



Reference Guide for Interoperability

Avaya Collaboration Unit CU360



Version 11.3
Issue 5
June 2021

Contents

Interoperability Test Descriptions.....	6
CISCO SX80 Version 9.1.4.....	7
CISCO SX80 to CU360 - H.323	7
CISCO SX80 Version 9.1.4.....	7
CISCO SX80 to CU360 - SIP	7
CISCO SX80 Version 9.1.4.....	8
CU360 to CISCO SX80 - H.323 1920 kbps	8
CISCO SX80 Version 9.1.4.....	8
CU360 to CISCO SX80 - H.323 1152 kbps	8
CISCO SX80 Version 9.1.4.....	9
CU360 to CISCO SX80 - H.323 512 kbps	9
CISCO SX80 Version 9.1.4.....	9
CU360 to CISCO SX80 - H.323 384 kbps	9
CISCO SX80 Version 9.1.4.....	10
CU360 to CISCO SX80 - H.323 128 kbps	10
CISCO SX80 Version 9.1.4.....	10
CU360 to CISCO SX80 - SIP	10
CISCO SX80 Version 9.1.4.....	11
CU360 to CISCO SX80 - H.323	11
CISCO SX20 Version TC 6.3.0.3.....	12
CISCO SX20 to CU360 - H.323	12
CISCO SX20 Version TC 6.3.0.3.....	12
CISCO SX20 to CU360 SIP	12
CISCO SX20 Version TC 6.3.0.3.....	13
CU360 to CISCO SX20 - H.323 1920 kbps	13
CISCO SX20 Version TC 6.3.0.3.....	13
CU360 to CISCO SX20 - H.323 1152 kbps	13
CISCO SX20 Version TC 6.3.0.3.....	14
CU360 to CISCO SX20 - H.323 512 kbps	14
CISCO SX20 Version TC 6.3.0.3.....	14
CU360 to CISCO SX20 - H.323 384 kbps	14
CISCO SX20 Version TC 6.3.0.3.....	15
CU360 to CISCO SX20 - H.323 128 kbps	15
CISCO SX20 Version TC 6.3.0.3.....	15
CU360 to CISCO SX20 - SIP	15
CISCO SX20 Version TC 6.3.0.3.....	16
CU360 to CISCO SX20 – H323	16
CISCO DX80 Version 9.7.1	17
CU360 to CISCO DX80 - SIP.....	17
CISCO DX80 Version 9.7.1	17
CU360 to CISCO DX80 – H323	17
CISCO DX80 Version 9.7.1	18

CISCO DX80 to CU360 - SIP	18
CISCO DX80 Version 9.7.1	18
CISCO DX80 to CU360 – H323	18
CISCO WEBEX MINI Version 9.5.1	19
CU360 to CISCO WEBEX Mini - SIP	19
CISCO WEBEX Mini Version 9.5.1	19
CU360 to CISCO WEBEX Mini – H323.....	19
CISCO WEBEX MINI Version 9.5.1	20
CISCO WEBEX Mini to CU360 - SIP	20
CISCO WEBEX Mini Version 9.5.1	20
CISCO WEBEX Mini to CU360 – H323.....	20
Poly Group 700 Version V. 6.1.2.1	21
Poly Group 700 to CU360 - H.323	21
Poly Group 700 Version V. 6.1.2.1	21
Poly Group 700 to CU360 - SIP	21
Poly Group 700 Version V. 6.1.2.1	22
CU360 to Poly Group 700 - SIP	22
Poly Group 700 Version V. 6.1.2.1	22
CU360 to Poly Group 700 - H.323	22
Poly Group 700 Version V. 6.1.2.1	23
CU360 to Poly Group 700 - H.323 1920 kbps.....	23
Poly Group 700 Version V. 6.1.2.1	23
CU360 to Poly Group 700 - H.323 1152 kbps.....	23
Poly Group 700 Version V. 6.1.2.1	23
CU360 to Poly Group 700 - H.323 512 kbps.....	24
Poly Group 700 Version V. 6.1.2.1	24
CU360 to Poly Group 700 - H.323 384 kbps.....	24
Poly Group 700 Version V. 6.1.2.1	25
CU360 to Poly Group 700 - H.323 128 kbps.....	25
Poly HDX 8000 Version V. 3.1.10.....	26
Poly HDX 8000 to CU360 - H.323.....	26
Poly HDX 8000 Version V. 3.1.10.....	26
Poly HDX 8000 to CU360 - SIP	26
Poly HDX 8000 Version V. 3.1.10.....	27
CU360 to Poly HDX 8000 - SIP.....	27
Poly HDX 8000 Version V. 3.1.10.....	27
CU360 to Poly HDX 8000 - H.323.....	27
Poly HDX 8000 Version V. 3.1.10.....	28
CU360 to Poly HDX 8000 - H.323 1920 kbps	28
Poly HDX 8000 Version V. 3.1.10.....	28
CU360 to Poly HDX 8000 - H.323 1152 kbps	28
Poly HDX 8000 Version V. 3.1.10.....	28
CU360 to Poly HDX 8000 - H.323 512 kbps	29

Poly HDX 8000 Version V. 3.1.10	29
CU360 to Poly HDX 8000 - H.323 384 kbps	29
Poly HDX 8000 Version V. 3.1.10	29
CU360 to Poly HDX 8000 - H.323 128 kbps	29
Poly XC50 V. 3.0.0	31
CU360 to Poly XC50 - SIP	31
Poly XC50 V. 3.0.0	31
CU360 to Poly XC50 – H.323	31
Poly XC50 V. 3.0.0	32
Poly XC50 to CU360 - SIP	32
Poly XC50 V. 3.0.0	32
Poly XC50 to CU360 – H.323	32
YEALINK VC200 V 80.32.0.40	33
YEALINK VC200 to CU360 - SIP	33
YEALINK VC200 V 80.32.0.40	33
CU360 to YEALINK VC200 – SIP	33
Lifesize ICON600 LS_RM3_3.4.6 (3340)	34
Lifesize ICON600 to CU360 - SIP	34
Lifesize ICON600 LS_RM3_3.4.6 (3340)	34
Lifesize ICON600 to CU360 – H.323	34
Lifesize ICON600 LS_RM3_3.4.6 (3340)	35
CU360 to Lifesize ICON600 – SIP	35
Lifesize ICON600 LS_RM3_3.4.6 (3340)	35
CU360 to Lifesize ICON600 – H.323	35
Avaya XT4300/XT5000/XT7000	36
Avaya CU360 to Avaya XT V.9.1.0.44 - H.323	36
Avaya XT4300/XT5000/XT7000	36
Avaya CU360 to Avaya XT V.9.1.0.44 - SIP	36
Avaya XT4300/XT5000/XT7000	37
Avaya XT V.9.1.0.44 to Avaya CU360 - H.323	37
Avaya XT4300/XT5000/XT7000	37
Avaya XT V.9.1.0.44 to Avaya CU360 - SIP	37
Avaya XT4300/XT5000/XT7000	38
Avaya XT V.9.1.0.44 to Avaya CU360 - H.323 1920 kbps	38
Avaya XT4300/XT5000/XT7000	38
Avaya XT V.9.1.0.44 to Avaya CU360 - H.323 1152 kbps	38
Avaya XT4300/XT5000/XT7000	39
Avaya XT V.9.1.0.44 to Avaya CU360 - H.323 512 kbps	39
Avaya XT4300/XT5000/XT7000	39
Avaya XT V.9.1.0.44 to Avaya CU360 - H.323 384 kbps	39
Avaya XT4300/XT5000/XT7000	40
Avaya XT V.9.1.0.44 to Avaya CU360 - H.323 128 kbps	40
Avaya MCU6000 Version 8.4.1.12	41

