**HD Visual Communications System**

**KX-VC500**

- *HDMI cables are required for connection to the camera, TV, etc.*

**Related Products**
- HD-Conference
- Intelligent Camera
- LED Display

---

### Specification

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication Rate</strong></td>
<td><strong>(Min to max)</strong></td>
</tr>
<tr>
<td>Video codec</td>
<td><strong>ITU-T H.264 high-profile</strong></td>
</tr>
<tr>
<td>Video input</td>
<td><strong>Supports only camera connection. (Connection of a DVD player is not supported.)</strong></td>
</tr>
<tr>
<td>Audio codec</td>
<td><strong>MPEG-4 AAC-LD (LATM)</strong></td>
</tr>
<tr>
<td>Audio input</td>
<td><strong>Supports up to 4 Boundary Microphones (part no.: KX-VCA001, sold separately).</strong></td>
</tr>
<tr>
<td>Audio output</td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td>Maximum conference points</td>
<td><strong>1 for 1080i</strong></td>
</tr>
<tr>
<td>Content sharing</td>
<td><strong>3 Mbps minimum</strong></td>
</tr>
<tr>
<td>Encrypted transmission</td>
<td><strong>512 kbps to 9 Mbps</strong></td>
</tr>
<tr>
<td><strong>Network Control (serial)</strong></td>
<td><strong>1 Mbps to 7 Mbps</strong></td>
</tr>
<tr>
<td><strong>Dimensions (W x H x D)</strong></td>
<td><strong>1.5 Mbps minimum</strong></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td><strong>512 kbps minimum</strong></td>
</tr>
<tr>
<td><strong>Voltage and frequency</strong></td>
<td><strong>1 for 4SIF</strong></td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td><strong>3 Mbps minimum</strong></td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td><strong>1.5 Mbps to 7 Mbps</strong></td>
</tr>
<tr>
<td><strong>Operating humidity</strong></td>
<td><strong>3 Mbps minimum</strong></td>
</tr>
<tr>
<td><strong>Standard pickup area</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Maximum pickup area</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Pickup method</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Microphone unit</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Number of connections</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Band frequency</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Maximum input sound pressure</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Sampling frequency</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Delay time</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Microphone cable connectors</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Mute switch</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>LED</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Cable length</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Power source</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Operating humidity</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Remote control</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
<tr>
<td><strong>Remote control batteries (AA manganese batteries)</strong></td>
<td><strong>1.2 Vrms</strong></td>
</tr>
</tbody>
</table>

---

*This data is for reference purposes only. The actual value may vary depending on the image and communication conditions.*

*Some restrictions apply when 3 or 4 locations are connected. For details, please consult with your local dealer.

*Specification is subject to change without notice.

*Dimensions and weights are approximate.*
Making Communication Visible with the HD Visual Communications System

The HD Visual Communications System provides smooth conversations with high-resolution video quality over not only a company intranet, but also the Internet. It is also easy to operate. The resulting real-life visual communication makes it seem like everyone is in the same room, even though they are in remote locations. The HD Visual Communications System enables the kind of precise communication and real-time collaboration between remote locations that was simply not possible with conventional videoconference systems because of their low resolution and frequent sound interruptions and delays.

• People’s facial expressions are difficult to see.
• It’s hard to tell who’s talking.
• Communication is often interrupted.
• It’s difficult to operate.

• Now have great images, so facial expressions are clear.
• Now allow natural, comfortable conversations.
• Now enable easy use with a stable network connection.
• Let you switch conveniently to a sub camera or PC.

System Connection Diagram
Making Communication Visible with the HD Visual Communications System

The HD Visual Communications System provides smooth conversations with high-resolution video quality over not only a company intranet, but also the Internet. It is also easy to operate. The resulting real-life visual communication makes it seem like everyone is in the same room, even though they are in remote locations. The HD Visual Communications System enables the kind of precise communication and real-time collaboration between remote locations that was simply not possible with conventional videoconference systems because of their low resolution and frequent sound interruptions and delays.

- People’s facial expressions are difficult to see.
- It’s hard to tell who’s talking.
- Communication is often interrupted.
- It’s difficult to operate.

- Now have great images, so facial expressions are clear.
- Now allow natural, comfortable conversations.
- Now enable easy use with a stable network connection.
- Let you switch conveniently to a sub camera or PC.

System Connection Diagram
The HD Visual Communications System Handles a Wide Variety of Tasks.

