



Windows collaboration display

PN-CD701 - 4K 70" interactive display

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SHARP
Be Original.

Always smarter meetings.

Productivity doesn't just depend on the time that we put in, but also on the quality of work we do – using the best possible tools.

For teamwork to be truly effective, people need to easily connect and share ideas and information in a comfortable environment – whether they are working in a meeting space, conference room or anywhere in the world.



The world's first certified Windows collaboration display from Sharp, is certified for Skype for Business and is a next generation 4K 70" interactive display that enables better space utilisation and more productive collaboration in meetings, boardrooms, training rooms, technical reviews and almost anywhere else.

As well as using Sharp's award-winning technology, together with a built-in microphone, high quality camera and IoT sensor hub, it works seamlessly with the best Microsoft 365 collaboration tools. Furthermore, it's all backed by the cloud to deliver outstanding ease of use and enable the continual analysis of meeting room conditions and usage.



In addition, to the Skype for Business certification, the Windows collaboration display has received a Crestron Connected® certification which shows that employees can stay focused on more important tasks instead of spending time setting up in-room meetings.

Walk in, plug in and work together

Setting up the technology needed for a meeting can be very time consuming and frustrating. But you simply 'plug and play' with the Windows collaboration display.

It is so simple to walk in to a room, plug in your device and start working together straightaway. Just connect with the 8m long USB-C cable and it automatically switches to the right input for whatever information you want to display. You're instantly ready to start your meeting – saving up to 10 minutes* time trying to set up connections.

This single USB-C** connector, which is also used with the latest Windows® and Apple® Mac notebooks, provides high-speed, high-bandwidth data transfer for multiple functions, including 4K*** Video, internet network and application data. And it can also provide power for attached mobile devices. However, for added flexibility, a wireless connection is included for lower bandwidth data transfer and any hardware without a USB-C connection can still use the full functionality of the Windows collaboration display using a HDMI® and USB Type B cable combination.



Our Windows collaboration display has won an award for Best New Collaboration Board in the 2019 Best of ISE Awards (rAVE publications) and 2019 Top New Technology (TNT) award for displays. (CE Pro and Commercial Integrator magazines).

*Total Economic Impact™ Study, Forrester Consulting, February 2016.

** USB-C port must support DP Alt Mode (DisplayPort Alt Mode) to provide 4K Ultra HD resolution video signal.

*** Camera set to 1080p resolution by default.



Better places to meet

Creating a comfortable environment in your meeting rooms pays real dividends in terms of helping people concentrate and improving productivity. The Windows collaboration display from Sharp has in-built sensors that can connect to the Microsoft Azure Digital Twins IoT platform, and other commercially available cloud and subscription services such as **Sharp WorkSpaces*** as part of a smart building environment.

IoT sensors

- **Occupancy** – a motion sensor detects the presence of people in the room. An additional artificial intelligence (AI) service can analyse this data and count the numbers of people, while in conjunction with a 3rd party AI service provider, displays and other equipment could be automatically switched on to enable a faster setup and help improve the scheduling of room bookings. During a meeting, the IoT sensors can also be utilised by another AI service to detect the location of whomever is speaking controlling the three-dimensional microphone array to focus on the relevant person.
- **Temperature** – its intelligent climate measurement sensor can be used by an AI service to automatically regulate the room temperature and relative humidity to make the room feel more comfortable. By intelligently optimising the operation of the air-conditioning it also helps reduce costs.
- **Light** – an ambient light sensor helps with intelligent lighting control, as it automatically measures the level of light in the meeting space. An AI service could then adjust the in-room lighting system with changing day and night conditions, which can reduce eye strain and may save money on wasted energy.
- **Air quality** – the Windows collaboration display continually measures and analyses the ambient air quality** in the meeting room sending data to another AI service, automatically adjusting the air-conditioning to provide the best possible working environment.

*Read more on page 8.

** Measure the levels of eCO₂ (Equivalent Carbon Dioxide) and TVOC (Total Volatile Organic Compounds).



Actively using the data collected by the Windows collaboration display and making physical changes to how rooms are used and controlled is best achieved with a Facility Manager using the latest industry smart tools and technologies. Sharp is working with a number of leading businesses to build a comprehensive eco-system for the creation of smart meeting spaces that enable truly effective collaboration.

A more natural approach.

When ideas are flowing you need to be able to work quickly and intuitively, without having to struggle with the technology.

Even in the most highly interactive meeting, the Windows collaboration display from Sharp ensures that information can be shared and captured quickly and precisely.

