**Test Plan for Action Camera**

**1. Power Button Functionality**

**Test Description**: Verify that pressing the power button turns the camera on and off.

**Test Procedure Steps**:

1. Press the power button once to turn the camera on.
   * **Expected Result**: The camera powers on, and a visible indicator (like an LED light) appears.
2. Press the power button again to turn the camera off.
   * **Expected Result**: The camera powers off completely with no further response.

**Pass Criteria**:

* The camera powers on and off without issues.
* There’s no delay in turning the camera on or off.

**Fail Criteria**:

* The camera doesn’t power on or off as expected.
* There’s a noticeable delay or malfunction.

**2. Shutter Button Functionality**

**Test Description**: Check that the shutter button works to start and stop video recording or take a photo.

**Test Procedure Steps**:

1. While in video mode, press the shutter button once.
   * **Expected Result**: The camera should begin recording a video, and the recording indicator (e.g., a blinking light) should be visible.
2. Press the shutter button again to stop recording.
   * **Expected Result**: The recording stops, and the video file is saved successfully.
3. Switch the camera to still image mode using the mode switch button.
   * **Expected Result**: The camera should switch to still image capture mode.
4. Press the shutter button to take a photo.
   * **Expected Result**: The camera captures a clear image, and the photo is saved.

**Pass Criteria**:

* The shutter button works correctly in both video and still image modes, starting and stopping recording and taking clear photos.

**Fail Criteria**:

* The shutter button does not start or stop recording, or it fails to capture photos properly.

**3. Mode Switch Button (Video/Still Image)**

**Test Description**: Test the mode switch button to toggle between video and still image modes.

**Test Procedure Steps**:

1. Press the mode switch button to switch to video mode.
   * **Expected Result**: The camera switches to video mode, displaying video-specific settings.
2. Press the mode switch button again to switch back to still image mode.
   * **Expected Result**: The camera switches to still image mode, displaying photo-specific settings.

**Pass Criteria**:

* The camera switches smoothly between modes without any delays.

**Fail Criteria**:

* The camera fails to switch between modes, or there’s an extended delay.

**4. Battery Life (Standby)**

**Test Description**: Verify that the camera’s battery lasts for 10 hours in standby mode.

**Test Procedure Steps**:

1. Fully charge the camera.
   * **Expected Result**: The camera should be fully charged and ready for testing.
2. Leave the camera on standby mode.
   * **Expected Result**: The camera should stay in standby mode for 10 hours.
3. Observe when the camera powers off automatically.
   * **Expected Result**: The camera powers off after 10 hours of standby.

**Pass Criteria**:

* The camera lasts at least 10 hours in standby mode without shutting off prematurely.

**Fail Criteria**:

* The camera shuts off before 10 hours.

**5. Battery Life (Filming)**

**Test Description**: Verify that the camera records video for 4 hours on a full battery.

**Test Procedure Steps**:

1. Fully charge the camera.
   * **Expected Result**: The camera is fully charged.
2. Start a video recording.
   * **Expected Result**: The camera starts recording without issues.
3. Observe when the battery runs out.
   * **Expected Result**: The camera should stop recording automatically after 4 hours of filming.

**Pass Criteria**:

* The camera records video for 4 hours without interruption due to battery depletion.

**Fail Criteria**:

* The camera stops recording before 4 hours.

**6. Water Resistance (1m Depth)**

**Test Description**: Test the camera's functionality at 1m underwater.

**Test Procedure Steps**:

1. Submerge the camera underwater to a depth of 1m.
   * **Expected Result**: The camera should remain fully functional underwater.
2. Leave the camera submerged for 30 minutes.
   * **Expected Result**: The camera should not show signs of water ingress or malfunction.
3. Remove the camera from the water and check functionality.
   * **Expected Result**: The camera should power on and work as expected without water damage.

**Pass Criteria**:

* The camera remains functional after being submerged in water to 1m depth for 30 minutes.

**Fail Criteria**:

* The camera malfunctions or shows signs of water ingress.

**7. Water Resistance (10m Depth)**

**Test Description**: Verify the camera's functionality at 10m underwater.

**Test Procedure Steps**:

1. Submerge the camera underwater to a depth of 10m.
   * **Expected Result**: The camera should function properly underwater.
2. Leave the camera submerged for 30 minutes.
   * **Expected Result**: No water ingress or malfunction should occur.
3. Remove the camera from the water and check functionality.
   * **Expected Result**: The camera should still function normally after being removed from the water.