With conventional videoconference systems, it was difficult to view people’s expressions and the connection was unstable. This sometimes made it necessary for people to travel in order to hold meetings in person. With the HD Visual Communications System, you can conduct natural conversations with high image and sound quality, as if the person you are talking to were standing right next to you, for more personal communication. This lets you apply the HD Visual Communications System to a variety of situations that were difficult for conventional videoconference systems.

### Medical Treatment

**Gain advice from medical specialists in remote locations.**

Reducing Differences in the Level of Medical Services

Medical specialists can now advise doctors in other regions by using the high-quality images of the HD Visual Communications System. It can also be used for training doctors, to help reduce differences in the level of medical services from region to region.

### Manufacturing Industry

**High-quality communication between remote locations.**

See Close-up Views of Detailed Parts and Prototype Models

Sub cameras can be used to display clear images of substrates, blueprints, and design prototypes on a desk. Even for cases that used to require a business trip in order to show detailed plans, the HD Visual Communications System allows both parties to see objects clearly for instant discussion, resulting in travel-free meetings.

### Education

**Active collaborative research with remote locations.**

Almost Like Being in the Same Laboratory

Connecting research laboratories located in remote areas with the HD Visual Communications System enables comfortable, collaborative research. The high image and sound quality allows precise collaborative research, as if both parties were in the same room. It can also be used for live remote teaching and training.

### Others

**Wide-ranging business applications.**

Easy, Comfortable Meetings Between Remote Locations

The kinds of problems that are common with ordinary videoconferences, such as poor-quality images and disrupted, delayed, or interrupted audio, have been resolved. In addition to in-company networks using an intranet, remote meetings can be held smoothly and easily with clients and customers outside the company over the Internet. There are many other convenient uses, such as connecting the HD Visual Communications System to a PC and showing the PC screen to the other party.

### A Valuable Communication Tool for Emergencies

Even when travel is restricted due to a disaster, such as the spread of an influenza virus, an earthquake, or heavy rain, the HD Visual Communications System can connect people in remote locations with sharp images and clear audio, and enable them to carry on with business as usual. The system contributes to risk management without causing problems for your customers or clients.

### Less Travelling Also Reduces CO₂ Emissions and Costs

In recent years, social demands for ecological conservation have continued to grow. From now on, a strong emphasis will be placed on environmentally friendly businesses, which reduce the number of times people have to travel in order to reduce the amount of CO₂ emitted by transportation systems. Of course, this also helps to reduce travelling costs and time. The HD Visual Communications System is a vital tool for future businesses because it can simultaneously make business more efficient and more ecological.
The HD Visual Communications System Handles a Wide Variety of Tasks.

With conventional videoconference systems, it was difficult to view people’s expressions and the connection was unstable. This sometimes made it necessary for people to travel in order to hold meetings in person. With the HD Visual Communications System, you can conduct natural conversations with high image and sound quality, as if the person you are talking to were standing right next to you, for more personal communication. This lets you apply the HD Visual Communications System to a variety of situations that were difficult for conventional videoconference systems.

Medical Treatment

Gain advice from medical specialists in remote locations.

Reducing Differences in the Level of Medical Services

Medical specialists can now advise doctors in other regions by using the high-quality images of the HD Visual Communications System. It can also be used for training doctors, to help reduce differences in the level of medical services from region to region.

Education

Active collaborative research with remote locations.

Almost Like Being in the Same Laboratory

Connecting research laboratories located in remote areas with the HD Visual Communications System enables comfortable, collaborative research. The high image and sound quality allows precise collaborative research, as if both parties were in the same room. It can also be used for live remote teaching and training.

Manufacturing Industry

High-quality communication between remote locations.

See Close-up Views of Detailed Parts and Prototype Models

Sub cameras can be used to display clear images of substrates, blueprints and design prototypes on a desk. Even for cases that used to require a business trip in order to show and discuss fine details, the HD Visual Communications System allows both parties to see objects clearly for instant discussion, resulting in travel-free meetings.

Others

Wide-ranging business applications.

Easy, Comfortable Meetings Between Remote Locations

The kinds of problems that are common with ordinary videoconferences, such as poor-quality images and disrupted, delayed or interrupted audio, have been resolved. In addition to in-company networks using an intranet, remote meetings can be held smoothly and easily with clients and customers outside the company over the Internet. There are many other convenient uses, such as connecting the HD Visual Communications System to a PC and showing the PC screen to the other party.

A Valuable Communication Tool for Emergencies

Even when travel is restricted due to a disaster, such as the spread of an influenza virus, an earthquake, or heavy rain, the HD Visual Communications System can connect people in remote locations with sharp images and clear audio, and enable them to carry on with business as usual. The system contributes to risk management without causing problems for your customers or clients.

