

Spectralink IP-DECT Server 200/400/6500  
Virtual IP-DECT Server One

## AudioCodes Mediant SBC

### MS Teams Interoperability Guide

## Copyright Notice

© 2019-2021 Spectralink Corporation All rights reserved. Spectralink™, the Spectralink logo and the names and marks associated with Spectralink's products are trademarks and/or service marks of Spectralink Corporation and are common law marks in the United States and various other countries. All other trademarks are property of their respective owners. No portion hereof may be reproduced or transmitted in any form or by any means, for any purpose other than the recipient's personal use, without the express written permission of Spectralink.

All rights reserved under the International and pan-American Copyright Conventions. No part of this manual, or the software described herein, may be reproduced or transmitted in any form or by any means, or translated into another language or format, in whole or in part, without the express written permission of Spectralink Corporation.

Do not remove (or allow any third party to remove) any product identification, copyright or other notices.

## Notice

Spectralink Corporation has prepared this document for use by Spectralink personnel and customers. The drawings and specifications contained herein are the property of Spectralink and shall be neither reproduced in whole or in part without the prior written approval of Spectralink, nor be implied to grant any license to make, use, or sell equipment manufactured in accordance herewith.

Spectralink reserves the right to make changes in specifications and other information contained in this document without prior notice, and the reader should in all cases consult Spectralink to determine whether any such changes have been made.

NO REPRESENTATION OR OTHER AFFIRMATION OF FACT CONTAINED IN THIS DOCUMENT INCLUDING BUT NOT LIMITED TO STATEMENTS REGARDING CAPACITY, RESPONSE-TIME PERFORMANCE, SUITABILITY FOR USE, OR PERFORMANCE OF PRODUCTS DESCRIBED HEREIN SHALL BE DEEMED TO BE A WARRANTY BY SPECTRALINK FOR ANY PURPOSE, OR GIVE RISE TO ANY LIABILITY OF SPECTRALINK WHATSOEVER.

## Warranty

The Product Warranty and Software License and Warranty and other support documents are available at <http://support.spectralink.com/>.

## Contact Information

### US Location

+1 800-775-5330

Spectralink Corporation  
2560 55th Street  
Boulder, CO 80301  
USA

[info@spectralink.com](mailto:info@spectralink.com)

### Denmark Location

+45 7560 2850

Spectralink Europe ApS  
Bygholm Soepark 21 E Stuen  
8700 Horsens  
Denmark

[infoemea@spectralink.com](mailto:infoemea@spectralink.com)

### UK Location

+44 (0) 20 3284 1536

Spectralink Europe UK  
329 Bracknell, Doncastle Road  
Bracknell, Berkshire, RG12 8PE  
United Kingdom

[infoemea@spectralink.com](mailto:infoemea@spectralink.com)

# Contents

<b>Chapter 1: About This Guide</b> .....	<b>4</b>
Related Documentation.....	4
<b>Chapter 2: Feature List</b> .....	<b>6</b>
<b>Chapter 3: Prerequisites and Limitations</b> .....	<b>7</b>
Prerequisites.....	7
Limitations .....	7
<b>Chapter 4: Introduction</b> .....	<b>8</b>
Example Environment .....	8
<b>Chapter 5: AudioCodes Mediant SBC</b> .....	<b>10</b>
Creating SIP Interface.....	10
Creating Media Realm .....	10
Creating an Allowed Audio Coders Groups.....	10
Creating a Message Manipulation .....	10
Creating an Inbound Manipulation .....	11
Creating an IP Profile.....	11
Creating an IP Group.....	11
Creating Classifications .....	12
Creating IP-to-IP routing rules .....	12
<b>Chapter 6: Spectralink IP-DECT/Virtual IP-DECT Server One</b> .....	<b>14</b>
Configuring the Spectralink IP-DECT/Virtual IP-DECT Server One .....	14
Adding Users .....	14

# Chapter 1: About This Guide

This guide describes how to configure a Spectralink IP-DECT Server 200/400/6500 and Spectralink Virtual IP-DECT Server One for connecting to a Microsoft Teams or Skype for Business Online tenant using an AudioCodes Mediant SBC. In the following, the servers will be referred to as Spectralink IP-DECT/Virtual IP-DECT Server One.

This guide is intended for qualified technicians and the reader is assumed to have a basic knowledge about the Spectralink IP-DECT/Virtual IP-DECT Server One, Microsoft Teams/Skype for Business Online tenant and AudioCodes Mediant SBC. It is also assumed, that you have an installed and functioning Microsoft Teams or Skype for Business Online tenant, AudioCodes Mediant SBC and Spectralink IP-DECT/Virtual IP-DECT Server One.

When connecting to a:

- Skype for Business Online tenant, a Skype for Business Cloud Connector Edition (CCE) setup is utilized.
- Microsoft Teams tenant, a Direct Routing setup is used.