**Pass Criteria**:

* The camera remains functional after being submerged to 10m depth for 30 minutes.

**Fail Criteria**:

* The camera shows signs of water damage or fails to work properly.

**8. Water Resistance (100m Depth)**

**Test Description**: Test the camera’s functionality at 100m underwater.

**Test Procedure Steps**:

1. Submerge the camera underwater to 100m depth.
   * **Expected Result**: The camera should remain functional at this depth.
2. Leave the camera submerged for 30 minutes.
   * **Expected Result**: The camera should continue to work without any water ingress.
3. Remove the camera and verify it’s working.
   * **Expected Result**: The camera should work as expected after being removed from the water.

**Pass Criteria**:

* The camera remains fully functional after being submerged to 100m depth for 30 minutes.

**Fail Criteria**:

* Any signs of malfunction or water ingress after submersion.

**9. Vertical Drop (15m)**

**Test Description**: Drop the camera from a height of 15m to test its durability.

**Test Procedure Steps**:

1. Drop the camera from a height of 15m onto a soft surface.
   * **Expected Result**: The camera should remain intact with no visible damage.
2. Power on the camera after the fall.
   * **Expected Result**: The camera should power on without issues.
3. Inspect the camera for any visible damage.
   * **Expected Result**: The camera should have no visible cracks or damage.

**Pass Criteria**:

* The camera survives the fall without any significant damage.

**Fail Criteria**:

* The camera is damaged and doesn’t power on.

**10. Camera Lens Integrity**

**Test Description**: Verify that the camera lens is intact and undamaged.

**Test Procedure Steps**:

1. Inspect the lens for cracks, scratches, or other damage.
   * **Expected Result**: The lens should be free from any visible damage.
2. Test the camera’s ability to take clear photos and videos.
   * **Expected Result**: The camera should capture clear, undistorted photos and videos.

**Pass Criteria**:

* The lens is intact, and the camera captures clear images and videos.

**Fail Criteria**:

* The lens is cracked or scratched, affecting image quality.

**11. Button Sensitivity**

**Test Description**: Test the responsiveness of all buttons on the camera.

**Test Procedure Steps**:

1. Press the power, shutter, and mode switch buttons multiple times.
   * **Expected Result**: Each button should respond immediately without any delay or malfunction.

**Pass Criteria**:

* All buttons work without delay and respond as expected.

**Fail Criteria**:

* Any button becomes unresponsive or takes longer than expected to register a press.

**12. Display Visibility in Sunlight**

**Test Description**: Check how visible the display is when the camera is used in direct sunlight.

**Test Procedure Steps**:

1. Turn on the camera and use it in direct sunlight.
   * **Expected Result**: The display should remain clearly visible and readable, even in bright sunlight.

**Pass Criteria**:

* The display is clear and readable in direct sunlight.

**Fail Criteria**:

* The display is hard to read due to glare or fading in the sunlight.

**13. Camera Startup Time**

**Test Description**: Verify the time it takes for the camera to power on and be ready for use.

**Test Procedure Steps**:

1. Press the power button to turn on the camera.
   * **Expected Result**: The camera should be ready to use within 5 seconds.

**Pass Criteria**:

* The camera starts up within 5 seconds.

**Fail Criteria**:

* The camera takes longer than 5 seconds to start up.

**14. Camera Mode Switching Speed**

**Test Description**: Test how quickly the camera switches between video and still image modes.

**Test Procedure Steps**:

1. Switch from still image mode to video mode.
   * **Expected Result**: The switch should happen within 2 seconds.
2. Switch from video mode back to still image mode.
   * **Expected Result**: The switch should happen within 2 seconds.

**Pass Criteria**:

* Mode switching takes less than 2 seconds.

**Fail Criteria**:

* Mode switching takes longer than 2 seconds.

**15. Audio Quality in Video Mode**

**Test Description**: Check the quality of audio recorded in video mode.

**Test Procedure Steps**:

1. Record a video that includes sound.
   * **Expected Result**: The video should capture clear, audible sound without distortion.
2. Play back the recorded video and listen to the audio.
   * **Expected Result**: The audio should be clear, without noise or distortion.

**Pass Criteria**:

* The audio is clear and audible without distortion.

**Fail Criteria**:

* The audio is distorted, muffled, or difficult to hear.