



NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA-769008 (ODISHA)
An Institute of National Importance under Ministry of HRD, GOI

NOTICE INVITING TENDER

Tender Notification No: NITR/PW/EC/2019/131

Dated: 05/07/2019

The National Institute of Technology, Rourkela invites bids from the eligible bidders for procurement of **Hardware Components** at NIT Rourkela.

Last date of Submission of Bid : **29/07/2019 at 03:00 PM**

Opening date of Techno-commercial Bid : **30/07/2019 at 03:00 PM**

For Details:

http://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx

Contact: Dr. Santos Kumar Das, (Assistant Professor)
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Bidding through: <https://eprocure.gov.in/eprocure/app>

sd/-
REGISTRAR



**NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008, ODISHA**

(OPEN TENDER NOTICE NO.: NITR/PW/EC/2019/131

Date: 05/07/2019)

(Procurement of Hardware Components NIT Rourkela)

SL. No.	ITEM NAME	DESCRIPTION	QTY
1	Arduino Mega 2560 with USB cable.	Microcontroller ATmega1280 Operating Voltage 5V Input Voltage (recommended) 7-12V Input Voltage (limits) 6-20V Digital I/O Pins 54 (of which 15 provide PWM output) Analog Input Pins 16 DC Current per I/O Pin 40 mA DC Current for 3.3V Pin 50 mA Flash Memory 128 KB of which 4 KB used by bootloader SRAM 8 KB EEPROM 4 KB Clock Speed 16 MHz	2
2	Arduino Uno R3 With USB Cable	Microcontroller: ATmega328 Operating Voltage: 5V Input Voltage (recommended): 7-12V Input Voltage (limits): 6-20V Digital I/O Pins: 14 (of which 6 provide PWM output) Analog Input Pins: 6 DC Current per I/O Pin: 40 mA DC Current for 3.3V Pin: 50 mA Flash Memory: 32 KB of which 0.5 KB used by bootloader SRAM: 2 KB (ATmega328) EEPROM: 1 KB (ATmega328) Clock Speed: 16 MHz	2
3	Arduino Due with USB connector	Microcontroller AT91SAM3X8E Operating Voltage 3.3V Input Voltage (recommended) 7-12V Input Voltage (limits) 6-16V Digital I/O Pins 54 (of which 12 provide PWM output) Analog Input Pins 12 Analog Output Pins 2 (DAC) Total DC Output Current on all I/O lines 130 mA DC Current for 3.3V Pin 800 mA DC Current for 5V Pin 800 mA Flash Memory 512 KB all available for the user applications SRAM 96 KB (two banks: 64KB and 32KB) Clock Speed 84 MHz	4

4	LIDAR litev3 with connector.	<p>Range: 0-40m Laser Emitter. Accuracy: +/- 2.5cm at distances greater than 1m. Power: 4.75-5V DC; 6V Max Current Consumption: 105mA idle; 130mA continuous Rep Rate: 1-500Hz Laser Wave Length/Peak Power: 905nm/1.3 watts Beam Divergence: 4 m Radian x 2 m Radian. Optical Aperture: 12.5mm. Interface: I2C or PWM.</p>	2
5	ultrasonic sensor	<p>Operating Voltage: 5V DC, Operating current:15mA, Measure Angle: 15 degrees. Range: 2cm-4cm</p>	5
6	10 DOF-IMU sensor	<p>1) 3-axis gyroscope: ± 250, ± 500, or ± 2000 degree-per-second scale. 2) 3-axis compass: ± 1.3 to ± 8.1 gauss magnetic field scale. 3) 3-axis accelerometer: $\pm 2g/\pm 4g/\pm 8g/\pm 16g$ selectable scale. BMP180 barometric pressure/temperature: -40 to 85 °C, 300 - 1100hPa range, 0.17m resolution (preferred Adafruit company:- Product IDs L3GD20H, LSM303 and LSM303)</p>	2
7	RC servo motor	<p>Voltage: 4.8-6.0 Volts Torque: 69.56/83.47 oz-in. (4.8/6.0V) Speed: 0.18/0.16 sec/60° (4.8/6.0V) Direction: Counterclockwise 1000-2000usec Rotation: 180°</p>	4
8	RC servo motor	<p>Voltage: 4.8-6.0 Volts Torque: 45.8/66.7 oz-in. (4.8/6.0V) Speed: 60/70 r/min (4.8/6.0V) Rotation: 360°</p>	3
9	RC servo motor	<p>Voltage: 4.8-6.0 Volts Torque: 16.6/20.8 oz-in. (4.8/6.0V) Speed: 0.15/0.10 sec/60° (4.8/6.0V) Rotation: 160°</p>	3

