

Product Name

Portable

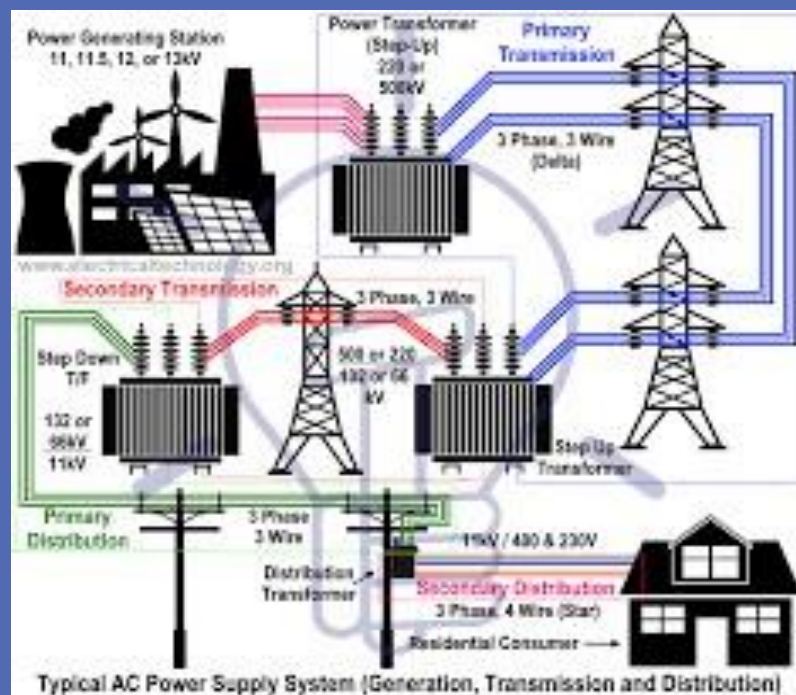
(EMI/EMC Meter)



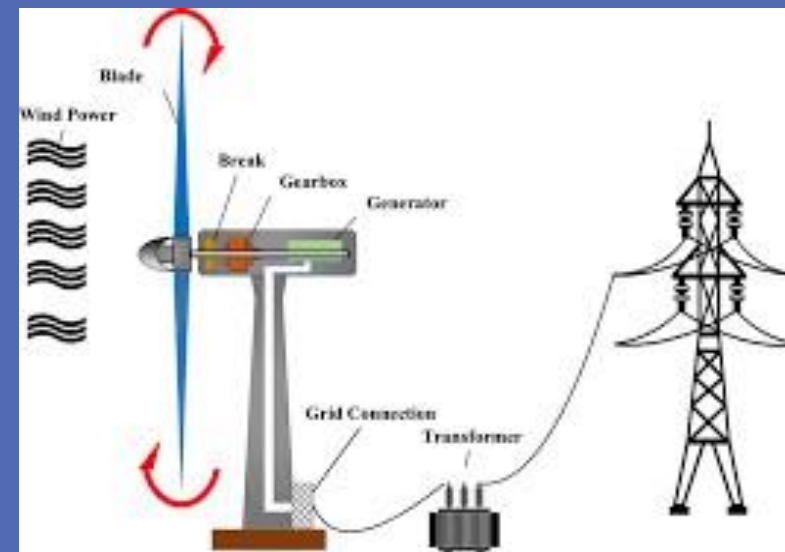
PROBLEM STATEMENT

- ✓ In metro networks, electronic equipment operating near high-voltage power supplies is susceptible to electromagnetic interference (EMI), which can compromise its functionality.
- ✓ Traditional EMI/EMC measurement tools are **bulky, expensive, and require specialized skills**, making them impractical for frequent use in metro systems and other industries.

Power Systems.



Wind power generation system.