Avaya MCU6000 to CU360 - H.323	41
Avaya MCU6000 Version 8.4.1.12.....	41
Avaya MCU6000 to CU360 – SIP	41
Avaya MCU6000 Version 8.4.1.12.....	42
CU360 to Avaya MCU6000 - H.323 1920 kbps	42
Avaya MCU6000 Version 8.4.1.12.....	42
CU360 to Avaya MCU6000 - H.323 1152 kbps	42
Avaya MCU6000 Version 8.4.1.12.....	43
CU360 to Avaya MCU6000 - H.323 512 kbps	43
Avaya MCU6000 Version 8.4.1.12.....	43
CU360 to Avaya MCU6000 - H.323 384 kbps	43
Avaya MCU6000 Version 8.4.1.12.....	44
CU360 to Avaya MCU6000 - H.323 128 kbps	44
Avaya MCU6000 Version 8.4.1.12.....	44
CU360 to Avaya MCU6000 - H.323	44
Avaya MCU6000 Version 8.4.1.12.....	45
CU360 to Avaya MCU6000 - SIP	45
Avaya Equinox Media Server Version 9.1.0	46
Avaya Equinox Media Server to CU360 - H.323.....	46
Avaya Equinox Media Server Version 9.1.0	46
Avaya Equinox Media Server to CU360 – SIP.....	46
Avaya Equinox Media Server Version 9.1.0	47
CU360 to Avaya Equinox Media Server - H.323 1920 kbps	47
Avaya Equinox Media Server Version 9.1.0	47
CU360 to Avaya Equinox Media Server - H.323 1152 kbps	47
Avaya Equinox Media Server Version 9.1.0	48
CU360 to Avaya Equinox Media Server - H.323 512 kbps	48
Avaya Equinox Media Server Version 9.1.0	48
CU360 to Avaya Equinox Media Server - H.323 384 kbps	48
Avaya Equinox Media Server Version 9.1.0	50
CU360 to Avaya Equinox Media Server - H.323 128 kbps	50
Avaya Equinox Media Server Version 9.1.0	50
CU360 to Avaya Equinox Media Server - H.323.....	50
Avaya Equinox Media Server Version 9.1.0	51
CU360 to Avaya Equinox Media Server - SIP.....	51
CISCO SX10 Version 9.1.4.....	52
CISCO SX10 to CU360 SIP	52
CISCO SX10 Version 9.1.4.....	53
CU360 to CISCO SX10 - H.323 1920 kbps	53
CISCO SX10 Version 9.1.4.....	53
CU360 to CISCO SX10 - H.323 1152 kbps	53
CISCO SX10 Version 9.1.4.....	54
CU360 to CISCO SX10 - H.323 512 kbps	54

CISCO SX10 Version 9.1.4.....	54
CU360 to CISCO SX10 - H.323 384 kbps	54
CISCO SX10 Version 9.1.4.....	55
CU360 to CISCO SX10 - H.323 128 kbps	55
CISCO SX10 Version 9.1.4.....	55
CU360 to CISCO SX10 – H.323	55
CU360 - Cisco VCS v X7.2.4	56
IP Office	57
Avaya Aura / Workplace / Equinox	57
PBX SIP servers	58
BROADSOFT	59
Interoperability with third party Apps and Cloud services	65
Cloud Video Services Gateways.....	68
Avaya Cloud	68
Third Party Cloud.....	69
ZOOM	69
BLUEJEANS.....	70
CISCO WEBEX	70
PEXIP and TEAMS using PEXIP	72
GOOGLE HANGOUTS/MEET	72
STARLEAF	72
TEAMS via POLY REAL CONNECT.....	72
General Troubleshooting for SIP/H.323 Cloud Services	73

Interoperability Test Descriptions

All the interoperability tests reported in the present document were performed using the CU360 v11.3.

Interoperability tests have been performed with endpoints and infrastructure of different vendors, such as Cisco, Poly, and Lifesize.

Performed tests are as follows.

Point to Point calls: CU places and receives calls. Each set of calls was performed using the H.323 protocol on endpoints and MCUs. Sets of calls were performed using the SIP protocol on selected endpoints and MCUs.

Multipoint calls: Two types of calls were tested: CU calls to the Multipoint Conference Unit (MCU), and MCU calls to CU. Each set of calls was performed using the H.323 protocol when available and SIP for selected endpoints and MCUs.

Additional tests were performed on selected endpoints and MCUs:

- Dual video with H.323 and SIP protocols
- Far End Camera Control (FECC) H.323 and SIP Interoperability
- Encryption test

Apart the above listed tests, also Presence and Web Collaboration have been submitted to interoperability test.

Successful Web Collaboration Server (WCS) interoperability tests related to presentation have been held with Equinox Media Server v9.

The following tests have been performed for XMPP presence:

- Subscription
- Contact list (presence)
- Call

The following XMPP servers have been used:

- OpenFire Rel. 3.9.3
- IPOFFICE Rel. 11.0
- Aura Rel. AVAYA-SM-7.1.3

CISCO SX80 Version 9.1.4

CISCO SX80 to CU360 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx fps	30 fps	
Audio (Tx)	G.722 64K	
Audio (Rx)	G.722.1 32K	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 5 fps	
FECC	N/A	
FECC from remote	✓	
Encryption	✓	

CISCO SX80 Version 9.1.4

CISCO SX80 to CU360 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	OPUS FB 12K	
Audio (Rx)	OPUS WB 3K	
Send DualVideo	H.264 1080p 15fps	
Receive DualVideo	H.264 1080p 5 fps	
FECC	N/A	
FECC from remote	✓	
Encryption	✓	

CISCO SX80 Version 9.1.4

CU360 to CISCO SX80 - H.323 1920 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1920	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 5fps	
Receive DualVideo	H.264 1080p 15fps	
FECC	✓	
FECC from remote	N/A	

CISCO SX80 Version 9.1.4

CU360 to CISCO SX80 - H.323 1152 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1152	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 720p	
Rx fps	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 4fps	
Receive DualVideo	H.264 1080p 10fps	
FECC	✓	
FECC from remote	N/A	

CISCO SX80 Version 9.1.4

CU360 to CISCO SX80 - H.323 512 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	512	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 1080p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 w576p	
Rx FPS	30	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 2fps	
Receive DualVideo	H.264 1080p 2fps	
FECC	✓	
FECC from remote	N/A	

CISCO SX80 Version 9.1.4

CU360 to CISCO SX80 - H.323 384 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	384	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 720p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 w448p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 1fps	
Receive DualVideo	H.264 1080p 1fps	
FECC	✓	
FECC from remote	N/A	

CISCO SX80 Version 9.1.4

CU360 to CISCO SX80 - H.323 128 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	128	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 w240p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 w288p 512x288	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 24K	
Audio (Rx)	G.722.1 24K	
Send DualVideo	H.264 720p 1fps	
Receive DualVideo	H.264 720p 1fps	
FECC	✓	
FECC from remote	N/A	

CISCO SX80 Version 9.1.4

CU360 to CISCO SX80 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	OPUS WB 3K	
Audio (Rx)	OPUS FB 12K	
Send DualVideo	H.264 1080p 5fps	
Receive DualVideo	H.264 1080p 15 fps	
FECC	✓	
FECC from remote	N/A	
Encryption	✓	

CISCO SX80 Version 9.1.4

CU360 to CISCO SX80 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx fps	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	H.264 1080p 15 fps	
FECC	✓	✓
FECC from remote	N/A	
Encryption	✓	

CISCO SX20 Version TC 6.3.0.3

CISCO SX20 to CU360 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx fps	30 fps	
Audio (Tx)	G.722 64K	
Audio (Rx)	G.722.1 32K	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 4 fps	
FECC	N/A	
FECC from remote	✓	
Encryption	✓	

CISCO SX20 Version TC 6.3.0.3

CISCO SX20 to CU360 SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722 64K	
Audio (Rx)	G.722.1 32K	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 4 fps	
FECC	N/A	
FECC from remote	✓	
Encryption	✓	

CISCO SX20 Version TC 6.3.0.3

CU360 to CISCO SX20 - H.323 1920 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1920	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 4fps	
Receive DualVideo	H.264 1080p 15fps	
FECC	✓	
FECC from remote	N/A	

CISCO SX20 Version TC 6.3.0.3

CU360 to CISCO SX20 - H.323 1152 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1152	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 1080p	
Rx fps	20 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 4fps	
Receive DualVideo	H.264 1080p 10fps	
FECC	✓	
FECC from remote	N/A	

CISCO SX20 Version TC 6.3.0.3

CU360 to CISCO SX20 - H.323 512 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	512	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 1080p	
Rx FPS	6 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 1fps	
Receive DualVideo	H.264 1080p 3fps	
FECC	✓	
FECC from remote	N/A	

CISCO SX20 Version TC 6.3.0.3

CU360 to CISCO SX20 - H.323 384 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	384	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 720p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 1080p	
Rx FPS	6 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 1fps	
Receive DualVideo	H.264 1080p 3fps	
FECC	✓	
FECC from remote	N/A	

CISCO SX20 Version TC 6.3.0.3

CU360 to CISCO SX20 - H.323 128 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	128	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 w240p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 1080p	
Rx FPS	2 fps	
Audio (Tx)	G.722.1 24K	
Audio (Rx)	G.722.1 24K	
Send DualVideo	H.264 720p 1fps	
Receive DualVideo	H.264 720p 2fps	
FECC	✓	
FECC from remote	N/A	

CISCO SX20 Version TC 6.3.0.3

CU360 to CISCO SX20 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 4 fps	
Receive DualVideo	H.264 1080p 15 fps	
FECC	✓	
FECC from remote	N/A	
Encryption	✓ Only if: Trans.Outb.BFcp=TCP or LengthAES=128b	

CISCO SX20 Version TC 6.3.0.3

CU360 to CISCO SX20 – H323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 4 fps	
Receive DualVideo	H.264 1080p 15 fps	
FECC	✓	
FECC from remote	N/A	
Encryption	✓	

