



## The MOST Affordable HD Video Conferencing

Video conferencing has become an increasingly popular service, being widely used by enterprises, organizations and individuals. Thanks to the enormous growth in smart phone use and widespread adoption of multimedia applications, video conferencing is quickly becoming the natural choice for interpersonal and organizational communications.

## Conferencing for Enterprises, Conferencing for SMBs

The Orion-VX1000/VX2000 is a plug & play, open, standards based, high definition voice and video conferencing bridge that provides real-time, low latency, ubiquitous conferencing capabilities between different devices with different multimedia voice and video capabilities. Offering unmatched price/performance value, Orion-VX1000/VX2000 targets conferencing for enterprises.

The Orion-VX1000/VX2000 is available as a standalone appliance that connects to any IP network providing voice and video conferencing solution.

**[www.orionmcu.com](http://www.orionmcu.com)**



\* Product specifications is subject to change at the sole discretion of SURF Communication Solutions.



## Why Video Conferencing?

By using video conferencing, enterprises and organizations reduce enormous expenses. They save time, money and become more efficient through significant decrease in travel and unnecessary overhead. Conferencing for SMBs and conferencing for enterprises need to be affordable without compromising service quality.

## Video Conferencing Challenges

One of the main video conferencing challenges is providing interoperability between various types of video endpoints and applications. The interoperability problem is caused by incompatibility between different types of networks, devices, signaling and different media characteristics such as codecs, frame rates, frames size and resolution, that need a powerful bridging capability.

Real time video communication in bandwidth constraint networks requires special handling and bandwidth availability changes constantly as subscribers roam throughout the mobile networks. Video conferencing application needs to meet the bandwidth constraint and mobile networks challenges.

HD voice and video conferencing solutions need to be cost effective, such that any organization and enterprise at any size can afford it or in other words, it should be so cost-effective that the enterprise cannot afford not to have it.

## Orion-VX1000/VX2000 Meets the Challenges

Orion-VX1000/VX2000 offers a whole solution for the interoperability. It bridges the gaps by providing connectivity beyond a wide variety of devices including tablets, smart phones, desktops, hardware phones and room systems that support different codec types and profiles and signaling protocols.

Orion-VX1000/VX2000 supports High Definition voice and video. The system is capable of identifying the handsets' resolution capabilities and it provides only the handsets' required resolution through transcoding.

## Network Topologies

### Orion-VX1000/VX2000 via SIP PBX



1. All SIP endpoints at the enterprise register to the IP PBX.
2. The IP-PBX supports SIP Signaling
3. The Orion-VX1000/VX2000 registers, or is configured as a trunk at the PBX.
4. Orion-VX1000/VX2000 provides Mixing/Bridging/Switching and signaling interoperability.
5. Voice-only end-points can also connect to the bridge.

### Orion-VX1000/VX2000 via PBX/Gatekeeper and Direct Connectivity



1. The H.323 endpoints at the enterprise register to the IP PBX/Gatekeeper.
2. The IP-PBX supports H.323 Signaling
3. The Orion-VX1000/VX2000 registers, or is configured as a trunk at the Gatekeeper.
4. Orion-VX1000/VX2000 provides Mixing/Bridging/Switching and signaling interoperability.
5. Voice-only end-points can also connect to the bridge.

## Network Topologies

### Orion-VX1000/VX2000 via PBX and Direct Connectivity



1. SIP endpoints are registered on Orion-VX1000/VX2000 internal SIP registrar or PBX.
2. The IP-PBX supports SIP Signaling
3. The Orion-VX1000/VX2000 also registers, or is configured as a trunk at the PBX.
4. SIP endpoints can call through the PBX, Orion-VX1000/VX2000 registrar or directly to the Orion-VX1000/VX2000
5. Orion-VX1000/VX2000 provides Mixing/Bridging/Switching and signaling interoperability.
6. SIP endpoints can also connect directly using direct IP dialing.
7. Voice-only clients can also participate in a video conference, making it a mixed Voice/Video conference.

