EMERTXE TRAINING PROJECT DOCUMENTATION FRAMEWORK

REQUIREMENTS & DESIGN DOCUMENT

Emertxe Information Technologies (P) Ltd

Microwave Oven

VERSION: 0.1 REVISION DATE: 16-07-2021

Version	Date	Changed By	Modifications
0.1	16-07-2021	Rajani Shinde	Initial Draft

Contents

1 Overview

1.1 Purpose

Specify the purpose of this Requirement and Design Document (RDD) and its intended audience.

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The purpose of the document is to review and validate the requirements of “MO”

The intended audience are all the stake holders of ECEP trainers and Students.

1.2 Scope

Describe the scope of the system application to be produced.

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A microwave oven is a very versatile kitchen appliance that offers a whole range of uses. Microwave ovens can be used to reheat and cook food .

2 Assumptions, Dependencies, Constraints

2.1 Assumptions

Describe the assumptions that can affect the requirements specified in this document.

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All the events will be generated in the Lab and no real interface will be available.

2.2 Dependencies

Describe the dependencies that can affect the requirements specified in this RDD.

⇒

None

2.3 Constraints

Describe the constraints that can affect the requirements specified in this RDD.

⇒

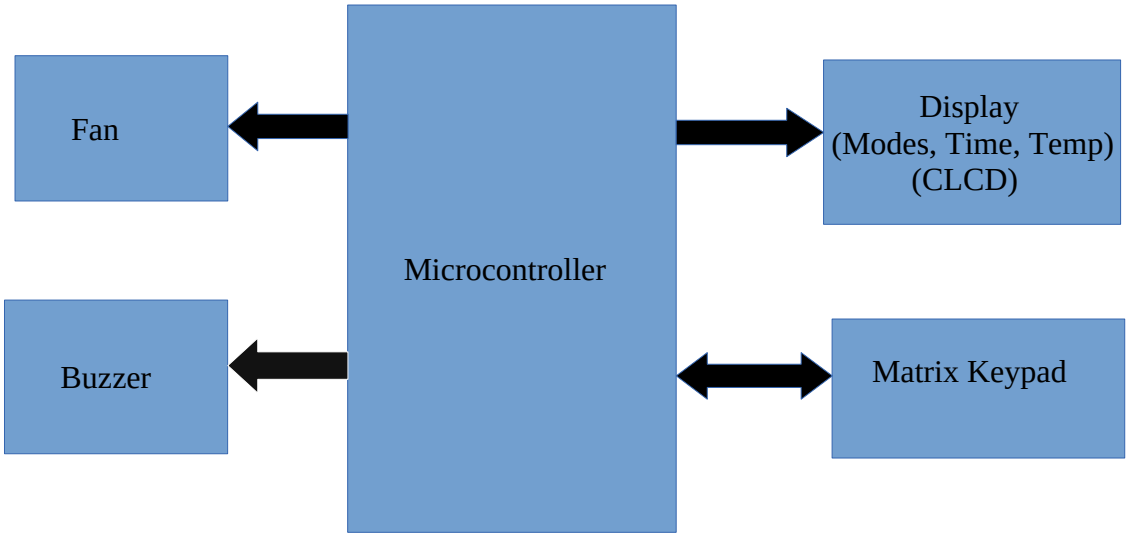
3 Requirements

3.1 Functional Requirements

- *Block diagram*
- *For each major function specify the following*

  Please replicate table below for each of the major requirement under this section

Requirement Function	*Requirement Name*	
Description	*Input*	*All possible inputs pertaining to this requirements in brief in details*
	Process	*Process sequence in detail to satisfy the requirement* *(E.g.: Validity checks for input, Exact sequence of operations, mode of execution etc.)*
	Output	*(including any specific error/information messages & reports)*



Requirement No	1 – Power ON Message Screen	
Description	Inputs	System Power ON
	Process	Power ON Message Screen
	Output	Display (CLCD) should display the power message on screen as Powering ON Microwave Oven