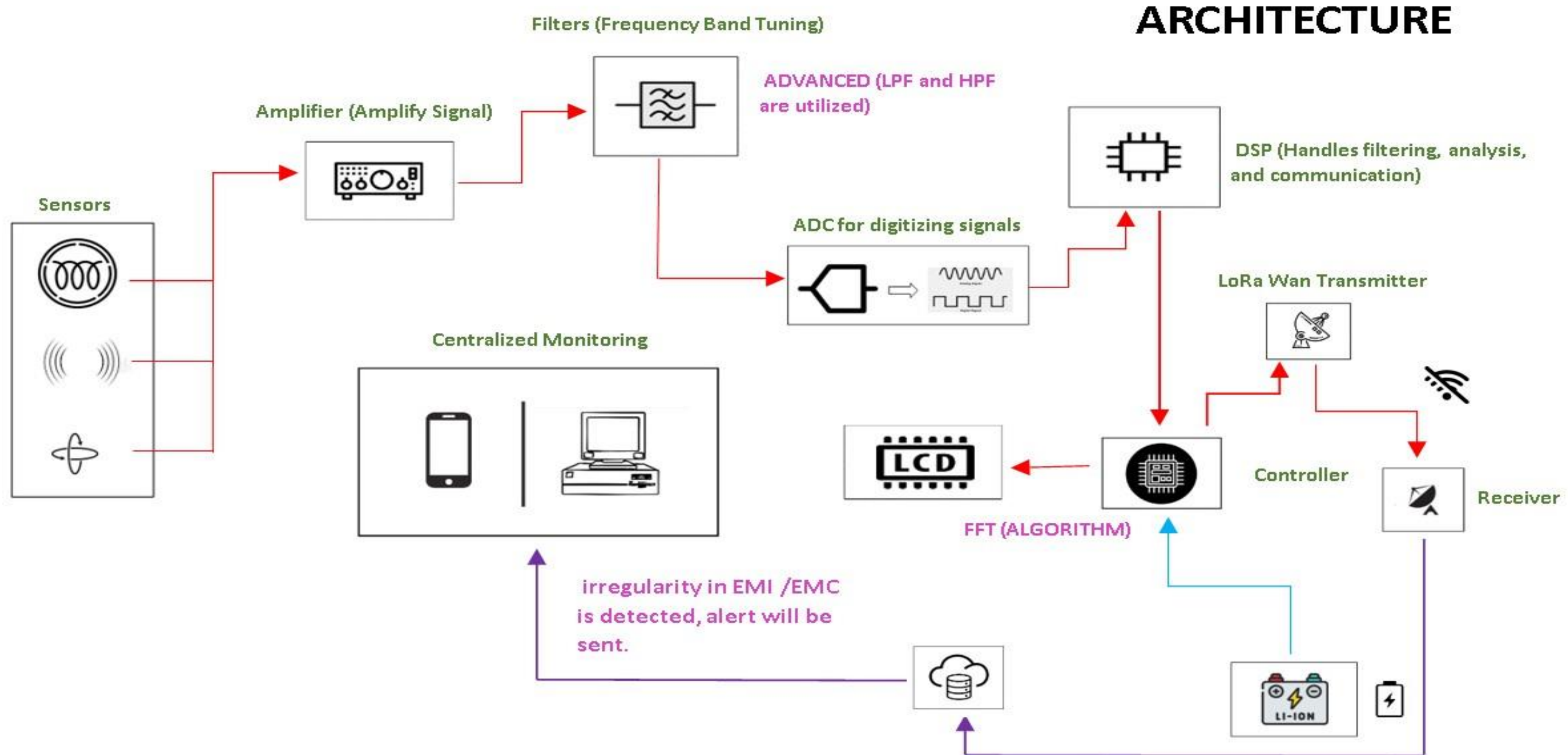
Metro stations



Electronics Manufacturing



Flow chart



PROCESS FLOW

- Signal Collection: A loop antenna captures EMI signals from the environment.
- Amplification: Low Noise Amplifiers (LNA) boost weak signals.
- Filtering: Low Pass Filters (LPF) remove high-frequency noise.
- Processing: A microcontroller processes the filtered signals.
- Display: Real-time data is shown on a 20x4 LCD.
- Transmission: Data is sent wirelessly to mobile devices and substations.

The meter wirelessly transmits data to a mobile app for storage and analysis, enabling trend monitoring, diagnostics, and access to historical data for informed decisions and predictive maintenance.