Simply much easier

With its 10-point Projected Capacitive (PCAP) touch technology and direct optical bonding, it provides a more accurate and natural Pen-on-Paper® experience. Writing on-screen is just as quick and effortless as writing on a flipchart or whiteboard. By using either a finger or pen, notes and comments can be quickly added as simple text or by drawing freehand to highlight changes and annotate the information on-screen. So, in boardroom presentations, you can quickly give the big picture overview, but also focus on key details to keep everyone engaged and 'eyes up'.



Fast, precise control

The Windows collaboration display comes with a Passive pen as standard. Designed with a precise 2mm tip for precise annotation and a broader tip for automatically sensed eraser function, this powerful and ergonomic stylus sits comfortably in the hand enhancing the Pen-on-Paper® experience. It is ideal for reviewing complex technical information or graphics, such as architectural plans or engineering designs, where you need to review even the smallest details.



Passive pen

Thanks to the Windows collaboration display's exceptional responsiveness and ease of use, it also:

- **Speeds-up collaboration** – users can work together immediately, with no training, which encourages more engagement and interactivity.
- **Builds confidence** – users feel more confident and willing to participate and present and share information.
- **Increases concentration** – users can focus on the delivery of content with no technical distractions.



All you need to do more

Business teams come in all shapes and sizes – from tactical workgroups to large-scale, established project teams – and often span both local and global locations. But to be truly effective they need to share ideas openly and inclusively.

The Windows collaboration display from Sharp has been certified for Skype for Business and is supported by Microsoft Teams. It offers the highest quality audio and video and provides the best ways to connect and collaborate using the power and productivity of Microsoft 365 at room scale.*

- **Microsoft 365** provides familiar Microsoft Office applications that enable people to be more creative, work together more effectively and have a more productive experience. It also includes advanced security and device management capabilities to help safeguard your business.
- **Microsoft Teams** is a complete chat, notes, attachments and online meetings solution. It includes annotation, overlay and presentation features, along with seamless video conferencing and collaboration tools. So whether everyone is in a meeting room or spread around the world it still feels like you're all together.
- **Microsoft Azure Digital Twins** is an IoT platform that creates a comprehensive model of physical environments. Data from multiple IoT sensors can be stored in a reliable and secure private cloud database and can be analysed, for example, with a 3rd party smart building dashboard solution, to help optimise the management of office space.

* The mentioned software and services are available as an additional purchase and are not included in shipping with the Windows collaboration display.

Look and work smarter.

Technology should not only enhance your productivity, but also your workplace.

Imagine a collaborative space where the technology is designed to ensure effortless control and collaboration, but also adds an extra touch of style. That's exactly what you get with the Windows collaboration display from Sharp.



Stylish design

The display has an attractive and elegant edge to edge design that looks good in even the most prestigious corporate boardroom:

- The On Screen Display (OSD) buttons are discretely located on the front for quick and easy control.
- The high quality video conferencing camera and IoT sensor hub have been integrated neatly on the top of the display.
- An integrated directional microphone picks up sound from anywhere within your meeting space.



Effortless device sharing

The Windows collaboration display has in-built Wireless Casting that works with Windows™ and Android™ devices. As a result, you can effortlessly connect your own device to the display and easily share information.



Image for illustration purposes only.

Up to five* devices can be connected simultaneously making the Windows collaboration display ideal for dynamic workgroups, discussions or interactive training sessions.

The Windows collaboration display's Picture by Picture (PbP) mode allows for multiple device engagement, showing up to two different connected devices out of the five possible options. The two screens can be any combination of inputs, for example, 1 USB-C + wireless 1, or HDMI + wireless 2.

Touch back is also a feature that works in PbP mode, with whichever attached device is active. Touch back control automatically switches between the two PbP displays, depending on which side is touched.