Requirement No	2 – Cooking Mode Screen	
Description	Inputs	Matrix Keypad (SW1 to SW4)
	Process	Cooking Mode Screen
	Output	The cooking mode screen will contain following cooking modes displays 1. Macro 2. Grill 3. Convection 4. Start The KEY1 is used to select Macro mode The KEY2 is used to select Grill mode The KEY3 is used to select Convection mode The KEY4 is used to start microwave oven by 30 sec. time

Requirement No	3 – Macro	
Description	Inputs	Matrix Keypad (SW1 to SW12), Timer
	Process	To Start Macro Mode of Cooking

	Output	Display (CLCD) should print
		
		Power = XYZ
		
		where XYZ is power
		After 3 sec display should print
		SET TIME (MM:SS)
		TIME- mm:ss
		*:CLEAR #:ENTER
		The Secs field should blink indicating the field to be changed
		The Matrix Keypad keys 0 to 9 are used to enter time.
		The KEY * is used to clear entered time.
		The KEY # is used to start microwave oven with entered time.
		Once # key is pressed(User Key) display (CLCD) should print
		TIME = MM:SS
		4.Start/Resume
		5.Pause
		6.Stop
		Remaining cooking time MM:SS is printed on line1.
		The KEY4 is used to resume microwave oven if it is stopped
		The KEY5 is used to pause cooking process.
		The KEY6 is used to stop cooking process.
		The KEY6 press should change to cooking mode screen

Requirement No	4 – Grill	
Description	Inputs	Matrix Keypad (SW1 to SW12), Timer
	Process	To Start Grill Mode of Cooking

	Output	Display (CLCD) should print
		SET TIME (MM:SS)
		TIME- mm:ss
		*:CLEAR #:ENTER
		The Secs field should blink indicating the field to be changed
		The Matrix Keypad keys 0 to 9 are used to enter time.
		The KEY * is used to clear entered time.
		The KEY # is used to start microwave oven with entered time.
		After # key pressed(User Key) display (CLCD) should print
		TIME = MM:SS
		4.Start/Resume
		5.Pause
		6.Stop
		Remaining cooking time MM:SS is printed on line1.
		The KEY4 is used to resume microwave oven if it is stopped
		The KEY5 is used to pause cooking process.
		The KEY6 is used to stop cooking process.
		The KEY6 press should change to cooking mode screen

Requirement No	5 – Convection	
Description	Inputs	Matrix Keypad (SW1 and SW12), Timer
	Process	To Start Convection Mode of Cooking

	Output	The Convection mode screen will contain the following displays
		SET TEMP. (^{O}C)
		TEMP : xyz
		*:CLEAR #:ENTER
		The Matrix Keypad keys 0 to 9 are used to enter temprature
		The KEY * is used to clear entered temerature
		The KEY # is used to confirm entered temperature.
		After # key pressed(User Key) display (CLCD) should print
		Pre-Heating
		Time Rem. = sssSEC
		Once Pre-Heating time sss is over display(CLCD) should print
		SET TIME (MM:SS)
		TIME- mm:ss
		*:CLEAR #:ENTER
		The Secs field should blink indicating the field to be changed
		The Matrix Keypad keys 0 to 9 are used to enter time.
		The KEY * is used to clear entered time.
		The KEY # is used to start microwave oven with entered time.
		After # key pressed(User Key) display (CLCD) should print
		TIME = MM:SS
		4.Start/Resume
		5.Pause
		6.Stop
		Remaining cooking time MM:SS is printed on line1.
		The KEY4 is used to resume microwave oven if it is stopped
		The KEY5 is used to pause cooking process.
		The KEY6 is used to stop cooking process.
		The KEY6 press should change to cooking mode screen

