Evaluation of Dolby Voice Room

Hands-on testing of a pre-release version of a service provider-friendly video conferencing device for small to medium rooms.

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This evaluation sponsored by:
Background

Founded in 1965 and headquartered in San Francisco, California, Dolby Laboratories (Dolby) is a publicly-held (NYSE: DLB) company that specializes in audio noise reduction, audio encoding / compression and imaging technologies. The company employs approximately ~ 2,000 people and generates more than $1B in annual revenue.

In May 2018, Dolby commissioned the Recon Research (RR) test team to perform a third-party assessment of the pre-GA version of Dolby Voice Room for BlueJeans solution - a turnkey, service provider friendly, video conferencing solution designed by Dolby running software from BlueJeans.

This document contains the results of our hands-on testing.

Understanding Dolby Voice Room

Dolby Voice Room (a.k.a. “the system” within this study) is a meeting room video conferencing system / platform designed and manufactured by consumer and professional audio/video heavyweight Dolby.

Traditionally, group video conferencing systems are dedicated appliances that run software specifically designed by the vendor to drive that particular device. So a Huawei group video conferencing system runs a Huawei-provided code base only, and thus can act like a Huawei video system only.

Dolby Voice Room, on the other hand, is a hardware-based group video conferencing platform designed to run third-party software. This allows Dolby partners (e.g. BlueJeans and HighFive) to create software applications that run on Dolby Voice Room and provide a customized user experience.

The takeaway is that Dolby Voice Room is not just a video conferencing system – it is a customizable video conferencing platform.

A complete Dolby Voice Room system includes the following:

- **Dolby Voice Hub (“the Hub”)** – a small footprint appliance that runs the partner’s conferencing application and sends the audio and video signals to the conferencing service or remote systems / users.

- **Dolby Conference Phone (“the DCP”)** – a multi-microphone, multi-speaker conference phone with a customizable touch UI designed for use with Dolby Voice-enabled conferencing services.

- **Dolby Voice Camera** – a 13 megapixel, 4K USB 3.0 camera offering a 95 degree field of view.
The system also ships with the power supply for the hub, assorted cables, and other accessories.

Dolby offers SDKs and APIs to enable partners to create versions of their software designed for use with Dolby Voice Room. And when Dolby Voice Room is officially launched, BlueJeans and HighFive versions of Dolby Voice Rooms will be available.

Dolby Voice Room has a list price of US $4,695 and will be sold via a network of channel partners who will load the proper software (BlueJeans or HighFive) onto the device.

For this initial assessment, Dolby provided Recon Research with a pre-GA Dolby Voice Room loaded with a pre-release version of software created and provided by BlueJeans.

System Installation and Configuration

The installation of Dolby Voice Room within our test environment was fast and easy, requiring only:

- installing and powering-up the Dolby Voice Hub (power cable, network cable, and HDMI connection to the meeting room display)
- connecting the provided CATx cable between the Hub and the Dolby Conference Phone (DCP)
- connecting the provided USB cable between the Hub and the Dolby Voice Camera

While connecting the system, we were pleased by Dolby’s strong attention to detail. For example:

- the Hub’s power cable uses a screw-on connection to avoid accidental dislodging
- the camera’s mounting bracket is strong enough to keep the camera in place, and flexible enough to support thin and thick flat screens.
- every connection was well labeled, and the included cables were long enough to support various installation options (e.g. Hub located behind the display or on the table).

While hardly rocket science, we are sticklers for good mechanicals and cable management as these things save time and ensure a reliable installation.

While unpacking and installing Dolby Voice Room, we were struck by Dolby’s exceptional attention to detail.

We then pressed the power button on the back of the Hub, and a few seconds later both the Dolby Conference Phone and our main room display showed a “Getting Ready” message.

A minute or two later, the display showed a code to be entered in to the DCP (see photo at right).

Using the DCP’s soft keyboard, we entered the code and then a meeting room name (“Test Lab”).
A few seconds later, the display showed the welcome page below and the system was ready for use.

Like the BlueJeans Rooms with Dolby Voice system that our team tested a few months ago, BlueJeans allows this system to be used to join calls without having to connect the system to a BlueJeans account or pay for a license. Well done.

The entire setup, including making the physical connections and configuring the setup, took us less than 10 minutes to complete.