*USB-C x2, Wireless x2, HDMI x1



Sharp WorkSpaces

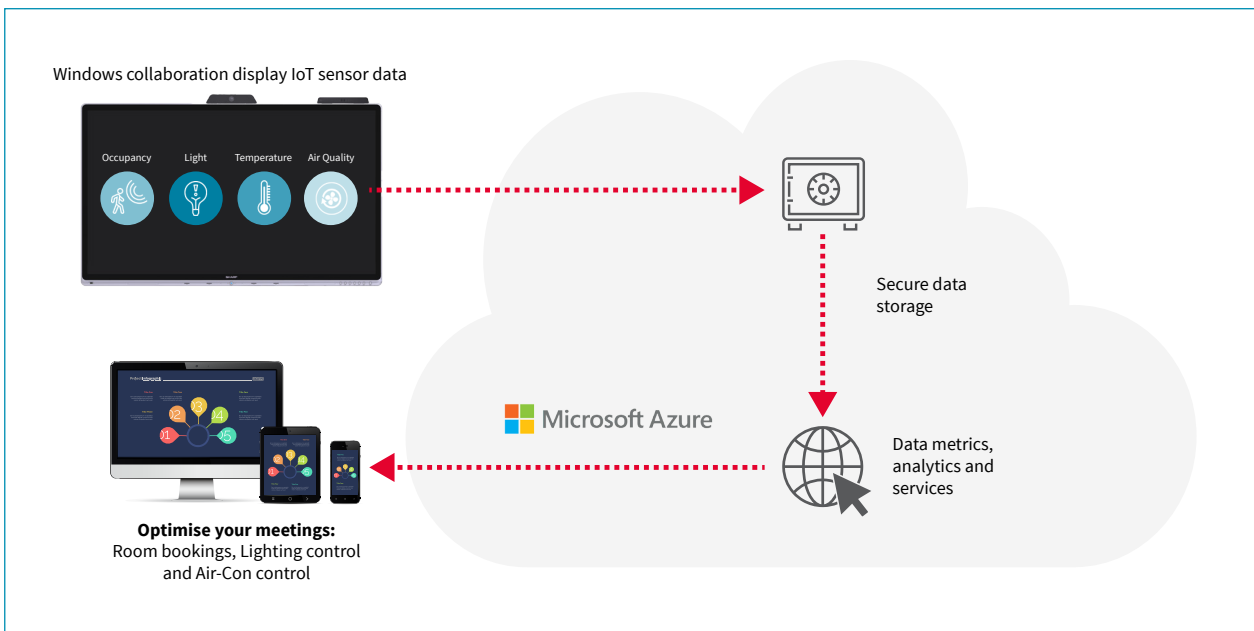
- Get an intelligent edge.

Enjoy a smarter way to monitor and improve meeting room usage and conditions.

Sharp WorkSpaces* is a software solution that helps you make the best use of data from the IoT Sensor hub on the Windows collaboration display. It provides clear, visual information to enable more efficient room booking and utilisation and create comfortable meeting and training room environments for more productive collaboration and learning, while also improving overall facilities management.

By collecting and analysing real-time data from across the digital and physical worlds, it automatically detects meeting room usage, monitors ambient conditions and helps optimise the use of space once connected to the analytics of a smart building management system.

This all happens through the Microsoft Azure Digital Twins IoT platform, which is a powerful, managed cloud service that acts as a central data store and can provide additional data processing intelligence.



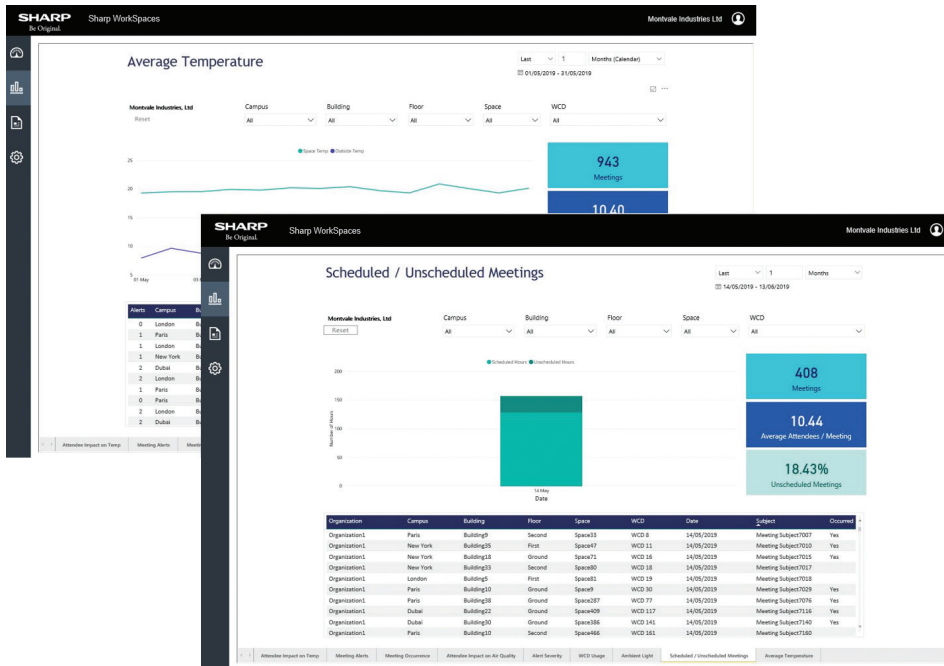


Image for illustration purposes only.

