage		1kV DC(5sec.)
Filter Set	Notch	Adjustable 50Hz or 60Hz	Size		56mmX35mm (PCB)
	HPF	0.3Hz	Lead cable		3 wire shielded cable (1,100mm, stereo jack)
	LPF	35Hz			

[Package Contents]

Item	Quantity	Note
PSL-iECG2 body	1EA	PSL-iECG2 body
Lead cable	1EA	3 wire shielded cable (1,100mm, stereo jack)
Output cable	1EA	Cable length 300mm(molex — pin type)
Electrode	6EA	Disposable Ag/AgCl electrode
Manual	1EA	-

[General Information]

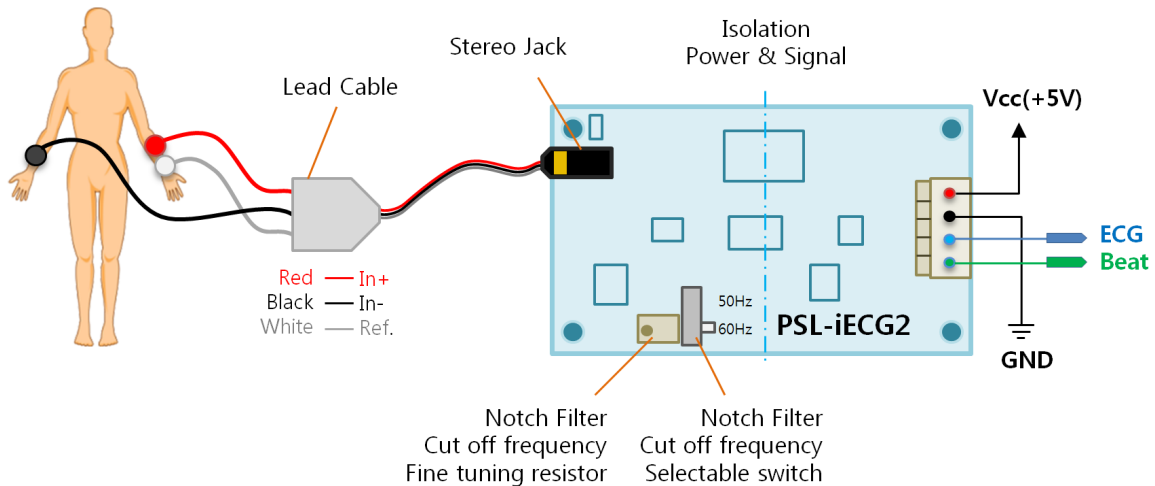


Figure 3. General information of PSL-iECG2

[Warning] Please push to the end when connecting the cable to the stereo jack of the module.
If the cable has not been properly connected to the module, it may cause a malfunction.

[Example of Measurement]

- Measurement device : PSL-DAQ
- Simulator : SimDAQ-KIT
- Simulation signal → **PSL-iECG2** → PSL-DAQ(data acquisition) ► **ECG, Beat output**
- Simulation signal : Sythesis of the ECG(72BPM, 1.0 mV) and the Sine(60Hz, 1.0mVpp) wave

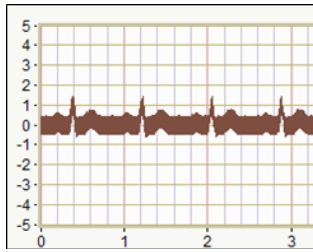


Figure 4. ECG input signal

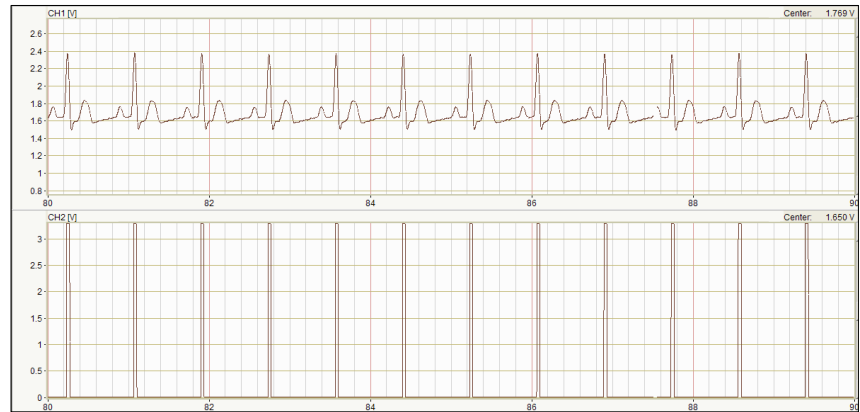


Figure 5. ECG & Beat output signals

※ PSL-DAQ : PhysioLab product, small 2-channel DAQ with 16bit ADC.

※ SimDAQ-KIT : PhysioLab product, 8-channel DAQ & Simulator with 24bit ADC.

[Example of Application] Connection to PSL-DAQ

- PSL-DAQ is 2-channel analog data acquisition device and released with PSL-iModule V2 series.
- PSL-DAQ can supply power to the PSL-iModule V2 series and receive signals from the module at the same time. Therefore it can easily connect to the module using one cable(with a 4-pin configuration)
- The PCB size of PSL-DAQ is the same as the PSL-iModule V2's. If they are arranged in the up and down, they can have minimal volume and be used as a digital bio-signal module.