10	ZigBee pro long range wireless module with antenna	Operating Voltage:2.7 V to 3.6 V Output Power: 63 mW Frequency:-2.4 GHz Range: 2 mile Data Rate: 250 kbps Sensitivity: – 101 dBm Maximum Operating Temperature: + 85 C Antenna Connector Type: RPSMA Brand: Digi International Dimensions:-3.294 cm x 2.438 cm Interface Type: SPI, UART	5
11	ZigBee Explorer dongle	This unit works with all XBee modules including the Series 1 and Series 2.5, standard and Pro version.	2
12	GSM/GPRS module	Quad-band range:-850/900/1800/1900MHz Bluetooth connectivity, Baud rate (9600-115200, factory default value: 9600), Standard Audio Jack Connectors for external speaker and mic, Selectable interface between hardware serial port and software serial port, Inbuilt Powerful TCP/IP protocol stack for internet data transfer over GPRS. SMA Connector with external antenna Input Voltage: 5V-12V DC Normal operation temperature: -20 °C to +55 °C	2
13	GPS module	GPS Solution MTK MT3339, 66 Channels Frequency L1, 1575.42 MHz; Position Accuracy Without aid: 3.0 m 2D-RMS Interface to UART Baud Rate 4800 ~ 115200 bps Update Rate 1 ~ 10 Hz Power Supply VCC: 3.0 V to 4.3 V	4
14	GSM/GPRS module	Compatible with Raspberry Pi 2B/3B/Zero/Zero W Supports SMS, phone call, GPRS, DTMF, HTTP, FTP, MMS, email, etc. Support GPS, COMPASS, Bluetooth 3.0, supports data transferring through Bluetooth.	1
15	Wi-fi module (ESP2866)		2
16	Lora Module With Berg connector	Operating Voltage: 1.8 – 3.7V, default 3.3V. Wireless Standard: 433MHz. Frequency range: 420 – 450MHZ. Port: SPI/GPIO. Working temperature: -40- +85 degrees. Pin pitch: 2.0 mm. Distance :10 KM in Open Area.	3

17	Lora Module With Berg connector	Range approximate to 2 Km line of sight using simple wire antennas, or up to 20Km with directional antennas	2
18	LoRa GPS Shield for Arduino	<p>lora specification:- 168 dB maximum link budget. +20 dBm - 100 mW constant RF output vs. +14 dBm high efficiency PA. Programmable bit rate up to 300 kbps. High sensitivity: down to -148 dBm. Bullet-proof front end: IIP3 = -12.5 dBm.. Low RX current of 10.3 mA, 200 nA register retention. Fully integrated synthesizer with a resolution of 61 Hz. FSK, GFSK, MSK, GMSK, LoRaTM and OOK modulation. Preamble detection. 127 dB Dynamic Range RSSI. Automatic RF Sense and CAD with ultra-fast AFC. Packet engine up to 256 bytes with CRC. Built-in temperature sensor and low battery indicator.</p> <p>GPS specification:- Power Acquisition:25mA,Power Tracking:20mA. Compliant with GPS, SBAS. Programmable bit rate up to 300 kbps. Serial Interfaces UART: Adjustable 4800~115200 bps,Default: 9600bps. Update rate:1Hz (Default), up to10Hz. Protocols:NMEA 0183,PMTK.</p>	1
19	PIR Sensor	Sensing Distance 12 Meter Output Type Digital Operating Current 170 μ A Operating Temperature -20° to 60° C Operating Voltage 3 to 6 V DC	7
20	Thermal Image sensor	temperatures ranging from 0°C to 80°C (32°F to 176°F) with an accuracy of +- 2.5°C (4.5°F). It can detect a human from a distance of up to 7 meters (23) feet. With a maximum frame rate of 10Hz.	1
21	PTZ ip camera	2MP Exmor CMOS Sensor Real Time 1080p Streaming at 30fps 5.1-61.2mm 12x Optical Zoom 16x Digital Zoom (Preferred Sony Brand)	1
22	ip camera	8MP Network IP Camera 4K Video Resolution 3840x2160 pixels 15fps Recording Capability at H.265+, H.265, H.264+, H.264 Triple Video Streams	1