A better place to work

Sharp WorkSpaces delivers real-time analysis of the environmental conditions in your boardrooms and meeting spaces as part of a temperature monitoring system. It continually measures the ambient temperature and relative humidity levels as well as the light and air quality ensuring maximum comfort in each room.

For example, the temperature in a room occupied by 3 people is likely to differ if the number increases to 10 people. So, based on the information gathered by Sharp WorkSpaces, the air-conditioning in every room can be adjusted automatically**, to suit the number of people. As well as improving the comfort of everyone in the meeting, it also reduces costs by avoiding any unnecessary heating or cooling.

And, even better, Sharp WorkSpaces can handle all the data from a fleet of multiple Windows collaboration displays installed in different buildings. You can then see all activity and data from any PC or mobile device.

Always room for improvement

Using data intelligence captured by room occupancy sensors, Sharp WorkSpaces can actively monitor when meeting rooms are being used to determine*** how many people are in each. Once connected to in-house systems, such as a meeting room booking system, you can also see which rooms are booked, as well as seeing when a meeting room becomes free after a period of time.

In addition, you can allocate the most suitable rooms to use depending on the number of attendees. Sharp WorkSpaces can also help you detect and prevent repeat “phantom” meetings – where somebody has booked a room but not turned up!

To help understand and improve the long-term occupancy rates, Sharp WorkSpaces reporting tools can show what type of meetings are taking place, for example:

- **Scheduled (booked and used)**
- **Unscheduled (not booked but used)**
- **Phantom (booked and not used)**

It also highlights the trends of how often each room is used, including the peak and low occupancy times generating a variety of alerts for the Facilities Manager.

** This can happen if the Windows collaboration display sensor data is connected to a smart building system, so custom integration may be required.

*** Sharp WorkSpaces features such as People Counting available as a future development from Q1 2020.

Extra comfort, better collaboration.

Creating a meeting environment in which everyone is relaxed can pay real dividends by improving the productivity of group work.

Sharp WorkSpaces gives businesses of all sizes the information intelligence to adapt the ambient conditions in each meeting room, to suit the number of people and the type of activities taking place. These conditions include the temperature, humidity, air quality and lighting, all conducive to creating the perfect environment.

So, every time a new meeting or training sessions starts, organisers and participants don't have to worry about adapting the conditions of the room as it is automatically optimised for their needs*. By ensuring that people are physically more comfortable, everyone can simply pay attention to what's on the agenda and focus on working more collaboratively.

* This can happen if the Windows collaboration display sensor data is connected to a smart building system, so custom integration may be required.



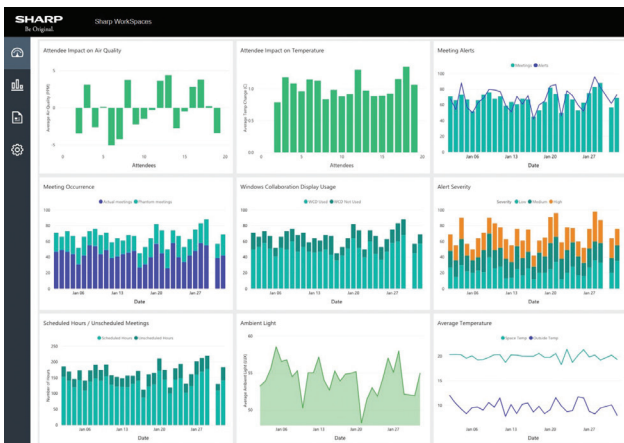


Image for illustration purposes only.

Less hassle, less cost

As a Software as a Service (SaaS) solution, Sharp WorkSpaces is really easy to set-up, provision and use – all you need is a simple pairing code that's entered from the Windows collaboration display.

There's also a free-of-charge 90-day trial licence with the purchase of each Windows collaboration display unit. Sharp WorkSpaces then offers you the flexibility to choose from various options through its SaaS subscription model.

Keep control of your data

Sharp WorkSpaces offers the best performance when running on Microsoft's Azure cloud services, which includes highly secure data encryption. If you prefer, you can also use other cloud platforms or even create a premise-based solution using custom-built software, which would be based in your physical location and running on your own computers and local servers. Of course, Sharp WorkSpaces fully conforms to the European GDPR directive.



