

Ascom i62 was first tested on July 30<sup>st</sup>, 2014 with firmware version 5.2.8 on Call Manager 10.5. When testing we ran into fail test case 6.4.2, because of this the whole test failed and was not able to get its certification. Between tekVizion and Cisco we created a regression test plan for Ascom. Ascom fixed the previous issue and came out with i62 5.3.2 firmware, this firmware was used for the regression test on Call Manager 10.5. The regression test plan was tested on January 23<sup>rd</sup>, 2015 and passed. Below you will see the original test report followed by the regression test report.

# IVT Regression Test Plan and Report for Ascom i62

Test Result	Pass
Test Date	January 23, 2015
Product Name	I62
Product Version #	Firmware= 5.3.2
Call Manager Version X.X(x)	10.5.1
Partner Main Support Email	Karl-Magnus.Olsson@ascom.se

## Revision History

Revision	Author	Date	Comment
2.3	Craig Newman	August 7 <sup>th</sup> 2014	Updates after review with Cisco
2.4	Felipe Escobar	October 2, 2014	Regression Test Plan
2.5	Cherie Reed	October 15, 2014	Revised for regression and added Cisco required test cases
2.6	Felipe Escobar	January 23, 2015	Regression Test Report

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	As one of the first VoWiFi handsets operating on an 802.11n network, the Ascom i62 is truly unique. It supports deployment of voice over the WiFi network without degrading the performance of an existing .11n network capacity. As well as trouble-free WiFi vendor interoperability and scalability, the Ascom Solution has the capacity to integrate and communicate with a comprehensive range of external sources. The Ascom i62 integrates to the CUCM via SIP and offers a feature-rich wireless telephony solution. When it comes to system administration, our web-based Centralized Management system offers many benefits. Over-the-air updates reduce the workload of administrators and centrally stored settings simplify phone replacement and shared handset scenarios. As well as representing continuity and peace of mind for administrators and handset users, this provides increased value.....	18
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## 1 Executive Summary

The following summarizes tekVizion's findings:

- Test Case Failures:
  - 2.2.7: Call is disconnected 1800s after primary node goes down. The session timer expires value 1800s set by CUCM is never refreshed.
  
- Test Cases that are Not Tested:
  - 2.1.2 & 2.1.6: Testing I62 phones not IP Dect.

## 2 Introduction

This document is a regression test plan of Ascom i62 that was tested previously on July 30<sup>th</sup>, 2014. When previously tested the following test case failed:

Subscriber Outage: place station-to-station call, isolate Subscriber (disconnect network cable), place one more station-to-station call, reconnect Subscriber network cable, place another station-to-station call	Confirm all calls are completed.	<b>Fail</b>	<b>Failed to fallback: when the Subscriber(Primary to DUT) is down the active call stays up and after the call is disconnected, the DUT gets registered to secondary node but when primary comes back online the active call with secondary is getting disconnected and there is a down time before the calls are successful</b>
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Ascom has created a fix for the issue identified. The purpose of this test plan is to validate resolution of the issue(s) identified via an exception through Cisco approved regression testing. Upon completion, this document will be added as an addendum to the original report with notes referring to it and the exception made by Cisco in the Executive Summary section of the original report.

*Note: All test specific information is contained in the original test document, this document contains regression cases and results only.*

## 2.1 Basic Call Scenarios

The intention of this section is to verify the basic operation of the new version under test.

Test Case	Description	Expected Result	Pass/Fail	Comments
<b>Station to Station Calls</b>				
2.1.1	DUT to DUT2, originator releases call	Two-way voice path, call released properly	Pass	
2.1.2	IP-DECT to IP-DECT, originator releases call (KPML)	Two-way voice path, call released properly	N/T	Testing I62 phones not IP Dect.
2.1.3	DUT to CSP, originator releases call	Two-way voice path, call released properly	Pass	
2.1.4	DUT to CSIPP, originator releases call	Two-way voice path, call released properly	Pass	
<b>PSTN Calls</b>				
2.1.5	DUT to PSTN, originator releases call	Two-way voice path, call released properly	Pass	
2.1.6	IP-DECT to PSTN, originator releases call (TLS/SRTP)	Two-way voice path, call released properly	N/T	Testing I62 phones not IP Dect.

Test Case	Description	Expected Result	Pass/Fail	Comments
<b>Call Forward All (CFA) (Note: Applicable to devices that send 3xx redirect)</b>				
2.1.7	DUT to DUT2, Call forwarded to DUT3, Endpoint releases call	Two-way audio, call released properly	Pass	
<b>3-Way Conference</b>				
2.1.8	DUT to DUT2, Originator is the bridge( DUT bridges the call with DUT3 ) a) Originator drops out of the conference first b) DUT2 drops out of conference first c) DUT3 drops out of conference first	DUT2 receives TOH/silence DUT receives ring back, 3-way audio  Other 2 parties remain on conference with 2-way audio.	Pass	A) N/S Originator cannot dropout of conference leaving the other parties on call.



Test Case	Description	Expected Result	Pass/Fail	Comments
<b>Call Forward All (CFA) (Note: Applicable to devices that send 3xx redirect)</b>				
2.1.9	DUT to DUT2, Call forwarded to DUT3, Endpoint releases call	Two-way audio, call released properly	Pass	Same as TC 2.1.7.
2.1.10	DUT to DUT2, Call forwarded to DUT3, DUT abandons call	Terminator stops ringing, call released properly	Pass	
<b>3-Way Conference</b>				
2.1.11	DUT to DUT2, Originator is the bridge( DUT bridges the call with DUT3 )  d) Originator drops out of the conference first  e) DUT2 drops out of conference first  f) DUT3 drops out of conference first	DUT2 receives TOH/silence DUT receives ring back, 3-way audio  Other 2 parties remain on conference with 2-way audio.	Pass	Same as TC 2.1.8.

## 2.2 Specific Regression Tests

These tests are specific to the area of change.

Test Case	Description	Expected Result	Pass/Fail	Comments
2.2.1	<p>Primary Subscriber Outage:</p> <p>Place station-to-station call, isolate Subscriber (disconnect Primary UCM network cable)</p> <p>End Call.</p> <p>Make new call when device registers with Secondary UCM</p>	<p>Confirm call stays up until caller or called party disconnects.</p> <p>Upon call end, device registers with Primary UCM.</p> <p>Call completed after registration to Secondary UCM.</p>	Pass	<p>Note time to register to secondary UCM.</p> <p>On average 30 seconds to 2 minutes.</p>
2.2.2	<p>Primary UCM Subscriber reinstated:</p> <p>Place station-to-station call while device is registered to secondary UCM</p> <p>While call is in conversation state – re-connect Primary UCM Sub.</p> <p>After Primary UCM has all previous devices registered and is fully back in service, disconnect call.</p> <p>Place new call.</p>	<p>Call stays in conversation state during primary recovery and until caller/called disconnect.</p> <p>After disconnect, device re-registers with primary.</p> <p>New call completes.</p>	Pass	<p>Note time to register to Primary UCM.</p> <p>On average 1 to 2 minutes.</p>
2.2.3	<p>Primary and Secondary UCM failure. Disconnect Primary and secondary UCM from the network.</p> <p>Reconnect both.</p> <p>When device re-registers – make call.</p>	<p>Device loses registration.</p> <p>Device registers with first UCM online, and finally returns to Primary.</p> <p>Call completes normally.</p>	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
2.2.4	Device Network Outage: Disconnect device from network. Disconnect Primary UCM from network. Connect Device to network. Make Call. Connect Primary UCM to network. End last call. Make new call	Device registers to Secondary UCM Call completes normally and stays in conversation state until user ends. New call completes.	Pass	Note time to register to Primary UCM. On average 1 to 2 minutes.
2.2.5	Device Network Outage: Disconnect device from network. Disconnect Primary and Secondary UCM from network. Connect Device to network. Connect Secondary UCM to network. Make call Connect Primary UCM to network End first call Allow re-registration Make second call	Device registers to Secondary UCM Call completes normally and stays in conversation state until user ends. When Primary UCM is online and call is ended, device moves to Primary. New call completes.	Pass	Note time to register to Primary UCM. On average 1 to 3 minutes.

Test Case	Description	Expected Result	Pass/Fail	Comments
2.2.6	<p>Create network bounce condition:</p> <p>Make call</p> <p>Drop, connect, drop, connect primary UCM while call is in conversation state.</p> <p>Wait until primary fully recovers and end call.</p>	Call completes and is not ended until user ends.	Pass	
2.2.7	<p>Long duration call – with Sub failure:</p> <p>Start call with device registered to Primary Sub.</p> <p>Disconnect Primary sub from network.</p> <p>Leave in this state for 1 hour.</p> <p>Reconnect Primary</p>	Call stays in conversation state.	Fail	Call is disconnected 1800s after primary node goes down. The session timer expires value 1800s set by CUCM is never refreshed.
2.2.8	<p>Long duration call – with Sub failure:</p> <p>Disconnect primary Sub, allow device to register with secondary Sub.</p> <p>Start call with device registered to Secondary Sub.</p> <p>Re-sconnect Primary sub to network.</p> <p>Leave call in conversation state for 1 hour.</p> <p>End Call.</p>	<p>Call stays in conversation state.</p> <p>Device re-registers with primary Sub.</p>	Pass	

### 3 Appendix

Email from Cisco that proves test case 2.2.7 is a fail test case but that the overall test is still a pass:



Re Re Certification  
Quote.msg



# Detailed IVT Test Plan and Report for Ascom i62 phones with CUCM 10.5

Test Result	<b>Fail</b>
Test Date	30 <sup>th</sup> July 2013
Product Name	<b>Ascom i62</b>
Product Version # (must be generally available)	<b>5.2.8</b>
Call Manager Version X.X(x)	<b>10.5</b>
Product Type (Billing, Voice Recording, phone apps etc.):	<b>SIP End Point</b>
API/Protocol(s) Used	<b>SIP</b>
Developer Services Contract #	<b>91326703</b>
Partner IVT Contact Name:	Gert Wallin
Partner IVT Contact Phone:	+46 31 559514
Partner IVT Contact Email:	<a href="mailto:gert.wallin@ascom.se">gert.wallin@ascom.se</a>
IVT Lab Location (EMEA or US):	Richardson, TX,USA
Partner Main Support Number	+ 46 31 55 94 50
Partner Main Support Email	<a href="mailto:support@ascom.se">support@ascom.se</a>

## Revision History

Revision	Author	Date	Comment
1.0	Gerry Pearson	09/12/2008	Initial draft for Cisco review
1.1	Sonu Sijin	07/11/2012	Modified existing test cases to add more detailed description, added missing scenarios
1.2	Ameeta Thukral	07/12/2012	Added UCM9.0 feature - native call queuing related test scenarios.
1.3	Ameeta Thukral	07/17/2012	Incorporated internal review comments
1.4	Tony Nally/ Cherie Reed	08/09/2012	Test plan reviewed by Cisco
1.5	Ameeta Thukral/Sonu Sijin	08/17/2012	Incorporated the review comments
1.6	Neena Pemmaraju	08/20/2012	Updated template
1.7	Neena Pemmaraju	08/27/2012	Updated template based on feedback from Cisco
2.0	Ameeta Thukral	09/21/2012	Updating version to 2.0 based after Cisco review and approval.
2.1	Suresh Kadiyala	4/1/2013	Modified Native call queuing test cases.
2.2	Suresh Kadiyala	7/30/2014	Test Report
2.3	Craig Newman	8/7/2014	Updates after review with Cisco

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## 4 Introduction

This document is the detailed Interoperability Verification Test Plan and Report for Cisco Unified Communications Manager 10.5 and Ascom i62 phone version 5.2.8.

### 4.1 Entry Criteria

Before testing can begin 3<sup>rd</sup> party partner shall run this entire test plan in their lab and verify that results. If there are any test cases not supported, not applicable or are not successful, the partner should consult with tekVizion test team. Once testing has been initiated, the device under test is considered frozen for certification testing purposes. No software/firmware load can be changed during the testing period. However, configuration can be modified to accommodate testing.

### 4.2 Exit Criteria

To be deemed certified as configured, the devices under test should have zero severity 1 and severity 2 defects and up to two severity 3 defects detected.

If a severity 1 or 2 failure occurs, irrespective of whom is responsible for the problem (Cisco or the 3rd party product), the testing is considered unsuccessful.

Table 1 Defect Severity Level Description

Severity	Description
1	Catastrophic - Common circumstance causes the entire system or a major subsystem to stop working affects other areas/devices no workaround
2	Severe- Important functions are unusable does not affect other areas/devices no workaround
3	Moderate - Very unusual circumstances cause failure minor feature doesn't work at all there's a low impact workaround

If any tests fail, the configuration will be verified to resolve the issue. If the issue cannot be resolved, the tester will attempt to continue testing if possible. If the testing cannot proceed without this problem being resolved, the testing is considered complete and the devices under test are deemed not certified.

The following procedures are followed when testing fails:

- Preliminary analysis is made to determine the source of the problem. If the problem is related to a device under test, then the problem is reported to that partner. If the problem is deemed Cisco related, the problem will be reported to Cisco, but the partner is responsible to open a TAC case with Cisco developer services. Partner should provide the TAC case number to the test team so they can document it in the report.

- If testing can continue past this failure, the other test cases will be tested and verified for pass or fail. If the testing cannot progress past this problem, testing will be halted and a final test report submitted to Partner and Cisco.
- All problems and resolutions encountered during testing are documented in the final test report.
- If a severity 1 failure occurs, irrespective of whom is responsible for the problem (Cisco or the 3<sup>rd</sup> party product), the testing is considered unsuccessful.

Any deviations of the test execution or problem acceptance are documented in the test report.