CISCO DX80 Version 9.7.1

CU360 to CISCO DX80 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	Opus WB 20	
Audio (Rx)	Opus FB10	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 15 fps	

CISCO DX80 Version 9.7.1

CU360 to CISCO DX80 – H323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 15 fps	

CISCO DX80 Version 9.7.1

CISCO DX80 to CU360 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	Opus WB 20	
Audio (Rx)	Opus FB10	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 15 fps	

CISCO DX80 Version 9.7.1

CISCO DX80 to CU360 – H323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 15 fps	

CISCO WEBEX MINI Version 9.5.1

CU360 to CISCO WEBEX Mini - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	Opus WB 20	
Audio (Rx)	Opus FB10	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 15 fps	

CISCO WEBEX Mini Version 9.5.1

CU360 to CISCO WEBEX Mini – H323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 15 fps	

CISCO WEBEX MINI Version 9.5.1

CISCO WEBEX Mini to CU360 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	Opus WB 20	
Audio (Rx)	Opus FB10	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 15 fps	

CISCO WEBEX Mini Version 9.5.1

CISCO WEBEX Mini to CU360 – H323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722 64K	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p 15 fps	

Poly Group 700 Version V. 6.1.2.1

Poly Group 700 to CU360 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP 1080p	
Tx FPS	25 fps	
Video Coding (Rx)	H.264 HiP 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 annex C 48K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 HiP 1080p 12fps	
Receive DualVideo	H.264 HiP 1080p 5fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Poly Group 700 Version V. 6.1.2.1

Poly Group 700 to CU360 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP 1080p	
Tx FPS	25 fps	
Video Coding (Rx)	H.264 HiP 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 annex C 48K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 HiP 1080p 12fps	
Receive DualVideo	H.264 HiP 1080p 5fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Poly Group 700 Version V. 6.1.2.1

CU360 to Poly Group 700 - SIP

2511@10.134.78.120

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP 1080p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 HiP 1080p 5fps	
Receive DualVideo	H.264 HiP 1080p 12fps	
FECC	✓	
FECC from remote	✓	
Encryption	N/A	

Poly Group 700 Version V. 6.1.2.1

CU360 to Poly Group 700 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP 1080p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 HiP 1080p 5fps	
Receive DualVideo	H.264 HiP 1080p 12fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Poly Group 700 Version V. 6.1.2.1

CU360 to Poly Group 700 - H.323 1920 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1920	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP,1080p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 HiP 1080p 5 fps	
Receive DualVideo	H.264 HiP 1080p 15 fps	
FECC	✓	
FECC from remote	✓	

Poly Group 700 Version V. 6.1.2.1

CU360 to Poly Group 700 - H.323 1152 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1152	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP,1080p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 HiP,1080p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 HiP 1080p 5fps	
Receive DualVideo	H.264 HiP 1080p 12fps	
FECC	✓	
FECC from remote	✓	

Poly Group 700 Version V. 6.1.2.1

CU360 to Poly Group 700 - H.323 512 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	512	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP 1080p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 HiP 720p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 HiP 1080p 2 fps	
Receive DualVideo	H.264 HiP 1080p 6 fps	
FECC	✓	
FECC from remote	✓	

Poly Group 700 Version V. 6.1.2.1

CU360 to Poly Group 700 - H.323 384 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	384	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP 720p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 HiP w576p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 HiP 1080p 1 fps	
Receive DualVideo	H.264 HiP 1080p 4fps	
FECC	✓	
FECC from remote	✓	

Poly Group 700 Version V. 6.1.2.1

CU360 to Poly Group 700 - H.323 128 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	128	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP w480p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 HiP w576p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 24K	
Audio (Rx)	G722.1 annex C 24K	
Send DualVideo	H.264 HiP 720p 1fps	
Receive DualVideo	H.264 HiP 1080p 3fps	
FECC	✓	
FECC from remote	✓	

Poly HDX 8000 Version V. 3.1.10

Poly HDX 8000 to CU360 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP 1080p	
Tx FPS	25 fps	
Video Coding (Rx)	H.264 HiP 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 annex C 48K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 1080p 15fps	
Receive DualVideo	H.264 1080p 5fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Poly HDX 8000 Version V. 3.1.10

Poly HDX 8000 to CU360 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP 1080p	
Tx FPS	25 fps	
Video Coding (Rx)	H.264 HiP 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 annex C 48K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 1080p 15fps	
Receive DualVideo	H.264 1080p 5fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Poly HDX 8000 Version V. 3.1.10

CU360 to Poly HDX 8000 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP 1080p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5fps	
Receive DualVideo	H.264 1080p 15fps	
FECC	✓	
FECC from remote	✓	
Encryption	N/A	

Poly HDX 8000 Version V. 3.1.10

CU360 to Poly HDX 8000 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP 1080p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5fps	
Receive DualVideo	H.264 1080p 15fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Poly HDX 8000 Version V. 3.1.10

CU360 to Poly HDX 8000 - H.323 1920 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1920	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP,1080p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	H.264 1080p 15 fps	
FECC	✓	
FECC from remote	✓	

Poly HDX 8000 Version V. 3.1.10

CU360 to Poly HDX 8000 - H.323 1152 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1152	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP,1080p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 HiP,1080p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5fps	
Receive DualVideo	H.264 1080p 15fps	
FECC	✓	
FECC from remote	✓	

Poly HDX 8000 Version V. 3.1.10

CU360 to Poly HDX 8000 - H.323 512 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	512	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP 1080p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 HiP 720p	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 2fps	
Receive DualVideo	H.264 1080p 6fps	
FECC	✓	
FECC from remote	✓	

Poly HDX 8000 Version V. 3.1.10

CU360 to Poly HDX 8000 - H.323 384 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	384	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP 720p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264 HiP 4CIF	
Rx FPS	25 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 1fps	
Receive DualVideo	H.264 1080p 4fps	
FECC	✓	
FECC from remote	✓	

Poly HDX 8000 Version V. 3.1.10

CU360 to Poly HDX 8000 - H.323 128 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	128	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H.264 HiP w480p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP 4CIF	
Rx FPS	25 fps	
Audio (Tx)	G722.1 24K	
Audio (Rx)	G722.1 annex C 24K	
Send DualVideo	H.264 720p 3 fps	
Receive DualVideo	H.264 720p 1 fps	
FECC	✓	
FECC from remote	✓	

Poly XC50 V. 3.0.0

CU360 to Poly XC50 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H264 Hip 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H264 Hip 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 AnnexC 48K	
Audio (Rx)	G722.1 AnnexC 48K	
Send DualVideo	H264 Hip 1080p 15 fps	
Receive DualVideo	H264 Hip 1080p 15 fps	

Poly XC50 V. 3.0.0

CU360 to Poly XC50 – H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H264 Hip 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H264 Hip 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 AnnexC 48K	
Audio (Rx)	G722.1 AnnexC 48K	
Send DualVideo	H264 Hip 1080p 15 fps	
Receive DualVideo	H264 Hip 1080p 15 fps	

Poly XC50 V. 3.0.0

Poly XC50 to CU360 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H264 Hip 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H264 Hip 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 AnnexC 48K	
Audio (Rx)	G722.1 AnnexC 48K	
Send DualVideo	H264 Hip 1080p 15 fps	
Receive DualVideo	H264 Hip 1080p 15 fps	

Poly XC50 V. 3.0.0

Poly XC50 to CU360 – H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H264 Hip 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H264 Hip 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 AnnexC 48K	
Audio (Rx)	G722.1 AnnexC 48K	
Send DualVideo	H264 Hip 1080p 15 fps	
Receive DualVideo	H264 Hip 1080p 15 fps	

YEALINK VC200 V 80.32.0.40

YEALINK VC200 to CU360 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H264 Hip 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H264 Hip 1080p	
Rx FPS	30 fps	
Audio (Tx)	Opus FB 20	
Audio (Rx)	Opus FB 20	
Send DualVideo	H264 Hip 1080p 15 fps	
Receive DualVideo	H264 Hip 1080p 15 fps	

YEALINK VC200 V 80.32.0.40

CU360 to YEALINK VC200 – SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H264 Hip 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H264 Hip 1080p	
Rx FPS	30 fps	
Audio (Tx)	Opus FB 20	
Audio (Rx)	Opus FB 20	
Send DualVideo	H264 Hip 1080p 15 fps	
Receive DualVideo	H264 Hip 1080p 15 fps	

Lifesize ICON600 LS_RM3_3.4.6 (3340)

Lifesize ICON600 to CU360 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H264 Hip 720p	
Tx FPS	30 fps	
Video Coding (Rx)	H264 Hip 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 AnnexC 48K	
Audio (Rx)	G.722.1 AnnexC 48K	
Send DualVideo	H264 Hip 1080p 15 fps	
Receive DualVideo	H264 Hip 1080p 7 fps	
FECC	✓	

Lifesize ICON600 LS_RM3_3.4.6 (3340)

