

## Test Plan Sheets

### Hardware Test Sheet

Tests Subject	Result(P/F)	Comments
<b>Temperature and Soil Moisture Sensor</b>		
Soil moisture sensor provides correct and consistent reading		
Temperature sensor provides correct and consistent reading		
Sensors are responsive (delay < 1s)		
Electronics are fixed and stable		
<b>Timer Controller</b>		
Timer can be manually operated by push buttons (+/-/start/stop)		
<b>PCIe Controller</b>		
Changes from the hardware side will be updated to the Processor		
Changes from the software will be downloaded to the hardware		
<b>LCD</b>		
Temperature, Soil moisture and Remaining time are displayed correctly on LCD		
<b>Valve Controller and Circuitry</b>		
Valve will be turned on as long as remaining time is greater than zero		
The source circuit are isolated from interferences		
Provides protection for the control unit		
Electronics are fixed		

## Main Logic Application Test Sheet

Tests Subject	Result(P/F)	Comments
Irrigation AI		<input checked="" type="checkbox"/> Event occurs
<input checked="" type="checkbox"/> moisture < 40% <input checked="" type="checkbox"/> 1 ℃<temperate (operational range) <input checked="" type="checkbox"/> outside the block policy schedule <input type="checkbox"/> rain forecast <input type="checkbox"/> user requests Result: valve on		
<input checked="" type="checkbox"/> moisture < 40% (Don't care) 1 ℃<temperate (Don't care) outside the block policy schedule <input checked="" type="checkbox"/> rain forecast <input type="checkbox"/> user requests Result: valve off		
<input checked="" type="checkbox"/> moisture < 40% <input type="checkbox"/> 1 ℃<temperate <input checked="" type="checkbox"/> outside the block policy schedule <input type="checkbox"/> rain forecast <input type="checkbox"/> user requests Result: valve off		
<input checked="" type="checkbox"/> moisture < 40% <input checked="" type="checkbox"/> 1 ℃<temperate <input type="checkbox"/> outside the block policy schedule <input type="checkbox"/> rain forecast <input type="checkbox"/> user requests Result: valve off		
<input type="checkbox"/> moisture < 40% (Don't care) 1 ℃<temperate (Don't care) outside the block policy schedule (Don't care) no rain forecast <input type="checkbox"/> user requests Result: valve off		
(Don't care)moisture < 40% (Don't care)1 ℃<temperate (Don't care)outside the block policy schedule (Don't care)no rain forecast <input checked="" type="checkbox"/> user requests Result: valve on		

Hardware Interface		
Sensor results and adjusted time are received correctly from the hardware		
Requests can be sent to the hardware		
Server Connection		
Automatically reconnect the server if internet disconnect		
Information and requests can be correctly downloaded/updated from/to the sever (Including device status, adjusting time, irrigation interval, block interval )		
Local weather can be downloaded to the device		

### Server Test Sheet

Tests Subject	Result(P/F)	Comments
Data Transmission		
Successfully received data from device/mobile		
Data is stored in database without loss		
Successfully send requested data to device/mobile		
Show Connection activity log		
Server is able to handle at least 500 clients simultaneously within acceptable delay		
Privacy		
Server verifies the pin number and password before accessing		

## Mobile App Test Sheet

Tests Subject	Result(P/F)	Comments
<b>Opening Application</b>		
Successfully opened the application without crashing		
Auto-connect to the server when the application is opened		
<b>Login Page</b>		
Wrong match of username and password are denied		
Correct match of username and password are approved		
<b>Operation Page</b>		
Page access successful		
Display correct device status and remaining time		
Operation commends are sent to sever and executed within delay tolerance		
<b>History Page</b>		
Page access successful		
Display correct operation history data and environment data		
<b>Block Policy Page</b>		
Page access successful		
Be able to add/remove the block interval		
Display block schedule correctly		
<b>General Requirements</b>		
Run without frequent crash		
All buttons work as expected		