Technical Approach

APPROACH

- **Hall effect sensor** detects the Electro Magnetic Interference
- **Induction sensor** detects the proximity of metal objects.
- **Amplifier** strengthens sensor data.
- **Filters** remove unwanted noises.
- **ADC and DSP** combined work towards the spectrum analyses.
- **Torque sensor** takes automated decision-equipment settings or alerts maintenance personnel.

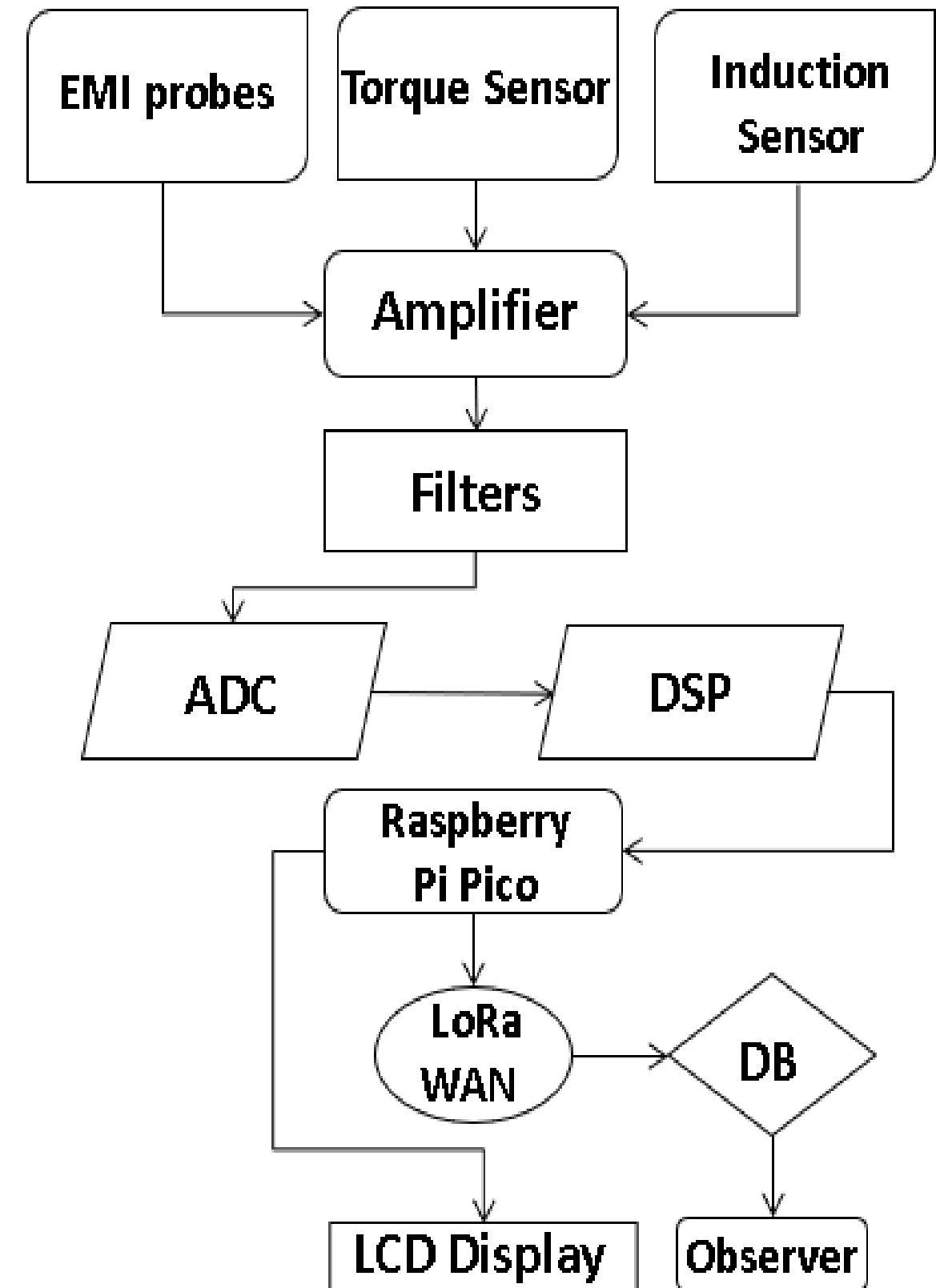
TECHNICAL STACKS

HARDWARE

- | | |
|----------------------|--------------------|
| Sensors | ▪ Filters(LPF&HPF) |
| ▪ Hall effect sensor | ▪ ADC&DSP |
| Amplifier(LNA) | ▪ LCD Display |
| Loop Antenna – RX | ▪ Li-ion battery |

