

P5.3 TEST PLAN

ANDROID CLIENT CONNECTED TO MX7 SERVER

VERSION 1

NOV. 27, 2017

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#7686561

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1 – TPP VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason	Mark
1	Richard Constantine	11/27/2017				

2 - INTRODUCTION

2.1 PURPOSE OF THE TEST PLAN TEMPLATE DOCUMENT

The purpose of this test plan document is to test the Android client software to confirm that it can successfully establish a TCP connection with the server software on the MX7 board, as well as provide functionality to read the connected temperature sensor (via the I2C bus).

3 – ANDROID CLIENT CONNECTED TO MX7 SERVER

3.1 TEST PLAN AND CASES

Item to Test	Test Description	Test Date	Responsibility
ANDROID CLIENT CONNECTED TO MX7 SERVER	The tester will connect and command the MX7 server via Android Interface. The tester will confirm that the MX7 board can successfully read and communicate the temperature, and the client can successfully display it. This test will also confirm remote control of the LEDs and retrieving the status of the pushbuttons via the Android client.	Nov. 27, 2017	Richard Constantine

3.2 TEST PROCEDURE

Instruction	P/F
1. Ensure the PC being used has an up-to-date version of Windows (Windows 7 or later) along with the Android Studio IDE (v3.0 or later), ensuring to download the Java JDK (these can be found via google).	
2. Also, ensure that a version of MPLAB X (v4.01 or later) is installed – this can be accomplished by downloading the software via the Microchip website – then connect the MX7 board (using the debug port) to the host PC with the USB micro cable. Also connect the device to the host PC using an ethernet connection.	
3. Ensure that the MX7 board has the temperature sensor connected to the right-most pins of the I2C2 jumper.	
4. Go to the Google OneDrive URL sent via email. This should take you a folder called Richard Constantine - 7686561 - ECE 3740 - Assignment 10. Download and extract all files within P4.3.zip, and place its contents in a directory called C:\Users\<YourUsername>\ECE3740\Constantine_Richard_P5\P5.3.	

P5.3 TPP

5.	Start the Android Studio by doubling clicking the desktop icon, or locating the install folder and running the .exe.	
6.	Next, within Android Studio, open the client project by selecting File -> Open Project. Browse to C:\Users\<YourUsername>\ECE3740\Constantine_Richard_P5\P5.3\AndroidClient and open the project called client.java.	
7.	Within MPLAB X, open the server project by selecting File -> Open Project and browsing to C:\Users\<YourUsername>\ECE3740\Constantine_Richard_P5\P5.3\MX7Server\TCPIPStack\TCPIP\Demo App\ and opening the project XC32-PIC32_ETH_SK_ETH795.	
8.	Run the client program by highlighting the client project in the Projects tab (within Android Studio) and selecting Run -> Run 'app'. Ensure to connect an Android device or set an emulator (this code was developed on the Nexus 6, using the Nougat 24 API).	
9.	Run the server program by highlighting the XC32-PIC32_ETH_SK_ETH795 project in the Projects tab (within MPLAB X) and selecting Run -> Run Project.	
10.	Once the server has finished compiling and programming (a message will indicate when the program has been uploaded). In the Android emulator, when the 'Connect' button is pressed, a message should appear in the 'Console Messages' confirming this button press.	
11.	Try pressing the 'Get Temperature' button. This should display the temperature to 4 decimal places in the 'Console Messages' of the GUI.	
12.	The 'Get Time' button also reads the temperature in this design.	
13.	When one of the 'Read' buttons are pressed, it should alter the 'Console Messages' with the appropriate pushbutton status – confirm this by pressing the read button while the PBs are up and down to confirm that they are being read correctly.	
14.	When one of the LED buttons are pressed, a message should appear in the 'Console Messages' confirming this button press, as well as the button should stay highlighted indicating that the LED is currently toggled on. The same should occur when the LED is toggled off. This can be confirmed by looking at the MX7 board and confirming the LEDs are responding.	
15.	When the 'Disconnect' button is pressed, a message should appear in the 'Console Messages' confirming this button press.	
16.	Try to again connect to the server using the 'Connect' button – ensure that the client can successfully reconnect and communicate with the server.	
17.	Check that the client can still receive temperature readings from the MX7 server by clicking the 'Get Time' button.	
18.	Finally, exit the GUI by clicking the 'Quit' button or pressing the home button. This should also disconnect the client if quitting while connected.	

4 - TEST PLAN TEMPLATE APPROVAL

The undersigned acknowledge they have reviewed the P5.3 Test Plan Template document and agree with the approach it presents. Any changes to this Requirements Definition will be coordinated with and approved by the undersigned or their designated representatives.

Required Signatures:

- TA - Kaiser Nahiyan

Signature:	_____	Date:	_____
Print Name:	_____		
Title:	_____		
Role:	_____		

REFERENCES

- [1] K. Ferens, "ECE 3740 Systems Engineering Principles I," 15 September 2001. [Online]. Available: <http://ece.eng.umanitoba.ca/undergraduate/ECE3740/>. [Accessed 16 September 2017].