Lifesize ICON600 to CU360 – H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H264 Hip 720p	
Tx FPS	30 fps	
Video Coding (Rx)	H264 Hip 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 AnnexC 48K	
Audio (Rx)	G.722.1 AnnexC 48K	
Send DualVideo	H264 Hip 1080p 15 fps	
Receive DualVideo	H264 Hip 1080p 7 fps	
FECC	✓	
Encryption	✓	

Lifsize ICON600 LS_RM3_3.4.6 (3340)

CU360 to Lifsize ICON600 – SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H264 Hip 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H264 Hip 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 AnnexC 48K	
Audio (Rx)	G.722.1 AnnexC 48K	
Send DualVideo	H264 Hip 1080p 15 fps	
Receive DualVideo	H264 Hip 1080p 15 fps	
FECC	✓	

Lifsize ICON600 LS_RM3_3.4.6 (3340)

CU360 to Lifsize ICON600 – H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	-/-	
Video Coding (Tx)	H264 Hip 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H264 Hip 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 AnnexC 48K	
Audio (Rx)	G.722.1 AnnexC 48K	
Send DualVideo	H264 Hip 1080p 15 fps	
Receive DualVideo	H264 Hip 1080p 15 fps	
FECC	✓	
Encryption	✓	

Avaya XT4300/XT5000/XT7000

Avaya CU360 to Avaya XT v.9.1.0.44 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G719 64K	
Send DualVideo	H.264 HiP SVC 1080p 7 fps	
Receive DualVideo	H.264 HiP SVC 1080p 15 fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Avaya XT4300/XT5000/XT7000

Avaya CU360 to Avaya XT v.9.1.0.44 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	Opus WB	
Audio (Rx)	Opus FB	
Send DualVideo	H.264 HiP SVC 1080p 7 fps	
Receive DualVideo	H.264 HiP SVC 1080p 15 fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Avaya XT4300/XT5000/XT7000

Avaya XT v.9.1.0.44 to Avaya CU360 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G719 64K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 HiP SVC 1080p 15 fps	
Receive DualVideo	H.264 HiP SVC 1080p 7 fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Avaya XT4300/XT5000/XT7000

Avaya XT v.9.1.0.44 to Avaya CU360 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	Opus FB	
Audio (Rx)	Opus WB	
Send DualVideo	H.264 HiP SVC 1080p 15 fps	
Receive DualVideo	H.264 HiP SVC 1080p 7 fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Avaya XT4300/XT5000/XT7000

Avaya XT v.9.1.0.44 to Avaya CU360 - H.323 1920 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1920	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G719 64K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 HiP SVC 1080p 15 fps	
Receive DualVideo	H.264 HiP SVC 1080p 7 fps	
FECC	✓	
FECC from remote	✓	

Avaya XT4300/XT5000/XT7000

Avaya XT v.9.1.0.44 to Avaya CU360 - H.323 1152 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1152	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP SVC 720p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	15 fps	
Audio (Tx)	G719 64K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 HiP SVC 1080p 15 fps	
Receive DualVideo	H.264 HiP SVC 1080p 7 fps	
FECC	✓	
FECC from remote	✓	

Avaya XT4300/XT5000/XT7000

Avaya XT v.9.1.0.44 to Avaya CU360 - H.323 512 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	512	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP SVC 720p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	15 fps	
Audio (Tx)	G719 64K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 HiP SVC 1080p 5 fps	
Receive DualVideo	H.264 HiP SVC 1080p 5 fps	
FECC	✓	
FECC from remote	✓	

Avaya XT4300/XT5000/XT7000

Avaya XT v.9.1.0.44 to Avaya CU360 - H.323 384 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	384	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 HiP SVC w480p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC w720p	
Rx FPS	15 fps	
Audio (Tx)	G719 64K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 HiP SVC 1080p 3 fps	
Receive DualVideo	H.264 HiP SVC 1080p 3 fps	
FECC	✓	
FECC from remote	✓	

Avaya XT4300/XT5000/XT7000

**Avaya XT v.9.1.0.44 to Avaya CU360 - H.323
128 kbps**

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	128	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264 w288p HiP SVC	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 w480p HiP SVC	
Rx FPS	15 fps	
Audio (Tx)	G722.1 annex C 24K	
Audio (Rx)	G722.1 annex C 24K	
Send DualVideo	H.264 HiP SVC 720p 3fps	
Receive DualVideo	H.264 HiP SVC 720p 3fps	
FECC	✓	
FECC from remote	✓	

Avaya MCU6000 Version 8.4.1.12

Avaya MCU6000 to CU360 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	4096	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 annex C 48K	
Audio (Rx)	G.722.1 32K	
Send DualVideo	Gallery layout	
Receive DualVideo	H.264 1080p 5 fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Avaya MCU6000 Version 8.4.1.12

Avaya MCU6000 to CU360 – SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	4096	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722.1 32K	
Send DualVideo	Gallery layout	
Receive DualVideo	H.264 1080p 5 fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Avaya MCU6000 Version 8.4.1.12

CU360 to Avaya MCU6000 - H.323 1920 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1920	
Actual rate (Kbps)	1920/1920	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	Gallery layout	
FECC	✓	
FECC from remote	✓	

Avaya MCU6000 Version 8.4.1.12

CU360 to Avaya MCU6000 - H.323 1152 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1152	
Actual rate (Kbps)	1152/1152	
Video Coding (Tx)	H.264 HiP SVC 720p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 720p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	Gallery layout	
FECC	✓	
FECC from remote	✓	

Avaya MCU6000 Version 8.4.1.12

CU360 to Avaya MCU6000 - H.323 512 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	512	
Actual rate (Kbps)	512/512	
Video Coding (Tx)	H.264 HiP SVC 720p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 720p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	Gallery layout	
FECC	✓	
FECC from remote	✓	

Avaya MCU6000 Version 8.4.1.12

CU360 to Avaya MCU6000 - H.323 384 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	384	
Actual rate (Kbps)	384/384	
Video Coding (Tx)	H.264 HiP SVC 480p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 480p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	Gallery layout	
FECC	✓	
FECC from remote	✓	

Avaya MCU6000 Version 8.4.1.12

CU360 to Avaya MCU6000 - H.323 128 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	128	
Actual rate (Kbps)	128/128	
Video Coding (Tx)	H.264 HiP SVC 288p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 240p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 24K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 1080p 3 fps	
Receive DualVideo	Gallery layout	
FECC	✓	
FECC from remote	✓	

Avaya MCU6000 Version 8.4.1.12

CU360 to Avaya MCU6000 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	4096	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	Gallery layout	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

CU360 to Avaya MCU6000 - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	4096	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	Gallery layout	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Avaya Equinox Media Server Version 9.1.0

Avaya Equinox Media Server to CU360 - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	4096	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 annex C 48K	
Audio (Rx)	G.722.1 32K	
Send DualVideo	WCS or Gallery Layout	
Receive DualVideo	H.264 1080p 5 fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Avaya Equinox Media Server Version 9.1.0

Avaya Equinox Media Server to CU360 – SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual Bitrate (Tx/Rx)	4096	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	Opus WB	
Audio (Rx)	Opus WB	
Send DualVideo	WCS or Gallery Layout	
Receive DualVideo	H.264 1080p 5 fps	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

Avaya Equinox Media Server Version 9.1.0

CU360 to Avaya Equinox Media Server - H.323 1920 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1920	
Actual rate (Kbps)	1920/1920	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	WCS or Gallery Layout	
FECC	✓	
FECC from remote	✓	

Avaya Equinox Media Server Version 9.1.0

CU360 to Avaya Equinox Media Server - H.323 1152 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1152	
Actual rate (Kbps)	1152/1152	
Video Coding (Tx)	H.264 HiP SVC 720p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 720p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	WCS or Gallery Layout	
FECC	✓	
FECC from remote	✓	

Avaya Equinox Media Server Version 9.1.0

**CU360 to Avaya Equinox Media Server -
H.323 512 kbps**

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	512	
Actual rate (Kbps)	512/512	
Video Coding (Tx)	H.264 HiP SVC 720p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 720p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	WCS or Gallery Layout	
FECC	✓	
FECC from remote	✓	

Avaya Equinox Media Server Version 9.1.0

**CU360 to Avaya Equinox Media Server -
H.323 384 kbps**

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	384	
Actual rate (Kbps)	384/384	
Video Coding (Tx)	H.264 HiP SVC 480p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 480p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 32K	
Audio (Rx)	G722.1 annex C 48K	
Send DualVideo	H.264 1080p 3 fps	
Receive DualVideo	WCS or Gallery Layout	
FECC	✓	
FECC from remote	✓	

Avaya Equinox Media Server Version 9.1.0

CU360 to Avaya Equinox Media Server - H.323 128 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	128	
Actual rate (Kbps)	128/128	
Video Coding (Tx)	H.264 HiP SVC 288p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 240p	
Rx FPS	30 fps	
Audio (Tx)	G722.1 24K	
Audio (Rx)	G722.1 32K	
Send DualVideo	H.264 720p 3 fps	
Receive DualVideo	WCS or Gallery Layout	
FECC	✓	
FECC from remote	✓	