SOFTWARE

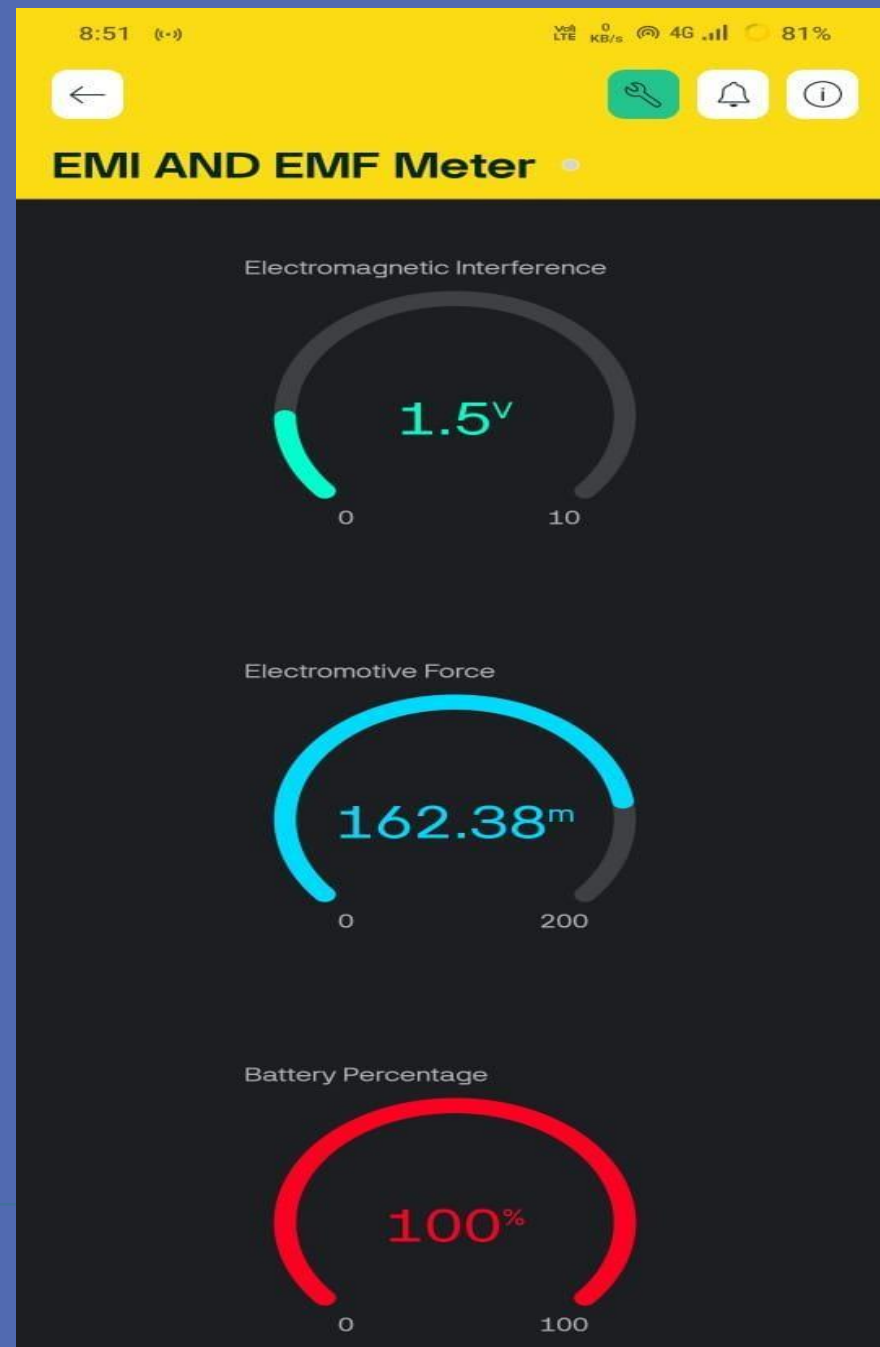
- Blynk IoT
- Arduino IDE
- Embedded C
- NX CAD designing



