



# राजकीय इंजीनियरिंग कालेज

कटरिया याकूबपुर, अम्बेडकर नगर (उ०प्र०) – 224122 भारत



## Rajkiya Engineering College

Katariya Yakoobpur, Ambedkar Nagar, (U.P.) – 224122 Cell Phone: 91-9454439590

AICTE APPROVED GOVERNMENT ENGINEERING COLLEGE Website: [www.recabn.ac.in](http://www.recabn.ac.in)

VIDE APPROVAL LETTER No. F. No. Northern/1-3511948247/2018/EOA DATED: 30-Apr-2018 E-mail: [director@recabn.ac.in](mailto:director@recabn.ac.in)

Affiliated to Dr. A.P.J. Abdul Kalam Technical University Lucknow, U.P., India

RECABN/TEQIP-III/2019-20/ 354

Date: 06/01/2020

### INVITATION FOR QUOTATION FOR IoT & WSN Lab

To,

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dear Sir,

You are invited to submit your most competitive quotation for IoT & WSN lab for the Rajkiya Engineering College, Ambedkar Nagar. In this connection, submit your financial offers/quotations as per the product in the given format in Annexure-II for IoT & WSN lab. The details of specifications is given in Annexure-I

Sr. No	Name of Particular/ Product/Package Brief Description	Quantity	Place of Delivery	Installation & Training Required
1	<b>IoT &amp; WSN Lab</b> As per specification (Attached in Annexure-I)	As per annexure-I	Rajkiya Engineering College, Ambedkar Nagar	YES & One-week Training for the faculty & Students

Government of India has received a credit from the International Development Association (IDA) in various towards the cost of the **Technical Education Quality Improvement Programme (TEQIP) Phase -III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.

**Instructions:**

1. The quantity of the items is as mentioned in annexure-I.
2. The bidders should quote their offer/rates in package and not for individual items with clear terms without any ambiguity.
3. The Institute will select bidder who has offered the lowest aggregate cost for complete set of items.
4. All duties, taxes and other levies payable by the bidder shall be included in the total price.
5. The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
6. The cost should be quoted in Indian Rupees only.
7. Quotation/Offer shall remain valid for a period not less than 45 days after the last date of submission.
8. For the said product warranty should be at least two years/ onsite manufacture warranty.
9. Bidder should be submitting an authorization certificate from OEM/Manufacture/Dealership.
10. All technically qualified vendor will be called for Pre-Demo for equipment and setup.
11. Submit the copy of at least one P.O. of similar type of work executed in the Govt. organization/institution.
12. Submit a copy of price justification.
13. The last date of submission of offer is **20/01/2020** by **5:00 PM**.
14. The quotation opening date will be notified later.
15. Sealed quotation to be submitted/ delivered at the address mentioned below:

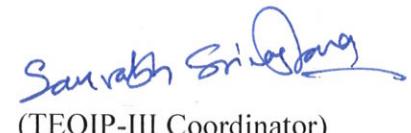
<b>Quotation (In the name of)</b>	<b>Delivery Address</b>
<u>TO</u> <u>DIRECTOR</u> <u>RAJKIYA ENGINEERING COLLEGE</u> <u>AMBEDKAR NAGAR</u> <u>PIN CODE-224122, UTTAR PRADESH</u>	<u>TEQIP-III OFFICE</u> <u>RAJKIYA ENGINEERING COLLEGE</u> <u>AMBEDKAR NAGAR</u> <u>PIN CODE-224122, UTTAR PRADESH</u>

16. Bidders should mention at the top of envelop:

**Quotation for IoT & WSN lab Under TEQIP-III (in bold)**

17. Make & Model should be specified, and material should be standard.
18. Submit a GSTIN registration and PAN copy of firm duly signed.
19. Delivery of the said items should be within 45 days from the date of P.O.
20. Performance security of 5% of total amount should be submitted by vendor within one month of receiving of P.O.
21. Payment shall be made in Indian Rupees as per P.O. no advance will be paid for the said.
22. Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the process and reject all quotations at any time prior to the P.O.
23. Postal or courier delay will not be considered, and the bid received late will be rejected.