Avaya Equinox Media Server Version 9.1.0

CU360 to Avaya Equinox Media Server - H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	4096	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G.722.1 annex C 48K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	WCS or Gallery Layout	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

CU360 to Avaya Equinox Media Server - SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	4096	
Actual rate (Kbps)	4096	
Video Coding (Tx)	H.264 HiP SVC 1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264 HiP SVC 1080p	
Rx FPS	30 fps	
Audio (Tx)	Opus WB	
Audio (Rx)	Opus WB	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	WCS or Gallery Layout	
FECC	✓	
FECC from remote	✓	
Encryption	✓	

CISCO SX10 to CU360 SIP

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	3072	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx fps	30 fps	
Audio (Tx)	OPUS SWB 11K	
Audio (Rx)	OPUS WB 3K	
Send DualVideo	H.264 1080p 15 fps	
Receive DualVideo	H.264 1080p-5fps	
FECC	N/A	
FECC from remote	✓	
Encryption	✓	

CISCO SX10 Version 9.1.4

CU360 to CISCO SX10 - H.323 1920 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1920	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx fps	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G722 64K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	H.264 1080p 15 fps	
FECC	✓	
FECC from remote	N/A	
Encryption	✓	

CISCO SX10 Version 9.1.4

CU360 to CISCO SX10 - H.323 1152 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	1152	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264,720p	
Rx fps	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G722 64K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	H.264 1080p 10fps	
FECC	✓	
FECC from remote	N/A	
Encryption	✓	

CISCO SX10 Version 9.1.4

CU360 to CISCO SX10 - H.323 512 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	512	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264,w576p	
Rx fps	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G722 64K	
Send DualVideo	H.264 1080p 2 fps	
Receive DualVideo	H.264 1080p 4fps	
FECC	✓	
FECC from remote	N/A	
Encryption	✓	

CISCO SX10 Version 9.1.4

CU360 to CISCO SX10 - H.323 384 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	384	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,720p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264,w448p	
Rx fps	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G722 64K	
Send DualVideo	H.264 1080p 1fps	
Receive DualVideo	H.264 1080p 3fps	
FECC	✓	
FECC from remote	N/A	
Encryption	✓	

CISCO SX10 Version 9.1.4

CU360 to CISCO SX10 - H.323 128 kbps

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	128	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,w240p	
Tx FPS	15 fps	
Video Coding (Rx)	H.264,320x180	
Rx fps	30 fps	
Audio (Tx)	G.722.1 24K	
Audio (Rx)	G.722.1 24K	
Send DualVideo	H.264 720p 1 fps	
Receive DualVideo	H.264 720p 1fps	
FECC	✓	
FECC from remote	N/A	
Encryption	✓	

CISCO SX10 Version 9.1.4

CU360 to CISCO SX10 – H.323

Communication Type	Results	Comments
Nominal Bitrate (Kbps)	3072	
Actual Bitrate (Tx/Rx)	-/-	
Video Coding (Tx)	H.264,1080p	
Tx FPS	30 fps	
Video Coding (Rx)	H.264,1080p	
Rx fps	30 fps	
Audio (Tx)	G.722.1 32K	
Audio (Rx)	G722 64K	
Send DualVideo	H.264 1080p 5 fps	
Receive DualVideo	H.264 1080p-15fps	
FECC	✓	
FECC from remote	N/A	
Encryption	✓	

CU360 - Cisco VCS v X7.2.4

A limited set of interoperability tests has been performed with Cisco VCS platform, using CU360 in point to point.

Results of tests, after SIP registration on VCS, are as follows:

- **UPD successful:** Audio, video, presentation, FECC, XT built-in MCU
- **TCP successful:** Audio, video, presentation, FECC, XT built-in MCU
- **TLS enabled successful:** Audio, video, presentation, FECC, XT built-in MCU. When TLS is used, all systems involved in the call must be registered as TLS.

Results of tests, after H.323 registration on VCS, are as follows:

- **Successful:** Audio, video, presentation, FECC, XT built-in MCU

Important

All the above interoperability tests are successful when **encryption is disabled**. To obtain the same results when encryption is enabled, all audio capabilities must be disabled (audio call will be established with G.722), and also the video capabilities H.264 High Profile and H.264 SVC must be disabled (H.264 Baseline Profile will be used).

IP Office

CU360 endpoints registers as an Avaya SIP endpoint; no 3rd party SIP license needed (CU360 requires IP Office v10.1 and later). An Avaya IP Endpoint license for the IP Office is required for each. The CU360 SIP configuration includes the option "IP Office Server" among "Server Models"

The customer should just configure the CU360 SIP Server page (please see the deployment guide available on <https://support.avaya.com/>) following the installation guidelines of IPO.

Avaya Aura / Workplace / Equinox

The CU360 can be easily configured with a SIP extension, just using an Exchange account (dedicated to the room, or specific of a user), with the "Easy to start" procedure

The "Easy to start" procedure is same as the procedure you follow to login with the Workplace client. You just enter your email and password, and the client becomes your SIP terminal. CU360 now behaves exactly the same way.

If there is the need to have a specific account for the room, the IT guys can create a "room delegate account".

This account can also be used to attach the CU360 calendar to a specific Outlook calendar.

For all the rest (generic SIP configuration), you can refer to the SIP configuration within the deployment guide of the CU360 User guide available on <https://support.avaya.com/>).

Being treated as a standard SIP endpoint, on Aura side, you can also refer to the standard Aura documentation.

- "Deploying Avaya Aura® Communication Manager"
- "Deploying Avaya Aura® Communication Manager in Virtualized Environment"
- "Administering Avaya Aura® Communication Manager"
- "Administering Avaya Aura® System Manager"
- "Administering Avaya Aura® Device Services"

PBX SIP servers

The following table reports the interoperability with PBX sip servers.

	Asterisk™	3CX™	FreeSWITCH™
SIP	UDP, TCP, TLS	UDP, TCP, TLS	UDP, TCP, TLS
Media encryption protocol	SRTP via in-SDP (SDS)		
Media encryption algorithm	AES_256_CM_HMAC_SHA1_80 AES_CM_128_HMAC_SHA1_80	AES_256_CM_HMAC_SHA1_80 AES_CM_128_HMAC_SHA1_80	AES_256_CM_HMAC_SHA1_80 AES_CM_128_HMAC_SHA1_80
Media encryption rules	Best effort and strict	Two types of Best effort: RFC8643/IMTC mode RFC5939/CapNeg	Strict only
Audio codecs	G.722.1 Annex C (siren 14), G.722.1 (siren 7), OPUS, G722, G711, G729	It depends on the 3CX media server modes used. If Proxy - Pass Through Mode or Transcoding - Bound Mode: Opus, G.722, G.711, G.729A, DTMF-RFC2833	If bypass_media or bypass_media_after_bridge options are set, the system codecs are all available. Otherwise, the supported codecs are: G.722.1 Annex C (siren 14), G.722.1 (siren 7), OPUS, G722, G711, G729
Video codecs	H.264 HP, H.264 BL	As above, it depends on the 3CX media server modes used	If bypass_media or bypass_media_after_bridge options are set, the system codecs are all available. Otherwise, the supported codecs are: H.264 HP, H.264 BL
DTMF types	RFC4733, RFC2833	RFC4733, RFC2833	RFC4733, RFC2833
Some key advanced SIP features	With feature codes (DTMF), the following are supported: Do Not Disturb, Hold/Resume, Call Forward, Call Pick Up, Call Transfer, Call Park/Unpark, and Automatic Redial/Callback.	With feature codes (DTMF), the following are supported: Do Not Disturb, Hold/Resume, Call Forward, Call Pick Up, Call Transfer, Call Park/Unpark, and Automatic Redial/Callback.	With feature codes (DTMF), the following are supported: Do Not Disturb, Hold/Resume, Call Forward, Call Pick Up, Call Transfer, Call Park/Unpark, and Automatic Redial/Callback.
Some key limitations	H264 High Profile SVC, H264 Baseline Profile SVC video codecs are not supported. BFCP for Content Video Sharing and Far End Camera Control protocols is not supported. Moreover, Asterisk has some limitations related to its SDP negotiation module.	Auto-Provisioning, Call Waiting, Message Waiting Indicator , Busy Lamp Field Configuration, Feature Key Synchronization Configuration, Emergency call configuration, User Service configuration, Directory Configuration, and Call Logs Configuration are not supported.	Auto-Provisioning, Call Waiting, Message Waiting Indicator , Busy Lamp Field Configuration, Feature Key Synchronization Configuration, Emergency call configuration, User Service configuration, Directory Configuration, and Call Logs Configuration are not supported.