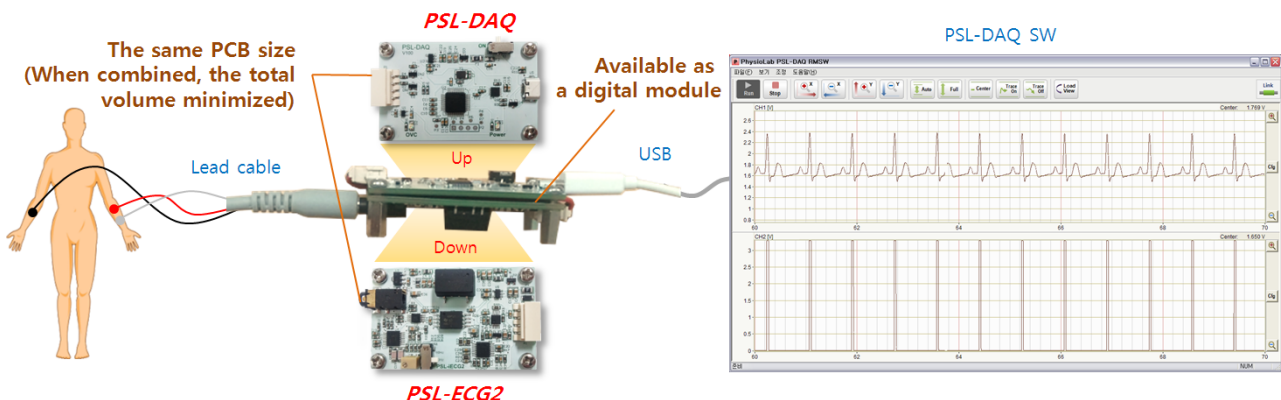


Figure 6. Configuration example of PSL-iECG2 and PSL-DAQ placed up-down.

[Example of Application] Connection to Arduino

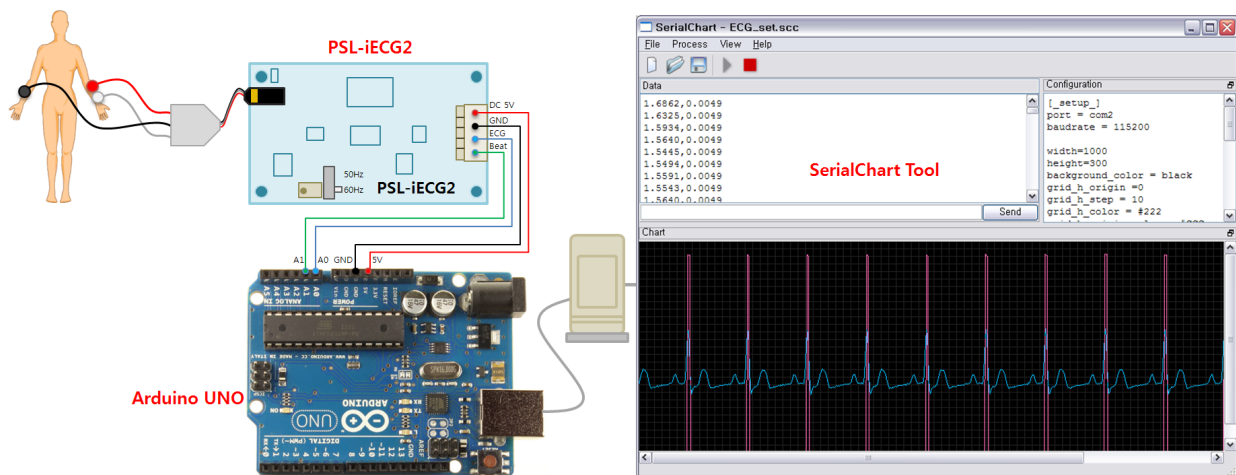


Figure 7. Configuration example, connect the Arduino board and PSL-iECG2

Arduino Source - using timer interrupt	SerialChart Configuration
<pre>#include <MsTimer2.h> int analogPin0 = 0; int analogPin1 = 1; void setup() { Serial.begin(115200); MsTimer2::set(10, AnalogAD); // 10ms period MsTimer2::start(); } void AnalogAD() { int reading0 = analogRead(analogPin0); float Voltage0 = float(reading0)*5/1023; Serial.print(Voltage0,4); Serial.print(","); int reading1 = analogRead(analogPin1); float Voltage1 = float(reading1)*5/1023; Serial.println(Voltage1,4); } void loop() {}</pre>	<pre>[_setup_] port = com2 baudrate = 115200 width = 1000 height = 300 background_color = black grid_h_origin = 0 grid_h_step = 10 grid_h_color = #222 grid_h_origin_color = #ccc grid_v_origin = 0 grid_v_step = 10 grid_v_color = #222 grid_v_origin_color = transparent [_default_] min = 0 max = 3.5 [Field1] color = deepskyblue [Field2] color = hotpink</pre>
MsTimer2 : http://playground.arduino.cc/Main/MsTimer2	SerialChart : https://code.google.com/p/serialchart/

Homepage : <http://www.physiolab.co.kr> E-mail : physiolab@physiolab.co.kr

Offline Shop : PhysioLab Co., Ltd.

Online Shop : PhysioLab <http://storefarm.naver.com/physiolab>

Device Mart <http://www.devicemart.co.kr/goods/brand.php?seq=1308>

Tel. +82-51-325-2868, Fax. +82-51-325-2869

Copyright © 2015, PhysioLab Co., Ltd.