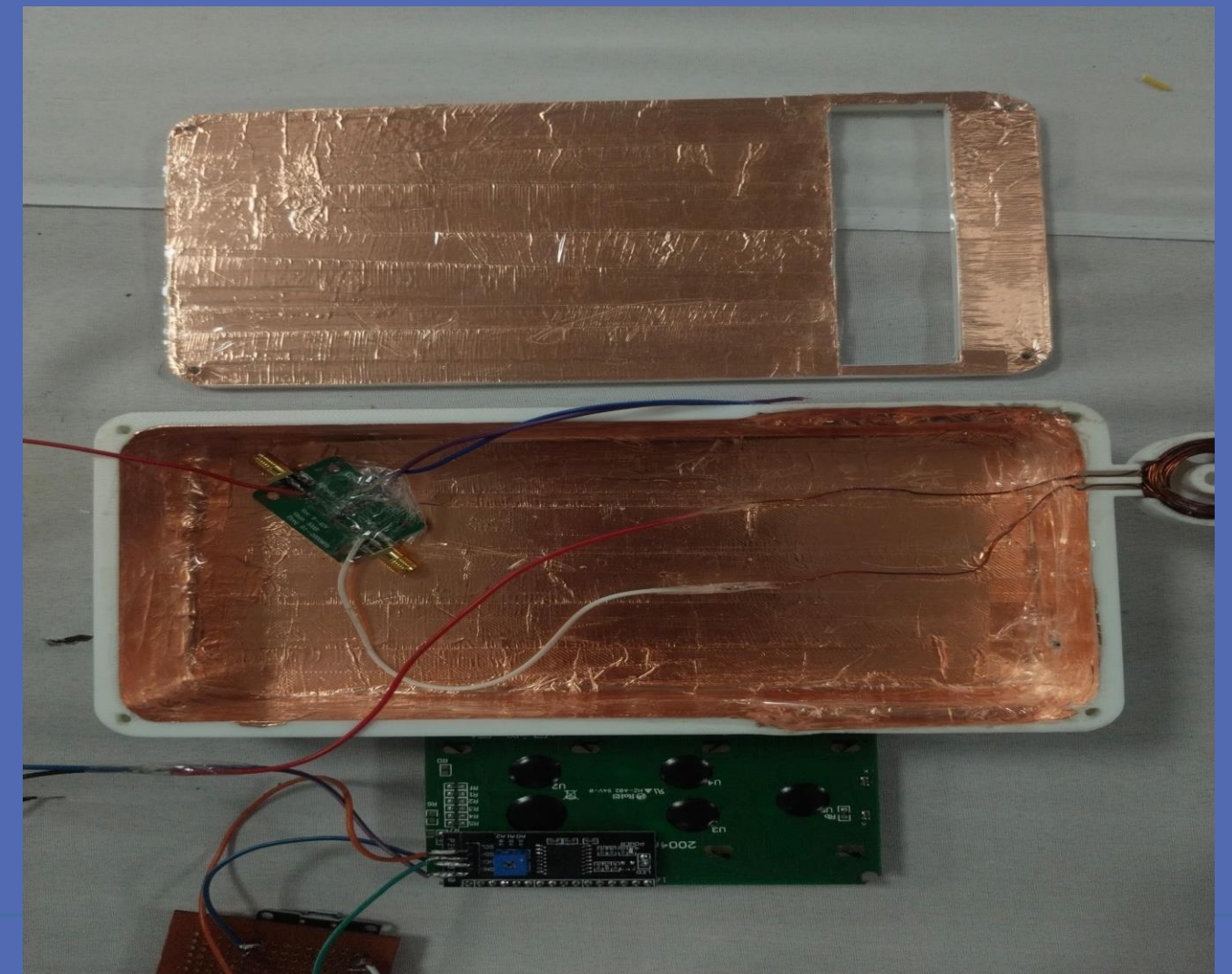
OUR INNOVATION

(UNIQUE VALUE PROPOSITION)

- The meter features EMI shielding to protect sensitive electronic components from interference.
- Real-time data transmission enables immediate analysis and monitoring.