Requirement No	6 – Start	
Description	Inputs	Matrix Keypad (SW1 to SW12), Timer
	Process	To start Microwave oven
	Output	Display (CLCD) should print TIME = MM:SS 4.Start/Resume 5.Pause 6.Stop This mode will start microwave oven with default 30sec time clock Remaining cooking time MM:SS is printed on line1. The KEY4 is used to resume microwave oven if it is stopped else time clock incremented by 30sec The KEY5 is used to pause cooking process. The KEY6 is used to stop cooking process. The KEY6 press should change to cooking mode screen

3.2 User Interfaces

Describe the user interface requirements for the system like snapshots, block diagram etc.,

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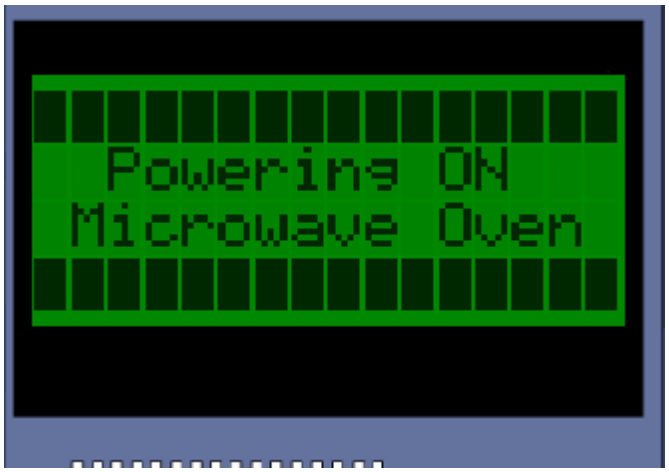


Fig 3.1: Power On Message

Fig 3.1 shows the power ON message to user

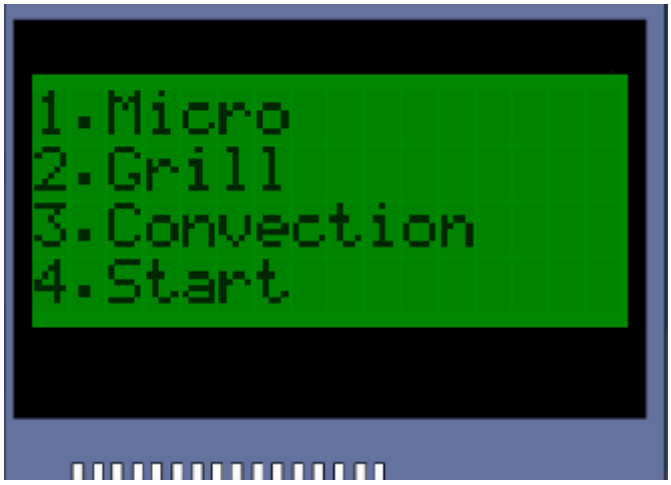


Fig 3.2: Cooking Mode Screen

The fig 3.2 shows cooking mode screen. Key number is highlighted in front of every mode by pressing that key respective mode will be selected. User should use KEY1 to KEY4 to select required mode.

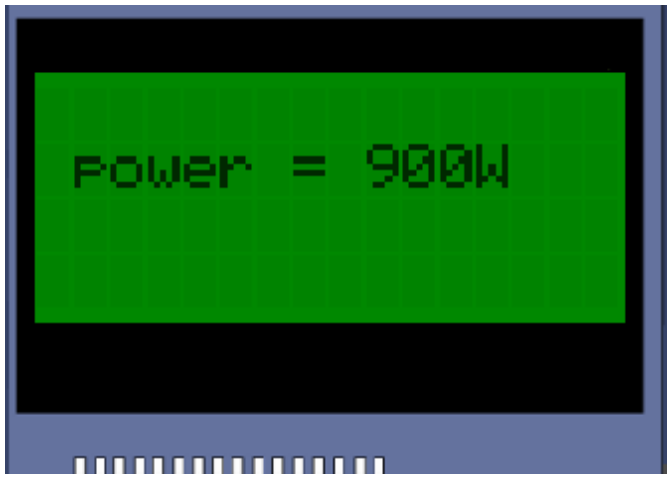


Fig 3.3: Power Display

The fig 3.3 will be once the user presses KEY1 to select macro mode of cooking. After 3 sec. Set time display screen will be displayed.