  
Shivendra  
Indenter of Lab

  
Sanvabhi Srivastava  
(TEQIP-III Coordinator)

## Technical Specification

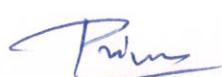
## Annexure-I

Sr. No	Item Name	Specifications	Quantity
1	Particle Mesh Wi-Fi Bundle	<p>Mesh Wi-Fi Bundle: 1. Argon Kit: Argon development board; Mini breadboard; 2.4GHz flex antenna; USB cable; Starter project includes two resistors (220 ohm), one red LED, and one photodiode. Specs: Espressif ESP32-D0WD 2.4G Wi-Fi coprocessor ; On-board 4MB flash for ESP32 ; 802.11 b/g/n support ; 802.11 n (2.4 GHz), up to 150 Mbps; Nordic Semiconductor nRF52840 SoC ; ARM Cortex-M4F 32-bit processor @ 64MHz ; 1MB flash, 256KB RAM ; IEEE 802.15.4-2006: 250 Kbps ; Bluetooth 5: 2 Mbps, 1 Mbps, 500 Kbps, 125 Kbps ; Supports DSP instructions, HW accelerated Floating Point Unit (FPU) calculations ; ARM Trust Zone CryptoCell-310 Cryptographic and security module ; Up to +8 dBm TX power (down to -20 dBm in 4 dB steps) NFC-A tag; On-board additional 2MB SPI flash; 20 mixed signal GPIO (6 x Analog, 8 x PWM), UART, I2C, SPI; Micro USB 2.0 full speed (12 Mbps); Integrated Li-Po charging and battery connector; JTAG (SWD) Connector; RGB status LED; Reset and Mode buttons; On-board 2.4GHz PCB antenna for Thread/BLE (does not support Wi-Fi); Two U.FL connectors for external antennas (one for Thread/BLE, another for Wi-Fi); Meets the Feather specification in dimensions and pin out; FCC, CE, and IC certified; RoHS compliant (lead-free) 2. Xenon Kits: Xenon dev board; Mini breadboard; USB cable Specs: Nordic Semiconductor nRF52840 SoC ; ARM Cortex-M4F 32-bit processor @ 64MHz ; 1MB flash, 256KB RAM ; IEEE 802.15.4-2006: 250 Kbps ; Bluetooth 5: 2 Mbps, 1 Mbps, 500 Kbps, 125 Kbps ; Supports DSP instructions, HW accelerated Floating Point Unit (FPU) calculations ; ARM Trust Zone CryptoCell-310 Cryptographic and security module ; Up to +8 dBm TX power (down to -20 dBm in 4 dB steps) ; NFC-A tag; On-board additional 2MB SPI flash; 20 mixed signal GPIO (6 x Analog, 8 x PWM), UART, I2C, SPI; Micro USB 2.0 full speed (12 Mbps); Integrated Li-Po charging and battery connector; JTAG (SWD) Connector; RGB status LED; Reset and Mode buttons; On-board PCB antenna; U.FL connector for external antenna; Meets the Feather specification in dimensions and pin out; FCC, CE and IC certified; RoHS compliant (lead-free). 1 Particle FeatherWing Tripler 1 Particle Debugger</p>	12
2	Boron 2G/3G Kit	<p>u-blox SARA U201 2G/3G modem ; HSPA/GSM/UMTS with global hardware and SIM support ; 3GPP Release 7 ; Bands 800/850/900/1900/2100 MHz; Nordic Semiconductor nRF52840 SoC ; ARM Cortex-M4F 32-bit processor @ 64MHz ; 1MB flash, 256KB RAM ; IEEE 802.15.4-2006: 250 Kbps ; Bluetooth 5: 2 Mbps, 1 Mbps, 500 Kbps, 125 Kbps ; Supports DSP instructions, HW accelerated Floating Point Unit (FPU) calculations ; ARM TrustZone CryptoCell-310 Cryptographic and security module ; Up to +8 dBm TX power (down to -20 dBm in 4 dB steps) ; NFC-A tag; On-board additional 2MB SPI flash ; 20 mixed signal GPIO (6 x Analog, 8 x PWM), UART, I2C, SPI; Micro USB 2.0 full speed (12 Mbps); Integrated Li-Po charging and battery connector; JTAG (SWD) Connector; RGB status LED; Reset and Mode buttons; Dual SIM support: Nano 4FF and MFF2; U.FL connector for external antenna; Meets the Feather specification in dimensions and pinout;</p>	12