**Note:** *The Cisco approval process may increase/decrease the severity level of the defect after the test cycle, if considered necessary.*

## 5 Product Overview

As one of the first VoWiFi handsets operating on an 802.11n network, the Ascom i62 is truly unique. It supports deployment of voice over the WiFi network without degrading the performance of an existing .11n network capacity. As well as trouble-free WiFi vendor interoperability and scalability, the Ascom Solution has the capacity to integrate and communicate with a comprehensive range of external sources. The Ascom i62 integrates to the CUCM via SIP and offers a feature-rich wireless telephony solution. When it comes to system administration, our web-based Centralized Management system offers many benefits. Over-the-air updates reduce the workload of administrators and centrally stored settings simplify phone replacement and shared handset scenarios. As well as representing continuity and peace of mind for administrators and handset users, this provides increased value.

## 6 Executive Summary

*Short summary of the test effort, summarizing tekVizion's findings during the testing*

The following summarizes tekVizion's findings:

- Test Case Failures:
  - Fallback: Test case 6.4.2 fails. After a failover from the Primary Subscriber to the Secondary Subscriber, if a call remains in progress when the Primary Subscriber is restored it will be dropped. Users that complete their calls on the Secondary Subscriber will successfully establish future calls on the Primary server. Similarly, if a call is dropped on Fallback, a user's next call attempt will use the restored Primary after a short time-out. This is the current design of the DUT. After review with Cisco, this issue is deemed a Sev2
- Features Not Supported:
  - SIP URI Dialing
  - In band DTMF
  - Semi-Unattended transfer from DUT
  - Mid-call codec renegotiation

- Call park
- Mobile Handoff with mobile communicator
- Test Cases that are Not Applicable:
  - Multiple lines per phone
  - Call Forking
  - DUT as Hotline
  - Hlog key on DUT
- Test Cases that were Not Executed:
  - None
- Observations:
  - DUT will accept the codec set by the CUCM, will not negotiate the codec that is set on the DUT.
  - In a 3 way conference the originator can drop only one call at a time
  - Two SIP proxies can be configured on the DUT settings as primary and secondary and if the primary goes down it fails over to secondary. Secondary can be another CUCM node or SRST router.

## 7 Features Tested

The following features are tested as part of this test plan.

Unified Communications Manager Feature	RFC Reference	To Be Tested?
Call Hold and Resume	3261, 3264, 2327, 1889	Yes
Transfer Unattended	3261, 3264, 2327, 1889, 3515, 3420, 3265, 3892	No
Transfer Attended	3261, 3264, 2327, 1889, 3515, 3420, 3265, 3892, 3891	Yes
Call Forwarding All	3261, 3264, 2327, 1889	Yes
Call Forwarding No Answer	3261, 3264, 2327, 1889	Yes
Call Forwarding Busy	3261, 3264, 2327, 1889	Yes
Multiple Calls per Line	3261, 3264, 2327, 1889	Yes
Incoming Call Screening	3261, 3264, 2327, 1889, 3725	No
Outgoing Call Screening	3261, 3264, 2327, 1889, 3725	No
Calling and Connected Line ID	3261, 3264, 2327, 1889, Remote Party ID	Yes
Calling and Connected Name ID	3261, 3264, 2327, 1889, Remote Party ID	Yes
Message Waiting Indication	3261, 3264, 2327, 1889, 3842	Yes
Three-Way Conference Calling	3261, 3264, 2327, 1889	Yes
Call Forking	3261, 3264, 2327, 1889	No
Speed Dialing	3261, 3264, 2327, 1889	Yes
Multiple Lines per Phone	3261, 3264, 2327, 1889	No

## 7.1 Items Not Tested

Features that are specific to the internals of the 3<sup>rd</sup> party product or any features not listed will not be tested.

MOH

Call Forking

Shared Line

## 7.2 Assumptions

- Interoperability of 3<sup>rd</sup> party products – Testing will cover only features in 3<sup>rd</sup> party products that result in events to and/or from the CUCM or specified PSTN gateway.
- Call Processing – PSTN interface and Cisco SIP call processing traffic for all testing (excluding manual sampling run during traffic) may be generated using simulators.

## 8 Test Environment

### 8.1 Administration, Testing and Debugging tools

*Tools used/required – Identify any tools required by 3<sup>rd</sup> party (partner under test). Also add Trace and Debug settings here.*

Table 2 Administration, Testing and Debugging Tools

Product Name	Version	Type	Purpose	Units	Notes
<b>Test Tools</b>					
<i>SIM Client</i>					Lab Provided
<b>3rd Party Tools</b>					
N/A					
<b>Debug Tools</b>					
<i>Wireshark</i>	<i>1.10.5</i>	<i>Protocol trace</i>	<i>Debug</i>	<i>1</i>	Lab Provided

### 8.2 Equipment Requirements

Table below identifies all equipment/versions used for in this IVT.

Table 3 Equipment and Product Information

Product	Version	Type	Purpose	Units	Notes
<b>Cisco Products</b>					
Cisco Unified Call Manager	10.5	MCS7835- I3	Publisher and 2 Subscriber nodes	3	Lab Provided
Cisco 3845 (PSTN GW)	12.4(24)T	IOS	PSTN Gateway	1	Lab Provided

Product	Version	Type	Purpose	Units	Notes
3rd Party Products					
Ascom i62	5.2.8	Mobile handset (VoWiFi)	Telephone	3	

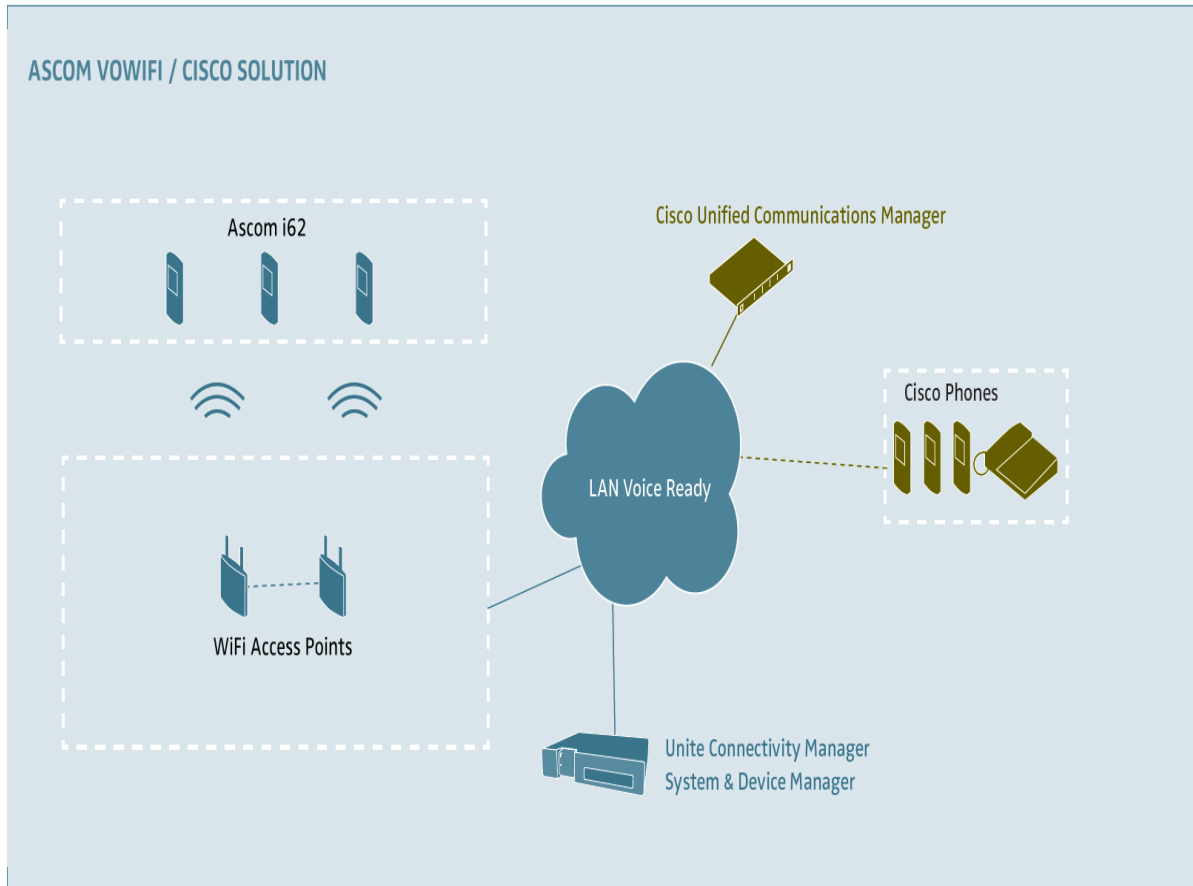
### 8.3 Cisco Phones

Table 4 Cisco Phones Information

Cisco Phone Model	Phone Firmware Version	Protocol	POE/ Power	Units	Notes
<i>Cisco 8961</i>	<i>sip8961.9-4-1-9</i>	<i>SIP</i>	<i>POE</i>	<i>1</i>	Lab Provided
<i>Cisco 7961</i>	<i>SCCP41.9-3-1SR4-1S</i>	<i>SCCP</i>	<i>POE</i>	<i>1</i>	Lab Provided
<i>Cisco 7960</i>	<i>P0S3-8-12-00</i>	<i>SIP</i>	<i>POE</i>	<i>1</i>	Lab Provided
<i>Cisco 7975</i>	<i>SCCP75.9-3-1SR4-1S</i>	<i>SCCP</i>	<i>POE</i>	<i>1</i>	Lab Provided

## 8.4 Deployment Architecture

Figure 1 – Deployment Architecture





## 8.5 Test Environment Architecture

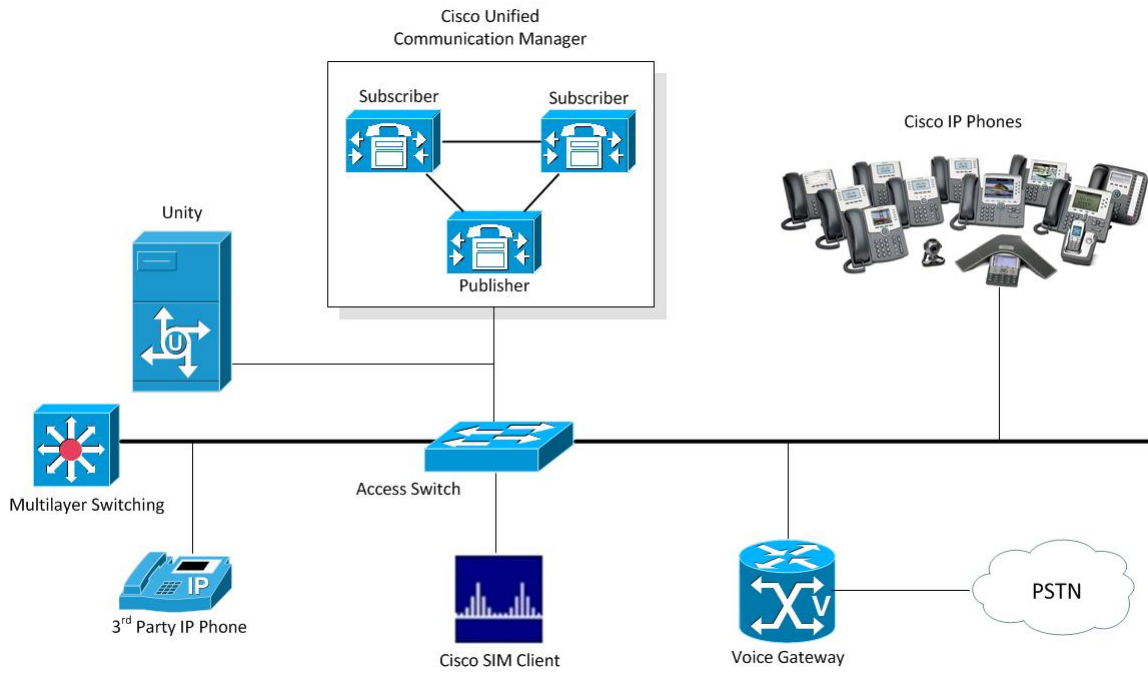


Figure 2 – Test Environment

## 9 Test Cases

This section details the tests that will be performed during the testing period.

*Note: Unless otherwise noted, all tests will be run with a background load (80K BHCA of basic calls) on the CUCM.*

Table 5 – Test Results Legend

Result	Description
Pass	The test case passed with no exceptions
Fail	The test case failed – details of the failure are noted in the Comments column
N/A	The test case is not applicable to the product under test. Justification must be provided in the Comments column.
N/S	Not supported. While the feature tested by this test case generally would be considered a standard feature for this product category, this specific product (or this specific release) does not support the feature.
N/T	Not tested. The feature is supported by the product under test, but external factors (lab configuration, e.g.) prevented execution of the test. Justification must be provided in the Comments column.
Blocked	Other test case failures prevented the execution of this test. Reference to the corresponding failed test case must be provided in the Comments column.

**Note:**

- DUT – Device Under Test
- CSP – Cisco Skinny Phone
- CSIPP – Cisco SIP Phone
- Treatment - Treatment may be an announcement which plays for example, ‘The number you have dialed does not exist, please check the number and dial again ‘ or it could be a busy / disconnect tone, etc.

## 9.1 Basic Call Scenarios

The intention of this section is to verify that basic calls can be properly handled between the SIP Phone under test and Cisco Unified Communications Manager. This test includes the validation of the different call stages from setup, alerting, connecting, and tear down, as well as different call scenarios between end points, IP server local or remote extensions and calls to and from PSTN, Cisco SIP and SCCP phones.