BROADSOFT

Overview

This chapter describes the SIP interoperability tests of the CU360 with the Broadsoft infrastructure.

The CU360 (Device under Test - DUT) is registered in the Broadsoft Public Interoperability System and tested as specified in

- Broadsoft SIP Phone Interoperability Test Plan, Release 22.0, Document Version 1.10. The results of the test cases (in this document) are reported according
- BroadWorks SIP Phone Interoperability Test Report, Release 22.0.

The Broadsoft documentation is available at <https://interop.broadsoft.com>.

The Test has been performed in IPV4 only.

Test Results

The following table is filled as the test report by marking an “X” in the appropriate column: Pass, Fail, NA (Not Applicable), NS (Not Supported), NT (Supported but Not Tested).

Test Case Title	Priority	Pass	Fail	NA	NS	NT
Basic Package						
Basic – Call Origination						
1 DUT to BroadWorks; DUT Hangs Up After Answer	P0	X				
2 DUT to BroadWorks; DUT Hangs Up Before Answer	P0	X				
3 DUT to BroadWorks; BroadWorks Hangs Up After Answer	P0	X				
Basic – Call Termination						
4 BroadWorks to DUT; BroadWorks Hangs Up After Answer	P0	X				
5 BroadWorks to DUT; BroadWorks Hangs Up Before Answer	P0	X				
6 BroadWorks to DUT; DUT Hangs Up After Answer	P0	X				
Basic – Session Audit						
7 BroadWorks to DUT; Wait for Session Audit	P0	X				
8 BroadWorks to DUT; BroadWorks Holds, Wait for Session Audit	P0	X				
9 DUT to BroadWorks; Wait for Session Audit	P0	X				
10 DUT to BroadWorks; DUT Holds, Wait for Session Audit	P0				X	
11 DUT to BroadWorks; DUT Restarts, Wait for Session Audit	P0	X				
Basic – Session Timer						

Test Case Title	Priority	Pass	Fail	NA	NS	NT
12 BroadWorks to DUT; Wait for Session Timer	P1				X	
13 BroadWorks to DUT; BroadWorks Holds, Wait for Session Timer	P1				X	
14 DUT to BroadWorks; Wait for Session Timer	P1				X	
15 DUT to BroadWorks; DUT Holds, Wait for Session Timer	P1				X	
Basic – Ringback and Early Media						
Ringback						
16 DUT Generates Local Ringback	P0	X				
17 DUT Receives Remote Ringback	P0	X				
18 DUT Generates Local Ringback, Followed by Receiving Remote Ringback	P0	X				
Forked Dialog						
19 Early to Confirmed Dialog Forking	P0	X				
20 Early to Early to Confirmed Dialog Forking	P0	X				
181 Call is Being Forwarded						
21 181 Call is Being Forwarded	P1	X				
Basic – Dial Plan						
22 Local Operator Dialing (0)	P0	X				
23 International Dialing (011XXXXXXXXXX)	P0	X				
24 Casual Access Dialing (1010321-12405550000)	P0				X	
25 Extension Dialing (XXXX#)	P0				X	
26 Feature Access Code Dialing (*XX)	P0	X				
27 Interrogation Feature Access Code Dialing (*XX*)	P0	X				
Basic – DTMF						
28 In-band DTMF	P0				X	
29 RFC 2833 DTMF Offered, In-band DTMF Negotiated	P0	X				
30 RFC 2833 DTMF	P0	X				
31 DTMF Relay	P2				X	
Basic – Codec Negotiation/Renegotiation						
Codec Negotiation						
32 Codec Negotiation: re-INVITE without SDP	P0	X				
33 Codec Negotiation: Initial Answer with HOLD SDP	P0	X				
Codec Renegotiation						

Test Case Title	Priority	Pass	Fail	NA	NS	NT
34 Codec Renegotiation: Blind Transfer	P0	X				
35 Codec Renegotiation: Attended Transfer	P0	X				
36 Codec Renegotiation: Blind Transfer of Call on Hold	P0				X	
BroadWorks Services Package						
BroadWorks Services – Third-Party Call Control						
Basic Call Control						
37 Click To Dial	P0	X				
38 Click To Hold; DUT Originator	P0	X				
39 Click To Hold; DUT Terminator	P0	X				
Advanced Call Control						
40 Click To Dial	P2				X	
41 Click To Answer	P2				X	
42 Click To Hold; DUT Originator	P2				X	
43 Click To Hold; DUT Terminator	P2				X	
44 Click To Answer; Call Waiting	P2				X	
45 Click To Dial; Second Call	P2				X	
BroadWorks Services – Voice Messaging						
Voice Message Deposit/Retrieval						
46 Voice Message Deposit	P0	X				
47 Voice Message Retrieval	P0	X				
Message Waiting Indicator						
48 Message Waiting Indicator: Unsolicited	P1				X	
49 Message Waiting Indicator: Solicited, MWI Subscription	P1				X	
50 Message Waiting Indicator: Solicited, Refresh MWI Subscription	P1				X	
51 Message Waiting Indicator: Solicited, NOTIFY for MWI Status Change	P1				X	
52 Message Waiting Indicator: Update During Active Call	P1				X	
53 Message Waiting Indicator: Message Waiting Count	P2				X	
54 Message Waiting Indicator: Message Waiting Saved and Urgent Information	P2				X	
Voice Portal Outcall						
55 Voice Portal Outcall	P0	X				

Test Case Title	Priority	Pass	Fail	NA	NS	NT
BroadWorks Services – Advanced AlertingX						
56 Ring Splash	P2				X	
57 Priority Alert Ringing	P2				X	
58 Priority Alert Call Waiting Tone	P2				X	
59 Alternate Number Ringing	P2				X	
60 Alternate Number Call Waiting Tone	P2				X	
61 Silent Alerting	P2				X	
BroadWorks Services – Calling and Connected Line ID						
Calling Line ID						
62 Calling Name and Number	P1				X	
63 Anonymous Call	P1	X				
64 Calling Name with Unicode Characters	P1	X				
Connected Line ID						
65 Connected Line Presentation	P2				X	
66 Connected Line Presentation with Unicode Characters	P2				X	
67 Connected Line Restriction	P2				X	
68 Connected Line Presentation After Call Forward	P2				X	
69 Connected Line Restriction After Call Forward	P2				X	
70 Connected Line Presentation on UPDATE	P2				X	
71 Connected Line Presentation on Re-INVITE	P2				X	
BroadWorks Services – Diversion and History-Info						
72 Diversion Header	P1				X	
73 Diversion Header: Multiple Redirects	P1				X	
74 History-Info Header	P1	X				
75 History-Info Header: Multiple Redirects	P1	X				
BroadWorks Services – Advice of Charge						
76 AoC-D Currency	P2				X	
77 AoC-D Free	P2				X	
78 AoC-E Currency	P2				X	
79 AoC-E Free	P2				X	
BroadWorks Services – Meet-Me Conferencing						
80 Meet-Me Conference	P0	X				

Test Case Title	Priority	Pass	Fail	NA	NS	NT
81 Meet-Me Conference – G722	P1	X				
82 Meet-Me Conference – AMR-WB	P1				X	
83 Meet-Me Conference – Opus	P1	X				
BroadWorks Services – Collaborate – Audio						
84 Collaborate – Audio	P0	X				
85 Collaborate – Audio – G722	P1	X				
86 Collaborate – Audio – Opus	P1	X				
BroadWorks Services – Call Decline Policy						
87 Call Decline Policy	P1	X				
DUT Services Package						
DUT Services – Call Control Services						
Call Waiting						
88 Call Waiting	P1				X	
Call Hold						
89 Call Hold: DUT Terminator	P1				X	
90 Call Hold: DUT Originator	P1				X	
Call Transfer						
91 Blind Transfer	P1				X	
92 Attended Transfer After Answer	P1				X	
93 Attended Transfer Before Answer	P1				X	
Three-Way Call						
94 Three-Way Call After Answer	P1				X	
95 Three-Way Call Before Answer	P1				X	
Network-based Conference						
96 Network-based Three-Way Call	P2				X	
97 Network-based N-Way Call	P2				X	
DUT Services – Registration and Authentication						
98 REGISTER Authentication	P1	X				
99 Maximum Registration Time	P1				X	
100 Minimum Registration Time	P1				X	
101 INVITE Authentication	P1	X				
102 Re-INVITE/UPDATE Authentication	P1	X				
103 REFER Authentication	P1				X	

Test Case Title	Priority	Pass	Fail	NA	NS	NT
104 DUT Authenticating BroadWorks INVITE	P2				X	
DUT Services – Emergency Call						
105 Emergency Call; Originator Hang Up	P1				X	
106 Emergency Call; Originator Hang Up; Ringback Unanswered	P1				X	
107 Emergency Call; Originator Hang Up; Ringback Answered	P1				X	
108 Emergency Call; Howler Tone	P1				X	
DUT Services – P-Access-Network-Info						
109 REGISTER with P-Access-Network-Info Header	P1				X	
110 INVITE with P-Access-Network-Info Header	P1				X	
DUT Services – Miscellaneous Features						
111 Do Not Disturb	P1	X				
112 Call Forward Always	P1				X	
113 Call Forward Always Diversion Inhibitor	P1				X	
114 Anonymous Call	P1				X	
115 Anonymous Call Block	P1				X	
116 Remote Restart via NOTIFY	P1				X	

Interoperability with third party Apps and Cloud services

The following table summarizes the results of some tests performed with third-party cloud services and apps, using a CU360 where the Google™ Framework Services have been installed, using a valid Google™ Account. See also “Cloud Video Services” for details about using CU360 App with third-party services. All the Third-Party apps listed below can enjoy ePTZ of the local camera using the remote control.