		FCC and PTCRB certified; RoHS compliant (lead-free)	
3	Particle Maker Kit	Specifications: Device Management; Over the Air Firmware Updates; Fully Managed Connectivity; Developer Tools; Integrations.	12
4	Grove Starter Kit for Particle Mesh	1x Grove Shield for Particle Mesh; 1x Button; 1x Rotary Angle Sensor; 1x Ultrasonic Ranger; 1x Temp& Humi Sensor; 1x Light Sensor v1.2; 1x Chainable RGB LED; 1x Buzzer; 1x 4-Digit Display.	12
5	GPS Device	1. 5Hz position update rate 2. Operating temperature range: -40 TO 85°C 3. UART TTL socket 4. EEPROM to save configuration settings 5. Rechargeable battery for Backup 6. The cold start time of 38 s and Hot start time of 1 s 7. Supply voltage: 3.3 V 8. Configurable from 4800 Baud to 115200 Baud rates. (default 9600) 9. Super Sense Indoor GPS: -162 dBm tracking sensitivity 10. Support SBAS (WAAS, EGNOS, MSAS, GAGAN) 11. Separated 18X18mm GPS antenna	12
6	Asset Tracker Kit V2	ACCESS TO THE DEVICE CLOUD INCLUDES: 3MB of cellular data per device/mo; First 3 months of Device Cloud FREE; Device Cloud Features: Device Management; Over the Air Firmware Updates; Fully Managed Connectivity; Developer Tools; Integrations. SPECS: STM32F205 ARM Cortex M3 microcontroller; 1MB Flash, 128K RAM; Cellular modem: u-blox SARA U-series (3G) or G-series (2G); 36 pins total: 28 GPIOs (D0-D13, A0-A13), plus TX/RX, 2 GNDs, VIN, VBAT, WKP, 3V3, RST; Based on 72-channel u-blox M8 engine; GPS/QZSS L1 C/A, GLONASS L10F, BeiDou B1I, Galileo E1B/C, SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGAN; Update rates: Single GNSS: up to 18 Hz, 2 Concurrent GNSS: up to 10 Hz; Position accuracy of 2.5 meters; Sensitivity of -167dBm; Acquisition times: Cold starts: 26s, Aided starts: 2s, Reacquisition: 1s; Operating temperature of -40° C to 85° C; On board ROM; Anti spoofing and anti jamming technologies; Two quick connect grove sensor ports; Built-in 3 axis IMU; On board ceramic GPS antenna with LNA and bandpass filter; Ability to switch between on board antenna or external active antenna; Board dimensions: 4.6" x 1.42" x 0.3" (0.5" including headers).	12
7	Sensors	Sound Sensor, 3-Axis Accelerometer, Moisture Sensor, Ultrasonic Sensor, Electret Microphone, Water Sensor, Temperature Sensor, Light Sensor.	12
8	LIPO Battery	Voltage:--- 3.7V DC; Capacity-1800mAh; Power-7.4Wh	45
9	IWR1443 single-chip 76-GHz to 81-GHz mmWave sensor evaluation module	IWR1443 single-chip 76-GHz to 81-GHz mmWave sensor evaluation module	2
10	Node MCU	IWR1443 single-chip 76-GHz to 81-GHz mmWave sensor evaluation module	10
11	Arduino Uno R3	The Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino.cc. The board is equipped with sets of digital and analog input/output pins that may be interfaced to various expansion boards and other circuits.	10
	Sub-1 Ghz, wifi, BLE, Thread compatible	MCU systems for Sub-1 Ghz, wifi, BLE, Thread compatible MCU	1