Fig 3.4: Set Time prompt

The fig 3.4 is the set time screen after displaying power for 3 sec. The secs field should be blinking to indicate the user about selected field .The user should use KEY1 to KEY9 to enter time.

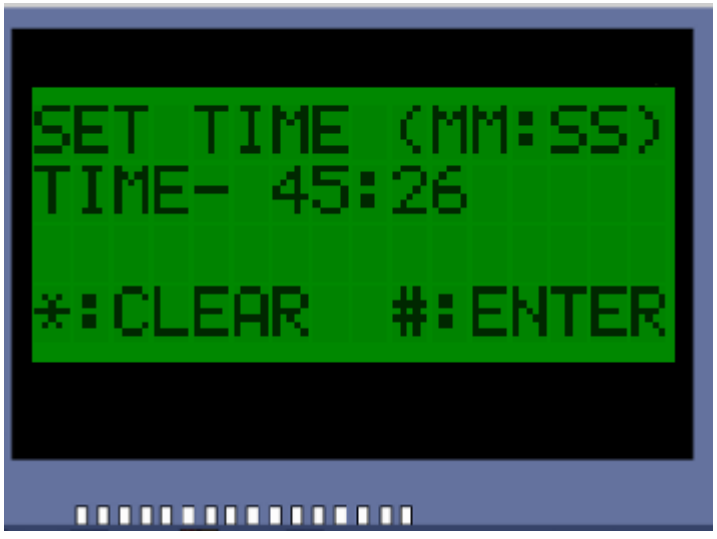


Fig 3.5: Set Time Entry

The fig 3.5 once time is entered. The KEY * is used to clear entered time. The KEY # is used to confirm entered time and to start cooking for entered time.

Fig 3.6: Display Time

The fig 3.6 is once # KEY is pressed. Line 1 will display remaining cooking time. The KEY4 is used to resume microwave oven if it is stopped. The KEY5 is used to pause cooking process. The KEY6 is used to stop cooking process. The KEY6 press should change to cooking mode screen.

Fig 3.7: Set Time prompt

The fig 3.7 is the set time screen once user selected grill mode using kEY2. The secs field should be blinking to indicate the user about selected field .The user should use KEY1 to KEY9 to enter time.

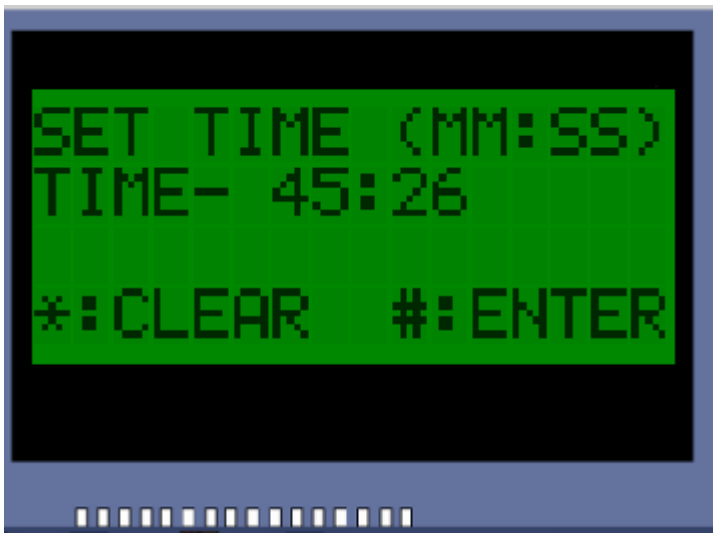


Fig 3.8: Set Time Entry

The fig 3.8 once time is entered. The KEY * is used to clear entered time. The KEY # is used to confirm entered time and to start cooking for entered time.