The Spectralink IP-DECT/Virtual IP-DECT Server One configuration is identical for both cloud technologies.

The guide is divided into two parts:

- AudioCodes Mediant SBC
- Spectralink IP-DECT/Virtual IP-DECT Server One

Each part describes the general configuration and the user administration.



## Note:

The configuration steps described are only for a basic configuration to illustrate the important points when performing the integration. More advanced setups with PSTN connectivity, Skype for Business hybrid environments etc. are possible, but not described here. For more information, see the Microsoft documentation site for the latest Microsoft documentation.

Setup of the Microsoft Teams/Skype for Business Online tenant and basic setup of the AudioCodes Mediant SBC are also not covered. For more information about these tasks, see the relevant Microsoft and AudioCodes documentation.

## Related Documentation

All Spectralink documents are available at <http://support.spectralink.com/>.

<i>Subject</i>	<i>Documentation</i>
Skype for Business Online tenant	Navigate to the Microsoft documentation site for the latest Microsoft documentation.
Microsoft Teams Phone System Direct Routing	Navigate to the Microsoft documentation site for the latest Microsoft documentation.

<i>Subject</i>	<i>Documentation</i>
Configure and manage Skype for Business Cloud Connector Edition	Navigate to the Microsoft documentation site for the latest Microsoft documentation.
AudioCodes Mediant SBC	Navigate to the AudioCodes documentation site for the latest AudioCodes Mediant SBC documentation.
Connecting AudioCodes SBC to Microsoft Teams Direct Routing Enterprise Model Configuration Note	Navigate to the AudioCodes documentation site for the latest AudioCodes Mediant SBC documentation.
Spectralink DECT Handsets	For more information about the handset, refer to the user guide available online at <a href="http://support.spectralink.com/products">http://support.spectralink.com/products</a> .
Site Survey Function in Handset	For more information about the site survey function in handset, refer to the guide available online at <a href="http://support.spectralink.com/products">http://support.spectralink.com/products</a> .
Synchronization and Deployment Guide	For more information about synchronization and deployment, refer to the guide available online at <a href="http://support.spectralink.com/products">http://support.spectralink.com/products</a> .
Spectralink IP-DECT/Virtual IP-DECT Server One	For more information about the server, refer to the guide available online at <a href="http://support.spectralink.com/products">http://support.spectralink.com/products</a> .
Spectralink Technical Bulletins	Available online at <a href="http://support.spectralink.com/products">http://support.spectralink.com/products</a> .
Release Notes	Document that describes software changes, bug fixes, outstanding issues, and hardware compatibility considerations for new software releases. Available online at <a href="http://support.spectralink.com/products">http://support.spectralink.com/products</a> .
Spectralink DECT Training material	In order to gain access to the Spectralink training material, you must attend training and become Spectralink Certified Specialist. Please visit <a href="http://partneraccess.spectralink.com/training/classroom-training">http://partneraccess.spectralink.com/training/classroom-training</a> for more information and registration.

# Chapter 2: Feature List

The following features are supported:

<i>Supported features</i>	
Telephony	<ul style="list-style-type: none"><li>• Basic Calling</li><li>• Call Hold</li><li>• Call Transfer</li><li>• Call Waiting</li><li>• Call Forward (all endpoints)</li><li>• Music on Hold (MOH)</li></ul>
User experience	<ul style="list-style-type: none"><li>• Centralized phone book via Active Directory and LDAP</li><li>• SIP URI Support Phone Book (75x2, 76x2, 77x2 only)</li></ul>
Security	<ul style="list-style-type: none"><li>• TLS</li><li>• SSRTP/ SRTP/RTP</li><li>• STUN/TURN/ICE</li></ul>
Voice Quality	<ul style="list-style-type: none"><li>• Codecs: G.726 (default), G.711, G.729</li></ul>
Value added Spectralink features	<ul style="list-style-type: none"><li>• Rich APIs for third-party solutions integration</li><li>• Multi-language (on handsets)</li><li>• Centralized management and provisioning via DECT server management capability</li><li>• Plug and play DECT is easy to use and fast to deploy</li><li>• Real Time Location Services (RTLS) (requires third-party solution)</li></ul>

# Chapter 3: Prerequisites and Limitations

## Prerequisites

The following must be configured/installed:

- Microsoft Office 365 Enterprise subscription with Phone System enabled.  
For more information, see SfB Online Tenant documentation.
- AudioCodes Mediant SBC with the following licenses:
  - TEAMS (For Microsoft Teams only)
  - Far End Users (FEU)
- For Skype for Business Online tenants, a Skype for Business Cloud Connector Edition (CCE) has been installed and configured locally, with the AudioCodes Mediant SBC set up as gateway.
- For Microsoft Teams tenants, a Direct Route has been setup and configured with the AudioCodes Mediant SBC set up as gateway.
- The Spectralink IP-DECT Server(s) has been upgraded to PCS 19Ca or newer.
- The Spectralink Virtual IP-DECT Server One is installed with PCS 20A\_ or newer.