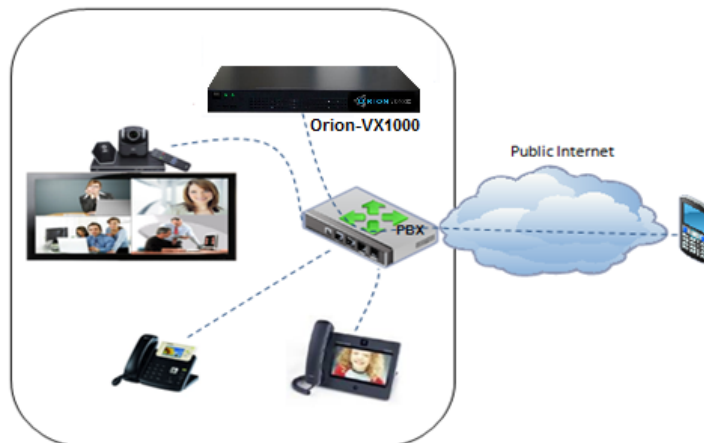
### Direct Interaction with Orion-VX1000/VX2000



1. Endpoints may be registered on Orion-VX1000/VX2000 SIP registrar.
2. All SIP endpoints can call directly to the Orion-VX1000/VX2000 via a direct IP call.
3. Orion-VX1000/VX2000 provides Mixing/Bridging/Switching and signaling interoperability.
4. Voice-only endpoints can also participate in a video conference, making it a mixed Voice/Video conference.

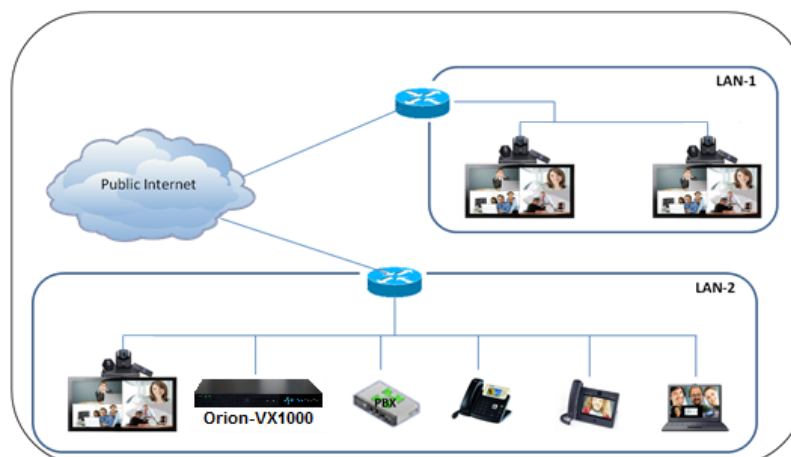
## Network Topologies

### Connectivity with External Networks



1. All SIP Endpoints at the enterprise register to the IP PBX.
2. The IP-PBX supports SIP Signaling.
3. The Orion-VX1000/VX2000 also registers, or is configured as a trunk at the PBX.
4. Endpoints can also connect via the external network.
5. Orion-VX1000/VX2000 provides Mixing/Bridging/Switching and signaling interoperability.

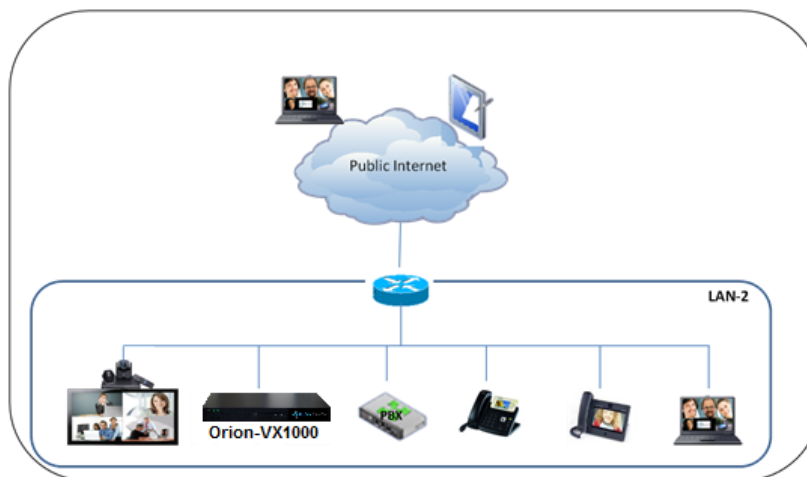
### NAT Traversal Capabilities with Orion-VX1000/VX2000



1. Endpoints may be registered on Orion-VX1000/VX2000 SIP registrar or on the PBX
2. Remote office (LAN 1) can connect to the Orion-VX1000/VX2000 through the built in NAT traversal capabilities.
3. Orion-VX1000/VX2000 provides Mixing/Bridging/Switching and signaling interoperability.
4. Voice-only endpoints can also participate in a video conference, making it a mixed Voice/Video conference.