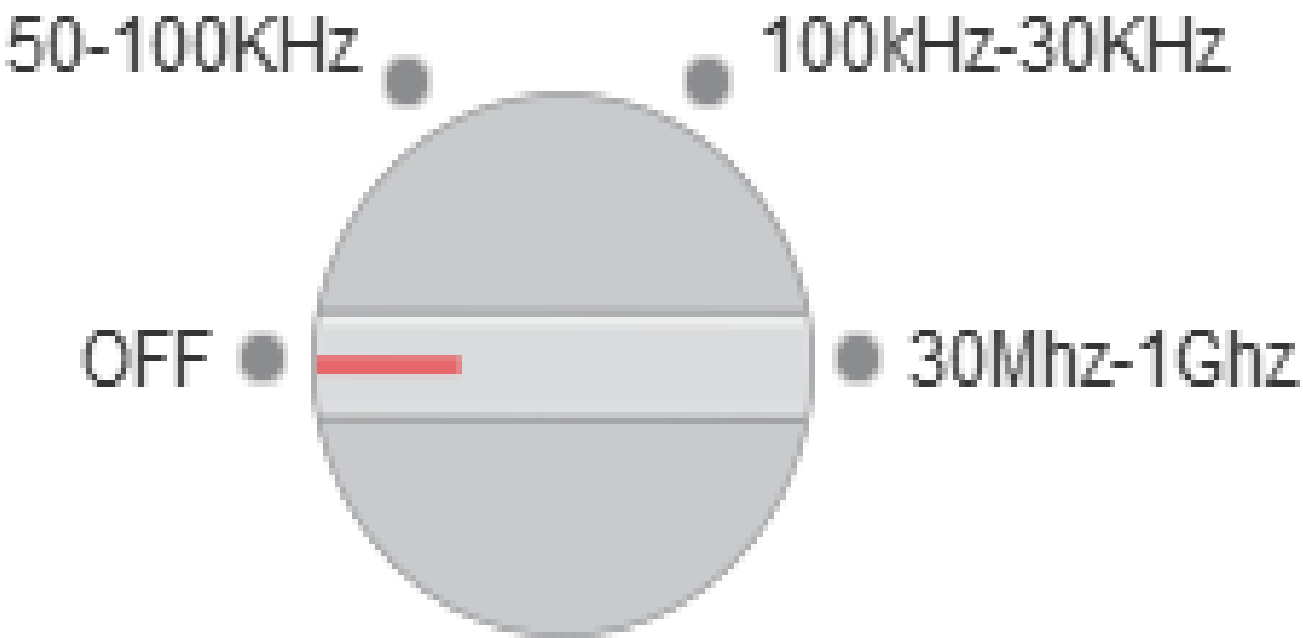
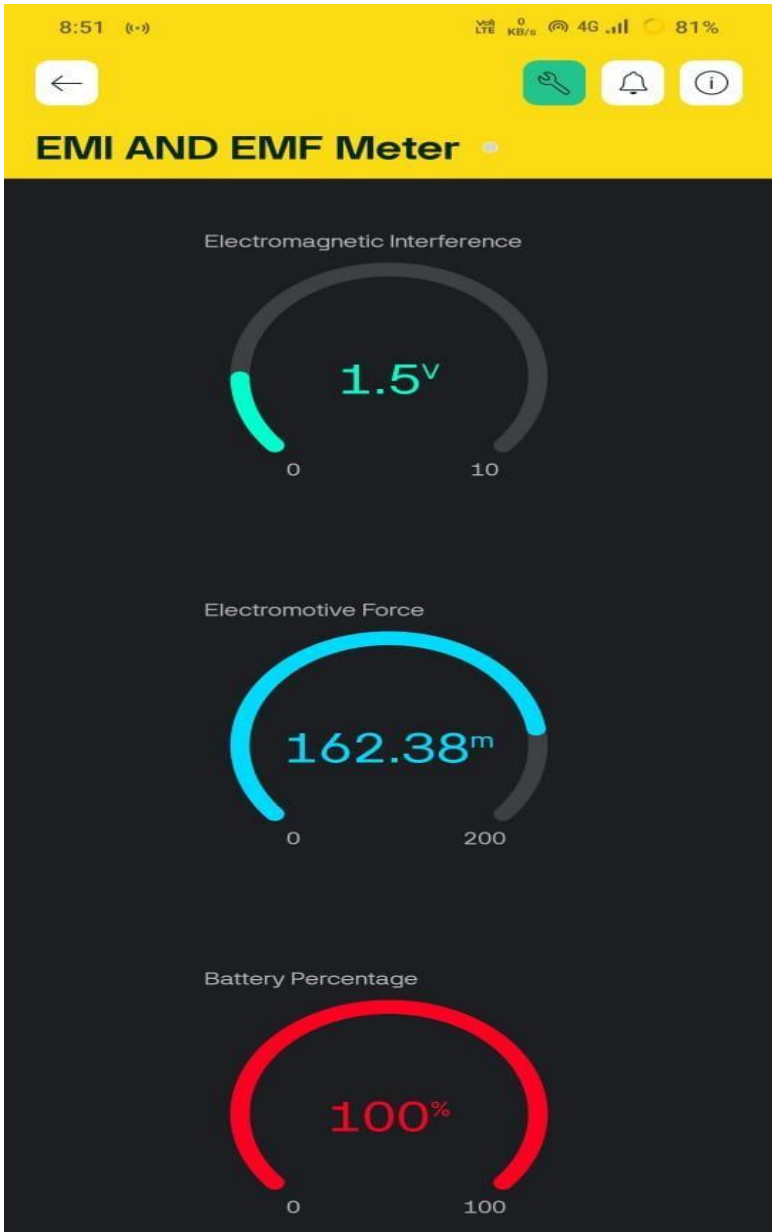
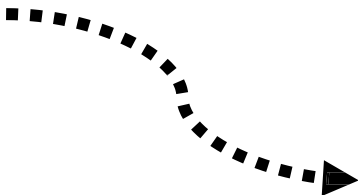


