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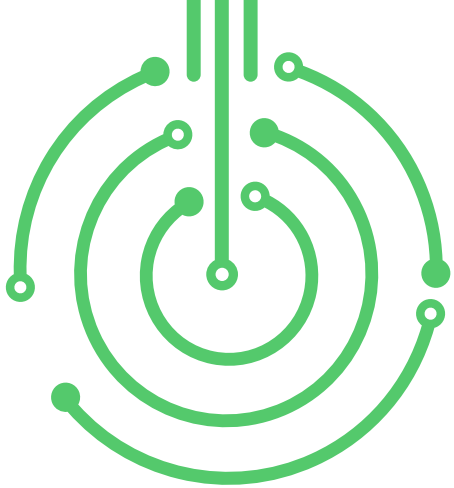


Arduino Compatible OLED Board with 4 Channel 16-Bit ADC

SKU: EL143653

Arduino Compatible OLED Board with 4 Channel 16-Bit ADC

This board consists of Arduino-compatible hardware which includes an OLED display, ADS1115 4-Channel 16Bit ADC, Arduino-compatible Microcontroller ATMEGA328, a connector for Arduino Programming, a connector for 4 Channel Analog input, and a connector for a couple of I/O lines. Operating supply 5V DC.

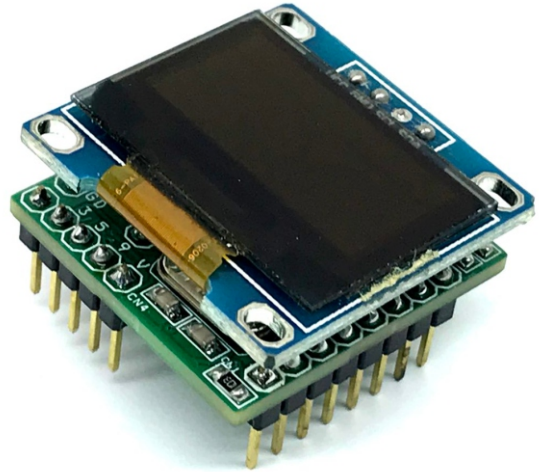
The ADS1115 device is a precision, low-power, 16-bit, I2C-compatible, analog-to-digital converter (ADCs). It incorporates a low-drift voltage reference and an oscillator. The ADS1115 also incorporates a programmable gain amplifier (PGA) and a digital comparator. These features, along with a wide operating supply range, make the ADS1115 well-suited for power- and space-constrained, sensor measurement applications.

The ADS1115 performs conversions at data rates of up to 860 samples per second (SPS). The PGA offers input ranges from ±256 mV to ±6.144 V, allowing precise large- and small-signal measurements. The ADS1115 features an input multiplexer (MUX) that allows two differential or four single-ended input measurements. Use the digital comparator in ADS1115 for under and overvoltage detection.