Specifications

General

Installation	
PN-CD701	Landscape

LCD Panel

70-inch-class (69 1/2-inch [176.6 cm] diagonal) UV ² A ¹ LCD	
Max. resolution	3840 x 2160 pixels
Max. display colours (approx.)	1.06 billion colours
Pixel pitch (H x V)	0.401 x 0.401 mm
Max. brightness (average) ^{*2}	350 cd/m ²
Contrast ratio	4,000 : 1
Viewing angle (H/V)	176°/176° (CR >10)
Active screen area (W x H)	1,538.9 x 865.6 mm
Response time	6 ms (grey to grey, avg.)
Backlight	W-LED, edge lit

Touchscreen

Touch technology	Projected Capacitive (PCAP) touch
Direct optically bonded	Yes
Palm reject	Yes
PC connection port	USB (2.0) Type B x1, USB Type C x2
Power supply	Supplied from main unit
Multi touch	10 points
Protection glass	Thickness: approx. 1.9 mm ^{*3} Shock resistance: 130 cm ^{*4}

Pen

Passive touch pen	Standard with the Windows collaboration display
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Wireless Casting

Wireless communication method	2.4 GHz, IEEE802.11 b/g/n; 5 GHz, IEEE802.11 a/n/ac
Supported devices	Windows™ and Android™

Computer Input

Video	HDMI x 1, USB Type C (DP Alt Mode) x2
Plug & play	Yes
Power management	Yes

Input/Output terminals*5

Top	USB (3.0) Type A x2 (1 for camera) SPDIF-In x1 (for camera)
Side	USB (3.0) Type A x2 LAN port (External Gb Ethernet) x1 Audio line-out (3.5mm-diameter mini stereo jack) x1 LAN port (Internal Gb Ethernet) x1 USB (2.0, Internal storage expansion) Type A x1 USB Type C (DP Alt Mode) output x1

Speaker output	
Built-in	12W + 12W

Power supply	100V - 240V / AC 50/60Hz
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Power consumption	370W max
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Environmental conditions	
Operating temperature	5°C to 35°C
Operating humidity	20% to 80% RH (no condensation)

Dimensions (W x D x H) (display only)	1,623.6 x 90 x 976.4 mm
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Weight (display only)	65kg
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Main accessories	AC power cord, set-up manual, USB Type C (DP Alt Mode) cable (8.0 m), passive touch pen, HDMI cable, USB touchback cable
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Unified Communications

Output connector	USB (3.0) Type B
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Camera resolution	4K sensor with Full-HD @ 30 fps
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Camera field of view	102°
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Microphone	Array microphone x 4
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Sound collecting distance	4-6m
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IoT Sensor Hub

Output connector	USB (2.0) Type A
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AI camera	
Resolution	1920 x 1080 @30 fps
Colour space	YUY2, MJPG
Field of view	74.8°

Motion sensor	
Sensor type	Microwave
Detection area	140° (Horizontal) / 70° (Vertical) 0dB level

Light sensor	
Selectable LUX ranges	128/256/512/1024/2048
Processing	50/60Hz flicker noise and IR rejection

Air quality sensor	
Gas types	eCO2, TVOC

Temperature humidity sensor	
Temperature range	-40°C to +100°C
RH range	0% - 100%



^{*1} UV²A stands for Ultraviolet-induced Multi-domain Vertical Alignment, a photo-alignment technology that ensures uniform alignment of liquid crystal molecules. ^{*2} Brightness depends on input mode and other picture settings. Brightness level will decrease slightly over the lifetime of the product. Due to the physical limitations of the equipment, it is not possible to maintain a precisely constant level of brightness. ^{*3} Including AG film on the front and AR film on the back. ^{*4} Approximate distance at which the glass panel can withstand the impact of a 500-gram iron ball dropped on its center. ^{*5} Use a commercially available connection cable for PC and other video connections. Microsoft PowerPoint, Excel, Windows, OneNote, and Outlook are either registered trademarks or trademarks of Microsoft Corporation in the US and/or other countries. Intel, Intel Core, and Celeron are trademarks of Intel Corporation in the US and/or other countries. Sempron and Athlon are trademarks of Advanced Micro Devices, Inc. Adobe, Illustrator, and Photoshop, are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries. Apple, iPhone, iPad, Mac, and OS X are trademarks of Apple Inc., registered in the US and other countries. Android and Google Play are trademarks of Google Inc. App Store is a service mark of Apple Inc. iOS is a trademark or registered trademark of Cisco in the US and other countries and is used under license. The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. All other brand names and product names may be trademarks or registered trademarks of their respective owners. DESIGN AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. © Sharp Corporation Windows collaboration display. October 2019. Job No. 20204. All trademarks acknowledged E&OE.