**Dolby Voice Room with BlueJeans Experience**

**The Meeting Join Workflow**

Joining a BlueJeans meeting from Dolby Voice Room was as easy as pressing the Join button on the Dolby Conference Phone, entering a BlueJeans meeting ID, and clicking Join. We followed this process, and ten seconds later we were connected to our meeting.
In-Meeting Controls / Features
While in a BlueJeans meeting, Dolby Voice Room users have access to the following functions from the Dolby Conference Phone UI:

- Enable / disable camera
- Show / hide PiP
- Control the camera
- Leave the meeting
- View meeting roster
- Share Content
- Change video layout

Pressing the Camera Control button allows users to choose between the Full or Auto camera modes (more information below).

Pressing the Share button allows users to:

- Share content wireless using a BlueJeans screen share URL provided on screen
- Share the in-room dry-erase board instead of the camera (more information below)

In addition, Dolby Voice Room with BlueJeans supports wired content sharing while in a call, and while not in a call. To test this capability, we connected the provided HDMI cable to the content input on the Dolby Voice Hub. Then we simply connected the other end of the HDMI cable to our notebook PC.

Pressing the Layout button allows users to choose between Speaker View (full screen of one remote participant / location), People View (a 1+3 view) and Gallery View (quad-screen).

Users can also mute / unmute their outgoing audio and adjust the incoming audio level using the physical buttons on the Dolby Conference Phone.

We tested each of the above functions, and they worked properly.

The Overall Meeting Experience
Overall, we’d categorize the meeting experience of the pre-release version of Dolby Voice Room for BlueJeans as very strong.

- The outgoing and incoming video quality was exceptional throughout all calls.
- The audio quality was excellent during our tests, which was not surprising given the support for Dolby Voice audio within Dolby Voice Room and the BlueJeans cloud.
- Both wired and wireless content sharing (using the BlueJeans screen share URL) worked very well, offering a fast “time-to screen” and strong image quality.

Dolby Voice Room provided a very strong meeting experience throughout our testing.
Additional Features / Functions

**Camera Settings**
The Dolby Voice Camera was designed to automatically compensate for room lighting conditions without requiring the user to make any manual adjustments. And this was absolutely the case during our testing. However, those who wish to make manual adjustments can access the settings menu on the Dolby Conference Phone and adjust the camera’s brightness, color intensity, and contrast settings.

Within this same menu, the user can also enable / disable HDR – a function that optimizes image quality in high contrast lighting conditions (e.g. when the camera is capturing direct sunlight).

We appreciate the ability to manually adjust the camera, but in most cases, users should not have to adjust the camera at all. The system will do this automatically.

**Camera Modes**
This same menu also allows the user to select from three different camera modes:

**Mode #1: Room (a.k.a. Full) Mode**
In this mode, the camera is zoomed out to capture as much of the room as possible, and automatic image quality is enabled to optimize the outgoing video quality. This is the default mode for the system.

**Mode #2: People (a.k.a. Auto) Mode**
In this mode, the system uses face detection to determine where people are sitting, and then uses digital pan and tilt to select a portion of the image that best captures the participants.¹ Within the video conferencing industry, this capability is called room framing.

In the image above, the remote participants are using Dolby Voice Room in People Mode. Note how the system automatically framed the room to capture all meeting participants.

¹ Dolby Voice Room’s People Mode also supports digital zoom, but this is not yet implemented in the BlueJeans software.
With face tracking / room framing systems, the devil is in the details. While many systems can determine where people are sitting, adjusting the image to optimize the experience without distracting the participants is more art than science.

During our testing of People Mode, the system did a fine job locating our meeting participants and adjusting the camera scene quickly enough to be responsive, yet slowly enough to avoid stepping on the experience.

We also appreciate that the system didn’t constantly try to re-adjust the image as we’ve seen in some tracking / framing systems.

One minor nit – the system did not zoom in on our meeting participants, even when only one or two people were in the room. While we understand that digital zoom can impact image quality, some additional zoom would have improved the remote experience. My understanding is that Dolby is still fine tuning this capability.

Mode #3: Whiteboard Mode

This is an advanced mode that allows the user (or system installer / admin) to define a portion of the camera image as containing a physical whiteboard (dry erase board).

See the image below showing a typical meeting space with a whiteboard on one side of the room.

To define the whiteboard area, the user simply drags whiteboard corner points on the DCP touch user interface (see image at above at right) while simultaneously viewing a live preview of the defined whiteboard in the main display. This makes it quick and easy to define the whiteboard. Very well done.

Once the white board portion of the image has been defined, the system automatically flattens and enhances that part of the image to create a whiteboard video stream.

This image shows the same whiteboard captured and flattened by the Dolby Voice Camera and Dolby Voice Room system.

In a word, this is exceptional.
Whiteboard capture worked extremely well during our testing. Given the high penetration of dry-erase whiteboards in meeting rooms, we expect this feature to be very well received.

