



# INSTITUTE OF TECHNOLOGY OF CAMBODIA

Department of Telecommunication and Network  
Engineering

## MULTI-FUNCTION TESTER



### INTRODUCTION

The main parameters that farmer wants to measure for plant in their farm are Humidity, Temperature, Moisture and Soil's pH, but it's so difficult to measure and control those parameters. Plants need the specific temperature, humidity and moisture to grow faster and more yield. This project aims to support to farmer to measure those data in their farm or greenhouse.

### OBJECTIVE

Our project is a part of Agriculture and Technology. We plan to build simple Multi-Function Tester to help farmer to measure the data of Temperature, Humidity, Moisture and Soil's pH in the farm.



Fig1: Measuring Sensor in Greenhouse

### SYSTEM ARCHITECTURE

Multi-Function Tester is a device that can measure the temperature, humidity, soil moisture and soil's pH from the farm or greenhouse. Main components of this tester consist of one micro-controller(STM32F103C8) with 3 sensors and a LCD. There are three buttons on Multi-Function Tester. One button is used for turning on and turning off and another used to read data from sensor. Multi-Function Tester can also function as a weather station and test-toolkit too. It's small and we can use it with battery and power supply. So, it's easier for farmer to use it.

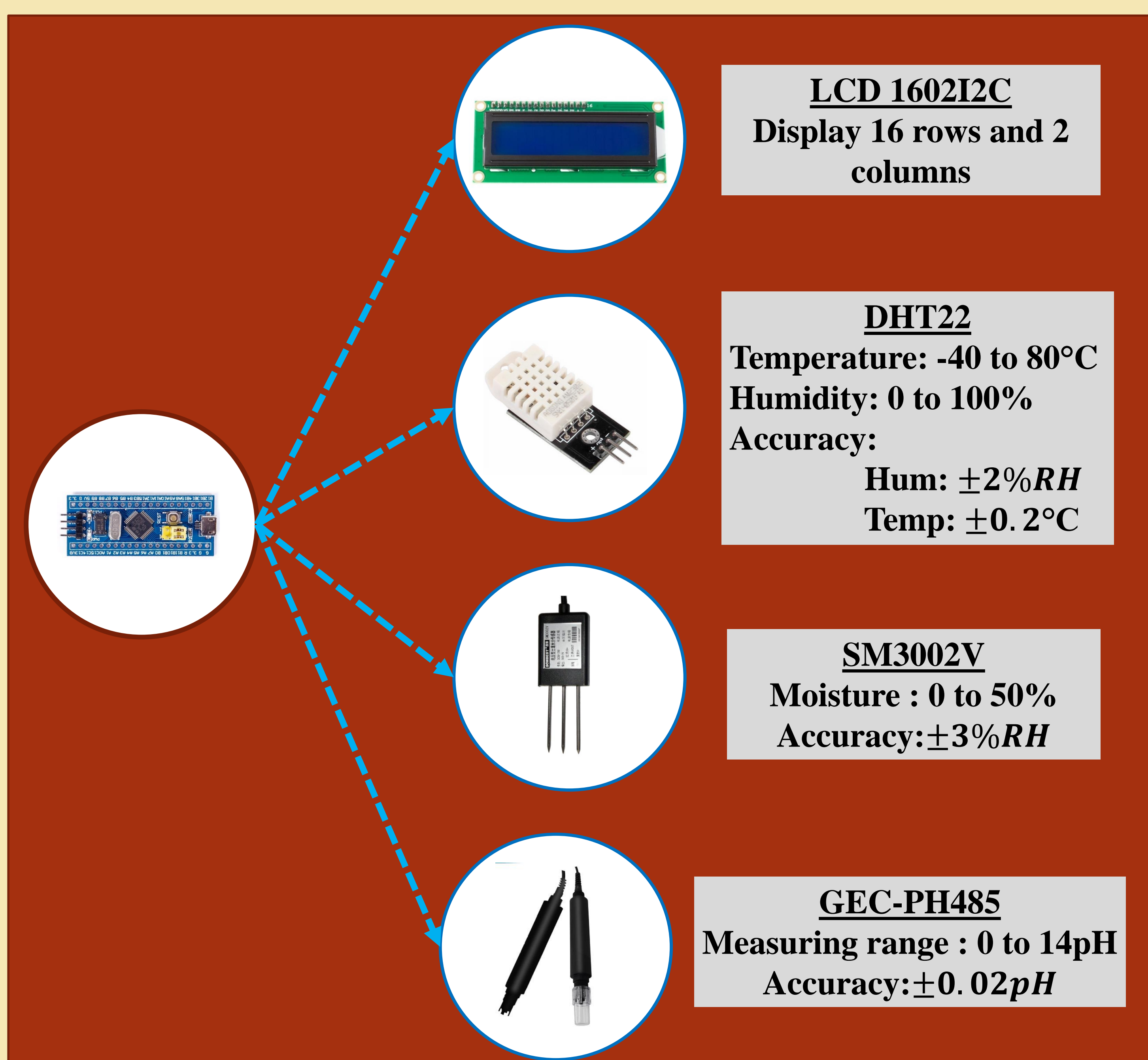


Fig2: Main Components of Multi-Function Tester

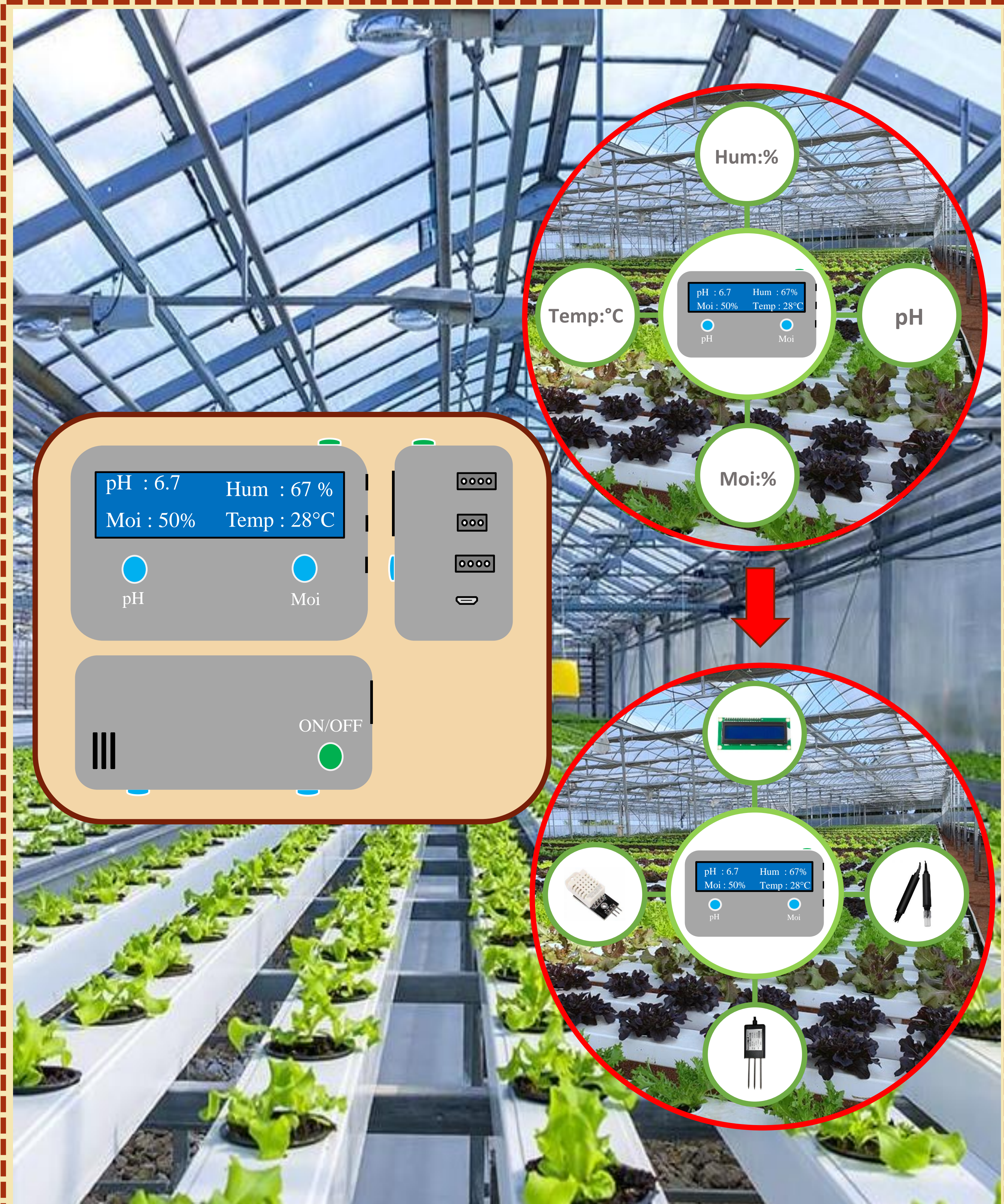


Fig3: Sample of Multi-Function Tester

### APPLICATION

Multi-Function Tester can use in many situation such as:

- Garden
- Farm
- Greenhouse
- Laboratory



### CONTACT

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GitHub: <https://github.com/Chanthan89/Smart-Irrigation/tree/master/Multi-Function%20Tester>