Test Cases

Create a schedule for test cases, documenting the results (failed/passed) for each test.

Test Case ID	Test Case Description	Test Steps	Expected Results	Actual Results	Passed/Failed
ACC_TC_001	ACC Activation	1. Turn on the ACC system. 2. Set the desired speed using the controls. 3. Drive the vehicle on a highway behind another vehicle.	The ACC system activates and maintains a safe distance from the forward vehicle.	The ACC system activates and maintains a safe distance from the forward vehicle.	Passed
ACC_TC_002	ACC Deactivation	1. Turn on the ACC system. 2. Set the desired speed using the controls. 3. Drive the vehicle on a highway behind another vehicle. 4. Press the brake pedal to deactivate the ACC system.	The ACC system deactivates and the vehicle returns to manual control.	The ACC system deactivates and the vehicle returns to manual control.	Passed
AEB_TC_001	AEB Activation	1. Drive the vehicle towards an obstacle or another vehicle at a constant speed. 2. Do not apply the brakes and allow the vehicle to approach the obstacle or other vehicle.	The AEB system detects the imminent collision and applies the brakes to prevent or mitigate the impact.	The AEB system detects the imminent collision and applies the brakes to prevent or mitigate the impact.	Passed
AEB_TC_002	AEB Activation with Low Visibility	1. Turn on the ACC system and enable low visibility mode 2. Drive the vehicle towards an obstacle or another vehicle at a constant speed in low visibility conditions. 3. Do not apply the brakes and allow the vehicleto approach the obstacle or other vehicle.	The AEB system detects the obstacle or other vehicle and applies the brakes to prevent or mitigate the impact.	The AEB system detects the obstacle or other vehicle and applies the brakes to prevent or mitigate the impact.	Passed
Ultrasonic_TC_001	Ultrasonic Sensor Warning	1. Drive the vehicle towards an obstacle or a wall. 2. Verify that the ultrasonic sensors detect the obstacle and provide an audible and visual warning to the driver.	The ultrasonic sensors detect the obstacle and provide an audible and visual warning to the driver.	The ultrasonic sensors detect the obstacle and provide an audible and visual warning to the driver.	Passed
IR_TC_001	IR Sensor Warning	1. Drive the vehicle on a highway. 2. Verify that the IR sensors detect objects in the vehicle's blind spots and provide an audible and visual warning to the driver.	The IR sensors detect objects in the vehicle's blind spots and provide an audible and visual warning to the driver.	The IR sensors detect objects in the vehicle's blind spots and provide an audible and visual warning to the driver.	Passed
LKS_TC_001	LKS Activation	1. Turn on the LKS system. 2. Drive the vehicle on a highway. 3. Gradually drift out of the lane without signaling.	The LKS system activates and provides corrective steering input to keep the vehicle centered in the lane.	The LKS system activates and provides corrective steering input to keep the vehicle centered in the lane.	Passed
LKS_TC_002	LKS Deactivation	1. Turn on the LKS system. 2. Drive the vehicle on a highway. 3. Turn off the LKS system using the controls. 4. Gradually drift out of the lane without signaling.	The LKS system deactivates and the vehicle returns to manual control.	The LKS system deactivates and the vehicle returns to manual control.	Passed
LKS_TC_003	Lane Detection with Solid Lines	1. Turn on the LKS system. 2. Drive the vehicle on a highway with solid lane markings. 3. Gradually drift out of the lane without signaling.	The LKS system detects the solid lane markings and keeps the vehicle centered in the lane.	The LKS system detects the solid lane markings and keeps the vehicle centered in the lane.	Passed
LKS_TC_004	Lane Detection with Dashed Lines	1. Turn on the LKS system. 2. Drive the vehicle on a highway with dashed lane markings. 3. Gradually drift out of the lane without signaling.	The LKS system detects the dashed lane markings and keeps the vehicle centered in the lane.	The LKS system detects the dashed lane markings and keeps the vehicle centered in the lane.	Failed
LKS_TC_005	Steering Correction	1. Turn on the LKS system. 2. Drive the vehicle on a highway. 3. Gradually drift out of the lane without signaling. 4. Allow the LKS system to apply steering corrections to bring the vehicle back into the lane.	The LKS system applies steering corrections to bring the vehicle back into the lane.	The LKS system applies steering corrections to bring the vehicle back into the lane.	Passed

LDW_TC_001	LDW Warning	1. Drive the vehicle at a constant speed in a lane. 2. Gradually drift out of the lane without signaling.	The LDW system provides an audible and visual warning to the driver.	The LDW system provides an audible and visual warning to the driver.	Passed
LDW_TC_002	LDW Warning with Solid Lines	1. Turn on the LDW system. 2. Drive the vehicle on a highway with solid lane markings. 3. Gradually drift out of the lane without signaling.	The LDW system provides a visual and audible warning to the driver.	The LDW system provides a visual and audible warning to the driver.	Passed
LDW_TC_003	LDW Warning with Dashed Lines	1. Turn on the LDW system. 2. Drive the vehicle on a highway with dashed lane markings. 3. Gradually drift out of the lane without signaling.	The LDW system provides a visual and audible warning to the driver.	The LDW system provides a visual and audible warning to the driver.	Passed
GUI_TC_001	GUI Connection with ECU	1. Run GUI on Raspberrypi 2. Connect it with STM32 through UART 3. Pushes the buttons of each mode	The car enters the mode selected through GUI	The car works as expected according to each mode functionality	Passed
GUI_TC_002	GUI Gauge value update	1. Run GUI on Raspberrypi 2. Enter the ACC mode 3. Sense the speed based on the distance	The needle of the gauge follows the current speed of the car	The needle doesn't change	Failed