12	MCU Lab Pack 12 users	Lab Pack with industry training, compiler software and cloud support.	
13	mikroC PRO for ARM Code License	TIME PAYMENT, LIFETIME LICENSE, mikroC offers a unique mechanism to easily use libraries in your project, just select the libraries you need and they will be instantly available in your code. No need for dozens of #include directives. You can also install and manage third-party libraries using our package manager and library manager. Simply select the libraries you need for your project, by checking the box. Or press the "Check All" button to include them all. With more than 1200 library functions you'll save time, effort and you'll write better code. 1312 SUPPORTED MCUs The mikroC PRO for ARM® currently supports over 1312 ARM® Cortex-M0®, M0+, M3, M4, and M7 microcontrollers from leading manufacturers, and we are constantly adding new ones.	2
14	Lumenier LU15 II 100kv Professional Motor	Features: • Patented technology protects against foreign matter • Centrifugal self-cooling design • Increased thrust and payload compared to LU15 • Imported custom silver wires increase flow efficiency and reduce heat • New iron core design provides more thrust and efficiency • Large smooth bearings reduce noise and vibrations • Multiple propeller installation options Specifications: Internal Resistance 12mΩ Configuration 36N42P Shaft Diameter 20mm Motor Dimensions Φ 147.5×64 mm Lead Enamelled Wire Cable Length 100mm Weight Including Cables 1640g Weight Excluding Cables / No. of Cells(Lipo) 12-24S Idle Current@10v 4.5A Max Continuous Power 180S 9942W Max Continuous Current 180S	12
15	raspberry pi 4, 4gb	This product's key features include a high-performance 64-bit quad-core processor, dual-display support at resolutions up to 4K via a pair of micro-HDMI ports, hardware video decode at up to 4Kp60, up to 4GB of RAM, dual-band 2.4/5.0 GHz wireless LAN, Bluetooth 5.0, Gigabit Ethernet, USB 3.0, and PoE capability (via a separate PoE HAT add-on).	5
16	NVIDIA Jetson Nano Developer Kit	NVIDIA® Jetson Nano™ Developer Kit is a small, powerful computer that lets you run multiple neural networks in parallel for applications like image classification, object detection, segmentation, and speech processing. All in an easy-to-use platform that runs in as little as 5 watts. It's simpler than ever to get started! Just insert a microSD card with the system image, boot the developer kit, and begin using the same NVIDIA JetPack SDK used across the entire NVIDIA Jetson™ family of products. JetPack is compatible with NVIDIA's world-leading AI platform for training and deploying AI software, reducing complexity and effort for developers.	2
17	raspberry pi zero w	The Raspberry Pi Zero W extends the Pi Zero family. Launched at the end of February 2017, the Pi Zero W has all the functionality of the original Pi Zero, but comes with added connectivity, consisting of: • 802.11 b/g/n wireless LAN • Bluetooth 4.1 • Bluetooth Low Energy (BLE) Like the Pi Zero, it also has: • 1GHz, single-core CPU • 512MB RAM • Mini HDMI and USB On-The-Go ports • Micro USB power • HAT-compatible 40-pin header • Composite video and reset headers • CSI camera connector	5
18	memory card 32 GB	storage device which will be used to boot the operating systems in the mini computers.(raspberry pi and NVIDIA jetson)	10