Fig 3.9: Display Time

The fig 3.9 is once # KEY is pressed. Line 1 will display remaining cooking time. The KEY4 is used to resume microwave oven if it is stopped. The KEY5 is used to pause cooking process. The KEY6 is used to stop cooking process. The KEY6 press should change to cooking mode screen.

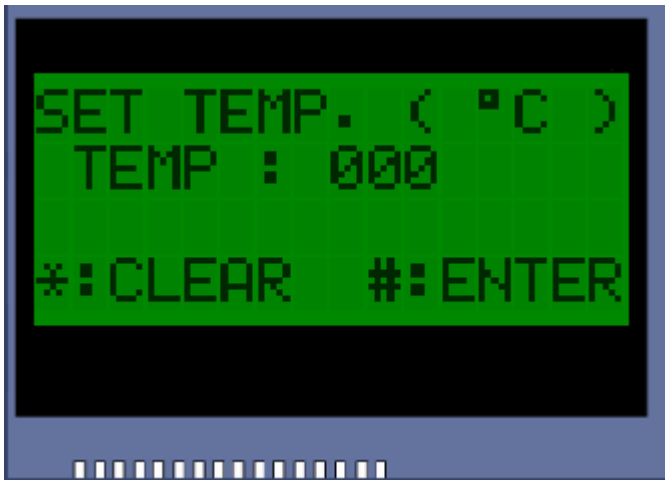


Fig 3.10: Set Temp Prompt

The fig 3.10 is once user selected convection mode using KEY3 from cooking modes. The temp. field should be blinking to indicate to enter temperature. The user should use KEY1 to KEY9 to enter temperature..

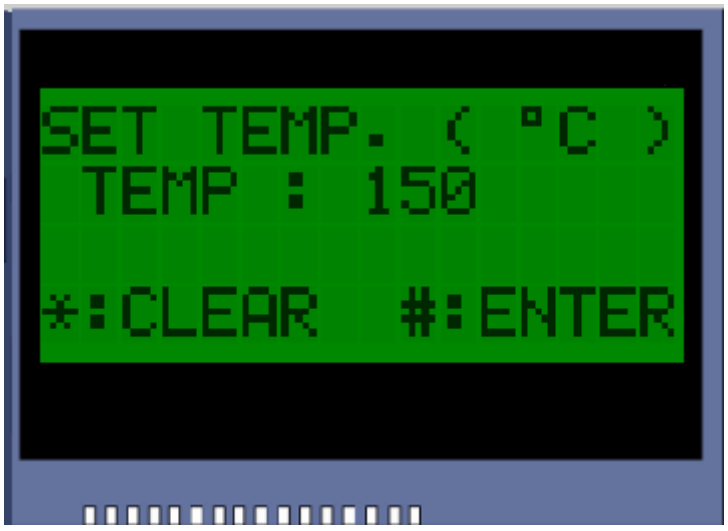


Fig 3.11:Set Temp Entry

The fig 3.11 once temperature is entered. The KEY * is used to clear entered temperature. The KEY # is used to confirm entered temperature and to start pre-heating..

