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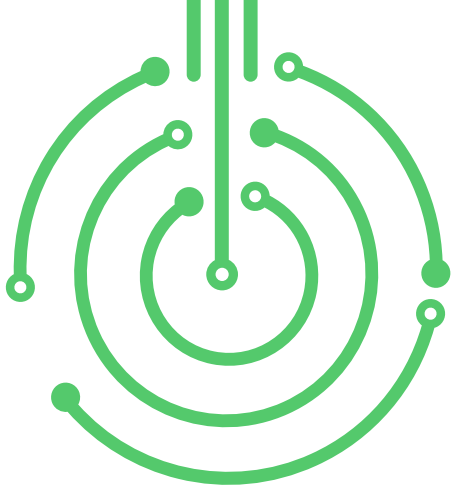


434Mhz Arduino Wireless Analog Sensor Transmitter

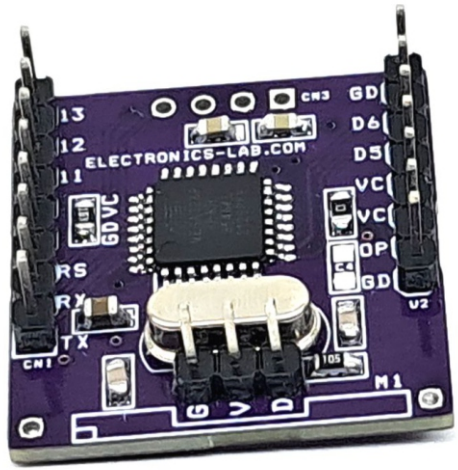
SKU: EL154706

434Mhz Arduino Wireless Analog Sensor Transmitter

This Wireless Analog Sensor project is a cost-effective solution for transmitting live data and enabling continuous monitoring, logging, and plotting sensor measurements. The system utilizes a 434MHz RF module and an Arduino-compatible microcontroller, ATMEGA328, to transmit data from a sensor connected to the A1 analog pin. The data is received and displayed on an OLED display at the receiver side (additional board).

FEATURES

- Power Supply 5V DC @ 50mA
- On Board RF434 Module Connector
- Very Compact Low-cost solution
- Any Analog Sensor Can be connected (Analog value 0 to 1023)
- Optional OLED Display Option
- Optional 4 Pin Header Connector 2 Digital I/O D5 and D6
- 3 Pin Header Connector to connect sensor
- Temperature Sensor LM35 Can be directly Mount on PCB
- PCB Dimensions 27.78X26.83MM



The project's key components include:

- ATMEGA328 microcontroller: This microcontroller is responsible for reading the analog value from the sensor and transmitting it through the 434MHz RF ASK module connected to D2 pin of Arduino micro-controller.
- 434MHz ASK RF Transmitter module: This module is used to transmit the data from the microcontroller to the receiver.
- Connector for programming and bootloader: This connector allows for easy programming and updating of the microcontroller.
- Connector for sensor: This connector is used to connect the sensor to the A1 analog pin of the microcontroller.
- Optional OLED installation: The project allows for the installation of an OLED display to display the received data.
- Connector for digital I/O D5 and D6: This connector provides additional digital I/O pins for future expansion.
- The system operates by reading the analog value from the sensor, which ranges from 0 to 1023, and transmitting it through the 434MHz RF ASK module. The data can then be displayed or logged at the receiver side.
- A simple example of the project's application is connecting an LM35 temperature sensor and transmitting temperature information from a distance.

This demonstrates the project’s potential for remote monitoring and data transmission in various applications.

Overall, the Wireless Analog Sensor project offers a low-cost and efficient solution for transmitting live data and enabling continuous monitoring, logging, and plotting of sensor measurements.

This Transmitter Project is compatible with the 434Mhz Arduino Wireless Analog Sensor Receiver