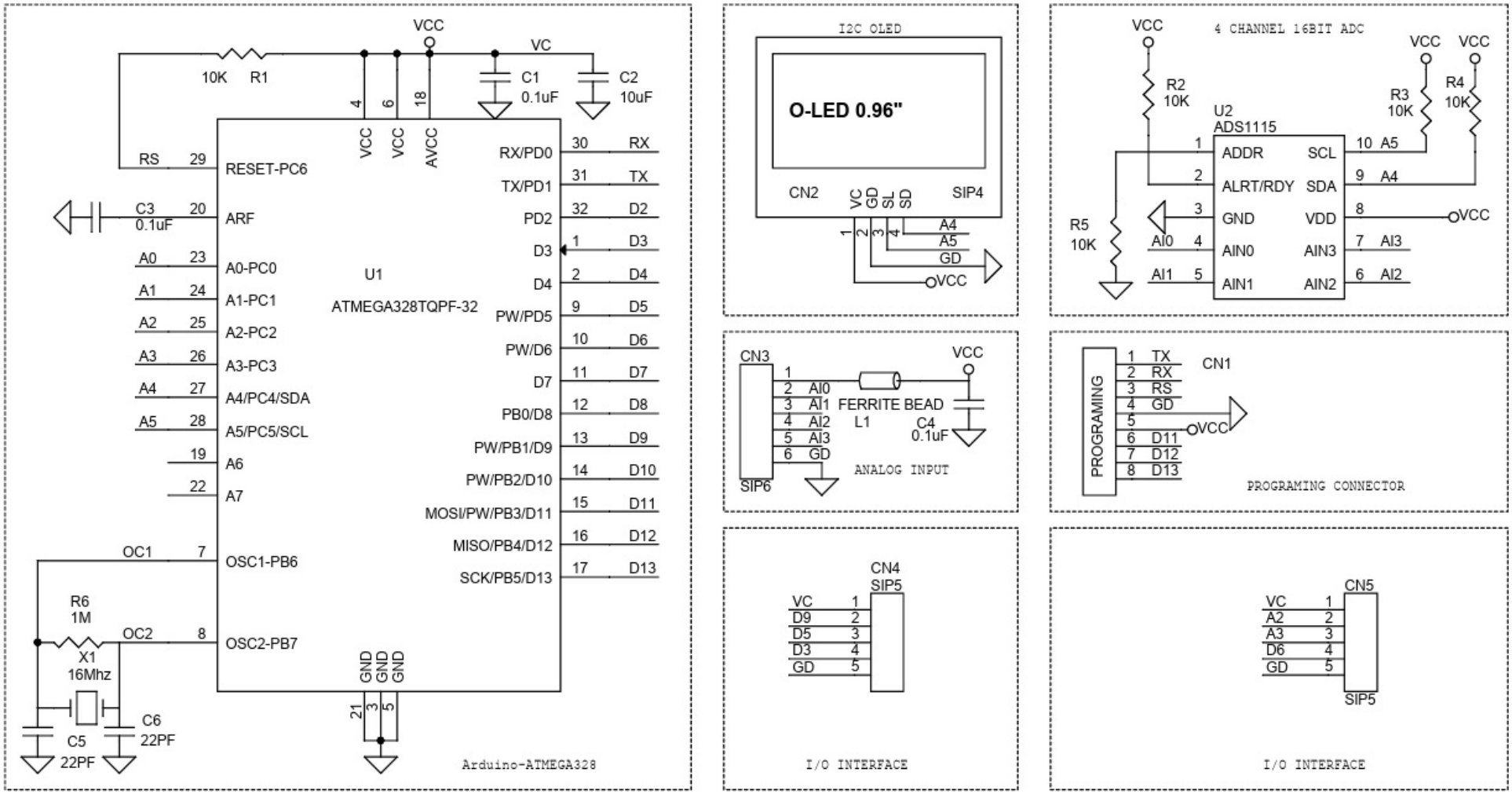
The ADS1115 operates in either continuous-conversion mode or single-shot mode. The devices are automatically powered down after one conversion in single-shot mode; therefore, power consumption is significantly reduced during idle periods.

FEATURES

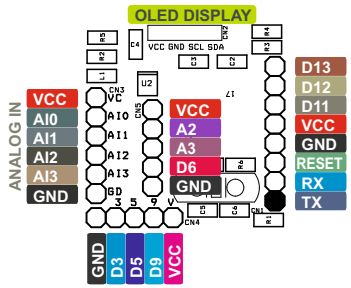
- Supply 5V DC
- Supports 0.96Inch OLED Display with I2C
- 4 Channel ADC (2 Differential Inputs or 4 Single-Ended Inputs
- Header Connector for Arduino Programming
- Header Connector for 4 Channel Analog Inputs and Power Supply
- Header Connector for Extra I/O Lines
- Compact PCB Same Size as OLED Display
- PCB Dimensions 27.62 X 26.83MM

