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| DIO\_FUNCTION | TEST | EXPECTED | RESULT |
| U8 DIO\_u8Init(void) | 1-call init function  2-connect led+ resistor to 5V to check the status of the pin | The led to light as the initial pin values is output with low voltage applied |  |
| U8 DIO\_u8SetPinValue  (u8 PinNum) | 1-set Direction of pin to output  2-call SetPin function  3-use avometer to check voltage on the pin is high | Voltage difference between pin and ground is around 5V |  |
| U8 DIO\_u8SetPinValue  (u8 PinNum,u8 value) | 1-set Direction of pin to output  2-call SetPin function by sending a wrong pin number  OR  By sending worng value | Returns Error level 1 |  |
| U8 DIO\_u8SetPinDir  (u8 PinNum,u8 Direction) | 1-call SetPinDir function as output  2-put PORT value to high and use avometer to read the pin value | Voltage difference between pin and ground is around 5V |  |
| U8 DIO\_u8SetPinDir  (u8 PinNum,u8 Direction) | 1-call SetPinValue function by sending a wrong pin number  OR  By sending worng Direction | Returns Error level 1 |  |
| U8 DIO\_u8GetPinValue  (u8 PinNum,u8 \*Value) | 1-set pin direction as input  2-put 5v on the pin  1-call GetPinValue function | Pin should return 5v in value pointer |  |
| U8 DIO\_u8GetPinValue  (u8 PinNum,u8 \*Value) | 1-call SetPinDir function by sending a wrong pin number  OR  By sending a Null pointer | Returns Error level 1 |  |

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| UART\_FUNCTION | TEST | EXPECTED | RESULT |
| U8 UART\_u8Init(void) | 1-call UARTinit function  2- Send and receive using Uart | The baud rate is set correctly |  |
| U8 UART\_Send | 1-call the function and send a character through  2-use a working UART reciever at the same baude rate | Receive sent character correctly |  |
| U8 UART\_Recieve | 1- use a working UART transmiter at the same baude rate  2- call the function and recieve a character through | Receive sent character  correctly |  |

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| MOTOR\_FUNCTION | TEST | EXPECTED | RESULT |
| U8 MOTOR\_u8Init(void) | 1-call MOTORinit function  2- Connect motor to the pin | The motor doesn’t move |  |
| U8 MOTOR\_LEFT | 1-call the function  2- Connect motor to the pin | Motor rotates left |  |
| U8 MOTOR\_RIGHT | 1-call the function  2- Connect motor to the pin | Motor rotates Right |  |

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| LED\_FUNCTION | TEST | EXPECTED | RESULT |
| U8 LED\_u8Init(void) | 1-call LEDinit function  2- Connect LED to the pin | The LED is off |  |
| U8 LED\_ON(void) | 1-call LEDON function  2- Connect LED to the pin | The LED is oN |  |
| U8 LED\_OFF(void) | 1-call LEDOff function  2- Connect LED to the pin | The LED is off |  |

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| PWM\_FUNCTION | TEST | EXPECTED | RESULT |
| U8 PWM\_u8Init(void) | 1-call PWMinit function  2- Connect MOTOR to the pin | The MOTOR moves with normal speed |  |
| U8 PWMON(void) | 1-call PWMON function  2- Connect MOTOR to the pin | The MOTOR is Moves with different speed |  |
| U8 PWM\_OFF(void) | 1-call PWMOff function  2- Connect MOTOR to the pin | The MOTOR moves with normal speed |  |