19	memory card 64 gb	storage device which will be used to boot the operating systems in the mini computers.(raspberry pi and NVIDIA jetson)	5
20	DC Driver Controller Stepper Motor for Arduino PIC, Dual H Bridge DC Motor Driver	L298N Dual H bridge DC stepper motor drive controller board module for arduino. The L298 stepper controller makes it easy to drive either two DC motors or a bipolar stepper motor.	10
21	DURACELL battery rechargeable AA	rechargeable batteries will be used to power up all the microprocessor board and IOT boards as well as motors.	30
22	9 to 12 volt DC Motor	• High torque rated voltage current-dc 12v for Diy Applications PCB Drill • No load current-0.2amps (Max ~1.2 Amps) • No load power consumption- 2.4 watts (Max ~15 W) • Package includes - 12volt motor + 1pcs snap connector + 1pcs9v hw battery	10
23	Lumenier 22000mAh 6s 20c Lipo Battery	Lumenier lipo batteries provide you with great performance for your multi-rotor airframes and planes. This lipo's 20 "C" rating is well suited for multi-rotor applications by balancing performance and weight. This Lumenier lipo maximizes flight time with minimal voltage sag. The all black battery design with the Luminier brand will look great on any airframe! This 22000mAh 6s battery pack is the best choice to match DJI S1000 or S900 professional aerial photography equipment. This battery packs a ton of power in a compact form factor, giving you the flight time you need on your heavy-lift aerial photography rigs. Specs:: Length Width Height Length 205 mm Width 72 mm Height 90.5 mm Weight 2650g C-Rating 20c - Burst 40c Connector EC5 SKU 2445 Manufacturer Lumenier UPC (GTIN) 721248878748 Discharge Plug EC5 Voltage / Cell Count 22.2 Volt (6 Cell) Battery Capacity (mAh) 22000	6
24	Zigbee XBee Pro S2C 802.15.4 Module 63mW 3Km+ 3.2dBi Antenna"	Brand Digi Model S2C PRO TRANSCEIVER CHIPSET SiliconLabs EM357 SoC DATA RATE 250kbps Max RATED OUTDOOR/RF LINE-OF-SIGHT RANGE Up to 2 miles (3200m) Frequency 2.4GHz Sensitivity -101 dBm Supply Voltage (V) 2.7 to 3.6 TRANSMIT CURRENT 120 mA RECEIVE CURRENT 31 mA Output Power 63mW Operating Temperature (°C) -40 to +90 Antenna Connector RP-SMA Interface Type SPI, UART Weight 0.125 kg Features: Supports binding and multicasting for home automation Mesh-network topology 2.4 GHz for worldwide deployment Common XBee footprint fits Parallax XBee Adapters and the Propeller Activity Board Industry-leading sleep current of sub 1 μA Firmware upgrades via UART, SPI or over the air.	2
25	Plastic 3D Printer	Specifications for this item Part Number 709652463538: Number of Items 1; UPC 709652463538; Brand Name FlashForge; EAN 0709652463538; Is Assembly Required? false; Item Volume 0 fluid_ounces; Item Weight 24.3 pounds; Model Number 7.09652E+11; UNSPSC Code 40100000 The Creator ProDual Extruder 2x spool holders 2 spools filament (N.W.: 1 kilogram per spool, material and color are randomly selected) 2x spare blue platform stickers 2x filament guide tubes 2 M3×8 screws, 3 wrenches in different sizes, 1 spare leveling knob, 2 spare Teflon tubes, 1 unclogging pin and grease in tool bag Extruder's accessory kit Containing turbo fan duct, 2 M3×8 screws, M3×6 screw Power	1