Test Case	Description	Expected Result	Pass/Fail	Comments
<b>Station to Station Calls</b>				
9.1.1	DUT to DUT2, originator releases call	Two-way voice path, call released properly	Pass	
9.1.2	DUT to DUT2, originator abandons call	Terminator stops ringing, originator released properly	Pass	
9.1.3	DUT to DUT2, terminator releases	Two-way voice path, call released properly	Pass	
9.1.4	DUT to DUT2, terminator busy	Busy tone heard at originator	Pass	Call Waiting Disabled
9.1.5	DUT to DUT2, unanswered call	Ringing at terminator, ring back at originator, originator released properly	Pass	
9.1.6	DUT, call to unknown number(an invalid number)	Treatment heard at originator, originator released properly	Pass	
9.1.7	DUT to CSP, originator releases call	Two-way voice path, call released properly	Pass	
9.1.8	DUT to CSP, terminator releases call	Two-way voice path, call released properly	Pass	
9.1.9	CSP to DUT, originator abandons call	Terminator stops ringing, originator released properly	Pass	
9.1.10	CSP to DUT, terminator releases	Two-way voice path, call released properly	Pass	
9.1.11	DUT to CSP, terminator busy	Busy tone heard at originator	Pass	Call Waiting Disabled
9.1.12	DUT to CSP, unanswered call	Ringing at terminator, ring back at originator, originator released properly	Pass	
9.1.13	DUT to CSIPP, originator releases	Two-way voice path, call released properly	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
	call			
9.1.14	DUT to CSIPP, terminator releases call	Two-way voice path, call released properly	Pass	
9.1.15	CSIPP to DUT, originator abandons call	Terminator stops ringing, originator released properly	Pass	
9.1.16	CSIPP to DUT, terminator releases	Two-way voice path, call released properly	Pass	
9.1.17	DUT to CSIPP, terminator busy	Busy tone heard at originator	Pass	Call Waiting Disabled
9.1.18	DUT to CSIPP, unanswered call	Ringing at terminator, ring back at originator, originator released properly	Pass	
<b>SIP URI Dialing :CUCM 9.0 feature : Devices that support URI receive both DN and URI / Devices that don't support URI receive the DN only</b>				

Test Case	Description	Expected Result	Pass/Fail	Comments
<b>SIP URI Dialing: Intra-Cluster</b>				
9.1.19	DUT to DUT2: SIP URI Dialing. Originator releases call.	DUT2 : receives both DUT DN and URI./ receive the DN only  2-way voice path established successfully.  Call released successfully.	N/S	
9.1.20	DUT to CSIPP : SIP URI Dialing Originator releases call.	CSIPP : receives both DUT DN and URI./ receive the DN only  2-way voice path established successfully.  Call released successfully.	N/S	
9.1.21	CSIPP to DUT : SIP URI Dialing Originator releases call.	CSIPP : receives both DUT DN and URI./ receive the DN only  2-way voice path established successfully.  Call released successfully.	Pass	Only DN is received to DUT
<b>SIP URI Dialing – Inter-cluster</b>				
9.1.22	DUT to DUT2: SIP URI Dialing.- DUT2 in different cluster Originator releases call.	DUT2 : receives both DUT DN and URI./ receive the DN only  2-way voice path established successfully.  Call released successfully.	N/S	
9.1.23	DUT to CSIPP : SIP URI Dialing- CSIPP in different cluster Originator releases call.	CSIPP : receives both DUT DN and URI./ receive the DN only  2-way voice path established	N/S	

Test Case	Description	Expected Result	Pass/ Fail	Comments
		successfully. Call released successfully.		

Test Case	Description	Expected Result	Pass/Fail	Comments
9.1.24	CSIPP to DUT : SIP URI Dialing - DUT in different cluster  Originator releases call.	DUT : receives both CSIPP DN and URI./ receive the DN only  2-way voice path established successfully.  Call released successfully.	N/S	
<b>PSTN Calls</b>				
9.1.25	DUT to PSTN, originator releases call	Two-way voice path, call released properly	Pass	
9.1.26	DUT to PSTN, originator abandons call	Terminator stops ringing, originator released properly	Pass	
9.1.27	DUT to PSTN, terminator releases	Two-way voice path, call released properly	Pass	
9.1.28	DUT to PSTN, terminator busy	Busy tone heard at originator	Pass	
9.1.29	DUT to PSTN, unanswered call	Ringing at terminator, ring back at originator, originator released properly	Pass	
9.1.30	DUT to PSTN, call to unknown number(an invalid number)	Treatment heard at originator, originator released properly	Pass	
9.1.31	PSTN to DUT, PSTN abandons call	Terminator stops ringing, originator released properly	Pass	
9.1.32	PSTN to DUT, terminator releases call	Two-way voice path, call released properly	Pass	
9.1.33	PSTN to DUT, terminator busy	Busy tone heard at originator	Pass	
9.1.34	PSTN to DUT, unanswered call	Ringing at terminator, ring back at originator, originator released properly	Pass	



Test Case	Description	Expected Result	Pass/Fail	Comments
<b>DTMF Using G.711 (in band)</b>				
9.1.35	DUT retrieves a voicemail, DUT releases call after sending DTMF tones	Voicemail retrieve successfully	N/S	
9.1.36	DUT retrieves a voicemail, voicemail releases call after receiving DTMF tones	Voicemail retrieve successfully	N/S	
<b>DTMF Using RFC 2833 (out of band)</b>				
9.1.37	DUT retrieves a voicemail, DUT releases call after sending DTMF tones	Voicemail retrieve successfully	Pass	
9.1.38	DUT retrieves a voicemail, voicemail releases call after receiving DTMF tones	Voicemail retrieve successfully	Pass	

## 9.2 Cisco Unified Communications Manager Feature Support

The goal of this section is to verify protocol interactions between the device under test and the Cisco Unified Communications Manager standards implementation. Focus is on feature call functionality, call control and other call information support interworking capabilities of the endpoint under test and the Cisco Unified Communications Manager version under test.

*Note: In all scenarios below involving DUT and CSIPP, the dialing will be SIP URI Dialing. If the third party endpoint does NOT support URI dialing, then DN will be used.*

Test Case	Description	Expected Result	Pass/Fail	Comments
<b>Call Forward All (CFA) (Note: Applicable to devices that send 3xx redirect)</b>				
9.2.1	DUT to DUT2, Call forwarded to DUT3, Endpoint releases call	Two-way audio, call released properly	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.2	DUT to DUT2, Call forwarded to DUT3, DUT3 releases call	Two-way audio, call released properly	Pass	
9.2.3	DUT to DUT2, Call forwarded to DUT3, DUT abandons call	Terminator stops ringing, call released properly	Pass	
9.2.4	DUT to DUT2, Call forwarded to DUT3, DUT3 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled.
9.2.5	PSTN to DUT, Call forwarded to DUT2, PSTN releases call	Two-way audio, call released properly	Pass	
9.2.6	PSTN to DUT, Call forwarded to DUT2, DUT2 releases call	Two-way audio, call released properly	Pass	
9.2.7	PSTN to DUT, Call forwarded to DUT2, PSTN abandons call	Terminator stops ringing, call released properly	Pass	
9.2.8	PSTN to DUT, Call forwarded to DUT2, DUT2 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT2.
9.2.9	DUT to CSP, Call forwarded to DUT2, DUT releases call	Two-way audio, call released properly	Pass	
9.2.10	DUT to CSIPP, Call forwarded to DUT2, DUT releases call	Two-way audio, call released properly	Pass	
9.2.11	DUT to CSP, Call forwarded to DUT2, DUT2 releases call	Two-way audio, call released properly	Pass	
9.2.12	DUT to CSIPP, Call forwarded to DUT2, DUT abandons call	Terminator stops ringing, call released properly	Pass	
9.2.13	DUT to CSP, Call forwarded to DUT2, DUT2 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT2

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.14	DUT to CSIPP, Call forwarded to DUT2, DUT2 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT2.
9.2.15	PSTN to DUT, Call forwarded to CSIPP, PSTN releases call	Two-way audio, call released properly	Pass	
9.2.16	PSTN to DUT, Call forwarded to CSP, CSP releases call	Two-way audio, call released properly	Pass	
9.2.17	PSTN to DUT, Call forwarded to CSIPP, PSTN abandons call	Terminator stops ringing, call released properly	Pass	
9.2.18	PSTN to DUT, Call forwarded to CSP, CSP is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on CSP
9.2.19	CSIPP to DUT, Call forwarded to DUT2, CSIPP abandons call	Terminator stops ringing, call released properly	Pass	
9.2.20	DUT to CSP, Call forwarded to CSSIP, CSSIP is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on CSIPP
9.2.21	DUT to CSIPP, Call forwarded to CSP, CSP is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on CSP
<b>Call Forward if Busy (CFB)</b>				
9.2.22	DUT to DUT2, Call forwarded to DUT3, Endpoint releases call	Two-way audio, call released properly	Pass	
9.2.23	DUT to DUT2, Call forwarded to DUT3, DUT3 releases call	Two-way audio, call released properly	Pass	
9.2.24	DUT to DUT2, Call forwarded to DUT3, DUT abandons call	Terminator stops ringing, call released properly	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.25	DUT to DUT2, Call forwarded to DUT3, DUT3 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT3
9.2.26	PSTN to DUT, Call forwarded to DUT2, PSTN releases call	Two-way audio, call released properly	Pass	
9.2.27	PSTN to DUT, Call forwarded to DUT2, DUT2 releases call	Two-way audio, call released properly	Pass	
9.2.28	PSTN to DUT, Call forwarded to DUT2, PSTN abandons call	Terminator stops ringing, call released properly	Pass	
9.2.29	PSTN to DUT, Call forwarded to DUT2, DUT2 is busy	Originator hears busy tone, call released properly	Pass	
9.2.30	DUT to CSP, Call forwarded to DUT2, DUT releases call	Two-way audio, call released properly	Pass	
9.2.31	DUT to CSIPP, Call forwarded to DUT2, DUT releases call	Two-way audio, call released properly	Pass	
9.2.32	DUT to CSP, Call forwarded to DUT2, DUT2 releases call	Two-way audio, call released properly	Pass	
9.2.33	DUT to CSIPP, Call forwarded to DUT2, DUT abandons call	Terminator stops ringing, call released properly	Pass	
9.2.34	DUT to CSP, Call forwarded to DUT2, DUT2 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT2
9.2.35	DUT to CSIPP, Call forwarded to DUT2, DUT2 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT2.
9.2.36	PSTN to DUT, Call forwarded to CSIPP, PSTN releases call	Two-way audio, call released properly	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.37	PSTN to DUT, Call forwarded to CSP, CSP releases call	Two-way audio, call released properly	Pass	
9.2.38	PSTN to DUT, Call forwarded to CSIPP, PSTN abandons call	Terminator stops ringing, call released properly	Pass	
9.2.39	PSTN to DUT, Call forwarded to CSP, CSP is busy	Originator hears busy tone, call released properly	Pass	CUCM sends a 404 Not found to the Gateway
9.2.40	CSIPP to DUT, Call forwarded to DUT2, CSIPP abandons call	Terminator stops ringing, call released properly	Pass	
9.2.41	DUT to CSP, Call forwarded to CSSIP, CSSIP is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on CSIPP
9.2.42	DUT to CSIPP, Call forwarded to CSP, CSP is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on CSP
<b>Call Forward if No Answer (CFNA)</b>				
9.2.43	DUT to DUT2, Call forwarded to DUT3, Endpoint releases call	Two-way audio, call released properly	Pass	
9.2.44	DUT to DUT2, Call forwarded to DUT3, DUT3 releases call	Two-way audio, call released properly	Pass	
9.2.45	DUT to DUT2, Call forwarded to DUT3, DUT abandons call	Terminator stops ringing, call released properly	Pass	
9.2.46	DUT to DUT2, Call forwarded to DUT3, DUT3 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT3
9.2.47	PSTN to DUT, Call forwarded to DUT2, PSTN releases call	Two-way audio, call released properly	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.48	PSTN to DUT, Call forwarded to DUT2, DUT2 releases call	Two-way audio, call released properly	Pass	
9.2.49	PSTN to DUT, Call forwarded to DUT2, PSTN abandons call	Terminator stops ringing, call released properly	Pass	
9.2.50	PSTN to DUT, Call forwarded to DUT2, DUT2 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT2
9.2.51	DUT to CSP, Call forwarded to DUT2, DUT releases call	Two-way audio, call released properly	Pass	
9.2.52	DUT to CSIPP, Call forwarded to DUT2, DUT releases call	Two-way audio, call released properly	Pass	
9.2.53	DUT to CSP, Call forwarded to DUT2, DUT2 releases call	Two-way audio, call released properly	Pass	
9.2.54	DUT to CSIPP, Call forwarded to DUT2, DUT abandons call	Terminator stops ringing, call released properly	Pass	
9.2.55	DUT to CSP, Call forwarded to DUT2, DUT2 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT2
9.2.56	DUT to CSIPP, Call forwarded to DUT2, DUT2 is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT2
9.2.57	PSTN to DUT, Call forwarded to CSIPP, PSTN releases call	Two-way audio, call released properly	Pass	
9.2.58	PSTN to DUT, Call forwarded to CSP, CSP releases call	Two-way audio, call released properly	Pass	
9.2.59	PSTN to DUT, Call forwarded to CSIPP, PSTN abandons call	Terminator stops ringing, call released properly	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.60	PSTN to DUT, Call forwarded to CSP, CSP is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on DUT2
9.2.61	CSIPP to DUT, Call forwarded to DUT2, CSIPP abandons call	Terminator stops ringing, call released properly	Pass	
9.2.62	DUT to CSP, Call forwarded to CSSIP, CSSIP is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on CSIPP
9.2.63	DUT to CSIPP, Call forwarded to CSP, CSP is busy	Originator hears busy tone, call released properly	Pass	Call Waiting Disabled on CSP
<b>Call Hold and Resume</b>				
9.2.64	DUT to DUT2. Originator Holds and resumes call	DUT2 hears TOH/silence 2-way audio resumes	Pass	DUT sends a=Inactive SIP attribute. DUT plays local TOH
9.2.65	DUT to DUT2. Terminator Holds and resumes call	DUT hears TOH/silence, 2-way audio resumes	Pass	
9.2.66	DUT to DUT2. Originator Holds call to answer an incoming call	DUT2 hears TOH/silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.67	DUT to DUT2. Terminator Holds call to answer an incoming call	DUT hears TOH/silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.68	DUT to DUT2. Originator Holds to originate a second call	DUT2 hears TOH/silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.69	DUT to DUT2. Terminator Holds to originate a second call	DUT hears TOH/silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.70	DUT to DUT2. Originator Holds call, Terminator releases before retrieve	DUT2 hears TOH/silence, DUT2 leg properly released, DUT unable to retrieve, DUT properly released	Pass	
9.2.71	DUT to DUT2. Terminator Holds call, Originator releases before retrieve	DUT hears TOH/silence, DUT leg properly released, DUT2 unable to retrieve, DUT2 properly released	Pass	
9.2.72	PSTN to DUT, Terminator Holds and resumes call	PSTN hears silence, 2-way audio resumes	Pass	
9.2.73	PSTN to DUT, PSTN Holds and resumes call	DUT hears Silence/MOH, 2-way audio resumes	Pass	
9.2.74	PSTN to DUT, terminator Holds call to answer an incoming call	PSTN hears silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.75	PSTN to DUT, PSTN Holds call to answer an incoming call	DUT hears Silence/MOH, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	



Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.76	PSTN to DUT, terminator Holds to originate a second call	PSTN hears silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.77	PSTN to DUT, PSTN Holds to originate a second call	DUT hears Silence/ MOH, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.78	PSTN to DUT, terminator Holds call, PSTN releases before retrieve	PSTN hears silence, PSTN leg properly released, DUT unable to retrieve, DUT properly released	Pass	
9.2.79	PSTN to DUT, PSTN Holds call, End Point (DUT) release before retrieve	DUT hears silence/ MOH, DUT leg properly released, PSTN unable to retrieve, PSTN properly released	Pass	
9.2.80	DUT to PSTN, originator holds and resumes call	PSTN hears silence, 2-way audio resumes	Pass	
9.2.81	DUT to PSTN, PSTN Holds and resumes call	DUT hears silence/MOH, 2-way audio resumes	Pass	
9.2.82	DUT to PSTN, originator holds call to answer an incoming call	PSTN hears silence/, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.83	DUT to PSTN, PSTN Holds call to answer an incoming call	DUT hears silence/MOH, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.84	DUT to PSTN, originator holds to originate a second call	PSTN hears silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.85	DUT to PSTN, PSTN Holds to originate a second call	DUT hears silence/MOH, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.86	DUT to PSTN, DUT Holds call, PSTN releases before retrieve	PSTN hears silence, PSTN leg properly released, DUT unable to retrieve, DUT properly released	Pass	
9.2.87	DUT to PSTN, PSTN Holds call, DUT release before retrieve	DUT hears silence/MOH, DUT leg properly released, PSTN unable to retrieve, PSTN properly released	Pass	
9.2.88	DUT to CSP. Originator Holds and resumes call	CSP hears silence, 2-way audio resumes	Pass	
9.2.89	DUT to CSP. Terminator Holds and resumes call	DUT hears MOH, 2-way audio resumes	Pass	
9.2.90	DUT to CSP. Originator Holds call to answer an incoming call	CSP hears silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	<b>No MOH on CSP</b>
9.2.91	DUT to CSP. Terminator Holds call to answer an incoming call	DUT hears MOH, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.92	DUT to CSP. Originator Holds to originate a second call	CSP hears silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	No MOH on CSP
9.2.93	DUT to CSP. Terminator Holds to originate a second call	DUT hears MOH, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.94	DUT to CSP. Originator Holds call, Terminator releases before retrieve	CSP hears silence, CSP leg properly released, DUT unable to retrieve, DUT properly released	Pass	No MOH on CSP
9.2.95	DUT to CSP. Terminator Holds call, Originator releases before retrieve	DUT hears MOH, DUT leg properly released, CSP unable to retrieve, CSP properly released	Pass	
9.2.96	CSP to DUT. Originator Holds and resumes call	DUT hears MOH, 2-way audio resumes	Pass	
9.2.97	CSP to DUT. Terminator Holds and resumes call	CSP hears silence, 2-way audio resumes	Pass	No MOH on CSP
9.2.98	CSP to DUT. Originator Holds call to answer an incoming call	DUT hears MOH, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.99	CSP to DUT. Terminator Holds call to answer an incoming call	CSP hears silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	No MOH on CSP
9.2.100	CSP to DUT. Originator Holds to originate a second call	DUT hears MOH, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.101	CSP to DUT. Terminator Holds to originate a second call	CSP hears silence, 2-way audio on 2nd call, 2nd call properly released, 2-way audio resumes	Pass	No MOH on CSP
9.2.102	CSP to DUT. Originator Holds call, Terminator releases before retrieve	DUT hears MOH, DUT leg properly released, CSP unable to retrieve, CSP properly released	Pass	
9.2.103	CSP to DUT. Terminator Holds call, Originator releases before retrieve	CSP hears silence, CSP leg properly released, DUT unable to retrieve, DUT properly released	Pass	No MOH on CSP
9.2.104	DUT to CSIPP. Originator Holds and resumes call	CSIPP hears silence, 2-way audio resumes	Pass	No MOH on CSIP
9.2.105	DUT to CSIPP. Terminator Holds and resumes call	DUT hears MOH, 2-way audio resumes	Pass	
9.2.106	DUT to CSIPP. Originator Holds call to answer an incoming call	CSIPP hears silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	No MOH on CSIP
9.2.107	DUT to CSIPP. Terminator Holds call to answer an incoming call	DUT hears MOH, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	
9.2.108	DUT to CSIPP. Originator Holds to originate a second call	CSIPP hears silence, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	No MOH on CSIP
9.2.109	DUT to CSIPP. Terminator Holds to originate a second call	DUT hears MOH, 2-way audio on 2 <sup>nd</sup> call, 2 <sup>nd</sup> call properly released, 2-way audio resumes	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.110	DUT to CSIPP. Originator Holds call, Terminator releases before retrieve	CSIPP hears silence, CSIPP leg properly released, DUT unable to retrieve, DUT properly released	Pass	<b>No MOH on CSIP</b>
9.2.111	DUT to CSIPP. Terminator Holds call, Originator releases before retrieve	DUT hears MOH, DUT leg properly released, CSIPP unable to retrieve, CSIPP properly released	Pass	
9.2.112	CSIPP to DUT. Originator Holds and resumes call	DUT hears MOH, 2-way audio resumes	Pass	
9.2.113	CSIPP to DUT. Terminator Holds and resumes call	CSIPP hears silence, 2-way audio resumes	Pass	<b>No MOH on CSIP</b>
9.2.114	CSIPP to DUT. Originator Holds call to answer an incoming call	DUT hears MOH, 2-way audio on 2nd call, 2nd call properly released, 2-way audio resumes	Pass	
9.2.115	CSIPP to DUT. Terminator Holds call to answer an incoming call	CSIPP hears silence, 2-way audio on 2nd call, 2nd call properly released, 2-way audio resumes	Pass	<b>No MOH on CSIP</b>
9.2.116	CSIPP to DUT. Originator Holds to originate a second call	DUT hears MOH, 2-way audio on 2nd call, 2nd call properly released, 2-way audio resumes	Pass	
9.2.117	CSIPP to DUT. Terminator Holds to originate a second call	CSIPP hears silence, 2-way audio on 2nd call, 2nd call properly released, 2-way audio resumes	Pass	<b>No MOH on CSIP</b>

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.118	CSIPP to DUT. Originator Holds call, Terminator releases before retrieve	DUT hears MOH, DUT leg properly released, CSP unable to retrieve, CSP properly released	Pass	
9.2.119	CSIPP to DUT. Terminator Holds call, Originator releases before retrieve	CSIPP hears silence, CSP leg properly released, DUT unable to retrieve, DUT properly released	Pass	<b>No MOH on CSIP</b>
<b>Call Waiting</b>				
9.2.120	DUT to DUT2, PSTN calls DUT  Call waiting on Originator.	DUT indicates incoming call	Pass	
9.2.121	DUT to DUT2 PSTN calls DUT2  Call waiting on Terminator.	DUT2 indicates incoming call	Pass	
9.2.122	DUT to PSTN CSP/CSIPP calls DUT  Call Waiting on Originator.	DUT indicates incoming call	Pass	
9.2.123	PSTN to DUT CSP/CSIPP calls DUT  Call Waiting on Terminator.	DUT indicates incoming call	Pass	
9.2.124	DUT to CSP CSP/CSIPP calls DUT  Call waiting on Originator.	DUT indicates incoming call	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.125	CSP to DUT, CSP/CSIPP calls DUT  Call waiting on Terminator.	DUT indicates incoming call	Pass	
9.2.126	DUT to CSIPP, CSP/CSIPP calls DUT  Call waiting on Originator.	DUT indicates incoming call	Pass	
9.2.127	CSIPP to DUT, CSP/CSIPP calls DUT  Call waiting on Terminator.	DUT indicates incoming call	Pass	
<b>Blind Call Transfer</b>				
9.2.128	DUT to DUT2, Originator transfer to a second extension (DUT3)	DUT properly released, 2-way audio between DUT2 and extension	Pass	
9.2.129	DUT to DUT2, Originator failed to transfer call to a second extension (transfer call to an invalid number)	DUT properly released, DUT2 receives treatment, DUT2 properly released	Pass	Call is released after the transfer.
9.2.130	DUT to DUT2, Originator transfer to a second extension (DUT3), release before answer	All legs properly released	Pass	
9.2.131	DUT to DUT2, Terminator transfer to a second extension (DUT3)	DUT2 properly released, 2-way audio between DUT and extension	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.132	DUT to DUT2, Terminator failed to transfer call to a second extension(transfer call to an invalid number)	DUT2 properly released, DUT receives treatment, DUT properly released	Pass	Call is released after the transfer.
9.2.133	DUT to DUT2, Terminator transfer to a second extension(DUT3), Originator release before answer	All legs properly released	Pass	
9.2.134	DUT to DUT2, Originator transfer to PSTN	DUT properly released, 2-way audio between DUT2 and PSTN	Pass	
9.2.135	DUT to DUT2, Originator failed to transfer call to PSTN (transfer call to an invalid PSTN number)	DUT properly released, DUT2 receives treatment, DUT2 properly released	Pass	Call is released after the transfer.
9.2.136	DUT to DUT2, Originator transfer to PSTN, release before answer	All legs properly released	Pass	
9.2.137	DUT to DUT2, Terminator transfer to PSTN	DUT2 properly released, 2-way audio between DUT and PSTN	Pass	
9.2.138	DUT to DUT2, Terminator failed to transfer call to PSTN (transfer call to an invalid PSTN number)	DUT2 properly released, DUT receives treatment, DUT properly released	Pass	
9.2.139	DUT to DUT2, Terminator transfer to PSTN, Originator release before answer	All legs properly released	Pass	



Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.140	PSTN to DUT, terminator transfer to second extension(DUT2)	DUT properly released, 2-way audio between PSTN and extension	Pass	
9.2.141	PSTN to DUT, terminator failed to transfer call(transfer call to an invalid number)	DUT properly released, PSTN receives treatment, PSTN properly released	Pass	Call is dropped after the transfer.
9.2.142	PSTN to DUT, terminator transfer(transfer call to DUT2), PSTN releases before call is answered	All legs properly released	Pass	
9.2.143	DUT to PSTN, originator transfer to second extension(DUT2)	DUT properly released, 2-way audio between PSTN and extension	Pass	
9.2.144	DUT to PSTN, originator failed to transfer call (transfer call to an invalid number)	DUT properly released, PSTN receives treatment, PSTN properly released	Pass	
9.2.145	DUT to PSTN, originator transfer(transfer call to DUT2), PSTN releases before call is answered	All legs properly released	Pass	
9.2.146	DUT to CSP, Originator transfer to a second extension (DUT2)	DUT properly released, 2-way audio between CSP and extension	Pass	
9.2.147	DUT to CSP, Originator failed to transfer call to a second extension (DUT2)	DUT properly released, CSP receives treatment, CSP properly released	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.148	DUT to CSP, Originator transfer to a second extension(DUT2), release before answer	All legs properly released	Pass	
9.2.149	DUT to CSP, Originator transfer to PSTN	DUT properly released, 2-way audio between CSP and PSTN	Pass	
9.2.150	DUT to CSP, Originator failed to transfer call to PSTN(transfer call to an invalid PSTN number)	DUT properly released, CSP receives treatment, CSP properly released	Pass	
9.2.151	DUT to CSP, Originator transfer to PSTN, release before answer	All legs properly released	Pass	
9.2.152	DUT to CSIPP, Originator transfer to a second extension (DUT2)	DUT properly released, 2-way audio between CSIPP and extension	Pass	
9.2.153	DUT to CSIPP, Originator failed to transfer call to a second extension(transfer call to an invalid number)	DUT properly released, CSIPP receives treatment, CSIPP properly released	Pass	Call is dropped after the transfer
9.2.154	DUT to CSIPP, Originator transfer to a second extension(DUT2), release before answer	All legs properly released	Pass	
9.2.155	DUT to CSIPP, Terminator transfer to a second extension (DUT2)	CSIPP properly released, 2-way audio between DUT and extension	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.156	DUT to CSIPP, Terminator failed to transfer call to a second extension(transfer call to an invalid extension)	CSIPP properly released, DUT receives treatment, DUT properly released	Pass	Call is dropped after the transfer.
9.2.157	DUT to CSIPP, Terminator transfer to a second extension(DUT2), Originator release before answer	All legs properly released	Pass	
9.2.158	DUT to CSIPP, Originator transfer to PSTN	DUT properly released, 2-way audio between CSIPP and PSTN	Pass	
9.2.159	DUT to CSIPP, Originator failed to transfer call to PSTN(transfer call to an invalid PSTN number)	DUT properly released, CSIPP receives treatment, CSIPP properly released	Pass	
9.2.160	DUT to CSIPP, Originator transfer to PSTN, release before answer	All legs properly released	Pass	
9.2.161	DUT to CSIPP, Terminator transfer to PSTN	CSIPP properly released, 2-way audio between DUT and PSTN	Pass	
9.2.162	DUT to CSIPP, Terminator failed to transfer call to PSTN(transfer call to an invalid PSTN number)	CSIPP properly released, DUT receives treatment, DUT properly released	Pass	
9.2.163	DUT to CSIPP, Terminator transfer to PSTN, Originator release before answer	All legs properly released	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.164	DUT to DUT2, Originator transfer to a second extension (DUT3),DUT3 is busy	Originator hears busy tone, call released properly	Pass	Call is dropped after the transfer.
9.2.165	PSTN to DUT, DUT transfer to PSTN2	DUT properly released, 2-way audio between PSTN and PSTN2	Pass	
9.2.166	CSP to DUT, CSP transfer to CSIPP	CSP properly released, 2-way audio between DUT and CSIPP	Pass	
<b>Consultative Call Transfer</b>				
9.2.167	DUT to DUT2, Originator transfer to a second extension (DUT3)	DUT2 receives TOH/silence 2-way audio DUT to extension, DUT properly released, 2-way audio DUT2 to extension	Pass	
9.2.168	DUT to DUT2, Originator failed to transfer call to a second extension(transfer call to an invalid number), retrieve call	DUT2 receives TOH/silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.169	DUT to DUT2, Originator transfer to a second extension(DUT3), release before answer	DUT2 receives TOH/silence, 2-way audio DUT to extension, all call legs properly released	N/A	
9.2.170	DUT to DUT2, Terminator transfer to a second extension (DUT3)	DUT receives TOH/silence, 2-way audio DUT2 to extension, DUT2 properly released, 2-way audio DUT to extension	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.171	DUT to DUT2, Terminator failed to transfer call to a second extension(transfer call to an invalid number), retrieve call	DUT receives TOH/silence, DUT2 receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.172	DUT to DUT2, Terminator transfer to a second extension(DUT3), Originator release before answer	DUT receives TOH/silence, 2-way audio DUT2 to extension, all call legs properly released	N/A	
9.2.173	DUT to DUT2, Originator transfer to PSTN	DUT2 receives TOH/silence, 2-way audio DUT to PSTN, DUT properly released, 2-way audio DUT2 to PSTN	Pass	
9.2.174	DUT to DUT2, Originator failed to transfer call to PSTN(transfer call to an invalid PSTN number), retrieve call	DUT2 receives TOH/silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.175	DUT to DUT2, Originator transfer to PSTN, release before answer	DUT2 receives TOH/silence, 2-way audio DUT to PSTN, all call legs properly released	N/A	
9.2.176	DUT to DUT2, Terminator transfer to PSTN	DUT receives TOH/silence, 2-way audio DUT2 to PSTN, DUT2 properly released, 2-way audio DUT to PSTN	Pass	
9.2.177	DUT to DUT2, Terminator failed to transfer call to PSTN(transfer call to an invalid PSTN number), retrieve call	DUT receives TOH/silence, DUT2 receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.178	DUT to DUT2, Terminator transfer to PSTN, Originator release before answer	DUT receives TOH/silence, 2-way audio DUT2 to PSTN, all call legs properly released	N/A	
9.2.179	PSTN to DUT, terminator transfer to second extension(DUT2)	PSTN receives Silence, 2-way audio DUT to extension, DUT properly released, 2-way audio PSTN to extension	Pass	
9.2.180	PSTN to DUT, terminator failed to transfer call(transfer call to an invalid number)	PSTN receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.181	PSTN to DUT, terminator transfer, PSTN releases before call is answered	PSTN receives silence, 2-way audio DUT to extension, all call legs properly released	N/A	
9.2.182	DUT to PSTN, originator transfer to second extension(DUT2)	PSTN receives silence, 2-way audio DUT to extension, DUT properly released, 2-way audio PSTN to extension	Pass	
9.2.183	DUT to PSTN, originator failed to transfer call(transfer call to an invalid number)	PSTN receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.184	DUT to PSTN, originator transfer(transfer call to DUT2), PSTN releases before call is answered	PSTN receives silence, 2-way audio DUT to extension, all call legs properly released	N/A	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.185	DUT to CSP, Originator transfer to a second extension (DUT2)	CSP receives silence, 2-way audio DUT to extension, DUT properly released, 2-way audio CSP to extension	Pass	
9.2.186	DUT to CSP, Originator failed to transfer call to a second extension(transfer call to an invalid number), retrieve call	CSP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.187	DUT to CSP, Originator transfer to a second extension(DUT2), release before answer	CSP receives silence, 2-way audio DUT to extension, all call legs properly released	N/A	
9.2.188	DUT to CSP, Terminator transfer to a second extension (DUT2)	DUT receives MOH , 2-way audio DUT to extension, DUT properly released, 2-way audio CSP to extension	Pass	
9.2.189	DUT to CSP, Terminator failed to transfer call to a second extension(transfer call to an invalid number) , retrieve call	DUT receives MOH , DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.190	DUT to CSP, Terminator transfer to a second extension(DUT2), Originator release before answer	DUT receives MOH , 2-way audio DUT to extension, all call legs properly released	N/A	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.191	DUT to CSP, Originator transfer to PSTN	CSP receives silence, 2-way audio DUT to PSTN, DUT properly released, 2-way audio CSP to PSTN	Pass	
9.2.192	DUT to CSP, Originator failed to transfer call to PSTN(transfer call to an invalid PSTN number), retrieve call	CSP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.193	DUT to CSP, Originator transfer to PSTN, release before answer	CSP receives silence, 2-way audio DUT to PSTN, all call legs properly released	N/A	
9.2.194	DUT to CSP, Terminator transfer to PSTN	DUT receives MOH, 2-way audio CSP to PSTN, CSP properly released, 2-way audio DUT to PSTN	Pass	
9.2.195	DUT to CSP, Terminator failed to transfer call to PSTN(Transfer call to an invalid PSTN number), retrieve call	DUT receives MOH, CSP receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.196	DUT to CSP, Terminator transfer to PSTN, Originator release before answer	DUT receives MOH, 2-way audio CSP to PSTN, all call legs properly released	N/A	
9.2.197	DUT to CSIPP, Originator transfer to a second extension (DUT2)	CSIPP receives silence, 2-way audio DUT to extension, DUT properly released, 2-way audio CSIPP to extension	Pass	



Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.198	DUT to CSIPP, Originator failed to transfer call to a second extension(transfer call to an invalid number), retrieve call	CSIPP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.199	DUT to CSIPP, Originator transfer to a second extension(DUT2), release before answer	CSIPP receives silence, 2-way audio DUT to extension, all call legs properly released	N/A	
9.2.200	DUT to CSIPP, Terminator transfer to a second extension (DUT2)	DUT receives MOH , 2-way audio DUT to extension, DUT properly released, 2-way audio CSIPP to extension	Pass	
9.2.201	DUT to CSIPP, Terminator failed to transfer call to a second extension(transfer call to an invalid number), retrieve call	DUT receives Silence , DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.202	DUT to CSIPP, Terminator transfer to a second extension(DUT2), Originator release before answer	DUT receives MOH , 2-way audio DUT to extension, all call legs properly released	N/A	
9.2.203	DUT to CSIPP, Originator transfer to PSTN	CSIPP receives silence, 2-way audio DUT to PSTN, DUT properly released, 2-way audio CSIPP to PSTN	Pass	
9.2.204	DUT to CSIPP, Originator failed to transfer call to PSTN(transfer call to an invalid PSTN number), retrieve call	CSIPP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.205	DUT to CSIPP, Originator transfer to PSTN, release before answer	CSIPP receives silence, 2-way audio DUT to PSTN, all call legs properly released	N/A	
9.2.206	DUT to CSIPP, Terminator transfer to PSTN	DUT receives MOH, 2-way audio CSIPP to PSTN, CSIPP properly released, 2-way audio DUT to PSTN	Pass	
9.2.207	DUT to CSIPP, Terminator failed to transfer call to PSTN (transfer call to an invalid PSTN number), retrieve call	DUT receives MOH, CSIPP receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.208	DUT to CSIPP, Terminator transfer to PSTN, Originator release before answer	DUT receives MOH, 2-way audio CSIPP to PSTN, all call legs properly released	N/A	
9.2.209	DUT to DUT2, Originator transfer to a second extension (DUT3), DUT3 is busy	DUT2 hears busy tone, call released properly	Pass	Busy tone is tone heard when DUT calls a busy DUT extension and the original call is retrieved.
9.2.210	PSTN to DUT, DUT transfer to PSTN2	DUT properly released, 2-way audio between PSTN and PSTN2	Pass	PSTN to DUT, DUT consultative transfer to PSTN2
9.2.211	CSP to DUT, CSP transfer to CSIPP	CSP properly released, 2-way audio between DUT and CSIPP	Pass	
<b>Semi - Unattended Transfer</b>				

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.212	DUT to DUT2, Originator transfer to a second extension (DUT3)	DUT2 receives TOH/silence 2-way audio DUT to extension, DUT properly released, 2-way audio DUT2 to extension	N/S	
9.2.213	DUT to DUT2, Originator failed to transfer call to a second extension(transfer call to an invalid number), retrieve call	DUT2 receives TOH/silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	N/S	
9.2.214	DUT to DUT2, Originator transfer to a second extension(DUT3), release before answer	DUT2 receives TOH/silence, 2-way audio DUT to extension, all call legs properly released	N/S	
9.2.215	DUT to DUT2, Terminator transfer to a second extension (DUT3)	DUT receives TOH/silence, 2-way audio DUT2 to extension, DUT2 properly released, 2-way audio DUT to extension	N/S	
9.2.216	DUT to DUT2, Terminator failed to transfer call to a second extension(transfer call to an invalid number), retrieve call	DUT receives TOH/silence, DUT2 receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	N/S	
9.2.217	DUT to DUT2, Terminator transfer to a second extension(DUT3), Originator release before answer	DUT receives TOH/silence, 2-way audio DUT2 to extension, all call legs properly released	N/S	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.218	DUT to DUT2, Originator transfer to PSTN	DUT2 receives TOH/silence, 2-way audio DUT to PSTN, DUT properly released, 2-way audio DUT2 to PSTN	N/S	
9.2.219	DUT to DUT2, Originator failed to transfer call to PSTN(transfer call to an invalid PSTN number), retrieve call	DUT2 receives TOH/silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	N/S	
9.2.220	DUT to DUT2, Originator transfer to PSTN, release before answer	DUT2 receives TOH/silence, 2-way audio DUT to PSTN, all call legs properly released	N/S	
9.2.221	DUT to DUT2, Terminator transfer to PSTN	DUT receives TOH/silence, 2-way audio DUT2 to PSTN, DUT2 properly released, 2-way audio DUT to PSTN	N/S	
9.2.222	DUT to DUT2, Terminator failed to transfer call to PSTN(transfer call to an invalid PSTN number), retrieve call	DUT receives TOH/silence, DUT2 receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	N/S	
9.2.223	DUT to DUT2, Terminator transfer to PSTN, Originator release before answer	DUT receives TOH/silence, 2-way audio DUT2 to PSTN, all call legs properly released	N/S	
9.2.224	PSTN to DUT, terminator transfer to second extension(DUT2)	PSTN receives silence, 2-way audio DUT to extension, DUT properly released, 2-way audio PSTN to extension	N/S	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.225	PSTN to DUT, terminator failed to transfer call(transfer call to an invalid number)	PSTN receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	<b>N/S</b>	
9.2.226	PSTN to DUT, terminator transfer, PSTN releases before call is answered	PSTN receives silence, 2-way audio DUT to extension, all call legs properly released	<b>N/S</b>	
9.2.227	DUT to PSTN, originator transfer to second extension(DUT2)	PSTN receives silence, 2-way audio DUT to extension, DUT properly released, 2-way audio PSTN to extension	<b>N/S</b>	
9.2.228	DUT to PSTN, originator failed to transfer call(transfer call to an invalid number)	PSTN receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	<b>N/S</b>	
9.2.229	DUT to PSTN, originator transfer(transfer call to DUT2), PSTN releases before call is answered	PSTN receives silence, 2-way audio DUT to extension, all call legs properly released	<b>N/S</b>	
9.2.230	DUT to CSP, Originator transfer to a second extension (DUT2)	CSP receives silence, 2-way audio DUT to extension, DUT properly released, 2-way audio CSP to extension	<b>N/S</b>	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.231	DUT to CSP, Originator failed to transfer call to a second extension(transfer call to an invalid number), retrieve call	CSP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	N/S	
9.2.232	DUT to CSP, Originator transfer to a second extension(DUT2), release before answer	CSP receives silence, 2-way audio DUT to extension, all call legs properly released	N/S	
9.2.233	DUT to CSP, Terminator transfer to a second extension (DUT2)	DUT receives MOH, 2-way audio DUT to extension, DUT properly released, 2-way audio CSP to extension	Pass	
9.2.234	DUT to CSP, Terminator failed to transfer call to a second extension(transfer call to an invalid number) , retrieve call	DUT receives MOH, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.235	DUT to CSP, Terminator transfer to a second extension(DUT2), Originator release before answer	DUT receives MOH, 2-way audio DUT to extension, all call legs properly released	Pass	
9.2.236	DUT to CSP, Originator transfer to PSTN	CSP receives silence, 2-way audio DUT to PSTN, DUT properly released, 2-way audio CSP to PSTN	N/S	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.237	DUT to CSP, Originator failed to transfer call to PSTN(transfer call to an invalid PSTN number), retrieve call	CSP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	N/S	
9.2.238	DUT to CSP, Originator transfer to PSTN, release before answer	CSP receives silence, 2-way audio DUT to PSTN, all call legs properly released	N/S	
9.2.239	DUT to CSP, Terminator transfer to PSTN	DUT receives MOH, 2-way audio CSP to PSTN, CSP properly released, 2-way audio DUT to PSTN	Pass	
9.2.240	DUT to CSP, Terminator failed to transfer call to PSTN(Transfer call to an invalid PSTN number), retrieve call	DUT receives MOH, CSP receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.241	DUT to CSP, Terminator transfer to PSTN, Originator release before answer	DUT receives MOH, 2-way audio CSP to PSTN, all call legs properly released	Pass	
9.2.242	DUT to CSIPP, Originator transfer to a second extension (DUT2)	CSIPP receives silence, 2-way audio DUT to extension, DUT properly released, 2-way audio CSIPP to extension	N/S	
9.2.243	DUT to CSIPP, Originator failed to transfer call to a second extension(transfer call to an invalid number), retrieve call	CSIPP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	N/S	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.244	DUT to CSIPP, Originator transfer to a second extension(DUT2), release before answer	CSIPP receives silence, 2-way audio DUT to extension, all call legs properly released	N/S	
9.2.245	DUT to CSIPP, Terminator transfer to a second extension (DUT2)	DUT receives MOH, 2-way audio DUT to extension, DUT properly released, 2-way audio CSIPP to extension	Pass	
9.2.246	DUT to CSIPP, Terminator failed to transfer call to a second extension(transfer call to an invalid number), retrieve call	DUT receives MOH, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.247	DUT to CSIPP, Terminator transfer to a second extension(DUT2), Originator release before answer	DUT receives MOH, 2-way audio DUT to extension, all call legs properly released	Pass	
9.2.248	DUT to CSIPP, Originator transfer to PSTN	CSIPP receives silence, 2-way audio DUT to PSTN, DUT properly released, 2-way audio CSIPP to PSTN	N/S	
9.2.249	DUT to CSIPP, Originator failed to transfer call to PSTN(transfer call to an invalid PSTN number), retrieve call	CSIPP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	N/S	
9.2.250	DUT to CSIPP, Originator transfer to PSTN, release before answer	CSIPP receives silence, 2-way audio DUT to PSTN, all call legs properly released	N/S	



Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.251	DUT to CSIPP, Terminator transfer to PSTN	DUT receives MOH, 2-way audio CSIPP to PSTN, CSIPP properly released, 2-way audio DUT to PSTN	Pass	
9.2.252	DUT to CSIPP, Terminator failed to transfer call to PSTN (transfer call to an invalid PSTN number), retrieve call	DUT receives MOH, CSIPP receives treatment, call successfully retrieved with 2-way audio, failed leg properly released	Pass	
9.2.253	DUT to CSIPP, Terminator transfer to PSTN, Originator release before answer	DUT receives MOH, 2-way audio CSIPP to PSTN, all call legs properly released	Pass	
<b>3-Way Conference</b>				
9.2.254	DUT to DUT2, Originator is the bridge( DUT bridges the call with DUT3 )  g) Originator drops out of the conference first  h) DUT2 drops out of conference first  i) DUT3 drops out of conference first	DUT2 receives TOH/silence DUT receives ring back, 3-way audio  Other 2 parties remain on conference with 2-way audio.	Pass	a) N/S Originator cannot dropout of conference leaving the other parties on call.
9.2.255	DUT to DUT2, Originator failed to bridged call to a DUT3(bridges the call to an invalid number), retrieve call	DUT2 receives TOH/silence, DUT receives treatment, call successfully retrieved with 2-way audio	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.256	DUT to DUT2, Originator is the bridge(DUT bridges the call with DUT3), Terminator release before answer	DUT2 receives TOH/silence, DUT receives ring back, DUT2 properly released, 2-way audio DUT – DUT3 after answer	Pass	
9.2.257	DUT to DUT2, Originator is the bridge(DUT bridges the call with DUT3), Originator cancel 3 way call, retrieve original call	DUT2 receives TOH/silence, DUT receives ring back, call successfully retrieved with 2-way audio	Pass	
9.2.258	DUT to DUT2, Terminator is the bridge(DUT2 bridges the call with DUT3) a) DUT2 drops out of the conference first b) DUT drops out of conference first c) DUT3 drops out of conference first	DUT receives TOH/silence, DUT2 receives ring back, 3-way audio  Other 2 parties remain on conference with 2-way audio.	Pass	a) N/S-DUT2 cannot dropout of the conference leaving the other two parties on call.
9.2.259	DUT to DUT2, Terminator failed to bridged call(DUT2 bridges the call with an invalid number), retrieve original call	DUT receives TOH/silence, DUT2 receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.260	DUT to DUT2, Terminator bridged to a DUT3, Originator releases before answer	DUT receives TOH/silence, DUT2 receives ring back, DUT properly released, 2-way audio DUT2 – DUT3 after answer	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.261	DUT to DUT2, Originator bridge to PSTN a) DUT drops out of the conference first b) DUT2 drops out of conference first c) PSTN drops out of conference first	DUT2 receives TOH/silence, DUT receives ring back, 3-way audio  Other 2 parties remain on conference with 2-way audio.	Pass	a) N/S- DUT cannot dropout of the conference leaving PSTN and DUT2 on call.
9.2.262	DUT to DUT2, Originator failed to bridge call to PSTN(DUT bridges the call with an invalid PSTN number), retrieve call	DUT2 receives TOH/silence, DUT receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.263	DUT to DUT2, Originator bridge to PSTN, terminator releases before answer	DUT2 receives TOH/silence, DUT receives ring back, DUT2 properly released, 2-way audio DUT – PSTN after answer	Pass	
9.2.264	DUT to DUT2, Terminator bridge to PSTN a) DUT2 drops out of the conference first b) DUT drops out of conference first c) PSTN drops out of conference first	DUT receives TOH/silence; DUT2 receives ring back, 3-way audio.  Other 2 parties remain on conference with 2-way audio.	Pass	a) N/S-DUT2 cannot dropout of the conference leaving the other two parties on call.

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.265	DUT to DUT2, Terminator failed to bridge call to PSTN(DUT2 bridges the call with an invalid PSTN number), retrieve call	DUT receives TOH/silence, DUT2 receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.266	DUT to DUT2, Terminator bridge to PSTN, Originator release before answer	DUT receives TOH/silence, DUT2 receives ring back, DUT properly released, 2-way audio DUT2 – PSTN after answer	Pass	
9.2.267	PSTN to DUT, terminator bridge to DUT2 a) DUT drops out of the conference first b) DUT2 drops out of conference first c) PSTN drops out of conference first	PSTN receives silence, DUT receives ring back, 3-way audio Other 2 parties remain on conference with 2-way audio.	Pass	a) N/S-DUT cannot dropout of the conference leaving the other two parties on call.
9.2.268	PSTN to DUT, terminator failed to bridge call(DUT bridges the call with an invalid number)	PSTN receives silence, DUT receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.269	PSTN to DUT, terminator attempt to bridge(DUT bridges the call with DUT2), PSTN releases before call is answered	PSTN receives silence, DUT receives ring back, PSTN properly released, 2-way audio DUT – DUT2 after answer	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.270	DUT to PSTN, originator bridge to DUT2 a) DUT drops out of the conference first b) DUT2 drops out of conference first c) PSTN drops out of conference first	PSTN receives silence; DUT receives ring back, 3-way audio.  Other 2 parties remain on conference with 2-way audio	Pass	a) N/S-DUT cannot dropout of the conference leaving the other two parties on call.
9.2.271	DUT to PSTN, originator failed to bridge call(DUT bridges the call with an invalid number)	PSTN receives silence, DUT receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.272	DUT to PSTN, originator attempts to bridge call(DUT bridges the call with DUT2), PSTN releases before call is answered	PSTN receives silence, DUT receives ring back, PSTN properly released, 2-way audio DUT – DUT2 after answer	Pass	
9.2.273	DUT to CSP, Originator is the bridge (DUT bridges the call with DUT2) a) DUT drops out of the conference first b) CSP drops out of conference first c) DUT2 drops out of conference first	CSP receives silence; DUT receives ring back, 3-way audio.  Other 2 parties remain on conference with 2-way audio	Pass	a) N/S-DUT cannot dropout of the conference leaving the other two parties on call.

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.274	DUT to CSP, Originator failed to bridged call to a DUT2(DUT bridges the call with DUT2,an invalid number), retrieve call	CSP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.275	DUT to CSP, Originator is the bridge(DUT bridges the call with DUT2), Terminator release before answer	CSP receives silence, DUT receives ring back, CSP properly released, 2-way audio DUT – DUT2 after answer	Pass	
9.2.276	DUT to CSP, Originator is the bridge(DUT bridges the call with DUT2), Originator cancel 3 way call, retrieve original call	CSP receives silence, DUT receives ring back, call successfully retrieved with 2-way audio	Pass	
9.2.277	DUT to CSP, Terminator is the bridge(CSP bridges the call with DUT2)  a) CSP drops out of the conference first  b) DUT drops out of conference first  c) DUT2 drops out of conference first	DUT receives MOH; CSP receives ring back, 3-way audio.  Other 2 parties remain on conference with 2-way audio	Pass	
9.2.278	DUT to CSP, Terminator failed to bridged call(CSP bridges the call to an invalid number), retrieve original call	DUT receives MOH, CSP receives treatment, call successfully retrieved with 2-way audio	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.279	DUT to CSP, Terminator bridged to a DUT2, Originator releases before answer	DUT receives MOH, CSP receives ring back, DUT properly released, 2-way audio CSP – DUT2 after answer	Pass	
9.2.280	DUT to CSP, Originator bridge to PSTN a) DUT drops out of the conference first b) CSP drops out of conference first c) PSTN drops out of conference first	CSP receives silence; DUT receives ring back, 3-way audio. Other 2 parties remain on conference with 2-way audio	Pass	
9.2.281	DUT to CSP, Originator failed to bridge call to PSTN(DUT bridge call to an invalid PSTN number), retrieve call	CSP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.282	DUT to CSP, Originator bridge to PSTN, terminator releases before answer	CSP receives silence, DUT receives ring back, CSP properly released, 2-way audio DUT – PSTN after answer	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.283	DUT to CSP, Terminator bridge to PSTN  a) DUT drops out of the conference first  b) CSP drops out of conference first  c) PSTN drops out of conference first	DUT receives silence; CSP receives ring back, 3-way audio.  Other 2 parties remain on conference with 2-way audio	Pass	
9.2.284	DUT to CSP, Terminator failed to bridge call to PSTN(CSP bridge call to an invalid number), retrieve call	DUT receives silence, CSP receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.285	DUT to CSP, Terminator bridge to PSTN, Originator release before answer	DUT receives silence, CSP receives ring back, DUT properly released, 2-way audio CSP – PSTN after answer	Pass	
9.2.286	DUT to CSIPP, Originator is the bridge(DUT bridge call with DUT2)  a) DUT drops out of the conference first  b) CSIPP drops out of conference first  c) DUT2 drops out of conference first	CSIPP receives silence; DUT receives ring back, 3-way audio.  Other 2 parties remain on conference with 2-way audio	Pass	



Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.287	DUT to CSIPP, Originator failed to bridged call to a DUT3(DUT bridge call with DUT3, an invalid number), retrieve call	CSIPP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.288	DUT to CSIPP, Originator is the bridge(DUT bridge call with DUT2), Terminator release before answer	CSIPP receives silence, DUT receives ring back, CSIPP properly released, 2-way audio DUT – DUT2 after answer	Pass	
9.2.289	DUT to CSIPP, Originator is the bridge(DUT bridge call with DUT2), Originator cancel 3 way call, retrieve original call	CSIPP receives silence, DUT receives ring back, call successfully retrieved with 2-way audio	Pass	
9.2.290	DUT to CSIPP, Terminator is the bridge(CSIPP bridge call with DUT2) a) DUT drops out of the conference first b) CSIPP drops out of conference first c) DUT2 drops out of conference first	DUT receives MOH; CSIPP receives ring back, 3-way audio.  Other 2 parties remain on conference with 2-way audio	Pass	
9.2.291	DUT to CSIPP, Terminator failed to bridged call(CSIPP bridge call to an unknown number), retrieve original call	DUT receives MOH, CSIPP receives treatment, call successfully retrieved with 2-way audio	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.292	DUT to CSIPP, Terminator bridged to a DUT3, Originator releases before answer	DUT receives MOH, CSIPP receives ring back, DUT properly released, 2-way audio CSIPP – DUT2 after answer	Pass	
9.2.293	DUT to CSIPP, Originator bridge to PSTN a) DUT drops out of the conference first b) CSIPP drops out of conference first c) PSTN drops out of conference first	CSIPP receives silence; DUT receives ring back, 3-way audio. Other 2 parties remain on conference with 2-way audio	Pass	
9.2.294	DUT to CSIPP, Originator failed to bridge call to PSTN(DUT bridge call to an invalid PSTN number), retrieve call	CSIPP receives silence, DUT receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.295	DUT to CSIPP, Originator bridge to PSTN, terminator releases before answer	CSIPP receives silence, DUT receives ring back, CSIPP properly released, 2-way audio DUT – PSTN after answer	Pass	
9.2.296	DUT to CSIPP, Terminator bridge to PSTN a) DUT drops out of the conference first b) CSIPP drops out of conference first c) PSTN drops out of conference first	DUT receives MOH; CSIPP receives ring back, 3-way audio. Other 2 parties remain on conference with 2-way audio	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.297	DUT to CSIPP, Terminator failed to bridge call to PSTN(CSIPP bridge call to an invalid PSTN number), retrieve call	DUT receives silence, CSIPP receives treatment, call successfully retrieved with 2-way audio	Pass	
9.2.298	DUT to CSIPP, Terminator bridge to PSTN, Originator release before answer	DUT receives MOH, CSIPP receives ring back, DUT properly released, 2-way audio CSIPP – PSTN after answer	Pass	
9.2.299	DUT to DUT2, Originator is the bridge( DUT bridges the call with DUT3 ) ,DUT3 busy	DUT2 receives TOH/silence DUT receives busy tone, All calls released properly.	Pass	DUT plays busy tone, and the original call can be retrieved.
9.2.300	PSTN to DUT, Terminator is the bridge( DUT bridges the call with PSTN2)	PSTN receives Silence; DUT receives ring back, 3-way audio.	Pass	
9.2.301	CSP to DUT, Originator is the bridge( CSP bridges the call with CSIPP )	CSP receives Silence; DUT receives ring back, 3-way audio.	Pass	
<b>Calling Line Identification</b>				
9.2.302	DUT to DUT2, Calling Line identification type I(basic calls)	Calling Line ID presented at terminator	Pass	
9.2.303	CSIPP to DUT2, Calling Line identification type I(basic calls)	Calling Line ID presented at terminator	Pass	
9.2.304	CSP to DUT2, Calling Line identification type I(basic calls)	Calling Line ID presented at terminator	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.305	DUT to PSTN, Calling Line identification type I(basic calls)	Calling Line ID presented at terminator	Pass	
9.2.306	PSTN to DUT, Calling Line identification type I(basic calls)	Calling Line ID presented at terminator	Pass	
9.2.307	DUT to DUT2, Type II(call waiting) on terminator, call in progress between two end points	Calling Line ID presented at terminator	Pass	
9.2.308	DUT to DUT2, Type II (call waiting) on originator, call in progress between two end points	Calling Line ID presented at terminator	Pass	
9.2.309	DUT to DUT2, Type II(call waiting) on originator, call in progress between End point and PSTN	Calling Line ID presented at terminator	Pass	
9.2.310	DUT to DUT2, Type II(call waiting) on terminator, call in progress between PSTN and End point	Calling Line ID presented at terminator	Pass	
9.2.311	DUT to DUT2, Calling Line identification type I(basic call) Restricted	Calling Line ID <i>not</i> presented at terminator	Pass	
9.2.312	CSIPP to DUT2, Calling Line identification type I (basic call) Restricted	Calling Line ID <i>not</i> presented at terminator	Pass	
9.2.313	CSP to DUT2, Calling Line identification type I (basic call) Restricted	Calling Line ID <i>not</i> presented at terminator	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.314	Multiline DUT (single line presented, others not) to DUT Line Presented (Calling party)	Calling Line ID presented at terminator	N/A	
9.2.315	Multiline DUT (single line presented, others not) DUT to DUT Name Presented (Calling Party)	Calling Name presented at terminator	N/A	
9.2.316	Multiline DUT (single line presented, others not) DUT to DUT line and Name Presented (Calling Party)	Calling Line ID and Calling Name presented at terminator	N/A	
9.2.317	Multiline DUT (single line presented, others not) DUT to DUT Line restricted (Calling Party)	Calling Line ID <i>not</i> presented at terminator	N/A	
9.2.318	Multiline DUT (single line presented, others not) DUT to DUT Name restricted (Calling Party)	Calling Name <i>not</i> presented at terminator	N/A	
9.2.319	Multiline DUT (single line presented, others not) DUT to DUT Line and Name restricted (Calling Party)	Calling Line ID and Name <i>not</i> presented at terminator	N/A	
9.2.320	Call Forward (DUT to DUT2, forwarded to DUT3)	Calling Line ID presented at DUT3	Pass	
9.2.321	Call Transfer (DUT to DUT2, originator transfer to DUT3)	Calling Line ID presented at DUT3	Pass	
9.2.322	Call Transfer (DUT to DUT2, terminator transfer to DUT3)	Calling Line ID presented at DUT3	Pass	
<b>Calling Name Presentation</b>				

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.323	DUT to DUT2, Calling Party Name	Calling Name presented at terminator	Pass	
9.2.324	DUT to DUT2, Calling Party Name Restricted	Calling Name <i>not</i> presented at terminator	Pass	
9.2.325	CSP to DUT, Calling Party Name	Calling Name presented at terminator	Pass	
9.2.326	CSP to DUT, Calling Party Name Restricted	Calling Name <i>not</i> presented at terminator	Pass	
9.2.327	CSIPP to DUT, Calling Party Name	Calling Name presented at terminator	Pass	
9.2.328	CSIPP to DUT, Calling Party Name Restricted	Calling Name <i>not</i> presented at terminator	Pass	
9.2.329	DUT to PSTN, Calling Party Name	Calling Name presented at terminator	Pass	
9.2.330	PSTN to DUT, Calling Party Name	Calling Name presented at terminator	Pass	
9.2.331	Multiline DUT (single line presented, others not) to DUT Line Presented (Calling party)	Calling Line ID presented at terminator	N/A	
9.2.332	Multiline DUT (single line presented, others not) DUT to DUT Name Presented (Calling Party)	Calling Name presented at terminator	N/A	
9.2.333	Multiline DUT (single line presented, others not) DUT to DUT line and Name Presented (Calling Party)	Calling Line ID and Calling Name presented at terminator	N/A	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.334	Multiline DUT (single line presented, others not) DUT to DUT Line restricted (Calling Party)	Calling Line ID <i>not</i> presented at terminator	N/A	
9.2.335	Multiline DUT (single line presented, others not) DUT to DUT Name restricted (Calling Party)	Calling Name <i>not</i> presented at terminator	N/A	
9.2.336	Multiline DUT (single line presented, others not) DUT to DUT Line and Name restricted (Calling Party)	Calling Line ID and Calling Name <i>not</i> presented at terminator	N/A	
9.2.337	Call Forward (DUT to DUT2, forwarded to DUT3)	Calling Name presented at DUT3	Pass	
9.2.338	Call Transfer (DUT to DUT2, originator transfer to DUT3)	Calling Name presented at DUT3	Pass	
9.2.339	Call Transfer (DUT to DUT2, terminator transfer to DUT3)	Calling Name presented at DUT3	Pass	
<b>Multiple Lines per Phone (Applicable to advanced 3<sup>rd</sup> part SIP devices only)</b>				
9.2.340	DUT1 line 1 calls DUT2 line 1, DUT1 line 2 calls DUT2 line 2, etc. (all DUT1 lines occupied). Alternate between calls.	2-way audio on each call. Held calls receive MOH. Connected Line ID and Name display reflects current call.	N/A	
9.2.341	DUT line 1 calls CSP, DUT line 2 calls CSP, etc. (all DUT1 lines occupied). Alternate between calls.	2-way audio on each call. Held calls receive MOH. Connected Line ID and Name display reflects current call.	N/A	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.342	DUT line 1 calls CSIPP, DUT line 2 calls CSIPP, etc. (all DUT1 lines occupied). Alternate between calls.	2-way audio on each call. Held calls receive MOH. Connected Line ID and Name display reflects current call.	N/A	
9.2.343	DUT2 calls DUT1 line 1, CSP calls DUT1 line 2, CSIPP calls DUT1 line 3, PSTN calls DUT1 line 4. Alternate between calls. All originators release.	2-way audio on each call. Held calls receive MOH. Calling Line ID and Name display reflects current call. All calls properly released.	N/A	
9.2.344	DUT1 line 1 calls DUT2, DUT1 line 2 calls CSP, DUT1 line 3 calls CSIPP, and DUT1 line 4 calls PSTN. Alternate between calls. All originators release.	2-way audio on each call. Held calls receive MOH. Connected Line ID and Name display reflects current call. All calls properly released.	N/A	
9.2.345	Line Busy: CFWD Busy Line 1 to Line 2, CFWD Busy Line 2 to Line 3, Line 1 in call with Line 2, CSP calls Line 1	2-way audio between CSP and Line 3.	N/A	
9.2.346	CSP calls DUT line 1. CSIPP calls DUT line 2. Place line 1 on hold, answer line 2. Bring line 1 into conference.	3-way audio between parties.	N/A	
9.2.347	CSP calls DUT line 1. Blind transfer to line 2. Pick up line 2.	Line 1 properly released. 2-way audio with Line 2.	N/A	
9.2.348	MWI – Single line: leave VMAIL on line 2, retrieve and delete line 2 VMAIL	Line 2 message waiting is indicated, indicator cleared when VMAIL deleted	N/A	



Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.349	MWI – All lines: leave VMAIL on all lines, retrieve and delete each	MWI consistent with voice mail state per line.	N/A	
<b>Call Forking</b>				
9.2.350	DUT1 to DUT2, DUT3 Call Forking – DUT2 Answers	2-way audio, DUT3 ring stop	N/A	
9.2.351	DUT1 to DUT2, DUT3 Call Forking – DUT3 Answers	2-way audio, DUT2 ring stop	N/A	
9.2.352	DUT1 to DUT2, CSIPP Call Forking – DUT2 Answers.	2-way audio, CSIPP ring stop	N/A	
9.2.353	DUT1 to DUT2, CSIPP Call Forking – CSIPP Answers.	2-way audio, DUT2 ring stop	N/A	
9.2.354	DUT1 to DUT2, CSP Call Forking – DUT2 Answers.	2-way audio, CSP ring stop	N/A	
9.2.355	DUT1 to DUT2, CSP Call Forking – CSP Answers.	2-way audio, DUT2 ring stop	N/A	
9.2.356	DUT1 to DUT2, DUT3 Call Forking, Race condition– DUT2 and DUT3 Answer	2-way audio, other phone ring stop	N/A	
9.2.357	DUT1 to DUT2, CSIPP Call Forking, Race condition– DUT2 and CSIPP Answer	2-way audio, other phone ring stop	N/A	
9.2.358	DUT1 to DUT2, CSP Call Forking, Race condition– DUT2 and CSP Answer	2-way audio, other phone ring stop	N/A	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.359	DUT1 to DUT2, DUT3 Call Forking – DUT2 CFWD all to DUT3. DUT3 Answers	Only DUT3 rings, 2-way audio DUT1 to DUT3	N/A	
9.2.360	DUT1 to DUT2, DUT3 Call Forking – DUT2 Busy. DUT3 Answers	Only DUT3 rings, 2-way audio DUT1 to DUT3	N/A	
9.2.361	Call Forking – Multiline DUT	Two lines on DUT ring, 2-way audio on answered line, ring stop on other line	N/A	Applicable to advanced 3 <sup>rd</sup> party SIP devices only
9.2.362	Call Forking – Multi call DUT (Call waiting)	Call waiting indication on in-use line, 2-way audio on answered line, call waiting indication ends when call answered	N/A	
<b>Mobile Handoff</b>				

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.363	<p>Mobile Handoff:</p> <p>Configure a Cisco Unified Mobile Communicator and the DUT as shared lines.</p> <p>PSTN calls the shared line.</p> <p>Answer the call from mobile.</p> <p>Handoff the call to the DUT</p>	<p>Verify both the end points ring.</p> <p>Verify the call is handed off to DUT</p>	N/S	
9.2.364	<p>Mobile Handoff: Part 2</p> <p>Configure a Cisco Unified Mobile Communicator and DUT as shared lines.</p> <p>PSTN calls the shared line.</p> <p>DUT answers the call.</p> <p>DUT hands off the call to mobile.</p>	<p>Verify the hand off works correctly.</p>	N/S	
<b>Message Waiting Indicator</b>				
9.2.365	<p>Call DUT, leave voice mail</p>	MWI activated	Pass	
9.2.366	<p>Retrieve only voice mail</p>	MWI cleared	Pass	
9.2.367	<p>Call DUT, leave 2 voice mails, retrieve one, hang up, retrieve second voice mail, hang up</p>	MWI activates with first voice mail, stays active after first retrieve, clears after second retrieve	Pass	
9.2.368	<p>Active call, second inbound call goes to VM, leave voice mail</p>	MWI activates while in call	Pass	
<b>Speed Dial</b>				

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.369	Speed dial max digits (25)	INVITE sent with all 25 digits	Pass	
9.2.370	Configure and use a speed dial assigned to a 25 digit number, with external access number prefix (9).	INVITE sent with all digits	Pass	
9.2.371	Speed dials min digits (4 digit ext.):	INVITE sent with all digits	Pass	Minimum of 1 digit can be setup.
9.2.372	Configure and use a speed dial to a 4 digit number	INVITE sent with all digits	Pass	
9.2.373	Speed dial no entry	Call does not originate	N/A	
9.2.374	Max Speed-dial entries. Use first and last entries, and one other	All speed dial entries populated and usable	Pass	
9.2.375	Exceed Max Speed Dial entries.	Entry n+1 rejected, all other entries remain intact and usable	N/A	
9.2.376	Re-assign existing speed dial to new number (25 digit to 4 digit)	Number successfully changed and usable	Pass	
9.2.377	Delete Speed Dial Entry.	Number no longer usable. Remaining entries unchanged.	Pass	
9.2.378	Reset phone	Speed dial configuration persists through reset	Pass	
9.2.379	Power cycle phone	Speed dial configuration persists through power cycle	Pass	
<b>Hotline</b>				