		Digital WDR, Noise Reduction, Back Light Compensation Day & Night IR Cut Filter 4mm Fixed Lens - 87° Angle of View 130ft Night Vision Micro SD card slot supports up to 128GB	
23	Thermal imaging camera	Type: Analog Camera Style: PTZ Camera Sensor: Vox Technology: Pan / Tilt / Zoom Special Features: Waterproof / Weatherproof IR Distance:4000M	2
24	Flame Sensor (5 channel/5 direction)	Detecting range: >120 degree Analog and digital outputs On-board potentiometer and indicators. Operating Voltage: 3.3V – 9V	2
25	Flame Sensor	Detection range of 760 nm to 1100 nm. Detection angle is about 60 degrees, extremely sensitive to the flame spectrum. With an adjustable precision potentiometer to adjust the sensitivity. Operating voltage:3.3V-5V.	5
26	Gas sensor includes MQ-135, MQ-7, MQ-5 etc. (2 from each)	1.Operating Voltage: 5V DC Type: Analog & Digital Sensitivity to Ammonia, Sulphide and Benzene steam. Range : 10 to 1000 ppm. 2.Characteristic gas : 100 ppm CO. Sensitive resistance : 2 to 20 10kohm 10 kohm at 100ppm CO.	6
27	Raspberry pi3 with SD card (64 GB)	64-bit quad-core ARM Cortex-A53 802.11 b/g/n Wireless LAN Bluetooth 4.1 (Classic & Low Energy) Dual core Video core IV® Multimedia co- processor.1 GB LPDDR2 memory.	7
28	Bread Board	2 distribution strip, 1 Terminal strip, 200 distribution holes 630 terminal hoes	6
29	Jumper wire for Arduino and Raspberry pi and sensors.	Male- Male, Female-Female, Male-Female) 1 strip from each.	3
30	8 channel relay module.	8 Channel 5V Relay Shield Module Board for Arduino Raspberry Pi.	2
31	Raspberry pi display	Display size 10.1 Inch IPS HDMI Monitor 1280*800 HD LCD Screen Display Audio with Case& speaker for Raspberry Pi 3	1
32	Raspberry pi case	Abs Case With Fan For Raspberry Pi 3/2/B+ (White)	5