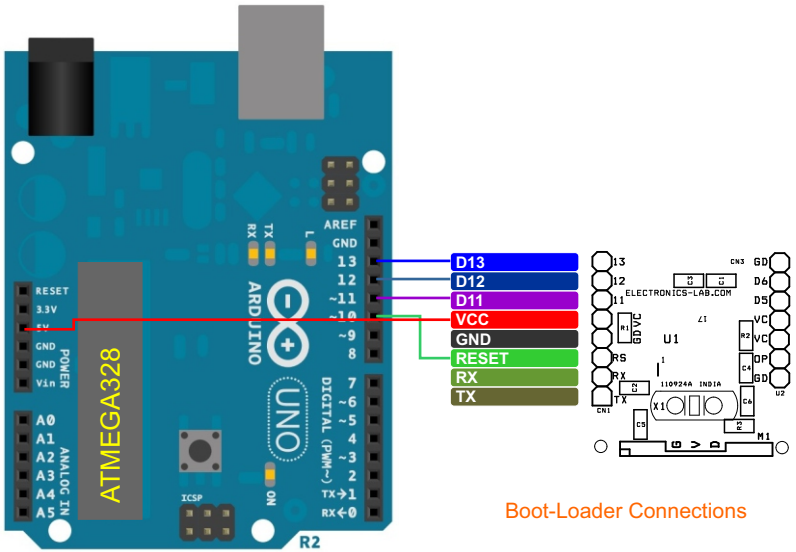
Arduino Programming

To test the project, Arduino code is available for download, allowing users to read the analog values on ADC A1 and transmit through 434Mhz RF module.

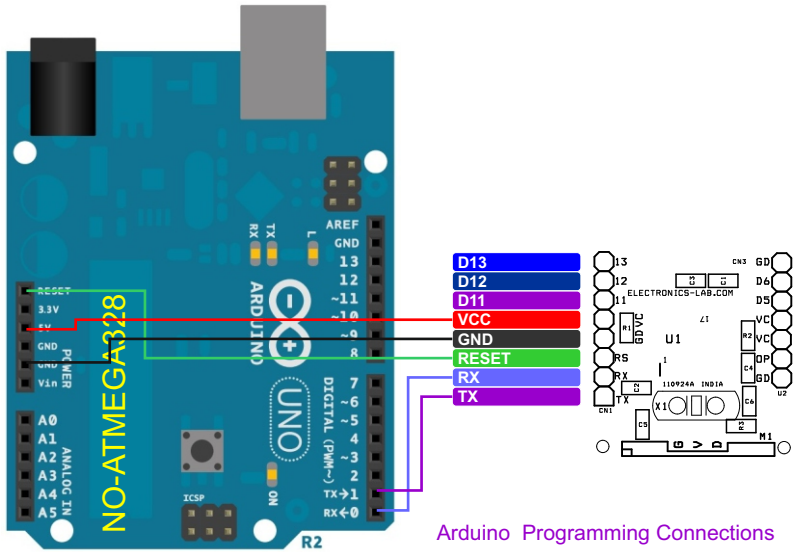
The code can be modified to suit specific application requirements. It is important to note that a new ATMEGA328 microcontroller requires a bootloader before programming the Arduino code.

To facilitate this process, a connection diagram is provided for both bootloader and Arduino programming. Additionally, users can refer to the official Arduino documentation, specifically the “Arduino to Breadboard” example, for more information on Arduino programming and bootloader installation.

The provided link to the Arduino documentation (https://docs.arduino.cc/built-in-examples/arduino-isp/ArduinoToBreadboard/) offers a comprehensive guide on how to program the ATMEGA328 microcontroller and install the bootloader, ensuring seamless integration with the Wireless Analog Sensor Receiver project.