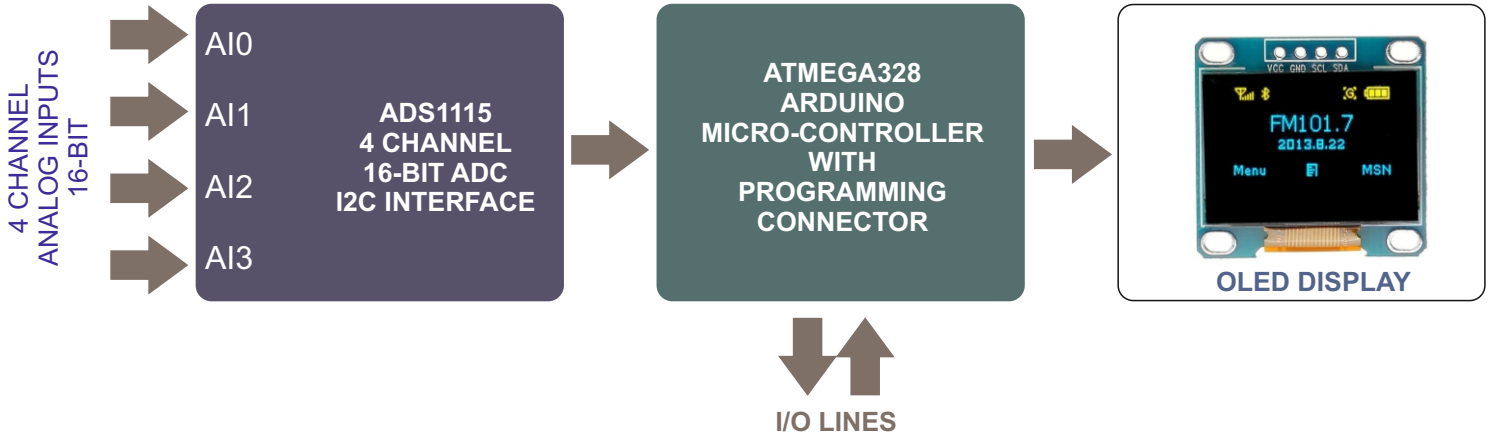


Schematic


VCC
10K R1
C1 0.1uF
C2 10uF
RS 29
RESET-PC6
C3 0.1uF 20
ARF
A0 23
A0-PC0
A1 24
A1-PC1
A2 25
A2-PC2
A3 26
A3-PC3
A4 27
A4/PC4/SDA
A5 28
A5/PC5/SCL
19 A6
22 A7
U1
ATMEGA328TQPF-32
RX/PD0 30 RX
TX/PD1 31 TX
PD2 32 D2
D3 1 D3
D4 2 D4
PW/PD5 9 D5
PW/D6 10 D6
D7 11 D7
PB0/D8 12 D8
PW/PB1/D9 13 D9
PW/PB2/D10 14 D10
MOSI/PW/PB3/D11 15 D11
MISO/PB4/D12 16 D12
SCK/PB5/D13 17 D13
OC1 7 OSC1-PB6
OC2 8 OSC2-PB7
R6 1M
X1 16Mhz
C5 22PF
C6 22PF
Arduino-ATMEGA328
I2C OLED
O-LED 0.96"
CN2
SIP4
A4
A5
GD
VCC
4 CHANNEL 16BIT ADC
R2 10K
R3 10K
R4 10K
R5 10K
U2
ADS1115
ADDR
ALRT/RDY
GND
AIN0
AIN1
SCL
SDA
VDD
AIN3
AIN2
CN3
SIP6
AI0
AI1
AI2
AI3
FERRITE BEAD
L1
C4 0.1uF
ANALOG INPUT
PROGRAMING
CN1
TX
RX
RS
GD
D11
D12
D13
PROGRAMING CONNECTOR
CN4
SIP5
VC
D9
D5
D3
GD
I/O INTERFACE
CN5
A2
A3
D6
I/O INTERFACE

Connections

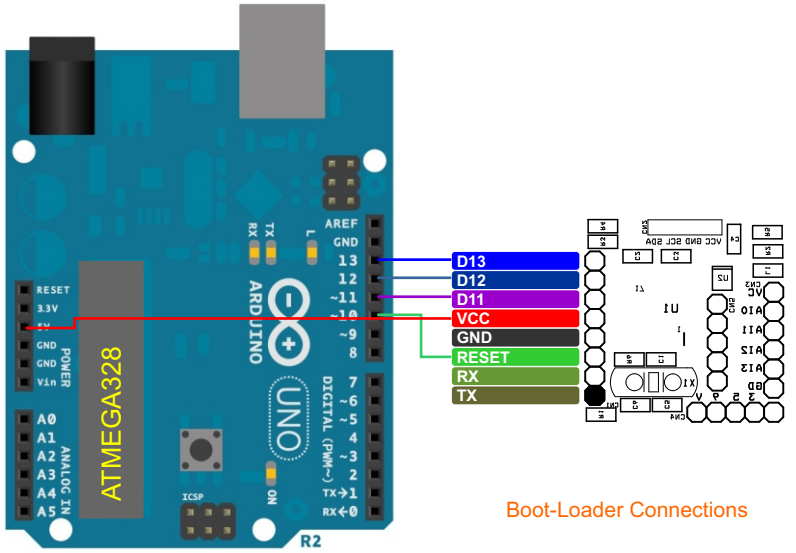




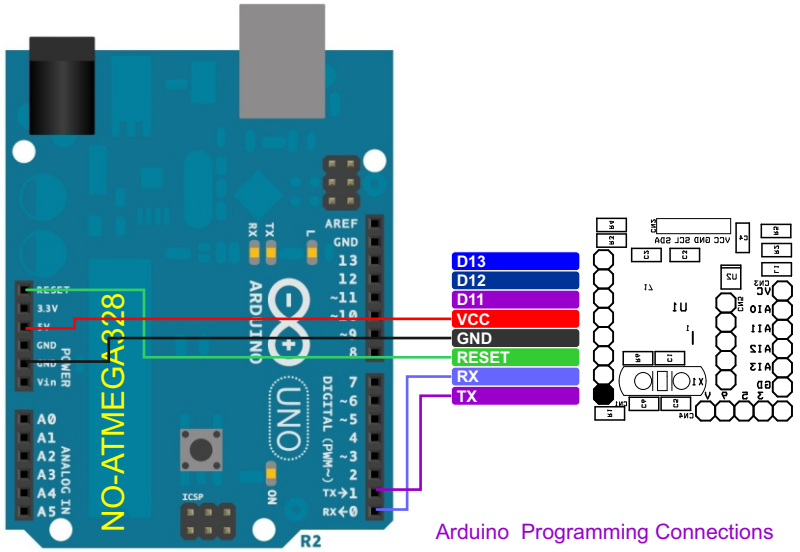
Connections:

- CN1: Pin 1 TX, Pin 2 RX, Pin 3 Reset, Pin 4 GND, Pin 5 VCC, Pin 6 D11, Pin 7 D12, Pin 8 D13
- CN2: Pin 1 VCC, Pin 2 GND, Pin 3 SLA, Pin 4 SDA (OLED Display)
- CN3: Pin 1 VCC, Pin 2 Analog Input 0, Pin 3 Analog Input 1, Pin 4 Analog Input 2, Pin 5 Analog Input 3, Pin 6 GND
- CN4: Pin 1 VCC, Pin 2 D9, Pin 3 D5, Pin 4 D3, Pin 5 GND
- CN5: Pin 1 VCC, Pin 2 A2, Pin 3 A3, Pin 4 D6 Pin 5 GND

Arduino Programming

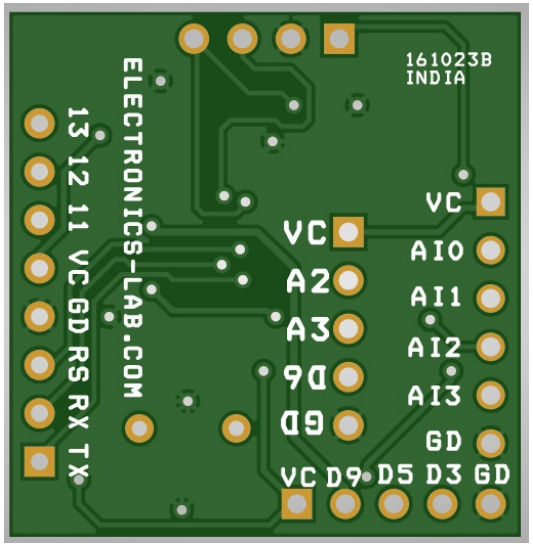


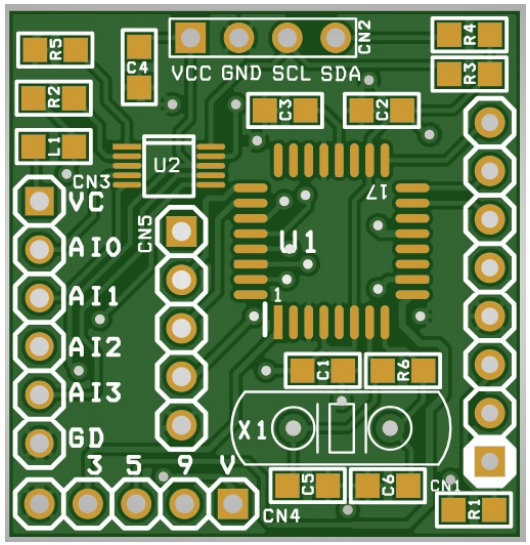
Boot-Loader Connections



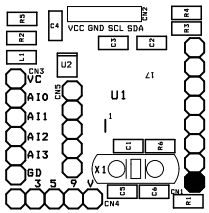
Arduino Programming Connections

PCB

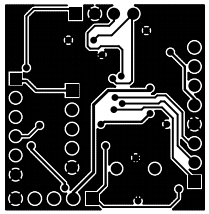




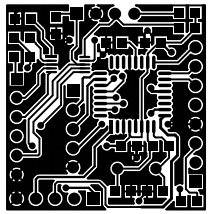
PCB GERBER FILES AVAILABLE



SILK SCREEN TOP



BOTTOM LAYER



TOP LAYER

PCB DIMENSIONS 27.62 X 26.83MM

Parts List

BOM NO.	QNTY.	REF.	DESC.	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	8 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5321-ND
2	1	CN2	4 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5317-ND
3	1	CN3	6 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5319-ND
4	2	CN4,CN5	5 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5318-ND
5	3	C1,C3,C4	0.1uF/50V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
6	1	C2	10uF/10V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
7	2	C5,C6	22PF/50V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
8	1	L1	FERRITE BEAD	WURTH	DIGIKEY	732-6706-1-ND
9	5	R1,R2,R3,R4,R5	10K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
10	1	R6	1M 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
11	1	U1	ATMEGA328TQPF-32	MICROCHIP	DIGIKEY	ATMEGA328P-AURCT-ND
12	1	U2	ADS1115	TI	DIGIKEY	296-38849-2-ND
13	1	X1	16Mhz	ECS INC	DIGIKEY	X1103-ND

Notes

APP

Android App

DOWNLOAD

Android App launched in 2017 and has 100k+ downloads - rated with 4.5 stars.

SCAN QR CODE

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