A Project Sponsored by

MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
GOVERNMENT OF INDIA

Title of Project:

"Development and Deployment of KISAN Cloud using Electronic Soil Nutrients Analyser (ESNA) and Capacity Building of ST Masses on SmartAgri and Livelihood Entrepreneurship for Self-Employment"

Product Specification of ESNA

Implemented by

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Circuit and Architecture design of ESNA

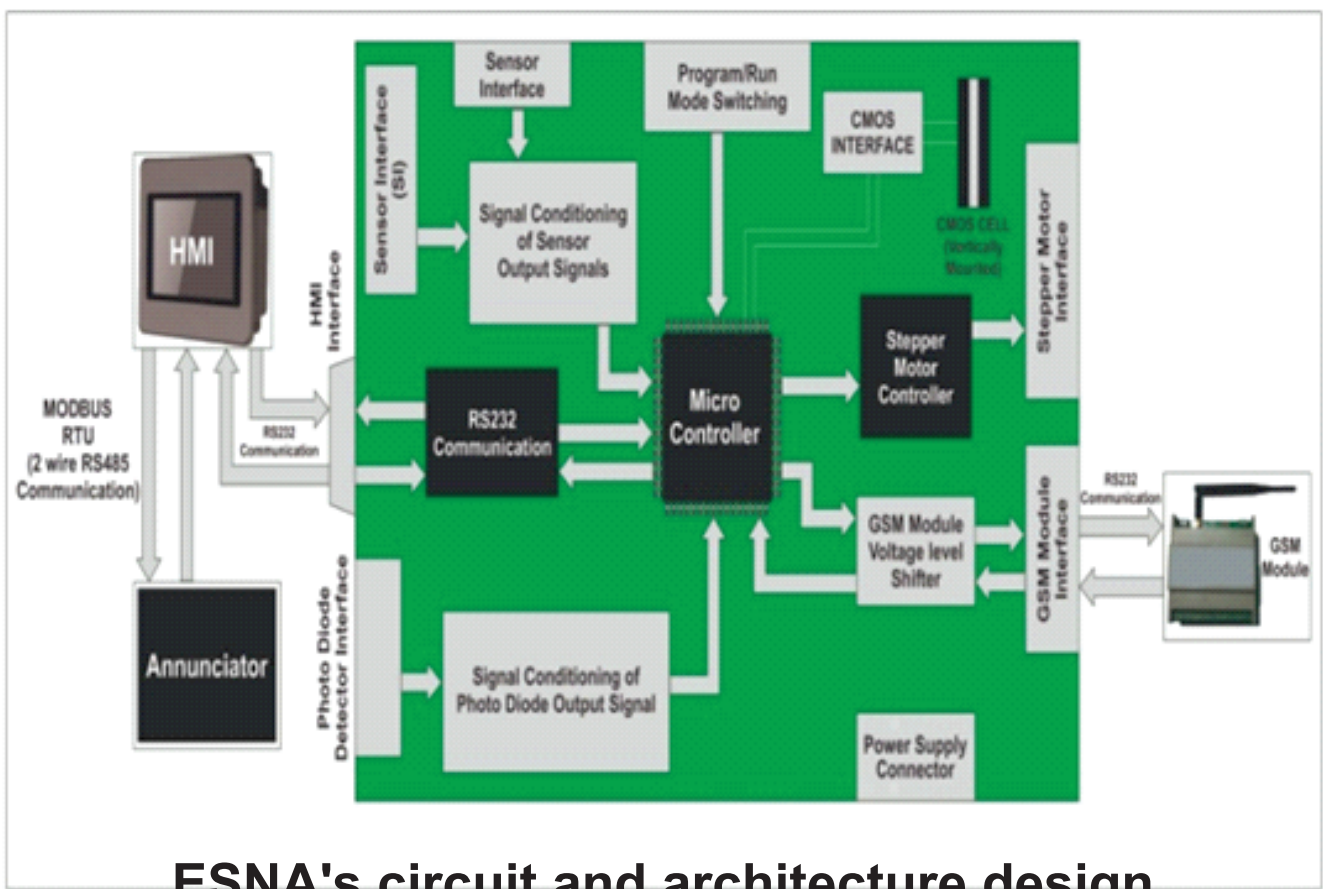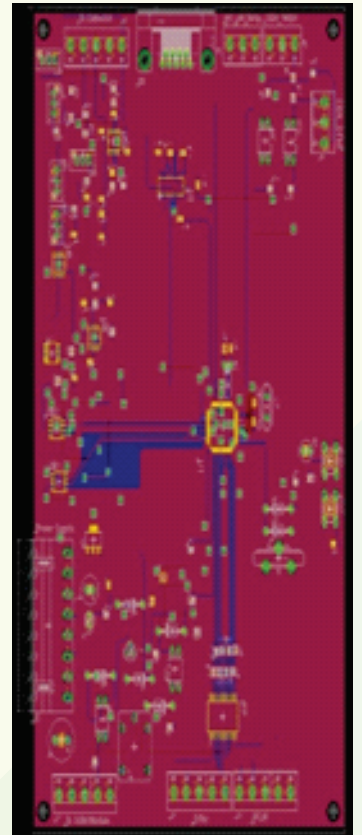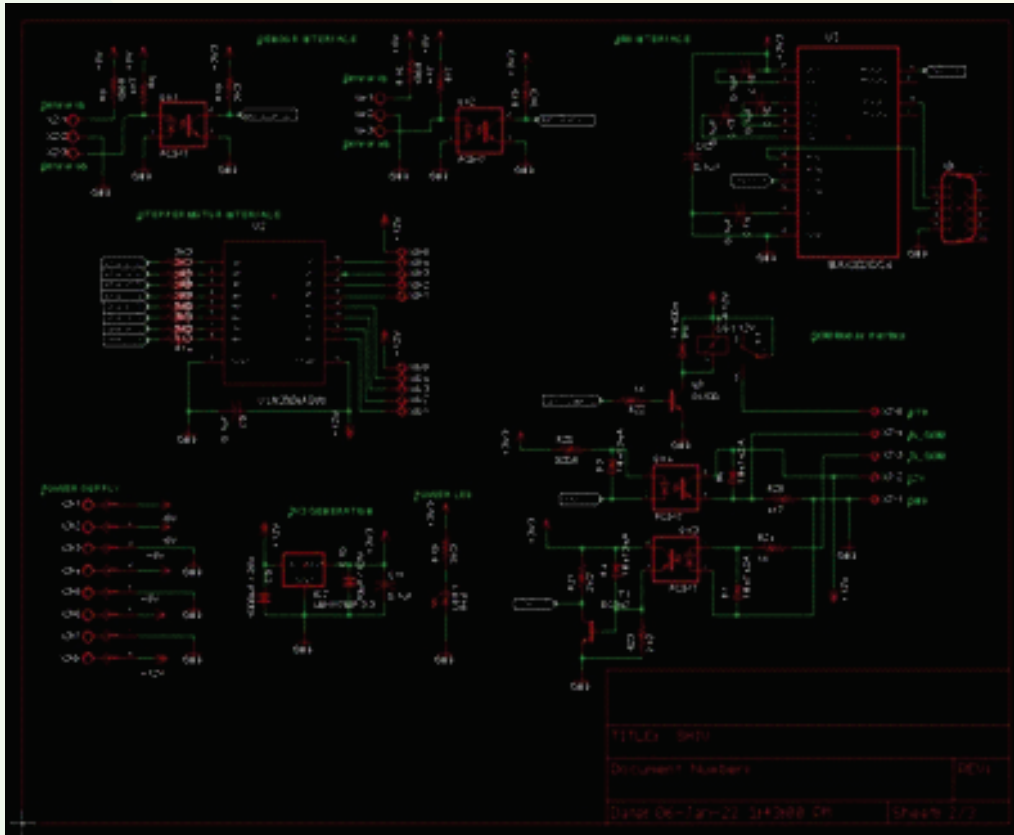**PCB Design and Technology Transfer (ToT):**
If you're seeking a PCB (Printed Circuit Board) designer for the ESNA device, which is an electronic soil nutrient analyser designed for soil nutrient analysis using Bhumitra tablet extracts and reagents, the PCB design and architecture for ESNA will be part of an Expression of Interest (EOI) for Transfer of Technology (ToT). This process includes sharing the Gerber files as part of the ToT. Here's a step-by-step approach:

1. **Contact the Project or Organization:** Reach out to the organization responsible for ESNA development. Inquire about the EOI process and express your interest in obtaining the PCB design and architecture.
2. **Participate in the EOI:** Follow the specific guidelines and requirements outlined in the EOI for ToT. This may involve submitting a formal expression of interest and providing details about your capabilities and intentions regarding the technology.
3. **Review the Gerber Files:** Once involved in the ToT process, you'll gain access to the Gerber files, which are crucial for PCB fabrication. These files contain the necessary information for manufacturing PCBs based on the design specifications.
4. **Collaborate and Negotiate:** Collaborate closely with the organization or project team to negotiate the terms of the technology transfer. This includes discussing licensing agreements, technical support, and other relevant aspects.
5. **Design and Fabrication:** Once you have access to the PCB design and architecture, proceed with the fabrication of PCBs according to the provided specifications.

For HMI Programming and UI/UX Design:
Designing the Human-Machine Interface (HMI) for the soil nutrient analyser (ESNA) involves creating a user-friendly interface for interacting with the device and its software. Here's how to approach HMI programming and UI/UX design:

1. **User Research:** Understand the needs and expectations of your target users, which may include agricultural professionals, researchers, or farmers. Identify specific user tasks, such as data input, results viewing, or tests.
2. **Information Architecture:** Organize information and features logically and consider creating flowcharts or wireframes for layout planning.
3. **User Interface (UI) Design:** Choose an intuitive design with clear buttons, icons, and responsive elements. Select a user-friendly color scheme and typography.
4. **User Experience (UX) Design:** Prioritize user-centered design principles, incorporate feedback mechanisms, and minimize user errors.
5. **Programming:** Select a suitable programming language or framework for HMI development. Implement UI elements and necessary algorithms for soil nutrient analysis.
6. **Testing and Iteration:** Conduct usability testing, gather feedback, and iterate on design and programming to enhance user experience.
7. **Security and Authentication:** Implement robust security measures if user authentication or data security is required.
8. **Documentation:** Create user manuals to guide users on device operation and interaction with the HMI.
9. **Training and Support:** Offer training resources and customer support to assist users.
10. **Compliance and Regulations:** Ensure compliance with industry standards and regulations, especially for research or commercial use.

ESNA's circuit and architecture design