33	Arduino mega case	Transparent Acrylic Case Shell Enclosure Gloss Box For Arduino Mega 2560 R3.	5
34	Arduino Uno case	Transparent Acrylic Case Shell Enclosure Gloss Box For Arduino UNO R3.	3
35	Power bank	11000 mAh Power Bank (Preferred Philips Brand)	2
36	HDMI to VGA port cable (compatible with Raspberry pi)	Raspberry pi compatibility connection with pc	6
37	A soldering iron stand, and soldering iron pack consist of [1 x Tool carry case 1 x Adjustable temperature soldering iron 1 x Solder wire 1 x Solder sucker(De-soldering Pump) 5 x Extra soldering iron tips (Total 6 Pieces) 1 x Tweezer] flux, tin lead, solder iron tip cleaner.	1)magnifier stand 2)60W 110V Electric Soldering Iron Kit Adjustable Temperature Welding Starter Tool	1
38	Wi-Fi module (esp-32 model)	Operating Voltage – Supply: 2.2 - 3.6 V. Current – Transmitting: 80 mA. Data Rate: 54 Mbps. Frequency: 2.4 GHz.	1
39	6 DOF-IMU sensor	1)Analog supply voltage 1.9- 3.6 V 2)3 magnetic field channels and 3 acceleration channels. 3)16-bit data output.	1
40	9DOF IMU Sensor	9 axis module (3 axis gyroscope + 3 accelerometer + 3 axis magnetic field)	1
41	10 DOF-IMU sensor	input range from 3 to 8v. Integrate 10 dof sensors Adxl345 accelerometer ITG3200 gyro HMC5883L Compass BMP280 pressure sensor	5
42	Power adopter with cable for Raspberry pi and Arduino	output:-5v,2A	6
43	Wind Sensor Rev. P	Wind Speeds Measured: 0-150 MPH, Ambient temperature compensation	1
44	RG-11 (Rain Gauge Sensor)	I/P voltage: - 12-30DC voltage. operating temp range:- -40 to 60 degree Celsius	1
45	Buzzer(High decibel, mini siren smoke)	Range-1 KM, Type:- Siren, Loud Sound	2
46	Data Acquisition card	Featuring I/O on both sides of the device in the form of MXP and MSP connectors, it includes 10 analog inputs, six analog outputs, 40 digital I/O lines, wi-fi, LEDs, a push button, an onboard accelerometer, a Xilinx FPGA, and a dual-core ARM Cortex-A9 processor. Preferred [my RIO-1900 model NI Data Acquisition card]	1

47	Data Acquisition card accessories	NI myRIO Starter Accessory Kit NI myRIO Mechatronics Accessory Kit NI myRIO Embedded Systems Accessory Kit Preferred [NI myRIO Essentials Guide Bundle]	1
48	AD/DA converter	operating voltage range of 2.5V to 6V. analog inputs programmable as single-ended or differential inputs.8-bit successive approximation A / D converter through an analog output DAC gain. Preferred [PCF8591 AD/DA Analog to Digital to Analog Converter Module + 4pin F-F Cable]	2
49	Analog to digital converter (ADC)	12-bit precision at 3300 samples/second over I2C. The chip can be configured as 4 single-ended input channels, or two differential channels. (Preferable from texas instrument Model : ADS1015)	1
50	Real time debugger and JTAG	Real time debugger and JTAG General purpose which is compatible with Arduino, Raspberry Pi, ARM Cortex, etc.	1
51	Raspberry pi camera	Raspberry pi camera module v2, 8MP, 1080p with case	2

1. **Quantity required Delivery: As mentioned above (All information provided in technical specification)**
2. **Delivery: Within 30 days from the date of purchase order.**
3. Last Date of submission of bid : **29/07/2019 at 03:00 PM**
4. Date of opening of Techno-commercial bid : **30/07/2019 at 03:00 PM**
5. The firm should not have been black listed at any time.
6. The submission of following bids by the tender should be through <https://eprocure.gov.in/eprocure/app>
7. Please follow the guidelines as per the portal.

**Procurement of Hardware Components at NIT Rourkela.
(Open Tender Notice No.: NITR/PW/EC/2019/131 Dated 05/07/2019) due on
29/07/2019 at 03:00 PM.**

8. Liquidated damage clause will be charged for any delay in supply of goods.
9. The validity of the tender shall be **90 days** from the date of opening of the bids.
10. Detailed advertisement including all tender documents is also available in our website at http://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx.
11. NIT reserves the right to qualify or deny pre-qualification of any or all applicants without assigning any reasons.

**(REGISTRAR)
NIT, Rourkela
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