		cordUSB cableInjected PC top cover1 x 16GB SD card (contains software ReplicatorG and FlashPrint, test sample files and operation manual)Compatible Software: ReplicatorG, FlashPrint and Simplify3D(Please kindly noted that Simplify3D is a third party paid software, which is not included in this package.If user want to use, please buy it by yourself)Compatible OS: Windows, Mac OSX and LinuxPrint from SD card or over USB cableInput file type: STL, gcode, x3g Printing Build envelope: 225 x 145 x 150 mmBuild volume: About 5 litersLayer thickness: 0.1-0.3 mm(adjustable)Nozzle diameter: 0.4 mmMaterials : Works well with 1.75 mm ABS and PLA.Support Contact InformationIf you encounter any issues with your FlashForge purchase or have any questions, please contact the support.	
26	Wearable IoT Kit - ARM	Compact, wearable cool form factorStyle and usability of a high-end consumer device in a dev kit. Efficiency and low power consumption. Powered by Kinetis K64 32-bit ARM® Cortex®-M4 MCU. Features several advanced NXP sensors. Equipped with Bluetooth Low Energy. Works with compatible iOS/Android apps. Connects to the cloud. Hexiwear has several preloaded applications that let you use it out of the box. – but it will become your own only when you create new firmware. Bring forth your own ideas and discover Hexiwear's full potential! Over The Air Programming let's you upload a HEX file directly from the smart phone app. Alternatively, the docking station has an onboard programmer – all you need is a USB cable. Expandability: Core functionality can be enhanced with hundreds of sensors and transceivers through click boards. Connect with devices nearby or cloud servers far away Android and iOS apps for Hexiwear are available. Download them from Google Play or the App Store. Open Source: Kinetis Design Studio source files and complete hardware layouts and schematics freely available (Kinetis Design Studio, Kinetis SDK). Hexiwear Firmware Hexiwear Documentation Kinetis Design Studio Kinetis SDK PyOCD add-on for Eclipse mikroC PRO for ARM Hexiwear iOS App Hexiwear Android App Smartphone App Source Code Hexiwear 3D files Specifications:: Packed with sensors to quantify yourself and the world around you. By partnering with NXP, one of the leading producers of microcontrollers and sensors, we were able to create a top performing product at a low overall cost. MCU: NXP Kinetis K64xMCU (ARM® Cortex®-M4, 120 MHz, 1M Flash, 256K SRAM) BLE: NXP Kinetis KW4x(ARM® Cortex®-M0+, Bluetooth Low Energy & 802.15.4 Wireless MCU) 3D Accelerometer and 3D Magnetometer: NXP FXOS8700CQ 3-Axis Digital Gyroscope: NXP FXAS21002 Absolute Digital Pressure sensor: NXP MPL3115A2R1 600 mA Single-cell Li-Ion/Li-Polymer Battery Charger: NXP MC34671 Light-to-digital converter, Digital humidity and temperature sensor, Heart-rate sensor 1.1" full color OLED display Haptic feedback engine 190 mAh 2C Li-Po battery Capacitive touch interface RGB LED	1
27	Analog Discovery 2	The Analog Discovery 2: A portable USB laboratory for everyone. Discover WaveForms, a software toolset available on Mac, Windows and Linux.	2
28	FiPy - LoRa, WiFi, Bluetooth, Sigfox and	Imagine 5 networks in one perfectly-formed, same-small-foot-print-as-WiPy- LoPy-and SiPy, IoT development board. MicroPython enabled. Featuring WiFi, Bluetooth, LoRa, Sigfox and dual LTE-M (CAT M1 and NB-IoT) the FiPy gives access to all the world's	6

