

Detailed Design (DD)

LCD (Liquid Crystal Display)

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APIs

1. Initialization API
2. Send Command API
3. Display Character API
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5. Move Cursor API
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1 Initializing API

Name	Initialization Function
Prototype	STD HAL_CLCD_u8Init(void);
Parameter in	-
Parameter out	-
Parameter in-out	-
Return Type	STD OK \ STD NOK
Description	This Function is responsible of initializing the LCD: * 1. Setup the LCD pins directions by use the GPIO driver. * 2. Setup the LCD Data Mode 4-bits or 8-bits.
Covered Requirement	[SRS_LCD_10], [SRS_LCD_8], [SRS_LCD_6], [SRS_LCD_1]

2 Send command API

Name	Send Command Function
Prototype	STD HAL_CLCD_sendCommand(u8 Copy_u8Command);
Parameter in	uint8 command
Parameter out	-
Parameter in-out	-
Return Type	STD OK \ STD NOK
Description	This Function is responsible of: sending the required command to the screen.
Covered Requirement	[SRS_LCD_6], [SRS_LCD_9]

3 Display Character API

Name	Display Character Function
Prototype	STD HAL_CLCD_SendData(u8 Copy_u8Data);
Parameter in	uint8 data
Parameter out	-
Parameter in-out	-
Return Type	STD OK \ STD NOK
Description	This Function is responsible of: Display the required character on the screen.
Covered Requirement	[SRS_LCD_6], [SRS_LCD_3]

4 Display String API

Name	Display String Function
Prototype	STD HAL_LCD_SendString(const char* copy_pcString);
Parameter in	const char* str
Parameter out	-
Parameter in-out	-
Return Type	STD OK \ STD NOK
Description	This Function is responsible of: Display the required string on the screen.
Covered Requirement	[SRS_LCD_2], [SRS_LCD_6]

5 Navigate the screen API

Name	Move Cursor Function
Prototype	STD HAL_CLCD_GoToXY(CURSOR_LOC * ptr);
Parameter in	CURSOR_LOC * ptr
Parameter out	-
Parameter in-out	-
Return Type	STD OK \ STD NOK
Description	This Function is responsible of: moving cursor to a specific position
Covered Requirement	[SRS_LCD_6], [SRS_LCD_5]

7 Clear Screen API

Name	Clear Screen Function
Prototype	STD HAL_LCD_clearLcd(void);
Parameter in	-
Parameter out	-
Parameter in-out	-
Return Type	STD OK \ STD NOK
Description	This Function is responsible of: clearing the screen.
Covered Requirement	[SRS_LCD_6], [SRS_LCD_9], [SRS_LCD_7]

