ENVIROBAT

An Urban Air Quality Monitoring Solution

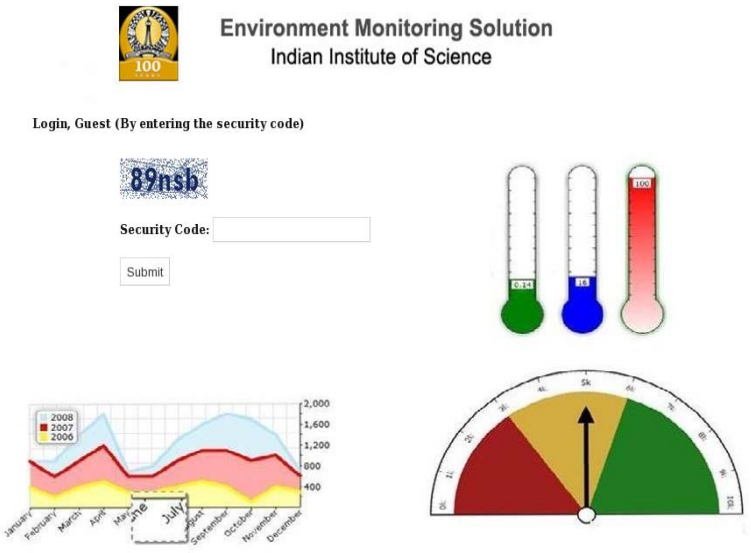
ENVIROBAT Features

- Low Power Low Cost Wireless Urban Air Quality Monitoring Device
- Design based on TI MSP430 microcontroller
- Data communication using GSM / GPRS
- Onboard CO, CO2, SO2, NO2, O3 sensors
- Integrated Temperature and humidity sensors
- Sockets for mounting gas sensors for easy maintenance

- 256 KB flash memory to store data
- Selectively programmed power cycle for each sensor
- 3.7 V, 8000 mA-H rechargeable Li-Ion battery with onboard battery charging circuit
- Option to run on 5V-3A DC wall adapter
- Weatherproof FRP enclosure
- Dimensions (W x D x H) 20 x 12 x 14.6 cm
  Weight – 1.5 Kg approx.

Monitoring Software Features

- Installed on a central server for online monitoring
- 2-way communication using TCP/IP
- Easy access with Google Maps - Devices' location indicated on the map along with the latest data of gases' concentration
- Graphical representation of data
- Availability of data in excel format for further analysis



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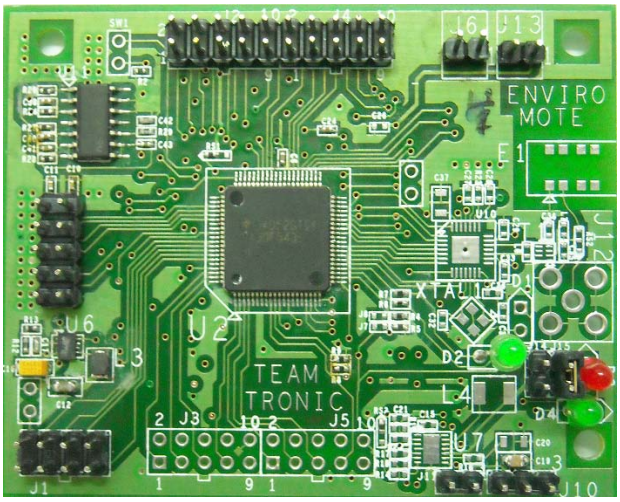
Controller Board Features



- Low power 16-bits TI MSP430F5435 microcontroller with 12-bits SAR ADC, 192 KB Flash memory and 2 UART & 1 SPI interfaces
- Power source: Li-ion battery (nominal 3.7V) and/or 5V DC wall adapter.
- On board 256 KB Flash memory for data storage
- On-board Li-ion battery charger for simultaneous charging
- Analog signal conditioning circuit with programmable gain followed by a 5 stage low pass filter
- Capability to accept 16 analog inputs
- LED indicators for power and battery charging

GSM / GPRS Board Features

- Quadband Sagem HiLo GSM / GPRS Module with Molex 40-pins connector
- Power supply
  - 3.5 V to 4.2 V range, 3.7 V nominal with Li-ion battery and
  - 4.2 V with 5 V DC
- BH011 GSM PCB antenna with UFL connector
- Mode of communication – text message and TCP/IP or UDP/IP

Sensor Board Features

- Selective operation of sensors: Programmable ON/OFF of sensors independently
- Andon Gold / Gold plated sockets for mounting sensors

Sensor	CO_2	CO	NO_2	SO_2	O_3
Model	TGS 4161	MiCS 5521	MiCS 2710	EC4-20SO2	MiCS 2610
Range (ppm)	350 - 10000	1 – 1000	0.05 - 5	0 - 20	0.01 - 1
Power Rating	5 V, 50 mA	5 V, 32 mA	2.5V, 26 mA	-	5 V, 34 mA

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