## Limitations



### Note:

With the setup described in this guide, it is not possible to assign the same telephone number to both a Microsoft Teams/Skype for Business Client and a DECT handset simultaneously.

For routing purposes, it is recommended, that the telephone numbers assigned to DECT handsets are kept in a separate range.

# Chapter 4: Introduction

The basic Spectralink IP-DECT/Virtual IP-DECT Server One and AudioCodes Mediant SBC integration consists of the following steps:

- 1 Create an SIP Interface  
For more information, see "[Creating SIP Interface](#)".
- 2 Create a Media Realm  
For more information, see "[Creating Media Realm](#)".
- 3 Create an Allowed Audio Coders Groups  
For more information, see "[Creating an Allowed Audio Coders Groups](#)".
- 4 Create a Message Manipulation  
For more information, see "[Creating a Message Manipulation](#)".
- 5 Create an Inbound Manipulation  
For more information, see "[Creating an Inbound Manipulation](#)".
- 6 Create an IP Profile  
For more information, see "[Creating an IP Profile](#)".
- 7 Create an IP Group  
For more information, see "[Creating an IP Group](#)".
- 8 Create Classifications  
For more information, see "[Creating Classifications](#)".
- 9 Create IP-to-IP routing rules  
For more information, see "[Creating IP-to-IP routing rules](#)".



**Note:**

As Microsoft Teams/Skype for Business Online requires all phone numbers to be in E.164 format, it is required to transform any other phone number format into E.164.

This guide will keep phone numbers in E.164 format where possible and convert user dialed numbers before processing.

For more information about creating phone numbers in E.164 format, see <https://en.wikipedia.org/wiki/E.164>.

## Example Environment

The detailed configuration steps in the next sections assume the following example environment:

- E.164 numbers for Teams/SfB users are in the +457628118x range



- E.164 numbers for IP-DECT users are in the +457628119x range
- AudioCodes Mediant SBC with IP address 172.29.198.4
- Redundant Spectralink IP-DECT Servers with IP addresses 172.29.198.5 and 172.29.198.6

# Chapter 5: AudioCodes Mediant SBC

Below is a description of how to configure the AudioCodes Mediant SBC from the AudioCodes Mediant SBC user interface. Configuration includes creation of: SIP Interface, Media Realm, allowed Audio Coders Groups, Message Manipulation, IP Profile, IP Group, Inbound Manipulation, Classifications, and IP-to-IP Routing Rules.

## Creating SIP Interface

Add an entry to the SIP Interfaces table (**Setup** menu> **Signaling & Media** tab> **Core Entities** folder> **SIP Interfaces**):

- Name: IP-DECT
- Network Interface: LAN\_IF
- Application Type: SBC
- UDP Port: 5060
- TCP Port: 0
- TLS Port: 0

## Creating Media Realm

Add an entry to the Media Realms table (**Setup** menu> **Signaling & Media** tab> **Core Entities** folder> **Media Realms**):

- Name: IP-DECT
- IPv4 Interface Name: LAN\_IF
- UDP Port Range Start: 6000
- Number of Media Session Legs: 1000

## Creating an Allowed Audio Coders Groups

Add an entry to the Allowed Audio Coders Groups table (**Setup** menu> **Signaling & Media** tab> **Coders & Profiles** folder> **Allowed Audio Coders Groups**):

- Name: IP-DECT
- Items: G.726, G.711A, G.711U, G.729

## Creating a Message Manipulation

Add an entry to the Message Manipulations table (**Setup** menu> **Signaling & Media** tab> **Message Manipulation** folder> **Message Manipulations**):

- Name: Prefix Refer-To
- Manipulation Set ID: Pick an unused set ID
- Message Type: Refer
- Condition: Header.Refer-To.url.User regex 11[8-9]x
- Action Subject: Header.Refer-To.URL.User
- Action Type: Add Prefix
- Action Value: '+457628'

## Creating an Inbound Manipulation

Add an entry to the Inbound Manipulation table (**Setup** menu> **Signaling & Media** tab> **SBC** folder> **Manipulation**> **Inbound Manipulations**):

- Name: Add E.164 prefix
- Request Type: INVITE
- Source IP Group: IP-DECT
- Destination Username Pattern: 11[8-9]x
- Manipulated Item: Destination
- Prefix to Add: +457628

## Creating an IP Profile

Add an entry to the IP Profiles table (**Setup** menu> **Signaling & Media** tab> **Coders & Profiles** folder> **IP Profiles**):