Less Travelling Also Reduces CO\textsubscript{2} Emissions and Costs

In recent years, social demands for ecological conservation have continued to grow. From now on, a strong emphasis will be placed on environmentally friendly businesses, which reduce the number of times people have to travel in order to reduce the amount of CO\textsubscript{2} emitted by transportation systems. Of course, this also helps to reduce travelling costs and time. The HD Visual Communications System is a vital tool for future businesses because it can simultaneously make business more efficient and more ecological.
HD Visual Communications System

Four Features that Support Comfortable Business

The HD Visual Communications System is a clear departure from previous videoconference systems. And a wide range of advanced Panasonic technologies support the new system.

1 Expressions and gestures are clearly conveyed.

High Image Quality
Panasonic’s unique high-quality image technology, which was accumulated with its VIERA and DGA products, help to create a powerful realism, making it seem like everyone is in the same room. The digital home electronics platform Uniphier® system LSI also makes it possible to display facial expressions and gestures in clear, full-HD images as part of the visual communication experience.

2 Two-way conversations are smooth and natural.

High Sound Quality
Natural 2-way conversations are achieved thanks to a unique echo canceller. It reduces echo and howling, and enables a lifelike sound quality without interruptions even when two people speak at the same time. Broadband stereo achieves clear and expansive sounds. In addition, a boundary microphone (sold separately) with a direction recognition function, indicates the direction of the speaker’s voice and position to the listeners. This creates a natural conversation that makes it feel like everyone is in the same room even when they are in remote locations, and relieves fatigue when talking for long periods of time.

3 Adapts to changing network conditions.

Stable Connection
The HD Visual Communications System is packed with Panasonic technology for connection stability. A rate control function accurately estimates network congestion, and controls the data transfer amount to reduce packet loss. In addition, the combined usage of Forward Error Correction (FEC) and Automatic Repeat reQuest (ARQ) helps to restore inevitable packet loss. These functions make it possible to achieve a stable connection and prevent image disruptions and sound interruptions, both on intranets and on the Internet, where bandwidth is not guaranteed and the usable bandwidth constantly changes due to traffic conditions. The range of business opportunities naturally expands because of the ability to conduct visual communication with clients and customers outside the company.

4 Easy enough for anyone to operate.

Easy Operation
Easy-to-understand remote control operation and screen displays.

Easy-to-operate
Select the desired party with either a one-touch button or by using the address book.

Content Sharing
Switch to a sub camera or a PC screen with one-touch ease, and share data, such as movies or software applications.

Snapshots
High-resolution still images taken with a sub camera can be sent in order to share sharp, clear images while sending only a small amount of data.

Check Facial Expressions While Showing Images
You can switch to the image of the other party while showing them images of your PC screen or sub camera, to check their response.

Uniphier® is a registered trademark of Panasonic Corporation.
HD Visual Communications System
Four Features that Support Comfortable Business

1. Expressions and gestures are clearly conveyed.
   **High Image Quality**
   Panasonic’s unique high-quality image technology, which was accumulated with its VIERA and DIGA products, helps to create a powerful realism, making it seem like everyone is in the same room. The digital home electronics platform Uniphier® system LSI also makes it possible to display clear, full-HD images as part of the visual communication experience.

2. Two-way conversations are smooth and natural.
   **High Sound Quality**
   Natural 2-way conversations are achieved thanks to a unique echo canceller. It reduces echo and howling, and enables a lifelike sound quality without interruptions even when two people speak at the same time. Broadband stereo achieves clear and expansive sounds. In addition, a boundary microphone (sold separately) with a direction recognition function, indicates the direction of the speaker’s voice and position to the listeners. This creates a natural conversation that makes it feel like everyone is in the same room even when they are in remote locations, and relieves fatigue when talking for long periods of time.

3. Adapts to changing network conditions.
   **Stable Connection**
   The HD Visual Communications System is packed with Panasonic technology for connection stability. A rate control function accurately estimates network congestion, and controls the data transfer amount to reduce packet loss. In addition, the combined usage of Forward Error Correction (FEC) and Automatic Repeat reQuest (ARQ) helps to restore inevitable packet loss. These functions make it possible to achieve a stable connection and prevent image disruptions and sound interruptions, both on intranets and on the Internet, where bandwidth is not guaranteed and the usable bandwidth constantly changes due to traffic conditions. The range of business opportunities naturally expands because of the ability to conduct visual communication with clients and customers outside the company.