Third-Party Service			CU360 App			Streams & Notes
Cloud	SIP GW	H323 GW	SIP IOT	H323 IOT	Click to Join (Exchange Calendar)	A=Audio V=Video P=Presentation
BlueJeans	√	√	√	√*	√	AVP *Firewall rules needed for P
Google Hangouts	√*	-	√	-	√	AV no presentation available *GW through Pexip
Pexip	√	-	√	√	√	AVP
WebEx	√	√	√*	√*	√	AVP *Firewall rules needed for AVP
StarLeaf	√	√	-	√	√ (with Mobile App)	AV no presentation available
Zoom	√	√	√	√*	√	AVP *Firewall rules needed for P
Spaces	√		√		√	AVP
Teams via Poly Real Connect	√	√	√	√	V	AVP

Important Notes:

- Third-party applications installed on the CU360 device are not directly supported or tested by Avaya. Avaya declines any responsibility for third-party apps installed on the device from any sources, including “Aurora Store”.
- Avaya products cannot certify against all third-party applications, as versions, deployment options, and other factors create many variations and complex interactions.
- Avaya Inc. is not responsible for the contents or reliability of any third-party product referenced elsewhere within this Documentation, and Avaya does not necessarily endorse the products, services, or information described or offered within them. We cannot guarantee that these products or their configuration as explained in this document will work all the time and we have no control over the availability or changes in those products and their documentation or configuration or services.
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Mobile App Name Package Name	Icon	App Version	Other USB Devices M=USB mouse K=USB Keyboard A=USB mic+speaker	Sharing Wi-Fi Display	Video Resolution	Aspect Ratio	P2P Calls	Dual Monitor	Notes
Spaces room meeting com.avaya.spaces.room		1.0.4.901	Y (M,K)	N	720p	16:9 full view	N	Clone	no sharing feature
WebEx com.cisco.webex.meetings		41.5.0	Y (M,K,A)	Y	720p	16:9 full view	N	Clone	
Google Meet com.google.android.apps.meetings		45.0.328626805	Y (M,K,A) headphone is selectable	Y	720p	16:9 full view	N	Clone	
Jitsi Meet 8x8 org.jitsi.meet		21.1.0	Y (M,K,A) headphone is selectable	N	720p	16:9 full view	N	Clone	
Rainbow Alcatel com.ale.rainbow		1.87.1	Y (M,K,A)	N	576p	4:3 (horizontal angle reduction)	Y	Clone	no sharing feature
Avaya Spaces com.avaya.spaces		2.1001.6.1	Y (M,K,A)	N	1080p	16:9	Y	Remote video Content selectable	
Microsoft Teams com.microsoft.teams		1416/1.0.0.2021055001	Y (M,K)	Y	480p	16:9 (vertical / horizontal angle reduction)	Y	Clone	
Pexip com.mymeeetingvideo.app		3.4.8	Y (M,K)	Y	480p	16:9 full view	N	Clone	
Zoom us.zoom.videomeetings		5.6.6.2076	Y (M,K)	Y	480p	4:3 (horizontal angle reduction for)	N	Clone	Firewall rules needed for Presentation
Skype - free IM & video calls com.skype.raider		8.72.0.94	Y (M,K, A)	Y	480p	16:9 (vertical / horizontal angle reduction)	Y	Clone	
Skype for Business com.microsoft.office.lync15		6.27.0.18	Y (M,K)	Y	480p	4:3	Y	N/A	
Ring Central com.glip.mobile		21.2.20.545	Y (M,K)	Y	480p	4:3 (horizontal angle reduction)	Y instant meeting	Clone	
RingCentral Meetings com.ringcentral.meetings		21.1.40033.0329	Y (M,K)	Y	480p	4:3 (horizontal angle reduction)	N	Clone	
Google Hangouts com.google.android.talk		38.0.372644034	Y (M,K, A)	N	480p - 288p	16:9 (After first 10 seconds change resolution)	Y	Clone	no sharing feature
StarLeaf com.starleaf.breeze2		4.8.22	Y (M,K,A) headphone is selectable	Y	288p	16:9 (vertical / horizontal angle reduction for 16:9)	N	Clone	Rear camera (AV Grabber) cannot be used No sharing feature
BlueJeans com.bluejeansnet.Base		47.0.2775	Y (M,K, A) headphone is selectable	Y	288p	4:3 (horizontal angle reduction)	N	Clone	Firewall rules needed for Presentation
GoToMeeting com.gotomeeting		4.7.3.1	Y (M,K)	Y	240p	4:3 (horizontal angle reduction)	N	Clone	
Lifesize com.mirial.lifesizecloud		13.5.12	Y (M,K)	N	480p	4:3 (horizontal angle reduction)	Y	Clone	sharing available but not working
Avaya Cloud Office Rooms com.avaya.cloudoffice.rooms		21.2.20.038	Y (M,K)	Y from PC	720p	16:9 full view	Y	Gallery Active speaker Content selectable	
Avaya Cloud Office com.avaya.cloudoffice		20.4.21.529	Y (M,K)	N	960x540	4:3 (horizontal angle reduction)	Y	Clone	

Note:

"Video Grabber as rear camera" – Steps to use it:

1. Grabber connected to CU360 (USB Cable) from the turning on of the codec
2. Connect an HDMI Source Device (camera/PC/MAC) to the Grabber (HDMI cable)
3. During the meeting with the third party app it's possible to select the source connected at the HDMI cable as "rear" camera, inside the Video source menu of the App.

This video source replaces the live video from the embedded camera of the CU360.

Cloud Video Services Gateways

Avaya Cloud

You can use the Avaya Spaces mobile application or the Avaya Spaces Web PC/MAC Client to invite your CU360 Endpoint to an Avaya Spaces Meeting. If the CU360 Endpoint can connect to the remote Avaya Spaces Cloud Service, a QR Barcode and also a string Verification Code appears on the home page of the CU360 Endpoint.

To invite the CU360 Endpoint in Avaya Spaces using the Avaya Spaces Mobile App:

1. Connect your Avaya Spaces Mobile App to the desired Spaces Meeting.
2. Scan the QR Barcode with your Mobile App.

To invite the CU360 Endpoint in Avaya Spaces using the Avaya Spaces PC/MAC Web Client:

1. Connect your Avaya Spaces PC/MAC Web Client to the desired Spaces Meeting.
2. Insert the Verification Code into the Meeting Web Page.

Please refer to the Deployment Guide on the Avaya Support Site (<https://support.avaya.com>) for more details if needed.

Third Party Cloud

The CU360 device has been tested with several third-party cloud video services without being registered to any H323/SIP server.

The CU360 app can natively connect to several cloud services using SIP Gateways.

The below sections explain how this sip connectivity is established.

SIP Gateway is not needed if the respective Android app is used.

ZOOM, BlueJeans, CISCO WebEx, Pexip, Google Hangouts/Meet, STARLEAF Android apps are downloadable from the Google Play Store. You will need to set up access to the Google Play Store using the OpenGApps application.

More information can be found on the Avaya Support Site:

browse <https://support.avaya.com/>, select "Support by Product> Product Specific Support", search "CU360" and select version 11.3> Downloads> Release Notes.

The limitations and known issues for the different platforms are listed below. See also Third-Party Products Disclaimer.

ZOOM

The CU360 endpoints successfully connect H.323 or SIP meetings through ZOOM Gateway.

The network configuration must follow the guidelines provided by Zoom (www.zoom.com).

Here a reference article: <https://support.zoom.us/hc/en-us/articles/201363273-Getting-Started-With-H-323-SIP-Room-Connector>

To make SIP or H323 calls using the device, you must have at least one Cloud Room Connector (CRC) port purchased.

To make calls no special configuration is needed on your device.

To receive calls you need:

- to be publicly accessible,
- or to have a 1:1 NAT configuration of the FW/NAT and have enabled the NAT feature on your device as specified by the vendor and open the DEVICE ports as specified in the Security port matrix.
- See also Known Issue with Zoom CRC

Presenting

The device cannot present if the meeting option "Who can share?" is set to "Host only" even if it joins as "host".

