**List of Test Cases**

| **Test Case ID** | **Description** | **Executed?** | **Status** | **Notes** |
| --- | --- | --- | --- | --- |
| **1** | **Normal Call Workflow**: Test a normal call from one phone to another, including picking up, dialing, connecting, and hanging up. | Yes | Pass | Verified normal call flow with expected output messages. |
| **2** | **Conference Call Workflow**: Test adding a third phone to an ongoing call and check behavior when the original caller hangs up. | Yes | Pass | Tested multiple states during conference setup and after disconnecting. |
| **3** | **Call Transfer Workflow**: Test transferring a call to a third party and ensure the transfer completes with correct states. | Yes | Pass | Verified transfer behavior and checked states of involved parties. |
| **4** | **Busy Signal Test**: Test calling a phone that is already on a call to ensure the caller hears a busy signal. | Yes | Pass | Confirmed that busy signal is provided when calling an engaged phone. |
| **5** | **Illegal Phone Number Test**: Test calling an invalid phone number to confirm the system responds with a denial. | Yes | Pass | Tested with invalid phone numbers; verified that denial is issued. |
| **6** | **Onhook Command Without Offhook**: Test calling a phone without going offhook to check if the caller hears silence. | Yes | Pass | Confirmed silence is output if calling without going offhook first. |
| **7** | **Offhook While Already Offhook**: Test going offhook when already offhook and ensure no action is taken. | Yes | Pass | Verified that no additional action occurs on multiple offhook attempts. |
| **8** | **Maximum Conference Participants**: Test attempting to add more than two participants in a conference call to trigger a denial. | Yes | Pass | Verified denial response when exceeding conference participant limit. |
| **9** | **Status Command Test**: Test the status command in different stages (idle, in-call, conference) to ensure correct status output. | Yes | Pass | Confirmed that the status reflects accurate information for each stage. |
| **10** | **Invalid Command Test**: Test entering an undefined command to ensure the system responds with an "Invalid command" message. | Yes | Pass | Verified invalid commands trigger appropriate message response. |
| **11** | **Invalid Command Sequence: Issue a command sequence that doesn't follow the correct order (e.g., call without offhook) to verify if the system maintains correct behavior (hears silence).** | Yes | Pass | Confirmed the system outputs silence when trying to call without offhook. |
| **12** | **Attempted Re-Conference Call: Attempt to start another conference with a phone already in a conference call to see if the system denies the action.** | Yes | Pass | Verified that the system issues a denial when a phone tries to initiate a new conference while already in one. |
| **13** | **Call While Engaged in Conference: Attempt to call a phone that is already part of a conference to ensure the caller hears a busy signal.** | Yes | Pass | System correctly returned a busy signal when calling a phone in a conference. |
| **14** | **Boundary Test - Maximum Phone Entries: Load the maximum number of 20 phone entries and test basic commands to verify performance and response accuracy at capacity.** | No | N/A | Boundary test to check max capacity of 20. |
| **15** | **Invalid Characters in Commands: Test commands with invalid characters (e.g., symbols or extra spaces) to see if the system recognizes and rejects them with an "Invalid command" response.** | Yes | Pass | Confirmed the system provides an error message for malformed or extra-character commands. |
| **16** | **Idle Status Check: Run the status command when no phones are in use to confirm it outputs that all phones are idle.** | Yes | Pass | Status command correctly indicates that all phones are idle. |
| **17** | **Simultaneous Commands: Simulate multiple commands issued quickly (e.g., one phone calling another immediately after hanging up) to ensure the system doesn’t produce unexpected behaviors.** | No | N/A | Haven’t had any issues yet with using the system quickly. |
| **18** | **Sequential Calls: Place multiple calls in sequence (e.g., phone1 to phone2, hang up, then phone1 to phone3) to ensure state resets correctly after each call.** | Yes | Pass | Verified that phones reset to the correct state after each call ends. |
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