dual LTE-M (CAT M1 and NB1oT)	<p>LPWAN networks on one tiny board. NOTE: The LTE Antenna MUST always be used with LTE CAT M1 / NB1, or it could cause serious damage to the development board. Get on with a board that gives you full flexibility during testing, install, deployment and even later when you want to switch real-time your airtime network provider. You can switch when the time is right for you or set some parameters that will do so automatically. FiPy Features Powerful CPU Five networks: WiFi, BLE, cellular LTE-CAT M1/NB1, LoRa and Sigfox 1KM WiFi range MicroPython enabled Fits in a standard breadboard (with headers) Ultra-low power usage: a fraction compared to other connected microcontrollers Processing AES encryption engine Memory RAM: 4MB Flash Memory: 8MB GPIO: Up to 22 Hardware floating point acceleration Python multi-threading Voltage Input: 3.3V 5.5V 3v3 output capable of sourcing up to 400mA Sigfox Operating Frequencies RCZ1 – 868MHz(Europe) RCZ2 – 902MHz (US, Canada and Mexico) RCZ3 – (Japan and Korea) RCZ4 – 920-922MHz (ANZ, Latin America and S-E Asia) Sigfox Specification Semtech SX1272 – Long Range, Low Power RF Transceiver 860-1000MHz with LoRa® Technology Class 0 device. Maximum Tx power: – 14dBm (Europe) – 22dBm (America) – 22dBm (Australia and New Zealand) Node range: Up to 50km Sigfox pre-certified (October 2016) Power Sigfox (Europe): 17mA in Rx mode, 47mA in Tx mode and 0.5uA in standby Sigfox (Australia, New Zealand and South America): 24mA in rX mode, 257 mA in Tx mode and 0.5uA in standby Low energy and classic Compliant with Bluetooth v4.2 BR/EDR and BLE specification Class-1, Class-2 and Class-3 transmitter without external power amplifier Enhanced power control 10dBm transmitting power NZIF receiver with -98 dBm sensitivity Adaptive Frequency Hopping (AFH) Standard HCI based on SDIO/SPI/UART High speed UART HCI, up to 4 Mbps BT 4.2 controller and host stack Service Discover Protocol (SDP) General Access Profile (GAP) Security Manage Protocol (SMP) Bluetooth Low Energy (BLE) ATT/GATT HID All GATT-based profile supported SPP-Like GATT-based profile BLE Beacon A2DP/AVRCP/SPP, HSP/HFP, RFCOMM CVSD and SBC for audio codec Bluetooth Piconet and Scatternet LoRa Operating Frequencies 868MHz(Europe) at 14dBm maximum 915MHz (North and South America, Australia and New Zealand) at 20dBm maximum LoRa Specification Power consumption: 10mA Rx, 28mA Tx LoRaWAN stack – Class A and C devices Node range: Up to 40km Nanogateway: Up to 22km (Capacity up to 100 nodes) 34 bands supports from 699Mhz to 2170Mhz (Total world-wide support) LTE-M Specification One single chip for both CAT M1 and NB1 (yes, only one chip) 3GPP release 13 LTE Advanced Pro Supports narrowband LTE UE categories M1/NB1 Integrated baseband, RF, RAM memory and power management Reduced Tx power class option Peak power estimations: TX current = 420mA peak @1.5Watt RX current = 330mA peak @1.2Watt – Data rates: 300 kbps DL 375 kbps UL (LTE Cat M1 in 1.4 Mhz, HD-FDD) 40 kbps DL 55 kbps UL (LTE Cat M2 in 200 kHz, HD-FDD) Tx/Rx Frequencies Ports for LTE Bands Tx frequencies Rx frequencies Low bands 5, 8, 12, 13, 18, 19, 20, 28 699 to 915 MHz 729 to 960 MHz Mid bands 1, 2, 3, 4 1710 to 1980MHz 1805 to 2170 MHz WiFi Networking Up to 1km range 802.11b/g/n 16mbps Power: 12mA in active mode, 5uA in standby Size 55m x 20mm x 3.5mm (Without Headers) Weight 7g 31g (Packaged)</p>
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Annexure-II

**FORMAT FOR QUOTATION SUBMISSION**  
(In letterhead of the supplier with seal)

Date: \_\_\_\_\_

To: \_\_\_\_\_  
\_\_\_\_\_

Sl. No.	Description of goods (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex-Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
<b>Total Cost</b>							
Gross Total Cost (A+B): Rs. _____							

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. \_\_\_\_\_  
(Amount in figures) (Rupees \_\_\_\_\_ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of \_\_\_\_\_ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact No. \_\_\_\_\_