Stealing Presentation

The device cannot steal the presentation if the meeting option "Who can start sharing when someone else is sharing?" is set to "host" even if it joins as "host".

Content sharing on SIP calls

Seldom, it could happen that the device receives the presentation as a mixed stream together with the live video.

To have it as a second stream the user should:

- Press "1" via DTMF code to access the menu.
- Press "0" to access more options.
- Press "1" to toggle H.239 or BFCP for dual screen.

(<https://support.zoom.us/hc/en-us/articles/202046813-How-Do-I-Enable-H-239-or-BFCP->)

Content sharing on H323 calls

The device receives it mixed together with the live video stream.

To receive it as a dual screen content:

- the device should be publicly accessible;
or the user should
- set 1:1 NAT configuration on the NAT firewall network equipment, (only for the local device's ephemeral UDP ports)
- enable the "NAT Traversal" option on the device;
or the user should
- activate an Application Layer Gateway (ALG) for H323 support on the NAT firewall network equipment (it could not work correctly if the ALG software is not updated)

(<https://support.zoom.us/hc/en-us/articles/202046813-How-Do-I-Enable-H-239-or-BFCP->)

(<https://support.zoom.us/hc/en-us/articles/201458316>)

BLUEJEANS

The CU360 endpoints successfully connect H.323 or SIP meetings through BlueJeans Gateway.

The network configuration must follow the guidelines provided by Bluejeans (www.bluejeans.com).

Here a reference article: <https://support.bluejeans.com/s/article/Connecting-Room-System-video-devices-to-a-meeting?ui-force-components-controllers-recordGlobalValueProvider.RecordGvp.getRecord=1&r=4>

Content sharing on H323 calls.

The device receives the video content mixed together with the live video stream.

To receive it as a dual screen content:

- the device should be publicly accessible;

or the user should

- set 1:1 NAT configuration on the NAT firewall network equipment, (only for the local device's ephemeral UDP ports)
- enable the "NAT Traversal" option on the device;

or the user should

- activate an Application Layer Gateway (ALG) for H323 support on the NAT firewall network equipment (it could not work correctly if the ALG software is not updated).

CISCO WEBEX

The CU360 endpoints successfully connect H.323 or SIP meetings through CISCO WebEx Gateway.

The network configuration must follow the guidelines provided by Cisco (<https://help.webex.com/>) Here a reference article: <https://help.webex.com/en-us/WBX264/How-Do-I-Allow-Webex-Meetings-Traffic-on-My-Network>

Call/Audio/Video/Content

To correctly establish a SIP/H.323 call and have media (Audio/Video/Content) in both directions SIP/H.323 calls it is needed to open proper ports in the FW/NAT of your network, following WebEx instructions available at <https://help.webex.com/en-us/WBX264/How-Do-I-Allow-Webex-Meetings-Traffic-on-My-Network>

Sometimes, you must also open the NAT/FW ports that are specific for SIP and H323 media, TCP and UDP, as described in Security Port Matrix.

For Avaya Collaboration Unit CU360 Port Matrix, see <https://support.avaya.com> and search Avaya Port Matrix for latest document, or check <https://support.avaya.com/css/P8/documents/101065980>

Incoming audio/video (H323/SIP calls)

The device doesn't receive audio/video even if the call is established and the local audio and video are received by the remote.

To resolve this issue:

- the device should be publicly accessible;

or the user should

- set 1:1 NAT configuration on the NAT firewall network equipment, (only for the local device's ephemeral UDP ports)
- enable the "NAT Traversal" option on the device;

or the user should

- activate an Application Layer Gateway (ALG) for H323/SIP support on the NAT firewall network equipment (it could not work correctly if the ALG software is not updated)

SIP content sharing issues

if content sharing does not work during SIP calls, the user should set on the device "Transport Outbound BFCP" option to "UDP Preferred"

Received content sharing

The device (only CU360 family systems) is not able to decode the remote presentation stream sent by the WebEx app (mobile or PC) if the display of the shared content is in the portrait mode.

Note:

In deploying scenarios where the device is not registered to any server (H323-Gatekeeper or SIP-Server),

it is suggested to use the SIP service call respect to the H323 one to avoid FW/NAT issues.

PEXIP and TEAMS using PEXIP

The CU360 successfully succeeds in joining SIP/H.323 meeting through Pexip Gateway. The network configuration must follow the guidelines provided by Pexip (www.pexip.com/). Here some reference articles:

https://docs.pexip.com/clients/using_vmr.htm
https://docs.pexip.com/admin/port_usage.htm

Content sharing on SIP calls

If presentation does not work when making a SIP call to “Pexip” cloud service, the user should set on the device "Transport Outbound BFCP" option to "UDP Preferred"

GOOGLE HANGOUTS/MEET

The CU360 successfully succeeds in joining Google Hangouts/Meet meeting through Pexip Gateway. Here some reference articles:

<https://www.pexip.com/features/integrations?hsCtaTracking=31f804b64bc2-4fac-ab86-30a210b1e62b%7Cbd19d945-4546-4a7b-8fa0-4c650af1cf0a>

<https://www.pexip.com/google-interoperability>

https://docs.pexip.com/admin/port_usage.htm

Content sharing on SIP calls

If presentation does not work when making a SIP call to “Hangouts” cloud service, the user should set on the device "Transport Outbound BFCP" option to "UDP Preferred"

STARLEAF

The CU360 successfully succeeds in joining H.323 meeting through Starleaf Gateway. The SIP call fails to establish; the cloud service refuses it. The network configuration must follow the guidelines provided by Starleaf (www.starleaf.com/). Here a reference article: <https://support.starleaf.com/using/conferencing-and-recording/how-to-join-a-starleaf-meeting/>

TEAMS via POLY REAL CONNECT

The CU360 App successfully succeeds in joining Teams meeting via Poly Real Connect Gateway (SIP/H.323).

General Troubleshooting for SIP/H.323 Cloud Services

Issue: the device cannot establish a SIP/H323 call when the device is on a private network.

To correctly establish the call:

- the device should be publicly accessible;

or the user should:

- open the outbound ports used by the specific cloud service into the NAT Firewall network equipment¹

if it is still not working:

- enable the “NAT Traversal” option on the device;
- set 1:1 NAT configuration on the NAT firewall network equipment (for the local device’s ephemeral TCP ports and the local SIP/H323 well known ports)

or

- the user should activate an Application Layer Gateway (ALG) for SIP/H323 support on the NAT firewall network equipment (it could not work if the ALG software is not updated).

For details, refer to the related vendor support pages:

BlueJeans: “<https://support.bluejeans.com/s/article/TCP-UDP-ports-used-by-BlueJeans-Network>”

Pexip: “https://docs.pexip.com/admin/port_usage.htm”

WebEx: “<https://help.webex.com/en-us/WBX264/How-Do-I-Allow-Webex-Meetings-Traffic-on-My-Network>”

Zoom: “<https://support.zoom.us/hc/en-us/articles/201458316>”

Issue: The device doesn’t receive audio/video even if the call is established and the local ones are correctly sent

To correctly receive the audio/video streams:

- the device should be publicly accessible;

or the user should:

- set 1:1 NAT configuration on the NAT firewall network equipment, (only for the local device’s ephemeral UDP ports)
- enable the “NAT Traversal” option on the device;

or

- the user should activate an Application Layer Gateway (ALG) for SIP/H323 support on the NAT firewall network equipment (it could not work correctly if the ALG software is not updated).

Issue: The device receives the content sharing mixed together with the live video during an H323 call.

To receive it as a second stream:

- the device should be publicly accessible;

or the user should:

- set 1:1 NAT configuration on the NAT firewall network equipment, (only for the local

device's ephemeral UDP ports)

- enable the "NAT Traversal" option on the device;

or

- the user should activate an Application Layer Gateway (ALG) for H323 support on the NAT firewall network equipment (it could not work correctly if the ALG software is not updated).

Issue: The device fails sending sharing content during a SIP call. To avoid this:

o the device should be publicly accessible;

or the user should:

- set 1:1 NAT configuration on the NAT firewall network equipment, (only for the local device's ephemeral TCP/UDP ports; it depends on transport type negotiated for BFCP)

- enable the "NAT Traversal" option on the device;

or

- the user should activate an Application Layer Gateway (ALG) for SIP support on the NAT firewall network equipment (it could not work correctly if the ALG software is not updated).

Issues: The device

- disconnects always in the exact same amount of time,
- stops receiving audio/video streams,
- has SIP presentation issues,

To avoid these issues, try to lower the value of "Pinhole Refresh Time" setting on your device.

Issue: The device experiments missing remote live video or freezes on it during an H323 call
If the "Video Privacy" option is set to "Hide Video" set it to "Image".

Issue: The device experiments issues connecting to a cloud service with an H323/SIP session border controller

Verify that all the H323/SIP ALG (application level gateway) on the NAT firewall equipment are disabled.