**Connecting to BlueJeans Command Center**

Command Center is a web-based service intelligence tool that provides usage data, advanced real-time call statistics, live meeting control and more.

Connecting Dolby Voice Room with BlueJeans to Command Center was quick and easy, requiring only that we enter a seven-digit registration code shown on the Dolby Conference Phone into the Add New Room area within Command Center.

Once done, from within Command Center we could view system information, free / busy status, and real-time call statistics (see screen shot below), and configure SIP audio (IP PBX registration) settings for our Dolby Voice Room.

![Screen Shot](image)

**Features Not Available for Testing**

The system documentation describes several features that were not yet available for testing on our pre-release version including:

- Dual display support
- Wireless content sharing – while not in a call
- BlueJeans Quick Join allowing users to launch scheduled calls from their mobile devices

We expect to test these features once the GA version of the BlueJeans software becomes available.

While not tested as a part of this effort, we have been told that Dolby Voice Room also works with BlueJeans Relay – a software solution that integrates with calendar systems (Microsoft Exchange and Google Calendar) and meeting room systems and allows users to join BlueJeans meetings with a single press on a standard tablet.
Analysis and Opinion

Dolby Voice Room is a hardware-based video conferencing solution that includes a hub, a 4K camera, and a combination conference phone and controller. Sounds like offerings from other video vendors – right? Well not exactly.

The most notable difference is that unlike traditional dedicated video conferencing solutions, Dolby Voice Room is a platform that runs conferencing applications provided by Dolby partners (e.g. conferencing service providers).

Also, unlike competing solutions, Dolby Voice Room allows the partner to define not only the on-screen user interface and overall workflow, but also the user interface on the conference phone. A truly customized experience.

The net is that Dolby Voice Room brings many of the benefits of a dedicated hardware video system, and the flexibility of a software-based solution.

This assessment focused on a pre-release version of Dolby Voice Room running pre-release software created by cloud provider BlueJeans. And while we are often given access to pre-GA product and service offerings, it is rare that we’re permitted to publish our test results.

Overall, Dolby Voice Room with BlueJeans performed extremely well during our testing. Specifically:

- The physical design of Dolby Voice Room was well thought out.
- The system’s setup and configuration was quick and painless.
- The system’s ease of use and workflow was on par or better than other solutions we’ve tested.
- The video experience (outgoing and incoming) was exceptional.
- The audio experience (outgoing and incoming) was exceptional.

Even the power features we tested, such as Auto / People Mode (intelligent image framing) and Whiteboard Mode (capture an in-room dry erase board), performed admirably.

If we had to be critical (yes – we’re critical by nature), we’d raise only two points. First, the system bootup is a bit slow at ~ 80 seconds. Second, we suggest adding 2x – 4x digital zoom support. Given the system’s 4K camera, the quality loss should be negligible.

Dolby has assured us that we’ll be able to test a GA version of Dolby Voice Room with BlueJeans in the next few weeks. Not months or quarters … weeks. The joy of agile software development.

But for now, based on the results of our preliminary testing, we expect the shipping version of this joint Dolby / BlueJeans product and service package to fare quite well.

Organizations seeking to equip their small to medium rooms with cloud-based video conferencing, without committing to a single platform, should keep the soon-to-be-released Dolby Voice Room solution on their radar.
About Dolby Laboratories

(Information below provided by Dolby)

Dolby Laboratories (NYSE:DLB) is based in San Francisco with offices in over 20 countries around the globe. Dolby transforms the science of sight and sound into spectacular experiences. Through innovative research and engineering, we create breakthrough experiences for billions of people worldwide through a collaborative ecosystem spanning artists, businesses, and consumers. The experiences people have – in Dolby Vision, Dolby Atmos, Dolby Cinema, Dolby Voice, and Dolby Audio – revolutionize entertainment and communications at the cinema, on the go, in the home, and at work.

For more information, please visit www.dolby.com.

About Recon Research

Recon Research (RR) is an analyst / market research firm focused on the enterprise communications space. Our areas of coverage include unified communications, video conferencing, collaboration and ideation, audio visual AV solutions, wireless presentation, and more.

RR provides enterprise customers, vendors, channel partners, and investment professionals with the information and insight needed to make fact-based decisions.

What makes RR different is the depth of our knowledge and experience that comes from 15+ years of company briefings, market analysis, and hands-on testing of products and services in the space.

For more information, visit us at www.reconres.com.

Contact Information

Recon Research, Inc.
3111 N. University Drive
Coral Springs, FL 33065 USA

Contact us at: info@reconres.com

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