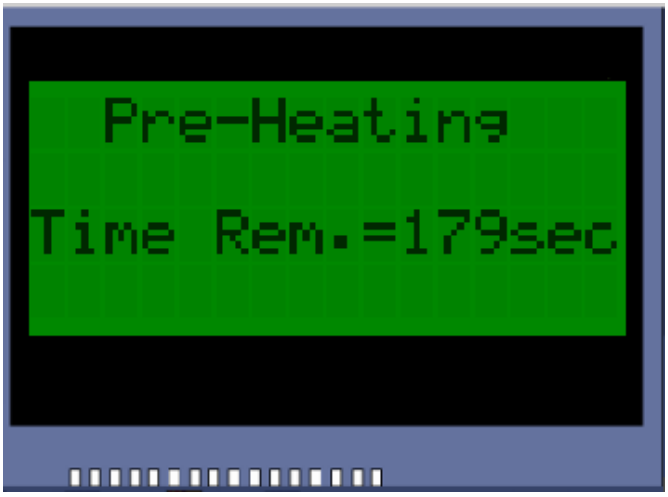


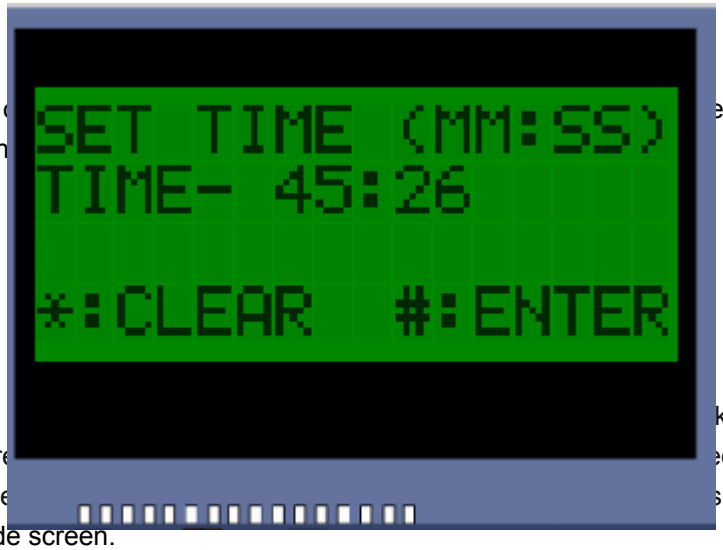
Fig 3.12: Pre-Heating Screen

The fig 3.12 is once # KEY is pressed. Line 3 will display remaining pre-heating time. Once there is time out it will display set time screen.

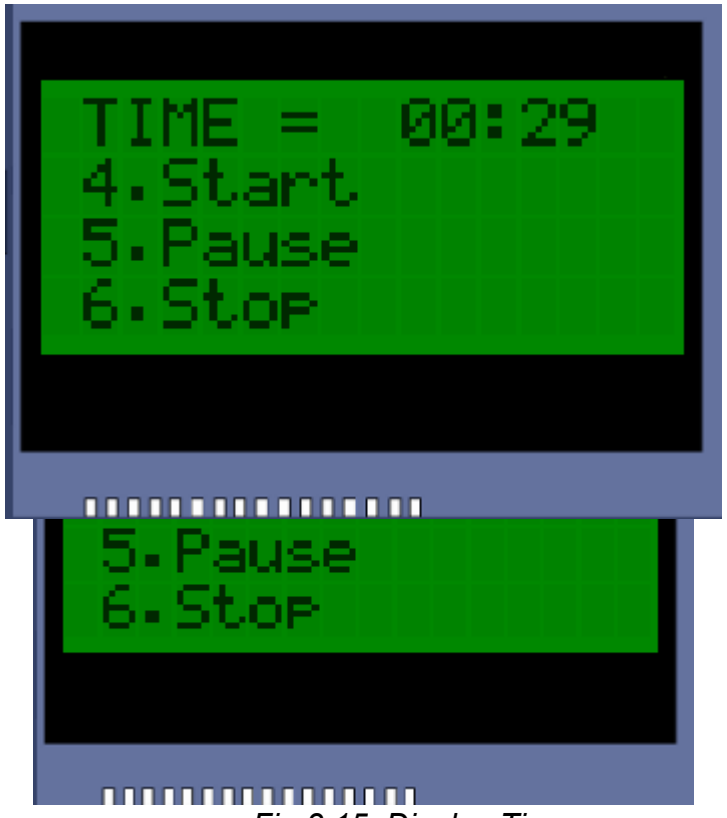
The fig 3 ld should be blinking t o KEY9 to enter time.

Fig 3.13: Set Time prompt

The fig 3.14 . The KEY # is used to confirm en



The fig 3.15 king time. The KEY4 is used to re d to pause cooking process. The ss should change to cooking mode screen.