- Name: IP-DECT
- SBC Media Security Mode: Not Secured
- Allowed Audio Coders: Select the Allowed Audio Coders Group created previously
- Remote REFER Mode: Handle Locally
- Remote Replaces Mode: Handle Locally
- Remote 3xx Mode: Handle Locally
- Remote Hold Format: Send Only
- Broken Connection Mode: Ignore

## Creating an IP Group

Add an entry to the IP Group table (**Setup** menu> **Signaling & Media** tab> **Core Entities** folder> **IP Groups**):

- Name: IP-DECT

- Topology Location: Down
- Type: User
- IP Profile: IP-DECT
- Media Realm: IP-DECT
- Classify By Proxy Set: Disabled
- Inbound Message Manipulation Set: The set ID of the Message Manipulation set created previously

## Creating Classifications

Classifications must be created for both the primary and secondary Spectralink IP-DECT Server.

### Primary Spectralink IP-DECT Server

Add the primary Spectralink IP-DECT Server to the Classification table (**Setup** menu> **Signaling & Media** tab> **SBC** folder> **Classification**):

- Name: IP-DECT Primary Server
- Source SIP Interface: IP-DECT
- Source IP Address: 172.29.198.5
- Source IP Group: IP-DECT

### Secondary Spectralink IP-DECT Server

Add the secondary Spectralink IP-DECT Server to the Classification table (**Setup** menu> **Signaling & Media** tab> **SBC** folder> **Classification**):

- Name: IP-DECT Secondary Server
- Source SIP Interface: IP-DECT
- Source IP Address: 172.29.198.6
- Source IP Group: IP-DECT

## Creating IP-to-IP routing rules

Add an entry to the IP-to-IP Routing table (**Setup** menu> **Signaling & Media** tab> **SBC** folder> **Routing**> **IP-to-IP Routing**):

- Name: Terminate IP-DECT registration
- Source IP Group: IP-DECT
- Request Type: REGISTER
- Destination Type: All Users

Add an entry to the IP-to-IP Routing table (**Setup** menu> **Signaling & Media** tab> **SBC** folder> **Routing**> **IP-to-IP Routing**):

- Name: \* -> IP-DECT
- Destination Username Pattern: +457628119x
- Destination Type: All Users

# Chapter 6: Spectralink IP-DECT/Virtual IP-DECT Server One

Below is a description of how to configure the Spectralink IP-DECT/Virtual IP-DECT Server One and how to add users to the system.

## Configuring the Spectralink IP-DECT/Virtual IP-DECT Server One

### SIP settings

The Spectralink IP-DECT/Virtual IP-DECT Server One requires a few SIP settings to be adjusted in order to connect properly to the AudioCodes Mediant SBC.



**Note:**

SIP settings not mentioned below should be left at their default values.

To modify the SIP settings from the web-based Administration Page:

- 1 Click **Configuration**, and then click **SIP**.
- 2 Modify the settings below.

Field	Setting
<b>SIP Configuration - General</b>	
Transport	Select <b>UDP</b> .
Default domain	Enter the IP address/hostname of the AudioCodes Mediant SBC. E.g.: audiocodes-mediant.spectralink.com
Send Hold before REFER	Disabled.

## Adding Users

It is necessary to add users to the Spectralink IP-DECT/Virtual IP-DECT Server One using E.164 numbers as the username. E.g. +4576281191.



**Note: DECT to DECT (Optional)**

If enabled, the user will only be able to call, and be called from, other users that are subscribed to the same IP-DECT server; the user cannot communicate externally.

DECT device	
Product name	Spectralink 7522
Model number	7522
Software part number	14225100
Item number	02620000
Firmware	20B
HW version	15B
Software version	1422 5100 PCS 20BA
Production Id	0029 3203 4758 5E9D
IPEI	<input type="text" value="05003 0838656"/>
Access code	<input type="text"/>
Configuration group	<input type="text" value="0"/>
User	
Standby text	<input type="text" value="1191"/>
DECT to DECT	<input type="checkbox"/>
Disabled	<input type="checkbox"/>
SIP	
Username / Extension *	<input type="text" value="+4576281191"/>
Secondary username	<input type="text"/>
Domain	<input type="text"/>
Displayname	<input type="text"/>
Authentication user	<input type="text" value="1191"/>
Authentication password	<input type="password" value="••••••••"/>
Features	
Call forward unconditional	<input type="text"/>
Admin rights	<input checked="" type="checkbox"/>
<input type="button" value="Save"/> <input type="button" value="Delete"/> <input type="button" value="Cancel"/>	
*) Required field	

For more information about adding users, see either the *IP-DECT Server 200/400/6500 and Virtual IP-DECT Server One Installation and Configuration Guide* and/or *Provisioning Guide*.

\*\*\*\*END OF DOCUMENT\*\*\*\*