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.380	<p>Hotline to DUT</p> <p>Steps:</p> <p>Configure CSP to be a Hotline</p> <p>Configure CSP to dial the DUT number</p> <p>Pick up the CSP, it should auto dial out DUT number</p>	<p>Verify the CSP will auto dial out</p> <p>Verify the call is not completed as DUT is not a Hotline phone.</p>	N/A	
9.2.381	<p>DUT to hotline</p> <p>Steps:</p> <p>Configure DUT to be a hotline device</p> <p>Configure DUT to dial out to CSIPP</p> <p>Pick up the DUT, it should not dial out to CSIPP</p>	<p>Verify DUT does not dial out to CSIPP</p> <p>Verify the call is not completed.</p>	N/A	
<p><b>Park/Pickup and Monitor</b></p> <p><b>It only works when the park is placed by 8961, 9951, or 9971 (SIP phones only)</b></p>				
9.2.382	<p>Park Monitor</p> <p>Steps:</p> <p>PSTN calls a 9951 Phone</p> <p>9951 parks the call</p> <p>DUT1 picks up the call</p>	<p>Verify PSTN call is connected to 9951 phone</p> <p>Verify the call is parked</p> <p>Verify the Park Bubble is displayed on the 9951 phone.</p> <p>Verify DUT picks up the parked call</p> <p>Verify the Park bubble on the 9951 phone is cleared.</p>	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.383	Park and Pickup Steps: DUT1 calls DUT2 DUT2 parks the call 9951 picks up the call DUT1 releases call	Verify the call is parked Verify 9951 can pick up the call. Verify all calls are cleared.	N/S	
<b>Native Call Queuing – UCM 9.0 Feature</b>				
9.2.384	DUT to hunt pilot, call queued and routed to alternate CSP2/CSIPP/DUT2 when maximum wait time condition is met	DUT hears ring back. After maximum wait time, queued call, calls lands on CSP2/CSIPP/DUT2. 2-way audio between DUT and CSP2/CSIPP/DUT2 MOH/TOH or IVR heard as long as call is in queue Verify queue status on CSP2/CSIPP by logging into hunt group	Pass	N/A for 9.0, if HLogg key cannot be configured on the phone.
9.2.385	DUT to hunt pilot, call queued and routed to alternate CSP2/CSIPP/DUT2 when maximum callers in queue condition is met	DUT hears ring back. After maximum wait time, queued call, calls lands on CSP2/CSIPP/DUT2. 2-way audio between DUT and CSP2/CSIPP/DUT2 MOH/TOH or IVR heard as long as call is in queue Verify queue status on CSP2/CSIPP/DUT2 by logging into hunt group	Pass	N/A for 9.0, if HLogg key cannot be configured on the phone.

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.386	DUT to hunt pilot, call queued and routed to alternate CSP2/CSIPP/DUT2 when no members available condition is met	DUT hears ring back. After maximum wait time, queued call, calls lands on CSP2/CSIPP/DUT2. 2-way audio between DUT and CSP2/CSIPP/DUT2 MOH/TOH or IVR heard as long as call is in queue Verify queue status on CSP2/CSIPP by logging into hunt group	Pass	N/A for 9.0, if HLogg key cannot be configured on the phone.
9.2.387	DUT to hunt pilot, call queued and routed to alternate DUT3 when maximum wait time condition is met	DUT hears ring back. After maximum wait time, queued call, calls lands on DUT3 2-way audio between DUT and DUT3 MOH/TOH or IVR heard as long as call is in queue Verify queue status on CSIPP2/CSP that are part of the hunt group by logging into hunt group	Pass	N/A for 9.0, if HLogg key cannot be configured on the phone.
9.2.388	DUT to hunt pilot, call queued and routed to alternate DUT3 when maximum callers in queue condition is met	DUT hears ring back. After maximum wait time, queued call, calls lands on DUT3 2-way audio between DUT and DUT3 MOH/TOH or IVR heard as long as call is in queue Verify queue status on CSIPP2/CSP that are part of the hunt group by logging into hunt group	Pass	N/A for 9.0, if HLogg key cannot be configured on the phone.

Test Case	Description	Expected Result	Pass/Fail	Comments
9.2.389	DUT to hunt pilot, call queued and routed to alternate DUT3 when no members available condition is met	DUT hears ring back. After maximum wait time, queued call, calls lands on DUT3 2-way audio between DUT and DUT3 MOH/TOH or IVR heard as long as call is in queue Verify queue status on CSIPP2/CSP that are part of the hunt group by logging into hunt group	Pass	N/A for 9.0, if HLogg key cannot be configured on the phone.
9.2.390	PSTN to hunt pilot, call queued and routed to alternate CSIPP/CSP/DUT2 when maximum wait time condition is met	PSTN hears ring back. After maximum wait time, queued call, calls lands on CSIPP/CSP/DUT2 2-way audio between PSTN and CSIPP/CSP/DUT2 MOH/TOH or IVR heard as long as call is in queue Verify queue status on CSIPP2/CSP that are part of the hunt group by logging into hunt group	Pass	N/A for 9.0, if HLogg key cannot be configured on the phone.



Test Case	Description	Expected Result	Pass/ Fail	Comments
9.2.391	PSTN to hunt pilot, call queued and routed to alternate CSIPP/CSP/DUT2 when maximum callers in queue condition is met	PSTN hears ring back. After maximum wait time, queued call, calls lands on CSIPP/CSP/DUT2 2-way audio between PSTN and DUT3 MOH/TOH or IVR heard as long as call is in queue Verify queue status on CSIPP2/CSP that are part of the hunt group by logging into hunt group	Pass	N/A for 9.0, if HLogg key cannot be configured on the phone.
9.2.392	PSTN to hunt pilot, call queued and routed to alternate CSIPP/CSP/DUT2 when no members available condition is met	PSTN hears ring back. After maximum wait time, queued call, calls lands on CSIPP/CSP/DUT2 2-way audio between PSTN and DUT3 MOH/TOH or IVR heard as long as call is in queue Verify queue status on CSIPP2/CSP that are part of the hunt group by logging into hunt group	Pass	N/A for 9.0, if HLogg key cannot be configured on the phone.

## 9.3 System Control and Verification

These tests are executed to determine the impact on calls, the Communications Manager and the 3<sup>rd</sup> party application when combinations of the aforementioned fail by power failure or network connectivity problems. Testing robustness of the application through hardware and software fault insertion i.e. failover/failback.

Test Case	Description	Expected Result	Pass/Fail	Comments
<b>Registration and Digest Authentication (Basic)</b>				
9.3.1	DUT Authenticated on Registration (name and password) (Positive)	DUT registers successfully	Pass	
9.3.2	DUT Authenticated on Registration (name and password) (Negative)	DUT registration rejected, retries	Pass	
9.3.3	DUT Authenticated on Origination	DUT resends INVITE with Authorization header, successfully originates call	Pass	
9.3.4	DUT Re-Registers before Registration Time Expires	Re-registration successful, DUT can originate calls	Pass	
9.3.5	Restart DUT phone remotely	DUT restarts and registers successfully	N/A	
9.3.6	DUT Multiline registration	All lines register successfully and can originate calls	N/A	Applicable to advanced 3 <sup>rd</sup> party SIP devices only
9.3.7	Loses network connection then re-connected	DUT can originate calls after registration	Pass	

## 9.4 Negative Tests

These tests are executed to determine the impact on calls, the Call Manager and the 3<sup>rd</sup> party application when combinations of the aforementioned fail by power failure or network connectivity problems. Testing robustness of the application through hardware and software fault insertion i.e. failover/failback.

Test Case	Description	Expected Result	Pass/Fail	Comments
9.4.1	Publisher outage: place station-to-station call, isolate Publisher (disconnect network cable), place one more station-to-station call, reconnect Publisher network cable, and place another station-to-station call.	Confirm all calls are completed.	Pass	The phone will always try to send a SIP register message to primary first and if the primary is up it won't try the secondary.
9.4.2	Subscriber Outage: place station-to-station call, isolate Subscriber (disconnect network cable), place one more station-to-station call, reconnect Subscriber network cable, place another station-to-station call	Confirm all calls are completed.	Fail	Failed to fallback: when the Subscriber(Primary to DUT) is down the active call stays up and after the call is disconnected, the DUT gets registered to secondary node but when primary comes back online the active call with secondary is getting disconnected and there is a down time before the calls are successful with the primary node.
9.4.3	IP-DECT Registers with SRST server when the CCM is unavailable		Pass	
9.4.4	IP-DECT re-Registered when CCM is back on service		Pass	
9.4.5	Basic call, IP-DECT uses SRST server when CCM is unavailable		Pass	
9.4.6	Call to PSTN using SRST server when CCM is unavailable		Pass	
9.4.7	Call from PSTN, call is terminated by SRST when CCM is unavailable		Pass	

## 9.5 Informational Tests

These tests are executed to verify specific information about the third-party product to Cisco. This is in relation to the IVT Questionnaire supplied by the vendor. *Test cases in this section will be selected or modified to reflect attributes of the device under test. Standard examples are:*

Test Case	Description	Expected Result	Pass/Fail	Comments
<b>Voice Codec Support</b>				
9.5.1	G.711 $\mu$ -law Configure DUT to support only G711ulaw codec. Place call from/to DUT from DUT2/CSIP/CSIPP	2-way audio successfully established between DUT and DUT2/CSP/CSIPP with G711ulaw codec	Pass	On DUT, can setup preferred codec but not one single codec.
9.5.2	G.711 A-law Configure DUT to support only G711Alaw codec. Place call from/to DUT from DUT2/CSIP/CSIPP	2-way audio successfully established between DUT and DUT2/CSP/CSIPP with G711alaw codec	Pass	
9.5.3	G.723 Configure DUT to support only G723 codec. Place call from/to DUT from DUT2/CSIP/CSIPP	2-way audio successfully established between DUT and DUT2/CSP/CSIPP with G723 codec	N/S	
9.5.4	G.729 Configure DUT to support only G729 codec. Place call from/to DUT from DUT2/CSIP/CSIPP	2-way audio successfully established between DUT and DUT2/CSP/CSIPP with G729 codec	Pass	

Test Case	Description	Expected Result	Pass/Fail	Comments
9.5.5	<p>Packetization period</p> <p>Configure DUT to support different p-times -10, 20, 30.</p> <p>Place call from/to DUT from DUT2/CSIP/CSIPP with p-time fixed at 20</p>	2-way audio successfully established between DUT and DUT2/CSP/CSIPP with p-time negotiated.	Pass	<b>p-time 10 is not supported</b>
9.5.6	Mid-call codec renegotiation		N/S	Applicable to advanced devices only
<b>General Phone Functions</b>				
9.5.7	Phone display (missed calls, called numbers, received calls)		Pass	
9.5.8	All visible buttons and soft keys function as labeled		Pass	
<b>General Dial Services</b>				
9.5.9	Redial or dial from Call History		Pass	
9.5.10	Last Call Return		Pass	<b>Optional test case</b>

## 9.6 Performance/Load Tests

These tests are executed to determine the impact of the 3<sup>rd</sup> party software on the Cisco Call Manager's ability to process calls. Testing will also determine the outer limits of the application's ability to properly function under stress and perform characterizing measurements on the Call Manager.

*Identify any modifications to Trace/Debug levels.*

Background Load characteristics for all tests:

- 2500 phones per subscriber
- XX Callers and XX receivers
- 100 % Internal (SCCP)
- All configurations to support each load test must be completed and verified prior to the start of this test.
- Document Registered Users, BHCA and BHCC per call type, and dial tone delay metrics for each test in the Load Test Results table following this test section.

Table 6 – Performance Counters to Be Used

Performance Parameter Measured
<b>Cisco Call Manager (Publisher)</b>
<i>Memory</i>
Available Mbytes
<i>Paging File</i>
% Usage
<i>Processor</i>
% Processor Time
<i>Logical Disk</i>
Free Megabytes
<i>SQL Server: Databases</i>

<b>Performance Parameter Measured</b>
Active Transactions
Data File(s) Size (KB)
Log Cache Hit Ratio
Log File(s) Size (KB)
Flush Log Wait Time
Log Flush/sec
Log Growths
Percent Log Used
<i>SQL Server: Cache Manager</i>
Cache Hit Ratio
<i>SQL Server: Memory Manager</i>
Connection memory

Table 7 – Cisco Performance Pass/Fail Criteria

Description	Cisco Criterion
Call Completion Failures	Less than .001%
Call Drops	Less than .001%
Call Manager CPU Utilization	Equal to or less than 68%
Publisher CPU Utilization	Equal to or less than 68%
Memory	No increase trends
SQL Server	No persistent decrease in cache hit ratio when compared to baseline
SQL Server	No change in transaction log growth rate over baseline
Dial Tone Delay	250ms
Disk Usage	No significant increase trends
Network Outage Recovery	Recover in 10 minutes or less

**Note: Any CPU pegs over 80% sustaining for 5 seconds or more and any sustained memory increases should be noted.**

Test Case	Description	Expected Result	Pass/Fail	Comments
6.5.1	Long duration Call  Make a call and leave the call up for an hour.	Verify the call does not drop and the session timers are working correctly	Pass	
6.5.2	Continuous calls  If the device supports auto answer, place the device in auto answer and make continues calls with a call hold time of 2 min for two hours.	Verify the all the calls are correctly handled.	Pass	



Test Case	Description	Expected Result	Pass/Fail	Comments
6.5.3	<p>Continuous calls</p> <p>If the device does not support auto answer , place continuous ring and release the call after each ring for 2 hours</p> <p>Once the test is complete, place a call to the phone and confirm two way audio</p>	<p>Verify all the rings/calls are correctly handled.</p> <p>After the continuous calls DUT should continue to accept calls and display normal / expected behavior</p>	N/A	Phone supports auto answer so tested the above call scenario.