Real-time monitoring



Faraday coating

WORKING MODEL



Rotary Switch

CONSUMER SEGMENTS

- Metro and Rail Networks
- Aerospace and Defense
- Consumer Electronics Manufacturers
- Healthcare Sector
- Telecommunication Providers
- Industrial Automation
- Power and Energy Utilities



COST STRUCTURE / PRODUCT

Raw Material = 2700

Design cost = 200

Power unit module = 100

3D Fabrication = 200

Instruction Manual = 10

Machineries = 100

IoT Integration = 150

Production cost = 3460

Profit = 200

**Digital promotion
& Advertisement = 200**

Total MRP Rs :3860



CHANNELS/ MARKETING STRATEGIES

- Stockist
- Distributors
- Whole saler
- Retailers
- Customers
- E-commerce Website
- Social Media



REVENUE STREAM

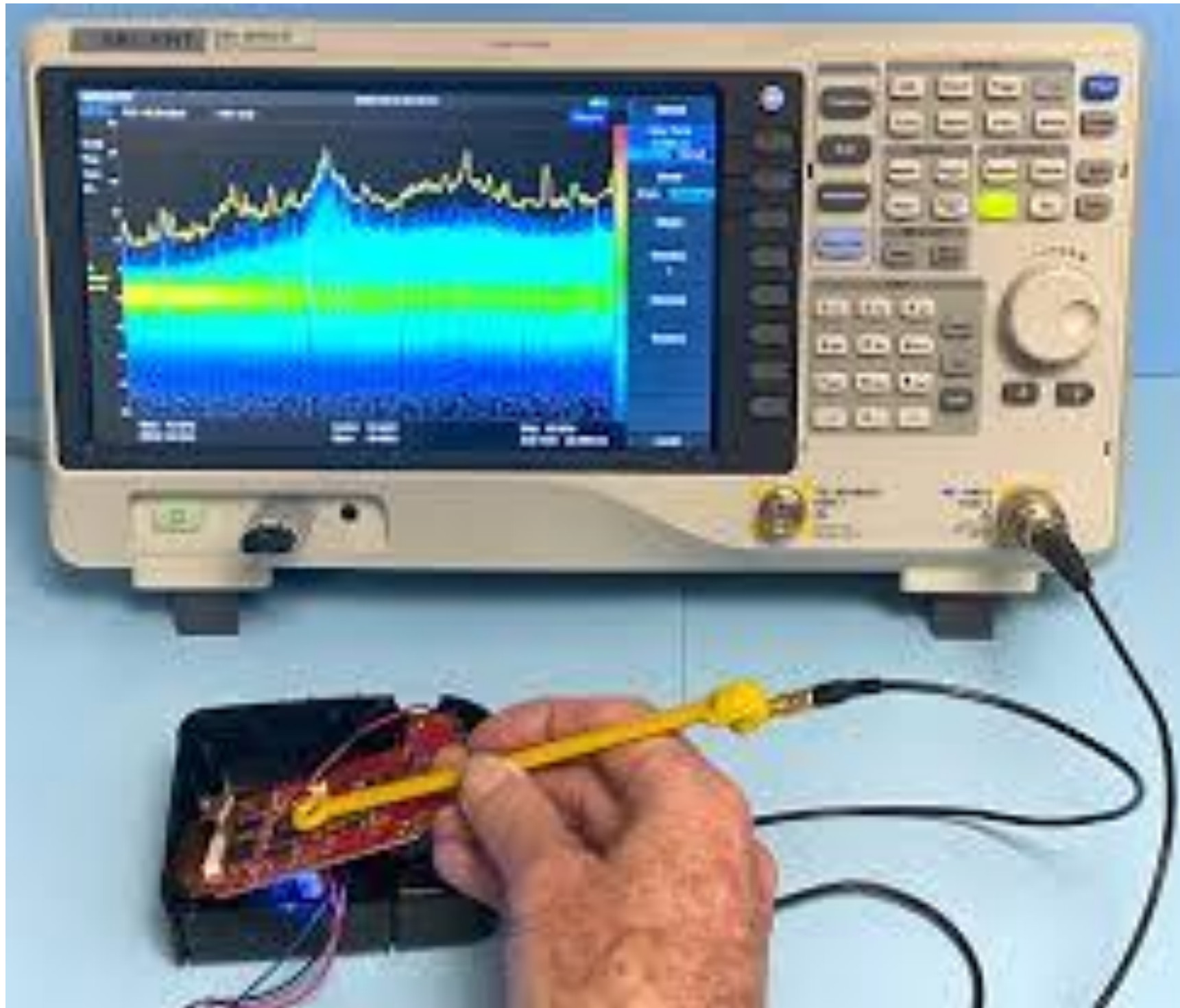
- **Device Sales**
- **Subscription Plans**
- **Training and Certification**
- **Customization Services**
- **Integration Services**
- **Leasing and Rental**



MODEL OF OUR Portable EMI Meter



Existing vs Our Product



<u>S.No</u>	Name of the Materials	Specification	Unit Cost	Quantity (in Nos)	Cost (Rs.)	Weight (gm)
<i>A. Design & Drawing</i>						
1	Design of 3D model case	Tinkercad-Opensource	-	-	-	
2	Faraday Cage	Cu+ Al+ Steel	400	-	400	50
3	3D Model casing	Size: 200mm×110mm×40mm, Wt -40gm	520	1	520	200
<i>B. Electrical Components</i>						
3	Loop Antenna	30mm	60	1	60	17
4	LN Amplifier	0.1-2000MHz RF Wide band amplifier, Gain-30db Low noise amplifier LNA Board Module	1000	1	1000	150
5	Resistor (R1)	6.8K Ω	2	1	2	
6	Capacitor (C1)	0.1 μ F	2	1	2	
7	Controller	ESP 32	350	1	350	
8	Li-ion Battery	3.7 v, 4000mah	230	1	230	
<i>D. Application Development</i>						
8	Software development	Flutter-Opensource	-	-	-	
9	Output Display	Android phone-Self	-	1	-	
Total					2,564	~500