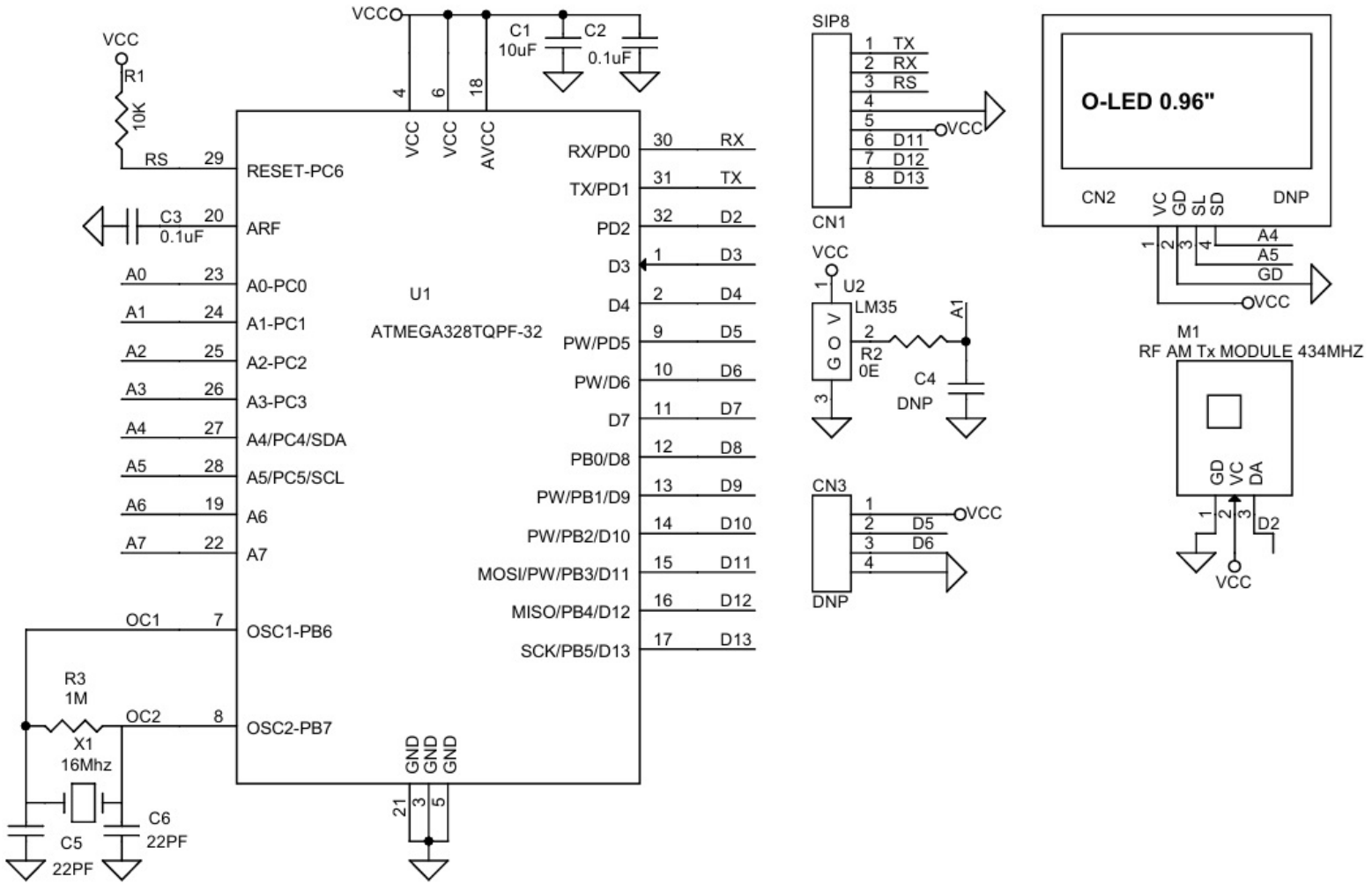


Boot-Loader Connections

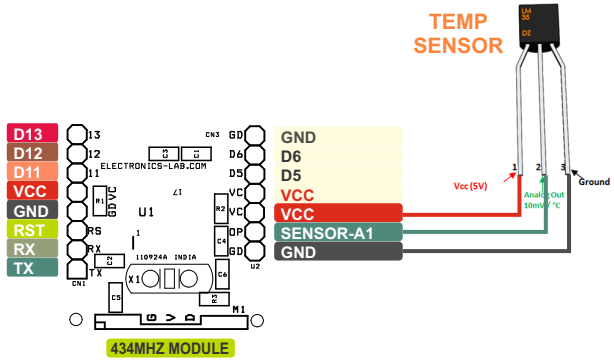


Arduino Programming Connections

Schematic


VCC
R1
10K
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
A6
19
A6
A7
22
A7
OC1
7
OSC1-PB6
R3
1M
OC2
8
OSC2-PB7
X1
16Mhz
C5
22PF
C6
22PF
U1
ATMEGA328TQPF-32
VCC
C1
10uF
C2
0.1uF
4
6
18
VCC
VCC
AVCC
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
GND
GND
GND
21
3
5
SIP8
1 TX
2 RX
3 RS
4
5
6 D11
7 D12
8 D13
VCC
CN1
VCC
U2
LM35
G O V
2
R2
0E
A1
C4
DNP
3
CN3
1
2 D5
3 D6
4
VCC
DNP
O-LED 0.96"
CN2
VC
GD
SL
SD
DNP
1
2
3
4
A4
A5
GD
VCC
M1
RF AM Tx MODULE 434MHZ
GD
VC
DA
1
2
3
D2
VCC