## Network Topologies

### Connectivity with Remote Endpoints



1. All SIP Endpoints at the enterprise register to the IP PBX or the Orion-VX1000/VX2000.
2. Remote workers connect to the conference call by registering to the Orion-VX1000/VX2000
3. Orion-VX1000/VX2000 provides Mixing/Bridging/Switching and signaling interoperability.



## Product Specifications

### Standard based signaling and coding technology

Orion-VX1000/VX2000 is able to connect different devices, from room systems, to desktop video phones, to video clients running on smart phones or tablets. Orion-VX1000/VX2000 transcodes the video conference providing the best available video conference quality to every participant.

### Signaling

SIP, H.323, H.239. Mixed (SIP, H.323) conferences are supported.

### Bridge Support

Support for both voice only bridge or video conferencing capabilities

### Voice Codecs

G.711a, G.711u, G.722.1<sup>1</sup>, G.722.

### Video Codecs

H.264, MPEG4, H.263

### Video Resolution

HD (720p), 4CIF, VGA, CIF and QCIF

### Transmitted Bandwidth

- HD Participant (720p, 30 FPS): 768Kbps-2Mbps
- VGA Participant (640x480, 30FPS): 512Kbps-1.2Mbps
- CIF Participant (352x288, 30FPS): 200Kbps-512Kbps

### Requested Received Bandwidth

- HD Participant: up to 2Mbps
- VGA Participant: up to up to 1.2mbps
- CIF Participant: up to 512kbps

### NAT/PAT Traversal Capabilities

Network and Port address translation capabilities for firewall traversals. Supporting both near-end and far-end firewall/NAT traversal.

### Bandwidth Allocation

Per conference configuration for low, medium and high bandwidth networks.

### Multiple Access Numbers

A single Orion-VX1000/VX2000 can support multiple access numbers. Access numbers can be registered in a SIP networks as an endpoint or SIP trunk. Access numbers can be registered in H.323 gatekeeper. Access numbers can be accessed directly without the need for registration with/without authentication (in SIP).

### Interactive Voice and Video Response

The Orion-VX1000/VX2000 has IVRs and IVVRs for participants calling an access number or a conference room with PIN code.

The IVRs/IVVRs notifies the participants when to enter a conference room number, PIN code and when they are connected or disconnected from the conference.

### Configurable Meeting Rooms

A conference meeting room can be provisioned at any time, and can be used at any time afterwards. The conference rooms can be configured as voice only or voice and video conference rooms.

### Setting the Maximum viewed Participant

Meeting rooms can be provisioned with the maximum viewed participants during a conference for optimal video layout experience.

### Multiple Video Layout Options

Different video layouts available, which automatically switch as participants enter or leave the conference.

### VIP Participants

Participants may be recognized by the system and automatically connected to a predefined bridge; this is useful in connecting multiple conference rooms to a preset configuration.

### Active speaker detection – Dominant speaker Based Layout

Participant placement within the dominant speaker layout is updated based on continuously measuring all active voice participants and concluding the top five active speakers within a conference.

### Real-time Statistics

Real-time video and audio statistics per conference or per participant and total incoming and outgoing bandwidth usage is displayed in the leader dashboard.

### SIP desktop sharing

Supported in conjunction with the Orion-O SIP client.

### H.239 Screen sharing

H.239 dual video stream support shared from any H.323 participant. Dual stream sent to any H.323 client while shared screen is sent to any SIP client on its primary stream.

### Ability to register to an external SIP Registrar

The Orion-VX1000/VX2000 supports registration to an external registrar. Access Numbers and Conference numbers can be registered to an external registrar, providing the ability to assimilate within the organizations communication system.