The fig 3.16 is once KEY4 is pressed by user to start microwave oven from cooking modes. It will start cooking for 30sec time. Line 1 will display remaining cooking time. The KEY4 is used to resume microwave oven if it is stopped else it will increase cooking time clock by 30 secs.. The KEY5 is used to pause cooking process. The KEY6 is used to stop cooking process. The KEY6 press should change to cooking mode screen.

3.3 Interfaces

Describe the logical characteristics of each interface between the application and other hardware, software, and communication protocols.

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There are no external interface to this application.

4 Board Jumper Settings

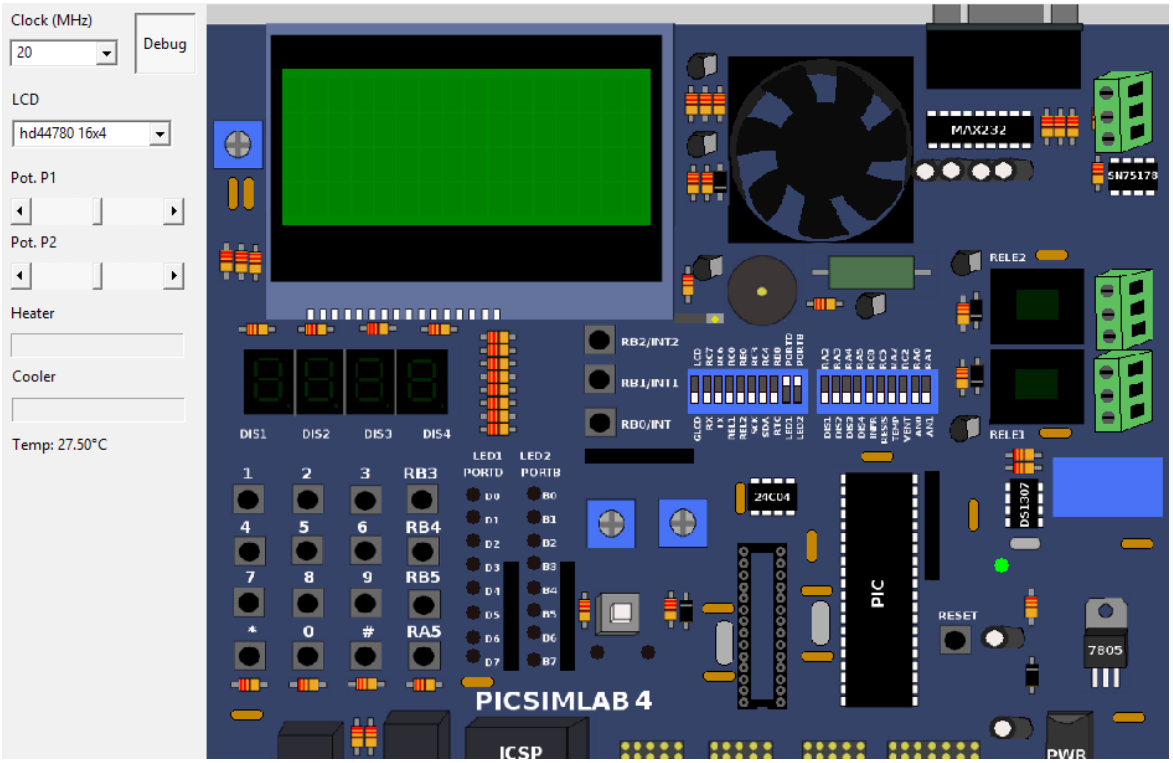

Fig 4.1: Project Jumper Configuration

5 References

Provide a list of all documents and other sources of information referenced in this document.

Document No.	Document Title	Date	Location

6 Glossary

Define of all terms and acronyms required to interpret the RDD properly.

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6.1 Abbreviations

The following abbreviation are used in this documents

EIDTC	: Emertxe Internal Document Template Code
RDD	: Requirement and Design Document
e.g. / E.g.	: Example
etc.,	: et cetera

7 Appendices

Include any relevant appendices.

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