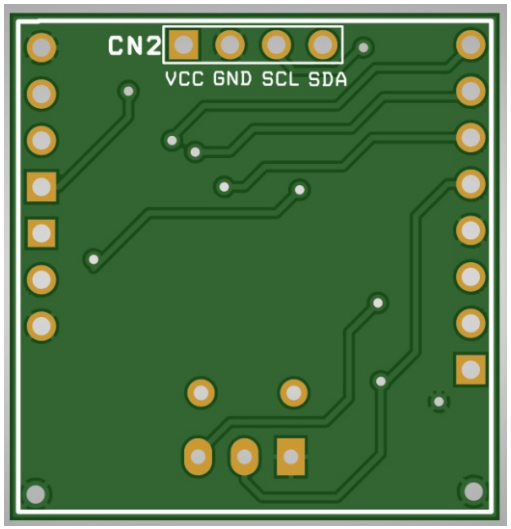
Connections

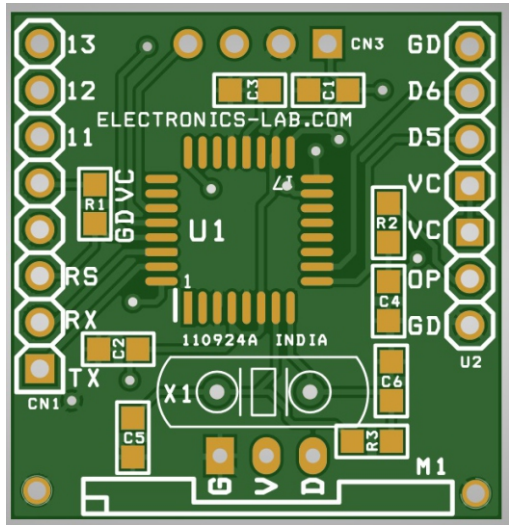


Connections

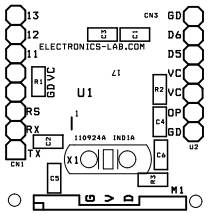
- CN1 Programming Connector: Pin 1 = TX, Pin 2 = RX, Pin 3 = Reset, Pin 4 = GND, Pin 5 = VCC, Pin 6 = D11, Pin 7 = D12, Pin 8 = D13
- CN2: OLED Display Optional 0.96Inc I/2C
- CN3: Optional I/O, Pin 1 = VCC, Pin 2 = D5, Pin 3 = D6, Pin 4 = GND
- U2 Analog Sensor: Pin 1 = VCC, Pin 2 Sensor, Pin 3 = GND
- M1: RF Module 434Mhz or 315Mhz ASK Transmitter 3 Pin

PCB

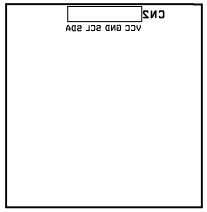




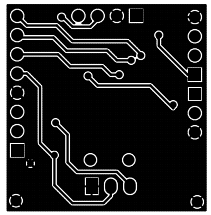
PCB GERBER FILES AVAILABLE



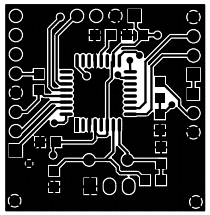
SILK SCREEN TOP



SILK SCREEN BOTTOM



BOTTOM LAYER



TOP LAYER

PCB DIMENSIONS 27.78X26.83MM

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	3	CN2,CN3,C4	DNP			
3	1	C1	10uF/16V CERAMIC SMD SIZE 0805	YAGEO/MUARATA	DIGIKEY	
4	2	C2,C3	0.1uF/50V CERAMIC SMD SIZE 0805	YAGEO/MUARATA	DIGIKEY	
5	2	C5,C6	22PF/50V CERAMIC SMD SIZE 0805	YAGEO/MUARATA	DIGIKEY	
6	1	M1	RF AM Tx MODULE 434MHZ 3PIN	AMAZON/EBAY	DIGIKEY	
7	1	R1	10K 5% SMD SIZE 0805	YAGEO/MUARATA	DIGIKEY	
8	1	R2	0E 5% SMD SIZE 0805	YAGEO/MUARATA	DIGIKEY	
9	1	R3	1M 5% SMD SIZE 0805	YAGEO/MUARATA	DIGIKEY	
10	1	U1	ATMEGA328TQPF-32	MICROCHIP	DIGIKEY	ATMEGA328P-AU-ND
11	1	U2	3 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5316-ND
12	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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