The Orion-VX1000/VX2000 supports digest authentication

### Built in SIP Registrar / Proxy

Orion-VX1000/VX2000 has a built in SIP registrar and proxy including SIP user database with full authentication (optional). Any registered subscriber can call directly to any access number or conference room configured in the Orion-VX1000/VX2000.

### Outbound SIP Proxy

Outbound SIP Proxy is supported.

### Leader based Moderation

Conference rooms can be moderated by a leader or set as unmanaged ad-hoc conference rooms to be used by users as needed. The Orion-VX1000/VX2000 has a leader dashboard where each conference room leader (moderator) can do the following:

- Set the dominant speaker
- View participant media information
- Mute/Unmute Voice
- Mute/Unmute Video
- Hang-up a participant
- Mute/Unmute all Participants
- Invite Multiple Participants (Dial Out)
- Lock/Unlock Conference
- Change the default layout to Equal or Dominant based layout.

### Rebranding

Web management for changing all logos, copyrights, SIP User Agent name and favorite icon.



#### H.323 Gatekeeper Registration

Support registration of access numbers and conference rooms on H.323 Gatekeeper

#### Web Management

Built in simple web management systems allows users to configure the system, provision conferences, and monitor and control conferences in real time.

#### Role based Management

Password protected administration access for platform administration and conference management. Different roles are supported for platform management and conference management.

#### Multiple language Support

The Orion-VX1000/VX2000 localization Web management enables adding new languages easily and translating any text field from English to any language. Right to Left support.

#### Upgrade

The Orion-VX1000/VX2000 can be upgraded via the Web management interface.

New versions are distributed via update server through the internet.

#### Maintenance and Diagnostics

Available Maintenance actions: Application restart, Hardware reset, System Status, Shutdown and collecting a diagnostic trace

#### Dynamic Video Layouts

Orion-VX1000/VX2000 provides dynamic video layouts. As video participants join the conference, the layouts automatically adjust to provide the optimal coverage of all viewed participants.

#### SIP RFC Compliance

Orion-VX1000/VX2000 supports SIP, according to the following RFCs: RFC3261, RFC4566, RFC2976, RFC3262, RFC3263, RFC 3264, RFC4317, RFC3581, RFC3966, RFC4028, RFC2833, RFC3550, RFC3551, RFC 3951, and RFC3952.

### Sizing

Media Type	# of Conferences		Viewable Participants	Participants	Content Sharing
	Orion-VX1000	Orion-VX2000			
HD Conference Room (720p) Symmetric	1	2	10	29	√
	2	4	2	29	√
HD Conference Room (720p) Asymmetric	1	2	16	29	√
	2	4	6	29	√
High Conference Room (VGA) Symmetric	1	2	16	29	√
	2	4	10	29	√
	3	6	4	29	√
	4	8	2	29	√
High Conference Room (VGA) Asymmetric					
	2	4	16	29	√
	3	6	12	29	√
	4	8	6	29	√
Normal Conference Room (CIF)					
	3	6	16	29	√
	4	8	10	29	√
Voice Conference	6	6	-	29	-

\* Performance may improve or worsen depending on endpoint capabilities

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## About SURF Communication Solutions

SURF Communication Solutions (SURF) is an industry leader in high-capacity processing solutions for real-time multimedia communication systems and applications. Since 1996, SURF's products have delivered the integral technology behind many of the leading vendor's multimedia servers and gateways deployed to operators and service providers worldwide. SURF-powered multimedia applications are delivering value added services to millions of end-users every day. Today, SURF is ideally positioned to stimulate change in the way we communicate. The video-ready SURF solution supports multimedia processing including full video, voice and data IP to IP communications, as well as modem and fax over IP. It is a fully converged multimedia processing subsystem that integrates easily into media gateways and servers. Since there is no such thing as "one size fits all," the SURF solution is available in various form factors or DSP chips affording unmatched density and optimal performance.

For more information, contact [sales@orionmcu.com](mailto:sales@orionmcu.com)

[www.orionmcu.com](http://www.orionmcu.com)

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<sup>i</sup> This product includes ITU-T G.722.1 (Polycom(R) Siren7TM) technology.