4. Easy enough for anyone to operate.
   **Easy Operation**
   Easy-to-understand remote control operation and screen displays.
   - **Speed Dial**
     You can contact two frequently called locations with a single touch.
   - **Address Book**
     Select and connect to the desired party directly from the address book.
   - **Content Sharing**
     Switch to a sub-camera or a PC screen with one-touch ease, and share data, such as movies or software applications.

   **Snapshots**
   High-resolution still images taken with a sub-camera can be sent in order to share sharp, clear images while sending only a small amount of data.

   **Close-up Views with a Sub Camera**
   Use a sub-camera to display close-up views of detailed parts that are difficult to see with the naked eye.

   **Check Facial Expressions While Showing Images**
   You can switch to the image of the other party while showing them images of your PC screen or sub camera, to check their response.

   * Uniphier® is a registered trademark of Panasonic Corporation.

---

**High Image Quality**

**High Sound Quality**

**Stable Connection**

**Easy Operation**

**Content Sharing**

**Snapshots**

**Close-up Views with a Sub Camera**

**Check Facial Expressions While Showing Images**

---

**HD Visual Communications System**

**Four Features that Support Comfortable Business**

1. Expressions and gestures are clearly conveyed.
2. Two-way conversations are smooth and natural.
3. Adapts to changing network conditions.
4. Easy enough for anyone to operate.
### Specification

| **Communication Protocol** | **Communication Rate** (Min to Max) | **Bandwidth (for different levels of resolution)** | **Video Codec** | **Audio Codec** | **Audio Input** | **Audio Output** | **Maximum Conference Points** | **Content Sharing** | **Encrypted Transmission** | **Network Control (Serial)** | **Dimensions (W x H x D)** | **Weight** | **Voltage and Frequency** | **Power Consumption** | **Operating Temperature** | **Operating Humidity** | **Standard Pickup Area** | **Maximum Pickup Area** | **Pickup Method** | **Microphone Unit** | **Number of Connections** | **Band Frequency** | **Maximum Input Sound Pressure** | **Sampling Frequency** | **Delay Time** | **Microphone Cable Connectors** | **Mute Switch** | **LED** |
|---------------------------|----------------------------------|-----------------------------------------------|---------------|----------------|----------------|----------------|-----------------------------|----------------------|--------------------------|-------------------------|--------------------------|-------------|--------------------------|---------------------|------------------------|-----------------|---------------------|------------------------|----------------------|------------------|----------------|----------------------|---------------------|----------------|----------------------|---------------------|----------------|--------------------------|---------------------|----------------|--------------------------|---------------------|----------------|
| **IP communication**      | **with 2 locations connected**   | **1 Mbps minimum** for 1080i, 1.5 Mbps maximum** for 720p | **ITU-T H.264 high-profile** | **MPEG-4 AAC-LD (LATM)** | **(HDMI) RCA pin jack** | **(HDMI) RCA pin jack** | **1.2 Vrms** | **110 dBspl** | **48 kHz** | **1 ms max.** | 2 colour LED (red, green) to indicate mute status. | **120 mm (diameter) x 25 mm** | **Approx. 8.5 m** | **Supplied by a special cable from the main unit** | **Approx. 280 g** | **0 °C to 40 °C** | **10 % to 90 % (non-condensing)** | **Approx. 2 m (radius), 360°** | **Approx. 3 m (radius), 360°** | **Stereo (automatic left/right channel setting, with 1 unit connected)** | **Monaural (with 2 to 4 units connected)** | **Unidirectional Electret condenser microphone x 4** | **Maximum 4 microphones** | **150 Hz to 10 kHz** | **110 dBspl** | **48 kHz** | **1 ms max.** | **2 colour LED (red, green) to indicate mute status.** | **Red: Mute on** | **Green: active** | **Orange: start-up (blinks approx. 1 sec)** | **Off: not communicating** | **RJ45 (LAN)** | **AES-CM/proprietary** | **100BASE-TX full duplex** | **For maintenance PC connection (with straight cable) D-Sub 9-pin male** | **Approx. 430 mm x 80 mm x 280 mm** | **Approx. 4 kg** | **AC 100-240 V, 50/60 Hz** | **During operation: Approx. 32 W, During stand-by: Approx. 30 W** | **0 °C to 40 °C** | **10 % to 90 % (non-condensing)** | **Remote control, remote control batteries (AA manganese batteries) x 2, power cord** |

---

*This value is for reference purposes only. The actual value may vary depending on the image and communication conditions.
*Some restrictions apply when 3 or 4 locations are connected. For details, please consult with your local dealer.
*Some sound can also be picked up by a microphone when the mic is off.
*Specifications are subject to change without notice.
*Dimensions and weights are approximate.